

IP Office 4.2

Manager 6.2

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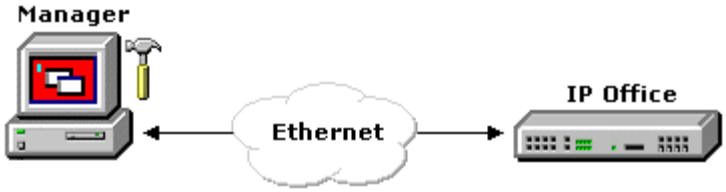
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Chapter 1.
Manager

1. Manager

IP Office Manager is an application for viewing and editing an IP Office system's configuration. It is a tool meant primarily for system installers and maintainers.

Manager runs on a Windows PC and connects to the IP Office via Ethernet LAN or WAN connections.



- **WARNING - Password Change Required**
  New IP Office systems use default security settings. These settings must be changed to make the system secure. At minimum you must change the default passwords of the Security Administrator and the default Service Users. Failure to do so will render the IP Office system unsecure. See the Security Mode 102 section for details.

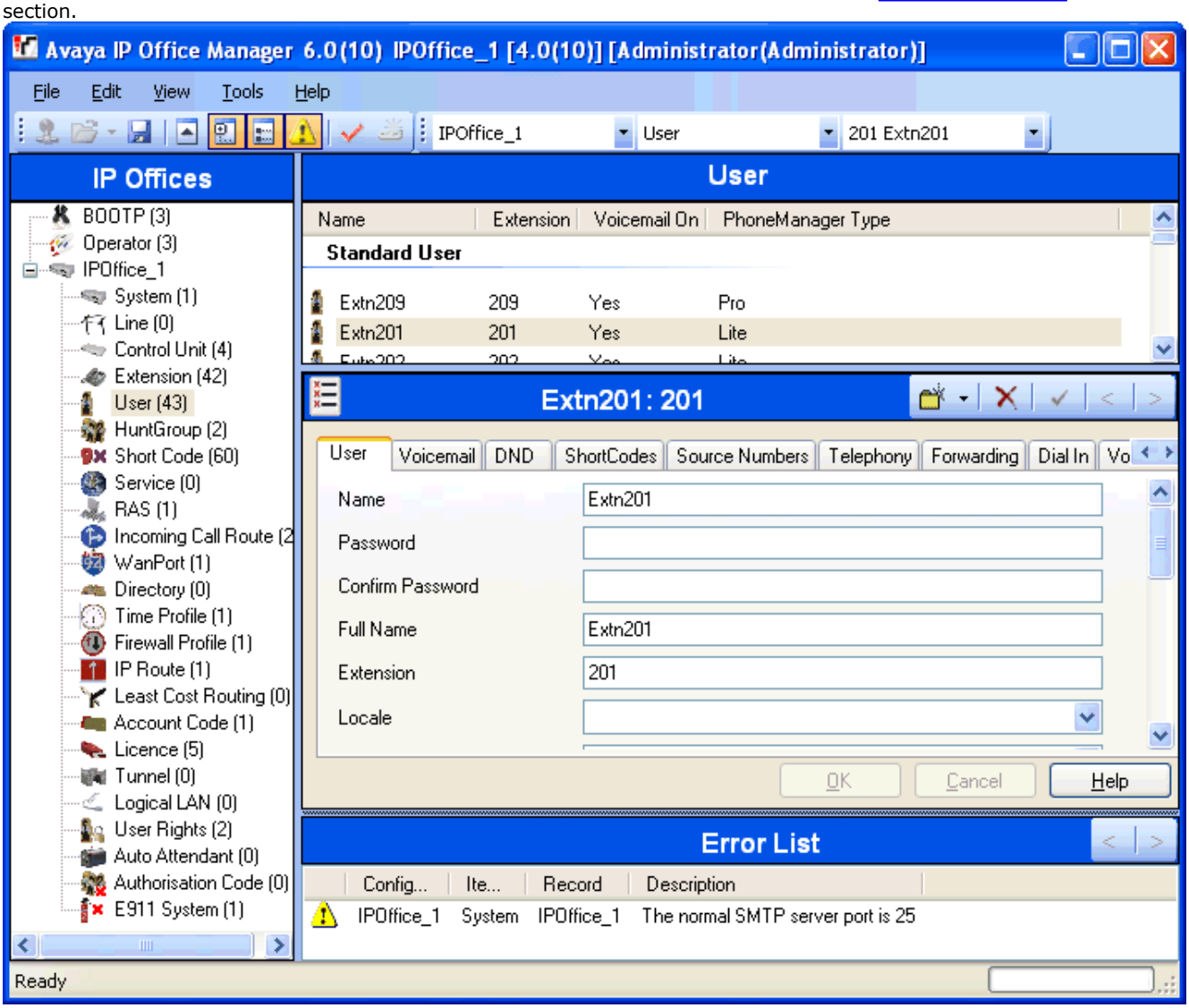
- **IMPORTANT**
  Manager is an off-line editor. It receives a copy of the IP Office system's current configuration settings. Changes are made to that copy and it is then sent back to the IP Office for those changes to become active. This means that changes to the active configuration in the system that occur between Manager receiving and sending back the copy may be overwritten. For example this may affect changes made by users through their phone or voicemail mailbox after the copy of the configuration is received by Manager.

Manager is part of the IP Office Admin suite of programs. It is important to note that the software level of IP Office Manager application is 2 higher than the software level of the IP Office system core software with which it is released. For example IP Office Manager 6.2 was released with IP Office 4.2 core software. The IP Office Manager application can be used to manage configurations from systems running IP Office 2.1 core software. See Backward Compatibility 52.

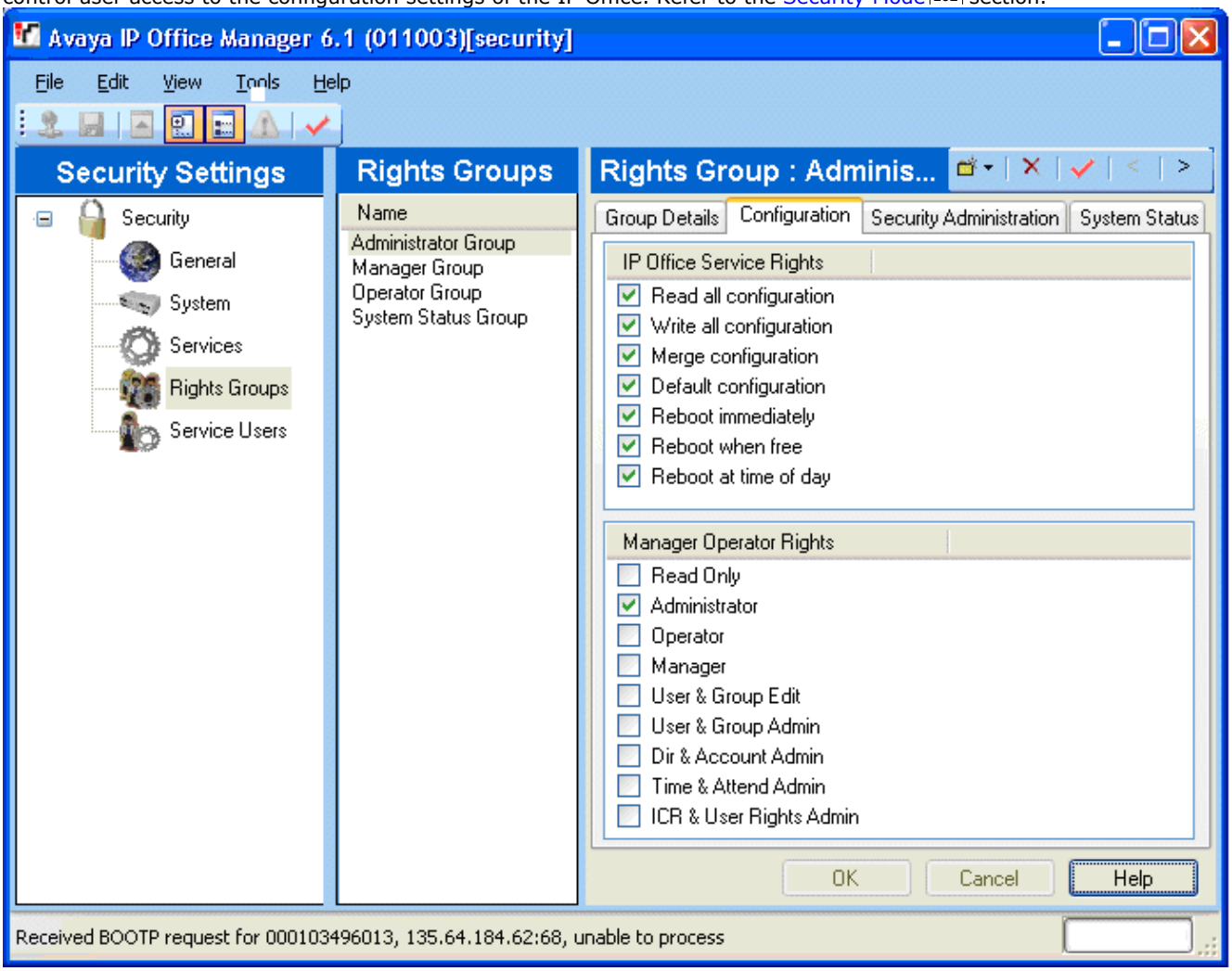
IP Office Functions

Manager performs a number of roles for IP Office systems.

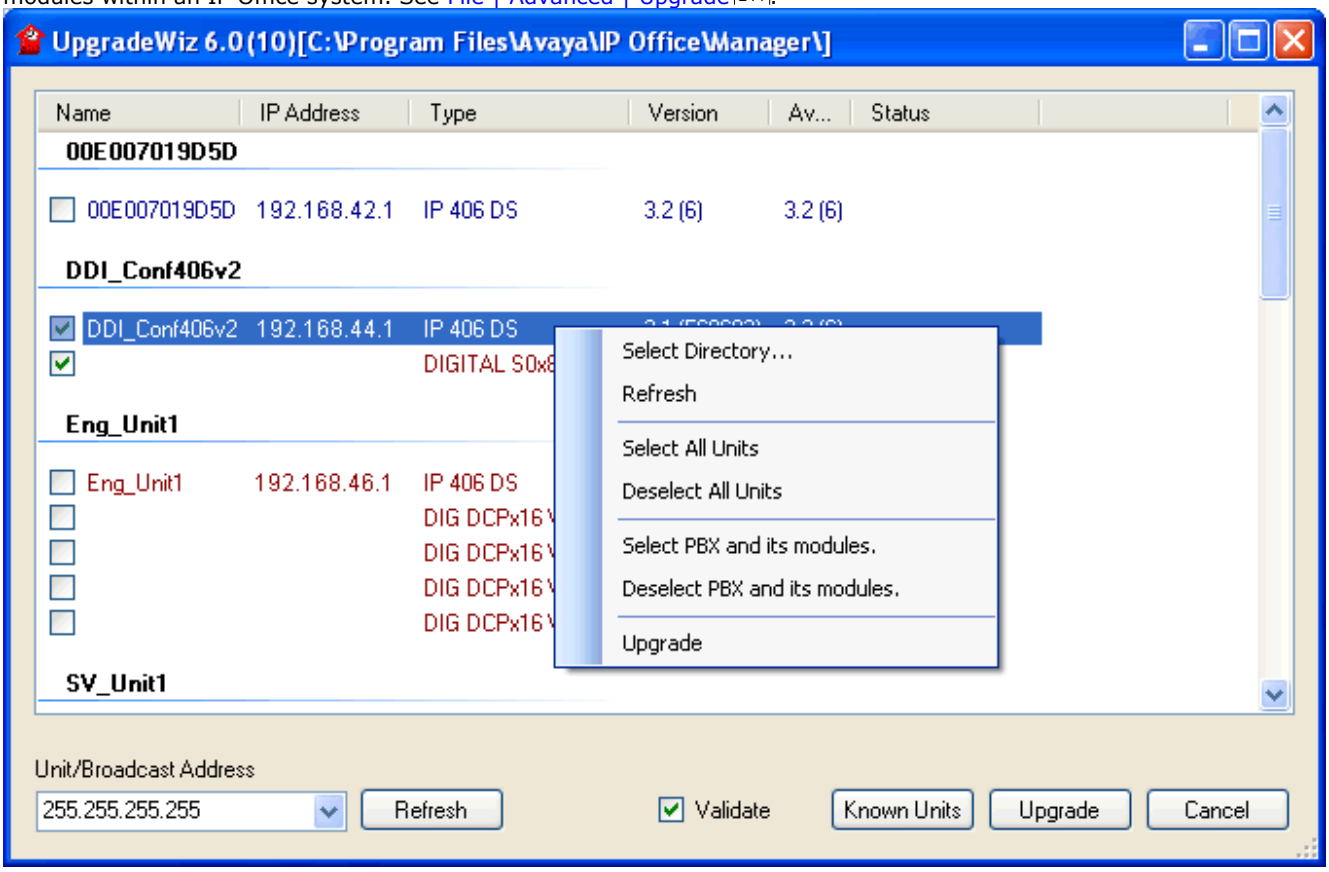
- **Configuration Settings Editor** 66
  In configuration mode Manager is used to edit configuration settings for IP Office systems. Those settings control the call and data function that the IP Office system provides to users and callers. Refer to the Configuration Mode 66 section.



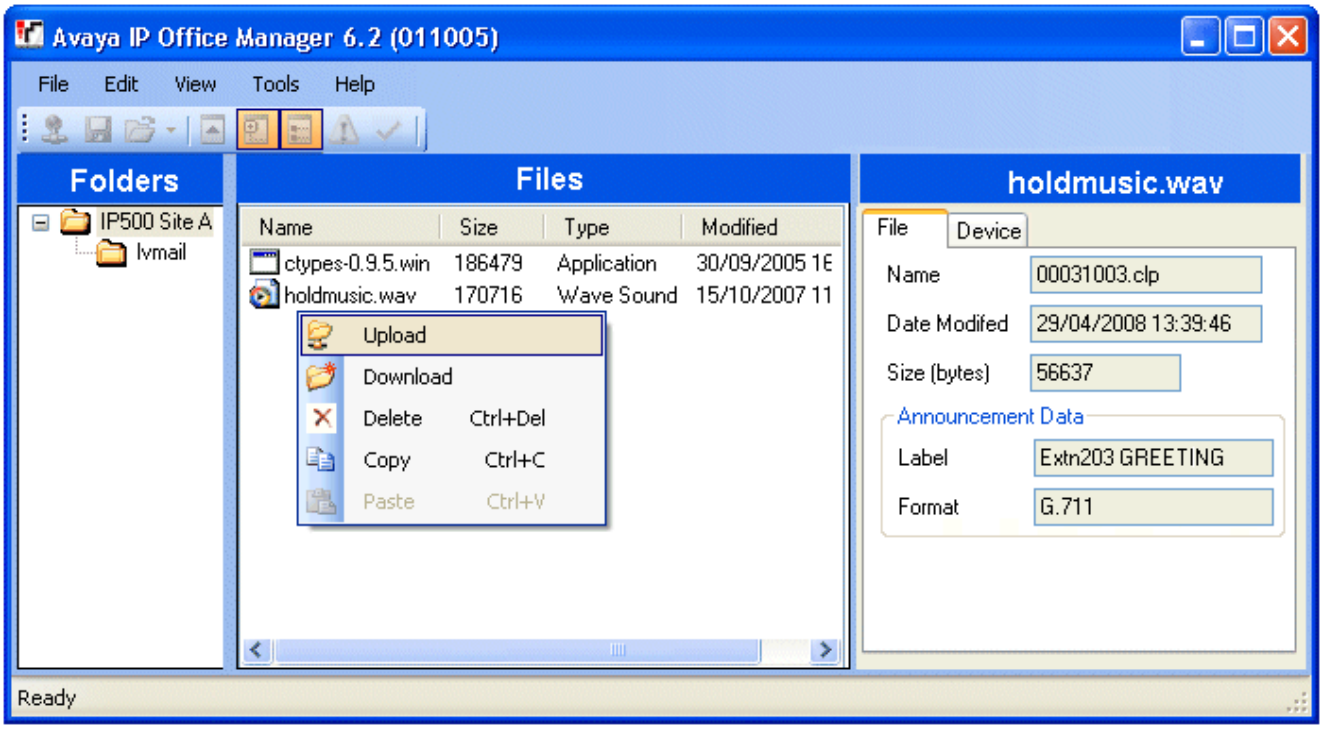
- **Security Settings Editor** 102
  In security mode Manager is used to edit the security settings of IP Office 3.2+ systems. Those settings are used to control user access to the configuration settings of the IP Office. Refer to the Security Mode 102 section.



- **Upgrade Wizard** 144
  The Upgrade Wizard is a component of Manager used to upgrade the firmware run by the control unit and expansion modules within an IP Office system. See File | Advanced | Upgrade 144.



- **Embedded Memory Card Management**
  For systems with a compact flash card installed, the IP Office 4.2+ Manager can be used to view and manage the files stored on the card. This is accessed through the **File | Advanced | Embedded File Management..** 149. .



- **BOOTP Server**
  Manager acts as a BOOTP server, providing software files in response to BOOTP requests from IP Office systems. This task is required for maintenance. This function can be switched off if not required.

- **Time Server**
  Manager acts as an Internet Time server (RFC868), providing the time in response to requests for IP Office systems. This function can be switched off if not required.

1.1 What is New in 4.2

This section summarizes the main changes in IP Office 4.1.

- **IP Office Manager Changes.** 18
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IP Office Manager Changes

- **Embedded File Management** 149
  For systems with a compact flash memory card installed, the contents of the card can be viewed through Manager. This mode is accessed through the **File | Advanced | Embedded File Management** 149 option. This view can also be used to add and remove files from the card. This may be useful when the memory card is being used to store music on hold files and or phone firmware files.
  - Embedded Voicemail message and mailbox greeting files in ***.clp*** format are protected and cannot be deleted or downloaded. Embedded Voicemail prompts files in ***.c11*** or ***.c23*** formats can be managed through this interface.
- **Improved Backup File Control** 140
  Previously if set to keep up backup copies of configuration, the number of backup kept was not controllable. The IP Office 4.2 Manager now allows the number of backups kept by Manager for each system to be limited. This is controlled by the **Number of Backup files to keep** control within **File | Preferences | Security** 140.
- **Discovery of Unsupported Systems** 89
  Previously the IP Office Manager discovery menu did not display IP Office systems with core software that it did not support. The discovery menu will now show those units but indicate that they are not supported.
- **SMTP Server Settings** 188
  The SMTP server settings have been moved from the System | System Events 185 tab to a separate System | SMTP 188 tab. This reflects the usage of SMTP sending for functions other than just system event notification. For IP Office 4.2 that includes Voicemail Email support for Embedded Voicemail.
- **IP Office Discovery using DNS** 139
  For customers who have configured their IP Office systems as entries on a DNS server, IP Office Manager can no be set to use DNS to locate the required IP Office system. The use of DNS is configured through **Files | Preferences | Discovery** 139. When selected the **Unit/Discovery Address** field on the **Select IP Office** 89 dialogue is replaced by a **Enter Unit DNS Name or IP Address** field.

Button Programming

- **Set Night Service Group** 598**/Set Out of Service Group** 599
  Programmable buttons can be configured to change the Night Service Group and Out of Service Group targets of the hunt group associated with the button.

Voicemail

- **Visual Voice through MESSAGES Button**
  The System | Voicemail 175 option **Messages button goes to Visual Voice** allows the default spoken prompts to be replaced by the Visual Voice menus on phones able to support Visual Voice.

Voicemail Pro

- **IP Office Unified Messaging Service (UMS)**
  Two new methods for users to access their mailbox are now supported. The methods are mailbox access using email applications that support IMAP (Internet Message Access Protocol) and mailbox access via web browsers. The use of these requires the IP Office configuration to contain ***UMS Web Services*** licenses for the number of required users.
  - **IMAP Service**
    The Voicemail Pro now includes an IMAP server. Users can then access their voicemail messages using email clients such as Outlook and Lotus notes that support an IMAP Client. When connected, the IMAP client and Voicemail Pro will synchronize messages in the mailbox with message files in the IMAP client. Playback is through the sound facilities of the user PC.

    - **Web Voicemail Service**
      The Voicemail Pro web service allows users to access their mailbox using a web browser. This has been tested with the Internet Explorer 7, Firefox 2 and Opera 9.10 PC browsers. This method of access requires Voicemail Pro to be installed on a PC already running Microsoft's IIS web server. Users can select to have message playback via an IP Office extension or through their PC's sound facilities.

- **Test Variable Action**
  The existing **Check Digits** action has been replaced by a **Test Variable** action. This, in addition to offering the capabilities of the **Check Digits** action, provides significant enhancements. In addition to being able to match the user's DTMF input against a specified string offered by the **Check Digits** action, the **Test Variable** action allows the testing of the contents of any system variable against known user extensions, hunt-groups, mailboxes and the contents of another variable. This will allow callers to enter numbers via a menu action, that can be verified as matching an existing extension or hunt groups prior to attempting to carry out transfers to otherwise potentially non-existent numbers.

- **Menu Action Invalid Input Handling**
  The **Menu** action has been enhanced. It now includes a control for the number of retries for the caller to make a valid entry and an ***Invalid Input*** result for connection to following call flow actions. Also prompts can be selected for playback whenever an invalid entry or entry timeout occurs.

- **License and Service Status Display**
  When the Voicemail Pro client is connected to a Voicemail Pro server, the **Help | About** screen displays a list of the licenses being used by the Voicemail Pro server. This license details include the validation status and capacity of those licenses. The status of related services, for example the UMS IMAP server, are also listed.

- **System Variable Length Increase**
  Previously the length of values stored by system variables has been limited to 64 characters. That maximum length has been increased to 512 characters.

- **Outcalling Configuration**
  In conjunction with Phone Manager 4.2, Voicemail Pro 4.2 allows users to adjust their outcalling settings through using a visual menu within Phone Manager.

    - Using the Phone Manager interface, users can now apply a delay between each notification call in an escalation list.

Embedded Voicemail

- **Cantonese Prompt Support**
  Cantonese Chinese prompts are now supported. They will be used for the system or user **Locale** set to ***Hong Kong (Cantonese)***.

- **Voicemail Email Support**
  The Voicemail Email options are now useable with Embedded Voicemail. This requires an accessible SMTP server to be configured in the System | SMTP 188 tab. Not supported on the Small Office Edition.

Mobility Features

The user **Twinning** options have been relabeled **Mobility** to reflect the addition of a number of features for mobile users. In addition the **Mobile Twinning** license has been relabeled **Mobility Features**. The additional features are:

- **Mobile Call Control** 667
  IP500 systems with digital trunks (PRI, BRI or SIP) can support users configured for Mobile Call Control. When those users receive a twinned call from the IP Office, they can dial ** to place that call on hold and access IP Office dial tone. They can then dial as if an extension on the IP Office. The IP Office can also be configured to allow incoming calls from the user's mobile twin device to receive IP Office dial tone (also know as DISA (Direct Inward System Access)).

- **one-X Mobile Client Support** 669
  IP Office 4.2 supports devices using the Avaya one-X Mobile Client software (Windows Mobile V5 and V6 and Symbian Single-Mode only) as the destinations for mobile twinning. An IP Office specific set of one-X Mobile functions are supported using DID's routed to special IP Office short codes. This allows one-X Mobile Client users to invoke various IP Office functions. For example picking up a call ringing at their primary extension or on calls received from the IP Office, transferring the call to their voicemail mailbox.

- **Logged Off Mobile Twinning** 280
  Previously mobile twinning was not used when the user logged out the IP Office. IP Office 4.2 allows selection of whether calls should still alert the user's twinned device when the user is logged out. This selection is per individual user. When used, the user's **Mobile Dial Delay** setting is ignored when logged out.

- **Longest Idle Status for Twinned Users**
  The longest idle information is now updated for calls to the internal or mobile twin of a hunt group member. The member is seen as busy to hunt group calls if either the master or the twin is on a call. In addition, for mobile twinning:

    - If mobile twinning of hunt group calls is selected and the master is idle, the longest waiting state will reflect that of the mobile twin.

    - The above also applies if the master is logged out and logged out twinning is selected.

- **User BLF Indication Changes**
  Changes have been made to the BLF status applied to users. For most user, logged in or associated with a specific extension, there will be no visible change.
  - Users set to DND are now indicated as busy on BLF indicators. This applies to BLF indication only and not to how calls are routing which still follow the previous operation for DND on.
  - For users who are logged out there are a number of changes:
    - The status shown for a logged out user without **Logged Off Mobile Twinning** depends on whether they have **Forward Unconditional** enabled. If they have **Forward Unconditional** enabled, the user is shown as idle. If they do not have **Forward Unconditional** enabled they will show as if on DND.
    - The status shown for a logged out user with **Logged Off Mobile Twinning** will be as follows:
      - If there are any calls alerting or in progress through the IP Office to the twin the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have Busy on Held enabled.
      - If the user enables DND through Mobile Call Control or one-X Mobile client their status will show as DND.
      - Calls from the IP Office direct to the users twinned destination rather than directed by twinning from their primary extension will not change the user's status.
- **License Change**
  The **Mobile Twinning** license is now called the **Mobility Features** license, reflecting the fact that it can be used for Mobile Call Control and one-X Mobile Client support in addition to mobile twinning. The mode of license operation has also changed. Prior to IP Office 4.2, the license was only consumed by users who had Mobile Twinning enabled. For IP Office 4.2 it is consumed by a user when they are configured for any of the mobility features, including mobile twinning even if they have turned mobile twinning off.

Music on Hold

The following changes have been made to music on hold (MoH) support.

- **3 Additional Internal Sources**
  Previously the IP Office has supported a single music on hold source which could be either an internal source (holdmusic.wav file), an external source connection or a default tone (IP Office 4.0+). Except for Small Office Edition, IP Office 4.2 systems can be configured with up to 3 additional internal hold music sources. These are loaded and stored in the same way as the standard ***holdmusic.wav*** file plus the IP Office will attempt to load new sources specified in a configuration merge.
- **IP500 Increased Internal Hold Music Length**
  The standard length of the holdmusic.wav file is 30 seconds. For the IP500 control unit, the length for all internal wav files for music on hold can be up to 90 seconds.
- **Incoming Call Route Hold Music Selection**
  On systems with multiple music on hold sources, the source to associate with external calls can be specified by the Incoming Call Route 330 applied to the call.
- **Hunt Group Hold Music Selection**
  On systems with multiple music on hold sources, the source to associate with calls received by a hunt group can be specified within the hunt group 289 configuration.
  - Calls overflowing from a hunt group will use the hold music source setting of the original hunt group and ignore the setting of the overflow group.
  - Calls going to night service or out of service fallback group use the hold music source setting of the original hunt group and then, if different, the setting of the fallback group. The setting of further fallback groups from the first are ignored.
- **Small Community Network Support**
  The 4 possible music on hold sources are numbered 1 to 4, with 1 being the IP Office System Source. Where the source number to associate with a call is changed by an Incoming Call Route or Hunt Group, that number is retained when the call is rerouted across the SCN. If the receiving switch has a matching numbered alternate source that source is used, otherwise it default to the default system source.
- **Merging Music on Hold Changes**
  Where possible, when an internal source is specified or details of an existing internal source are changed, the configuration changes can be merged and IP Office will attempt to download any newly specified file at that time. Once downloaded, any existing file is replaced even if callers are listening to that source.
- **System Status Reporting**
  The status of the up to 4 internal sources is reported in SSA (*Waiting to Load*, *Loading*, *Loaded* and *Failed to Load*). An alarm is also generated if the IP Office is unable to load a specified source.

Phone Manager

The following new features are supported for Phone Manager 4.2 users in conjunction the IP Office 4.2.

- **Change Password**
  Users can now change their **Password** (User | User | Password) using Phone Manager. This is the password used as part of the log in to IP Office for the Phone Manager, SoftConsole and IP Office TAPI applications.
- **Outcalling Configuration**
  Outcalling was added as part of Voicemail Pro 4.1. It allows users of Intuity emulation mode mailboxes to configure a escalating series of telephone numbers at which the Voicemail Pro would attempt to alert them about new messages. For IP Office 4.2, configuration of Outcalling can be done through Phone Manager Pro. This allows the user to view their current outcalling settings and to make changes when necessary.
  - Using the Phone Manager interface, users can now apply a delay between each notification call in an escalation list.
- **Forward Messages**
  When accessing a voicemail mailbox using Phone Manager Pro, the user can now right-click on a message and select to forward it to another mailbox.
- **Version Display**
  The **About Phone Manager** menu (**Help | About Phone Manager**) now includes version information for the IP Office phone system and the Voicemail Pro server. This is information that may aid in the resolution of support issues.
- **Phone Manager Pro PC Softphone**
  The software element used for the PC softphone updated with the following changes:
  - Phone Manager Pro PC Softphone 4.2+ is supported on Vista operating systems (excluding the Home editions).
  - The VoIP Settings tab has been removed from the Phone Manager preferences. All codec and similar options are controlled through the IP Office configuration.

System Status Application (SSA)

The following new features have been added to the System Status Application as part of IP Office 4.2+:

- **Feature Key and License Information**
  All licenses and their current status is listed on the SSA's ***Resources | Licenses*** screen. It includes details of how often the license limit has been reached and the last time that occurred. The type and serial number of the Feature key dongle is also shown.
- **Control Unit Audit Trail**
  The Audit Trail information held by the IP Office and previously visible through Manager is now also shown in SSA.
- **IP Routes**
  Details about IP routes are now listed.
- **Voicemail Summary and Details Screens**
  A voicemail status screen is now available. It details the voicemail server type and other information such as the number of ports and port in use. In addition a mailbox status screen is available detailing the basic voicemail settings of each mailbox and the number of new, read and saved messages.
- **Directory**
  The SSA can now display a directory of all the extensions, users and hunt groups known to the IP Office. This includes users and hunt groups known through Small Community Network connections. In addition any conflicting Small Community Network numbers are indicated.
- **IP Phone Control**
  SSA can be used to reboot specific IP phones. This allows control over which phones are upgrading.

1700 Series IP Phones

The IP Office now supports the Avaya 1703, 1708 and 1716 phones.

- **1703**
  This is the basic model. It provides only 3 programmable feature keys. Supports power from a power supply unit or PoE, however to use a 1703 with PoE requires an additional PoE power adaptor.
- **1708**
  Provides 8 programmable feature keys with twin LED's on each button. Supports power from a power supply unit or PoE.
- **1716**
  Provides 16 programmable feature keys with twin LED's on each button. Supports power from a power supply unit or PoE.
- **BM32**
  Usable with the 1716 only, the BM32 provides an additional 32 programmable feature keys with twin LED's. Up to 2 BM32's can be daisy-chained to the same 1716 phone. Each BM32 draws power from its associated 1716 phone and requires the phone to be using a dedicated power supply rather than PoE. A maximum of 16 BM32's are supported on the whole IP Office system. Note that appearance buttons are not supported on BM32's.

VoIP Phone Support Enhancements

In parallel with the addition of 1700 Series IP phones, a number of improvements have been made to the IP Office's support for IP phones.

- **Avaya IP Phone HTTP Server Support**
  For Avaya IP phones using IP Office DHCP, the address of the HTTP server from which those phones should download their software and settings files can now be specified in the IP Office configuration. 4600 Series and 5600 Series phones attempt to load files via HTTPS and then HTTP before falling back to TFTP. 1700 Series IP phones only support HTTPS or HTTP.
  - For IP Office 4.2, using the Embedded Voicemail memory card is also supported for HTTP file requests for up to 50 IP phones. This is done by setting the **TFTP Server IP Address** and **HTTP Server IP Address** to match the control units IP address. This is supported for up to 50 IP phones.
- **Secondary Site Specific Options Number**
  A Site Specific Option Number (SSON) is used by Avaya IP phones when requesting phone specific settings from a DHCP server. When the IP Office is acting as the DHCP server, the matching number must be set in the IP Office configuration. IP Office 4.2 now provides two fields for settings SSON numbers in order to support Avaya 4600 and 5600 Series IP Phones (which use a default SSON of 176) and Avaya 1700 Series phones (which use a default SSON of 242).
- **IP Phone Restart using System Status Application**
  Individual Avaya IP phones or groups of phones can be selected and then restarted remotely using the System Status Application. This allows individual phones or groups of phones (up to 20 at a time) to be restarted in order to upgrade their firmware.
- **IP500 DHCP Enhancements**
  The scope of DHCP support on IP500 has been enhanced in a number of areas.
  - **Full Avaya IP Phone Support**
    Previous only a maximum of 5 IP phones have been supported if using the IP Office for DHCP and TFTP functions. An external DHCP server is required to support more than 5 Avaya IP Phones. For IP Office 4.2+, the IP500 supports up to 272 Avaya IP phones, the maximum extension capacity of the IP500 control unit.
  - **Multiple DHCP IP Address Pools**
    On each IP Office LAN interface, up to 8 DHCP address ranges (called 'pools') can be specified. These pools do not have to be on the same subnet as the IP Office itself. This allows devices being supported by IP Office DHCP to be given addresses on a different subnet than the IP Office.
  - **DHCP for Avaya IP Phones Only**
    The DHCP pools provided by the IP Office can be restricted for use by Avaya IP phones only. The IP Office will then not respond to DHCP request from other devices.
- **IP500 VCM Controls**
  For IP Office 4.2+, the VCM controls for echo and comfort noise supported in the IP Office configuration (**System | VCM** 191) are now also applied to IP500 VCM cards.
- **Manager TFTP File Server**
  IP Office Manager is no longer supported as the TFTP server for IP phone files.

Trunk Support Changes

- **IP500 BRI Trunks So/To Control** 199 *(IP500 BRI Daughter cards only)*
  IP500 BRI daughter cards can be configured for So (S-Bus) operation for connection to ISDN terminal devices. Note that this requires the addition of terminating resistors at both the IP Office and remote end, and the use of a suitable ISDN cross-over cable. For full details refer to the IP Office Installation manual.
- **IP500 Analog Trunk Impedance Matching** 196 *(IP500 Analog Trunk Daughter cards only)*
  For systems set to the ***United States*** or ***French Canadian*** locale, the number of trunk impedance settings supported has been increased. In addition, IP Office Manager can now be used to perform line testing that will attempt to detect and display the recommended impedance setting. A In addition, options for improved signalling of long lines (**Quiet Line**) and mains hum filtering (**Mains Hum Filter**) have been added.
- **Increased ETSI CHI Trunk Support**
  Lines that support ETSI CHI (Channel Allocation ID) allow the IP Office to indicate to the central office exchange which trunk B-channel should be used for a call. IP Office 4.2 extends ETSI CHI support to all trunks that support ETSI and extends the number of features that can be used on ETSI CHI trunks.
  - E1 PRI and US PRI trunks can now select ETSI CHI operation.
  - The default Channel Allocation order to use for outgoing calls can be specified.
  - Previously only Line Appearance was configurable for each channel. For IP Office 4.2, the Incoming Group, Outgoing Group, Admin, Direction and Bearer can be set for each individual channel.

- **Network Interconnection Control (Trunk Cross-Connect Barring)** 703
  For the IP Office system, **Restrict Network Interconnect** 177 (System | Telephony | Telephony) 177 can be enabled When enabled, each trunk is provided with a **Network Type** option that can be configured as either ***Public*** or ***Private*** . The IP Office will not allow calls on a Public trunk to be connected to a Private trunk and vice versa, returning busy indication instead. This features is designed for markets that restrict certain trunk to trunk connections between private and public networks.
- **SIP Trunk Enhancements** 239
  The following changes have been made for SIP trunks offered by the IP Office:
  - **SIP Trunk ARS Routing Enhancement** 239
    Previously, when used within an ARS form, alternate call routes were only used when no further channels were available on the SIP trunk. The IP Office now supports a **Call Initiation Timeout** on SIP lines which determines how long the IP Office should wait for a response to a SIP packet sent to initiate a new call before failing to an alternate route. The default timeout is 4 seconds and can be configured between 1 and 99 seconds.
  - **Use Offerer's Codec** 239
    When negotiating the codec to be used for a call, the call answerers preferences are normally used. For some SIP providers this needs to be changed and priority given to the offerers preferences. The **Use Offerer's Codec** option on the SIP line can be used to enable this option.
- **IP Trunk Enhancement** 231
  The timeout used to determine when an IP line waiting for a response should use an alternate ARS route was previously set by the ***H323SetupTimerNoLCR*** option in the **NoUser** user **Source Numbers**. This option is now set for each IP line through a **Call Initiation Timeout** option on the IP lines VoIP Settings tab. The default timeout is 4 seconds and can be configured between 1 and 99 seconds.

Hunt Group Operation

- **Call Priority Enhancements**
  Call priority is used by hunt group queues, with calls in the queue being sorted by priority and then longest waiting time. Previously the priority setting applied to a call was set by the **Incoming Call Route** that routed the call onto the IP Office or for all other calls was ***1-Low***. IP Office 4.2 allows call priority to be changed in a number of ways.
  - **Call Priority Promotion Time** 177
    A system wide call promotion time can be defined (System | Telephony | Telephony | Call Priority Promotion Time 177). By default this feature is disabled. When enabled, calls queued for a hunt group have their priority increased by 1 each time they have been queued longer than the promotion time value until they have reached the maximum priority of 3.
  - **Call Priority Short Code Character** 387
    The character **p** can be used in the **Telephone Number** field of ***Dial Extn*** short codes to change the priority of a call. It is added as a suffix to the Telephone Number using the format ***p(x)*** where ***x*** is ***1***, ***2*** or ***3*** for low, medium or high priority.
- **Hunt Group Music on Hold Selection**
  With IP Office 4.2 now supporting up to 4 music on hold sources, the source to use for calls presented to a hunt group can now be specified to override the system or incoming call route setting. See Music on Hold 20 above.
- **Longest Idle Status for Twinned Users**
  The longest idle information is now updated for calls to the internal or mobile twin of a hunt group member. The member is seen as busy to hunt group calls if either the master or the twin is on a call. In addition, for mobile twinning:
  - If mobile twinning of hunt group calls is selected and the master is idle, the longest waiting state will reflect that of the mobile twin.
  - The above also applies if the master is logged out and logged out twinning is selected.
- **Hunt Group Queued Call Presentation** 296
  For hunt groups where multiple calls are waiting to be answered, two methods of setting which calls the hunt group member answers when they go off-hook. This is controlled by the **Queue Type** option on the **Hunt Group | Queuing** tab.
  - **Assign Call On Agent Answer**
    In this mode the call answered by the hunt group member will always be the longest waiting call of the highest priority. At the moment of answering that may not necessarily be the same call as was shown by the call details at the start of ringing. This is the default mode for IP Office 4.0+.
  - **Assign Call on Agent Alert**
    In this mode, once a call has been presented to a hunt group member, that is the call they will answer if they go off hook. This is similar to the method used for IP Office 3.2 and earlier. This mode should be used when calls are being presented to applications which use the call details such as a fax server, CTI or TAPI.
- **Overflow Mode Selection**
  Pre and post IP Office 4.0 system used different overflow methods. For pre-IP Office 4.0 system, whether a call should overflow was determined on a call by call basis. For IP Office 4.0+ system, once one call had met the criteria to overflow, all currently queued calls overflowed. For IP Office 4.2 systems the mode of overflow operation can be selected through the hunt group **Overflow Mode** setting.

Call Presentation/User Information Display

- **Called Number Display overrides Dialed Number Display**
  For IP Office 4.0+, the digits displayed to users after making an outgoing call was changed to show the digits dialled to line by the IP Office rather than the digits dialed by the user. IP Office 4.2 returns to displaying the digits dialed by the user. When making a call via a directory feature the digits dialed from the directory are shown. The user dialed digits are retained with the call when parked, held, transferred and retrieved. Directory matching is still performed on the number dialed.

- **User BLF Change**
  Changes have been made to the BLF status applied to users. For most user, logged in or associated with a specific extension, there will be no visible change. However for users who have logged out there are a number of changes.

  - The status shown for a logged out user without mobile twinning will depend on whether they have **Forward Unconditional** enabled. If they have **Forward Unconditional** enabled the user is shown as idle. If they do not have **Forward Unconditional** enabled they will show as if on DND.

  - The status shown for a logged out user with mobile twinning will be as follows:

    - If there are any calls alerting or in progress through the IP Office to the twinned destination, the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have **Busy on Held** enabled.

    - If the user enables DND through Mobile Call Control or one-X Mobile client, their status will show as DND.

    - Calls from the IP Office direct to the user's twinned destination number rather than redirected by twinning will not change the user's status.

- **Longest Idle Status for Twinned Users**
  The longest idle information is now updated for calls to the internal or mobile twin of a hunt group member. The member is seen as busy to hunt group calls if either the master or the twin is on a call. In addition, for mobile twinning:

  - If mobile twinning of hunt group calls is selected and the master is idle, the longest waiting state will reflect that of the mobile twin.

  - The above also applies if the master is logged out and logged out twinning is selected.

SMDR

- **SMDR via IP Direct from the IP Office** 818
  The IP Office control unit can be configured to send its SMDR call log records via IP to a designated address and port. The controls for this are on the System | CDR/SMDR 189 form.

- **Increased SMDR/CDR Buffering**
  For systems other than the Small Office Edition, the maximum of records that the system can buffer if the remote connect is lost has been increased from 1500 to 3000.

T3 Phone Enhancements

The following changes have been made to the range of features supported by T3 phones (all types) supported on IP Office.

- **Line Appearances** 635
  The use of line appearance buttons is now supported with T3 phones. Other appearance button types are not supported. Unlike other phones that support line appearances, the T3 phones do not need to have call appearance buttons programmed.

- **Self-Administered Button Programming** 473
  T3 phone users can be given access to a menu to program their own phone buttons (**Menu -> Settings -> Button programming**). This feature is not available by default, the user must be configured for this feature.

- **Voicemail Settings Menu**
  On IP Office systems with a voicemail server installed, T3 phone users can now access a menu of voicemail settings via ***Menu -> Settings -> Voicemail Settings***. The options available depend on whether the voicemail server supports Visual Voice (Voicemail Pro and Embedded Voicemail).

  - On systems that do not support Visual Voice, the menu provides options for turning the user's voicemail on/off and for listening to their messages via traditional audio prompts.

  - On system that support Visual Voice, then menu provides options for turning the user's voicemail on/off, listening to messages through menu of visual options (**Listen**) and the other Visual Voice menu options (**Message**, **Greeting**, **PIN**, **Email** and hunt group mailboxes).

- **Visual Voice Support**
  In addition to access to Visual Voice through the menu above, buttons set to access Visual Voice go direct to the Visual Voice **Listen** function.

- **Display of "Follow Me Here"**
  When another user sets a follow me to the T3 user's phone, Follow me here and the user using the follow me are displayed on the T3 phone's status display. The item can be selected and used to cancel the follow me.

- **Hunt Group Membership Display**
  For selected hunt groups of which the user is a member, the user can be configured to display and change the status of their membership. The hunt groups are selected through the IP Office Manager (User | T3 Options | Hunt Group Settings | Change Hunt Group Membership Status 277). Previously that list of hunt groups was accessed on the T3 phone using ***Menu -> Settings -> Display/Audio ->Group Membership***. For IP Office 4.2 that menu option has been removed, instead the selected hunt groups are displayed on the phone's status display and the status can be changed through that display.

- **Change Hunt Group Status**
  For selected hunt groups on the system the user can be configured to be able to display and change the in service, out of service and night service status of the group. The hunt groups are selected through the IP Office Manager (User | T3 Options | Hunt Group Settings | Change Hunt Group Service Status 277). The user can then change the status from their phone using the ***Menu -> Group state*** option. For IP Office 4.2 that option now includes options to set all the displayed groups in service, out of service or into night service. Previous this had to be done group by group for each displayed group.

- **System Name and Version Display**
  Following a restart of the IP Office system or the T3 phone, the phone will briefly display the IP Office system software level and system name. This information can also be accessed using ***Menu -> Settings -> System Info***.

Other Features

- **Logged Off Users**
  The following changes have been made in regard to logging out:

  - For IP Office 4.0 and 4.1, users without a configured **Login Code** are not allowed to log out. For 4.2+, these users are allowed to log out if they are currently associated with (logged in at) an extension that has a different **Base Extension Number** from their own Extension Number, so long as they are not set to Forced Login. This allows system maintainers to change and merge changed **Base Extension Numbers**. Affected users can then log out and will automatically be logged back in at the appropriate extension if available.

  - **Mobile Twinning Users** 280
    Mobile twinning users can be configured to still receive calls for their primary extension on their twinned device even when logged out from their primary extension. This is done using the **Twin When Logged Off** 280 (User | Mobility) 280 option.

- **Static NAT Options in IP Office Firewalls** 342
  Static NAT entries can be added to IP Office Firewall Profiles in order to translate between external and internal IP addresses. When static NAT entries are added to a Firewall Profile, only traffic that matches one of the static NAT entries (plus all the other firewall settings) is allowed. Each Firewall Profile can contain up to 64 static NAT pairs.

- **Enhanced Outgoing Call Barring**
  A number of new features have been added around the existing user setting **Outgoing Call Bar** 266 (User | Telephony | Supervisor Settings) 266. When enabled, this setting stops the user from making any outgoing external calls other than those using **Dial Emergency** features. Note that the features below have also been added to the IP Office 4.1 2008 Q2 maintenance release.

  - **Outgoing Call Bar Short Code Controls**
    The short code features **Outgoing Call Bar On** 444 and **Outgoing Call Bar Off** 444 can be used by a user to change their outgoing call bar status. In addition the short code **Change Login Code** 412 has been added.

- **User Password Controls**
  Each IP Office user has a number of passwords.

  - **Login Code Controls**
    The user log in code is used to log in at an extension and to switch off outgoing call bar. A **Change Login Code** 412 short code feature has been added.

  - **Voicemail Code**
    The voicemail code is used for access to the user's voicemail mailbox when accessed from destinations not configured as trusted sources. This code can be changed through the mailbox prompts interface or through Visual Voice. For IP Office 4.2 it can also be changed through the UMS Web Voicemail (IMAP) interface.

  - **User Password**
    The user password is used by IP Office application such as Phone Manager, SoftConsole and TAPI. Phone Manager 4.2 now provides a Change Password option that allows the user to change their password. In addition to changing their password, it will update the Phone Manager profile if **Remember Password** is enabled and will attempt where possible to update the TAPI settings if the IP Office TAPI driver is installed on the same PC (Phone Manager will display a warning if the TAPI configuration needs to be manually updated to the new password).

- **Phone Time and Date Display**
  For 4.2, the following phones now display the current time and date at the bottom right of their display when idle: 2410, 2420, 5410 and 5420.

Platform Restrictions

Where some of the features listed about are not supported on all IP Office systems that can run IP Office 4.2, the table and notes below detail the restrictions.

Restricted Feature	Small Office Edition	IP406 V2	IP412	IP500
Mobile Call Control	✗	✗	✗	✓
one-X Mobile Support	✗	✗	✗	✓
Switchable To/So BRI	✗	✗	✗	✓
VoIP Enhancements	✗	✗	✗	✓
Embedded Voicemail Email	✗	✓	✗	✓
Embedded File Management	✗	✓	✗	✓
T3 Phone Enhancements	✗	✓	✓	✓
Multiple Music on Hold Sources	✗	✓	✓	✓

1.2 What was New in 4.1

This section summarizes the main changes in IP Office 4.1.

General Manager Changes

- **Optional Legal/Informational Message Display** 40
  When starting IP Office Manager, a message dialogue can be displayed which features Continue and Cancel (closing Manager) options. This can be used to display legal warning text or information text before Manager is used.
- **AIM Configured System Warning** 56
  If an IP Office 4.1+ configuration from an IP Office that has been configured through AIM, is opened in a standalone version of IP Office Manager, a warning message is displayed. This is to prevent misconfiguration of systems that should only be configured through the version of Manager embedded in the AIM suite of software.
- **Application Idle Timeout** 140
  A timeout can be enabled. After 5 minutes of no mouse or keyboard activity, Manager will request reentry of the service user password used to load the current configuration or security settings.
- **Card and Port Indication** 195
  For line types provided by the installation of physical trunk cards or modules, within the line settings the card slot or module location is now indicated and the port number on that device.
- **System Events** 185
  The System Alarms tab has been renamed Systems Events.
- **Merging Extension Changes** 248
  For extension settings, the **Base Extension** and **Disable Speakerphone** fields are now mergeable.

Security Enhancements

- **Service User Password Controls** 120
  Various controls have been added within the IP Office security settings for service user passwords. These control can be used to enforce the required level of password complexity. Service user accounts can be disabled after too many incorrect password entries, after a specified period of not being used or after a specific expiry date. Service users can also be prompted to change their password when they next log in after a specified period.
- **Security Reset** 147
  Service users with sufficient rights can reset the IP Office security settings to their defaults using IP Office Manager. The command File | Advanced | Erase Security Settings (Default) 147 in available in configuration mode and File | Reset Security Settings 157 in security mode.
- **Transport Layer Security (TLS) Secure Connection Support** 102
  Secured communication is supported between the IP Office system and IP Office Manager using TLS for both authentication and encryption. Each of the IP Office services (configuration access, security access and system status access) can be configured for secure and/or unsecure connect. Secure connect can include the exchange of security certificates between the IP Office system and the IP Office Manager PC.

Avaya SIP for Branch Support

The Avaya SIP for Branch is a service delivered by interlinking Avaya switches through an Avaya SES (SIP Enablement Service) server. IP Office 4.1+ supports connect to the SES server through the following new features:

- **SES Lines** 242
  This type of line is used for connection from the IP Office system to the SES server. It is a variant of the SIP trunk type and requires the IP Office to have SIP Trunk Channel licenses available.
- **Branch Prefix** 165
  Each system within a SIP for Branch network requires a unique branch prefix. The Branch Prefix field on the System | System 165 tab is used to set that prefix. Calls to extensions on other systems within the network require the dialing of the branch prefix followed by the extension number.
- **Local Number Length** 165
  Extension numbers on systems within a SIP for Branch network should all be the same length. The Local Number Length field on the System | System 165 tab can be used to set the length of user, extension and hunt group extension numbers. Attempting to enter an extension number of a different length will cause a warning with IP Office Manager. Though intended for IP Office systems within a SIP for Branch network this field can be used in any IP Office system configuration.

General IP Office Features

- **Time Profile Calendar Dates** 336
  IP Office Time Profiles have been enhanced. In addition to the existing weekly time patterns, specific times on particular calendar dates can now also be added. Dates in the current and next year can be specified, including multiple dates.

- **Incoming Call Route Multiple Time Profile Support** 334
  Incoming call routes have now been amended to allow the use of multiple time profiles, with separate destinations and fallback destinations for use when a particular time profile is in effect.

- **IP406 V2 LAN2 Support** 168
  RJ45 Ethernet LAN port 8 on the front of the IP406 V2 control unit can now be specified as being the LAN2 port for the IP Office system. This enables the System | LAN2 173 tab and associated settings within the IP Office configuration. This mode is controlled by a Use Port 8 as LAN2 option on the System | LAN1 | LAN Settings 168 tab.

- **System Events Syslog Support** 185
  In addition to using SNMP and SMTP email, the IP Office can now send system events to up to two Syslog server destinations. The Syslog output can include IP Office Audit Trail events (not supported for SNMP and SMTP email).

- **Phone Manager Pro Telecommuter Mode** 278
  This additional mode has been added to the available Phone Manager Type options. This mode is supported by Phone Manager Pro 4.1+. Users of this mode can start Phone Manager as either a remote or local application. In remote mode the user uses a data connection for Phone Manager and specifies a telephone number available to them to make/receive calls. The IP Office then makes calls to that number when the user makes or answer calls using their Phone Manager application. In local mode the application function as a normal Phone Manager Pro with the user's associated extension. For full details refer to the Phone Manager User Guide and Phone Manager Installation Manual.

Hunt Group Operation

- **Queuing Alert Extension** 296
  For each hunt group, when a number of queued calls threshold is reached, an analog extension can be alerted with ringing. This is intended for an extension connected to a loud ringer device or similar (that is calls are not answered at that extension). This feature is controlled through the Hunt Group | Queuing 296 tab settings Calls in Queue Threshold and Pots Extension to Notify.

- **Automatic Recording Mailbox for Account Codes** 352
  By default automatic recordings for account codes are routed to the mailbox of the user making the call. Previously this could not be changed except through customized call flows on the Voicemail Pro. An alternate mailbox destination can now be specified through the Account | Voice Recording 352 tab.

Telephony

- **Group Listen** 571
  Using group listen allows callers to be heard through the phone's handsfree speaker but to only hear the phone's handset microphone. This feature can be enabled/disabled using either short codes and or a programmable button. Note: Group listen is not supported on IP phones.

- **Disable Speakerphone** 248
  The handsfree speaker enabled by the SPEAKER key on Avaya DS and IP phones can be disabled through the IP Office extension configuration settings. This allows handsfree operation to be disabled where such operation is not desirable.

Button Programming

- **IP Office Date, Time and Version**
  The Self Administer 592 button function can be used to set the IP Office system date and time. It can also be used to view the IP Office control unit type and software version. The user must be configured as a **System Phone** 265 (User | Telephony | Call Settings) 265 and a value of ***2*** entered as the button's action data.

- **Headset Force Feed** 578
  On Avaya phones with fixed **HEADSET** buttons, a programmable button can be assigned to put the phone into headset force feed mode. In this mode, when headset mode is selected but the phone is idle, an incoming external call will cause a single tone and then be automatically connected.

- **Group Listen** 571
  The group listen feature (see Telephony above) can be assigned to a programmable button. That button can be used to switch group listen on/off and indicates when group listen is on.

- **Enhanced Conference Meet Me**
  For IP Office 4.1+ this button has been enhanced. Buttons associated with a particular conference ID will indicate when the conference is active. Callers connected on other appearance buttons can be transferred into the conference by pressing TRANSFER and then the Conference Meet Me button. This allows the user to place callers into the conference specified by the button without being part of the conference call themselves. This option is only support on Avaya phones with a fixed TRANSFER button (excluding T3 and T3 IP phones).

Short Codes

- **Group Listen On/Off** 438
  The group listen feature (see Telephony above) can be switched on/off through the use of the Group Listen On and Group Listen Off short code features.

- **Default Embedded Voicemail Auto Attendant Short Codes**
  Previously 4 system short codes were automatically added for each auto attendant added to the configuration. With the increase in the number of supported auto attendants to 40, the method of short code usage has changed to allow just 4 system short codes for all auto attendants by using the auto attendant number rather than name.

IP Office 500

- **IP Office 500 PRI Trunk Card (PRI-U)**
  This card can be added as a trunk daughter card to any IP500 base card except the Legacy Card Carrier base card. The card is available in single and dual port PRI variants. The IP500 PRI-U card supports E1, T1 and E1-R2 PRI modes. To select the mode required, right-click on the line in the group or navigation pane and select Change Universal PRI Card Line Type. The IP Office systems supports 8 B-channels for each IP500 PRI-U port fitted, using in-service channels from port 9 of slot 1 upwards. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration. D-channels are not affected by licensing.

  - With the introduction of the IP500 PRI-U trunk daughter card, the design of stand off pillars supplied with IP500 trunk daughter cards has been changed. New cards will be supplied with 2 pre-fitted metal stand off pillar and 3 loose plastic pillars. Screws and washers are provided for the metal pillars for the final installation onto the IP500 base card. This changes is required for IP500 PRI-U cards but has been applied to all trunk daughter card types. This does not affect existing trunk daughter cards supplied with 5 plastic stand off pillars.

- **H.323 Trunk Support in Standard Edition Mode**
  H.323 trunks (IP trunks and QSIG trunks) on IP Office 500 systems require the addition of IP500 Voice Networking licenses. At launch those trunk and license were only supported on IP Office 500 system running in Professional Edition mode. IP Office 4.1 allows licensed H.323 trunks to be used in Standard Edition mode also.

- **Small Community Networking in Standard Edition Mode**
  The above change allows Small Community Networking to be used with IP Office 500 systems running in Standard Edition mode. That includes Centralized Voicemail and, subject to the appropriate additional licenses, advanced Small Community Network features.

Embedded Voicemail

- **40 Auto Attendants** 372
  Previously on 4 auto attendants were supported with the IP Office configuration. IP Office 4.1 allows up to 40 Auto Attendants to be created and to be chained together to support a flexible multi-tiered operation. Each auto-attendant is numbered and that number can be used in short codes for accessing the auto-attendant.

- **Named Greeting Files - LVMGreeting** 373
  The field Recording Name was added in the IP Office 4.0 Q2 20007 maintenance release for use with IP Office systems being managed by the AIM suite. However the field was not useable with systems being managed by stand-alone IP Office Manager. For IP Office 4.1+ the utility required to create named greeting files (***LVMGreeting.exe***) is now provided with IP Office Manager. Those files can then be place on the embedded voicemail memory card and selected in the Recording Name field. The same recording can be shared between multiple auto-attendants. The tools is accessed from Manager via the menu command **Advanced | LVM Greeting Utility** 148. For full details refer to the IP Office Embedded Voicemail Installation manual.

Voicemail Pro

In conjunction with IP Office 4.1, Voicemail Pro 4.1 supports the following new features:

- **Automatic Recording Mailbox for Hunt Groups** 299
  By default automatic recordings for hunt groups are routed to the hunt group mailbox. Previously this could not be changed except through customized call flows on the Voicemail Pro. An alternate mailbox destination can now be specified through the Hunt Group | Voice Recording 299 tab.
- **Automatic Recording Mailbox for Account Codes** 352
  By default automatic recordings for account codes are routed to the mailbox of the user making the call. Previously this could not be changed except through customized call flows on the Voicemail Pro. An alternate mailbox destination can now be specified through the Account | Voice Recording 352 tab.
- **Call Data Tagging on Transfer Actions**
  The Transfer action now supports fields for setting the transfer source and description to display on phones receiving the transfer. The ability to associate call data for MS-CRM via Assisted Transfer actions is now also supported on Transfer actions.
- **Call Transfer Announcements**
  The Transfer and Assisted Transfer actions can be configure to announce the transfer to the caller. The announcement uses the recorded name of the mailbox associated with the transfer if available or the number if otherwise.
- **LIFO/FIFO Mailbox Operation**
  The default message playback order of First In-First Out (FIFO) can now be changed to Last In-First Out (LIFO). This is separately adjustable for new, old and saved messages. These are set through the System Preferences | Housekeeping tab (Administration | Preferences | General).
- **Time in Queue and Time on System Variables**
  Two new variables can be used in Queued and Still Queued call flows. They are $TimeQueued for the time in the queue and $TimeSystem for the time the call has been on the IP Office system.
- **Castelle Fax Server Support**
  The Voicemail Pro can be configured to recognize faxes of this type left in user's email mailboxes and include announcement of there presence in the user's mailbox prompts.
- **Hunt Group/Account Code Call Recording Destination**
  Previously the destinations for automatic call recording triggered by hunt groups or account codes could not be changed except through a custom Voicemail Pro call flow. The IP Office 4.1 configuration now allows the required destination for the call recording to be specified.
- **$DDI System variable for DDI Numbers**
  This variable is available on DDI calls passed from the IP Office to the Voicemail Pro.
- **Variable Routing (replaces the CLI Routing Action)**
  The existing CLI Routing action has been replaced by the **Variable Routing** action. This action allows the call routing to be based on matching specified values to system variables such as $CLI and $DDI. The numbers to which matching is performed can include wildcards such as ? for a single digits and * for any digits.

Key and Lamp Operation

- **Abbreviated Ring Control** 265
  For users with multiple call appearance buttons, it can be selected whether additional calls once a call is connected, are presented with a short single abbreviated ring or with normal ringing.

- **Twinned Bridge/Coverage/Line Appearances** 280
  For users with a twinned secondary phone, only calls on call appearances at their primary phone also alert at the secondary phone. For IP Office 4.1 it is possible to configure that calls alerting on bridged, coverage and line appearance buttons on the primary should also alert on the secondary.

Licenses

- **IP500 Voice Networking**
  This type of license is now supported on IP Office 500 systems running in Standard Edition mode. This allows those systems to use IP and QSIG trunks and to be included in a Small Community Network.

- **IP500 PRI Universal (Additional Channels)**
  The IP Office systems supports 8 B-channels for each IP500 PRI-U port fitted. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration. D-channels are not affected by licensing.

- **VPN IP Extensions Licenses**
  IP Office 4.1+ supports 4610, 4621, 5610 and 5621 phones running the VPNremote firmware. These work in conjunction with the Extension | VoIP | VPN Phone Allow setting. The phones are licensed against VPN IP Extensions licenses added to the IP Office configuration.

Windows Operating System Support

- **Windows Vista**
  With IP Office 4.1, Vista support is expanded to all IP Office 4.1 applications also supported on Windows XP Pro. Note that the Vista support refers to Vista Business Ultimate and Vista Enterprise editions; the Vista Home Basic and Vista Home Premium editions are not supported.

System Status Application

The following changes have been made to the System Status Application (SSA) including in the IP Office 4.1 suite.

- **Device Version Numbers**
  IP500 trunk, extension and VCM cards have electronic version numbers. SSA is now able to display those version numbers.

- **Digital Trunk Clock Source Change Alarm**
  SSA can report when the clock source being used by the IP Office system changes from one digital trunk to another.

1.3 What was New in 4.0 May 2007

This section summarizes the changes made for the May 2007 maintenance release of the IP Office 4.0 suite of applications. This is not an exhaustive list. For full details refer to the appropriate IP Office Technical Bulletin.

- **Call Pickup Line Short Code** 406
  This short code feature allows the answering of calls ringing, parked or held on a line by use of the line's Line Appearance ID. This is intended for use with phones where Line Appearance buttons cannot be programmed. Not supported on T3 phones.
- **Call Pickup User Short Code** 407
  This short code feature allows the answering of calls ringing, parked or held against a user by use of the user's Extension Number setting. If the targeted user has multiple calls, preference is given to ringing, parked and held calls in that order. Not supported on T3 phones.
- **Embedded Voicemail** 372
  The following new features appears for Embedded Voicemail:
  - **Auto Attendant Greeting 'Record Name'** 373
    This field appears next to the short code used for recording auto-attendant prompts. The field is only useable for IP Offices being managed through the Avaya Integrated Management (AIM) 56 application.
  - **Enable Local Recording Control** 373
    The use of short code to record auto attendant greetings can be disabled if required. The short codes are still active and can be used to hear the current prompts, however the option to record a new prompt will not operate.
  - **Embedded Voicemail Shutdown Short Code** 459
    The Embedded Voicemail memory card is not a hot-swappable device, and so the IP Office system must be switched off in order to remove/replace the memory card. Use of this short code feature allows safe removal of the memory card whilst the IP Office system is running.
- **Known IP Office System Discovery** 92
  IP Office Manager can be configured to record details of IP Office systems it discovers and to then allow later rediscovery of those known systems. This feature is only available when Manager has been configured with a .csv file location to which to record known IP Office system details. When this has been done, a Known Units button is available within the IP Office Manager discovery screen.
- **Support for Avaya Integrated Management (AIM)** 56
  Avaya Integrated Management (AIM) is a suite of applications that can be used to monitor and maintain a large number of Avaya systems as multiple locations. Support for IP Office systems has been added to this application suite.
- **Custom Locale** 165
  For some systems, the locales fully supported by IP Office may not match the local requirements. In these cases, the option Customize can be selected in the Locale field of the System | System tab. Additional options are then made visible to select the tone usage, CLI type and busy tone detection settings.
- **System Time Setting Through Phones** 685
  For systems without access to an appropriate time server or where an immediate time and date change is required, a manual method for setting the system date and time has been added.
- **Internal Twinning for North America** 280
  The Internal Twinning function was added in the IP Office 3.1 release but not supported for systems with a North American locale. This feature is now supported in North American locales.
- **IP DECT** 233
  The Avaya IP DECT solution is now supported in North American locales. For IP Office Manager this means that an IP DECT line and IP DECT extensions can now be created on systems with a North American locale.
- **3641 and 3645 Wireless IP Phones**
  These phones are now supported. They can be used with 802.11a, 802.11b and 802.11g wireless networks.
- **T3 Direct Media Support**
  T3 IP phones have previously not supported Direct Media mode connection. For T3 IP phones with T246 or higher firmware that restriction no longer applies and the specific restrictions on the number of T3 IP phones can be removed.

1.4 What was New in 4.0

This section summarizes the main changes in the IP Office 4.0 General Availability release.

Manager Changes

- **Validation Control**
  Control of when Manager applies automatic validation to configuration files is now available through the File | Preferences menu.
- **Busy on Held Validation**
  The Tools menu now contains a Busy on Held Validation option that checks all users. Previously this check was only performed when a user's settings were edited.
- **Line Renumber**
  The Tools menu now contains a Line Renumber option for renumbering all Line Appearance ID's upwards from a selected base number.
- **BOOTP Entries**
  The maximum number of BOOTP entries has been increased from 20 to 50.

Hardware Support Changes

- **IP Office 500 System Unit (IP500)**
  This control unit has no integral extension or trunk ports. On its front the unit has 4 card slots into which IP500 base cards can be inserted. These card provide various combinations of digital station port, analog extension ports, voice compression channels and trunk ports. On its rear the unit has slots for embedded voicemail, a feature key dongle slot, audio port, door relay switch port and ethernet LAN/WAN ports plus 8 external expansion module ports.
  - 4406, 4412 and 4424 are only supported on external expansion modules. They are not supported directly on the IP500 system unit.
- **IP Office Standard Edition**
  By default the IP500 control unit runs a subset of full IP Office functionality called IP Office Standard Edition. In this mode the IP Office is restricted as follows. These restriction can be removed by adding an IP500 Upgrade Standard to Professional license to the configuration.
  - The IP500 is restricted to a maximum of 32 users using ports on base cards in the control unit.
  - In Standard Edition mode the IP500 does not support any external expansion modules.
  - The applications Embedded Voicemail, Phone Manager Lite/Pro, SoftConsole, TAPI, Delta Server and CBC, Manager, SSA and Monitor are supported.
    - Advanced applications such as Voicemail Lite/Pro, CCC, Conference Center, MS-CRM, etc are not supported.
  - IP trunks (H323, QSIG, SCN) not supported. IP DECT and SIP trunks are supported. Enabling IP trunks requires an IP500 Upgrade Standard to Professional license and IP500 Voice Networking licenses. Note: This restriction was removed in later IP Office 4.0 maintenance releases.
  - Meet-me conferencing is not supported.
- **Hardware Support**
  The following hardware is not supported with IP Office 4.0.
  - The WAN3 external expansion module is not supported (the WAN3 10/100 is still supported).
  - All Network Alchemy external expansion modules are no longer supported.
  - The IP403 and IP406 V1 control units are not supported.
- **Phone Support**
  The following phones are not supported by IP Office 4.0. They may function but have not been tested with 4.0 and any faults reported with 4.0 will not be fixed.
  - The 20DT Analog DECT phone used with IP Office Analog DECT and Compact DECT is not supported. It may be used with Avaya IP DECT but only as a generic GAP compatible DECT device.
  - The 4606, 4612 and 4624 phones are no longer supported.
  - The Transtalk 9040 is no longer supported.

System Status Monitoring

- **System Status Application (SSA)**
  This application provides information about the equipment and resources in IP Office 4.0 and higher systems. This information includes indication of alarms and details of current calls in progress. Use of SSA requires a service user name and password configured for System Status in the IP Office's security settings.
- **Call Status Application**
  This application is not supported by IP Office 4.0. It has been replaced by the IP Office System Status Application above. Call Status is still included in the IP Office Admin suite for use with pre-4.0 IP Office systems.
- **Monitor**
  The SysMonitor application has been enhanced but is no longer fully backwards compatible with pre-IP Office 4.0 systems. Therefore two versions of Monitor are included in the IP Office Admin suite; version 6.0 for use with IP Office 4.0 systems and version 5.2 for use with pre-IP Office 4.0 systems.

SIP Trunks

- IP Office 4.0+ supports SIP calls through the implementation of SIP trunks. Through normal short code routing of outgoing group ID's any user can make outgoing calls using SIP services, ie. users do not require SIP phones to make and receive SIP calls. Incoming call routing can be used to route incoming calls on SIP trunks. SIP trunks are a licensed feature.

Hot Desking (Logging In/Out)

- **Agent Status on No Answer**
  The IP Office can change the status of call center agents who do not answer a hunt group call presented to them. This can include logging the agent off the system. The change of status can be set per user and the use of this option can be set per hunt group.
- **Remote Hot Desking**
  Users can now hot desk between systems in a Small Community Network. This requires a Advanced Small Community Networking license in the system where a user logs in remotely.
- **Logging Out**
  User who do not have a log in code set cannot log out.
- **NoUser User**
  By default the NoUser user's first programmable button is set to the **Login** function.

Voicemail

- **Voicemail Channel Reservation**
  IP Office 4.0 allows the licensed voicemail channels between Voicemail Pro and the IP Office to be reserved for particular functions or to be left unreserved for any function.
- **Visual Voice**
  Users with Avaya multi-line display phones can use a display menu driven interface for accessing and controlling the playback of messages in voicemail mailboxes. This is supported with Voicemail Pro, in Intuity emulation and IP Office modes, and Embedded Voicemail.
- **Voice Recording**
  A number of improvements have been made to call recording operation in conjunction with Voicemail Pro. In the descriptions below 'party' can mean user, hunt group or incoming call route involved in a call.
  - Calls including IP end points, including those using Direct Media, can now be recorded.
  - Voicemail Pro automatic call recording can be triggered by Incoming Call Routes.
  - Where recording is triggered by several parties within the same call, separate recordings are produced for each party.
    - For example if both automatic hunt group recording and automatic user recording are applicable to the same call, separate recordings are produced for both the hunt group and the user.
    - If a call is to be recorded multiple times to the same mailbox only a single recording is made; resolved in the order of: incoming call route, account Code, hunt group and user settings.
  - Recording only continues while the party triggering the recording is part of the call, for example:
    - Recording triggered by a user stops when that call is transferred to another user.
    - Recording triggered by a hunt group continues if the call is transferred to another member of the same group. Recording stops if the call is transferred to a user outside the hunt group.
    - Recording triggered by an incoming call route continues for the duration of the call on the IP Office system.
  - Parking and holding a call pauses recording. Recording is restarted in the same file when the calls is unparked or taken of hold.
- **User Announcements**
  With Voicemail Pro 4.0 and higher, announcements are supported for calls waiting to be answered by an individual user. User start points in Voicemail Pro now include Queued and Still Queued options.
- **Embedded Voicemail**
  - Embedded voicemail is supported on the IP500 control unit using the same options as the IP406 V2 control unit.
  - Hunt group announcements are supported using embedded voicemail.
  - The auto-attendant menu includes a Fax option for rerouting fax calls.
  - Support for **Visual Voice**.
  - Support for Fast Forward (#), Rewind (*), Skip message (9) and Call Sender (**) when listening to messages.
  - Support for 3 voicemail reception destinations using *0, *2 and *3.

Hunt Groups

- **Agent Status on No Answer**
  The IP Office can change the status of call center agents when a hunt group call is presented but not answered. The agent can be put into busy wrap-up, busy not available or logged out. The change of status can be set per user and the use of this option can be set per hunt group. This feature is not applied if the call is answered elsewhere before the No Answer Time expires.
- **Fallback**
  Night service fallback using a time profile is no longer applied to a hunt group already set to out of service. Short codes and buttons can be used to set a hunt group out of service, overriding the night service time profile.
- **Voicemail Answer Time**
  A separate value has been added to hunt group settings to control when hunt group calls go to voicemail if unanswered. The default value is 45 seconds.
- **Queuing**
  - Previously the definition of queued calls did not include calls ringing against hunt group members. The definition now includes ringing calls and calls waiting to be present for ringing.
  - Control and usage of announcements has been separated from queuing (see below).
  - The queue limit can be set to include queued and ringing calls or just queued calls.
- **Announcements**
  - Hunt group announcements have been separated from hunt group queuing and can be used even when queuing is off.
  - Hunt group announcements are now supported by Embedded Voicemail in addition to Voicemail Pro and Voicemail Lite.
  - The times for the first announcement, second announcement and between repeated announcements are configurable.
- **Advertised Hunt Groups**
  A hunt group can be set to be 'advertised'. This requires an Advanced Small Community Networking license. Hunt groups that are advertised can be dialed by users on other systems within the Small Community Network (SCN) without the need for short codes. This feature requires entry of a Advanced Small Community Networking license on each system.
- **SCN Distributed Hunt Groups**
  Hunt groups in a Small Community Network can include members located on other systems within the network. This feature requires entry of a Advanced Small Community Networking license on each system. Distributed hunt groups are automatically advertised to other systems within the SCN.
- **Idle Status**
  For longest waiting hunt groups, the type of calls that change a hunt group member's idle status can be selected.
- **Call Presentation**
  When additional calls are waiting to be presented, additional hunt group members are alerted using the hunt group type. However when any member answers a call it will be the first waiting call that is answered.
- **Set Hunt Group Night Service and Set Hunt Group Out of Service Short Codes**
  Previously the Set Hunt Group Night Service 454 and Set Hunt Group Out of Service 454 short code features toggled. That behaviour is not supported in 4.0 and higher.
- **Voicemail Mailbox Operation**
  For IP Office 3.2 and earlier, when voicemail was invoked, the mailbox of whichever hunt group was currently handling the call was used, for example the mailbox of the overflow or night service hunt group might be used if the call had gone from the original hunt group to an overflow or night server hunt group. For IP Office 4.0 and higher, the mailbox of the originally targetted hunt group is used even if the call has overflowed or gone to a night server hunt group.

Alternate Route Selection (ARS)

- **Least Cost Routes (LCR)**
  LCR has been replaced by ARS. On systems being upgraded to IP Office 4.0, any LCR entries will be automatically converted as far as possible to ARS forms. However due to the difference in method of operation the ARS forms will need to be checked.
- **Secondary Dial Tone**
  Where secondary dial tone is required it is provided through a check box option in ARS. This simplifies the configuration of secondary dial tone.
- **Outgoing Call Routing**
  LCR forms were never explicitly applied to particular calls. Instead any number to be dialed externally, was compared to the LCR short codes for a possible match. In IP Office 4.0, dialing short codes are explicitly routed either to a outgoing line group or to an ARS form.

ISDN Features

The following ISDN features are now supported by IP Office 4.0+. Note that availability of these feature is dependant on their also being supported and available from the ISDN service provider for which there may be charges.

- **Malicious Call Identification - MCID**
  Short codes and button programming features have been added so that users can be configured to trigger this activity at the ISDN exchange when required.
- **Advice of Charge - AOC**
  Advice of charge during a call (AOC-D) and at the end of a call (AOC-E) is supported for outgoing ISDN calls other than QSIG. The call cost is displayable on T3 phones and included in the IP Office Delta Server output. The IP Office allows configuration of call cost currency and a call cost mark-up for each user.
- **Call Completion to Busy Subscriber - CCBS**
  CCBS can be used where provided by the ISDN service provider. It allows a callback to be set on external ISDN calls that return busy. It can also be used by incoming ISDN calls to a busy user.
- **Partial Rerouting - PR**
  When forwarding a call on an ISDN channel to an external number using another ISDN channel, partial rerouting informs the ISDN exchange to perform the forward, thus freeing the channels to the IP Office. Not supported on QSIG.

Advanced Small Community Networking (Advanced SCN)

The following new features are supported for IP Office 4.0+ Small Community Networks. Note that these feature require entry of an Advanced Networking License into systems in the network.

- **Network Hot Desking**
  Hot desking is supported between IP Office systems within the Small Community Network.
- **Distributed Hunt Groups**
  Hunt groups can now include members who are located on different IP Office systems within the Small Community Network. This feature requires entry of a Advanced Small Community Networking license on each system.
- **Break Out**
  This feature is provided primarily to support network hot desking but can be used for other purposes. It allows the dialing on one system in the network to be done as if dialed locally on an other system.

Key and Lamp Operation

The following key and lamp operation features were added in IP Office 4.0:

- **Delayed Ring Preference**
  This user telephony setting works in conjunction with the user's Ringing Line Preference setting. It sets whether ringing line preference should use or ignore the ring delay applied to the user's appearance buttons.
- **Answer Pre-Select**
  Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling the user telephony setting Answer Pre-Select allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call. To answer a call when the user has Answer Pre-Select enabled, the user must press the alerting button to display the call details and then either press the button again or go off-hook.
- **Reserve Last CA**
  Phones with appearance buttons require a free call appearance button to perform actions such as call transfers. However it is possible in some scenarios for all available call appearances to be occupied or alerting. The user telephony setting Reserve Last CA can be used to restrict the user's last call appearance button for outgoing calls only.

Licences

The following new licenses are used by IP Office 4.0:

- **IP500 Upgrade Standard to Professional**
  This license is required for an IP500 system to run in IP Office Professional Edition mode rather than IP Office Standard Edition mode. It is a pre-requisite for the IP500 Voice Networking licenses and any licensed features not supported in Standard Edition mode.
- **IP500 Voice Networking (Base 4 channels)**
  For IP500 systems running in Professional Edition mode, this licences enables support for H323 IP trunks between IP Office systems and QSIG or Small Community Networking over those trunks.
  - **IP500 Voice Networking (Additional channels)**
    Allows an additional 4 H323 voice networking trunks.
- **IP500 VCM Channels**
  Used with the IP500 VCM 32 and IP500 VCM 64 base cards. Each card supports 4 channels by default, with additional channels enabled by the addition of licenses.
- **SIP Trunk Channels**
  This license is used to configure the maximum number of simultaneous SIP trunk calls supported. Multiple licenses can be added for the cumulative number of SIP trunks required.
- **Advanced Small Community Networking**
  This license is used to enable support for hosting hot deskers from remote systems, creation of distributed hunt groups and the viewing of advertised hunt groups.

Other Features

- **Private Call**
  Users can set a status of private call using short codes or a programmed button. Private calls cannot be recorded, intruded on, bridged into or monitored.
- **RTP Relay**
  RTP relay allows much more efficient use of the voice compression channels available in an IP Office system:
  - Calls between IP endpoints using the same audio codecs that are routed via the IP Office (for example when not using direct media path) no longer use voice compression channels.
  - Call setup and progress tones no longer require a voice compression channel. The exceptions are short code confirmation tones, ARS camp on tone, account code entry tone and G723 calls (except Call Waiting).
  - Page calls to IP devices use G729a only and therefore only 1 channel regardless of the number of IP devices.
  - For T3 IP devices to benefit from RTP relay they must be configured to 20ms packet size.
- **Password Lockout**
  Any phone features that require a validated entry (for example password or account code entry) will automatically fail if they have been preceded by 4 failed attempted in the previous 90 seconds.
- **Firewall IP Office Service Controls**
  The IP Office firewall standard settings now include controls to drop or allow connects to IP Office 3.2 configuration settings, security settings and system status.
- **User Announcements**
  User announcements can be configured for use with Voicemail Pro. These announcements are used for external calls waiting to be answered.
- **Feature Key Dongle Serial Number**
  The IP Office configuration settings now displays the serial number of the last Feature Key dongle with which the system validated its licenses and whether the dongle is local (ie. serial or Smart Card) or remote (ie. USB or parallel).
- **Line ID Numbers**
  For defaulted systems, all lines supported line ID numbers are numbers from 701 upwards by default. The Line Renumber tool is now available again within Manager to renumber all lines starting from a user selected starting number.
- **Ending Conferences**
  - For pre-4.0 IP Office systems, if a conference has two parties, and one party leaves, the conference call is ended. This may affect conferences that are just beginning but currently only contain the first two parties to join.
  - For IP Office 4.0, a conference remains active until the last extension or trunk with reliable disconnect leaves. Connects to voicemail or a trunk without reliable disconnect (for example an analog loop-start trunk) will not hold a conference open.
- **Disconnect Tone**
  For digital and IP phones, when the IP Office detects that the far end of a call has disconnected it can either make the near end go idle or play disconnect tone. By default this behaviour depends on the system locale. The **Disconnect Tone** 179 (System | Telephony | Tones & Music) 179 field can be used to override the locale default and force either disconnect tone use or go idle.

1.5 Installing Manager

Manager is a component of the IP Office Admin suite of applications. This suite is supplied on the IP Office Administrator Applications CD and the IP Office DVD. In addition to Manager the suite includes:

- **System Monitor**
  This is a tool for system installers and maintainers. Interpreting the information output by System Monitor requires detailed data and telecoms knowledge. Note that two versions of System Monitor are provided for installation, one for pre-IP Office 4.0 systems and one for IP Office 4.0+ systems.
- **Feature Key Server**
  Only install this application if the PC will be hosting the IP Office systems USB or parallel port Feature Key dongle.
- **Voice Mail Lite**
  A license free voicemail application that provides mailboxes for all users and hunt groups. This should not be installed if another voicemail system such as IP Office Embedded Voicemail or Voicemail Pro is installed.
- **System Status Application**
  This is a Java application that can be used to monitor the status of the IP Office system such as extension, trunks and other resources. It displays current alarms and most recent historical alarms.
- **Call Status**
  This application is for pre-4.0 IP Office systems. For IP Office 4.0 and higher use the **System Status Application**. IP Office Manager 6.2 is backwards compatible and can be used to manage IP Office systems running software from IP Office 2.1 upwards.

PC Requirements

Minimum PC Requirements	
RAM	256MB
Hard Disk Free Space	1GB*
Processor:	
- Pentium	PIII 800MHz
- Celeron	Celeron 3 800Mhz
- AMD	Athlon Opteron, Athlon64/XP
Additional Apps:	
- .NET2	Installed with Manager if not already present.

Operating System Support	
Server OS:	
2000 Server	✗
2003 Server	✓
Client OS:	
2000 Professional	✗
XP Professional	✓
Vista Business/Enterprise	✓
Vista Ultimate	✓

*Includes disk space required for .NET2 component.

- **Language Support**
  The Manager application can run in English, French, German, Brazilian Portuguese, Dutch, Italian and Latin Spanish. By default this determined by the best match to the PC's regional setting. The online help is only provided in English, French and German. To change the language used see Changing the Manager Language 44.

Ports

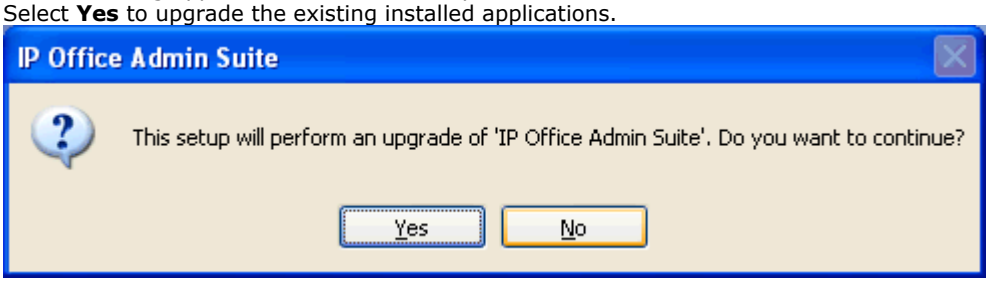
Component	Location - %ProgramFiles%\Avaya\IP Office\	Ports
IP Office Manager	Manager\manager.exe	TCP Port 50802. TCP Port 50804. TCP Port 50812. UDP Port 50798.
IP Office Upgrade Wizard	Manager\upgradewiz.exe	UDP Port 50798.

Installing Manager

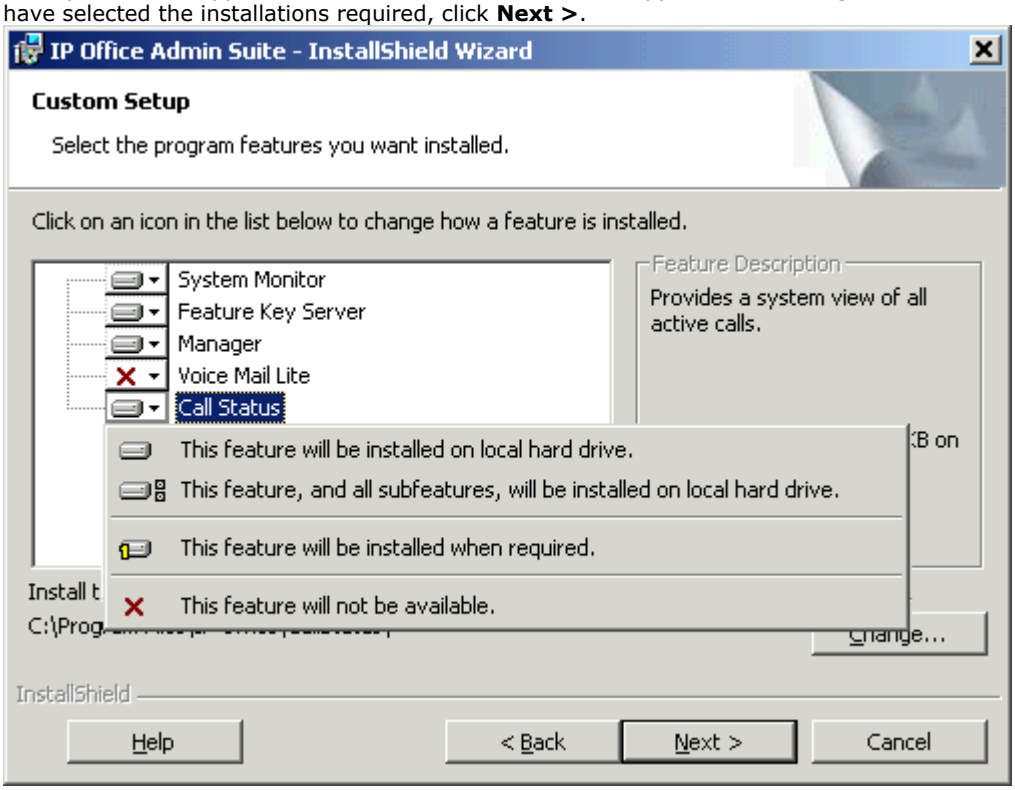
If applications in the IP Office Admin Suite other than Manager are required, we strongly recommend that you refer to the IP Office Installation Manual.

- **Note:** This installation process will install Windows .NET2 if not already present. The installation of .NET2 may require some systems to restart and the installation process to then be restarted.

1. If a pre-4.0 version of the IP Office Admin suite is installed it must be removed. This is done using the **Add or Remove Programs** option in the Windows Control Panel and selecting **IP Office Admin Suite** and then **Remove**.
2. Insert the CD. The installation process should auto start. If it does not auto start, open the CD contents and double-click **setup.exe**.
3. Select the language you want to use for the installation process. This does not affect the language used by Manager which will attempt to match the Windows regional setting. Click **Next >**.
   - If the following appears it indicates that a previous installation of the IP Office Admin suite has been detected. Select **Yes** to upgrade the existing installed applications.



4. If required select the destination to which the applications should be installed. We recommend that you accept the default destination. Click **Next >**.
5. The next screen is used to select which applications in the suite should be installed. Clicking on each will display a description of the application. Click on the ▼ next to each application to change the installation selection. When you have selected the installations required, click **Next >**.



6. The applications selected are now ready to be installed. Click **Install**.
7. Following installation, you will be prompted whether you want to run the IP Office Admin Suite. Selecting Yes runs IP Office Manager.
8. On some versions of Windows, you may be required to restart the PC. Allow this to happen if required.

Changing the Installed Applications
The Add or Remove Programs option can be used to change the selection of IP Office Admin suite applications that are installed. Locate IP Office Admin Suite in the list of programs and select Change.

Adding a Manager Start Dialogue
A warning or information dialogue can be added that will be displayed every time Manager is started. The user must then select Continue to use Manager or Cancel to quit.

The file can contain content in either plain text format or RTF format, however in either case the file name must be etcissue.txt.

1. Create a file called etcissue.txt using a tool such as Windows Notepad or WordPad.
2. Add the warning or information required to the file.
3. Save the file as either plain text or RTF format. RFT format allows font style and selection options and the use of graphic files within the document.
4. Place the text file in the Manager application program directory, by default C:\Program Files\Avaya\IP Office\Manager.

1.6 Starting Manager

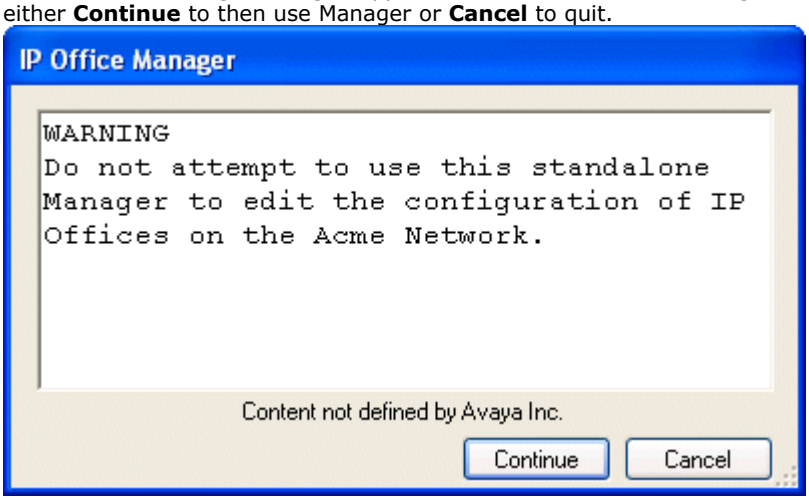
No operator name or password is required to start this version of Manager. A name and password is only required when performing an action that requires communication with an IP Office system; for example getting the configuration, send the configuration back, rebooting the system, etc.

Starting Manager

1. Select **Start** and then **Programs** or **All Programs** depending on the version of Windows.
2. Select the IP Office program group.
3. Select **Manager**.
4. On Windows XP systems, a Windows Security Alert may appear. Select **Unblock** to allow Manager to run and provide services to IP Office systems.



5. If an IP Office Manager dialogue appears, read the information or legal warning contained in the dialogue. Select either **Continue** to then use Manager or **Cancel** to quit.



6. The next section of this documentation describes the Manager interface and how to load and edit an IP Office's configuration settings.

1.7 Changing the Manager Language

The Manager application can run in US English, UK English, French, German, Brazilian Portuguese, Dutch, Italian and Mexican Spanish. By default it tries to use the best match to the PC's regional location settings, otherwise it will use UK English.

The process below can be used to run Manager in one of its supported languages. However it does not change the language used for help file content.

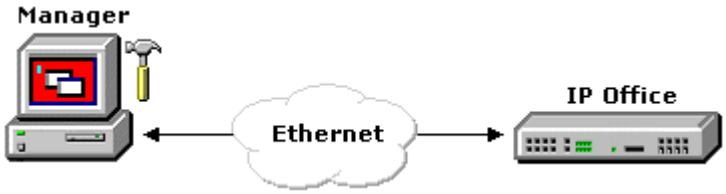
1. Create a Windows shortcut to the IP Office Manager application .exe file. By default this file is located in ***C:\Program Files\Avaya\IP Office\Manager\Manager.exe***.
2. Right-click on the shortcut and select **Properties**.
3. The **Target** field can be used to specify the locale setting that Manager should use. For example, for Italian the Target should have ***-locale:it-IT*** added to the end.
   - For example: ***"C:\Program Files\Avaya\IP Office\Manager\Manager.exe" -locale:it-IT***
4. The available locales for IP Office Manager are:

IP Office Manager Language	Shortcut Locale Setting
Brazilian Portuguese	-locale:pt-Br
Dutch	-locale:nl-NL
French	-locale:fr-FR
German	-locale:de-DE
Italian	-locale:it-IT
Mexican Spanish	-locale:es-MX
US English	-locale:en-US

5. Click **OK**.
6. The IP Office Manager application should now run in the selected language when launched using the updated shortcut.

1.8 Connecting Manager to IP Office

During IP Office first installation and setup, connection should always be made using a Manager PC directly connected to the IP Office.



Following IP Office installation and setup, the Manager PC can be run from a variety of locations.

IP Addresses

- The IP Office address for connections from Manager is its LAN1 IP Address. That address is set through the System | LAN1 tab within the IP Office configuration settings.
- If the IP address of the Manager PC is changed, Manager should be closed and restarted.

Discovery

The Select IP Office discovery process used by Manager to locate IP Office systems can use both UDP and TCP.

- Pre-3.2 IP Office systems respond to UDP discovery. The IP Office system listens for this type of discovery on port 69 (TFTP). TFTP is then used to send and receive configuration settings with the Manager PC.
- IP Office 3.2+ systems respond to both UDP and TCP discovery. The IP Office system listens for UDP discovery on port 69 (TFTP) and TCP discovery on port 50802. Unlike pre-3.2 IP Office systems, configuration settings are accessed using TCP.
- UDP can use broadcast addresses, however broadcasts are not forwarded by routers. TCP cannot use broadcast addresses. Manager however can specify a list of TCP addresses to check.

Configuration Access

Having discovered the available IP Office systems and selected one, configuration access can be attempted.

- For pre-3.2 IP Office systems, if the correct IP Office system password is entered, the configuration is transferred using TFTP.
- Access to configuration settings of an IP Office 3.2+ system, requires a valid Service User name and password. Manager does not send the name and password entered by the user to the IP Office. It sends a 'hash' of those values which are then compared against the names and passwords stored on the IP Office.
- The configuration access occurs using TCP and on port 50804 of the IP Office control unit. This port can be adjusted if required through the IP Office's security settings.

Security Settings

- Pre-3.2 IP Office systems do not have security settings that are separate from the configuration settings which include the system password.
- Access to the security settings of an IP Office 3.2 system is similar to accessing configuration settings. However, service user name and password used must have security access and the default port used is 50812.

Ports

As mentioned, a number of different ports are used for access to IP Office systems. The following table lists some of the ports on which the IP Office control unit listens for different types of access. ◀ Indicates a listening port on the IP Office control unit. ▶ indicates a port to which the IP Office sends, for example to a PC running an IP Office application.

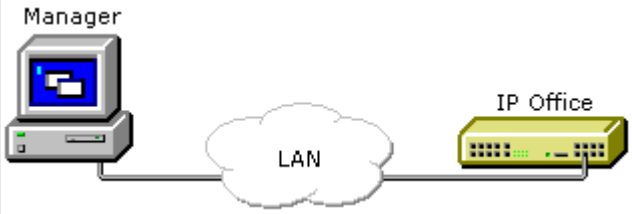
* Indicates that the port and or protocol can be changed.

Port		Protocol		Function
25*	▶	SMTP	TCP	Email system alarms from the IP Office to SMTP server. For IP Office 4.2 also used for Voicemail Email on Embedded Voicemail.
37	▶	Time	UDP	Time requests from the IP Office to a Time Server (RFC868).
53	◀	DNS	UDP	Domain Name Service responses.
67	◀	BOOTP/DHCP	UDP	DHCP server operation.
68	▶	BOOTP/DHCP	UDP	DHCP client operation.
69	◀	TFTP	UDP	File requests to the IP Office.
69	▶	TFTP	UDP	File requests by the IP Office.
161*	◀	SNMP	UDP	From SNMP applications.
162*	▶	SNMP Trap	UDP	To addresses set in the IP Office configuration.
500	◀	IKE	UDP	Key exchange for IPSec protocol.
389*	▶	LDAP	TCP	Lightweight Directory Access Protocol.
520	▶	RIP	UDP	To and from the IP Office to other RIP devices. For RIP1 and RIP2 (RIP1 compatible) the destination address is a subnet broadcast, eg. 192.168.42.255. For RIP2 Multicast the destination address is 224.0.0.9.
520	◀	RIP	UDP	
1701	◀	L2TP	UDP	Layer 2 tunneling protocol.
1718	◀	H.323	UDP	H.323 Discovery
1719	◀	H.323 RAS	UDP	H.323 Status. VoIP device registering with the IP Office.
1720	▶	H.323/H.245	UDP	H.323 Signalling. Data to a registered VoIP device.
2127	▶	(UDP)	UDP	PC Wallboard to CCC Wallboard Server.
3478	▶	SIP	UDP	Port used for STUN requests from the IP Office to the SIP provider.
5060	◀▶	SIP	UDP/ TCP*	SIP Line Signalling
8080	▶	HTTP	TCP	Browser access to the Delta Server application.
8089	▶	Enconf	UDP	From the IP Office to the Conferencing Center Server Service. User access to the conference center is direct via HTTP sessions.
8888	▶	HTTP	TCP	Browser access to the IP Office ContactStore (VRL) application.
49152 to 53247 *	◀▶	RTP/RTCP	UDP	Dynamically allocated ports used during VoIP calls for RTP and RTCP traffic. The port range can be adjusted through the System | Gatekeeper tab.
50791	▶	IPO Voicemail	UDP	To voicemail server address.
50793	◀	IPO Solo Voicemail	UDP	From IP Office TAPI PC with Wave drive user support.
50794	◀	IPO Monitor	UDP	From the IP Office Monitor application.
50795	◀	IPO Voice Networking	UDP	Small Community Network signalling (AVRIP) and BLF updates. Each system does a broadcast every 30 seconds. BLF updates are sent required up a maximum of every 0.5 seconds.
50796	◀	IPO PCPartner	UDP	From an IP Office application (for example Phone Manager or SoftConsole). Used to initiate a session between the IP Office and the application.
50797	◀	IPO TAPI	UDP	From an IP Office TAPI user PC.
50798	▶	(UDP)	UDP	IP Office Manager and UpgradeWizard
50799	▶	IPO BLF	UDP	Broadcast to the IP Office LAN and the first 10 IP addresses registered from other subnets.
50800	▶	IPO License Dongle	UDP	To the License Server IP Address set in the IP Office configuration.
50801	◀	EConf	UDP	Conference Center Service to IP Office.
50802	◀	Discovery	TCP	IP Office discovery from Manager.
50804 *	◀	HTTP	TCP	IP Office configuration settings access.
50805 *	◀	HTTPS	TCP	TLS Secure "
50808 *	◀	HTTP	TCP	IP Office system status access.

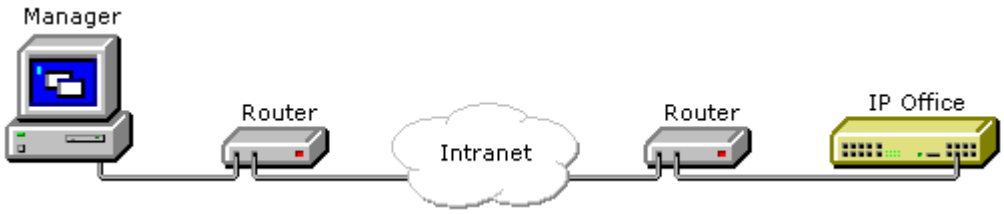
Port		Protocol		Function
50812 *	◀	HTTP	TCP	IP Office security settings access.
50813 *	◀	HTTPS	TCP	TLS Secure "

- CDR/SMDR from the IP Office is sent to the port number and IP address defined during configuration and using either TCP or UDP as selected.

Scenario
In this scenario, Manager's default behavior is used to connect to an IP Office 3.2 system on the same LAN.

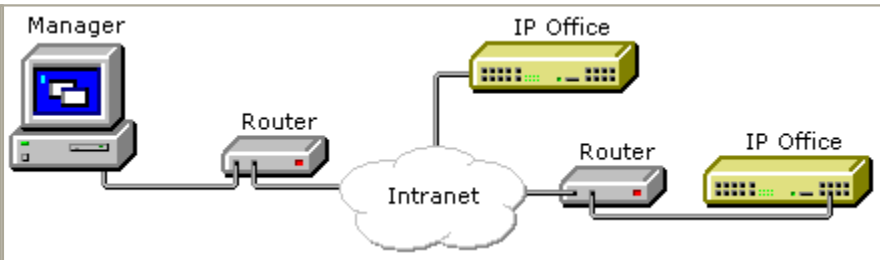
Diagram	
Sequence	1. The user starts Manager and clicks . Select IP Office menu appears. 2. Manager does a UDP Broadcast to 255.255.255.255, port 69 (TFTP). Since this is a broadcast, it will not be forwarded beyond the LAN by any router including the IP Office system. 3. The IP Office responds with its system details including its name, IP address and software level. 4. The Select IP Office menu lists the responding IP Offices. 5. The user selects the IP Office system and clicks OK. 6. Since the system is listed having a 3.2 software level, Manager requests the user to enter a Service User name and password. 7. Manager sends a 'hashed' version of the name and password to port 50804 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.
Requirements	• The IP Office must be on the same subnet as the Manager PC in order to see the UDP broadcast.
Controls	• The IP Office can be disabled from responding to UDP broadcasts if required. This is done through the IP Office's security settings. Access must then be done using TCP only.

Scenario
In this scenario, the user attempts to connect to an IP Office on another LAN using the Manager with its default settings.

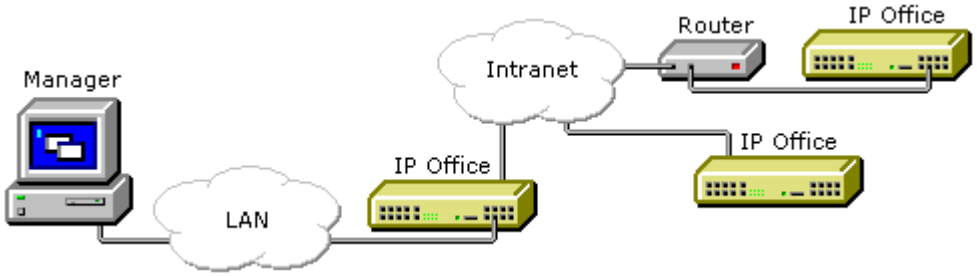
Diagram	
Sequence	1. The user starts Manager and clicks . The Select IP Office menu appears. 2. Manager does a UDP broadcast to 255.255.255.255. 3. The router does not forward the UDP broadcast. This is typical router behavior and would apply to any other intermediate routers. 4. The user changes the Unit/Broadcast Address to be the IP Office's LAN1 IP address and selects Refresh. 5. Manager sends an ICMP ping (UDP) to that address. 6. The router forwards the request. 7. The IP Office responds. Manager sends a TCP discovery request port 50802. 8. The IP Office responds with its system details including its name and software level. 9. The Select IP Office menu lists the responding IP Office. 10. The user selects the IP Office system and clicks OK. 11. Since the system is listed as having a 3.2 software level, Manager requests the user to enter a Service User name and password. 12. Manager sends a 'hashed' version of the name and password to port 50804 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.
Requirements	• The intermediate routers must be configured to route traffic for the IP Office's LAN1 IP address to that system. • The intermediate routers and any firewalls must be configured to allow pings. • The intermediate routers and any firewalls must be configured to allow a session to be started at the IP Office by incoming TCP traffic on ports 50802 (Discovery) and 50804/50805 (Configuration settings access).
Controls	• The default port on which the IP Office system listens for TCP discovery requests from Manager (50802) cannot be changed. • The port on which the IP Office system listens for configuration access requests (50804/50805) can be changed. This is done through the IP Office's security settings. • The port to which Manager sends configuration access requests can be changed to match the IP Office system. Select File | Preferences and on the Preferences tab change the Services Base TCP port. • The TCP address of the remote IP Office can be added to the default list of addresses scanned by the Select IP Office menu. Select File | Preferences and on the Discovery tab, enter the IP address in the IP Search Criteria area. See the following scenario.

Scenario: Managing Multiple Remote IP Offices
In this scenario, the user is maintaining a number of IP Office 3.2 systems located on other LANs. Through Manager it is possible to preset the addresses of these systems rather than having to change the Unit/Broadcast Address each time the Select IP Office menu appears.

Addresses are entered through the IP Search Criteria on the Preferences | Discovery tab. On this tab, IP Office system addresses can be entered, separating each entry with a semi-colon.

Diagram	
Sequence	1. The user starts Manager and clicks . The Select IP Office menu appears. 2. Manager does a UDP broadcast to 255.255.255.255. The router does not forward the UDP broadcast. This is typical router behavior and would apply to any other intermediate routers. 3. Manager also sends TCP discovery requests to the addresses listed in the IP Search Criteria on the Preferences | Discovery tab. The requests are sent to port 50802. 4. The IP Office systems respond with their system details including their names and software levels. 5. The Select IP Office menu lists the responding IP Office. 6. The user selects the IP Office system required and clicks OK. 7. Since the system is listed as having a 3.2 software level, Manager requests the user to enter a Service User name and password. 8. Manager sends a 'hashed' version of the name and password to port 50804/50805 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.

Scenario: Accessing an IP Office 3.2 Configuration
This scenario combines the previous scenarios. A UDP broadcast is used to access the users own IP Office on their LAN whilst preset TCP addresses are used to access the IP Office systems that IP Office systems that they maintain on other LAN's.

Diagram	
Sequence	1. The user starts Manager and clicks . The Select IP Office menu appears. 2. Manager does a UDP broadcast to 255.255.255.255. The router does not forward the UDP broadcast. This is typical router behavior and would apply to any other intermediate routers. 3. Manager also sends TCP discovery requests to the addresses listed in the IP Search Criteria on the Preferences | Discovery tab. 4. The IP Office systems respond with their system details including their names and software levels. 5. The Select IP Office menu lists the responding IP Office. 6. The user selects the IP Office system required and clicks OK. 7. Since the system is listed as having a 3.2 software level, Manager requests the user to enter a Service User name and password. 8. Manager sends a 'hashed' version of the name and password to port 50804/50805 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.

1.9 Backward Compatibility

Manager is part of the IP Office Admin suite of programs. It is important to note that the software level of IP Office Manager application is 2 higher than the software level of the IP Office system core software with which it is released. For example IP Office Manager 6.2 was released with IP Office 4.2 core software. The IP Office Manager application can be used to manage configurations from systems running IP Office 2.1 core software.

When an IP Office 2.1 or higher configuration is loaded, Manager adjusts the settings and fields that it shows to match the core software level of the IP Office system. If you attempt to load a pre-2.1 IP Office configuration, Manager will display an error message and does not load the configuration.

- To receive a pre-3.2 IP Office configuration requires entry of an operator name and the IP Office system password.
- To receive a 3.2 or higher IP Office configuration requires entry of a service user name and password stored by that IP Office system.

For IP Office 4.2+, IP Office Manager is able display systems with software levels it does not support in the Select IP Office discovery menu, however those systems are indicated as not supported.

- Backwards compatibility is only supported for General Availability releases of IP Office software. It is not supported for private builds.

1.10 IP Office Standard Edition

The IP500 system unit start operation in a mode called IP Office Standard Edition mode. In this mode, the number and range of features supported is limited. The limitations can be overridden by the addition of an IP500 Upgrade Standard to Professional license to the IP Office 500 configuration. Features not detailed in the table below are not affected directly by Standard Edition or Professional Edition mode selection.

Feature	Standard Edition	Professional Edition
Extensions	32	272
External Expansion Modules	✗	✓
Applications		
Phone Manager (All modes)*	✓	✓
SoftConsole *	✓	✓
IP Office TAPI	✓	✓
Delta Server	✓	✓
Compact Business Center (CBC)	✓	✓
Compact Contact Center (CCC)*	✗	✓
Embedded Voicemail	✓	✓
Voicemail Lite	✗	✓
Voicemail Pro *	✗	✓
ContactStore *	✗	✓
Conference Center *	✗	✓
MS-CRM	✗	✓
Meet-me Conferences	✗	✓
IP DECT Trunks	✓	✓
SIP Trunks *	✓	✓
SES Trunks *	✓	✓

*Also require appropriate application licenses.

The following licenses are specific to IP Office 500 systems.

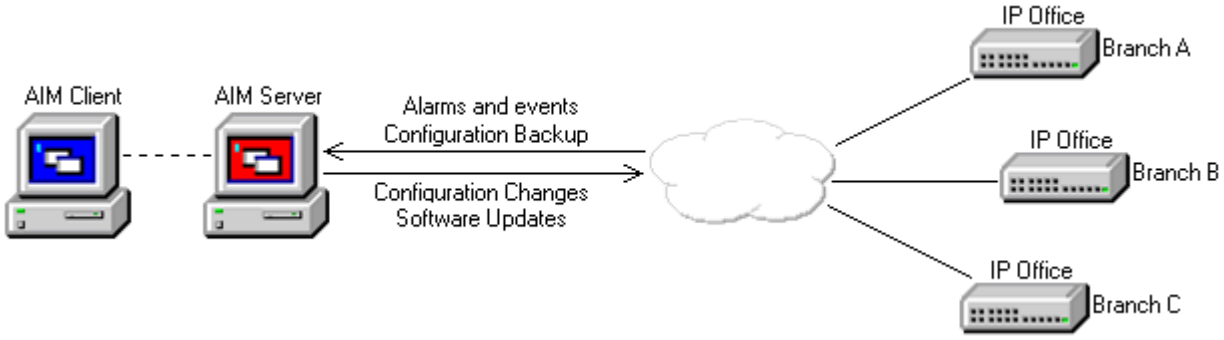
- **IP500 Upgrade Standard to Professional**
  This license is required for an IP500 system to run in IP Office Professional Edition mode rather than IP Office Standard Edition mode. It is a pre-requisite for any licensed features not supported in Standard Edition mode.
- **IP500 Voice Networking (Base 4 channels)**
  For IP500 systems this licenses enables support for H323 IP trunks between IP Office systems and QSIG or Small Community Networking over those trunks.
- **IP500 Voice Networking (Additional channels)**
  Allows an additional 4 H323 voice networking trunks.
  - For IP Office 4.0, the IP500 Voice Networking licenses were only supported in IP Office Professional Edition mode. For IP Office 4.1 they are supported in IP Office Standard and Professional Edition modes.
- **IP500 PRI Trunk Channels**
  Each IP500 PRI-U trunk daughter card provides 8 channels by default. Additional channels are enabled by the addition of the type of license.

Chapter 2.
AIM and IP Office

2. AIM and IP Office

✓Avaya Integrated Management (AIM) is a suite of applications used to monitor and manage multiple phone systems. Running either from a server or through a client -server setup, AIM can be used to remotely monitor and access those phone systems. Refer to the AIM product documentation for full details.

AIM and IP Office Manager support is aimed at customers requiring a "chain store management" solution, i.e. customers managing multiple branch office IP Office systems. Typically the dial plan and other settings of these phone systems are the same from branch to branch. Through the use of configuration templates, AIM is able to deploy the required settings following system installation and to deploy template changes to multiple systems simultaneously.



Key features provided by AIM for IP Office systems are:

- System monitoring and configuration backup.
- Rapid installation by remote software upgrading of new systems.
- Consistent programming through IP Office templates.
- Simultaneous distribution of template changes and updated auto-attendant prompts.

Use of AIM with IP Office is only supported by IP Office 4.0 and higher. Systems with IP Office 2.1 to IP Office 3.2 can be discovered by AIM NMC if they have SNMP enabled or are manually added to AIM Network Management Console (NMC). Those systems can then be upgraded to IP Office 4.1 using AIM Software Update Manager (SUM).

The IP Office 500 control unit is currently not supported for use with AIM.

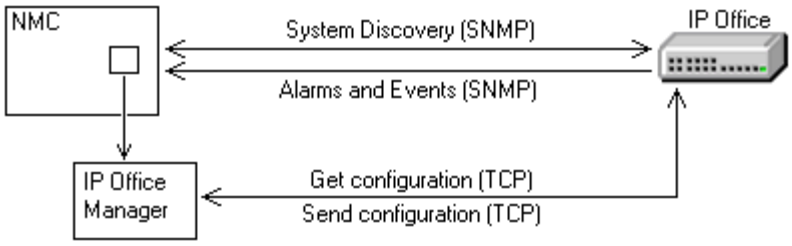
- **WARNING**
  IP Office systems being managed through AIM should only be accessed using the version of IP Office Manager included as part of the AIM suite installation. Similarly only the .bin files included in that installation should be used with those IP Office systems. Attempting to configure these systems using a standalone copy of Manager may cause configuration errors.

2.1 AIM Applications

IP Office 4.1 is supported by AIM. In addition to its own applications, AIM can also use IP Office Manager as a tool to configure IP Office systems. The IP Office Manager is installed as a component of AIM, either on the AIM server or the AIM client.

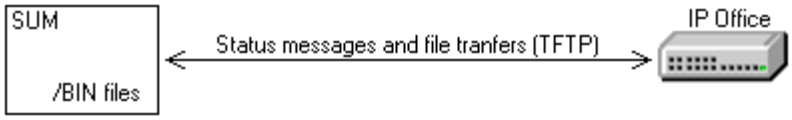
AIM consists of the following applications which interact with IP Office:

- **AIM Network Management Console (NMC)**
  NMC is used to monitor the phone systems being managed through AIM. It shows the equipment inventory of those systems, their status and system alarms. Refer to the AIM product documentation for full details.



- NMC uses SNMP to discover IP Office systems.
- IP Office SNMP is used to provide system information, alarms and events to NMC.
- For any IP Office system it knows, NMC can open that systems configuration directly into IP Office Manager using the Tool -> Device Manager menu command.

- **AIM Software Update Manager (SUM)**
  SUM is used to provide software updates to systems being managed through AIM. Refer to the AIM product documentation for full details.



2.2 Password Administration

The AIM Secure Admin Access (SAA) application is used to control access to the systems being managed through AIM including IP Office systems.

Configuring Access to IP Office Systems

1. Within SAA a number of IPO Users can be created. Multiple IP Offices can then assigned to each IPO User.
2. Each IPO User has a name, password and TFTP password configured within SAA.
3. SAA also has a general AIMAdmin password used by all IPO Users.
4. Within each IP Office's security settings, the name and password of the Unique Security Administrator must match the name and password of the IPO User with which the IP Office is associated in SAA.
5. When an IP Office system is associated with the SAA IPO User, SAA can access the IP Office system's security settings.
   5.1. It creates an IP Office Service User called AIMAdmin and belonging to the Administrator Rights Group.
   5.2. It sets the IP Office system password to match the IPO User TFTP Password.
      - If SAA fails to access the IP Office system's security settings using the IPO User name and password, it will attempt to access the settings using the IP Office Unique System Administrator defaults. If this succeeds it will reset the Unique System Administrator settings to match the IPO User name and password.
6. That Service User can then be used by the other AIM applications for configuration access to the IP Office.
7. SAA can also control the IP Office's System Password used for software updates.

Updating Passwords

If a password within SAA is changed, SAA will update the relevant IP Office systems to update the matching passwords.

1. If the IPO User password or TFTP password is changed, SAA will update the IP Office security settings of the IP Office system associated with that IPO User.
2. If the SAA AIMAdmin password is changed, SAA will update the IP Office security settings of all IP Office systems.

SAA Setting	IP Office Setting
IPO User name	Unique Security Administrator name
IPO User password	Unique Security Administrator password
IPO User TFTP password	System Password
SAA AIMAdmin password	AIMAdmin service user password

2.3 Configuring an IP Office for AIM

The processes below outline the basic steps for adding an IP Office system into AIM.

IP Office Systems with Pre-3.2 IP Office Software

This process covers existing IP Office systems with pre-3.2 IP Office software. It also covers new IP Office control units, except the IP500, as these may be supplied with an initial software level of IP Office 2.1.

1. Initial on-site configuration should ensure the following:
   1.1. IP connectivity between the IP Office and the AIM server.
   1.2. The System Password should be set to match that used by the IPO User.
   1.3. Enable SNMP.
2. Following the above, it should be possible for NMC to discover the IP Office system.
   2.1. If SNMP was not enabled during initial configuration, the IP Office system can be added manually to NMC.
3. SUM should be used to upgrade the IP Office system to IP Office 4.1software. Depending on the control unit type this may be a multi-stage upgrade process.
4. Having upgraded the IP Office system to IP Office 4.1, it will have default security settings. SAA can now be used to apply the IPO User required security settings to the IP Office system.
5. PIM can now be used to apply templates to the IP Office system. The hardware template should include enabling SNMP with the appropriate community string and alarms.
6. Additional site-specific configuration, for example the addition of software licenses, can be done through NMC.

IP Office Systems with IP Office 3.2 or Higher Software

This process covers existing IP Office systems with 3.2 or higher software. It also covers new IP500 control units which are supplied with a base software level of IP Office 4.0.

1. Initial on-site configuration should ensure the following:
   1.1. IP connectivity between the IP Office and the AIM server.
   1.2. The System password should be set to match that used by the IPO User.
   1.3. The Unique Security Administrator name and password should be set to match the IPO User or left at default.
   1.4. Enable SNMP.
2. Following the above, it should be possible for NMC to discover the IP Office system.
   2.1. If SNMP was not enabled during initial configuration, the IP Office system can be added manually to NMC.
3. SUM should be used to upgrade the IP Office system to IP Office 4.1 software to ensure that the same software build is being used for all the systems being managed through AIM.
4. SAA can now be used to apply the IPO User required security settings to the IP Office system.
5. PIM can now be used to apply templates to the IP Office system. The hardware template should include enabling SNMP with the appropriate community string and alarms.
6. Additional site-specific configuration, for example the addition of software licenses, can be done through NMC.

2.4 PIM Templates

The IP Office configuration record types within each template type are listed below. When a template of that type is created or edited, only the forms for those record types are visible.

- **Hardware Template** 61
  Contains Control Unit, System, Line, Extension and Short Code records. For some systems depending on IP Office control unit type and or location it may also contain Wireless and or E911 records.
- **User Template** 62
  Contains User, User Rights, Hunt Group, Incoming Call Route, Firewall and Time Profile records.
- **Auto Attendant Template** 63
  Contains Auto Attendant, Short Code, Incoming Call Routes and Time Profile records.
- **General Template** 64
  Contains ARS, Account Code, Directory, Time Profile and Firewall records.

Settings and record types not included in any template are referred to as 'site specific settings'. Those settings can only be edited using AIM NMC (Tools -> Device Manager) to launch IP Office Manager with the whole system configuration opened.

How are templates created?
PIM will first ask what type of template is being created. It then opens IP Office Manager showing only the record types that are needed for that sort of template. In the case of a Hardware template, when IP Office Manager is started the Create Offline Configuration Wizard appears and is used to define the IP Office system type and equipment.

How does IP Office Manager differ when creating or editing a template?
Compared to editing a full IP Office configuration the following differences are visible:

- The Manager application title bar displays the name given to the template.
- Tool and menu bar options not applicable to the template type are greyed out.
- Some fields may be shown as greyed out and empty. Those fields are not part of the template and when the template is merged with an IP Office configuration the existing site specific setting is retained.
- When using Manager to edit a full IP Office configuration, some fields act a drop-down lists from which a selection can be made. In a template, those same fields may not act as drop-downs as the relevant other configuration to list as possible selections are not available. Values must be manually typed into the template fields.
- In a full configuration some user fields can be configured if the user is not using user rights. Within a template those fields can only be set in user rights.
- For auto attendant greetings and menus, the name of wav files stored within PIM can be selected. Those files are converted and transferred to the IP Office system when the auto-attendant template is applied to that system.

How are templates associated with IP Office systems?
Once templates have been created, within PIM a Device Profile for each IP Office system can also be created. That Device Profile defines which templates, up to one of each type, the IP Office system uses.

How are templates merged with the existing configuration?
PIM is used to create Jobs. Each job specifies a date, time, which IP Office systems to update and which template or templates from each IP Office system's Device Profile to merge.

- Merging templates requires the IP Office system to reboot and so should be scheduled outside the normal business hours of the IP Office sites wherever possible.

What happens to existing records in the configuration when a template is merged?
In general all existing records of the type supported by a template are deleted unless the record appears in the template being merged. The exceptions are existing Short Code, Incoming Call Route, Firewall and Time Profile records which may not be deleted every time as these can come from more than one type of template.

What happens if there are configuration errors?
Once all the template records have been merged and all redundant records deleted, post merge validation is applied.

2.4.1 Hardware Template

The purpose of a hardware template is to contain those settings that are common to customer branches using the same type of IP Office control unit and associated hardware such as trunks and extensions.

When a new hardware template is created, IP Office Manager is launched and the Create Offline Configuration Wizard started. This then allows the physical hardware such as the IP Office control unit type, trunk interface cards and external expansion modules to be defined.

This type of template is useful for multiple branch offices that follow the same format, that is have the same hardware and dial plan.

- **WARNING**
  Care must be taken to ensure that a hardware template is only ever deployed to a matching physical IP Office. Sending a hardware template to a system with differing physical hardware such as trunks and extensions will cause unpredictable results.

Template Records
This type of template includes forms for the following types of IP Office configuration records.

- **Control Unit**
  All fields shown are greyed out and shown for information only.
- **System**
- **Line**
  Physical lines can only be added during the initial Create Offline Configuration Wizard stage of template creation. Only IP, IP DECT and SIP lines can be added after the template has been created.
- **Extension**
  Physical lines can only be added during the initial Create Offline Configuration Wizard stage of template creation. Only IP and IP DECT extensions can be added after the template has been created.
- **Short Code**
  All short code changes should be done in hardware template. Note that auto attendant related short code records are included in the Auto Attendant 63 template deployed to a branch.
- **Wireless**
  This form is only available if an IP Office Small Office Edition control unit is selected during the initial Create Offline Configuration Wizard stage of template creation.
- **E911**
  This form is only available if the locale United States is selected during the Create Offline Configuration Wizard stage of template creation.

2.4.2 User Template

The purpose of this type of template is to contain the records relevant to customer branch users.

Note that during normal operation, IP Office users can change some settings using IP Office short codes, programmable buttons on phones or IP Office Phone Manager applications unless locked through a user rights template. Those changes will be overwritten whenever a user template is reapplied.

Template Records

This type of template includes forms for the following types of IP Office configuration records.

-  **User**
  The user template deployed to an IP Office should contain user records that match the extension dial plan in the hardware template also deployed to that IP Office. Those fields that can also be defined in a User Rights record are greyed out and can only be set by associating each user with a user rights record in the same template. If required, time profiles can be added to allow different user rights to be associated with the user at different times.

-  **User Rights**
  For AIM it is required that customer create user rights records to define user settings and then assign them to users. User rights allow various user settings to be defined once and then applied to multiple users by associating those user with the user rights. Changes to the user rights are then applied to all associated users.

-  **Hunt Group**
  Hunt group records are used to create groups of users. Those groups can then be called from extensions within the system or specified as the destination for incoming calls in Incoming Call Route records.

-  **Incoming Call Route**
  Incoming calls route records can be used to route incoming calls to selected users or hunt groups. Note that Incoming call route records can also be added through Auto Attendant templates to route calls to an Embedded Voicemail auto attendant.

-  **Firewall**
  In the user template, firewall records can be added for users who receive RAS data calls. Note that other general purpose Firewall records should be the General 64 template to be deployed.

-  **Time Profile**
  In a user template, time profiles are used with users to control when features such as RAS, automatic voice recording, mobile twinning and user rights are enabled or disabled. They are also used with hunt groups to control night service fallback and automatic voice recording. Note that other time profile records can be added in the Auto Attendant 63 and General 64 templates deployed to a branch.

2.4.3 Auto Attendant Template

This type of template is only used with IP Office systems that are running Embedded Voicemail. Embedded Voicemail is supported on systems using the IP Office Small Office Edition, IP406 V2 and IP500 control units.

Embedded Voicemail requires an Embedded Voicemail memory card to be fitted to the control unit. Embedded Voicemail can be enabled through the IP Office System |Voicemail form settings contained in the Hardware Template.

Template Records

This type of template includes forms for the following types of IP Office configuration records.

-  **Auto Attendant**
  Each auto attendant record defines the DTMF key press actions supported by the auto attendant, the greetings the attendant uses and the time profiles that should control when each greeting is used.
  - The Recording Name fields, one each for the Morning, Afternoon, Evening and Menu Options prompts allow a WAV file name to be specified. The file names can be up to 31 characters long but should not include spaces or the .
-  **Short Code**
  Each auto attendant record created automatically adds short codes for the on-site recording of greetings. All non-auto attendant short code records should be managed via the Hardware 61 template deployed to a branch.
-  **Incoming Call Routes**
  Once auto attendant records have been added to a template, they can be used as the destination for incoming call routes. Incoming call route records for users and hunt groups should be added by the User 62 template deployed to a branch.
-  **Time Profile**
  Time profiles are used by auto attendant records to control when each of the auto attendant greetings are used. Other time profile records should be added in the General 64 and User 62 templates deployed to a branch.

How are the WAV files transferred to the IP Office?

Whenever the Auto Attendant template is deployed to an IP Office, PIM also transfers the required files named in the Auto Attendant template. The files are converted to the required format before transfer and then sent to the Embedded Voicemail Memory card within the system.

2.4.4 General Template

The purpose of this type of template is to include records that may be common to multiple branches but are not part of the other templates deployed to those branches.

Template Records

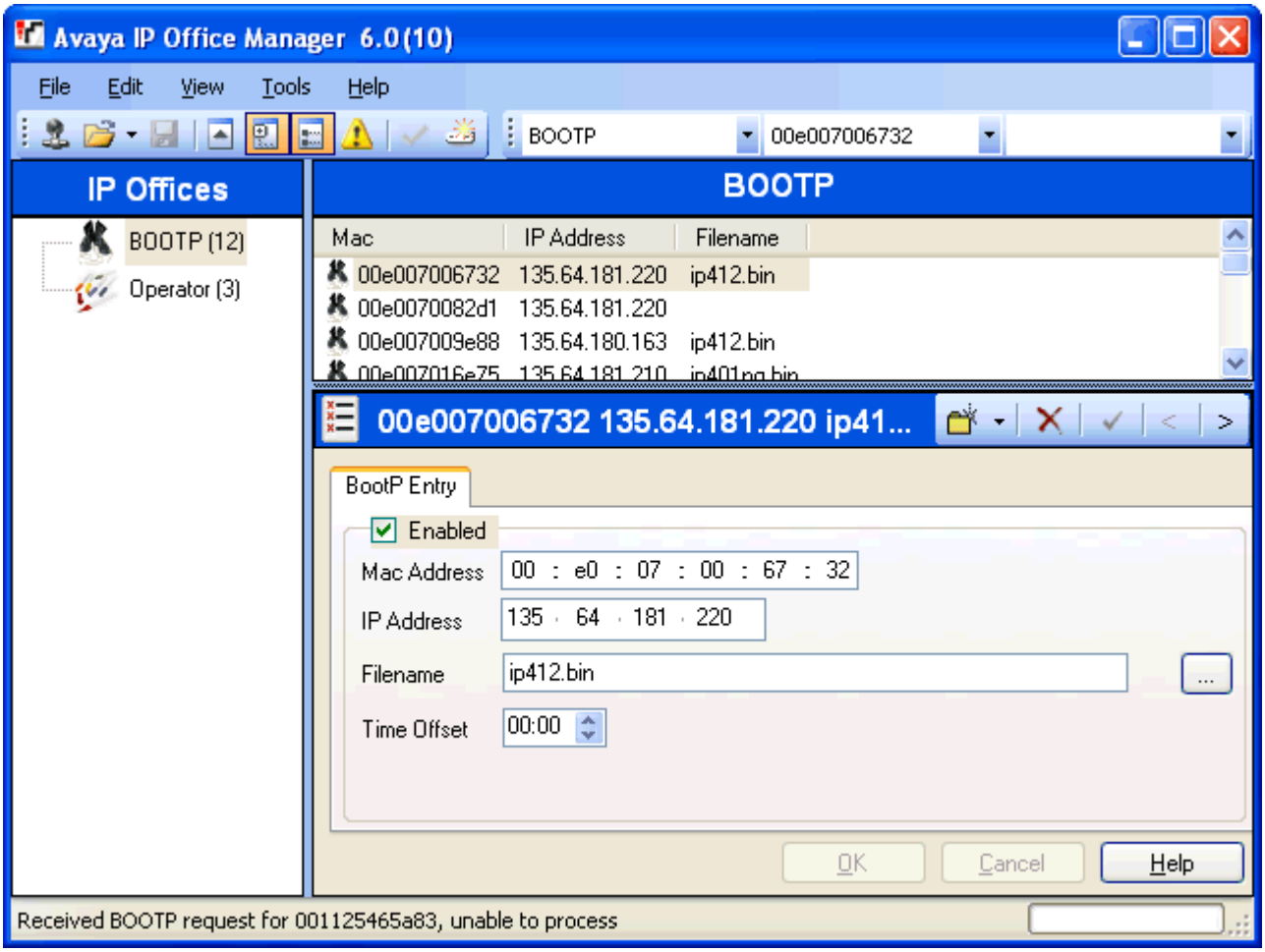
This type of template includes forms for the following types of IP Office configuration records.

-  **ARS**
  ARS is one of the methods used to select which line should be used for outgoing calls from an IP Office system.
-  **Account Code**
  Account codes can be used to control calls made by specific users or to specific numbers.
-  **Directory**
  Directory records are used to make outgoing calls and to match the ICLID of incoming calls to names for display on suitable phones.
-  **Time Profile**
  These time profile records are for general purposes such use by ARS records to switch the routing of calls from one ARS record to another. Time profile records required for auto attendants should be defined in the Auto Attendant template deployed to a branch. Similarly time profile records required for users should be defined in the User 62 template deployed to a branch.
-  **Firewall**
  Note that firewall records can also be added by the Auto Attendant 63 and User 62 templates deployed to a branch.

Chapter 3.
Configuration Mode

3. Configuration Mode

By default Manager starts in configuration mode with no IP Office configuration settings loaded.



This section of the documentation is divided into two parts as follows.

[The Configuration Mode Interface](#) 67
This part details the screen elements of Manager's configuration mode interface.

- [The Menu Bar](#) 71
- [Toolbars](#) 72
- [Using the Navigation Pane](#) 74
- [Using the Group Pane](#) 76
- [Using the Details Pane](#) 78
- [Using the Error Pane](#) 80
- [Altering the Interface](#) 81

[Editing Configuration Settings](#) 84
This part details how Manager's configuration mode can be used for the following tasks.

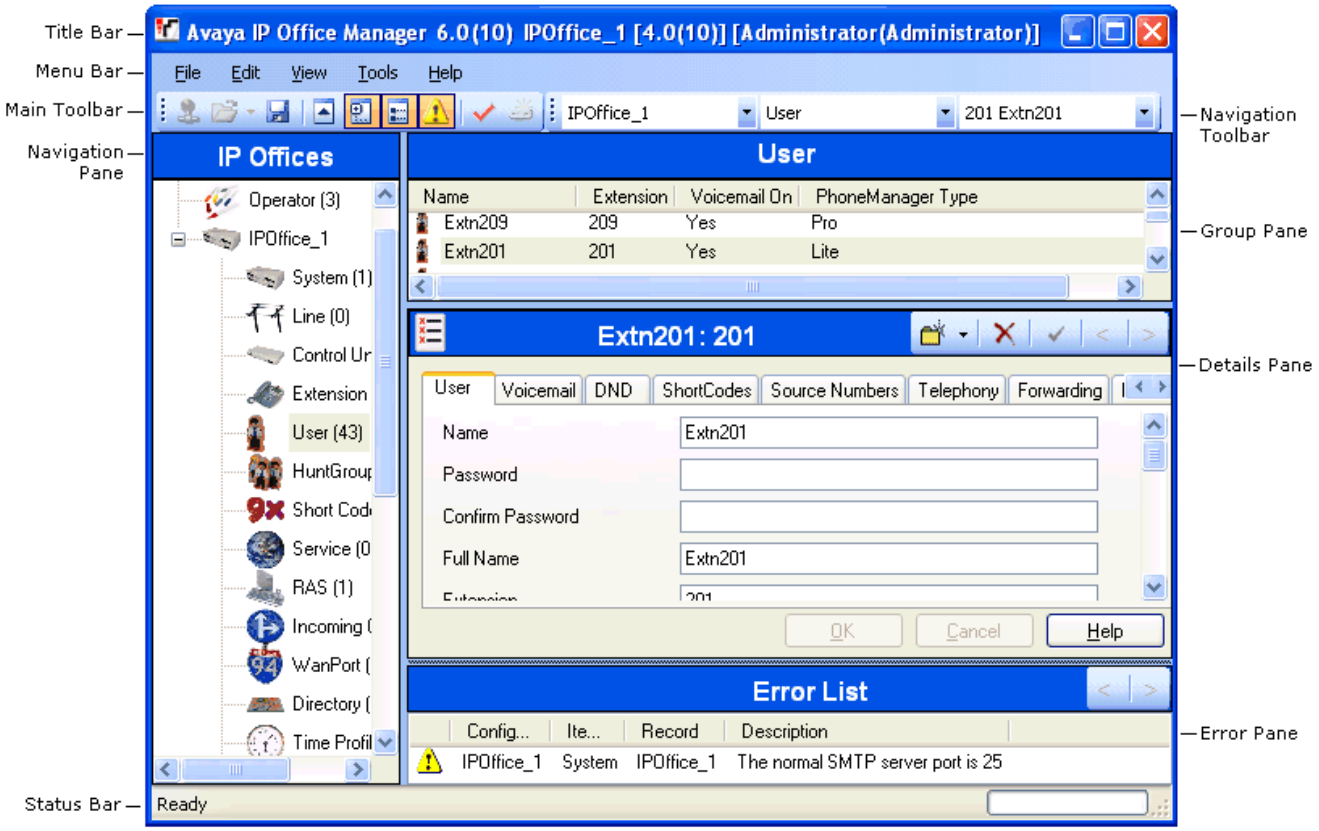
- [How the Configuration is Used](#) 84
- [Loading a Configuration](#) 89
- [Creating a New Configuration](#) 94
- [Importing and Exporting Settings](#) 95
- [Sending a Configuration](#) 98
- [Saving a Configuration Offline](#) 97
- [Erasing the IP Office Configuration](#) 100

Switching Manager to Configuration Mode

Though Manager starts in configuration mode; it can also run in security mode by selecting **File | Advanced | Security Settings**. To return to configuration mode from security mode, select **File | Configuration**.

3.1 The Configuration Mode Interface

When Manager is in configuration mode, the screen elements shown are available. Some of these elements can be customized, moved and hidden.

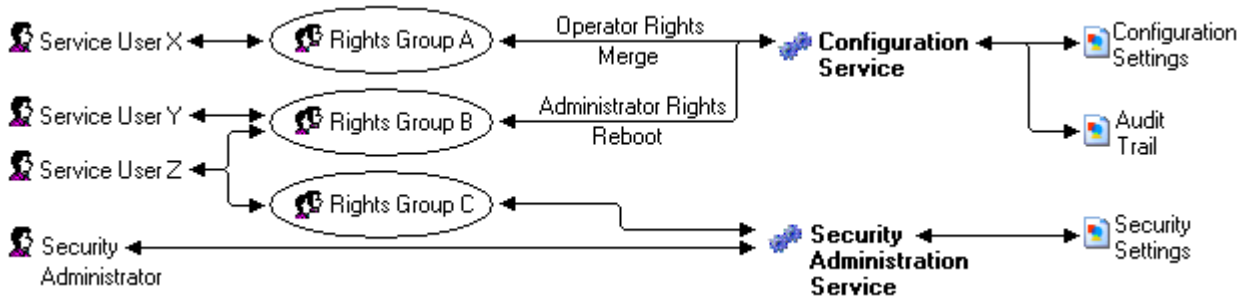


Manager Configuration Mode Screen Elements

- **Title Bar** 70
  In addition to the application name, when configuration settings are loaded from an IP Office system, the title bar displays the user name used to load the settings and the operator view applied.
- **Menu Bar** 71
  The options available with the drop down menus provided here change according to whether Manager has a set of configuration or security settings loaded or not.
- **Main Toolbar** 72
  This toolbar provides icon shortcuts to the most frequently required configuration setting actions.
- **Navigation Toolbar** 72
  This toolbar provides a set of drop downs which can be used to navigate to particular entries in the configuration settings. The selected options in the navigation pane, the group pane and the details pane are synchronized with the navigation toolbar and vice versa. This toolbar is particularly useful if you want to work with the group pane and or navigation pane hidden in order to maximize the display space for the details pane.
- **Navigation Pane** 74
  This pane shows icons for the different types of entry that the configuration can contain. Each type is followed by the number of entries of that type already in the configuration. Selecting an icon displays the matching entries in the group pane and navigation toolbar.
- **Group Pane** 76
  This pane lists all the entries that match the type selected in the navigation pane or navigation toolbar. The list can be sorted by clicking on column heading. Selecting an entry in this pane displays its details in the details pane.
- **Details Pane** 78
  This pane shows the configuration settings for a particular entry within the configuration. The entry is selected using the navigation toolbar or using the navigation pane and group pane.
- **Error Pane** 80
  This pane shows errors and warnings about the configuration settings. Selecting an item here loads the corresponding entry into the details pane.
- **Status Bar** 83
  This bar display messages about communications between Manager and IP Office systems. It also displays the security level of the communications by the use of a padlock icon.

3.2 Security Settings

Access to IP Office 3.2+ system settings is controlled by Service Users and Rights Groups. All actions involving communications between the Manager user and the IP Office require a Service User name and password. That Service User must be a member of a Rights Group configured to perform that action.



In the example illustrated above:

- Service User X can read and write the configuration. However they can only edit Operator settings and can only make changes that can be merged.
- Service User Y can read and write the configuration, edit all settings and make changes that require reboots.
- Service User Z can read and write the configuration, edit all settings and make changes that require reboots. They can also access the security settings.
- The Security Administrator can only access the security settings.

Security Administrators

By default the security administrator is the only user who can access the IP Office's security settings using Manager's security mode.

Service Users

Each Service User has a name, a password and is a member of one or more Rights Groups.

Rights Groups

The Rights Groups to which a Service User belongs determine what actions they can perform. Actions available to Rights Groups include configuration actions, security actions and system status actions:

Configuration	Security	System Status
• **Read the configuration.** • **Write the configuration.** • **Merge the configuration.** • **Default the configuration.** • **Reboot immediately.** • **Reboot when free.** • **Reboot at time of day.**	• **Read all security settings.** • **Write all security settings.** • **Reset all security settings.** (IP Office 4.1+) • **Write own password.** (IP Office 4.1+)	• **System Status Access.** • **Read All Configuration.**

Where a Service User has been configured as a member of more than one Rights Group, they combine the functions available to the separate Rights Groups.

Operator Rights
Each Rights Group has a Manager Operator Rights setting. This setting controls what types of configuration entries Manager will allow members of the Rights Group to view and what actions they can perform with those types of entries.

Operator	View/Edit/ New/ Delete	Configuration Entry Types
Administrator	All	View, edit create and delete all configuration entries.
Manager	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS, E911 System.
	New	
	Delete	As edit except Short Code.
Operator	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, Licence, ARS, E911 System.
	New	None.
	Delete	Delete Incoming Call Route and Directory.
User & Group Edit	View	User and Hunt Group entries only.
	Edit	
	New	None
	Delete	
User & Group Admin	All	User and Hunt Group entries only.
Dir & Account Admin	All	Directory and Account Code entries only.
Time & Attendant Admin	All	Time Profile and Auto Attendant entries only.
ICR & User Rights Admin	All	Incoming Call Route and User Rights entries only.
Read Only	View	View all configuration entries.
	Edit	None.
	New	
	Delete	

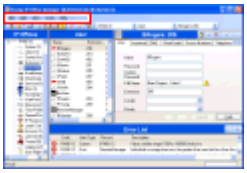
3.3 Title Bar

The IP Office Manager title bar shows several bits of information.



- The Manager application version.
- The system name of the IP Office system from which the currently loaded configuration was received.
- The software level of the IP Office system's control unit.
- For IP Office 3.2 systems, the service user name used to receive the configuration and that user's associated operator rights view level. For pre-3.2 IP Office systems this is replaced with just the operator name.

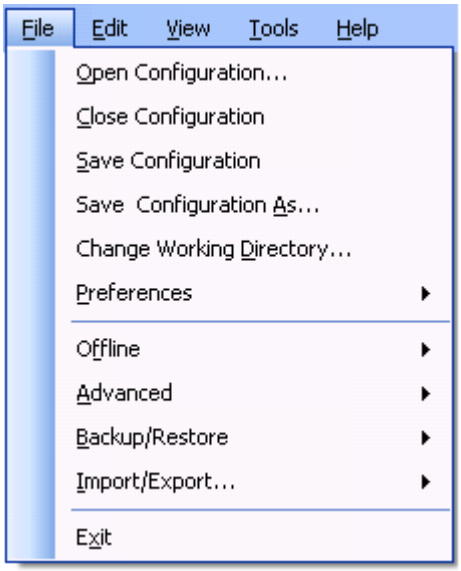
3.4 The Menu Bar



Details of all the options that may be available within the Menu Bar drop downs are contained in the section Menu Bar Commands [134].

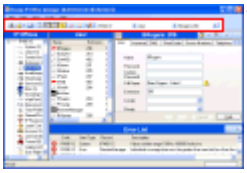
The commands are context sensitive. Commands are grayed out when not useable.

For some commands, an ▸ symbol indicates that there are sub-commands from which a selection can be made.



File Menu	View Menu	Tools Menu
Open Configuration... [135] Close Configuration [135] Save Configuration [135] Save Configuration As [135] Change Working Directory... [136] Preferences [137] **Offline** - Create New Config [143] - Open File... [143] - Send Config... [143] - Receive Config... [143] **Advanced** - Erase Configuration (Default) [143] - Reboot [143] - Upgrade.. [144] - Audit Trail... [146] - Security Settings... [147] - Erase Security Settings (Default) [147] - System Status [147] - LVM Greeting Utility [148] - Embedded File Management [149] **Backup/Restore** - Backup Binaries and Configurations [151] - Restore Binaries and Configurations [151] **Import/Export** - Import [153] - Export [152] Exit [153]	Toolbars [154] Navigation Pane [154] Group Pane [154] Details Pane [154] Error Pane [154] TFTP Log [154]	Extension Renumber [155] Line Renumber [155] Busy on Held Validation [155] MSN [156] Configuration [156]

3.5 Toolbars



The following toolbars are described here:

- **Main Toolbar.**
- **Navigation Toolbar.**
- **Details Toolbar.**

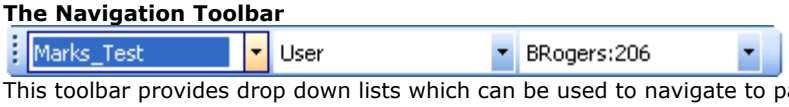
The Main Toolbar



This toolbar is also available when Manager is in security mode. However the Create New Configuration and MSN Configuration buttons are not shown, and the Show/Hide the Error Pane and Validate Configuration buttons do not function.

- **Open Configuration from IP Office** 89
  Advertises to the address currently shown in the Manager's title bar for any available IP Office systems. A list of responding systems is then displayed. When a system is selected from this list, a valid user name and password must be entered. Equivalent to File | Open Configuration.
- **Open Configuration File** 89
  Opens an IP Office configuration file stored on a PC. The button can be clicked to display a browse window. Alternatively the adjacent ▼ arrow can be used to drop-down a list of the last 4 previously opened configuration files. Equivalent to File | Offline | Open File.
- **Save Configuration File** 98
  The action of this icon depends on whether the currently loaded configuration settings were received from an IP Office system or opened from a file stored on PC. If the former applies, the menu sending the configuration back to the system is displayed. In the latter case, the file changes are saved to the original file. Equivalent to File | Save Configuration.
- **Collapse All Groups** 74
  Causes all ⊟ symbols in the navigation pane to be collapsed to ⊞ symbols.
- **Show/Hide the Navigation Pane** 74
- **Show/Hide the Group Pane** 76
- **Show/Hide the Error Pane** 80
- **Validate Configuration** 80
  Runs a validation on all the currently loaded configuration settings. The results appear in the error pane. By default the configuration is automatically validated when loaded and changes are validated when made, however the validation preferences can be changed through File | Preferences | Validation 142.
- **Create New Configuration** 94
  Runs a series of dialogs that create a new configuration from scratch.

The Navigation Toolbar



This toolbar provides drop down lists which can be used to navigate to particular entries in the configuration settings. The selected options in the navigation pane, group pane and the details pane are synchronized with the navigation toolbar and vice versa. This toolbar is particularly useful if you want to work with the group pane and or navigation pane hidden in order to maximize the display space for the details pane.

This toolbar is not available when Manager is in security mode 102.

Details Toolbar



This toolbar is shown in the top-right of the details pane.

- **Create New Record**
  The ▾ arrow is used to select the entry type to be created. For example; when adding an extension clicking ▾ may allow selection of a VoIP Extension or IP DECT Extension.
- **Delete Entry**
- **Validate Entry**
- < > **Show Previous/Next Entry**

Moving to the Previous or Next Entry

1. Click < or > at the top-right to move to the previous or next entry.

Altering the Toolbars

Showing or Hiding Toolbars

The different toolbars can be hidden if not required.

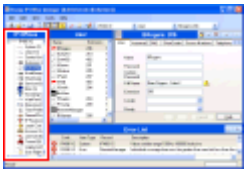
1. Select **View** and then **Toolbars**. Those toolbars currently shown are indicated by a tick mark.
2. To show or hide a toolbar, click on its name.

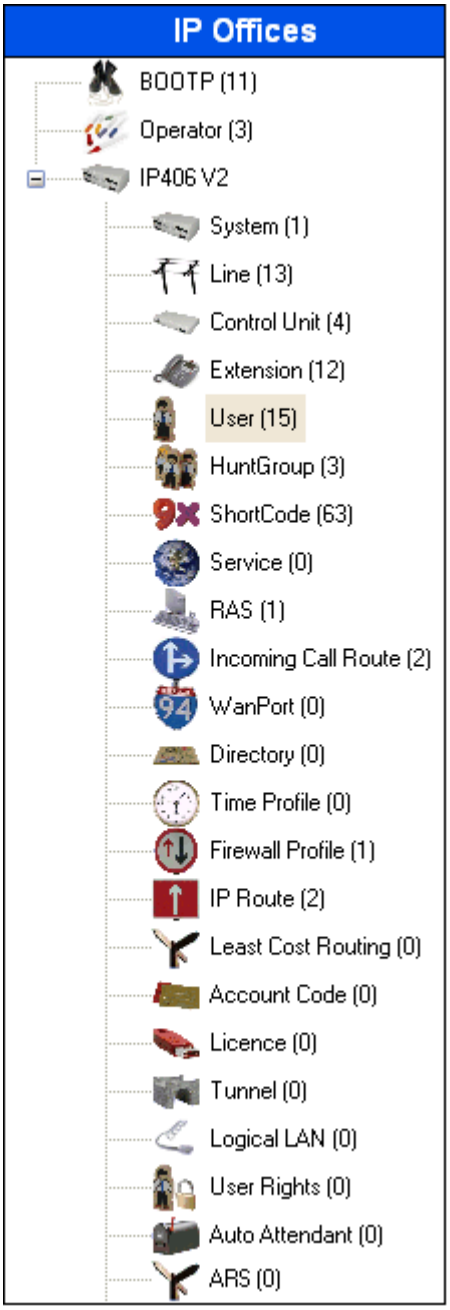
Moving Toolbars

The position of the Manager toolbars can be moved. Note that when moving a toolbar, the other toolbars and panes may adjust their size or position to ensure that all the toolbar icons remain visible.

1. Place the cursor over the end of the toolbar.
2. When the cursor changes to a four-way arrow, click and hold the cursor.
3. Move the toolbar to the required position and release the cursor.

3.6 Using the Navigation Pane





This pane shows icons for the different types of entry that the configuration can contain. Each type is followed by the number of entries of that type already in the configuration.

Selecting an icon displays the matching entries in the group pane and navigation toolbar.

Where ⊞ or ⊟ icons appear in the pane, they allow the structure to be expanded or collapsed. When the group pane is hidden, ⊞ and ⊟ icons are shown for each entry type and allow the entry type to be expanded to display all the existing entries of that type.

The icon in the main toolbar can also be used to collapse all the expanded entry types shown in the navigation pane.

The icons shown in this pane will vary according to the type of IP Office system loaded. For example Wireless is only shown for Small Office Edition systems. They may also vary for different locales, for example E911 is only shown in the US.

The BOOTP and Operator icons are special. They represent settings stored on the Manager PC rather than configuration settings received from an IP Office system.

When Manager is used in security mode, this pane is also used by Manager in security mode 102 to display entries for security settings.

Navigation Pane Actions

Moving the Border Between the Panes
The border between the visible panes can be adjusted. Note that this is a proportional rather than exact position. If the whole window size is altered, the border position may also move.

1. Place the cursor over the border between two panes.
2. When the cursor changes to a double headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Showing or Hiding Panes
The navigation pane can be shown or hidden. To do this use either of the following methods.

1. From the main toolbar, use the  icon.

or

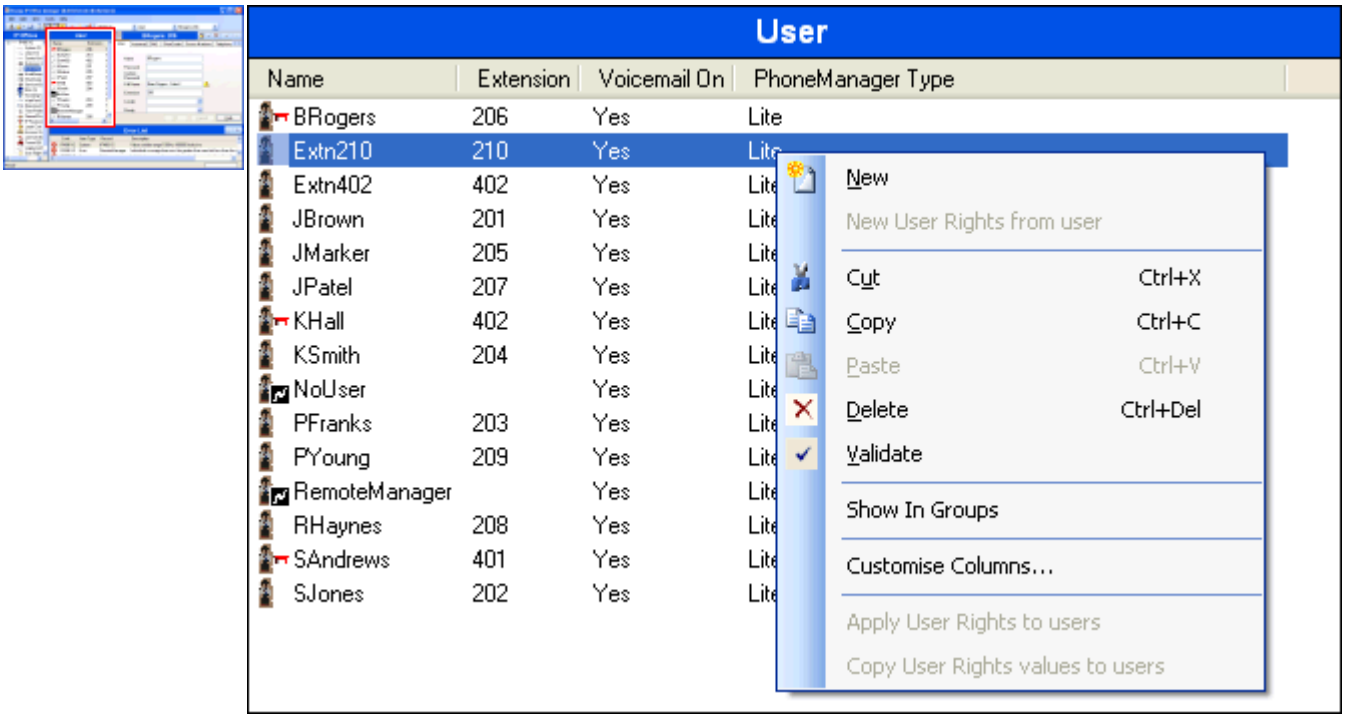
1. Select **View**. Those panes currently shown are indicated by a tick mark.
2. To show or hide the navigation pane, click on its name.

Changing the Size of Configuration Icons
The size of the icons used on the navigation pane and details pane can be adjusted.

1. Select **File** and then **Preferences**.
2. Select the **Visual Preferences** tab.
3. Select the required icon size from **Small**, **Medium** or **Large**.
4. Click **OK**.

3.7 Using the Group Pane

This pane lists all the entries that match the type selected in the navigation pane or navigation toolbar. The list can be sorted by clicking on a column heading. Selecting an entry in this pane displays its details in the details pane.



The icons used in the pane may vary according to the state of the entry. For example, some of the users shown in this example have been configured for hot desking. This pane is also used by Manager in security mode 102 to display entries for security settings.

Group Pane Actions

Sorting the List

The entries shown in the group pane can be sorted using any of the columns displayed.

1. To sort the list using the details in a particular column, click on the column header.
2. Clicking on the same column header again reverses the sort order.

Customizing the Columns Displayed

For each entry type, which details are shown in the group pane can be customized. Also the order of the column can be adjusted. For details of the options available for each type of entry see Appendix D: Miscellaneous.

1. Right-click on the pane and select **Customize Columns**.
2. To add a column, selects its name in the left-hand Available Columns list and click **>>** to move it to the right-hand **Selected Columns** list.
3. To remove a column, select its name in the right-hand **Selected Columns** list and click **<<** to move it to the left-hand **Available Columns** list.
4. To change the order of the **Selected Columns**, click on a column name and use the **^** and **V** controls.
5. Click **OK**.

Changing the Column Widths

1. In the column headers, place the cursor over the border between two columns.
2. When the cursor changes to a double headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Adding a New Entry
The group pane can be used to add a new entry of the type currently displayed.

1. Right-click on the pane and select **New**.
   - A ▸ arrow symbol next to **New** indicates that you can select a particular type of new entry to create. Click the arrow and select an option from the list.
2. Use the details pane to configure the new entry.
3. Click **OK** in the details pane.

Deleting an Entry

1. Select the entry to be deleted by clicking on it.
2. Right-click on the pane and select Delete.

Validating an Entry

1. Select the entry to be validated by clicking on it.
2. Right-click on the pane and select Validate.

Show in Groups
This command groups the items shown in the group pane. The grouping method will vary depending on the entry type being listed. For example, short codes are grouped based on short code feature type such as all forwarding short codes together.

1. Right-click on the pane and select **Show In Groups**.

Moving the Border Between the Panes
The border between the visible panes can be adjusted. Note that this is a proportional rather than exact position. If the whole window size is altered, the border position may also move.

1. Place the cursor over the border between two panes.
2. When the cursor changes to a double headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Showing or Hiding Panes
The group pane can be shown or hidden. To do this use either of the following methods.

1. From the main toolbar, use the  icon.

or

1. Select **View**. Those panes currently shown are indicated by a tick mark.
2. To show or hide the group pane, click on its name.

Changing the Size of Configuration Icons
The size of the icons used on the navigation pane and details pane can be adjusted.

1. Select **File** and then **Preferences**.
2. Select the **Visual Preferences** tab.
3. Select the required icon size from **Small**, **Medium** or **Large**.
4. Click **OK**.

3.8 Using the Details Pane

Whenever a selection is made through the group pane or the navigation toolbar, the settings for the matching entry are shown in the details pane. This pane is also used by Manager in security mode [102] to display entries for security settings.

The details are grouped into tabs. The tabs available may vary depending on what particular type of entry is being viewed. For example, for extension entries the Analog tab is only shown for analog extensions.

Individual settings may also be grayed out. This indicates that they are either for information only or that they cannot be used until another setting is enabled.



The top-left icon indicates the following:

Locked
Indicates that you can view the settings but cannot change them.

Editable
Indicates that you can change the settings if required.

Changed
Indicates that the settings have been changed since the tab was opened. Click OK to save the changes or Cancel to undo.

Various icons may appear adjacent to settings:

Locked Setting
The setting cannot be changed through this tab. This icon appears on user settings where the user is associated with User Rights that controls the setting.

Information
Indicates a value which does not have to be set but may be useful if set.

Warning
A warning indicates a configuration setting value that is not typical and may indicate misconfiguration.

Error
An error indicates a configuration setting value that is not supported by the IP Office. Such settings may cause the IP Office to not operate as expected.

Details Pane Actions

Editing an Entry

1. The method of entering an entry varies as different fields may use different methods. For example text entry boxes or drop down lists.
2. By default when changes are made, they are validated once another field is selected. See File | Preferences | Validation 142.
3. Clicking on **OK** at the base of the details pane to accept the changes or click on Cancel to undo the changes.

Adding a New Entry

1. Click  at the top-right of the details pane.
2. Select the type of entry required. For example, with services you can select from ***Normal***, ***WAN*** or ***Intranet***.

Deleting an Entry

1. Click  at the top-right of the details pane.

Validating an Entry

1. Click  at the top-right of the details pane.

Moving to the Previous or Next Entry

1. Click **<** or **>** at the top-right to move to the previous or next entry.

Selecting a Tab

1. To view the detail stored on a particular tab, click on the name of that tab.
2. If the tab required is not shown, use the  controls if shown on the right to scroll through the available tabs. The tabs available may vary depending on what particular type of entry is being viewed.

Changing the Position of the Details Pane

When the group pane is visible, the details pane is shown either below it or to its right. This position can be adjusted.

1. Select **View** and then **Details Pane**.
2. The current position setting is indicated by a tick mark.
3. To select a position, click on it.

Changing How the Tabs Display

For entries with more than two tabs, you can select whether Manager should use  controls or arrange the tabs as multiple rows when necessary.

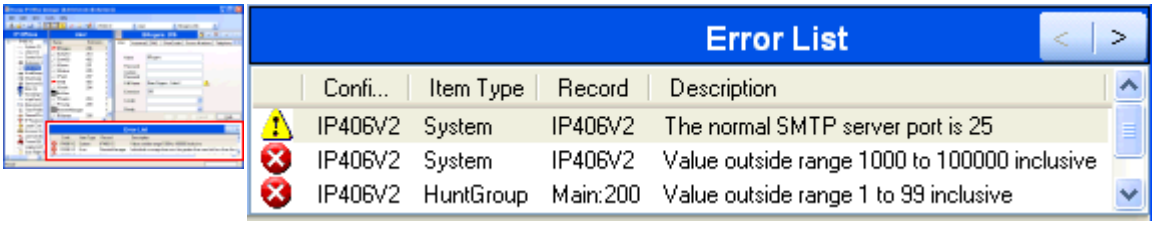
1. Select **Files | Preferences | Visual Preferences**.
2. Select **Multi-Line Tabs**.
3. Click **OK**.

3.9 Using the Error Pane

Validation is a process where Manager checks configuration entries for errors or for values for which it regards as requiring a warning. The results of this checking are shown by icons next to the field that caused the error or warning, All errors and warnings are also listed in the Error Pane.

By default validation is performed automatically whenever a configuration file is opened and when any field is edited. However, if required, the use of automatic validation can be controlled through the settings on the File | Preference | Validation 142 tab.

The validation process can be run manually using the icon for the whole configuration or the icon for a particular entry.



The icons used for errors and warnings are:

Error
An error indicates a configuration setting value that is not supported by the IP Office. Such settings are likely to cause the IP Office to not operate as expected.

Warning
A warning indicates a configuration setting value that is not typical and may indicate misconfiguration.

Information
Typically indicates a setting which may be useful to set.

Error Pane Actions

Revalidating Configuration Settings
By default, the configuration is validated when loaded and individual entries are revalidated when changed.

1. To validate the whole configuration, click in the main toolbar.
2. For a particular entry, click in the details pane.

Jumping to an Error or Warning

1. Clicking on an error or warning in the error pane will load the matching entry tab into the details pane.
2. The **<** and **>** can be used to move to the next error or warning in the error pane.

Showing or Hiding Panes
The error pane is automatically displayed if a configuration containing errors or warnings is loaded into Manager. However it can be manually shown or hidden using either of the following methods.

1. From the main toolbar, use the icon.

or

1. Select **View**. Those panes currently shown are indicated by a tick mark.
2. To show or hide the error pane, click on its name.

3.10 Altering the Interface

The Manager configuration settings interface can be customized in a number of ways. These changes are remembered the next time Manager is started.

Resizing the Manager Window

When the Manager window is not maximized or minimized, it size can be adjusted.

1. Place the cursor over the edge of the current window.
2. When the cursor changes to a double-headed arrow, click and hold the cursor.
3. Drag the edge to the required position and then release the cursor.

Moving the Border Between the Panes

The border between the visible panes can be adjusted. Note that this is a proportional rather than exact position. If the whole window size is altered, the border position may also move.

1. Place the cursor over the border between two panes.
2. When the cursor changes to a double headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Showing or Hiding Toolbars

The different toolbars can be hidden if not required.

1. Select **View** and then **Toolbars**. Those toolbars currently shown are indicated by a tick mark.
2. To show or hide a toolbar, click on its name.

Moving Toolbars

The position of the Manager toolbars can be moved. Note that when moving a toolbar, the other toolbars and panes may adjust their size or position to ensure that all the toolbar icons remain visible.

1. Place the cursor over the end of the toolbar.
2. When the cursor changes to a four-way arrow, click and hold the cursor.
3. Move the toolbar to the required position and release the cursor.

Showing or Hiding Panes

The details pane cannot be hidden. The navigation pane, group pane and error pane can be shown or hidden. To do this use either of the following methods.

1. From the main toolbar, use the following icons:
   -  **Hide/Show Navigation Pane**.
   -  **Hide/Show Group Pane**.
   -  **Hide/Show Error Pane**.

or

1. Select **View**. Those panes currently shown are indicated by a tick mark.
2. To show or hide a pane, click on its name.

Changing the Position of the Details Pane
When the group pane is visible, the details pane is shown either below it or to its right. This position can be adjusted.

1. Select **View** and then **Details Pane**.
2. The current position setting is indicated by a tick mark.
3. To select a position, click on it.

Changing the Size of Configuration Icons
The size of the icons used on the navigation pane and details pane can be adjusted.

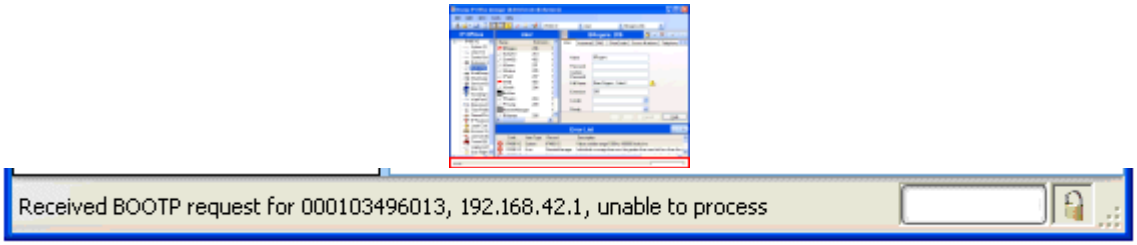
1. Select **File** and then **Preferences**.
2. Select the **Visual Preferences** tab.
3. Select the required icon size from **Small**, **Medium** or **Large**.
4. Click **OK**.

Changing How the Tabs Display
For entries with more than two tabs, you can select whether Manager should use  controls or arrange the tabs as multiple rows when necessary.

1. Select **Files | Preferences | Visual Preferences**.
2. Select **Multi-Line Tabs**.
3. Click **OK**.

3.11 The Status Bar

The status bar at the base of the Manager screen is used to display icons and messages about communications between Manager and IP Office systems. If the IP Office Manager is also acting as a BOOTP and TFTP server it will also show BOOTP and TFTP messages.



A padlock icon is displayed whenever the Manager communications settings are set to secure. This indicates all attempted configuration and security settings exchanged will be attempted over a secure TLS link:



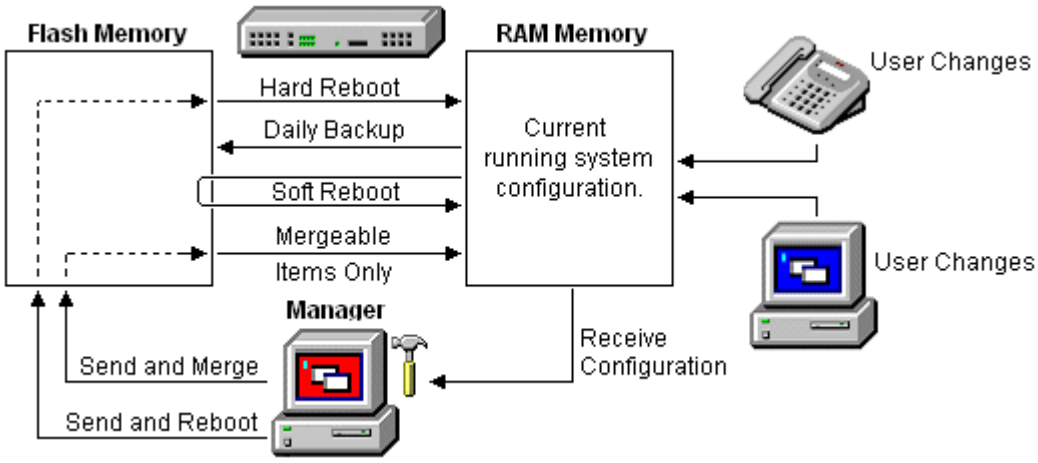
Status bar messages display information about communications the Manager application receives. Some typical status bar messages are listed below.

- **Ready**
  This message is normally seen when Manager has just started and no configuration has been received.
- **Received BOOTP request for 001125465ab2, unable to process**
  Manager is acting as a BOOTP server. It has received a BOOTP request that does not match an IP Office system listed in its BOOTP entries. The cause may be a device or application, other than an IP Office, that also uses BOOTP.
- **TFTP: Received TFTP Error "NotFound" from 192.168.42.1**
  An attempt to receive settings from or send settings to the IP Office failed. The most probable cause is a name or password error.
- **TFTP: Received 17408 bytes for Marks_Test**
  Manager has received configuration settings from the named system using TFTP.
- **Sent 100% of C:\Program Files\Avaya\IP Office\Manager\b10d01b2_3.bin**
  Manager has sent the indicated file in response to a BOOTP request.

3.12 Editing Configuration Settings

Before editing the IP Office configuration settings, it is important to understand how those settings are stored and used by the IP Office system.

- The IP Office control unit holds copies of its configuration in both Flash and RAM memory.
- The copy in Flash memory is retained even if power to the control unit is removed.
- During power up, the configuration in Flash memory is copied to the RAM memory.
- The copy in RAM memory is then used to control the IP Office system's operation.
- Users actions such as changing their forward destinations or mailbox passcode using their phone or Phone Manager are written to the configuration in RAM memory.
- Between 00:00 and 00:30, a daily backup occurs which copies the configuration in RAM back into Flash memory.



When using Manager to edit the configuration settings, the following need to be remembered:

- Manager receives the current configuration settings from RAM memory. Therefore the settings include any changes made by users up to that time.
- When sending the configuration settings back to the IP Office, Manager allows two choices, reboot or merge.
  - Reboot sends the configuration to the IP Office's Flash memory along with an instruction to reboot. Following the reboot, the new configuration in Flash memory is copied to the RAM memory and used.
  - Merge sends the configuration to the IP Office's Flash memory without rebooting. The IP Office then copies those changes that are mergeable into the RAM memory. A key point here is that not all configuration settings are mergeable, see the Reboot/Merge Configuration List that follows.

As a result of the above, it is important to bear the follow scenarios in mind:

- Changes made by users after a configuration is received by Manager may be lost when the configuration is sent back from Manager.
- If a merge is attempted with non-mergeable items, those items will be written to Flash memory but will not be copied to RAM memory. If a daily backup occurs, they will then be overwritten by the RAM. If a power loss reboot occurs, they will be written to RAM memory.

3.12.1 Mergeable Settings

The table below shows the configuration entries for which changes can be merged and those that require a system reboot. The Send Configuration menu shown when sending a configuration to the IP Office automatically indicates when the configuration is mergeable.

Mergeable		3.2+	Pre-3.2
	System 164	-	-
	- System 165	✓*1	✗
	- LAN1/LAN2 168	✗	✗
	- DNS 174	✗	✗
	- Voicemail 175	✓*2	✗
	- Telephony 177	✓*3	✗
	- H.323 Gatekeeper 181	✗	✗
	- LDAP 182	✗	✗
	- System Events 185	✗	✗
	- CDR/SMDR 189	✓	✗
	- Twinning 188	✓	-
	Line 193	✗	✗
	Control Unit 246	✗	✗
	Extension 247	✗	✗*4
	User 255	✓	✓
	Hunt Group 287	✓	✓
	Short Code 308	✓	✓
	Service 309	✓	✓
	RAS 326	✓	✓
	Incoming Call Route 328	✓	✓

Mergeable		3.2+	Pre-3.2
	WAN Port 320	✗	✗
	Directory 335	✓	✓
	Time Profile 336	✓	✗
	Firewall Profile 338	✓	✓
	IP Route 343	✓	✓
	Least Cost Route 346	✓	✓
	Account Code 351	✓	✓
	License 353	✓	✓
	Tunnel 355	✗	✗
	Logical LAN 360	✗	✗
	Wireless 361	✗	✗
	User Rights 364	✓	✓
	Auto Attendant 372	✓	✗
	Authorization Code 375	✓	✗
	ARS 377	✓	-
	E911 System 381	✗	✗

- ***1 - 3.2+ | System | System**
  Changes to Locale, License Server IP Address and Favor RIP Routes over Static require a reboot.
- ***2 - 3.2+ | System | Voicemail**
  Changes to Voicemail Type require a reboot.
- ***3 - 3.2+ | System | Telephony**
  Changes to Companding LAW and Busy Tone Detection require a reboot.
- ***4 - 4.1+ | Extension**
  For IP Office 4.1+, Base Extension and Disable Speakerphone are mergeable.

3.12.2 Configuration Sizes

There are maximum size limits to the configuration file that can be loaded into an IP Office control unit. They are:

Control Unit	Maximum Configuration File Size
Small Office Edition	192KB
IP403	192KB
IP406 V1	192KB
IP406 V2	256KB
IP412	1.0MB
IP500	1.0MB

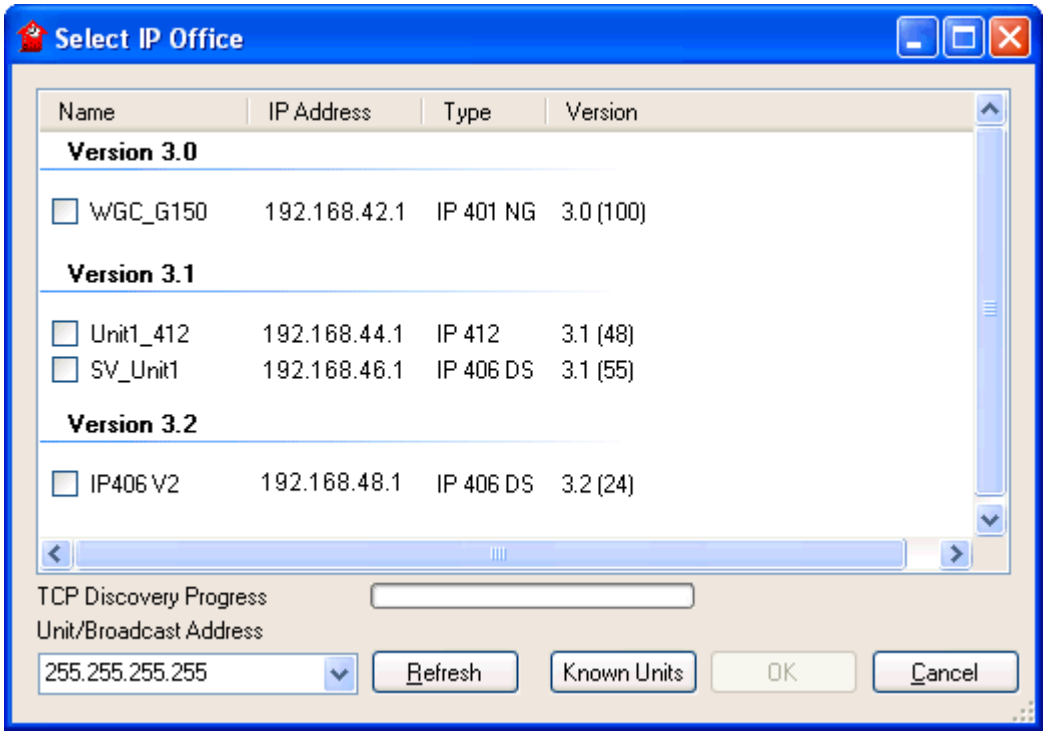
Attempting to load a configuration that exceeds the limits above will cause the system to lock and require resetting via the DTE port.

Figures for all individual entries in the configuration cannot be given as they vary between software releases. The list below gives typical values, in bytes, for common entries:

Physical Extension: 70.	WAN Service: 400.	IP Route (Static): 30.
IP Extension: 70.	RAS Service: 110.	License Key: 40.
User: 170.	Incoming Call Route: 30.	Account Code: 40.
User Short Code: 40.	WAN Port (PPP): 70.	Logical LAN: 60.
DSS Button: 20.	WAN Port (FR): 120.	Tunnel (L2TP): 200.
Hunt Group: 100.	Directory Entry: 70.	Tunnel (IPSec): 110.
Hunt Group member: 10.	Time Profile: 40.	
System Short Code: 10.	Time Profile Entry: 20.	
Normal Service: 220.	Firewall Profile: 40.	
Intranet Service: 240.	Custom Firewall Entry: 80.	

3.12.3 Setting the Discovery Addresses

By default, when or **File | Open configuration** is selected, Manager's **Select IP Office** menu appears. It performs a UDP broadcast to the address 255.255.255.255. This broadcast will only locate IP Office systems that are on the same network subnet as the PC running IP Office Manager.

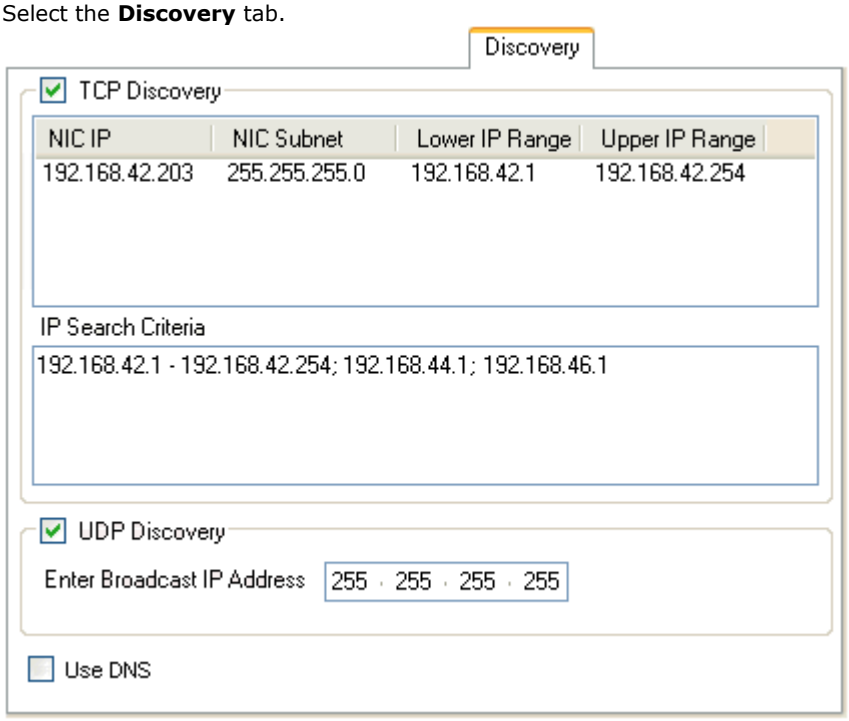


The process above is called discovery. A UDP broadcast will not be routed to other networks and subnets. Therefore to find IP Office systems not located on the same subnet as the Manager PC, the following other options are supported.

- **Specific Addressing**
  The Unit/Broadcast Address shown on the Select IP Office menu can be changed to the specific IP address of the required system. A single address is routable and so can be used to discover an IP Office system on another subnet.
- **TCP Discovery Address Ranges**
  IP Office 3.2+ systems support discovery by TCP as well as UDP. To support this, a set of TCP addresses and address ranges can be specified for use by the Select IP Office discovery process.
- **Known IP Office System Discovery**
  The IP Office 4.0 Q2 2007 maintenance release adds supports for a system whereby IP Office Manager can write the details of systems it discovers to a file. The list of systems in that file can then be used for access to those systems. See Known IP Office Discovery 92.
- **DNS Lookup**
  IP Office Manager 6.2 can be configured to locate IP Office systems using DNS name lookup. This requires the IP Office systems on a customer network to be added as names on the customer's DNS server and the Manager PC to be configured to use that server for DNS name resolution. The use of DNS is configured through **File | Preferences | Discovery** 139.

Changing the Initial Discovery Settings
The Discovery tab of the Manager Preferences menu can be used to set the UDP and TCP addresses used by the discovery process run by the Select IP Office menu.

1. Select **File | Preferences** menu.
2. Select the **Discovery** tab.



3. Under **UDP Discovery** you can enter the default UDP broadcast address to be used by the discovery process.
4. In the **IP Search Criteria** box you can enter IP addresses and IP address ranges for TCP discovery. Addresses are should be separated by semi-colons, ranges by - dashes.

3.12.4 Loading a Configuration

Manager can be used to load configuration settings directly from a running IP Office system or from a configuration file previously saved on the PC.

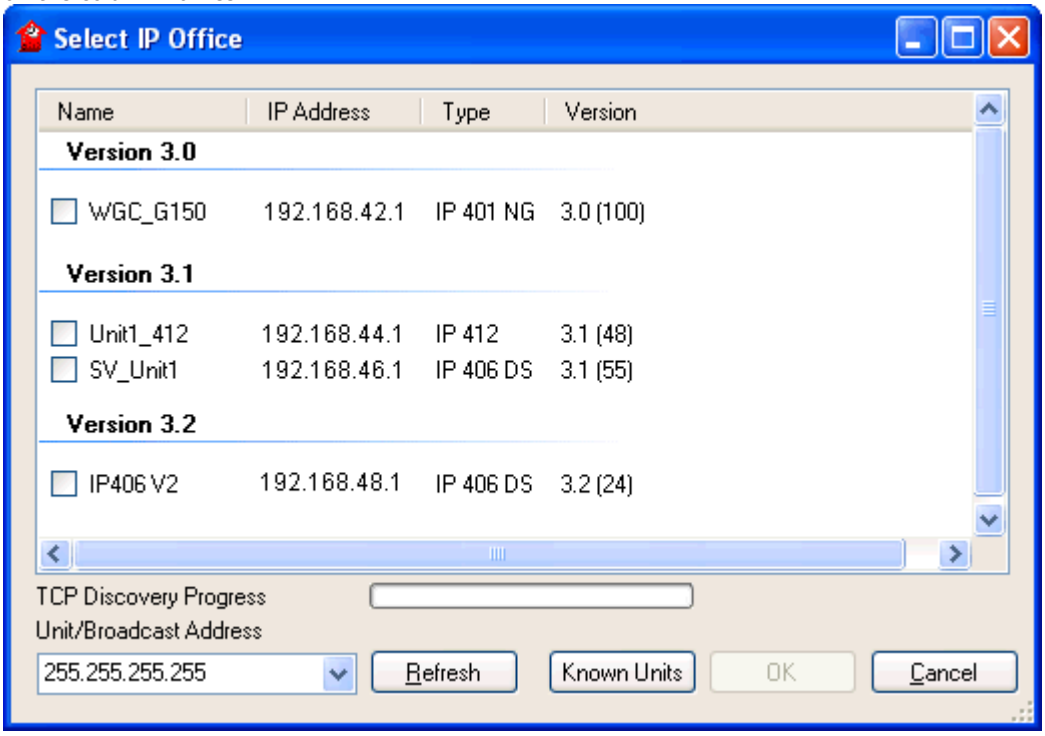
An important change for IP Office 4.1 is to optionally secure the link between the IP Office system and Manager for configuration and security settings exchanges. By default Manager and the IP Office will always attempt to use the original, unsecured link. The control of which mechanism is used by Manager is determined through Manager preferences (File | Preferences | Security | Secure Communications 140).

When secure communications mode is selected a padlock icon is present on the Manager status bar.

Loading the Current Configuration from an IP Office

The initial address ranges in which Manager searches for IP Office systems are set through the Manager preferences (File | Preferences | Discovery 139). The security mechanism used for configuration transfer between Manager and an IP Office are set through the Secure Communications attribute of Manager preferences (File | Preferences | Security 140).

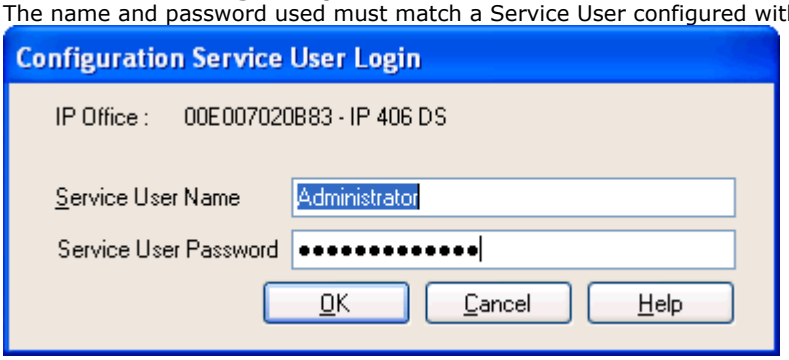
1. Click in the main toolbar or select **File | Open Configuration** from the menu bar.
2. The **Select IP Office** window appears, listing those IP Office systems that responded. The list can be sorted by clicking on the column names.



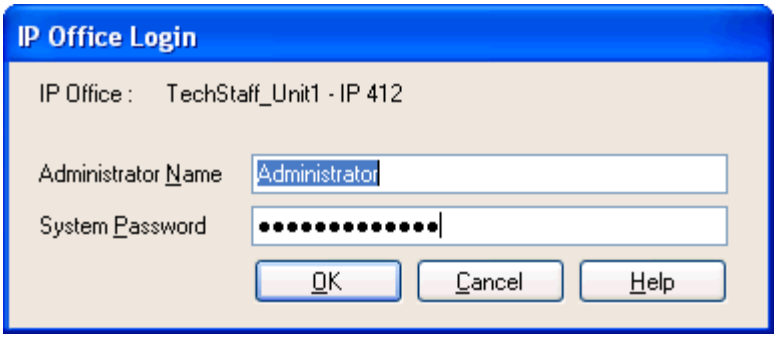
- If the system required was not found, the address used for the search can be changed. Enter or select the required address in the **Unit/Broadcast Address** field and then click **Refresh** to perform a new search.
- **Known Units** is not available unless configured, see Known IP Office Discovery 92.
- The **Unit/Broadcast Address** field is replaced by a **Enter Unit DNS Name or IP Address** field is Manager has been configured to **Use DNS**. See **File | Preferences | Discovery** 139 for more details.
- For IP Office 4.2+, the **Select IP Office** menu also displays IP Office systems which are not supported by the version of IP Office Manager being used. For example those with a core software level higher than the one with which the version of Manager being used was released. Those systems are listed as ***Not Supported***.

3. When the system required is located, check the box next to the system and click **OK**.
4. The name and password request is displayed. Enter the required details and click **OK**.

- **IP Office 3.2 and higher Systems:**
  The name and password used must match a Service User configured within the IP Office system's security settings.



- **Pre-3.2 IP Office Systems:**
  The name must match a Manager operator and the password must match the IP Office system's system password. If the name does not match a Manager operator, the config will still be loaded by using the Guest (read-only) operator.



5. If the configuration is not loaded it may be for various reasons:

- **Access Denied**
  This is displayed as the cause if the service user name/password were incorrect, or the service user has insufficient rights to read the configuration. The Retry option can be used to log in again but multiple rejections in a 10 minute period may trigger events, such as locking the user account, set by the Password Reject Limit and Password Reject Action options in the IP Offices security settings.
- **Failed to communicate with IP Office**
  This is displayed as the cause if the network link fails, or the secure communication mode is incorrect (for example Manager is set to unsecured, but the IP Office is set to secure only).
- **Account Locked**
  The account of the Service User name and password being used is locked. This can be caused by a number of actions, for example too many incorrect password attempts, passing a fixed expiry date, etc. The account lock may be temporary (10 minutes) or permanent until manually unlocked. An account can be enabled again through the IP Office's security settings.

6. Following a successful log in, addition messages may also appear before the configuration is loaded, such as:

- **Your service user account will expire in X days**
  This message indicates that an Account Expiry date has been set on the IP Office service user account and that date is approaching. Someone with access to the IP Office's security settings will be required unlock the account and set a new expiry date.
- **Your password will expire in X days. Do you wish to change it now?**
  This message indicates that password ageing has been configured in the IP Office's security settings. If your password expires, someone with access to the IP Office's security settings will be required to unlock the account.
- **Change password**
  Through the IP Office's security settings, a service user account can be required to change their password when logging in. The menu provides fields for entering the old password and new password.
- **Contact Information Check - This configuration is under Integrated Management control**
  This message will appear if you use a standalone copy of IP Office Manager to load the configuration from an IP Office system that is being managed through the Avaya Integrated Management (AIM) suite. Normally such as system should only be accessed using the tools included in AIM. The options available are:
  - **Cancel**
    Select this option to close the configuration without making any changes.
  - **Set configuration alteration flag**
    Select this option if the configuration is being opened because some urgent maintenance action. When the configuration is next opened, the fact that it has been altered will be indicated on the System | System 165 tab.
  - **Delete Contact Information**
    Select this option if the IP Office system is being permanently taken outside of management using AIM.

- **Contact Information Check - This configuration is under special control**
  This message will appear if a Manager user with administrator rights has entered their contact information into the configuration. For example to indicate that they do not want the configuration altered while a possible problem is being diagnosed. The options available are:
  - **Cancel**
    Select this option to close the configuration without making any changes.
  - **Set configuration alteration flag**
    Select this option if the configuration is being opened because some urgent maintenance action. When the configuration is next opened, the fact that it has been altered will be indicated on the System | System 165 tab.
  - **Delete Contact Information**
    Select this option to take the IP Office system out of special control.
  - **Leave contact information and flags unchanged *(Administrators only)***
    This option is only available to service users logging in with administrator rights.

Loading a Configuration Stored on PC

A configuration file previously saved on the PC can be reopened in Manager. This method of access does not require entry of a Service User name and password. All parts of the configuration are visible. In order to send a configuration opened this way to an IP Office 3.2 system, you must use a service user name with the Administrator operator rights view and rights to write with a reboot.

Use either of the following processes to load a saved configuration file:

1. If the files is one that has previously been opened offline, click the ▼ symbol next to  in the main toolbar. From the list of files displayed select the file required.

or

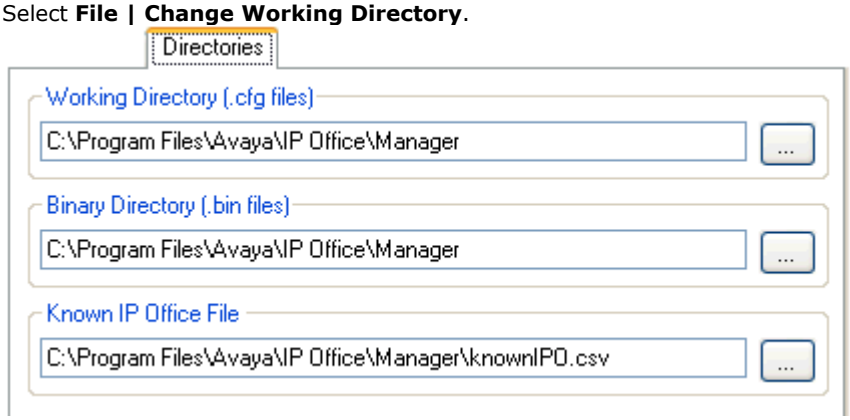
1. Click  the main toolbar or select **File | Offline | Open File** from the menu bar.
2. An **Open configuration file** window appears. Use this to browse to the required configuration file.
3. Select the file and click **Open**.

3.12.5 Known IP Office Discovery

When or **File | Open Configuration** is used, Manager displays the Select IP Office screen. This displays the IP Office systems discovered by either UDP broadcast and or TCP requests (see Setting the Discovery Addresses 87). The IP Office 4.0 Q2 2007 maintenance release adds a additional method which is to record details of discovered units and then display a list of those previously discovered ('known') IP Office systems.

Configuring Manager for Known System Discovery
Use of known systems discovery is not enabled by default. The IP Office Manager must be configured for the feature with a file location to which it can store and retrieve know system details.

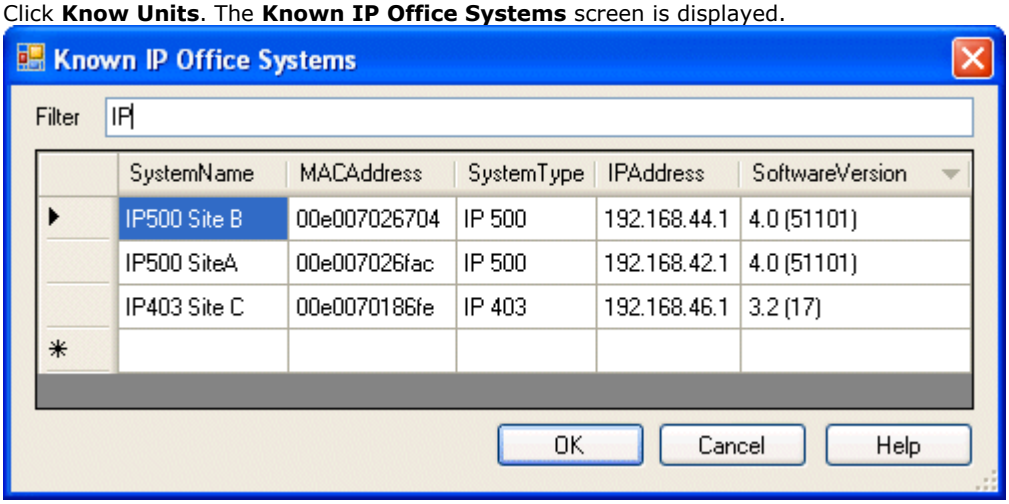
1. Select **File | Change Working Directory**.



2. In the Known IP Office File field, enter the directory path and file name for a CSV file into which Manager can write details of the IP Office systems it discovers. If the file specified does not exist it will be created the next time IP Office system discovery is performed from Manager.
3. Click **OK**.
4. When or **File | Open Configuration** is used, a **Known Units** button is now available on the Select IP Office screen.

Using Know System Discovery

1. Select or **File | Open Configuration**.
2. The **Select IP Office** screen is displayed.
3. Click **Know Units**. The **Known IP Office Systems** screen is displayed.



4. The screen displays the list of IP Office systems previously discovered and stored in the CSV file.
   - To select an IP Office control unit, highlight the row containing unit data and click OK. The selected unit will appear in the discovery list of the Select IP Office window. See Loading a Configuration 89.
   - To filter displayed units, type the first few characters of the unit name in the Filter field. Any unit whose name does match the filter from left to right will be temporarily hidden.
   - Each discovery appends data to the known unit list. It is possible that details of some entries in the list may be out of date. Right clicking on the leftmost (grey) column of any row will bring up a floating menu offering the options of Refresh and Delete.

- A new entry may be manually added without having to access the system first through normal discovery. Enter the IP address of the new system in the IP Address column of the blank row shown with a * and select Refresh from the floating menu. This will update the Known Units file with data relating to the unit with the specified address.
- Selecting the Cancel button will terminate the selection operation. It will not revert any manually created entries.

Note:

- The key used by the Known Systems CSV file is the IP address. The file cannot contain entries for separate systems that use the same IP address for access.
- The file can be made read only. In that case any attempts using Manager to update the file will be ignored.

3.12.6 Creating a New Configuration

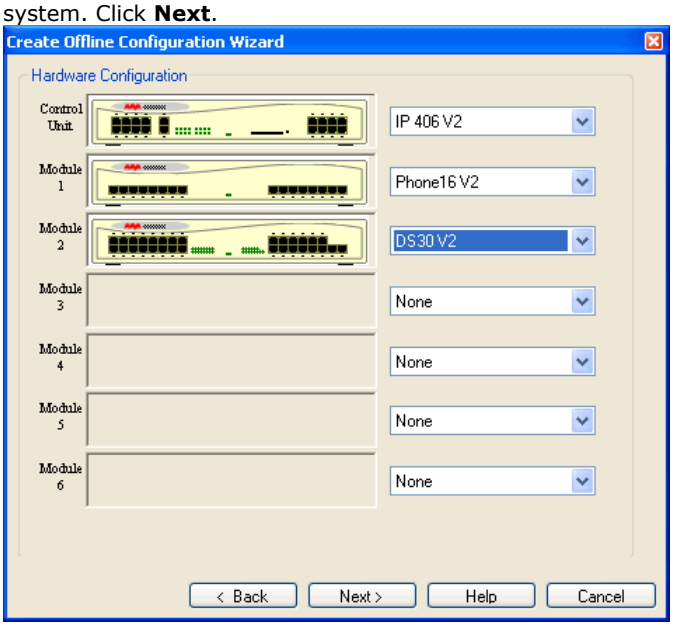
Manager can be used to create a new configuration without connecting to an IP Office system. During the process, you can specify the locale of the system, what type of trunk cards it uses and what type of control unit and expansion modules to include.

This allows the creation of a configuration prior to installation of the real system and so can be used to speed up installation.

- The configuration created must match the physical equipment in the IP Office system onto which the configuration will be loaded. Doing otherwise may cause the IP Office system to reset and experience other problems.
- The Create Configuration tool includes all control units, external expansion modules and trunk cards supported by IP Office. It is you responsibility to confirm what IP Office equipment is supported in your locale.

Creating a New Configuration

1. Click  in the main toolbar or select **File | Offline | Create New Config** from the menu bar.
2. Select the **Locale** for the system. This defines a range of features such as default telephony settings. Click **Next**.
3. **Fixed Length Numbering** is supported for IP Office 4.1+. The value can be ***None*** or ***3*** to ***9***. Click **Next**.
   - If a value is selected, all default extension, user and hunt group extension numbers created by Manager will be that length. in addition Manager will display a warning if an extension number of a different length is entered when editing the configuration.
4. Select the type of IP Office control unit. Then select the expansion modules, excluding WAN3, to also include in the system. Click **Next**.



5. The next step will depend on the type of IP Office control unit selected.
   - For Small Office Edition and IP400 series control units select the trunks cards to be included and the IP address of a WAN3 module if required.
   - For IP500 control units, first select the extension/VCM base cards required. Depending on the card selection different trunk daughter cards can then be added.
6. Click **Finish**.
7. The configuration is created and loaded into Manager.
8. Once this configuration has been edited as required it can be saved on the PC. In order to send it to the matching IP Office system, **File | Offline | Send Configuration** has to be used.

3.12.7 Importing and Exporting Settings

Manager can import configuration settings created elsewhere. This can be useful when setting up a new system or sharing common settings such as a directory between systems.

Settings are imported and exported in two formats:

- **Binary Files (.exp)**
  These are non-editable files. During import and export it is possible to select what types of entries should be included in the file. During import the whole file is imported.
- **Comma Separated Variable Text Files (.csv)**
  These are plain text files. In addition to being exported from an IP Office system these files can be created and edited using programs such as WordPad or Excel.
  - **UTF-8 Character Encoding**
    Manager imports and exports CSV files using UTF-8 character encoding which uses a double byte to support characters with diacritic marks such as **ä**. Other applications, such as Excel, may, depending on the user PC settings, use different encoding which will cause such characters to be removed or corrupted. Care should be taken to ensure that any tool used to create or edit the CSV supports all the characters expected and uses UTF-8 format.
    - **Importing into Manager from Excel**
      From Excel save the file as a .csv. This file will use ANSI character encoding. Open the file in Notepad and use the **Save As** option to rename the file and select UTF-8 encoding. Import the UTF-8 version of the file into Manager.
    - **Exporting from Manager into Excel**
      Do not double-click on the file exported from Manager. Start Excel and use **File | Open** to select the file. Excel will recognize that the file uses UTF-8 encoding and will start its text file importation wizard. Follow the wizard instructions and select comma as the field delimiter.

CSV File Formats
The format is CSV using commas as field separator, no text delimiters and no header row. The simplest way to check the required format for a CSV file prior to import, is to export and study the settings from an existing system.

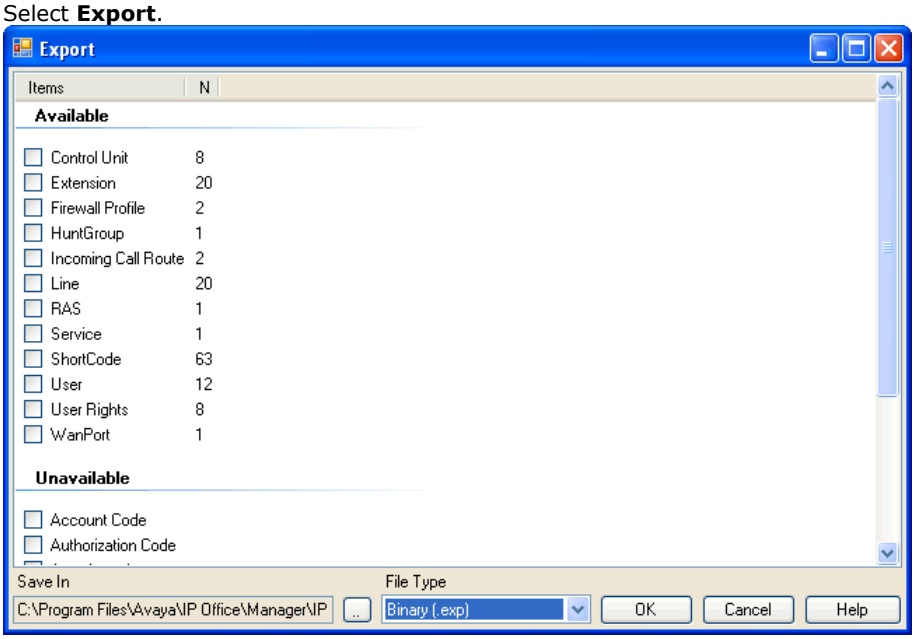
File Name	Fields in Order
Directory	Name, Number.
Hunt Group	Name, Extension, Group, Hunt, Rotary, Longest Waiting, Queuing On, Voicemail On, Broadcast, Voicemail Email.
License	License, License Key
Short Code	Code, Telephone Number, Feature.
User	Name, Extension, User Restriction/Rights, Voicemail Email.
Configuration	Proprietary format

Notes:

- **Hunt Group:** Apart from Name, Extension and Voicemail Email, the fields use a 1 or 0 value for on or off.
- **License:**
  - The License field is for information only and is ignored during import.
  - Following import the License name may appear as invalid with Manager. To resolve this save and then reload the configuration file.
- The format of the system CSV is too complex to be described. It is a full export of all the IP Office system's configuration settings. This file format should only be used for export and import between systems and not for any offline editing.

Exporting Settings

1. Select **File | Import/Export...** from the menu bar.
2. Select **Export**.

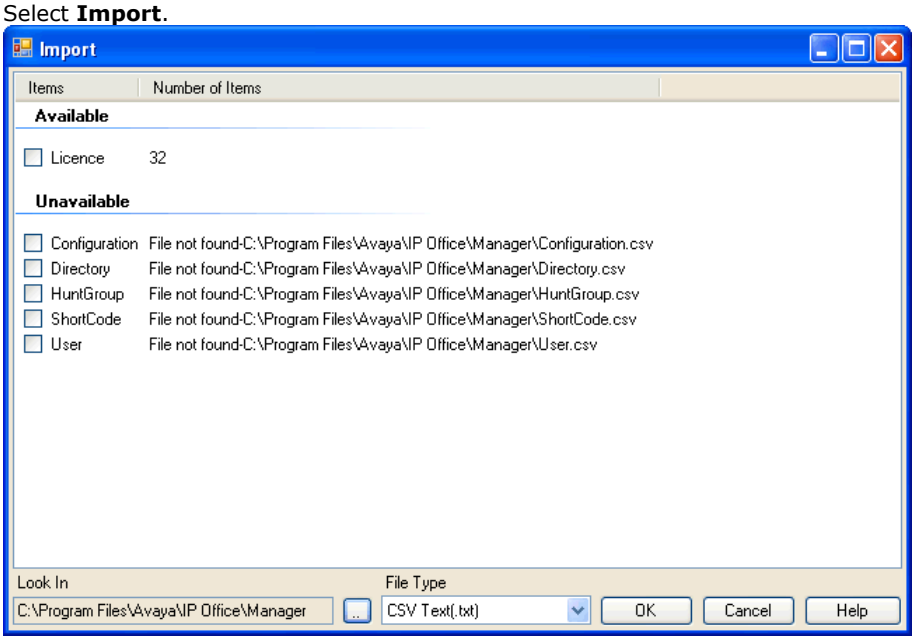


3. Select the type of file. The list of exportable entry types will change to match the file type.
4. Select the types of items that should be exported.
5. Use the Save In path to select the location for the exported files. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.
6. Click **OK**.

Importing Settings

Importing settings will overwrite any existing entries that match an entry being imported.

1. Select **File | Import/Export...** from the menu bar.
2. Select **Import**.



3. Select the type of file. The list of items will change to match the type of file selected and whether a matching file or files is found in the current file path.
4. Use **Look In** to adjust the file path. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.
5. Select the types of items that should be imported.
6. Click **OK**.

3.12.8 Copying and Pasting

IP Office Manager supports the normal Windows methods of cutting, copying, pasting and deleting entries and settings. These can be accessed through the Edit menu in the menu bar or using the standard Windows keyboard shortcuts for those actions. They can also be accessed by selecting an entry or text field and then right-clicking.

Copy and paste can be used with the navigation and group panes to create a new entry with the same settings as the original. The copy will be renamed as ***Copy of ...*** to avoid conflicting with the original.

When using copy and paste between individual settings fields, whether on the same entry or a different entry, care should be taken to ensure that the fields use the same type of data. Similarly copying an entry in the navigation or group pane and then pasting it into the details pane will prompt Manager to paste the copied entries data into the first field of the current entry in the details pane. As a general rule, cut and paste actions should be used with the same pane and within similar entry types.

For users and user rights, a number of controls have been provided to copy settings between a user and a user right or vice versa. See User Rights Overview 364 in the Configuration Settings section.

3.12.9 Saving a Configuration Offline

The IP Office system configuration settings shown within Manager can be saved as a .cfg file on the Manager PC. These files can be used as backups or sent to other persons to aid problem diagnostics. Note however that an offline configuration file does not include the Audit Trail records for the IP Office system.

Automatically Saving Sent Configurations

By default, Manager creates a file copy of the configuration before it is sent to the IP Office. This copy is stored in Manager's Working Directory using the IP Office's system name and .cfg. This behavior is controlled by the **Backup File on Send (File | Preferences | Security)** 140 option.

For IP Office 4.2+, the number of backups of each systems configuration can be limited to a set number of the most recent copies.

Saving a Configuration Received from an IP Office

1. Select **File | Save Configuration** as from the menu bar.

Saving a Configuration opened on the PC

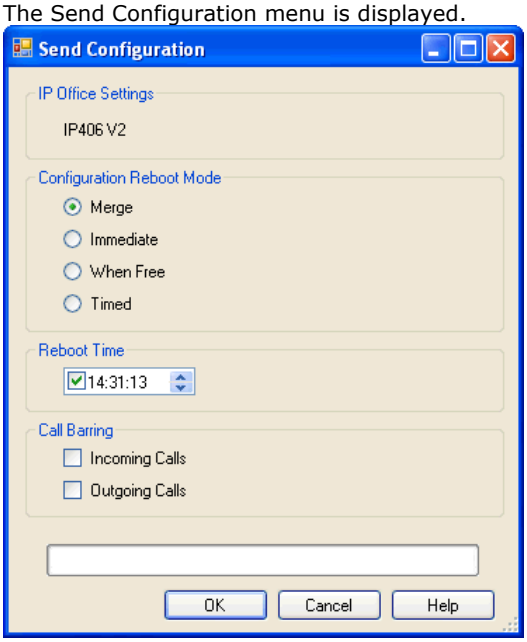
1. Click  in the main toolbar or select **File | Save Configuration** from the menu bar.

3.12.10 Sending a Configuration

The current configuration settings open within Manager can be sent to the IP Office system.

Sending a Configuration to an IP Office

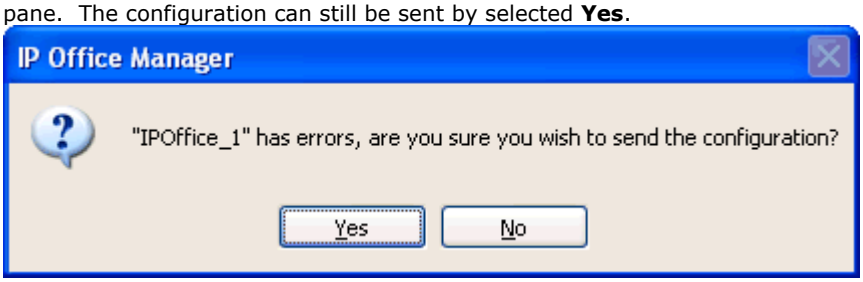
1. The first steps of this process depend on whether you are sending a configuration received from the IP Office system or sending one opened offline/created new.
   - **Received Configuration**
     Click  in the main toolbar or select **File | Save Configuration** from the menu bar.
   - **Opened Offline/Newly Created Configuration**
     Select **File | Offline | Send Config** from the menu bar.
2. The Send Configuration menu is displayed.



   - **Password - Pre-3.2 Systems Only**
     This field appears for pre-3.2 IP Office system. The system password should be entered. If sending the configuration to an IP Office 3.2 system, a Service User name and password are requested when OK is clicked.
   - **Configuration Reboot Mode**
     If Manager thinks the changes made to the configuration settings are mergeable, it will select Merge by default, otherwise it will select Immediate.
     - § **Merge**
       Send the configuration settings without rebooting the IP Office. This mode should only be used with settings that are mergeable. Refer to Mergeable Settings 85.
     - § **Immediate**
       Send the configuration and then reboot the IP Office.
     - § **When Free**
       Send the configuration and reboot the IP Office when there are no calls in progress. This mode can be combined with the **Call Barring** options.
     - § **Timed**
       The same as When Free but waits for a specific time after which it then wait for there to be no calls in progress. The time is specified by the **Reboot Time**. This mode can be combined with the **Call Barring** options.
   - **Reboot Time**
     This setting is used when the reboot mode Timed is selected. It sets the time for the IP Office reboot. If the time is after midnight, the IP Office's normal daily backup is canceled.
   - **Call Barring**
     These settings can be used when the reboot mode When Free is selected. They bar the sending or receiving of any new calls.
3. Click **OK**. For IP Office 3.2 systems a Service User name and password will be requested.
   - If the service user name or password used do not have a match on the IP Office, ***"Access Denied"*** is displayed.
   - If the service user name used does not have rights to send a configuration or to request a reboot or merge, "Insufficient service user rights" is displayed.

- If the service user name used does not have operator rights to make the changes that have been made to the configuration, ***"Insufficient operator rights. Operator cannot modify xxxx records"*** is displayed.

4. The following warning will appear if the configuration being sent contain any errors indicated by a icon in the error pane. The configuration can still be sent by selected **Yes**.



3.12.11 Erasing the IP Office Configuration

The configuration settings on an IP Office can be erased. During this process the IP Office is rebooted and starts with a set of default settings 100.

This process does not erase the security settings of the IP Office system. Those can only be reset by a separate process detailed in the IP Office Installation Manual.

Erasing the Configuration

This action returns the IP Office system to its default settings 100.

1. Select **File | Advanced | Erase Configuration (Default)**.
2. Enter a valid user name and password.
3. The IP Office system will be rebooted.

3.12.12 Default Settings

The following applies to new IP Office control units and those defaulted using the Erase Configuration 100 command. It also applies to IP500 control units defaulted using the reset button on the rear of the unit (refer to the IP Office Installation manual for details of using the reset button).

Default Short Codes

IP400 control units are manufactured as either A-Law or U-Law variants. For IP500 control units, A-Law or U-Law variant operation is determined by the IP500 Smart Card installed. Depending on the variant, different sets of short codes are created for the default configuration. See the Default System Short Code List 396.

Default Data Settings

When a defaulted IP Office control unit is switched on, it requests IP address information from a DHCP Server on the network. This operation will occur whether the LAN cable is plugged in or not.

- If a DHCP server responds within approximately 10 seconds, the control unit defaults to being a DHCP client and uses the IP address information supplied by the DHCP server.
- If no DHCP Server responds, the control unit defaults to being the DHCP server for the LAN using the following settings:
  - For its LAN1 it allocates the IP address 192.168.42.1 and IP Mask 255.255.255.0. It supports 200 DHCP clients using the addresses range 192.168.42.2 and 192.168.42.201, the IP Mask 255.255.255.0 and default gateway address 192.168.42.1 (the Control Unit's LAN1 address).
  - For its LAN2 if supported, it allocates the IP address 192.168.43.1 and IP Mask 255.255.255.0.
  - Note that the IP Office does not check that these addresses are valid and or available on the network.

This mode of operation will persist for subsequent power ups, until a config save occurs due to one of the following

- The unit performs its automatic midnight backup.
- A configuration is merged using IP Office Manager.
- A soft reboot is performed using IP Office Manager.
- A software upgrade is performed.

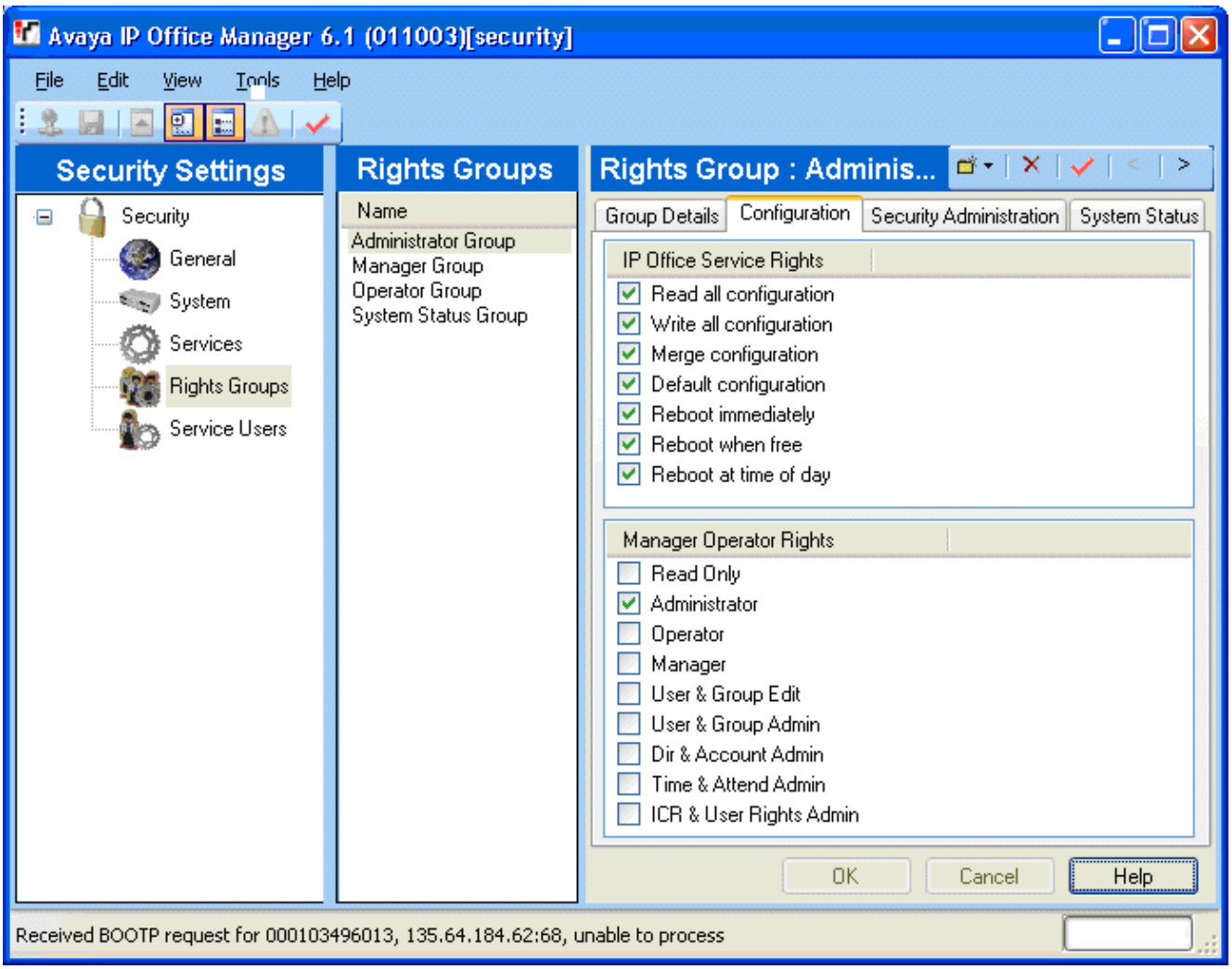
Chapter 4.
Security Mode

4. Security Mode

Security settings are used to control who can access the configuration settings of an IP Office system and what they are able to do with that access. They also control which applications are able to access the configuration settings.

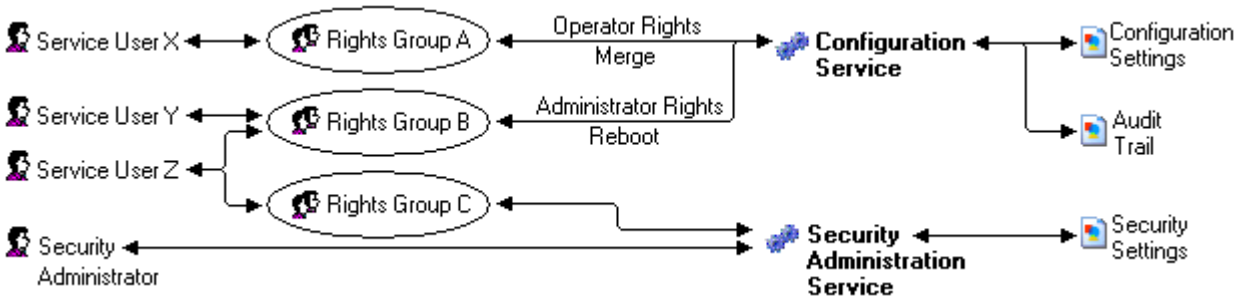
The security settings are stored on the IP Office system and are separate from the system's configuration settings.

To change a system's security settings, Manager must first be switched to security mode by selecting File | Advanced | Security Settings from the menu bar.



4.1 Security Settings

Access to IP Office 3.2+ system settings is controlled by Service Users and Rights Groups. All actions involving communications between the Manager user and the IP Office require a Service User name and password. That Service User must be a member of a Rights Group configured to perform that action.



In the example illustrated above:

- Service User X can read and write the configuration. However they can only edit Operator settings and can only make changes that can be merged.
- Service User Y can read and write the configuration, edit all settings and make changes that require reboots.
- Service User Z can read and write the configuration, edit all settings and make changes that require reboots. They can also access the security settings.
- The Security Administrator can only access the security settings.

Security Administrators
By default the security administrator is the only user who can access the IP Office's security settings using Manager's security mode.

Service Users
Each Service User has a name, a password and is a member of one or more Rights Groups.

Rights Groups
The Rights Groups to which a Service User belongs determine what actions they can perform. Actions available to Rights Groups include configuration actions, security actions and system status actions:

Configuration	Security	System Status
• **Read the configuration.** • **Write the configuration.** • **Merge the configuration.** • **Default the configuration.** • **Reboot immediately.** • **Reboot when free.** • **Reboot at time of day.**	• **Read all security settings.** • **Write all security settings.** • **Reset all security settings.** (IP Office 4.1+) • **Write own password.** (IP Office 4.1+)	• **System Status Access.** • **Read All Configuration.**

Where a Service User has been configured as a member of more than one Rights Group, they combine the functions available to the separate Rights Groups.

Operator Rights
Each Rights Group has a Manager Operator Rights setting. This setting controls what types of configuration entries Manager will allow members of the Rights Group to view and what actions they can perform with those types of entries.

Operator	View/Edit/ New/ Delete	Configuration Entry Types
Administrator	All	View, edit create and delete all configuration entries.
Manager	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS, E911 System.
	New	
	Delete	As edit except Short Code.
Operator	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, Licence, ARS, E911 System.
	New	None.
	Delete	Delete Incoming Call Route and Directory.
User & Group Edit	View	User and Hunt Group entries only.
	Edit	
	New	None
	Delete	
User & Group Admin	All	User and Hunt Group entries only.
Dir & Account Admin	All	Directory and Account Code entries only.
Time & Attendant Admin	All	Time Profile and Auto Attendant entries only.
ICR & User Rights Admin	All	Incoming Call Route and User Rights entries only.
Read Only	View	View all configuration entries.
	Edit	None.
	New	
	Delete	

4.2 Default Security Users

This section lists the default Rights Groups and Service Users for IP Office 4.0+ systems.

- ⚠ **WARNING: Change Passwords**
  New IP Office systems and systems upgraded from pre-IP Office 3.2 use default security settings. These settings must be changed to make the system secure. At minimum you must change the default passwords of the Security Administrator and the default Service Users. Failure to do so will render the IP Office system unsecure.

Unique Security Control Unit			
Enabled	✓		
Name	security		
Password	securitypwd		
Default Service Users			
Name	Administrator	Manager	Operator
Password	Administrator	Manager	Operator
Rights Group Membership			
- Administrator Group	✓	✗	✗
- Manager Group	✗	✓	✗
- Operator Group	✗	✗	✓
- System Status Group	✓	✓	✓
Default Rights Groups			
Name	Administrator Group	Manager Group	Operator Group
Operator View	Administrator	Manager	Operator
Read Configuration	✓	✓	✓
Write Configuration	✓	✓	✓
Default Configuration	✓	✓	✓
Merge	✓	✓	✓
Reboot Immediately	✓	✓	✓
Reboot When Free	✓	✓	✓
Reboot at Time	✓	✓	✓
Read All Security Settings	✗	✗	✗
Write All Security Settings	✗	✗	✗
Reset All Security Settings (IP Office 4.1+)	✗	✗	✗
Write own service user password (IP Office 4.1+)	✗	✗	✗

4.3 The Security Mode Interface

Manager can be switched to security mode. This mode it is used to load and edit the security settings of an IP Office 3.2 system. How the controls operate is the same as for Manager in configuration mode.



Switching Manager to Security Mode

1. Select **File | Advanced | Security Settings**.

Switching Manager Back to Configuration Mode

1. Select **File | Configuration**.

Manager Security Mode Screen Elements

- **Menu Bar**
  Provides commands for loading and saving security settings. See the Menu Bar Commands 134 section.
- **Main Toolbar**
  The toolbar icons perform the following actions:
  - **Get the Security Settings.**
  - **Save the Security Settings.**
  - **Not Used in security mode.**
  - **Show/Hide the Navigation Pane.**
  - **Show/Hide the Group Pane.**
  - **Not used in security mode.**
  - **Not used in security mode.**
- **Security Settings Pane**
  This pane is used to select the type of security entries that should be displayed in the group pane or details pane.
  - **General**
    Defines general security controls for the IP Office system. When selected, the settings are displayed in the details pane.
  - **System**
    Defines security settings for the IP Office such as application access. When selected, the settings are displayed in the details pane.
  - **Services**
    Secure services supported by the IP Office. Currently these are access to security settings and access to configuration settings.
  - **Rights Groups**
    Create groups with different access rights. When selected, the existing Rights Groups are displayed in the group pane.
  - **Service Users**
    Sets the name and password for an administrator. Also allows selection of the Rights Groups to which the user belongs. When selected, the existing Service Users are displayed in the group pane.
- **Group Pane**
  This pane is used to display the existing Right Groups or Service Users when those options are selected in the security settings pane.
- **Details Pane**
  This pane shows the settings selected in the security settings pane or the group pane.
- **Status Bar**
  This bar display messages about communications between Manager and IP Office systems. It also displays the security level of the communications by the use of a padlock icon.

4.4 Security Administration

This appendix covers the background to administrating IP Office 4.1+ in a secure environment, including policy considerations and implementation choices. This section also covers a basic introduction to security principles and the security mechanisms on IP Office.

- **NOTE:** If IP Office administration security is of no concern, the default settings allow modification of all IP Office features without restriction. It is recommended as a minimum that default passwords are changed.

1. Introduction

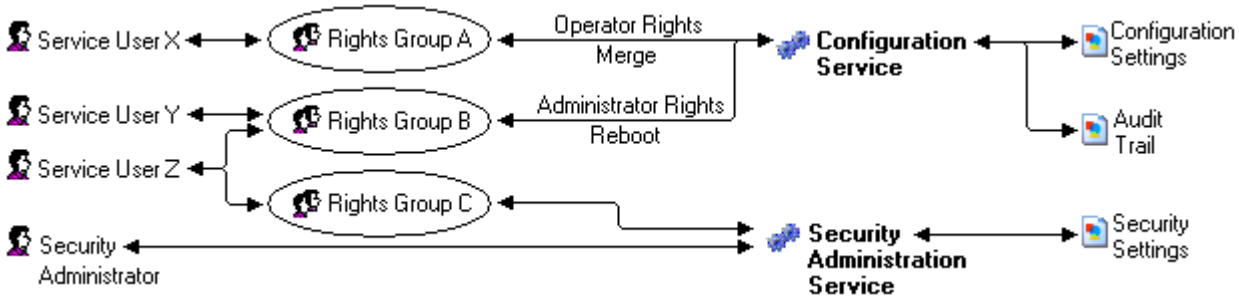
Administration security on IP Office is achieved using a number of optional cryptographic elements:

- Access control to prevent unauthorized use. Supported in version 3.2+.
- Encryption to guarantee data remains private. Supported in version 4.1+.
- Message Authentication ensures data has not been tampered with. Supported in version 4.1+.
- Identity assures the source of the data. Supported in version 4.1+.

2. Access Control

Access to configuration, security settings and SSA on IP Office 3.2+ are controlled by the use of Service Users, passwords and Rights Groups.

All actions involving communications between the Manager user and the IP Office require a Service User name and password. That Service User must be a member of a Rights Group configured to perform that action.



In the example illustrated above:

- Service User X can read and write the configuration. However they can only edit Operator settings and can only make changes that can be merged.
- Service User Y can read and write the configuration, edit all settings and make changes that require reboots.
- Service User Z can read and write the configuration, edit all settings and make changes that require reboots. They can also access the security settings.
- The Security Administrator can only access the security settings.

Security Administrator
By default the security administrator is the only user who can access the IP Office's security settings using Manager's security mode.

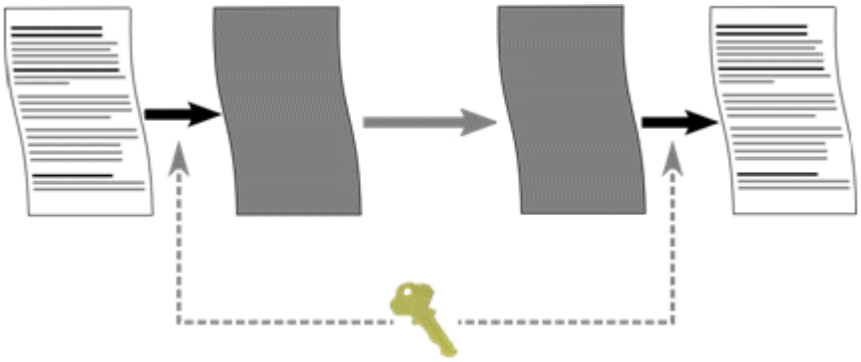
Service Users
Each Service User has a name, a password and is a member of one or more Rights Groups.

Rights Groups
The Rights Groups to which a Service User belongs determine what actions they can perform. Actions available to Rights Groups include configuration actions, security actions and system status actions.

Where a Service User has been configured as a member of more than one Rights Group, they combine the functions available to the separate Rights Groups.

3. Encryption

Encryption ensures that all data sent by either IP Office or Manager cannot be 'read' by anyone else, even another copy of Manager or IP Office. Encryption is the application of a complex mathematical process at the originating end, and a reverse process at the receiving end. The process at each end uses the same 'key' to encrypt and decrypt the data:



On IP Office 4.1+, any data sent may be optionally encrypted using a number of well known and cryptographically secure algorithms:

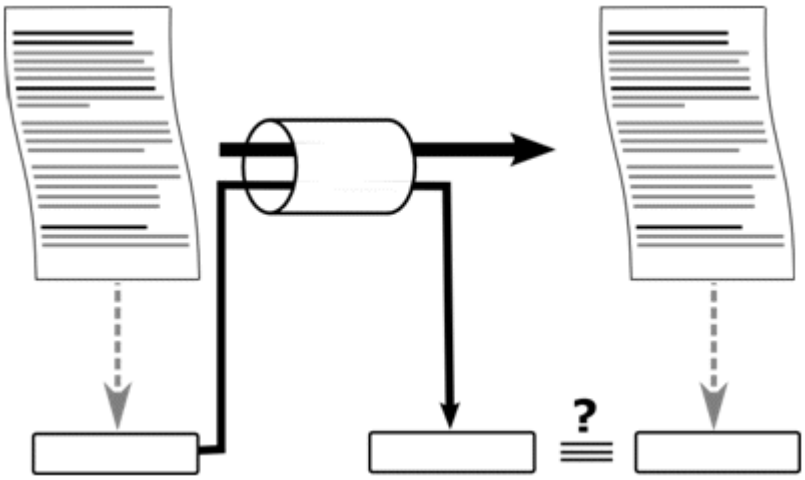
Algorithm	Effective key size (bits)	Use
DES-40	40	Not recommended.
DES-56	56	'Minimal' security.
3DES	112	'Strong' security.
RC4-128	128	'Strong' security.
AES-128	128	'Very strong' security.
AES-256	256	'Very strong' security.

In general the larger the key size, the more secure the encryption. However smaller key sizes usually incur less processing.

IP Office supports encryption using the Transport Layer Security (TLS) v1.0 protocol. In addition, many cryptographic components of the TLS module have been FIPS 140-2 certified, indicating the accuracy of implementation.

4. Message Authentication

Message authentication ensures that all data sent by either IP Office or Manager cannot be tempered with (or substituted) by anyone else without detection. This involves the originator of the data producing a signature (termed a hash) of the data sent, and sending that as well. The receiver gets the data and the signature and check both match.



On IP Office 4.1+, any data sent may be optionally authenticated using a number of well known and cryptographically secure algorithms:

Algorithm	Effective hash size (bits)	Use
MD5	128	'Minimal' security.
SHA-1	160	'Strong' security.

In general the larger the hash size, the more secure the signature. However smaller hash sizes usually incur less processing.

IP Office supports message authentication using the Transport Layer Security (TLS) v1.0 protocol. In addition, many cryptographic components of the TLS module have been FIPS 140-2 certified, indicating the accuracy of implementation.

5. Identity

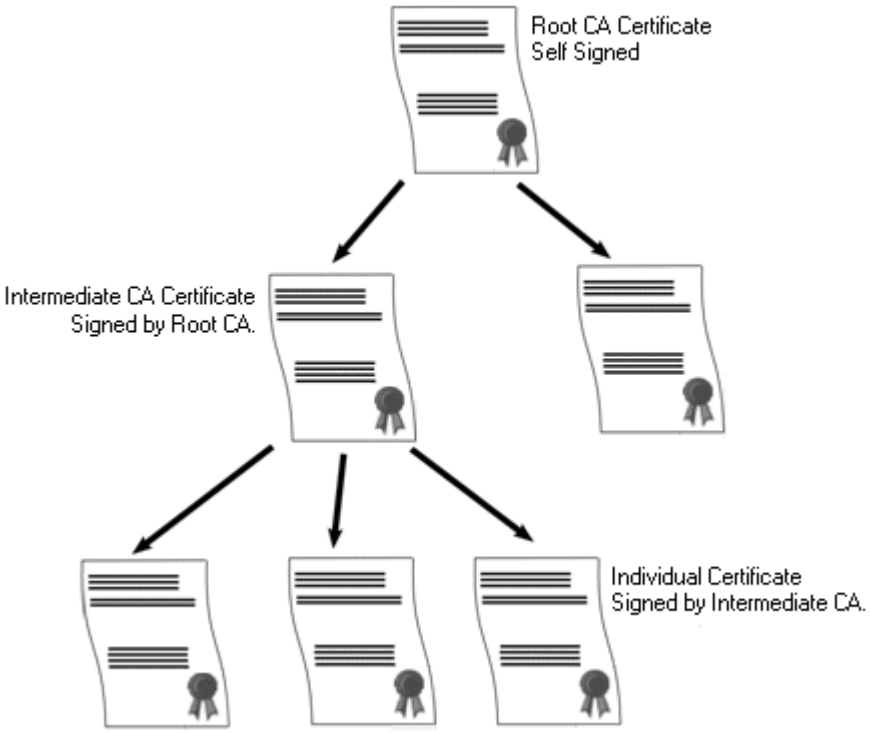
The identity of the equipment or person at each end of the link is achieved by the used of digital certificates – more specifically X.509 v3 certificates. Digital certificates are the preferred mechanism for the majority of internet-based applications including e-commerce and email, and can be thought of as a credential, just like a passport or drivers' license.

A digital certificate contains at least three things:

- A public key.
- Certificate information (Identity information about the user, such as name, user ID, and so on.)
- One or more digital signatures

The purpose of the digital signature on a certificate is to state that the certificate information has been verified to by some other person or entity. The digital signature does not verify authenticity of the certificate as a whole; it vouches only that the signed identity information goes along with, or is bound to, the public key: A certificate essentially is a public key with one or two forms of ID attached, plus a stamp of approval from some other 'trusted individual'.

Trusted individuals (also termed Certificate Authorities) themselves have publicly available certificates, which can contain signatures from their trusted authorities. These can be verified all the way up to a 'self-signed' root certificate from a root certificate authority.



Examples of root certificate authorities' certificates can be found in every web browsers' certificate store.

6. Windows Certificate Store Usage

The certificate store that is used by the IP Office Manager to save X509 certificates to and retrieve certificates from is the default one provided by the Windows operating system. This may be accessed for maintenance purposes by a user with sufficient permission via the use of a 'snap-in'.

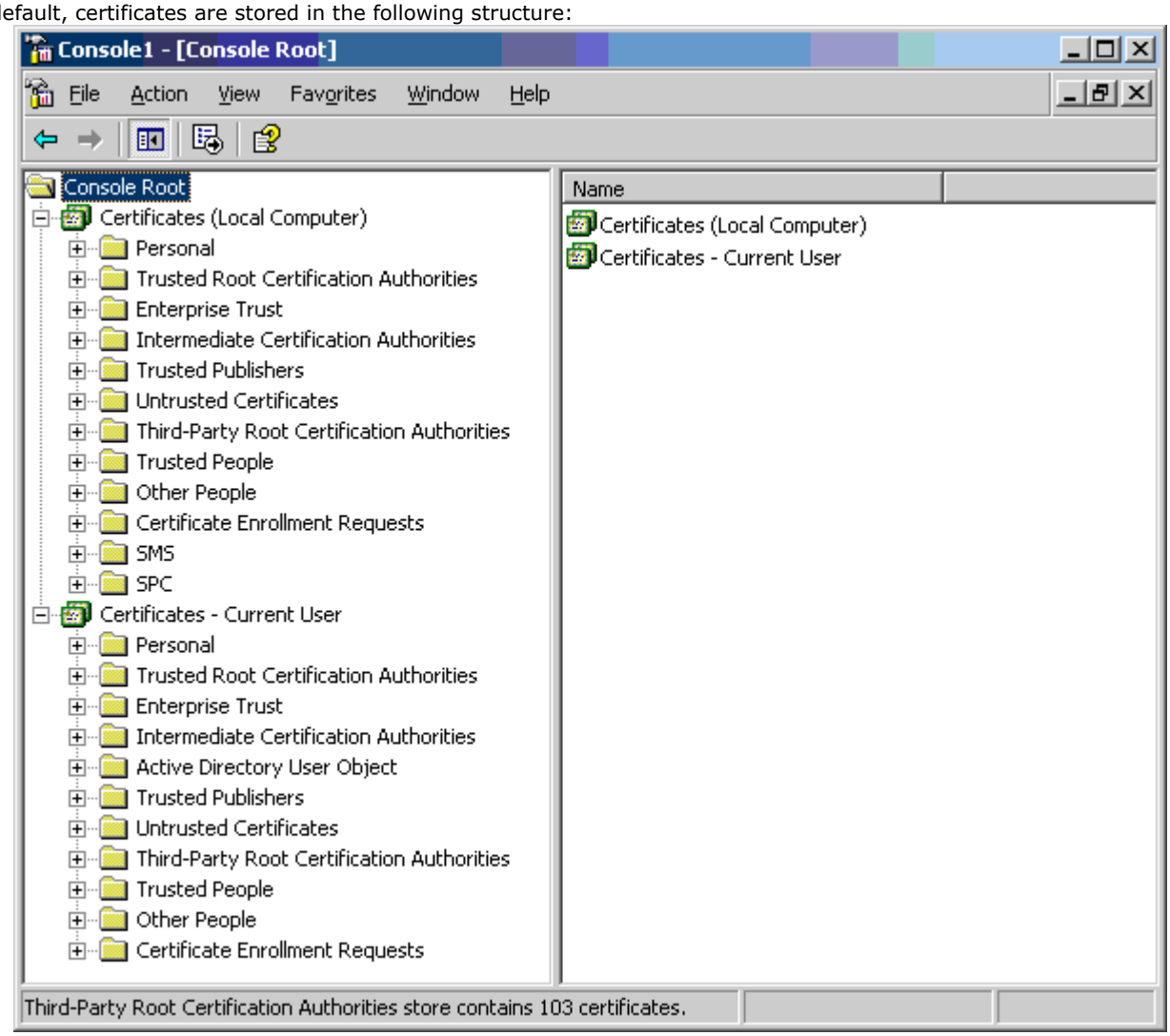
- **WARNING**
  Avaya accept no responsibility for changes made by users to the Windows operating system. Users are responsible for ensure that they have read all relevant documentation and are sufficiently trained for the task being performed.

If not installed already, the Microsoft Management Console (MMC) Certificates snap-in can be installed by following the relevant instructions. Both 'user account' and 'computer' options should be installed.

- **For Windows XP Professional:**
  http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag_cm_addsnap.mspx
- **For Windows Server 2003:**
  http://technet2.microsoft.com/windowsserver/en/library/4fa4568e-16de-4a64-b65e-12ee14b31dc21033.mspx?mfr=true
- **For Windows Vista:**
  http://technet2.microsoft.com/WindowsVista/f/?en/library/a8b21b9b-d102-4045-9f36-e4b3430d2f381033.mspx

7. Windows Certificate Store Organization

By default, certificates are stored in the following structure:



Each of the sub folders has differing usage. The Certificates - Current User area changes with the currently logged-in windows user. The Certificate(Local Computer) area does not change with the currently logged-in windows user.

IP Office Manager only accesses some of the certificate sub folder:

Certificates (Local Computer) Folder	IP Office Manager Use
Personal | Certificates	• Folder searched by Manager 1st for matching certificate to send to IP Office when requested. Certificate matched by the subject name contained in **File | Preferences | Security | Certificate** offered to IP Office. • Folder accessed whenever **'Local Machine certificate store'** used for Security Settings. • Folder searched by Manager for matching certificate when certificate received from IP Office, and **File | Preferences | Security | Manager Certificate Checks** = Medium or High.
Trusted Root Certification Authorities | Certificates	• Folder searched by Manager for matching parent certificates when non-self signed certificate received from IP Office, and **File | Preferences | Security | Manager Certificate Checks** = Medium or High.

Certificates – Current User Folder	IP Office Manager Use
Personal | Certificates	• Folder searched by Manager 2nd for matching certificate (subject name) to send to IP Office when requested. Certificate matched by the subject name contained in **File | Preferences | Security | Certificate** offered to IP Office. • Folder accessed whenever **'Current User certificate store'** used for Security Settings. • Folder searched by Manager for matching certificate when certificate received from IP Office, and **File | Preferences | Security | Manager Certificate Checks** = Medium or High.
Trusted Root Certification Authorities | Certificates	• Folder searched by Manager for matching parent certificates when non-self signed certificate received from IP Office, and **File | Preferences | Security | Manager Certificate Checks** = Medium or High.
Other People | Certificates	• Folder searched by Manager for matching parent certificates when non-self signed certificate received from IP Office, and **File | Preferences | Security | Manager Certificate Checks** = Medium or High.

8. Windows Certificate Store Import

In order to use certificates – either for IP Office security settings or Manager operation – they must be present in the windows certificate store. Certificates may be placed in the store by the Certificate Import Wizard or the Certificate MMC snap-in

The Certificate Import Wizard can be used whenever a certificate is viewed. In order for Manager to subsequently access this certificate the Place all certificate in the following store option must be selected:

- If the certificate is to subsequently identify the IP Office, the Other People folder should be used.
- If the certificate is to subsequently identify the Manager, the Personal folder should be used, and the associated private key saved as well.

If the saved certificate is to be used by other windows users, the MMC certificate snap-in must be used to move it to the Certificates (Local Computer) folder.

9. Certificate Store Export

Any certificate required outside of the Manager PC required to be first saved in the Certificate store, then exported using the MMC snap-in.

If the certificate is to be used for identity checking (i.e. to check the far entity of a link) the certificate alone is sufficient, and should be saved in PEM or DER format.

If the certificate is to be used for identification (i.e. to identify the near end of a link) the certificate and private key is required, and should be saved in PKCS#12 format, along with a password to access the resultant .pfx file.

10. Implementing IP Office Administration Security

This section suggests IP Office security settings that could implement possible security requirements. This section does not cover the general aspects of security policy analysis or definition, or how IP Office administration security interacts with other security mechanism.

10.1. Negligible Security

If all Manager and IP Office security settings are left at default, no security mechanisms are active, other than the use of default service user names and passwords. In addition, all legacy interfaces are active, and all configuration and security data is sent unencrypted.

It is recommended that at the very least, the default service user passwords are changed.

10.2. Minimum Security

A minimum security scenario could be where configuration data is open, but the security settings are constrained: Any individual with the correct service user name and password can access the configuration from any PC installation of Manager, no logging of access: Passwords can be simple, and will never age.

- Change all default passwords of all service users and Security Administrator
- Set IP Office Security Administration service security level to Secure, Low.
- Set IP Office Service User Password Reject Action to None.
- Set IP Office Client Certificate Checks level to None (default).
- Set IP Office Minimum Password Complexity to Low (default).
- Set IP Office Previous Password Limit to zero (default).
- Set IP Office Password Change Period to zero (default).
- Set IP Office Account Idle Time to zero (default).
- Set certificate check level to low in Manager Security Preferences (default).

In addition, any PC installation of Manager can manage any IP Office.

10.3. Medium Security

A medium security scenario could be where both configuration and security settings are constrained and a level of logging is required: Any individual with the correct service user name and password can access the configuration from any PC installation of Manager: Passwords cannot be simple, and will age.

- Change all default passwords of all service users and Security Administrator
- Set IP Office Security Administration service security level to Secure, Medium.
- Set IP Office Configuration service security level to Secure, Medium.
- Set IP Office Service User Password Reject Action to Log to Audit Trail (default).
- Set IP Office Client Certificate Checks level to None (default).
- Set IP Office Minimum Password Complexity to Medium.
- Set IP Office Previous Password Limit to non zero.
- Set IP Office Password Change Period to non zero.
- Set IP Office Account Idle Time to zero (default).
- Disable all IP Office Unsecured Interfaces.
- Set certificate check level to low in Manager Security Preferences (default).

10.4. Maximum Security

A maximum security scenario could be where both configuration and security settings are constrained and a full level of logging is required: Certified individuals with the correct service user name and password can access the configuration from specific PC installations of Manager: Passwords cannot be simple, and will age: Manager can managed specific IP Office systems.

- Change all default passwords of all service users and Security Administrator
- Set IP Office Security Administration service security level to Secure, High.
- Set IP Office Configuration service security level to Secure, High.
- Set IP Office Service User Password Reject Action to Log and Disable Account.
- Set IP Office Client Certificate Checks level to High.
- Set IP Office Minimum Password Complexity to High.
- Set IP Office Minimum Password Length to >8.
- Set IP Office Previous Password Limit to non zero (>5).
- Set IP Office Password Change Period to non zero.
- Set IP Office Account Idle Time to non zero.
- Set IP Office Session ID Cache to zero.
- Install valid, 1024 bits+, non self signed certificates (+private key) in all IP Office server certificates, derived from a trusted certificate authority.
- Install the corresponding trusted CA certificate in each of the Manager's windows certificate stores.
- Install valid, 1024 bits+, non self signed certificate (+ private key) in all Manager Certificate Stores.
- Install the corresponding certificates in all IP Office Certificate Stores of all permissible Manager entities, and the trusted CA certificate.
- Disable all IP Office Unsecured Interfaces.
- Set Manager Certificate Checks level to high in Manager Security Preferences.
- Set Certificate offered to IP Office in Manager Security Preferences.

The above essentially locks the IP Office systems and corresponding Managers together. Only recognised (by strong certificate) entities may communicate successfully on the service interfaces. All services use strong encryption and message authentication.

The use of intermediate CA certificates can be used to overcome the limit of 6 maximum certificates in each IP Office Certificate Store.

4.5 Editing Security Settings

Security settings can only be loaded directly from an IP Office system. These settings cannot be saved as a file on the local PC, nor do they appear as a temporary file at any time.

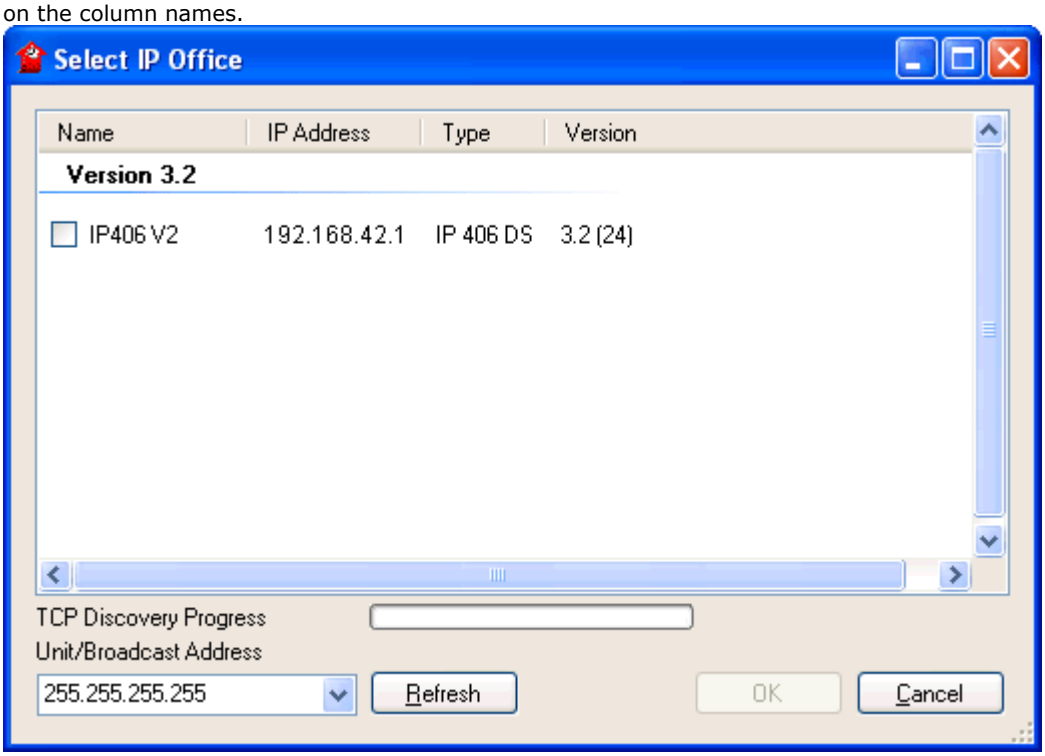
An important change for IP Office 4.1 is to optionally secure the link between the IP Office system and Manager for configuration and security settings exchanges. By default Manager (and IP Office) will always attempt to use the original, unsecured link. The control of which mechanism is used by Manager is determined Manager preferences.

When secure communications mode is selected a padlock icon is present on the Manager status bar.

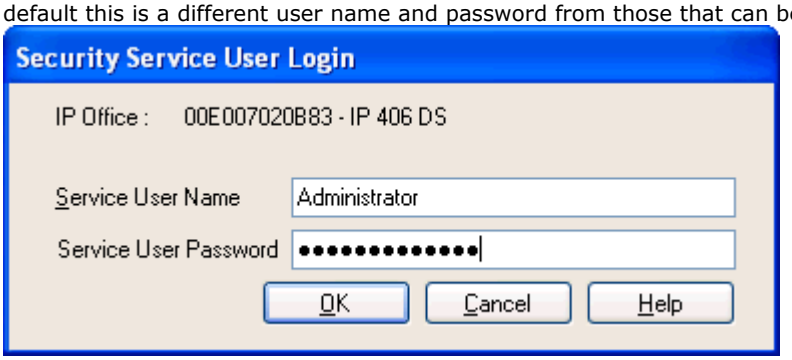
Loading an IP Office's Security Settings

The address ranges in which Manager searches for IP Office systems are set through the Manager preferences (**File | Preferences | Discovery** 137). The security mechanism used for security settings transfer between Manager and an IP Office are set through the Secure Communications attribute of Manager preferences (**File | Preferences | Security**).

1. If not already done, switch Manager to security mode by selecting **File | Advanced | Security Settings**.
   - Note: If the IP Office system's configuration settings have already been loaded using a Service User name and Password that also has security access, then the security settings are automatically loaded when Manager is switched to security mode.
2. If already in security mode, click in the main toolbar or select **File | Open Security Settings** from the menu bar.
3. The Select IP Office window appears, listing those IP Office systems that responded. The list can be sorted by clicking on the column names.



4. If the system required was not found, the address used for the search can be changed. Enter or select the required address in the Unit/Broadcast Address field and then click Refresh to perform a new search.
5. When the system required is located, check the box next to the system and click OK.
6. The user name and password request for the system is then displayed. Enter the required details and click OK. By default this is a different user name and password from those that can be used for configuration access.



7. If the security settings are received successfully, they appear within Manager.

- If the service user name/password is incorrect, or the service user has insufficient rights to read the security settings, ***"Access Denied"*** is displayed.
- If the network link fails, or the secure communication mode is incorrect (for example Manager is set to unsecured, but the IP Office is set to secure only), ***"Failed to communicate with IP Office"*** is displayed.

Editing Security Settings

Editing security settings differ from editing configuration settings in a number of ways:

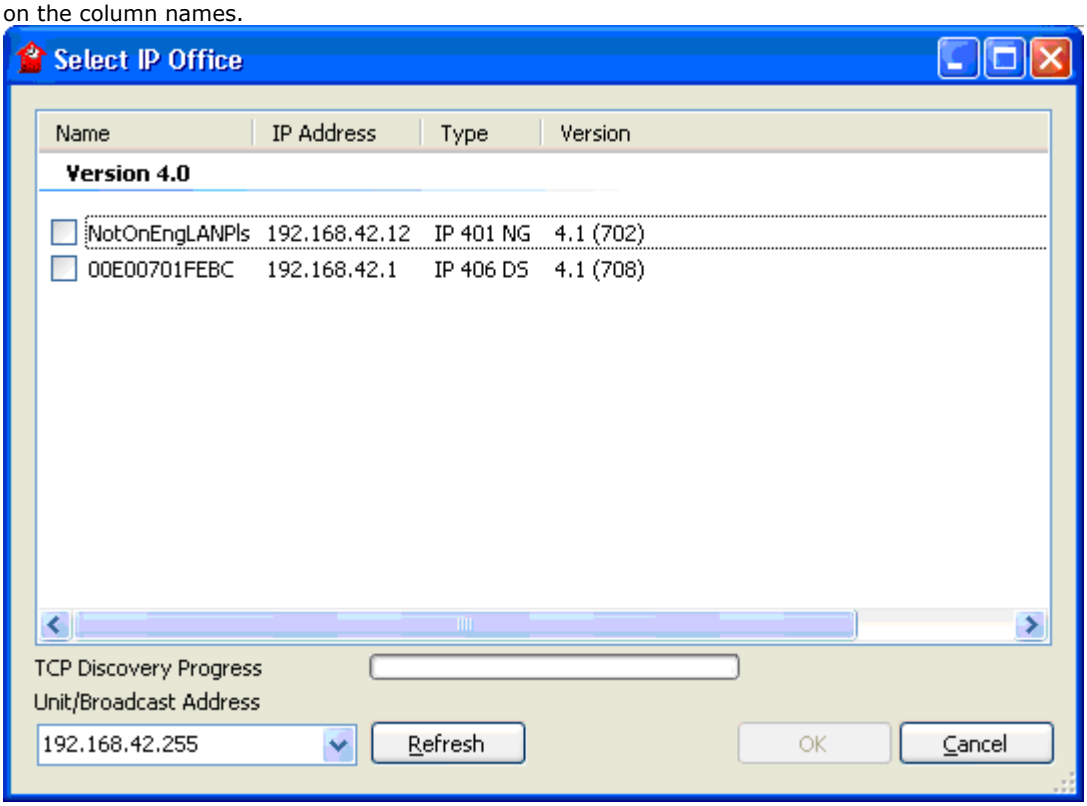
1. Editing of security settings may only be done online to an IP Office. No offline saving or editing is allowed for security purposes.
2. No errors in the security settings are allowed to persist. This prevents the IP Office becoming inaccessible through operator error.
3. Sets of changes to security objects may be made without the need for the OK button to be selected every time. This allows a coordinated set of changes to be accepted or canceled by the operator.

Saving Security Settings

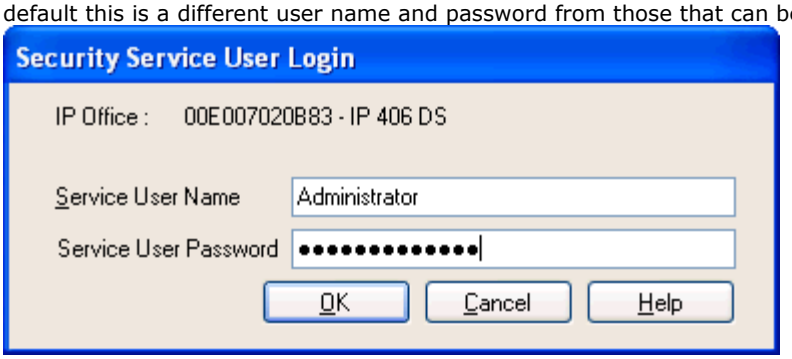
1. Click  in the **Main Toolbar** or select **File | Save Security Settings** from the menu bar. These options are only available when some change has been made.
2. The user name and password request for the system is then displayed. Enter the required details and click **OK**. By default this is a different user name and password from those that can be used for configuration access.

Resetting An IP Office's Security Settings
This option is only supported by IP Office 4.1 and higher systems. For other systems the method of resetting security settings requires is through the IP Office's DTE port, refer to the IP Office Installation manual for details.

1. Select **File | Reset Security Settings** (if in security mode), or **File | Advanced | Erase Security Settings** (if in configuration mode).
2. The **Select IP Office** window appears, listing those IP Office systems that responded. The list can be sorted by clicking on the column names.



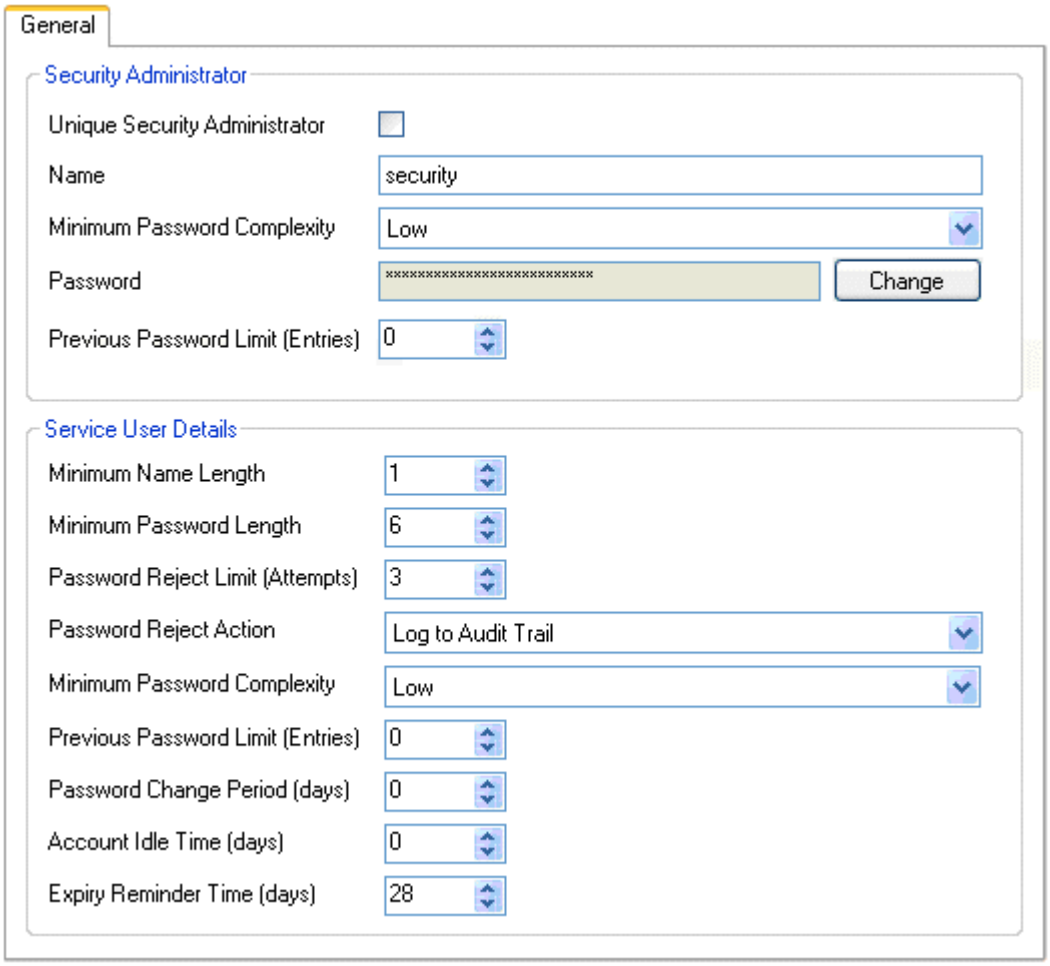
3. When the system required is located, check the box next to the system and click **OK**.
4. The user name and password request for the system is then displayed. Enter the required details and click **OK**. By default this is a different user name and password from those that can be used for configuration access.



5. Manager will indicate if the security settings are reset successfully.

4.5.1 General Settings

These settings are displayed when **General** is selected in the navigation pane.

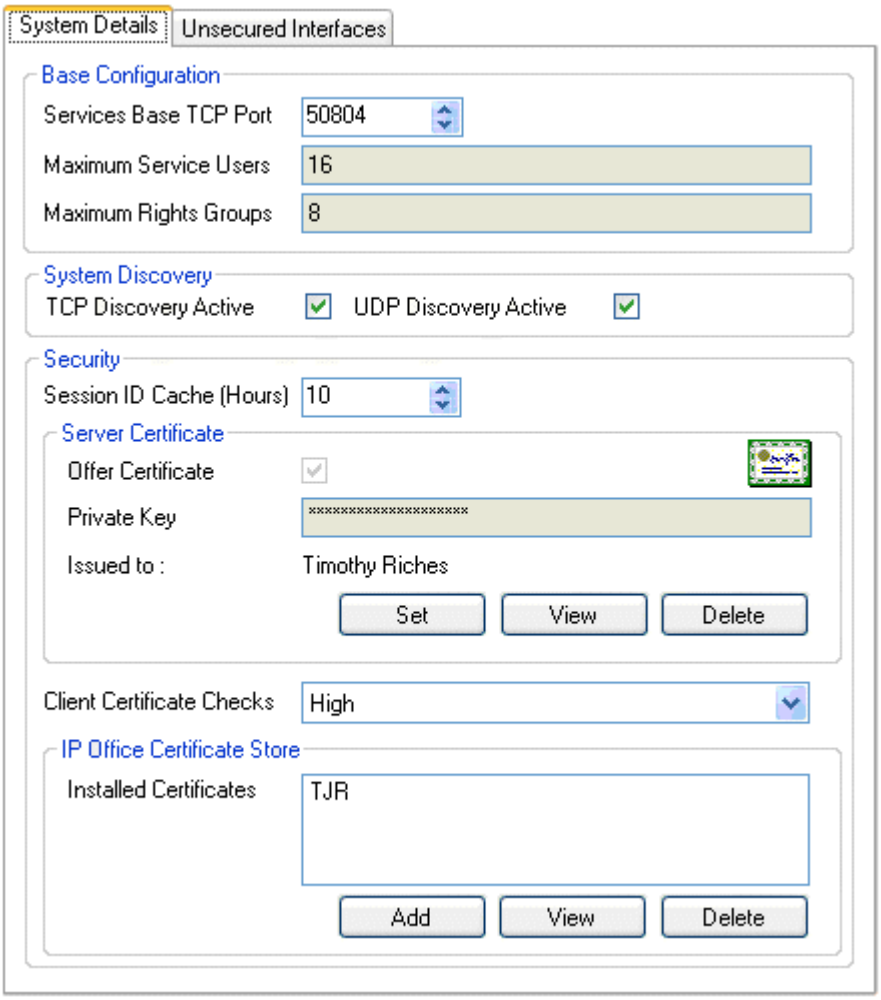


- **Security Administrator**
  The Security Administrator is a special Service User who does not belong to any Rights Groups. The Administrator is able to access the IP Office system's security settings but cannot access its configuration settings. By default it is the only Service User able to access to the security settings.
  - **Unique Security Administrator:** *Default = Off*
    When selected, only the Security Administrator is able to access the IP Office system's security settings. When this is selected, the security options for Rights Groups are disabled. When not selected, the ability to access security settings can also be assigned to Rights Groups.
  - **Name:** *Default = 'security'. Range = 6 to 31 characters.*
    The name for the Security Administrator.
  - **Minimum Password Complexity:** *Default = Low, Software level = 4.1+.*
    The password complexity requirements for the Security Administrator. This setting is active for attempted password changes on both Security Manager and IP Office.
    - **Low**
      Any password characters may be used without constraint.
    - **Medium**
      The password characters used must cover two 'code point sets'. For example lower case and upper case. In addition, Medium and High do not allow more than 2 repeated characters of any type.
    - **High**
      The password characters used must cover three 'code point sets'. For example lower case plus upper case and numbers.
  - **Password:** *Default = 'securitypwd'. Range = 6 to 31 characters.*
    The password for the Security Administrator. In order to change the Security Administrator password, the current password must be known.
  - **Previous Password Limit:** *Default = 0. Range = 0 (Off) to 10 entries, Software level = 4.1+.*
    The number of previous password to check for duplicates against when changing the password. When set to ***0***, no checking of previous passwords takes place. This setting is active for attempted password changes on both Security Manager and IP Office.

- **Service User Details**
  These settings control Service User names and password/account policies.
  - **Minimum Name Length:** *Default = 6, Range 1 to 31 characters.*
    This field sets the minimum name length for Service User names.
  - **Minimum Password Length:** *Default = 6, Range 1 to 31 characters.*
    This field sets the minimum password length for Service User passwords.
  - **Password Reject Limit:** *Default = 3, Range 0 to 255 failures.*
    Sets how many times an invalid name or password is allowed within a 10 minute period before the Password Reject Action is performed. Selecting 0 indicates never perform the **Password Reject Action**.
  - **Password Reject Action:** *Default = Log to Audit Trail*
    The action performed when a user reaches the **Password Reject Limit**. Current options are:
    - **No Action**
    - **Log to Audit Trail**
      Log to Audit Trail creates an entry indicating the service user account name and time of last failure.
    - **Log and Disable Account:** *Software level = 4.1+.*
      Log and Disable Account creates an audit trail entry and additionally permanently disables the service user account. This account may only be enabled using the Security Manager Service User settings.
    - **Log and Temporary Disable:** *Software level = 4.1+.*
      Log and Temporary Disable creates an audit trail entry and additionally temporarily disables the service user account for 10 minutes. This account may additionally be enabled using the Security Manager Service User settings.
  - **Minimum Password Complexity:** *Default = Low, Software level = 4.1+.*
    The password complexity requirements for all Service Users. This setting is active for attempted password changes on both Security Manager and IP Office.
    - **Low**
      Any password characters may be used without constraint.
    - **Medium**
      The password characters used must cover two 'code point sets'. For example lower case and upper case. In addition, Medium and High do not allow more than 2 repeated characters of any type.
    - **High**
      The password characters used must cover three 'code point sets'. For example lower case plus upper case and numbers.
  - **Password Change Period:** *Default = 0 (Off), Range 0 to 999 days, Software level = 4.1+.*
    Sets how many days a newly changed password is valid. Selecting 0 indicates any password is valid forever. This setting is active for password changes through this form or prompted by IP Office Manager. If this timer expires, the service user account is locked. The account may only be re-enabled using the Service User Settings 130. To prompt the user a number of days before the account is locked set a Expiry Reminder Time (see below).
    - Whenever this setting is changed and the OK button is clicked, the Security Manager recalculates all existing service user password timers.
  - **Account Idle Time:** *Default = 0 (Off), Range 0 to 999 days, Software level = 4.1+.*
    Sets how many days a service user account may be inactive before it becomes disabled. Selecting 0 indicates an account may be idle forever. If this timer expires, the service user account is permanently disabled. The account may only be re-enabled using the Service User Settings 130. The idle timer is reset whenever a service user successfully logs in.
    - Whenever this setting is changed and the OK button is clicked, the Security Manager recalculates all existing service user idle timers.
  - **Expiry Reminder Time:** *Default = 28, Range 0 (Off) to 999 days, Software level = 4.1+.*
    Sets the period before password or account expiry during which a reminder indication if the service user logs in. Selecting 0 prevents any reminders. Reminders are sent, for password expiry due to the Password Change Period (above) or due to the Account Expiry date (see Service User 130 setting) – whichever is the sooner. It is up to the IP Office application to display this reminder. Currently IP Office Manager displays reminders but SSA does not.

4.5.2 System | System Details

This tab is accessible when **System** is selected in the navigation pane.



- **Base Configuration**
  - **Base TCP Port:** *Default = 50804, Range = 49152 to 65526.*
    This is the base TCP port for services provided by IP Office 3.2+ systems. It sets the ports on which the IP Office listens for requests to access those services, using its LAN1 IP address. Each service uses a port offset from the base port value. If this value is changed from its default, the Manager application must be set to the same Base TCP Port through its Services Base TCP Port setting (**File | Preferences** 137).

Service	Method	Port Used	Default	IP Office
Configuration	Unsecured	Base TCP Port	50804	3.2+
	Secured	Base TCP Port plus 1.	50805	4.1+
System Status Interface	Unsecured	Base TCP Port plus 4.	50808	4.0+
Security Administration	Unsecured	Base TCP Port plus 8.	50812	3.2+
	Secured	Base TCP Port plus 9.	50813	4.1+

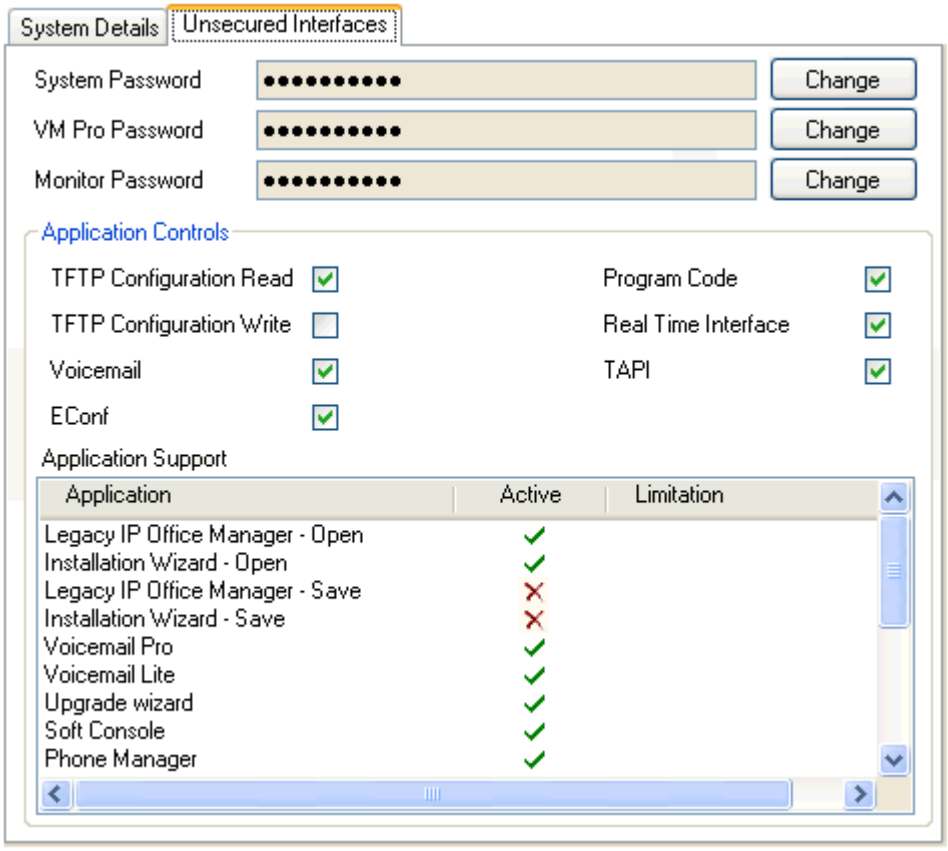
- When changing the base port, exercise caution that the selected port and those offset from it do not conflict with any ports already in use by other applications.
- **Maximum Service Users:** *Default = 16.*
  This is a fixed value for indication purposes only. This value is the maximum number of Service Users that can be stored in an IP Office system's security settings.
- **Maximum Rights Groups:** *Default = 8.*
  This is a fixed value for indication purposes only. This value is the maximum number of Rights Groups that can be stored in an IP Office system's security settings.
- **System Discovery**
  System discovery is the processes used by IP Office applications to locate and list available IP Office systems. The IP Office can be disabled from responding to this process if required. If this is done, access to the IP Office requires its specific IP address to be used.

- **TCP Discovery Active:** *Default = On.*
  TCP is the discovery method supported by Manager 5.2+ and IP Office 3.2+ systems. Selecting TCP Discovery Active allows the IP Office system to respond to those requests.
- **UDP Discovery Active:** *Default = On.*
  UDP is the discovery method used by previous versions of Manager and by other IP Office applications. Selecting UDP Discovery Active allows the IP Office system to respond to those requests.

- **Security:** *Software level = 4.1+.*
  These settings cover the per-system security aspects, primarily TLS settings.
  - **Session ID Cache:** *Default = 10 hours, Range 0 to 100 hours.*
    This sets how long a TLS session ID is retained by the IP Office. If retained, the session ID may be used to quickly restart TLS communications between the IP Office and a re-connecting IP Office application. When set to ***0***, no caching takes place and each TLS connection must be renegotiated.
  - **Offer Server Certificate:** *Default = On.*
    This is a fixed value for indication purposes only. This sets whether the IP Office will offer a certificate in the TLS exchange when the IP Office is acting as a TLS server, which occurs when accessing a secured service.
  - **Server Private Key:** *Default = None.*
    This is a fixed value for indication purposes only. This indicate whether the IP Office has a private key associated with the Server Certificate.
  - **Server Certificate:** *Default = None.*
    The **Server Certificate** is an X.509v3 certificate that identifies the IP Office system to a connecting client device (usually a PC running an IP Office application). This certificate is offered in the TLS exchange when the IP Office is acting as a TLS server, which occurs when accessing a secured service. By default the IP Office's own self-generated certificate is used (see note below), but set can be used to replace this with another certificate.
    - The Server Certificate may be generated by the IP Office itself, and can take up to 5 minutes to generate. This occurs when any of the Service Security Level 125 is to a value other than Unsecure Only. During this time normal IP Office operation is suspended.
    - **Set**
      Sets the current Server Certificate and associated private key. The certificate and key must be a matching pair, valid. The source may be:
      - Current User Certificate Store
      - Local Machine Certificate Store
      - File in PKCS#12 (.pfx), DER (.cer), or password protected DER (.cer) format
      - Pasted from clipboard in PEM format, including header and footer text.
    - **View**
      View the current Server Certificate. The certificate (not the private key) may also be installed into the local PC certificate store for export or later use when running the manager in secured mode.
    - **Delete**
      Delete the current Server Certificate. When sent to the IP Office will generate a new Server Certificate when next required. This can take up to 5 minutes to generate. During this time normal IP Office operation is suspended.
  - **Client Certificate Checks:** *Default = None.*
    When a Service Security Level is set to ***High***, a certificate is requested of Manager. For general information on security policy and application see Appendix: IP Office Secure Administration. The received certificate is tested according to the Client Certificate Checks level:
    - **None**
      No extra checks are made (The certificate must be in date).
    - **Low**
      Certificate minimum key size 512 bits, in date.
    - **Medium**
      Certificate minimum key size 1024 bits, in date, match to store, no reflected.
    - **High**
      Certificate minimum key size 1024 bits, in date, match to store, no self signed, no reflected.
  - **Client IP Office Certificate Store:** *Default = Empty.*
    The certificate store contains a set of trusted certificates used to evaluate received client (IP Office Manager) certificates. Up to six X.509v3 certificates may be installed. The source may be:
    - Current User Certificate Store.
    - Local Machine Certificate Store.
    - File in PKCS#12 (.pfx), DER (.cer), or password protected DER (.cer) format.
    - Pasted from clipboard in PEM format, including header and footer text.

4.5.3 System | Unsecured Interfaces

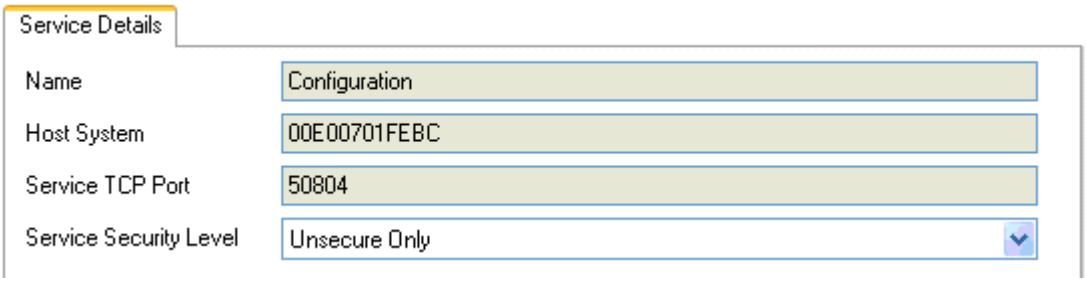
This tab is accessible when **System** is selected in the navigation pane. These features relate to IP Office applications that also access the IP Office configuration settings but still use the pre-IP Office 3.2 security methods. Currently this includes all 3.2+ applications except Manager and System Status Application.



- **System Password:** *Default = 'password', Range = 0 to 31 characters.*
  This password is required by some legacy applications such as Monitor and Call Status. It is also used for IP Office control unit software upgrades.
- **VM Pro Password:** *Default = '', Range = 0 to 31 characters.*
  This password is required if a matching password is also set through the Voicemail Pro client application. Typically no password is set.
- **Monitor Password:** *Default = '', Range = 0 to 31 characters.*
  This password, if set, is used by the IP Office Monitor and Call Status applications. If this password is not set, those applications use the system password.
- **Applications Controls:** *Default = All selected except TFTP Configuration Write.*
  These check boxes control which actions the IP Office will support for legacy applications. Different combinations are used by the different applications. A summary of the applications affected by changes is listed in the Application Support list.
- **Application Support**
  This panel is shown for information only. It indicates the effect on various IP Office applications of the Application Controls selections.

4.5.4 Services Settings

This tab is accessible when **Service** is selected in the navigation pane. It shows details of the services that the IP Office runs to which Service Users can communicate. Currently three services exist. The Configuration service is used for accessing IP Office configuration settings. The Security Administration service is used for accessing IP Office security settings. The System Status Interface service is used by the System Status Application.



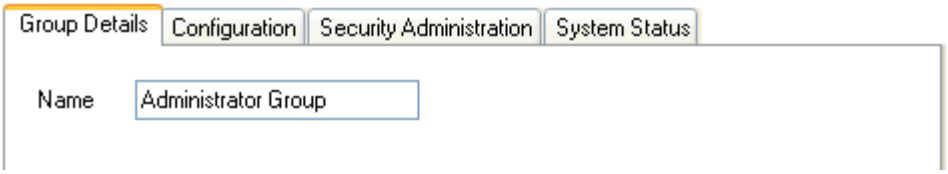
- **Name**
  The name of the service. This is a fixed value for indication purposes only.
- **Host System**
  This field shows the IP Office system's name. This is a fixed value for indication purposes only.
- **TCP Base Port**
  This is the TCP port on which the IP Office system listens for attempts to access the service. The routing of traffic to this port may need to be enabled on firewalls and network devices between the Service Users and the IP Office. The TCP Base Port for each service is offset by a fixed amount from the Base TCP Port set in System Settings.

Service	Method	Port Used	Default	IP Office
Configuration	Unsecured	Base TCP Port	50804	3.2+
	Secured	Base TCP Port plus 1.	50805	4.1+
System Status Interface	Unsecured	Base TCP Port plus 4.	50808	4.0+
Security Administration	Unsecured	Base TCP Port plus 8.	50812	3.2+
	Secured	Base TCP Port plus 9.	50813	4.1+

- **Service Security Level:** *Default = 'Unsecure Only', Software level = 4.1+.*
  Sets the minimum security level the service will support. See **File | Preferences | Security** 140 for the corresponding Manager application setting, which must be changed to match the appropriate service access security settings.
    - **WARNING**
      If the IP Office system does not already have an X509 security certificate, selecting a setting other than **Unsecure Only** will cause the IP Office system to stop responding for a period while the IP Office generates its own unique security certificate. On Small Office Edition systems this make take up to 5 minutes, on IP500 systems 30 seconds.
    - ***Unsecure Only***
      This option allows only unsecured access to the service. The service's secure TCP port is disabled.
    - ***Unsecure + Secure***
      This option allows both unsecured and secure (Low) access. In addition, TLS connections are accepted without encryption, just authentication.
    - ***Secure, Low***
      This option allows secure access to that service using TLS, and demands weak (for example DES_40 + MD5) encryption and authentication, or higher. The service's unsecured TCP port is disabled.
    - ***Secure, Medium***
      This option allows secure access to that service using TLS, and demands moderate (for example DES_56 + SHA-1) encryption and authentication, or higher. The service's unsecured TCP port is disabled.
    - ***Secure, High***
      This option allows secure access to that service using TLS and demands strong (for example 3DES + SHA-1) encryption and authentication, or higher. In addition a certificate is required of the client (usually Manager). See System Details | Client Certificate Checks 122 for tests made on the received certificate. The service's unsecured TCP port is disabled.

4.5.5 Rights Group | Group Details

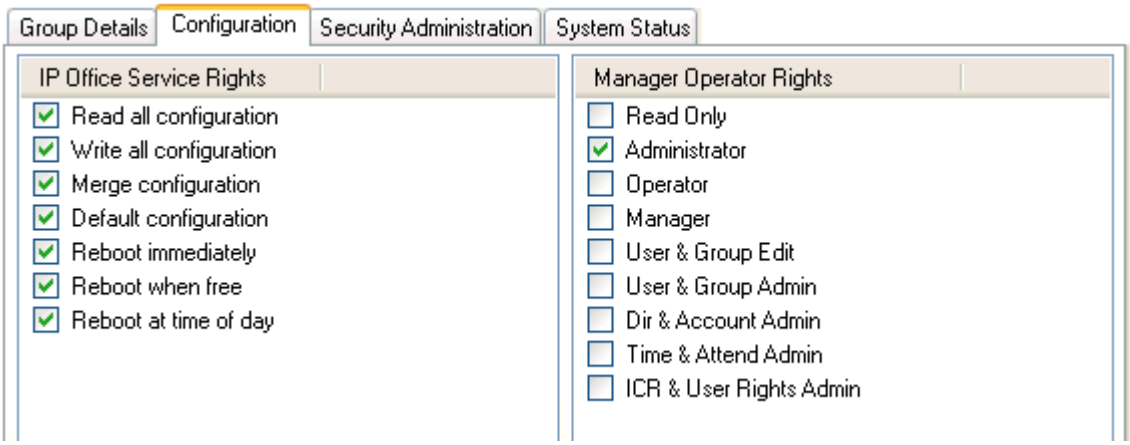
These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets the name of the Rights Group.



- **Name:** *Range = Up to 31 characters*
  The name for the Rights Group should be unique.

4.5.6 Rights Group | Configuration

These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets the configuration settings access for Service User's who are members of this Rights Group.

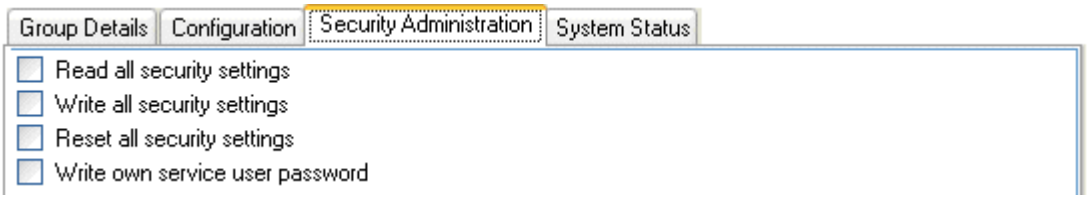


- **IP Office Service Rights**
  This setting controls what action on the IP Office system can be performed by members of the Rights Group.
- **Manager Operator Rights**
  This setting controls what types of configuration entries Manager will allow members of the Rights Group to viewed and what actions they can perform with those types of entries.

Operator	View/ Edit/New/ Delete	Configuration Entry Types
Administrator	All	View, edit create and delete all configuration entries.
Manager	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS, E911 System.
	New	
	Delete	As edit except Short Code.
Operator	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, Licence, ARS, E911 System.
	New	None.
	Delete	Delete Incoming Call Route and Directory.
User & Group Edit	View	User and Hunt Group entries only.
	Edit	
	New	None
	Delete	
User & Group Admin	All	User and Hunt Group entries only.
Dir & Account Admin	All	Directory and Account Code entries only.
Time & Attendant Admin	All	Time Profile and Auto Attendant entries only.
ICR & User Rights Admin	All	Incoming Call Route and User Rights entries only.
Read Only	View	View all configuration entries.
	Edit	None.
	New	
	Delete	

4.5.7 Rights Group | Security Administration

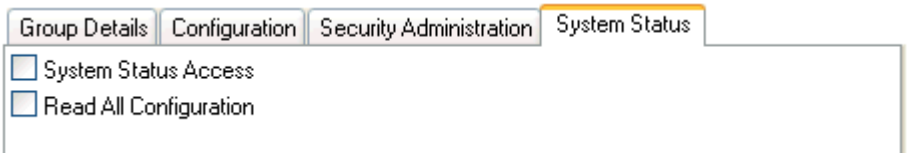
These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets the security settings access for Service user's who are members of this Rights Group. These settings are ignored and greyed out if a Unique Security Administrator has been enabled in General Settings 120.



- **Read all security settings**
  Members of the Rights Group can view the IP Office system's security settings.
- **Write all security settings**
  Members of the Rights Group can edit and return changes to the IP Office system's security settings.
- **Reset all security settings**
  For systems prior to IP Office 4.1 this option was not used. For IP Office 4.1+, if selected, members of the Rights Group can reset the security settings to default values.
- **Write own service user password:** *Software level = 4.1+.*
  If selected, members of the Rights Group can change their own password. This option must be enabled if a **Password Change Period** is enabled on the **General Settings** 120 tab.

4.5.8 Rights Group | System Status

These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets whether members of the group can access the IP Office system using the IP Office System Status Application (SSA). That application is only supported by IP Office 4.0 and higher systems.

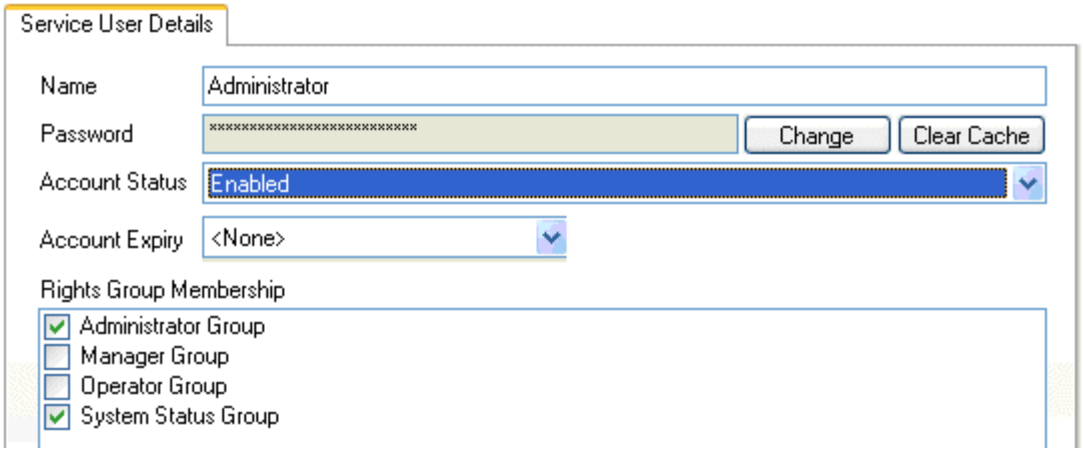


- **System Status Access**
  If selected, members of the Rights Group can view the IP Office system's current status and resources using the System Status Application (SSA).
- **Read all configuration**
  The System Status application includes tools to take a snapshot of the system for use by Avaya for diagnostics. That snapshot can include a full copy of the IP Offices configuration settings. This setting must be enabled for the SSA user to include a copy of the configuration in the snapshot.

4.5.9 Service User Settings

These settings are displayed when **Service Users** is selected in the navigation pane and a particular Service User is selected in the group pane.

Users can be created and deleted using the and icons at the top-right of the details pane. The maximum number of Service Users is 16.



- **Name:** *Range = Up to 31 characters.*

  Sets the Service User's name. The minimum name length is controlled through **General settings**.

  - Note: If changing the user name and/or password of the current service user used to load the security settings, after saving the changes Manager should be closed. Not closing Manager will cause error warnings when attempting to send any further changes.

- **Password:** *Range = Up to 31 characters.*

  Sets the Service User's password. The minimum password length and complexity is controlled through **General settings**.

- **Account Status:** *Default = 'Enabled', Software level = 4.1+.*
  Displays the current service user account status (correct at the time of reading from the IP Office).

  - ***Enabled***
    This status is the normal non-error state of a service user account. This setting can be selected manually to re-enable an account that has been disabled or locked. Note that re-enabling a locked account will reset all timers relating to the account such as **Account Idle Time**.

  - ***Force New Password***
    This status can be selected manually. The service user is then required to change the account password when they next log in. Until a password change is successful, no service access is allowed. Note that the user must be a member of a Rights Group that has the **Security Administration** option **Write own service user password** enabled.

  - ***Disabled***
    This status prevents all service access. This setting can be selected manually. The account can be enabled manually by setting the **Account Status** back to ***Enabled***.

  - **Locked – Password Error**
    This status indicates the account has been locked by the **Password Reject Action** option ***Log and Disable Account*** on the security **General Settings** tab. The account can be enabled manually by setting the **Account Status** back to ***Enabled***.

  - ***Locked - Temporary***
    This status indicates the account is currently locked temporarily by the **Password Reject Action** option ***Log and Temporary Disable*** on the security **General Settings** tab. The account can be enabled manually by setting the **Account Status** back to ***Enabled***, otherwise the service user must wait for the 10 minute period to expire.

  - ***Locked - Idle***
    This status indicates the account has been locked by passing the number of days set for the Account Idle Time on the security **General Settings** tab without being used. The account can be enabled manually by setting the **Account Status** back to ***Enabled***.

  - ***Locked - Expired***
    This status indicates the account has been locked after passing the Account Expiry date set below. The account can be enabled manually by setting **Account Status** back to ***Enabled***, and resetting the **Account Expiry** date to a future date or to ***No Account Expiry***.

- ***Locked – Password Expired***
  This status indicates the account has been locked after having not been changed within the number of days set by the Password Change Period option on the security General Settings 120 tab. The account can be enabled manually by setting the **Account Status** back to ***Enabled***.

- **Account Expiry:** *Default = <None> (No Expiry), Software level = 4.1+.*
  This option can be used to set a calendar date after which the account will become locked. The actual expiry time is 23:59:59 on the selected day. To prompt the user a number of days before the expiry date, set an Expiry Reminder Time on the security **General Settings** 120 tab.

- **Rights Group Membership**
  The check boxes are used to set the **Rights Groups** to which the user belongs. The user's rights will be a combination of the rights assigned to the groups to which they belong.

Chapter 5.
Menu Bar Commands

5. Menu Bar Commands

The commands available through the Manager's menu bar change according to whether Manager is running in configuration or security mode. Commands may also be grayed out if not useable.

The following sections outline the functions of each command. The Edit and Help menus are not included.

Configuration Mode		
File Menu	**View Menu**	**Tools Menu**
Open Configuration... 135 Close Configuration 135 Save Configuration 135 Save Configuration As 135 Change Working Directory... 136 Preferences 137 Offline | Create New Config 143 Offline | Open File... 143 Offline | Send Config... 143 Offline | Receive Config... 143 Advanced | Erase Configuration (Default) 143 Advanced | Reboot 143 Advanced | Upgrade.. 144 Advanced | Audit Trail... 146 Advanced | Security Settings... 147 Advanced | Erase Security Settings (Default) 147 Advanced | System Status 147 Advanced | LVM Greeting Utility 148 Advanced | Embedded File Management 149 Backup/Restore | Backup Binaries and Configurations 151 Backup/Restore | Restore Binaries and Configurations 151 Import/Export | Import 153 Import/Export | Export 152 Exit 153	Toolbars 154 Navigation Pane 154 Group Pane 154 Details Pane 154 Error Pane 154 TFTP Log 154	Extension Renumber 155 Line Renumber 155 Busy on Held Validation 155 MSN Configuration 156

Security Mode	
File	**View**
Open Security Settings 157 Close Security Settings 157 Save Security Settings 157 Reset Security Settings 157 Preferences 157 Configuration 157 Exit 157	Toolbars 154 Navigation Pane 154 Group Pane 154 Details Pane 154

Embedded File Management Mode	
File	**View**
Open File Settings 149 Close File Settings 149 Upload File 149 Preferences 137 Configuration 135 Exit 153	Toolbars 154 Tiles 149 Icons 149 List 149 Details 149

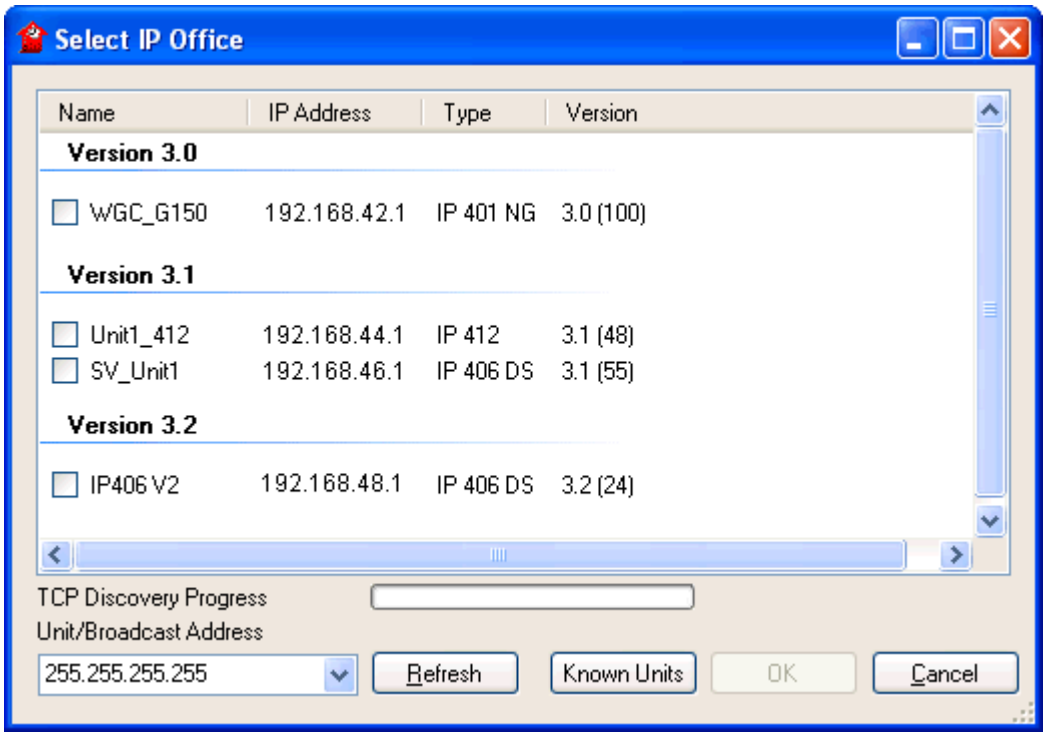
5.1 Configuration Mode

5.1.1 File Menu

5.1.1.1 Open Configuration

This command displays the Select IP Office menu used to receive an IP Office systems configuration settings. See Loading a Configuration 89.

The same action is performed by the icon in the Main Toolbar.



The Select IP Office menu is also used for other actions such as reboot and sending a configuration. If the unit required is not found, the Unit/Broadcast Address can be changed and then Refresh clicked. To change the TCP addresses scanned, select **File | Preferences | Discovery** 137 and enter the required addresses in the IP Search Criteria.

Known Units is not available unless configured, see Known IP Office Discovery 92.

5.1.1.2 Close Configuration

This command closes the currently loaded configuration without saving it.

5.1.1.3 Save Configuration

The **File | Save** command saves the amended configuration.

If the configuration has been received from an IP Office, the Send Config menu is displayed. See Sending a Configuration 98.

If the configuration file has been opened offline or created from new, the file is saved to disk only.

5.1.1.4 Save Configuration As

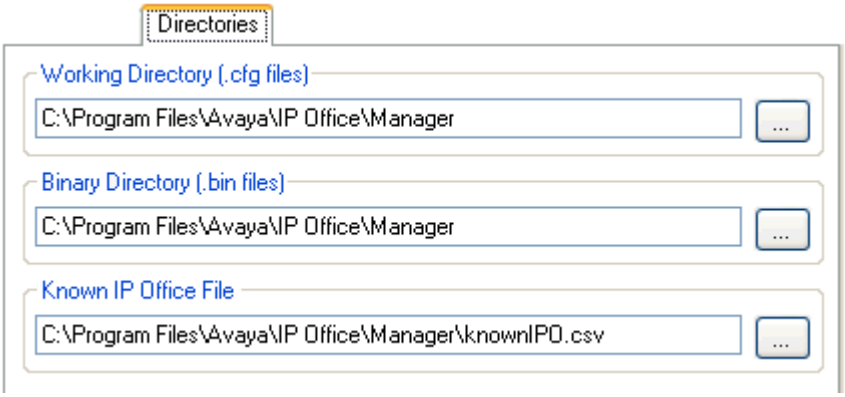
The **File | Save As** command allows you to save a configuration offline. The command displays the **Save File As** dialog box. You can enter the new file name, including the drive and directory.

Configurations saved onto the PC in this way can be reopened using the icon or the **File | Offline | Open File** command.

Note that dynamic configuration data, for example advertised hunt groups, is not included in a configuration file saved onto PC and then reopened.

5.1.1.5 Change Working Directory

This command allows you to change the default locations where Manager looks for and saves offline configuration (.cfg) files and IP Office equipment binary (.bin) files.



- **Working Directory (.cfg files)**
  Sets the directory into which Manager saves .cfg files. By default this is the Manager application's program directory.
- **Binary Directory (.bin files)**
  Sets the directory in which the Manager upgrade, TFTP and BOOTP functions look for .bin files. By default this is the Manager application's program directory.
- **Known IP Office File:** *Software level = 4.0 Q2 2007 maintenance release+.*
  Sets the file and directory into which Manager can record details of the IP Office systems it has discovered. Once a file location has been specified, a **Known Units** 92 button becomes available on the discovery menu used for loading IP Office configuration. Pressing that button displays the known units file as a list from which the required IP Office system can be selected. It also allows sorting of the list and entries to be removed.

5.1.1.6 Preferences

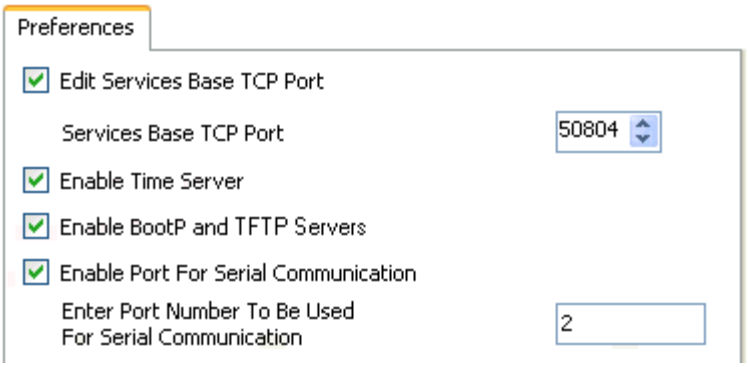
This command displays a menu for configuring various aspects of Manager's operation. The menu is divided into a number of tabs.

- **Preferences** 137
- **Directories** 138
- **Visual Preferences** 138
- **Discovery** 139
- **Validation** 142
- **Security** 140

5.1.1.7 Preferences | Preferences

This tab is accessed through **File | Preferences** and then selecting the **Preferences** sub-tab.

- **Note:** For IP Office Manager 6.1+, a number of option have been moved from this sub-tab to the Security 140 sub-tab. Those options are Request Login on Save, Close Configuration/Security Settings After Send, Save Configuration File After Load, Backup Files on Send.

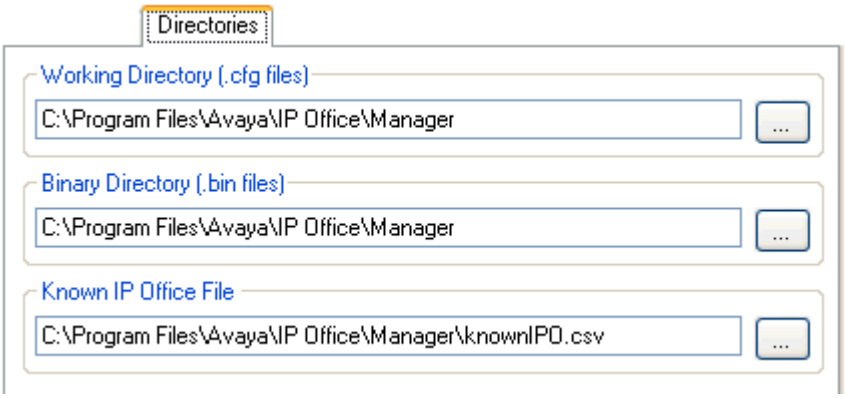


- **Edit Services Base TCP Port:** *Default = On.*
  This field shows or hides the Service Base TCP Port setting.
  - **Service Base TCP Port:** *Default = 50804*
    Access to the configuration and security settings on an IP Office 3.2+ system requires Manager to send its requests to specific ports. This setting allows the TCP Base Port used by Manager to be set to match the TCP Base Port setting of the IP Office system. The IP Office system's TCP Base Port is set through its security settings.
- **Enable Time Server:** *Default = On.*
  This setting allows Manager to respond to time requests from IP Office systems.
- **Enable BootP and TFTP Servers:** *Default = On.*
  This setting allows Manager to respond to BOOTP request from IP Office systems for which it also has a matching BOOTP entry. It also allows the IP Office to respond to TFTP requests for files. Note that IP Office Manager is not recommended as a permanent TFTP server.
- **Enable Port for Serial Communication**
  Not used. This is a legacy feature for some older control units that were managed via the serial port rather than the LAN.
  - **Enter Port Number to be used for Serial Communication**
    Used with the setting above to indicate which serial port Manager should use.

5.1.1.8 Preferences | Directories

This tab is accessed through **File | Preferences** and then selecting the **Directories** sub-tab.

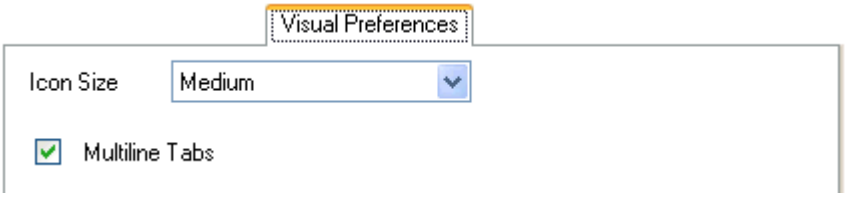
These fields set the default location where Manager will look for and save files. This tab is also accessed by the **File | Change Working Directory** command.



- **Working Directory (.cfg files)**
  Sets the directory into which Manager saves .cfg files. By default this is the Manager application's program directory.
- **Binary Directory (.bin files)**
  Sets the directory in which the Manager upgrade, TFTP and BOOTP functions look for .bin files. By default this is the Manager application's program directory. Note that in the Upgrade Wizard, right-clicking and selecting Change Directory also changes this setting.
- **Known IP Office File:** *Software level = 4.0 Q2 2007 maintenance release+.*
  Sets the file and directory into which Manager can record details of the IP Office systems it has discovered. Once a file location has been specified, a **Known Units** 92 button becomes available on the discovery menu used for loading IP Office configuration. Pressing that button displays the known units file as a list from which the required IP Office system can be selected. It also allows sorting of the list and entries to be removed.

5.1.1.9 Preferences | Visual Preferences

This tab is accessed through **File | Preferences** and then selecting the **Visual Preferences** sub-tab.



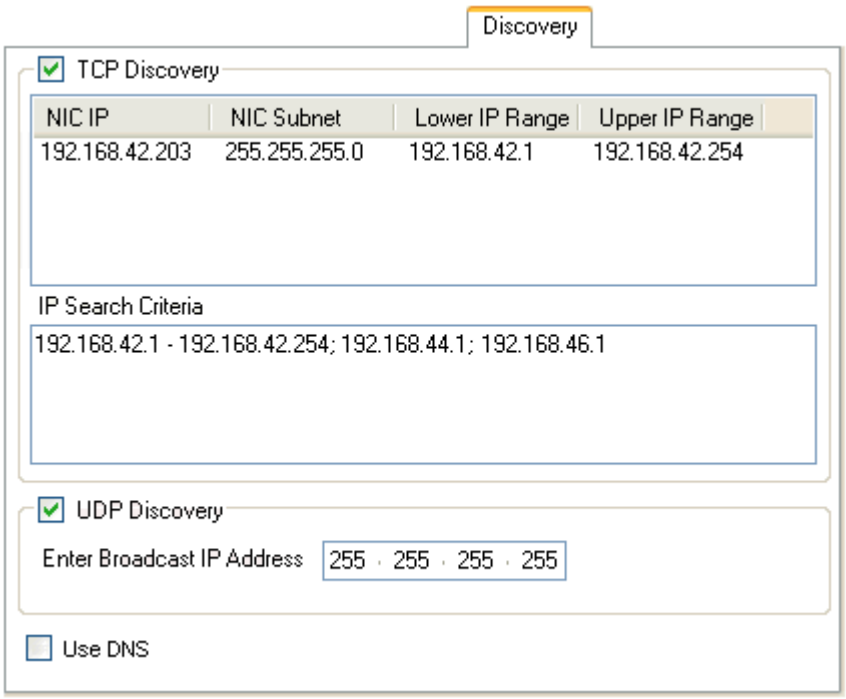
- **Icon size**
  Sets the size for the icons in the navigation pane between ***Small***, ***Medium*** or ***Large***.
- **Multiline Tabs:** *Default = Off.*
  In the details pane, for entry types with more than two tabs, Manager can either use  buttons to scroll the tabs horizontally or arrange the tabs into multiple rows. This setting allows selection of which method Manager uses.

5.1.1.10 Preferences | Discovery

This tab is accessed through **File | Preferences** and then selecting the **Discovery** sub-tab.

When  is clicked, the **Select IP Office** form appears and Manager attempts to discovery any IP Office systems. Within **Preferences**, the **Discovery** tab sets the IP addresses and methods used for the discovery process.

By default IP Office 3.2 systems respond to both UDP and TCP discovery. Pre-3.2 IP Office systems only support UDP discovery.



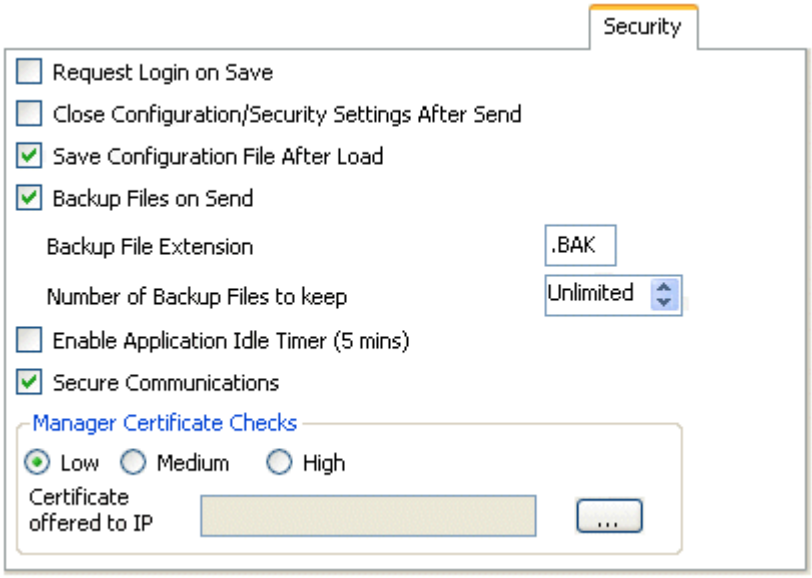
- **TCP Discovery:** *Default = On*
  This setting controls whether Manager uses TCP to discover IP Office systems. Only IP Office 3.2 and higher systems can respond to TCP discovery. The addresses used for TCP discovery are set through the IP Search Criteria field below.
  - **NIC IP/NIC Subnet**
    This area is for information only. It shows the IP address settings of the LAN network interface cards (NIC) in the PC running Manager. Double-click on a particular NIC to add the address range it is part of to the IP Search Criteria. Note that if the address of any of the Manager PC's NIC cards is changed, the Manager application should be closed and restarted.
  - **IP Search Criteria**
    This tab is used to enter TCP addresses to be used for the discovery process. Individual addresses can be entered separated by semi-colons, for example 135.164.180.170; 135.164.180.175. Address ranges can be specified using dashes, for example 135.64.180.170 - 135.64.180.175.
- **UDP Discovery:** *Default = On*
  This settings controls whether Manager uses UDP to discover IP Office systems. Pre-3.2 IP Office systems only respond to UDP discovery. By default IP Office 3.2 and higher systems also respond to UDP discovery but that can be disabled through the IP Office system's security settings.
  - **Enter Broadcast IP Address:** *Default = 255.255.255.255*
    The broadcast IP address range that Manager should used during UDP discovery. Since UDP broadcast is not routable, it will not locate IP Office systems that are on different subnets from the Manager PC unless a specific address is entered.
- **Use DNS:** *Software level = IP Office Manager 6.2+.*
  Selecting this option allows IP Office Manager to use DNS name (or IP address) lookup to locate an IP Office system. Note that this overrides the use of the TCP Discovery and UDP Discovery options above. This option requires the IP Office IP address to be assigned as a name on the users DNS server. When selected the **Unit/Discovery Address** field on the **Select IP Office** 89 dialogue is replaced by a **Enter Unit DNS Name or IP Address** field.

5.1.1.11 Preferences | Security

This tab is accessed through **File | Preferences** and then selecting the **Security** sub-tab.

Controls the various security settings of Manager. To control the security settings of the IP Office, see Security Mode 102.

All settings, except **Secure Communications**, can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.



- **Request Login on Save:** *Default = On*
  By default a valid user name and password is required to receive a configuration from an IP Office and also to send that same configuration back to the IP Office. Deselecting this setting allows Manager to send the configuration back without having to renter user name and password details. This does not apply to a configuration that has been saved on PC and then reopened. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Close Configuration/Security Settings After Send:** *Default = On.*
  When selected, the open configuration file or security settings are closed after being sent back to the IP Office system.
- **Save Configuration File After Load:** *Default = On.*
  When selected, a copy of the configuration is saved to Manager's working directory 138. The file is named using the IP Office's system name and the suffix ***.cfg***. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Backup Files on Send:** *Default = On.*
  If selected, whenever a copy of a configuration is sent to an IP Office system, a backup copy is saved in IP Office Manager's working directory 138. The file is saved using the system name, date and a version number followed by the **Backup File Extension** as set below. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Backup File Extension:** *Default = .BAK*
  Sets the file extension to use for backup copies of system configurations generated by the **Backup Files on Send** option above.
- **Number of Backup Files to keep:** *Default = Unlimited, Software level = 4.2+.*
  This option allows the number of backup files kept for each system to be limited. If set to a value other then **Unlimited**, when that limit would be exceeded, the file with the oldest backup file is deleted.
- **Enable Application Idle Timer (5 minutes):** *Default = Off, Software level = 4.1+.*
  When enabled, no keyboard or mouse activity for 5 minutes will cause the Manager to grey out the application and re-request the current service user password. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Secure Communications:** *Default = Off, Software level = 4.1+.*
  When selected, any service communication from Manager to IP Office uses the TLS protocol. This will use the ports set for secure configuration and secure security access. It also requires the configuration and or security service within the IP Office's security configuration settings to have been set to support secure access. Depending on the level of that secure access selected, it may be necessary for the Manager Certificate Checks below to be configured to match those expected by the IP Office configuration and or security service. See Security Administration 108.
  - When **Secure Communications** is set to ***On***, a padlock icon is displayed at all times in the lower right Manager status field.
- **Manager Certificate Checks:** *Software level = 4.1+.*
  When the Secure Communications option above is used, Manager will process and check the certificate received from the IP Office. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.

- ***Low***
  Any certificate sent by IP Office certificate is accepted without question.
- ***Medium***
  Any certificate sent by IP Office is accepted if it has previously been previously saved in the Windows' certificate store. If the certificate has not been previously saved, the user has the option to review and either accept or reject the certificate.
- ***High***
  Any certificate sent by IP Office is accepted if it has previously been previously saved in the Windows' certificate store. Any other certificate cause a log in failure.
- **Certificate Offered to IP Office:** *Default = none*
  Specifies the certificate used to identify Manager when the **Secure Communications** option is used and IP Office requests a certificate. Use the **Set** button to change the selected certificate. Any certificate selected must have an associated private key held within the store:
  - Select from Current User certificate store - Display certificates currently in the currently logged-in user store.
  - Select from Local Machine certificate store.
  - Remove Selection – do not offer a Manager certificate.

Security – Registry Settings

- **WARNING: Changing Windows Registry Settings**
  Avaya accept no liability for any issues arising from the editing of a PC's registry settings. If you are in any doubt about how to perform this process you should not proceed. It is your responsibility to ensure that the registry is correctly backed up before any changes are made.

NOTE: Before manually editing any registry entry, the following Microsoft support articles should be read:

- http://support.microsoft.com/kb/256986
- http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/regedit_permit_key.mspx

Manager stores it's security preferences in the Windows Registry. The following key affects manager security operation; it's values may only be changed by a configuration or security administrator:

- ***HKEY_CURRENT_USER\Software\Avaya\IP400\Manager\Security***

In order to prevent circumvention by manual editing of the Windows Registry, Regedt32.exe, the native registry editor, allows an operator user (with Full Control permissions) to edit permissions on a per key basis.

To prevent a user from manually editing the security preferences, the HKEY_USERS\User GUID\Software\Avaya\IP400 \Manager\Security key permission should be set to 'Read' only for that user. Ensure that all child object permissions are replaced as well by using the 'Advanced' button.

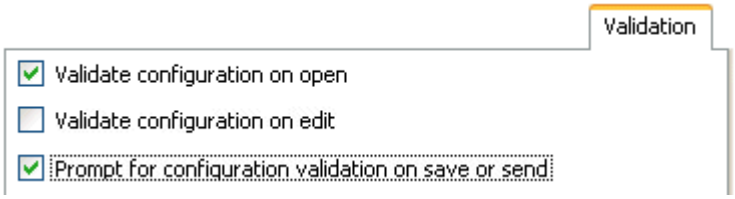
To allows the security policy of all local PC users to be fixed, a set of values in the key HKEY_CURRENT_USER\Software \Avaya\IP400\Manager\Security\ may be created. This is tested and used in preference to any value found under HKEY_CURRENT_USER\Software\Avaya\IP400\Manager\Security\.

This key is not created by the manager application.

5.1.1.12 Preferences | Validation

This tab is accessed through **File | Preferences** and then selecting the **Validation** sub-tab.

By default Manager validates the whole configuration when it is loaded and individual fields whenever they are edited. This tab allows selection of when automatic validation should be applied to configuration files loaded into Manager.



- **Validate configuration on open**
  Automatically validate configuration files when they are opened in Manager.
- **Validate configuration on edit**
  Validate the whole configuration when **OK** is clicked after editing a record. For large configurations, disabling this option removes the delay caused by validating the configuration after every edit.
- **Prompt for configuration validation on save or send**
  If selected, when saving or sending a configuration, a prompt is displayed asking whether the configuration should be validated. If validation is selected and error are found, the send or save process is canceled. This option is disabled if Validate configuration on edit is selected.

5.1.1.13 Offline | Create New Config

This command starts a dialog that allows you to create a default offline configuration by specifying the system locales, the type of IP Office control unit and expansion modules and the trunk cards fitted. See Creating a New Configuration 94.

The same action is performed by the icon in the Main Toolbar.

5.1.1.14 Offline | Open File

This command allows a configuration file stored on PC to be opened in Manager.

5.1.1.15 Offline | Send Config

This command is used to send an offline configuration to an IP Office system. See Sending a Configuration 98.

5.1.1.16 Offline | Receive Config

This command displays the Select IP Office menu used to receive an IP Office systems configuration settings. See Loading a Configuration 89.

Once the configuration has been received, you are prompted to save it on the PC.

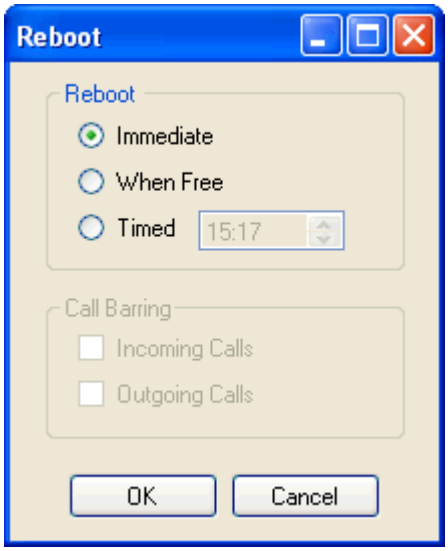
5.1.1.17 Advanced | Erase Configuration

This command returns the configuration settings of an IP Office system back to their default values 106. This action does not affect the IP Office system's security settings or audit trail record.

When this command is used, the **Select IP Office** menu is displayed. Once an IP Office system is selected, a valid user name and password are required to complete the action.

5.1.1.18 Advanced | Reboot

When this command is used, the **Select IP Office** menu is displayed. Once an IP Office system is selected, a valid user name and password are required. The type of reboot can then be selected.

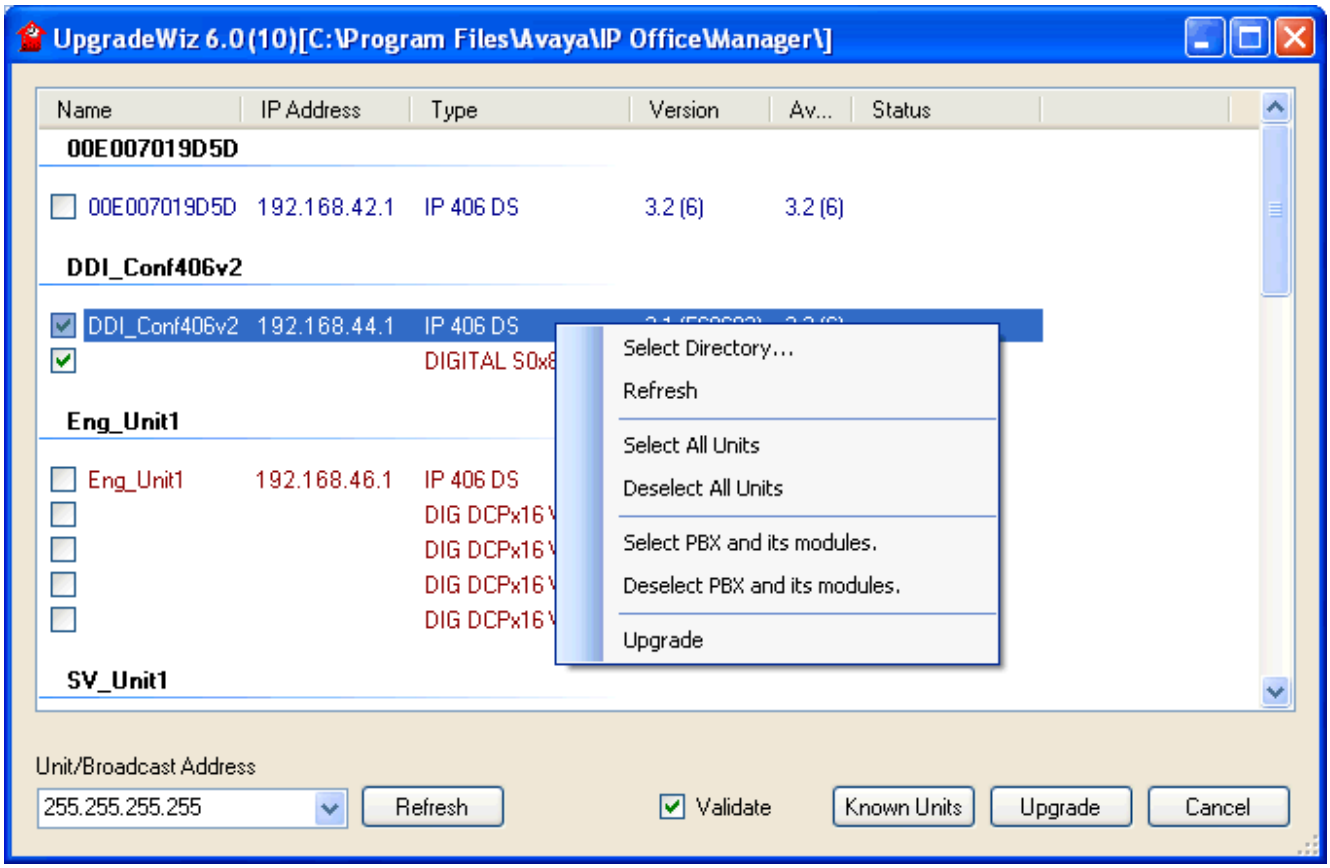


5.1.1.19 Advanced | Upgrade

This command starts the Upgrade Wizard tool. This tool is used to compare the software level of the control unit and expansion modules within IP Office systems against the software level of the .bin binary files Manager has available. The Upgrade Wizard can then be used to select which units to upgrade.

⚠ WARNING

- Incorrect use of the upgrade command can halt IP Office operation and render units in the system unusable. You must refer to the IP Office Technical Bulletins for a specific release for full details of performing software upgrades to that release.
- Performing any other actions on a system during an upgrade or closing the upgrade wizard and Manager during an upgrade may render systems unusable.
- During an upgrade the IP Office system may restrict calls and services. It will reboot and disconnect all current calls and services.
- The **Validate** option must remain selected wherever possible. Use of unvalidated upgrades is subject to a number of conditions outlined in the IP Office Installation Manual and Technical Bulletins.



The list area shows details of IP Office systems found by the Upgrade Wizard. The Version column details the current software each unit in the systems is running whilst the Available column shows the version of .bin file Manager has available for that type of unit (a – indicates no file available).

The check boxes are used to select which units should be upgraded. Upgrading will require entry of a valid name and password for the selected IP Office system.

The Validate option should remain selected wherever possible. When selected, the upgrade process is divided as follows: transfer new software, confirm transfer, delete old software, restart with new software. If Validate is not selected, the old software is deleted before the new software is transferred.

Sorting the List

1. To sort list of IP Office systems click on the Name or IP Address column headings.

Search for Particular Systems

The default address used by the Upgrade Wizard is the address shown in the Manager title bar, which is selected through File | Preferences. If the unit required is not found, the address used can be changed.

1. Enter or select the required address in the **Unit/Broadcast Address** field.
2. Click **Refresh** to perform a new search.

Changing the .bin File Directory Used

The directory in which the Upgrade Wizard looks for .bin files is set through Manager's Binary Directory setting. This can be changed using **Files | Change Working Directory** 136 or **File | Preferences | Directories** 138. It can also be changed directly from the Upgrade Wizard as follows.

1. Right-click on the list area.
2. Select **Select Directory**.
3. Browse to and highlight the folder containing the .bin files. Click **OK**.
4. The list in the Available column will be updated to show the .bin files in the selected directory that match IP Office units or modules listed.

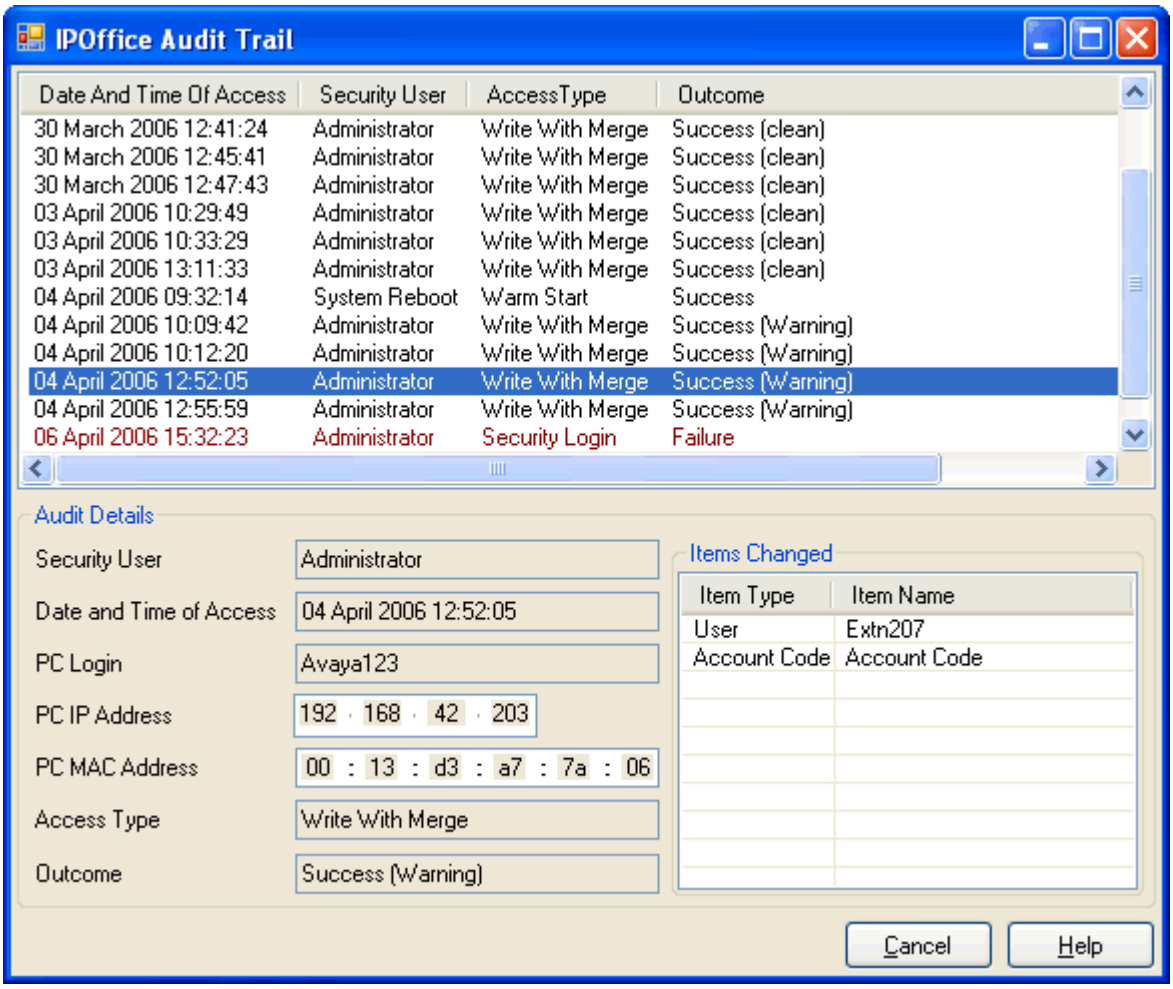
5.1.1.20 Advanced | Audit Trail

The audit trail lists the last 16 actions performed on the system from which the configuration loaded into Manager was received. It includes actions by Service Users such as getting the configuration, sending a configuration back, reboots, upgrades and default the system. The audit trail is not available for systems running pre-3.2 IP Office software.

For IP Office 4.1+ systems, audit trail events can be output to a Syslog server through the IP Office's **System | System Events** 185 settings.

The last failed action is always recorded and shown in red. It is kept even if there have been 16 subsequent successful actions.

- **Note:** The Audit Trail is part of the IP Office configuration file received from the IP Office system. If the configuration is kept open between send and reboot operations (ie. if **Close Configuration/Security Setting After Send** 140 is not selected), the Audit Trail will not show details of those operations. It will only show details of operations since the configuration was received if the configuration is closed and then a new copy of the configuration is received from the IP Office.



- **Audit Details**
  When a specific access event is selected from the list, the following information is shown in the Audit Details section:
  - The **Security User** shows the service user name used for the access action.
  - The **Data and Time of Access** indicate the local IP Office time when the recorded event occurred.
  - The **PC Login** is the computer name of the PC used for the access.
  - The **PC IP Address** and **PC MAC Address** are the IP address and MAC address of the PC used for access.
  - The **Access Type** details the type of action that was performed.
  - The **Outcome** shows the IP Office's response to the access. The outcome ***Success (Warning)*** refers to the sending of a configuration that contains fields marked as errors or warnings by Manager's validation function. ***Success (Clean)*** refers to the sending of a configuration that does not contain any validation errors or warnings.
- **Items Changed**
  The Items Changed area summarizes the changes contained in a sent configuration. Where changes to a single entry of a particular type are made, the Item Name field lists the individual entry changed. Where changes are made to several entries of the same type, the Item Name field displays Multiple items.

5.1.1.21 Advanced | Security Settings

This command is used to switch the Manager application to security mode. In that mode, Manager is used to edit the security settings of an IP Office system (3.2 or higher only). Refer to the section **Security Mode** 102.

5.1.1.22 Advanced | Erase Security Settings (Default)

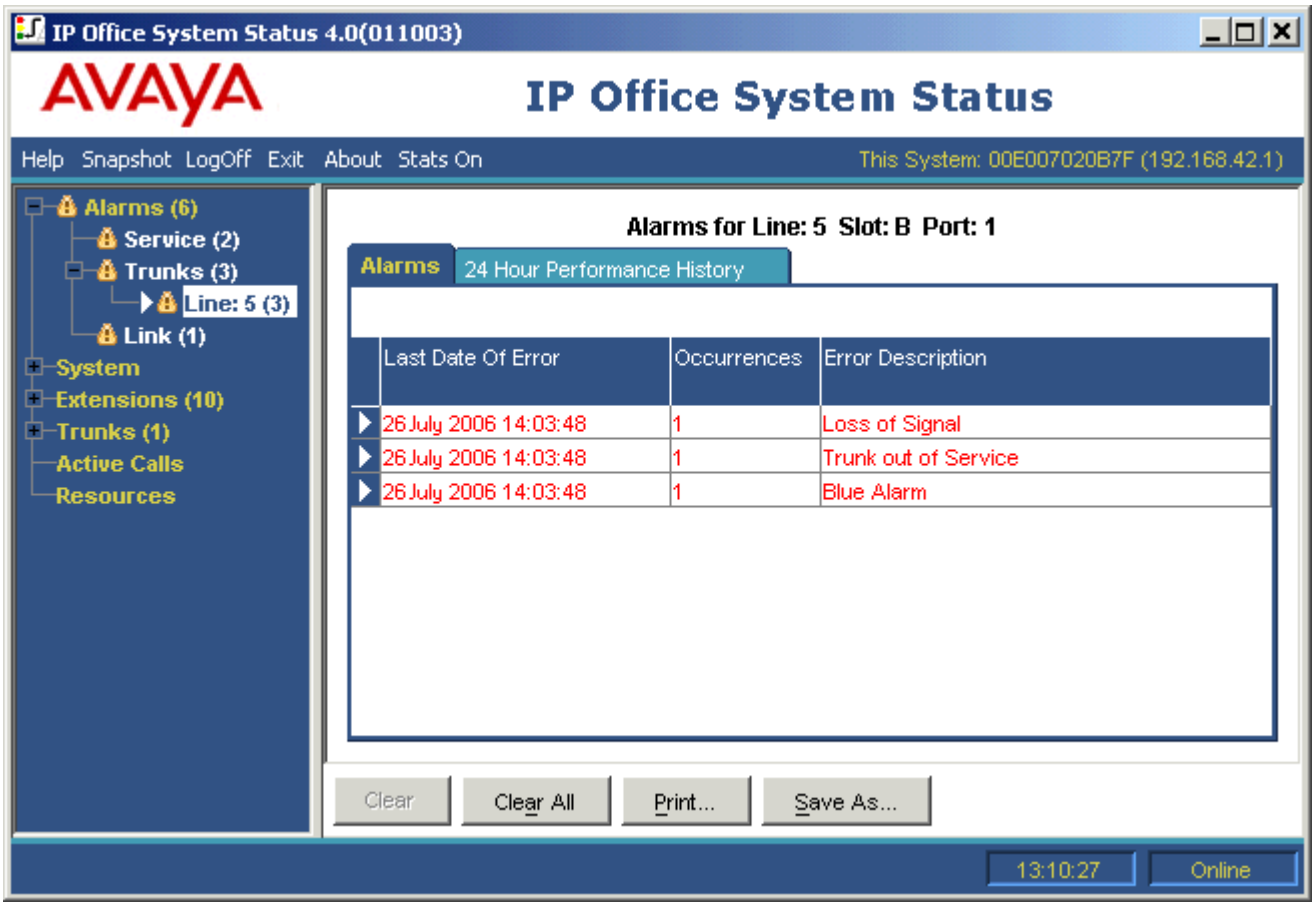
Added in IP Office Manager 6.1 and supported for IP Office 4.1+ systems.

This command returns the security settings of an IP Office system back to their default values. This action does not affect the IP Office system's configuration or audit trail record.

When this command is used, the Select IP Office menu is displayed. Once an IP Office system is selected, a valid user name and password are required to complete the action.

5.1.1.23 Advanced | System Status

IP Office System Status is an application that can be used to monitor and report on the status of an IP Office system. This application is supported by IP Office systems running IP Office 4.0 or higher.



This is a separate application from IP Office Manager but if installed on the same PC, it can be started using the File | Advanced | System Status link within Manager. Use of the application requires a service user name and password configured on the IP Office system for System Status Access within the IP Office's security settings.

5.1.1.24 Advanced | LVM Greeting Utility

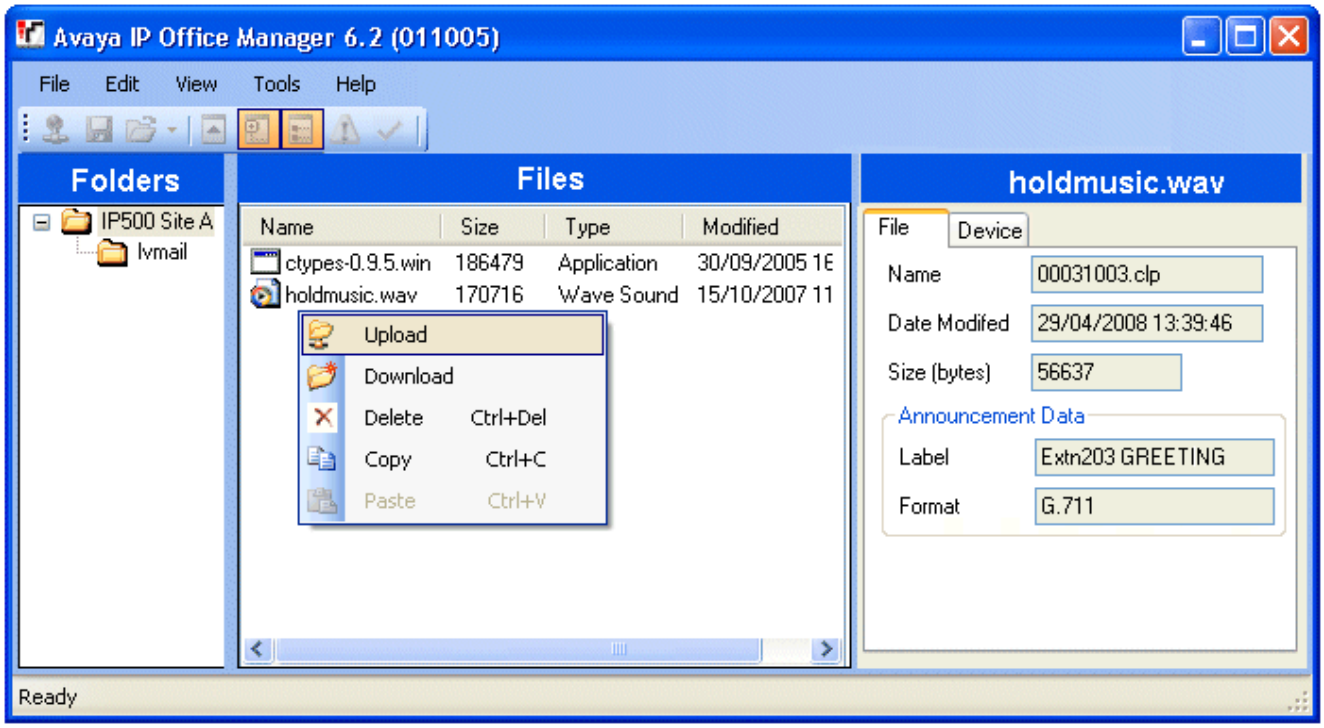
This command launches a utility that can be used to convert .wav files to the formats used by embedded voicemail (***.c23*** for Small Office Edition and ***.c11*** for others). The source file must be in the standard format used for all IP Office applications: PCM, 8kHz 16-bit, mono.

The resulting named greeting files can then be transferred to the embedded voicemail memory card and selected as auto attendant greetings in the **Recording Name** 373 field on the **Auto Attendant | Auto Attendant** 373 tab. The same named greeting file can be used in several auto attendants.

The utility can be run separately using the file **LVMGreeting.exe** found in the **LVMGreeting** sub-folder of the Manager application.

5.1.1.25 Advanced | Embedded File Management

For IP Office 4.2+ control units (except Small Office Edition) with an Embedded Voicemail memory card installed the contents of the card can be viewed through Manager. This view can also be used to add and remove files from the card. This may be useful when the memory card is being used to store Music on Hold or IP phone firmware files.



- **Embedded Voicemail Files**
  When viewing the memory card, the files related to Embedded Voicemail are visible, however these files are greyed out (ie. cannot be deleted, downloaded or overwritten).
  - Mailbox greetings and messages are shown as ***.clp*** files.
  - The language prompts for Embedded Voicemail functions are stored in separate language sub-folders of **lvmail**. These are either ***.c11*** (IP500 and IP406 V2) or ***.c23*** (Small Office Edition) files.
  - Named prompt files for use by Embedded Voicemail auto attendants are stored in the **lvmail\AAG** folder and use the same ***.c11*** or ***.c23*** file formats as the language prompts. These files can be created from standard .wav files before being downloaded to the memory card by using the LVM Greeting Utility 148.
- **Avaya IP Phone Files**
  The memory card can be used as the source of files requested by IP Phones when rebooting. For phones using IP Office DHCP, once the files are loaded onto the card, the **TFTP Server IP Address** 165 and **HTTP Server IP Address** 165 on the System | System 165 tab must be set to match the IP Office's LAN address.

- **Viewing a Memory Card**
  When **Advanced | Embedded File Management** is selected, the IP Office Manager will go through normal system discovery but will only allow selection of systems which can support a memory card and are running IP Office 4.2+. When a system is selected, a valid service user name and password for configuration access to that system is requested. If the system selected does not have a memory card installed, the files view remains blank and the message ***TFTP:Received TFTP Error "Not Found"*** appears in Manager's status bar.
- **Changing the Files View**
  The type of display used in the **Files** pane can be changed by selecting from the **View** menu in the toolbar.
- **Adding Files**
  Files can be added to the card by dragging and dropping or by right-clicking on the Files pane and selecting **Upload** or by using **File | Upload File...**. The IP Office will ask for confirmation if the file already exists on the memory card. The progress of the file upload is then indicated.
  - The IP Office Manager TFTP Log 154 shows the activity for files sent to and received from the memory card. It can be displayed by clicking on the **TFTP Log** button shown on the file upload/download dialog or by selecting **View | TFTP Log**.
- **Deleting Files**
  Existing files can be deleted by right-clicking on them and selecting **Delete**.
- **Downloading Files**
  Files can also be copied from the card by right-clicking on the file and selecting **Download**. Manager will prompt for the download location. Existing files are overwritten if present.
- To exit this mode of Manager back to normal configuration operation, select **File | Configuration** from the menu bar. Alternatively to view the card in another system, select **File | Close File Settings** and then **File | Open File Settings**.

5.1.1.26 Backup/Restore | Backup Binaries and Configuration

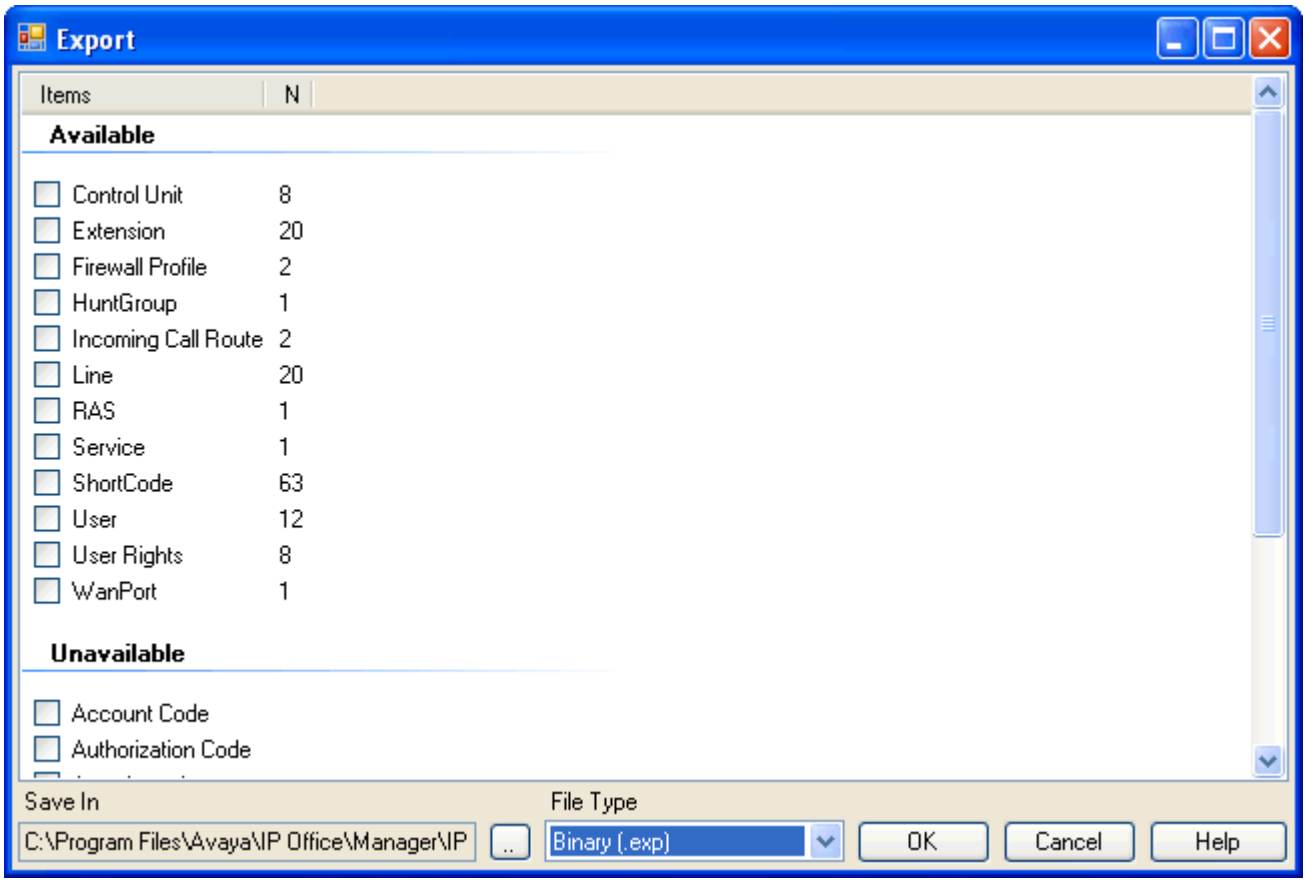
This command copies of all configuration files (.cfg) and software files (.bin) stored in Manager's working directory to a selected folder.

5.1.1.27 Backup/Restore | Restore Binaries and Configuration

This command copies all configuration files (.cfg) and software files (.bin) stored in a selected folder to the Manager's working directory.

5.1.1.28 Import/Export | Export

This command allows you to export the selected parts of the configuration to either a set of CSV text files (.csv) or a single binary file (.exp). See **Importing and Exporting Settings** 95.

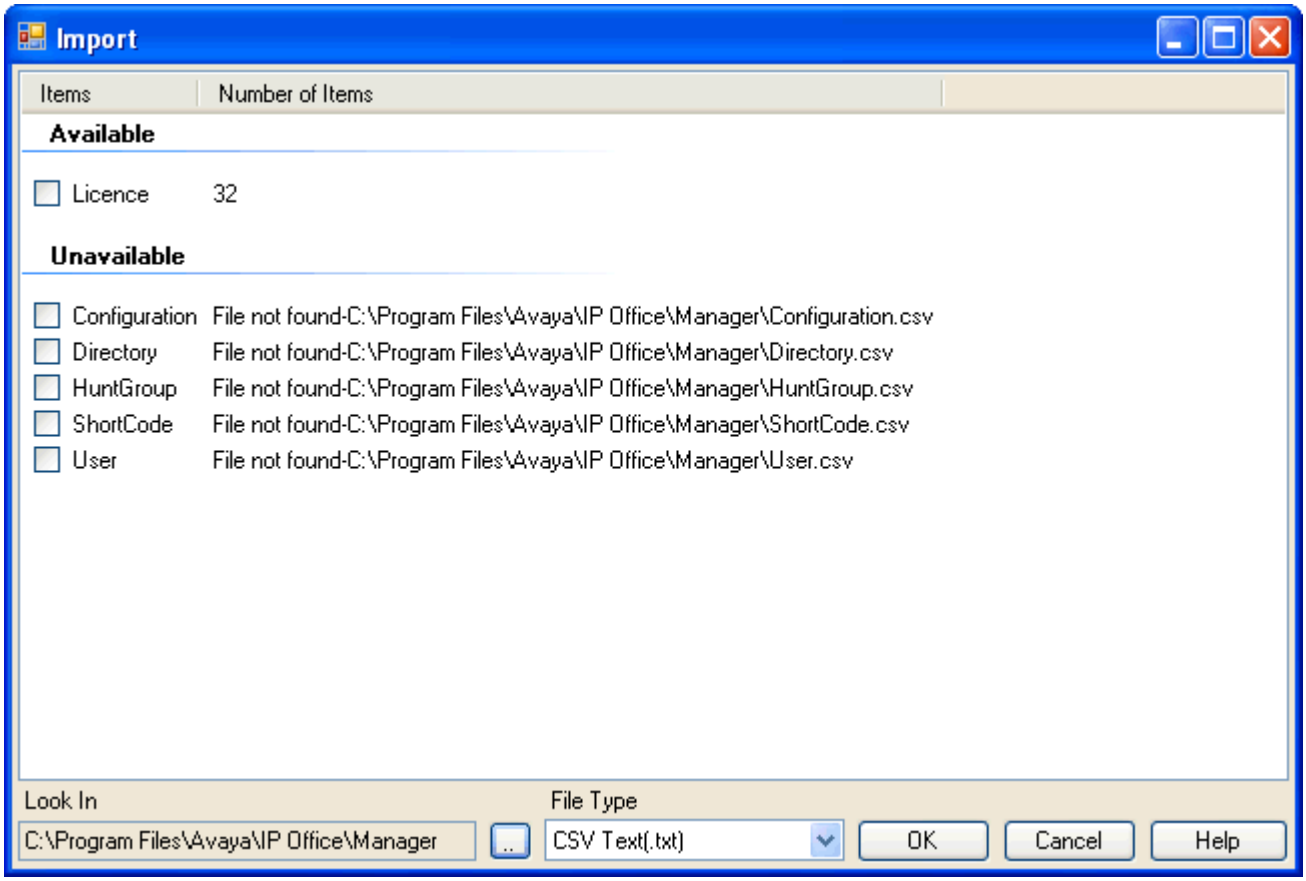


The display shows those exportable entry types for which the configuration contains entries. The File Type and the Save In path can be selected at the base. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.

Manager imports and exports CSV files using UTF8 character encoding which uses a double byte to support characters with diacritic marks such as ä. Other applications such as Excel, depending on the user PC settings, may use different single-byte encoding which will cause such characters to be removed. Care should be taken to ensure that any tool used to create or edit a CSV supports all the characters expected and is compatible with UTF8.

5.1.1.29 Import/Export | Import

This command allows you to import configuration settings. Two formats are supported. Binary files (.exp) are settings previously exported from an IP Office system using **File | Import /Export | Export** 152. CSV text files (.csv) can also be exported from an IP Office system or can be created using a plain text editor. See **Importing and Exporting Settings** 95.



For the selected File Type and the Look In path, the window displays the file or files found. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.

Manager imports and exports CSV files using UTF8 character encoding which uses a double byte to support characters with diacritic marks such as ä. Other applications such as Excel, depending on the user PC settings, may use different single-byte encoding which will cause such characters to be removed. Care should be taken to ensure that any tool used to create or edit a CSV supports all the characters expected and is compatible with UTF8.

5.1.1.30 Exit

The **File | Exit** command exits the Manager application.

5.1.2 View

5.1.2.1 Toolbars

This command allows selection of which toolbars should be shown or hidden in configuration mode. A tick mark is displayed next to the name of those toolbars that are currently shown.

5.1.2.2 Navigation Pane

This command shows or hides the Navigation Pane. A tick mark appears next to the command when the pane is shown.

5.1.2.3 Group Pane

This command shows or hides the Group Pane. A tick mark appears next to the command when the pane is shown.

5.1.2.4 Details Pane

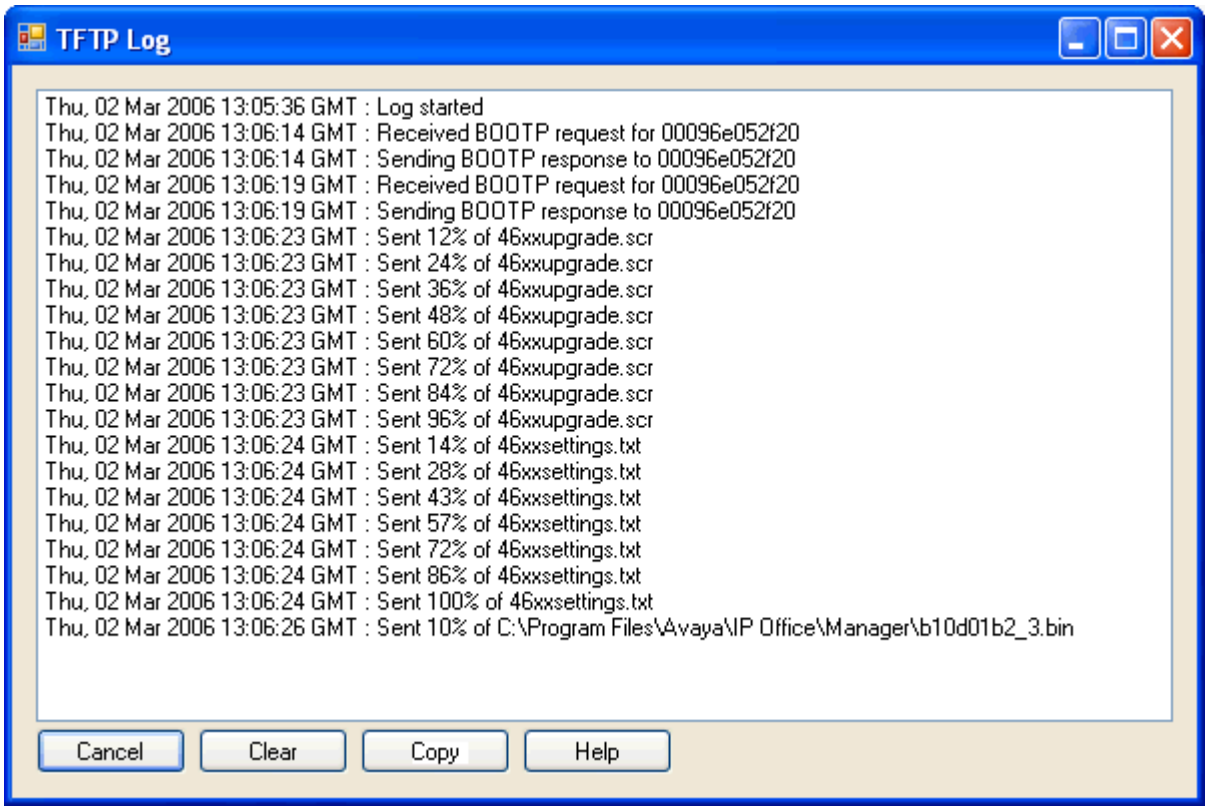
This command set the location of the Details Pane when the Group Pane is also shown. The Details Pane can be placed either below or to the right of the Group Pane.

5.1.2.5 Error Pane

This command shows or hides the Error Pane. A tick mark appears next to the command when the pane is shown.

5.1.2.6 TFTP Log

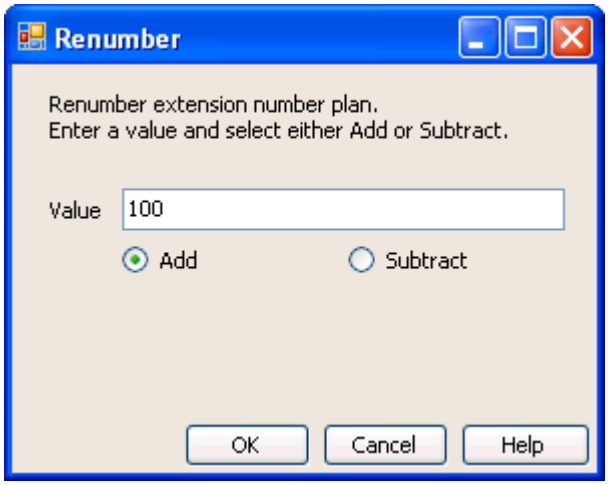
This command displays the TFTP Log window. This window shows TFTP traffic between Manager and devices that uses TFTP to send and receive files. For example, the TFTP Log below shows an Avaya IP phone requesting and then being sent its software files.



5.1.3 Tools Menu

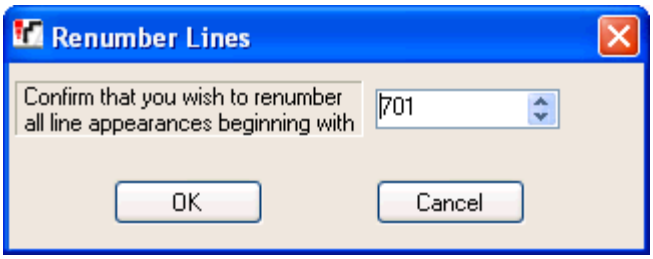
5.1.3.1 Extension Renumber

This command allows the extension numbering of user extensions to be raised or lowered by a specified amount. The command does not alter the extension number used for hunt groups but does adjust the extension numbers of hunt group members.



5.1.3.2 Line Renumber

On external trunks Line appearance ID numbers can be assigned to each channel supported in order to allow that channel or line to be associated with a Line Appearance button on phones that support button programming. By default all lines are automatically numbered from 701 upwards when added to the IP Office system. This command allows the lines to be renumbered from a different starting point.



5.1.3.3 Busy on Held Validation

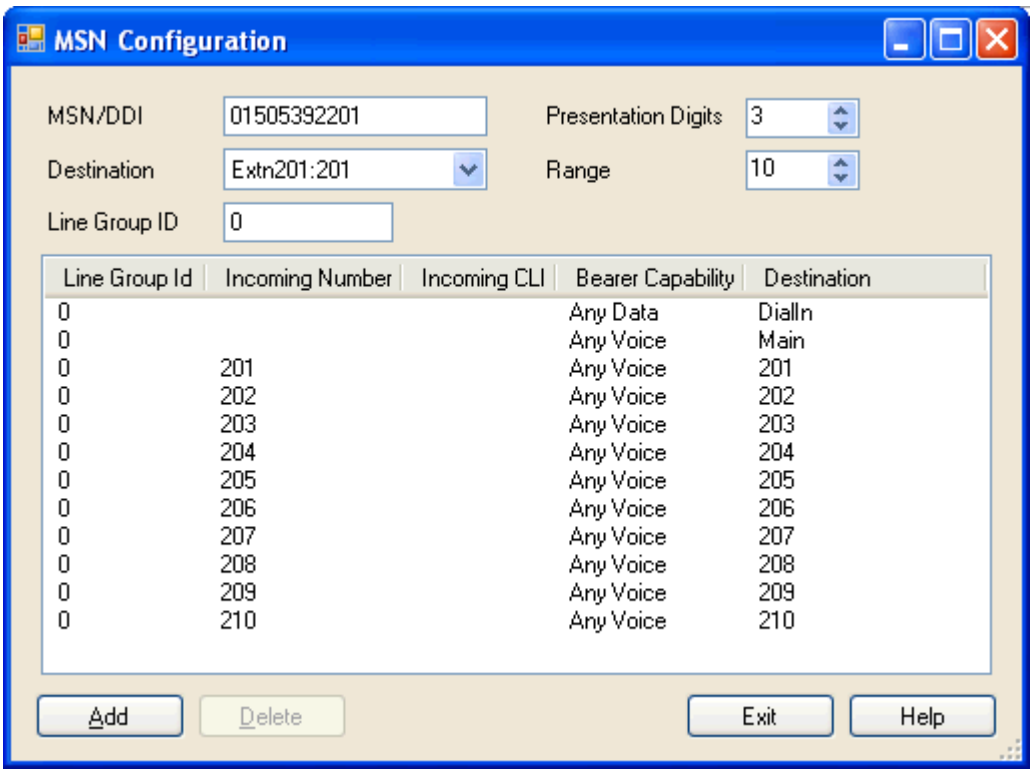
Busy on Held is a user feature where, when the user has a call on hold, the system indicate the user as being busy to any further calls.

The use of **Busy on Held** in conjunction with multiple call appearance buttons is deprecated. This command can be used to identify those users who have multiple call appearance buttons and for whom Busy on Held is currently set.

When run, it shows a list of the users affected and if selected their Busy on Held setting will be switched off.

5.1.3.4 MSN/DID Configuration

This menu can be used to populate the Incoming Call Route 328 table with a range of MSN or DID numbers.



In the example above, the customer has ten DID numbers starting at 01505392201 with the central office exchange passing through 3 digits for each. Having selected the number of presentation digits (3), set the range (10) and selected the first destination (201); clicking Add created the ten incoming call routes (201 to 210).

- **MSN/DID**
  The first number in the set of MSN numbers for which you have subscribed. Note: If you require to find an exact match between the MSN numbers and the destination numbers, enter a minus (-) sign before the first MSN number.
- **Destination**
  Where incoming calls with matching digits should be routed. The drop-down list contains the extensions and groups on the IP Office system.
- **Line Group ID**
  Specifies the incoming line group ID of the trunks to which the DID routing is applied.
- **Presentation Digits**
  Set to match the number of digits from the MSN/DID number that the central office exchange will actually present to the IP Office system.
- **Range**
  How many MSN or DID number routes to create in sequence using the selected MSN/DID and Destination as start points. Only routing to user extensions is supported when creating a range of entries.
- **Add**
  Adds the appropriate entries to the Incoming Call Route table using the value entered above.
- **Delete**
  Removes a specific entry.

5.2 Security Mode

5.2.1 File | Open Security Settings

This command displays the Select IP Office menu to select and load a system's security settings. This requires entry of a user name and password with rights to access security settings of the selected system.

This behavior changes when configuration settings have already be received from a system using a Service User name and password that also has security access rights for that system. In that case, the system's security settings are automatically loaded without requiring name and password entry.

5.2.2 File | Close Security Settings

Close the currently open set of security settings received from an IP Office system without saving those settings.

5.2.3 File | Save Security Settings

Send edited security settings back to the IP Office. Requires re-entry of a Service User name and password with access rights for security settings.

5.2.4 File | Reset Security Settings

Added in IP Office Manager 6.1 and supported for IP Office 4.1+ systems.

Reset the security settings of the selected IP Office to defaults. Requires entry of a Service User name and password with access rights for resetting the security settings. This option is not useable while a set of security configuration settings is loaded.

The command **File | Advanced | Erase Security Settings (Default)** 147 performs the same action from IP Office Manager configuration mode.

5.2.5 File | Preferences

See Preferences 137 in the Menu Bar Commands | Configuration Mode | File Menu section.

5.2.6 File | Configuration

This command returns the Manager application to configuration mode.

5.2.7 File | Exit

This command closes Manager.

Chapter 6.
Configuration Settings

6. Configuration Settings

This following sections detail the various configuration settings provided for different entry types within the IP Office configuration.

Depending on the type and locale of the IP Office some settings and tabs may be hidden as they are not applicable. Other settings may be grayed out. This indicates that the setting is either for information only or that another setting needs to be enabled first.

The different entry types are:

-  **BOOTP** 162
  Manager settings for the support of IP Office systems requesting software.
-  **Operator** 163
  Manager settings for the editing of configuration settings from pre-3.2 IP Office systems.
-  **System** 164
  Overall settings for the data and telephony operation of the IP Office system.
-  **Line** 193
  Settings for trunks and trunk channels within the IP Office including IP trunks.
-  **Control Unit** 246
  Information summary of the control and expansion units in the IP Office system.
-  **Extension** 247
  Settings for extension ports including IP extensions.
-  **User** 255
  Settings for IP Office users. They may or may not be associated with an extension.
-  **Hunt Group** 287
  Collections of users to which calls can be directed for answer by any one of those users.
-  **Short Code** 308
  These are numbers which when dialed trigger specific IP Office features or are translated for external dialing.
-  **Service** 309
  Configuration settings such as user names and passwords needed for connections to data services such as the Internet.
-  **RAS** 326
  Remote Access Service settings for connecting incoming data calls.
-  **Incoming Call Route** 330
  Entries here are used to match incoming call details to destinations on the IP Office system.
-  **WAN Port** 321
  Configuration settings for the WAN ports provided on some IP Office units.
-  **Directory** 335
  External names and numbers. Used for matching names to incoming calls and for dialing from IP Office user applications.
-  **Time Profile** 336
  Used to control when various IP Office functions are active.
-  **Firewall Profile** 339
  Use to control the types of data traffic that can cross into or out of the IP Office.
-  **IP Route** 344
  These entries are used to determine where data traffic on the IP Office LAN and WAN interfaces should be routed.

-  **Least Cost Routing** 346
  On pre-4.0 IP Office systems LCR is used to rerouted or block outgoing external calls. For IP Office 4.0+ this has been replace by ARS.

-  **Account Code** 351
  Used for call logging and to control the dialing of certain numbers.

-  **License** 353
  License keys are used to enable IP Office features and applications.

-  **Tunnel** 355
  Used to created IPSec and L2TP data tunnels.

-  **Logical LAN** 360
  Used to allow two subnets to be run and routed on the same physical LAN.

-  **Wireless** 361
  Used to provide wireless services on the Small Office Edition.

-  **Auto Attendant** 372
  Used when an Embedded Voicemail card is installed on a Small Office Edition, IP406 V2 or IP500 systems.

-  User Rights 364
  Provide templates to control which settings users can change.

-  **ARS** 377
  Automatic Route Selection is used by IP Office 4.0+ to control outgoing external calls. It replaces Least Cost Routes.

-  **Authorization Codes** 375
  Authorization codes are similar to account codes. However, unlike account codes which are useable by any user, each authorization code is only useable by a specific user or users associated with a specific set of user rights.

-  **E911 System** 381
  Available of US systems to support E911 services.

6.1 BOOTP



BOOTP is protocol used by devices to request software when restarting. For IP Office, it is used when upgrading the control unit within a system or when the core software within the control unit has been erased. When running, Manager can respond to BOOTP requests and, if it finds a matching BOOTP entry for the system, provide the software file indicated by that entry.

BOOTP entries are not part of an IP Office system's configuration settings; instead they are saved on the Manager PC. Normally Manager automatically creates a BOOTP entry for each system with which it has communicated, up to a maximum of 50 entries. However BOOTP entries can be added and edited manually when necessary.

- **File Location**
  The location from which Manager provides files in response to BOOTP is its binaries directory. This can be changed using **File | Change Working Directory** 136 or **File | Preferences | Directories** 138. This directory is also the directory used by Manager when providing files by TFTP.
- **Disabling BOOTP**
  Manager can be disabled from providing BOOTP support for any systems. Select **File | Preferences | Preferences | Enable BOOTP and TFTP Server** 137.

Settings

- **Enabled:** *Default = Enabled*
  If unticked, BOOTP support for the matching IP Office system from this Manager PC is disabled.
- **System Name**
  This field is not changeable. It shows the IP Office's system name.
- **MAC Address**
  The MAC address of the IP Office system's control unit. The address can be obtained and or verified in a number of ways:
  - When a system's configuration settings are loaded into Manager, it is shown as the Serial Number on the Unit 246 form. On defaulted systems, it is also used as the system name.
  - If the system is requesting software, the MAC address is shown as part of the request in the status bar at the base of the Manager screen.
  - If the system can be pinged, it may be possible to obtain its MAC address using the command ***arp -a <ip address>*** .
- **IP Address**
  The IP address of the IP Office system's LAN1.
- **Filename**
  The name of the .bin software file used by that type of control unit. For full details refer to the IP Office Installation Manual. To be transferred to the system this file must exist in the Manager applications Working Directory.
- **Time Offset:** *Default = 0.*
  In addition to performing BOOTP support for IP Office systems the Manager application can also act as a time server (RFC868). This field sets the offset between the time on the PC running Manager and the time sent to the IP Office system in response to its time requests. The field is not used if a specific Time Server IP Address is set through the System form in the IP Office's configuration settings.
  - Manager can be disabled from acting as an Internet Time (RFC868) server. Select **File | Preferences | Preferences** 137 and untick **Enable time server**.

6.2 Operator



Operator entries are not part of an IP Office system's configuration settings. They are used when a pre-3.2 IP Office configuration is loaded to control what parts of a configuration can be edited.

The table below lists the settings for the default operators provided.

Operator	View	Edit	New	Delete	Configuration Entry Types
Administrator	✓	✓	✓	✓	All configuration entries.
Manager	✓	✓	✓	✓	View all. Other actions Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS.
Operator	✓	✓	✗	✗	View all configuration entries. Edit all except System, Line, Control Unit and Authorization Codes.

If when receiving a configuration from a pre-3.2 IP Office system an invalid operator is specified, the settings will be loaded using the Guest operator. This additional operator allows a read-only view.

6.3 System



There is only one System entry for each IP Office system.

The following tabs are part of the System form:

- **System** 165
  General settings for the IP Office system.
- **LAN1** 168
  Network settings for the main RJ45 Ethernet ports on the IP Office control unit. Includes DHCP and RIP settings.
- **LAN2** 173
  LAN2 is not supported by all IP Office control units.
  - On the Small Office Edition and IP500 control units the LAN2 settings are used for the RJ45 Ethernet port labeled WAN.
  - On the IP412 control units LAN2 settings are used for the RJ45 ethernet port labeled LAN2.
  - For IP406 V2 control units running IP Office 4.1+, the RJ45 LAN port 8 can be selected to act be LAN2 if required.
- **DNS** 174
  Specify the Domain Name Server addresses to use for address resolution.
- **Voicemail** 175
  Details the type and location of the IP Office's voicemail server.
- **Telephony** 177
  System-wide telephony settings.
- **H.323 Gatekeeper** 181
  Settings used for VoIP end points registering with IP Office and for DiffServe QoS settings applied to VoIP traffic. This tab is only shown on pre-4.0 IP Office systems. For IP Office 4.0+ separate LAN1 and LAN2 H.323 settings are shown on the LAN1 and LAN2 tabs respectively.
- **LDAP** 182
  Settings to allow the IP Office to include Lightweight Directory Access Protocol database records in its directory.
- **System Events** 185
  Simple Network Management Protocol (SNMP), email (SMTP), and Syslog settings for the sending of IP Office events.
- **Twinning** 188
  System wide controls for the use of Mobile Twinning.
- **CDR** 189
  Call Detail Record settings for the sending of call detail records to a specified IP address.
- **VCM** 191
  This form allows adjustment of the echo control applied by IP400 VCM cards. It does not apply to IP500 VCM cards.
- **SBCC** 192
  This form is used for settings specific to the IP Office Small Business Contact Center (SBCC) application.

6.3.1 System

System | System	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓ Changes to Locale, License Server IP Address and Favor RIP Routes over Static Routes require a reboot..

- **Name:** *Default: = System MAC Address.*
  A name to identify this system. This is typically used to identify the configuration by the location or customer's company name. Some features such as Gatekeeper require the system to have a name. This field is case sensitive and within any network of IP Offices must be unique. Do not use punctuation characters such as #, ?, /, -,. and ,.
- **Contact Information:** *Default = Blank, Software level = 4.1+.*
  This field is only be edited by service user with administrator rights. If Contact Information is entered, it will set the IP Office system under 'special control'.
  - If the contact information is set using Avaya Integrated Management (AIM), warnings that "This configuration is under Integrated Management Control" are given if the configuration is opened using a standalone version of IP Office Manager. See Loading a Configuration 89.
  - If the contact information is set using a standalone version of Manager, warnings that "This configuration is under special control" are given when the configuration is opened again. This can be used to warn other users of Manager that the IP Office system is being monitored for some specific reason and provide them with contact details of the person doing that monitoring. See Loading a Configuration 89.
- **Locale**
  This setting sets default telephony and language settings based on the selection. It also sets various external line settings and so must be set correctly to ensure correct operation of the IP Office system. See Supported Country and Locale Settings 750. For individual users the system settings can be overridden through their own locale setting (**User | User | Locale**). If this option is selected, it is the installers responsibility to ensure that the settings selected match those required by the line providers.
  - **Customize Locale Settings:** *Software level = IP Office 4.0 Q2 2007 Maintenance Release +*
    The Customize locale matches the Saudi Arabia 783 locale but with the following additional controls:
    - **Tone Plan:** *Default = Tone Plan 1*
      The tone plan control tones and ringing patterns. The options are:
      - ***Tone Plan 1:*** United States 791.
      - ***Tone Plan 2:*** United Kingdom 790.
      - ***Tone Plan 3:*** France 766.
      - ***Tone Plan 4:*** Germany 768.
      - ***Tone Plan 5:*** Spain 785.
    - **CLI Type:** *Default = FSK V23*
      This should match the method CLI signalling being received by the IP Office.
    - **Busy Tone Detection:** *Default = Off.*
      Enables or disables the use of busy tone detection for call clearing. This is a system wide setting.
- **Password:** *Default = password, Software level = 2.1 to 3.1.*
  A password for controlling access to the operation of the Control Unit. This is required to upgrade and reboot and to send or receive configurations from the Control Unit. This is a required option and a prompt is given if left blank. For IP Office 3.2+ systems this setting has become part of the security settings.
- **Monitor Password:** *Default = blank, Software level = 2.1 to 3.1.*
  This password is used by the Monitor and Call Status applications to allow communication with the main unit. If left blank these applications will use the System Password above. For IP Office 3.2+ systems this setting has become part of the security settings.
- **Time Offset:** *Default = 00:00*
  This setting can be used if the IP Office is in a different time zone from its time server. For example, if the IP Office is 5 hours behind the time server, this field should be configured with -5:00 to make the adjustment. The time offset can be adjusted in 15 minute increments. Note: If the time server is a Manager PC, the adjustment can also be done through the Manager BOOTP entry for the system.
- **TFTP Server IP Address:** *Default = 0.0.0.0 (Broadcast)*
  For Avaya IP phones using IP Office DHCP, the address set here is used for their TFTP requests for software and settings files.
  - While running, IP Office Manager can act as a TFTP server and provides files from its working directory 138. IP Office Manager can be disabled from doing TFTP through the **Enable BootP and TFTP Servers** 137 command.

- On systems that support an Embedded Voicemail memory card (Small Office Edition, IP406 V2 and IP500), the LAN1 IP Address can be entered to specify that memory card as the TFTP file source. The files required for download must be transferred onto the card using either TFTP from the PC command line (see **File Writer IP Address** below) or for IP Office 4.2+ through **Embedded File Management** 149.
- 1700 Series IP phones do not support TFTP and require an HTTP Server IP Address (see below) to be specified.

- **HTTP Server IP Address:** *Default = 0.0.0.0 (Disabled), Software Level = 4.2+.*
  If an address is entered here, Avaya IP phones using IP Office DHCP will use that address to request software and settings files. The files for download should be placed in the HTTP server's root directory.
  - For IP Office 4.2, using the Embedded Voicemail memory card is also supported for HTTP file requests for up to 50 IP phones. This is done by setting the **TFTP Server IP Address** and **HTTP Server IP Address** to match the control units IP address. This is supported for up to 50 IP phones.
- **Branch Prefix:** *Default = Blank, Range = 0 to 999999999, Software Level = 4.1+.*
  Used to identify the IP Office system within an Avaya SIP for Branch network linked via an SES server. The branch prefixes of each IP Offices within the network must unique and must not overlap. For example 85, 861 and 862 are okay but 86 and 861 overlap. See SES Line 242 for more details.
- **Local Number Length:** *Default = Blank (Off), Range = Blank (Off) or 3 to 9, Software level = 4.1+.*
  Set the default length for extension numbers for extensions, users and hunt groups. Entry of an extension number of a different length will cause an error warning within IP Office Manager. This field is intended for IP Office systems being used in an Avaya SIP for Branch network linked via an SES server, where fixed extension lengths must be used. Note that the Branch Prefix and the Local Number Length must not exceed 15 digits.
- **Time Server IP Address:** *Default = 0.0.0.0 (Default)*
  The IP Office control unit contains a battery backed clock used to maintain system time during normal operation and when mains power is removed. The time is obtained using Internet Time protocol (RFC868) requests. Entering 0.0.0.1 disables time server updates.
  - 0.0.0.0 means default operation. In this mode, following a reboot the IP Office control unit will send out a time request on its LAN interfaces. It first makes the request to the Voicemail Server IP address in its configuration and, if it receives no reply, it then makes broadcast requests.
  - The Voicemail Lite Server, Voicemail Pro Service and the Manager program can all act as time servers for the IP Office, giving the time as set on their host PC.
  - If you are running Manager when the voicemail server starts, voicemail does not start as a time server. It is therefore recommended that you have no copy of Manager running when you start or restart the voicemail server. Manager can be disabled from acting as a time server by deselecting the Enable Time Server option (**File | Preferences | Edit | Preferences**).
- **File Writer IP Address:** *Default = 0.0.0.0 (Disabled)*
  For Small Office Edition, IP406 V2 and IP500 control units only. This field sets the address of the PC allowed to send files to the memory card in their PCMCIA or CF TII slot.
- **License Server IP Address:** *Default = 255.255.255.255*
  This is the IP address of the server providing license key validation for the IP Office. The serial number of the Feature Key dongle at that address must match the serial number used to generate the licenses in the IP Office system's configuration. See License 353 for more details.
  - For parallel and USB Feature Key dongles this address should be the IP address of a PC running the IP Office Feature Key server software. Note that separate IP Offices cannot use the same Feature Key server for license validation, nor can an IP Office validate its licenses against more than one address.
  - For a serial port Feature Key dongle, the address should be set to 0.0.0.0.
  - For IP500 systems this field is hidden as those systems must use a smart card Feature Key dongle inserted into the control unit.
- **Dongle Serial Number**
  This field is for information only. It shows the serial number of the feature key dongle against which the IP Office system last validated its licenses. ***Local*** is shown for a serial port or Smart Card feature key plugged directly into the control unit. ***Remote*** is shown for a parallel or USB feature key connected to a feature Key Server PC.
- **AVPP IP Address:** Default = 0.0.0.0 (Disabled)
  Where Avaya 3600 Series SpectraLink wireless handsets are being used with the IP Office, this field is used to specify the IP address of the Avaya Voice Priority Processor (AVPP).
- **Conferencing Center URL:** *Default = Blank (Disabled).*
  This is the root URL of the web server being used to support Conferencing Center, for example http://server/. This address is then by the Phone Manager and SoftConsole applications to launch Conference Center functions. In Phone Manager setting this value enables use of the join conference controls.
- **DSS Status:**
  This setting has been moved to the **System | Telephony | Telephony** 177 sub-tab.
- **Beep on Listen:** *Default = On (USA)/On (Rest of World)*
  This setting has been moved to the **System | Telephony | Tones & Music** 179 sub-tab.

- **Hide auto record:** *Default = On (USA)/Off (Rest of World)*
  During call recording by Voicemail Pro, some Avaya phones display REC or similar to show that the call is being recorded. When on, Hide auto record suppresses this recording indication.

- **Favour RIP Routes over Static Routes:** *Default = Off*
  RIP 345 can be enabled on the IP Office LAN1 168 and LAN2 173 interfaces, and on specific Services 309. When this setting is on, the RIP route to a destination overrides any static route to the same destination in the IP Office's IP Routes 344, regardless of the RIP route's metric. The only exception is RIP routes with a metric of 16 which are always ignored. Note: If a previously learnt RIP route fails, the IP Office applies a metric of 16 five minutes after the failure. When off, any RIP route to a destination for which a static route has been configured is ignored.

6.3.2 LAN1

This tab is used to configure the behavior of the RJ45 Ethernet ports labeled LAN or LAN1 on the IP Office control unit.

For IP Office 4.0+ this form contains 3 sub-tabs: LAN Settings, Gatekeeper and Network Topology. The Gatekeeper tab contains settings perviously located on the **System | H323 Gatekeeper** 181 tab.

Depending on the type of IP Office control unit, the relationship between the physical RJ45 Ethernet ports and LAN1 and LAN2 within the IP Office configuration varies as follows:

- **IP Office 500**
  This unit has 2 RJ45 Ethernet ports, marked as LAN and WAN. These form a full-duplex managed layer-3 switch. Within the IP Office configuration, the physical LAN port is LAN1, the physical WAN port is LAN2.
- **IP460 V2**
  This unit has 8 RJ45 Ethernet ports marked as LAN 1 to 8. These form a full-duplex unmanaged layer-2 LAN switch. Ports are auto-MDI/MDIX. Within the IP Office configuration the physical LAN ports are LAN1.
  - For IP Office 4.1+, port 8 can be configured to act as LAN2 using the Use Port 8 as LAN2 option on the LAN1 LAN Settings tab.
- **IP412**
  This unit has 2 RJ45 Ethernet ports marked as LAN 1 to 2. These form a half-duplex managed layer-3 switch. Both ports are fixed MDI crossover ports. Within the IP Office configuration, physical port 1 is LAN1, physical port 2 is LAN2.
- **Small Office Edition**
  This unit has 4 RJ45 Ethernet ports marked LAN 1 to 4. These form a full-duplex unmanaged layer-2 switch. An addition RJ45 Ethernet socket marked as WAN exists. With the LAN ports this acts as a managed layer-3 switch. Within the IP Office configuration, the physical LAN ports are LAN1, the physical WAN port is LAN2.

LAN Settings

System | LAN1 | LAN Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **IP Address:** *Default = 192.168.42.1 or DHCP client. See Default Settings* 106.
  This is the IP address of the Control Unit on LAN1. If the control unit is also acting as a DHCP server on LAN1 then this address is the starting address of the DHCP address range. For a new powered up control unit the default
- **IP Mask:** *Default = 255.255.255.0 or DHCP client. See Default Settings* 106.
  This is the IP subnet mask used with the IP address.
- **Use Port 8 as LAN2:** *Default = Off, Software level = 4.1+.*
  This option is provided for IP406 V2 control units with IP Office 4.1 or higher software only. When selected, LAN port 8 on the control unit acts as LAN2 173 for the IP Office control unit. Note that this setting is retained by the IP Office even if the system is defaulted. To change the setting, the value in the configuration should be changed and the configuration sent back to the system for an immediate reboot.
- **Primary Trans. IP Address:** *Default = 0.0.0.0 (Disabled)*
  This setting is only available on control units that support a LAN2. Any incoming IP packets without a service or session are translated to this address if set.
- **RIP Mode:** *Default = None*
  Routing Information Protocol (RIP) 345 is a method by which network routers can exchange information about device locations and routes. Routes learnt using RIP are known as 'dynamic routes'. The IP Office also supports 'static routes' though its IP Route 343 entries.
  - ***None***
    The LAN does not listen to or send RIP messages.
  - ***Listen Only (Passive)***
    Listen to RIP-1 and RIP-2 messages in order to learn RIP routes on the network.
  - ***RIP1***
    Listen to RIP-1 and RIP-2 messages and send RIP-1 responses as a sub-network broadcast.
  - ***RIP2 Broadcast (RIP1 Compatibility)***
    Listen to RIP-1 and RIP-2 messages and send RIP-2 responses as a sub-network broadcast.
  - ***RIP2 Multicast***
    Listen to RIP-1 and RIP-2 messages and send RIP-2 responses to the RIP-2 multicast address.

- **Enable NAT:** *Default = Off*
  This setting is only available on Small Office Edition, IP412 and IP500 systems. It controls whether NAT 712 should be used for IP traffic from LAN1 to LAN2. This setting should not be used on the same LAN interface as a connected WAN3 expansion module.

- **Number of DHCP IP Addresses:** *Default = 200 or DHCP client. See Default Settings 100, Range = 1 to 999.*
  This defines the number of sequential IP addresses available for DHCP clients.

- **DHCP Mode:** *Default = See Default Settings 100.*
  This controls the control unit's DHCP mode for LAN1. When doing DHCP; LAN devices are allocated addresses from the bottom of the available address range upwards, Dial In users are allocated addresses from the top of the available range downwards. If the control unit is acting as a DHCP server on LAN1 and LAN2, Dial in users are allocated their address from the LAN1 pool of addresses first.

    - For a new control unit or one with an erased configuration, the default mode depend on whether the IP Office detects another DHCP server when powered up. See Default Settings 100 for details.

  - ***Server***
    When this option is selected, the IP Office will act as a DHCP Server on LAN1, allocating address to other devices on the network and to PPP Dial in users.

  - ***Disabled***
    When this option is selected, the IP Office will not use DHCP. It will not act as a DHCP server and it will not request an IP address from a DHCP server on this LAN.

  - ***Dial In***
    When this option is selected, the IP Office will allocate DHCP addresses to PPP Dial In users only. On IP500 systems using DHCP pools, only addresses from a pool on the same subnet as the IP Office's own LAN address will be used.

  - ***Client***
    When this option is selected, the IP Office will request its IP Address and IP Mask from a DHCP server on the LAN.

  - **Advanced**: *Software level = 4.2+ (IP500 only).*
    IP500 control units with IP Office 4.2+ software can be configured with a number of DHCP pools from which the IP Office can then issue addresses. See DHCP Pools 172.

Gatekeeper

These settings are only shown on IP Office 4.0+ systems. On pre-4.0 IP Office systems the H.323 settings were located on a separate System | H.323 Gatekeeper 181 tab for the whole system. These settings relate to the support of H323 extension and trunks on the LAN1 interface including SIP trunks.

System | LAN1 | Gatekeeper Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✗.

- **H323 Gatekeeper Enable:** *Default = On*
  This settings enables IP Office gatekeeper operation.

- **SIP Proxy Enabled:** *Default = On*
  This settings enables support of SIP trunks. It also requires entry of a SIP Trunk Channels license.

- **H323 Auto-create Extn:** *Default = On*
  When this option is on, an extension entry is automatically created for H.323 phones registering themselves with the IP Office as their gatekeeper.

- **H323 Auto-create User:** *Default = Off*
  When this option is on and H323 Auto-create Extn is also on, when a new H.323 extension is created a matching user record is also created.

- **RTP Port Number Range:** *Software level = 3.0+.*
  For each VoIP call, a receive port for incoming Real Time Protocol (RTP) traffic is selected from a defined range of possible ports, using the even numbers in that range. The Real Time Control Protocol (RTCP) traffic for the same call uses the RTP port number plus 1, that is the odd numbers. For IP Office control units and Avaya H.323 IP phones, the default port range used is 49152 to 53246. On some installations, it may be a requirement to change or restrict the port range used. It is recommended that only port numbers between 49152 and 65535 are used, that being the range defined by the Internet Assigned Numbers Authority (IANA) for dynamic usage.

  - **Port Range (minimum):** *Default = 49152. Range = 1024 to 64510.*
    This sets the lower limit for the RTP port numbers used by the IP Office.

  - **Port Range (maximum):** *Default = 53246. Range = 2048 to 65534.*
    This sets the upper limit for the RTP port numbers used by the IP Office. The gap between the minimum and the maximum must be at least 1024.

- **DiffServe Settings**
  When transporting voice over low speed links it is possible for normal data packets (1500 byte packets) to prevent or delay voice packets (typically 67 or 31 bytes) from getting across the link. This can cause unacceptable speech quality. Therefore it is important that all traffic routers and switches in a network to have some form of Quality of Service mechanism (QoS). QoS routers are essential to ensure low speech latency and to maintain sufficient audible quality.

  IP Office supports the DiffServ (RFC2474) QoS mechanism. This uses a Type of Service (ToS) field in the IP packet header. The IP Office uses this field to prioritize voice and voice signaling packets on its WAN interfaces. Note that the IP Office does not perform QoS for its Ethernet ports including the WAN Ethernet port on the Small Office Edition.

  The hex and decimal entry fields for the following values are linked, the hex value being equal to the decimal multiplied by 4.

  - **DSCP (Hex):** *Default = B8 (Hex)/46 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
    The DiffServ Code Point (DSCP) setting applied to VoIP calls. For correct operation, especially over WAN links, the same value should be set at both ends.
  - **DSCP Mask (Hex):** *Default = FC (Hex)/63 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
    Allows a mask to be applied to packets for the DSCP value.
  - **SIG DSCP (Hex):** *Default = 88 (Hex)/34 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
    This setting is used to prioritize VoIP call signaling.
- **Primary Site Specific Option Number (SSON):** *Default = 176, Range = 128 to 254.*
  A site specific option number (SSON) is used as part of DHCP to request additional information. For IP Office it is used by Avaya IP Phones being supported by IP Office DHCP. 176 is the default SSON used by 4600 Series and 5600 Series IP phones.
- **Secondary Site Specific Option Number (SSON):** *Default = 242, Range = 128 to 254.*
  Similar to the primary SSON. 242 is the default SSON used by 1700 Series IP phones requesting installation settings via DHCP.

Network Topology Settings

These settings are used for SIP trunk connections from the LAN. Use of SIP requires entry of SIP Trunk Channels licenses. For further details of IP Office SIP operation refer to the SIP Line 236 section.

STUN (Simple Traversal of UDP through NAT) is a mechanism used with UDP SIP to overcome the effect of NAT firewalls. Test SIP packets are sent to a STUN server. The STUN server replies and includes copies of the packets it received in the reply. By comparing the packet sent to the STUN server and the copies of the packets it received, it is possible to determine the type of NAT firewall and to then modify future SIP packets to overcome negative effects of NAT.

The use of STUN is unnecessary if the SIP ITSP uses a Session Border Controller (SBC).

System | LAN1 | Network Topology Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✗.

The following fields can be completed either manually or the IP Office can attempt to automatically discover the appropriate values. To complete the fields automatically, only the STUN Server IP Address is required. STUN operation is then tested by clicking Run STUN. If successful the remaining fields are filled with the results.

- **STUN Server IP Address:** *Default = 69.90.168.13*
  This is the IP address of the SIP ITSP's STUN server. The IP Office will send basic SIP messages to this destination and from data inserted into the replies can try to determine the type NAT changes being applied by any firewall between it and the ITSP.
- **STUN Port:** *Default = 3478, Software level = 4.1+.*
  Defines the port to which STUN requests are sent if STUN is used.
- **Firewall/NAT Type:** *Default = Unknown*
  The settings here reflect different types of network firewalls. Options include Blocking Firewall, Symmetric Firewall, Open Internet, Symmetric NAT, Full Cone NAT, Restricted Cone NAT, Port Restricted Cone NAT and Unknown.
  - ***Open Internet***
    No action required. If this mode is selected, STUN lookups are not performed.
  - ***Symmetric Firewall***
    SIP packets are unchanged but ports need to be opened and kept open with keep-alives. If this type of NAT is detected or manually selected, a warning 'Communication is not possible unless the STUN server is supported on same IP address as the ITSP' will be displayed as part of the manager validation.

- ***Full Cone NAT***
  A full cone NAT is one where all requests from the same internal IP address and port are mapped to the same external IP address and port. Furthermore, any external host can send a packet to the internal host, by sending a packet to the mapped external address. SIP packets need to be mapped to NAT address and Port; any Host in the internet can call in on the open port, that is the local info in the SDP will apply to multiple ITSP Hosts. No warning will be displayed for this type of NAT because the IP Office has sufficient information to make the connection).

- ***Symmetric NAT***
  A symmetric NAT is one where all requests from the same internal IP address and port, to a specific destination IP address and port, are mapped to the same external IP address and port. If the same host sends a packet with the same source address and port, but to a different destination, a different mapping is used. Furthermore, only the external host that receives a packet can send a UDP packet back to the internal host. SIP Packets need to be mapped but STUN will not provide the correct information unless the IP address on the STUN server is the same as the ITSP Host. If this type of NAT/Firewall is detected or manually selected, a warning 'Communication is not possible unless the STUN server is supported on same IP address as the ITSP' will be displayed as part of the manager validation.

- ***Restricted Cone NAT***
  A restricted cone NAT is one where all requests from the same internal IP address and port are mapped to the same external IP address and port. Unlike a full cone NAT, an external host (with IP address X) can send a packet to the internal host only if the internal host had previously sent a packet to IP address X. SIP packets needs to be mapped. Responses from hosts are restricted to those that a packet has been sent to. So if multiple ITSP hosts are to be supported, a keep alive will need to be sent to each host. If this type of NAT/Firewall is detected or manually selected, no warning will be displayed for this type of NAT.

- ***Port Restricted Cone NAT***
  A port restricted cone NAT is like a restricted cone NAT, but the restriction includes port numbers. Specifically, an external host can send a packet, with source IP address X and source port P, to the internal host only if the internal host had previously sent a packet to IP address X and port P. SIP packets needs to be mapped. Keep-alives must be sent to all ports that will be the source of a packet for each ITSP host IP address. If this type of NAT/Firewall is detected or manually selected, no warning will be displayed for this type of NAT. However, some Port Restricted NAT's have been found to be more symmetric in behavior, creating a separate binding for each opened Port, if this is the case the manager will display a warning 'Communication is not possible unless the STUN server is supported on same IP address as the ITSP' as part of the manager validation.

- **Static Port Block:** *Software level = 4.1+.*
  Use the RTP Port Number Range specified on the Gatekeeper tab without STUN translation. Those ports must be fixed as open on any NAT firewall involved.

- **Binding Refresh Time (seconds):** *Default = 0 (Never), Range = 0 to 3600 seconds.*
  Having established which TCP/UDP port number to use, through either automatic or manual configuration, the IP Office can send recurring 'SIP Options requests' to the remote proxy terminating the trunk. Those requests will keep the port open through the firewall. Requests are sent every x seconds as configured by this field.

  - **Note:** If a binding refresh time has not been set you may experience problems receiving inbound SIP calls as they are unable to get through the Firewall. In these circumstances make sure that this value has been configured.

- **Public IP Address:** *Default = 0.0.0.0*
  This value is either entered manually or discovered by the Run STUN process. If no address is set, the IP Office LAN1 address is used.

- **Public Port:** *Default = 0*
  This value is either entered manually or discovered by the Run STUN process.

- **Run STUN**
  This button tests STUN operation between the IP Office LAN and the STUN Server IP Address set above. If successful the results are used to automatically fill the remaining fields with appropriate values discovered by the IP Office. Before using Run STUN the SIP trunk must be configured.

  - When this option is used, a  information icon is shown against the fields to indicate that the values were automatically discovered rather than manually entered.

- **Run STUN on startup:** *Default = Off*
  This option is used in conjunction with values automatically discovered using Run STUN. When selected, the IP Office will rerun STUN discovery whenever the IP Office is rebooted or connection failure to the SIP server occurs.

DHCP Pools

Supported on IP500 systems running IP Office 4.2+ software. DHCP pools allows the configuration of up to 8 ranges of IP addresses for allocation by the IP Office when acting as a DHCP server. By default the DHCP settings (IP Address, IP Mask and Number of DHCP IP Addresses) set on the LAN Settings 168 tab are reflected by the first pool here.

- For support of PPP Dial In address requests, at least one of the pools must be on the same subnet as the IP Office's LAN. Only addresses from a pool on the same subnet as the IP Office's own LAN address will be used for PPP Dial In.

System | LAN1 | DHCP Pools	
Control Unit	SOE ✗, IP403 ✗, IP406 V1 ✗, IP406 V2 ✗, IP412 ✗, IP500 ✓.
Software Level	4.2+.
Mergeable	✗.

- **Apply to Avaya IP Phones Only:** *Default = Off.*
  If this option is selected, the DHCP addresses are only used for requests from Avaya IP phones. Other devices connected to the IP Office LAN will have to use static addresses or obtain their address from another DHCP server.
  - In addition to the above control, Avaya IP phones will only complete DHCP against a DHCP server configured to supports a Site Specific Option Number (SSON) that matches that set on the phone. The SSON numbers supported by the IP Office DHCP are set on the Gatekeeper 169 sub-tab.
- **DHCP Pool**
  Up to 8 pools can be added. The first pool matches the IP Address, IP Mask and Number of DHCP IP Addresses on the LAN Settings 168 sub-tab. When adding or editing pools, IP Office Manager will attempt to warn about overlaps and conflicts between pools.
  - **Start Address**
    Sets the first address in the pool.
  - **Subnet Mask:** *Default = 255.255255.0*
    Sets the subnet mask for addresses issued from the pool.
  - **Default Router:** *Default = 0.0.0.0*
    For pools issuing IP addresses on the same subnet as the IP Office LAN's, ***0.0.0.0*** instructs the IP Office to determined the actual default router address to issue by matching the IP address/subnet mask being issued in the IP Routing 344 table. This matches the default behaviour used by IP Office's systems without multiple pools. For pools issuing addresses not on the same subnet as the IP Office LAN's, the default router should be set to the correct value for devices on that subnet.
  - **Pool Size:** *Default = 0*
    Set the number of DHCP client addresses available in the pool.

6.3.3 LAN2

LAN2 is not supported by all IP Office control units.

- On the Small Office Edition and IP500 control units the LAN2 settings are used for the RJ45 Ethernet port labeled WAN.
- On the IP412 control units LAN2 settings are used for the RJ45 ethernet port labelled LAN2.
- For IP406 V2 control units running IP Office 4.1+, the RJ45 LAN port 8 can be selected to act be LAN2 if required. This is done using the Use Port 8 as LAN2 option on the **LAN1 | LAN Settings** 168 tab.

System | LAN2	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓*, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

*Optional on IP Office 4.1+.

The fields available for LAN2 are the same as for LAN1 168 except for the following additional field:

- **Firewall:** *Default = <None> (No firewall)*
  Allows the selection of an IP Office firewall to be applied to traffic routed from LAN2 to LAN1.

6.3.4 DNS

DNS is a mechanism through which the URL's requested by users, such as www.avaya.com, are resolved into IP addresses. These requests are sent to a Domain Name Server (DNS) server, which converts the URL to an IP address. Typically the internet service provider (ISP) will specify the address of the DNS server their customers should use.

WINS (Windows Internet Name Service) is a similar mechanism used within a Windows network to convert PC and server names to IP addresses via a WINS server.

If the IP Office is acting as a DHCP server, in addition to providing clients with their own IP address settings for LAN1 168 or LAN2 173 it can also provide them with their DNS and WINS settings if requested by the client

System | DNS	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **DNS Service IP Address:** *Default = 0.0.0.0 (Do not provide DNS/Use DNS forwarding)*
  This is the IP address of an DNS Server. Your Internet service provider or network administrator provides this information. If this field is left blank, the IP office uses its own address as the DNS server for DHCP client and forward DNS requests to the service provider when Request DNS is selected in the service being used (**Service \| IP** 313).
  - **Backup DNS Server IP Address:** *Default = 0.0.0.0 (No backup)*
- **DNS Domain:** *Default = Blank (No domain)*
  This is the domain name for your IP address. Your Internet service provider or network administrator provides this. Typically this field is left blank.
- **WINS Server IP Address:** *Default = 0.0.0.0 (Do not provide WINS)*
  This is the IP address of your local WINS server. This is only used by Windows PCs, and normally points to an NT server nominated by your network administrator as your WINS server. Setting a value will result in also sending a mode of "hybrid".
  - **Backup WINS Server IP Address:** *Default = 0.0.0.0 (No backup)*
- **WINS Scope:** *Default = Blank (no scope)*
  This is provided by your network administrator or left blank.

6.3.5 Voicemail

The following settings are used to set the IP Office's voicemail server type and location. The fields are enabled or grayed out as appropriate to the selected voicemail type.

System | Voicemail	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓*Changes to Voicemail Type require a reboot.

- **Voicemail Type:** *Default = Voicemail Lite/Pro*
  Sets the type of voicemail system being used.
  - ***None***
    No voicemail operation.
  - ***Centralized Voicemail***
    Select this option when using a Voicemail Pro system installed and licensed on another IP Office in an IP Office Small Community Network. The outgoing line group for connection to the system with the Voicemail Pro should be entered as the Voicemail Destination.
  - ***Embedded Voicemail***
    Small Office Edition, IP406 V2 and IP500 control units only. Select this option to run embedded voicemail which stores messages and prompts on an Avaya memory card inserted into the control unit.
  - ***Group Voicemail***
    This option is used to support third-party voicemail systems attached by extension ports in the group specified as the Destination.
  - ***Remote Audix Voicemail***
    Select this option if using a remote Avaya Intuity Audix or MultiMessage voicemail system. Requires entry of an Audix Voicemail license in Licenses 353.
  - ***Voicemail Lite/Pro***
    Select this option when using Voicemail Lite or Voicemail Pro. The IP address of the PC being used should be set as the Voicemail IP Address. Use of Voicemail Pro requires entry of a Voicemail Pro (4 ports) license in Licenses 353.
- **Voicemail Destination:** *Default = blank*
  This setting is used when the Voicemail Type is set to Remote Audix Voicemail or Centralized Voicemail. It is used to enter the outgoing line group of the lines configured for connection to the remote voicemail system. It is also used for Group Voicemail to specify the group connected to the voicemail system.
- **Voicemail IP Address:** *Default = 255.255.255.255*
  This setting is used when the Voicemail Type is set to Voicemail Lite/Pro. It is the IP address of the PC running the Voicemail Lite or Voicemail Pro server. If set as 255.255.255.255, the control unit broadcasts on the LAN for a response from a voicemail server. If set to a specific IP address, the system connects only to the voicemail server running at that specific address.
- **Messages Button Goes to Visual Voice:** *Default = On, Software level = 4.2+*
  Visual Voice allows phone users to check their voicemail mailboxes and perform action such as play, delete and forward messages through menus displayed on their phone. By default, on phones with a **MESSAGES** button, the navigation is via spoken prompts. This option allows that to be replaced by Visual Voice on phones that support Visual Voice menus. For further details see Visual Voice 607.
- **Voicemail Password :** *Default = blank, Software level = 2.1 to 3.1.*
  This password is used by the main unit to confirm connection has been made to the correct Voicemail Pro Server. The password entered must correspond to the password set on the Voicemail Pro server. This entry should be left blank when using the any other voicemail server application. For IP Office 3.2 and higher this value is set through the IP Office security settings.
- **Audix UDP**
  Available if the voicemail type Remote Audix Voicemail is selected. Needs to be completed with a four digit number from the Universal Dial Plan of the Avaya Communication Manager system.
- **Maximum Record Time:** *Default = 120 seconds, Range = 30 to 180 seconds, Software level = 3.0+.*
  This field is only available when Embedded Voicemail is selected as the Voicemail Type. The value sets the maximum record time for messages and prompts.
- **Voicemail Channel Reservation:** *Software level = 4.0+*
  These settings allow the channels between the IP Office and Voicemail Pro to be reserved for particular functions. Unreserved channels can be used for any function but reserved channels cannot be used for any function other than that indicated. These settings are not available unless the configuration includes validated licenses for the number of voicemail channels.
  - **Unreserved Channels**
    This setting cannot be changed and by default will show the total number of licensed voicemail channels. This number will decrease as channels are reserved for the following functions.

- **Mailbox Access:** *Default = 0*
  This setting sets the number of channels reserved for users accessing mailboxes to collect messages.
- **Auto-Attendant:** *Default = 0*
  This setting sets the number of channels reserved for users directed to Voicemail Pro short code and module start points.
- **Voice Recording:** *Default = 0*
  This setting sets the number of channels reserved for voice recording other than mandatory voice recording (see below). If no channels are available recording does not occur though recording progress may be indicated.
- **Mandatory Voice Recording:** *Default = 0*
  This setting sets the number of channels reserved for mandatory voice recording. When no channels are available for a call set to mandatory recording, the call is barred and the caller hears busy tone.
- **Announcements:** *Default = 0*
  This setting sets the number of channels reserved for announcements. When no channels are available calls continue without announcements.

6.3.6 Telephony

This tab is used to set the default telephony operation of the IP Office. Some settings shown here can be overridden for individual users through their User | Telephony 265 tab.

Within Manager 6.2, the settings on this tab have been split into two separate sub-tabs. This applies to all configurations loaded regardless of the actual IP Office software level of the system loaded.

Telephony Sub-Tab

System | Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓*

*Changes to **Companding LAW** require a reboot.

- **Default Outside Call Sequence:** *Default = Normal*
  This setting is only used with analog extensions. It sets the ringing pattern used for incoming external calls. For details of the ring types see Ring Tones 683 in the Telephone Features section. This setting can be overridden by a user's **User | Telephony | Call Settings | Outside Call Sequence** 265 setting. Note that changing the pattern may cause fax and modem device extensions to not recognize and answer calls.
- **Default Inside Call Sequence:** *Default = Ring Type 1*
  This setting is only used with analog extensions. It sets the ringing pattern used for incoming internal calls. For details of the ring types see Ring Tones 683 in the Telephone Features section. This setting can be overridden by a user's **User | Telephony | Call Settings | Inside Call Sequence** 265 setting.
- **Default Ring Back Sequence:** *Default = Ring Type 2*
  This setting is only used with analog extensions. It sets the ringing pattern used for ringback calls such as hold return, park return, voicemail ringback, and Ring Back when Free. For details of the ring types see Ring Tones 683 in the Telephone Features section. This setting can be overridden by a user's **User | Telephony | Call Settings | Ringback Call Sequence** 265 setting.
- **Dial Delay Time (secs):** *Default = 4 (USA/Japan) or 1 (ROW), Range = 1 to 99 seconds.*
  This setting sets the time the system waits following a dialed digit before it starts looking for a short code match. In situations where there are potential short codes matches but not exact match, it also sets the delay following the dialing of a digit before dialing complete is assumed. See the Short Codes 386 section.
- **Dial Delay Count:** *Default = 0 digits (USA/Japan) or 4 digits (ROW), Range = 0 to 30 digits.*
  This setting sets the number of digits dialed after which the IP Office starts looking for a short code match regardless of the Dial Delay Time.
- **Default No Answer Time (secs):** *Default = 15 seconds, Range = 1 to 99999 seconds.*
  This setting controls the amount of time before an alerting call is considered as unanswered. How the call is treated when this time expires depends on the call type.
  - For calls to a user, the call follows the user's Forward on No Answer settings if enabled. If no forward is set, the call will go to voicemail if available or else continues to ring. This timer is also used to control the duration of call forwarding if the forward destination does not answer. It also controls the duration of ringback call alerting. This setting is overridden by the **User | Telephony | Call Settings | No Answer Time** 265 setting for a particular user if different.
  - For calls to hunt groups, this setting controls the time before the call is presented to the next available hunt group member. This setting is overridden by the **Hunt Group | Hunt Group | No Answer Time** 289 setting for a particular hunt group if different.
- **Hold Timeout (secs):** *Default = 120 (US) or 15 (ROW), Range = 0 (Off) to 99999 seconds.*
  This setting controls how long calls remain on hold before recalling to the user who held the call. Note that the recall only occurs if the user has no other connected call. Recalled calls will continue ringing and do not follow forwards or go to voicemail.
- **Park Timeout (secs):** *Default = 300 seconds, Range 0 (Off) to 99999 seconds.*
  This setting controls how long calls remain parked before recalling to the user who parked the call. Note that the recall only occurs if the user has no other connected call. Recalled calls will continue ringing and do not follow forwards or go to voicemail.
- **Ring Delay:** *Default = 5 seconds, Range = 0 to 98 seconds, Software level = 3.2+.*
  This setting is used when any of the user's programmed appearance buttons is set to Delayed ringing. Calls received on that button will initially only alert visually. Audible alerting will only occur after the ring delay has expired. This setting can be overridden by a ring delay set for an individual user (**User | Telephony | Multi-line Options | Ring Delay** 268).

- **Call Priority Promotion Time (secs):** *Default = Disabled, Range = Disabled, 10 to 999 seconds, Software level = 4.2+.*
  When calls are queued for a hunt group, higher priority calls are placed ahead of lower priority calls, with calls of the same priority sort by time in queue. External calls are assigned a priority (***1-Low***, ***2-Medium*** or ***3-High***) by the Incoming Call Route that routed the call. Internal calls are assigned a priority of ***1-Low***. This option can be used to increase the priority of a call each time it has remained queued for longer than this value. The calls priority is increased by 1 each time until it reaches 3-High.
  - Note that the queue time associated with a call is not reset when its priority is increased. This means that a call will jump ahead of other calls of the same priority if the newly promoted call has a longer time in queue. Due to this, the use of call priority promotion is not recommended on systems where Voicemail Pro is being used to provide estimate time to answer and position in queue information to the callers.
- **Companding LAW**
  These settings should not normally be changed for their defaults. They should only be used where 4400 series phones (U-Law) are installed on systems which have A-Law digital trunks. Note that **U-Law** is also called **Mu-Law** or **µ-Law**. Most IP Office IP400 control units are available in either A-Law and U-Law models. Typically U-Law models are supplied to North American locales, A-Law models are supplied to the rest of the world. IP500 control units are set to default A-Law or U-Law by the licence key inserted into the unit.
- **Default Currency:** *Default = Locale specific 750, Software level = 4.0+.*
  This setting is used with ISDN Advice of Charge (AOC) services. Note that changing the currency clears all call costs stored by the IP Office except those already logged through Delta Server. The currency is displayed in Phone Manager Pro and included in the IP Office SMDR output.
- **DSS Status:** *Default = Off*
  This setting affects Avaya display phones with programmable buttons. It controls whether pressing a DSS key set to another user who has a call ringing will display details of the caller. When off, no caller information is displayed.
- **Auto Hold:** *Default = On, Software level = 3.0+.*
  Used for users with multiple appearance buttons. When on, if a user presses another appearance button during a call, their current call is placed on hold. When off, if a users presses another appearance button during a call, their current call is disconnected.
- **Dial By Name:** *Default = On*
  When on, allows the directory features on various phones to match the dialing of full names. When off, the directory features use the pre-IP Office 1.4 method of first character match only. See Dial by Name in Appendix A: Configuration Examples 745.
- **Show Account Code:** *Default = On*
  This setting controls the display and listing of system account codes:
  - **When on:**
    - When entering account codes through Phone Manager, users can select from a drop-down list of available account codes.
    - When entering account codes through a phone, the account code digits are shown while being dialed.
  - **When off:**
    - Within Phone Manager the drop-down list of available account codes is not useable, instead account codes must be entered using the Phone Managers PIN Code features.
    - When entering account codes through a phone, the account code digits are replaced by s characters on the display.
- **Allow Outgoing Transfer:** *Default = Off, Software level = 3.0 to 3.2.*
  When not enabled, users are only able to transfer or forward off-switch incoming external calls. When enabled, users can forward both incoming and outgoing external calls. For pre-3.0 IP Office system the default behaviour is to bar outgoing transfers. For IP Office 4.0 and higher the default behaviour is to always allow outgoing transfers.
- **Inhibit Off-Switch Forward/Transfer:** *Default = Off (Italy = On)*
  When enabled, this setting stops any user from transferring or forwarding calls externally. See Off-Switch Transfer Restrictions 703
- **Restrict Network Interconnect:** *Default = Off, Software Level = 4.2+.*
  When this option is enabled, each trunk is provided with a **Network Type** option that can be configured as either ***Public*** or ***Private***. The IP Office will not allow calls on a Public trunk to be connected to a Private trunk and vice versa, returning busy indication instead. See Off-Switch Transfer Restrictions 703.
- **WAN Mode Override:** *Default = Off, Software level = 3.2/4.0 Q2 2007 Maintenance Release.*
  Alters the configuration of the WAN interface from the default to that required for BT X25 link inter-working. Used with IP406 V2 systems only.

Tones & Music Sub-Tab

System | Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.1+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓*

*Changes to **Busy Tone Detection** and the hold music **System Source** requires a reboot. Deleting any of the hold music **Alternate Sources** also requires a reboot.

- **Conferencing Tone:** *Default = Entry & Exit Tones.*
  This settings controls how conference tones are used. It can be set to either ***Entry & Exit Tones*** or ***Repeating Tone***. With ***Entry & Exit Tones*** a single tone is heard when a new party joins a conference and double-tone is heard when a party leaves the conference. With ***Repeating Tone*** a conference tone is heard every 10 seconds by all conference parties.
- **Disconnect Tone:** *Default = Default (Use locale setting 752), Software level = 4.0+.*
  For digital and IP phones, when the IP Office detects that the far end of a call has disconnected, it can make the near end either go idle or play disconnect tone. By default the chosen behaviour depends on the system locale 750. This field can be used to override the locale's default action and force either disconnect tone or go idle.
  - **Default:** Use the system locale specific action for disconnected calls.
  - **On:** Play disconnect tone when far end disconnection is detected.
  - **Off:** Go idle when far end disconnection is detected.
- **Local Dial Tone:** *Default = On*
  For all normal operation this setting should be left enabled as it allows the system to provide dial tone to users (essential for MSN working).
- **Local Busy Tone:** *Default = Off*
  This setting should only be used when the local exchange gives a busy signal via Q.931 but does not provide busy tone.
- **Beep on Listen:** *Default = On (USA)/On (Rest of World)*
  This setting controls whether call parties hear a repeating tone when their call is monitored by another party using the Call Listen 404 feature.
- **GSM Silence Suppression:** *Default = Off, Software level = 3.0+.*
  This setting should only be selected if voice quality problems are experienced with calls to voicemail or while recording calls. When on, the IP Office signals silence by generating silence data packets in periods when the voicemail system is not playing prompts. Note that use of this option may cause some timeout routing options in voicemail to no longer work.
- **Busy Tone Detection:** *Default = System Frequency (Tone defined by system locale)*
  Allows configuration of the IP Office's busy tone detection settings. These are on lines that do not provide reliable disconnect signalling. In that case the IP Office will uses tone disconnect clearing to disconnect such lines after 6 seconds of continuous tone. The default tone (frequency and on/off cadence) detection used is defined by the system locale 750. The settings should not be adjusted unless advised by Avaya Technical Support. Changes to this setting require a reboot rather than a merge when the new configuration is sent to the IP Office.
- **Hold Music**
  This section is used to define the source for the IP Office's music on hold source. You must ensure that any MOH source you use complies with copyright, performing rights and other local and national legal requirements.
  - **System Source:** *Default = WAV File.*
    Selects the default hold music source for most uses of music on hold. Changes to this setting require a reboot rather than a merge when the new configuration is sent to the IP Office.
    - ***WAV File***
      Use the WAV file ***holdmusic.wav***. This file is loaded via TFTP, see Music on Hold 684.
    - ***External:*** *Software level = 3.1+.*
      Previous the presence of a ***holdmusic.wav*** file loaded onto the IP Office automatically overrode the use of the IP Office control units external source. For IP Office 3.1+, External can be selected as the source. This causes the IP Office to not load the ***holdmusic.wav*** file via TFTP when rebooted
    - ***Tone:*** *Software level = 4.2+.*
      The use of a double beep tone (425Hz, 02./0.2/0.2/3.4 seconds on/off) can be selected as the system source.
      - For IP Office 4.0+ the hold music tone is automatically used if the system source is set to **WAV File** but the ***holdmusic.wav*** file has not been successfully downloaded.

- **Alternate Source:** *Software level = 4.2+ (Not Small Office Edition).*
  Up to three additional hold music source can be specified. These are wav files loaded and stored in the same way as ***holdmusic.wav***. Note that adding and changing a source can be done using a merge but deleting a source requires a reboot.

  - **Number**
    Assigned automatically by the IP Office. The alternate sources are numbered 2, 3 and 4.
  - **Name:** *Up to 31 characters*
    This field is used to associate a name with the alternate source. That name is then used in the Hold Music Source field on Incoming Call Routes and Hunt Groups.
  - **Source:** *Up to 31 characters*
    Defines the name of the wav file that the IP Office should download to use as the alternate source. Prefix the file name with ***WAV:***, for example for the file ***holdmusic2.wav*** enter ***WAV:holdmusic2.wav*** in IP Office Manager. This defines the file that the IP Office will automatically attempt to load via TFTP following a reboot.

6.3.7 H.323 Gatekeeper

For IP Office 4.0+ systems these settings have been moved to the System | LAN1 168 and if appropriate System | LAN2 173 tabs.

H.323 VoIP phones must register with a gatekeeper in order to send and receive H.323 calls. The gatekeeper then controls permission for the phone to make or accept calls.

IP Office can act as the gatekeeper for H.323 phones. For full details relating to Avaya H.323 phones refer to the IP Office IP Phone Installation Manual. For non-Avaya H.323 devices, entry of an IP End-Points license is required.

System | H.323 Gatekeeper	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2.
Mergeable	✗.

- **Gatekeeper Enable:** *Default = On*
  This settings enables IP Office gatekeeper operation.
- **Auto-create Extn:** *Default = On*
  When this option is on, an extension entry is automatically created for H.323 phones registering themselves with the IP Office as their gatekeeper.
- **RTP Port Number Range:** *Software level = 3.0+.*
  For each VoIP call, a receive port for incoming Real Time Protocol (RTP) traffic is selected from a defined range of possible ports, using the even numbers in that range. The Real Time Control Protocol (RTCP) traffic for the same call uses the RTP port number plus 1, that is the odd numbers. For IP Office control units and Avaya H.323 IP phones, the default port range used is 49152 to 53246. On some installations, it may be a requirement to change or restrict the port range used. It is recommended that only port numbers between 49152 and 65535 are used, that being the range defined by the Internet Assigned Numbers Authority (IANA) for dynamic usage.
  - **Port Range (minimum):** *Default = 49152. Range = 1024 to 64510.*
    This sets the lower limit for the RTP port numbers used by the IP Office.
  - **Port Range (maximum):** *Default = 53246. Range = 2048 to 65534.*
    This sets the upper limit for the RTP port numbers used by the IP Office. The gap between the minimum and the maximum must be at least 1024.
- **DiffServe Settings**
  When transporting voice over low speed links it is possible for normal data packets (1500 byte packets) to prevent or delay voice packets (typically 67 or 31 bytes) from getting across the link. This can cause unacceptable speech quality. Therefore it is important that all traffic routers and switches in a network to have some form of Quality of Service mechanism (QoS). QoS routers are essential to ensure low speech latency and to maintain sufficient audible quality.

  IP Office supports the DiffServ (RFC2474) QoS mechanism. This uses a Type of Service (ToS) field in the IP packet header. The IP Office uses this field to prioritize voice and voice signaling packets on its WAN interfaces. Note that the IP Office does not perform QoS for its Ethernet ports including the WAN Ethernet port on the Small Office Edition.

  The hex and decimal entry fields for the following values are linked, the hex value being equal to the decimal multiplied by 4.
  - **DSCP (Hex):** *Default = B8 (Hex)/46 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
    The DiffServ Code Point (DSCP) setting applied to VoIP calls. For correct operation, especially over WAN links, the same value should be set at both ends.
  - **DSCP Mask (Hex):** *Default = FC (Hex)/63 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
    Allows a mask to be applied to packets for the DSCP value.
  - **SIG DSCP (Hex):** *Default = 88 (Hex)/34 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
    This setting is used to prioritize VoIP call signaling.
- **Site Specific Option Number (SSON):** *Default = 176, Range 128 to 254.*
  Sets the site specific option number (SSON) used by the IP Office's internal DHCP server. This should match the SSON used by 4600 and 5600 Series IP phones to request installation settings.

6.3.8 LDAP

LDAP (Lightweight Directory Access Protocol) is a software protocol for enabling anyone to locate organizations, individuals, and other resources such as files and devices in a network, whether on the Internet or on a corporate intranet. LDAP is a "lightweight" (smaller amount of code) version of DAP (Directory Access Protocol), which is part of X.500, a standard for directory services in a network. LDAP is lighter because in its initial version, it did not include security features.

In a network, a directory tells you where in the network something is located. On TCP/IP networks, including the Internet, the Domain Name System (DNS) is the directory system used to relate the domain name to a specific network address. However, you may not know the domain name. LDAP allows you to search for an individual without knowing where they're located (although additional information will help with the search).

An LDAP directory is organized in a simple "tree" hierarchy consisting of the following levels:

- The "root" directory (the starting place or the source of the tree), which branches out to
- Countries, each of which branches out to
- Organizations, which branch out to
- Organizational units (divisions, departments, and so forth), which branches out to (includes an entry for)
- Individuals (which includes people, files, and shared resources such as printers)

An LDAP directory can be distributed among many servers. Each server can have a replicated version of the total directory that is synchronized periodically. An LDAP server is called a Directory System Agent (DSA). An LDAP server that receives a request from a user takes responsibility for the request, passing it to other DSA's as necessary, but ensuring a single coordinated response for the user.

LDAP Directory Synchronization allows the telephone number Directory held in the Control Unit to be synchronized with the information on an LDAP server. Although targeted for interoperation with Windows 2000 Server Active Directory, the feature is sufficiently configurable to interoperate with any server that supports LDAP version 2 or higher.

Telephone numbers obtained via the LDAP mechanism are held dynamically in the Directory. Each record retrieved creates a Directory Entry for use with Phone Manager. Please note that the entries are not stored in the configuration and therefore will not be visible via Manager. A maximum of 500 records can be retrieved due to size restraints. Records with exactly the same data in the Name and Number fields will not be duplicated.

By default up to 500 LDAP directory entries can be obtained and then displayed in the Phone Manager directory for IP Office users. They do not appear in the Manager directory. For IP Office 4.1+, the number can be increased using entries in the **NoUser** user's **Source Numbers** 263 tab.

System | LDAP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **LDAP Enabled:** *Default = Off*
  This option turns LDAP support on or off.
- **User Name:** *Default = blank*
  Enter the user name to authenticate connection with the LDAP database. To determine the domain-name of a particular Windows 2000 user look on the "Account" tab of the user's properties under "Active Directory Users and Computers". Note that this means that the user name required is not necessarily the same as the name of the Active Directory entry. There should be a built-in account in Active Directory for anonymous Internet access, with prefix "IUSR_" and suffix server_name (whatever was chosen at the Windows 2000 installation). Thus, for example, the user name entered is this field might be: IUSR_CORPSERV@acme.com
- **Password:** *Default = blank*
  Enter the password to be used to authenticate connection with the LDAP database. Enter the password that has been configured under Active Directory for the above user. Alternatively an Active Directory object may be made available for anonymous read access. This is configured on the server as follows:
  - In "Active Directory Users and Computers" enable "Advanced Features" under the "View" menu. Open the properties of the object to be published and select the "Security" tab. Click "Add" and select "ANONYMOUS LOGON", click "Add", click "OK", click "Advanced" and select "ANONYMOUS LOGON", click "View/Edit", change "Apply onto" to "This object and all child objects", click "OK", "OK", "OK".

    Once this has been done on the server, any entry can be made in the User Name field in the System configuration form (however this field cannot be left blank) and the Password field left blank. Other non-Active Directory LDAP servers may allow totally anonymous access, in which case neither User Name nor Password need be configured.
- **Server IP Address:** *Default = blank*
  Enter the IP address of the server storing the database.
- **Server Port:** *Default = 389*
  This setting is used to indicate the listening port on the LDAP server.
- **Authentication Method:** *Default = Simple*
  Select the authentication method to be used.
  - ***Simple:*** clear text authentication
  - ***Kerberos:*** Kerberos 4 LDAP and Kerberos 4 DSA encrypted authentication (for future use).
- **Resync Interval (secs):** *Default = 3600 seconds, Range = 1 to 99999 seconds.*
  The frequency at which the IP Office should resynchronize the directory with the server. This value also affects some aspects of the internal operation.
  - The LDAP search inquiry contains a field specifying a time limit for the search operation and this is set to 1/16th of the resync interval. So by default a server should terminate a search request if it has not completed within 225 seconds (3600/16).
  - The client end will terminate the LDAP operation if the TCP connection has been up for more than 1/8th of the resync interval (default 450 seconds). This time is also the interval at which a change in state of the "LDAP Enabled" configuration item is checked.
- **Search Base / Search Filter:** *Default = blank*
  These 2 fields are used together to refine the extraction of directory entries. Basically the Base specifies the point in the tree to start searching and the Filter specifies which objects under the base are of interest. The search base is a distinguished name in string form (as defined in RFC1779).

  The Filter deals with the attributes of the objects found under the Base and has its format defined in RFC2254 (except that extensible matching is not supported).

  If the Search Filter field is left blank the filter defaults to "(objectClass=*)", this will match all objects under the Search Base.

  The following are some examples applicable to an Active Directory database:
  - To get all the user phone numbers in a domain:

    ```
    Search Base: cn=users,dc=acme,dc=com
    Search Filter: (telephonenumber=*)
    ```
  - To restrict the search to a particular Organizational Unit (eg office) and get cell phone numbers also:

    ```
    Search Base: ou=holmdel,ou=nj,DC=acme,DC=com
    Search Filter: (|(telephonenumber=*)(mobile=*))
    ```
  - To get the members of distribution list "group1":

    ```
    Search Base: cn=users,dc=acme,dc=com
    Search Filter: (&(memberof=cn=group1,cn=users,dc=acme,dc=com)(telephonenumber=*))
    ```

- **Number Attributes:** *Default = see below*
  Enter the number attributes the server should return for each entry that matches the Search Base and Search Filter. Other entries could be ipPhone, otherIpPhone, facsimileTelephoneNumber, otherfacsimileTelephone Number, pager or otherPager. The attribute names are not case sensitive. Other LDAP servers may use different attributes.
  - By default the entry is "telephoneNumber,otherTelephone,homePhone=H,otherHomePhone=H,mobile=M, otherMobile=M", as used by Windows 2000 Server Active Directory for Contacts.
  - The optional "=string" sub-fields define how that type of number is tagged in the directory. Thus, for example, a cell phone number would appear in the directory as: John Birbeck M 7325551234

6.3.9 System Events

The IP Office supports a number of methods by which events occurring on the system can be reported. These are in addition to the real-time and historical reports available through the IP Office System Status Application (SSA).

- **SNMP Reporting (IP Office 2.1+)**
  Simple Network Management Protocol (SNMP) allows SNMP clients and servers to exchange information. SNMP clients are built into devices such as network routers, server PC's, etc. SNMP servers are typically PC application which receive and/or request SNMP information. The IP Office SNMP client allows the IP Office system to respond to SNMP polling and to send alarm information to SNMP servers. In order for an SNMP server application to interact with an IP Office, the IP Office MIB files, provided on the IP Office Admin CD, must be compiled into the SNMP server's applications database. For full details refer to the IP Office Installation Manual.
- **SMTP Email Reporting (IP Office 3.2+)**
  IP Office 3.2 and higher can also send alarms to an SMTP email server. This allows users to receive alarms without needing to configure an SNMP server. Using SMTP requires details of a valid SMTP email account user name and password and server address. If SMTP email alarms are configured but for some reason the IP Office cannot connect with the SMTP server, only the last 10 alarms are stored for sending when connection is successful.
- **Syslog Reporting (IP Office 4.1+)**
  IP Office 4.1 and higher can send alarms to a Syslog server (RFC 3164) without needing to configure an SNMP server. In addition Syslog output can include IP Office audit trail events.

Multiple event destinations can be created, each specifying which events and alarms to include, the method of reporting to use (SNMP, Syslog or Email) and where to send the events. Up to 2 alarm destinations can be configured for SNMP, 2 for Syslog and 3 for SMTP email.

Enabling System Alarms

1. Select  **System**.
2. Select the **System Events** tab.
   2.1. If planning to use SNMP, select **SNMP Enabled** and complete the information in the SNMP Info section by entering the SNMP port and community details to match those expected by your SNMP server. Details of installing the MIB files required for SNMP are included in the IP Office Installation manual.
   2.2. If planning to use SMTP, complete the information in the SMTP Server Configuration section. Enter the details of the SMTP email server and the email account.
   2.3. If planning to use Syslog, neither the SNMP or SMTP sections require entries.
3. Click **OK**.
4. Alarm destinations can now be configured through the **Alarms** sub-tab.

Editing Alarm Destinations

The Alarms section of the System Events tab displays the currently created alarm traps. It shows the event destinations and the types of alarms that will trigger the send of event reports. Up to 2 alarm destinations can be configured for SNMP, 2 for Syslog and 3 for SMTP email.

1. Select the **Alarms** sub-tab.
2. Use the **Add**, **Remove** and **Edit** controls to alter the traps.
3. Click **Add** or select the alarm to alter and then click **Edit**.
4. For a new alarm, set the **Destination** to either ***Trap (SNMP)*** or **Syslog** or ***Email (SMTP)***. Note that once a destination has been saved by clicking **OK** it cannot be changed to another sending mode.
5. The remaining details will indicate the required destination information and allow selection of the alarm events to include.
6. When completed, click **OK**.
7. Click **OK** again.

Configuration Tab

System | System Events | Configuration	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **SNMP Enabled:** *Default = Off*
  Enables support for SNMP. This option is not required if using SMTP or Syslog.

- **Community (Read-only):** *Default = public*
  The SNMP community name to which the IP Office belongs.
- **SNMP Port:** *Default = 161, Range = 0 to 65534.*
  The port on which the IP Office system listens for SNMP polling.

- **Device ID**
  This is a text field used to add additional information to alarms.

- **Contact**
  This is a text field used to add additional information to alarms.

- **Location**
  This is a text field used to add additional information to alarms.

Alarms Sub-Tab Settings

- **Events**
  This section is used to show and edit the alarm. Up to 2 Trap alarms can be configured for the sending of alarms to an SNMP server. Up to 3 Email alarms can be configured for the sending of SMTP email messages.

  - **Destination**
    The options are ***Trap (SNMP)***, ***Syslog*** or ***Email (SMTP)***. To use SNMP or Email the appropriate settings must be configured on the Configuration sub-tab. Note that the Destination type will also be grayed out if the maximum number of configurable alarms destinations of that type has been reached. Up to 2 alarm destinations can be configured for SNMP, 2 for Syslog and 3 for SMTP email.

    - **Trap:**
      If selected, the details required in addition to the selected Events are:

      - **IP Address:** *Default = 0.0.0.0*
        The IP address of the SNMP server to which trap information is sent.

      - **Port:** *Default = 162, Range = 0 to 65534.*
        The SNMP transmit port

      - **Community:** *Default = Blank*
        The SNMP community for the transmitted traps. Must be matched by the receiving SNMP server.

    - **Email:** *Software level = 3.2+.*
      If selected, the details required in addition to the selected Events are:

      - **Email:**
        The destination email address.

    - **Syslog:** *Software level = 4.1+.*
      If selected, the details required in addition to the selected Events are:

      - **IP Address:** *Default = 0.0.0.0*
        The IP address of the Syslog server to which trap information is sent.

      - **Port:** *Default = 516, Range = 0 to 65534.*
        The Syslog destination port.

- **Events:** *Default = None*
  Sets which types of IP Office events should be collected and sent. The table below lists the alarms associated with each type of event. Text in italics in the messages is replaced with the appropriate data. Items in [] brackets are included in the message if appropriate. The subject line of SMTP email alarms takes the form "System name: IP address - System Alarm".

Type	Events	Event State	Message
Entity	Application	Voicemail operation	The Voicemail server is now operational.
		Voicemail Failure	The Voicemail server is down.
		Voicemail Event - storage OK	The Voicemail server storage is OK.
		Voicemail Event - storage nearly full	The Voicemail server storage is nearly full.
		Voicemail Event - storage full	The Voicemail server storage is full.
		Delta Server Operational	The Delta server is now operational.
		Delta Server Failure	The Delta server is down.
	Compact Flash Card	Change	The PC card in *name* has changed.
	Expansion Module	Operational	Expansion module *name* link is up.
		Failure	Expansion module *name* link is down.
		Error	Expansion module *name* link has a link error.
		Change	Expansion module *name* link has changed.
	Trunk	Operational	Trunk *number (name)* [on expansion module *number*] is now operational.
		Failure	Trunk *number (name)* [on expansion module *number*] is down.
	VCM	Operational	VCM module *name* is now operational.
		Failure	VCM module *name* has failed.
Generic	Generic	Network link failure	Network Interface *name (ip address)* has been disconnected.
		Network link operational	Network Interface *name (ip address)* has been connected.
		System warm start	System has been restarted (warm start).
		System cold start	System has restarted from power fail (cold start).
		SNMP Invalid community	Invalid community specified in SNMP request.
Licence	Licence	Server operational	The license server is now operational.
		Server failure	The license server is no longer operational.
Loopback	Loopback	Near end line loopback	Trunk *number (name)* [on expansion module *number*] is in near end loopback.
		Near end payload loopback	Trunk *number (name)* [on expansion module *number*] is in near end loopback with payload.
		Loopback off	Trunk *number (name)* [on expansion module *number*] has no loopback.
Phone Change	Phone Change	Phone has been unplugged	The phone with id *n* has been removed from extension *extension* (*unit*, port *number*).
		Phone has been plugged in	The phone with type *type* (id *number*) has been plugged in for extension *extension* (unit, port *number*).
Audit Trail	Basic Audit	Events as written to the IP Office Audit Trail (Syslog output only).	

Notes:

- **Voicemail Pro Storage Alarms**
  The alarm threshold is adjustable through the Voicemail Pro client.
- **Embedded Voicemail Storage Alarms**
  A disk full alarm is generated when the embedded voicemail memory card reaches 90% full. In addition a critical space alarm is generated at 99% full (98% for the Small Office) and an OK alarm is generated when the disk space returns to below 90% full.
- **Loopback**
  This type of alarm is only available for systems with a United States locale.

6.3.10 SMTP

For IP Office Manager 6.2, the configuration settings for the IP Office control units SMTP function have been moved from the **System | System Events** tab to this separate tab. This reflects the fact that SMTP can be used for IP Office functions other than just system events reporting.

- For IP Office 3.2+, SMTP can be used as the method of sending for System Events 185.
- For IP Office 4.2+, SMTP can be used with Embedded Voicemail for Voicemail Email 259.

System | System Events | SMTP Configuration	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✗

- **IP Address:** *Default = 0.0.0.0*
  This field sets the IP address of the SMTP server being used to forward SNMP alarms sent by email.
- **Port:** *Default = 25, Range = 0 to 65534.*
  This field set the destination port on the SMTP server.
- **Email From Address:** *Default = Blank*
  This field set the sender address to be used with mailed alarms. Depending of the authentication requirements of the SMTP server this may need to be a valid email address hosted by that server. Otherwise the SMTP email server may need to be configured to support SMTP relay.
- **Server Requires Authentication:** *Default = On*
  This field should be selected if the SMTP server being used requires authentication to allow the sending of emails. When selected, the User Name and Password fields become available.
  - **User Name:** *Default = Blank*
    This field sets the user name to be used for SMTP server authentication.
  - **Password:** *Default = Blank*
    This field sets the password to be used for SMTP server authentication.
  - **Use Challenge Response Authentication (CRAM-MD5):** *Default = Off.*
    This field should be selected if the SMTP uses CRAM-MD5.

6.3.11 Twinning

These settings are used with Mobile Twinning, see the **User | Mobility** 280 tab for further details. The use of mobile twinning requires entry of a **Mobility Features** license.

These controls are not applied for twinned calls sent to SIP lines.

System | Twinning	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Send Original Party Information for Mobile Twinning:** *Default = On*
  When on, the IP Office will attempt to send the ICLID information provided with the incoming call to the twinning destination. Depending on the services provided by the line provider, this information may not be allowed in which case it may either be removed or the twinned call blocked. If this occurs, the Calling Party Information for Mobile Twinning field should be used to send information that is acceptable to the line provider.
- **Calling Party Information for Mobile Twinning:** *Default = Blank (Disabled), Range = Up to 32 digits.*
  This field is useable when **Send Original Part Information for Mobile Twinning** is off. Note that the number entered here for use as the CLI must be a valid number for return calls to the same site. Some line providers may reject calls that use a number that is not valid for return calls to the same site. In addition depending on the line type and line provider settings the maximum number of digits may be limited.

6.3.12 CDR/SMDR

Using a specified IP address, the IP Office can send a Call Detail Record (CDR) for each completed call. For IP Office 4.2 +, the system can be configured to send SMDR call log records rather than CDR records. This removes the need to have a the IP Office Delta Server application installed on a PC.

System | CDR	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Output:** *Default = No Output.*
  Select the type of call record that the IP Office should output via IP.
  - ***No Output***
  - ***CDR Only*****:** *Software level = 3.2+.*
    Send call records using the CDR setting below.
  - ***SMDR Only*****:** *Software level = 4.2+.*
    Send call records using the SMDR settings below.
- **CDR:** *Software level = 3.2+.*
  A number of different CDR formats can be selected to match the requirements of the call logging/accounting software being used at the destination address. For further details refer to Appendix B: CDR Records 794.
  - **Enable intra-switch CDRs:** *Default = Off.*
    When on, includes CDR records for internal calls.
    - **Formatting Options**
      These fields are used to select the format and type of CDR records required. They must match the records expected by the call logging application receiving the CDR records.
      - **Record Format:** *Default = Unformatted.*
        Allows selection from a number of common CDR record formats 794.
      - **Record Options:** *Default = Enhanced.*
        Sets the options to include in the CDR record.
      - **Date Format:** *Default = Day\Month.*
        Sets the date format used in the CDR records.
    - **Call Detail Recorder Communications**
      This section sets the destination and method for sending of the CDR data.
    - **IP Address:** *Default = 0.0.0.0.*
      The destination IP address for CDR records.
    - **IP Port:** *Default = 0.*
      The destination IP port for CDR records.
    - **Max CDRs:** *Default = 500. Range = 0 to 1500.*
      The IP Office can cache up to 1500 CDR records if it detects a communications failure with destination address. If the cache is full, the IP Office will begin discarding the oldest records for each new record. For IP Office 4.2+ the maximum number of records that can be buffered has been increased to 3000 for all systems other than the Small Office Edition.
    - **Use UDP:** *Default = Off (Use TCP)*
      When selected, this field switches the sending of CDR record packets to use UDP instead of TCP.
      - If ***off***, TCP is used. In this mode the IP Office will resend missed or corrupted records using the standard TCP protocol. Records are buffered until successfully sent.
      - If ***on***, UDP is used. In this mode the IP Office will not resend missed or corrupt records. Also when using UDP, the IP Office is less likely to detect a communications failure which would triggered record caching.
  - **SMDR:** *Software level = 4.2+.*
    The IP Office can send SMDR call log records to a specified IP address and port using TCP/IP. The records match the format of the IP Office Delta Server applications SMDR output.
    - **IP Address:** *Default = 0.0.0.0 (Listen).*
      The destination IP address for SMDR records.
      - The address 0.0.0.0 puts the IP Office control unit in listen mode on the specified TCP port. When a connection is made on that port, all SMDR records in the buffer are provided.
    - **TCP Port:** *Default = 0.*
      The destination IP port for SMDR records.

- **Records to Buffer:** *Default = 500, Range = 10 to 3000.*
  The IP Office can cache up to 1500 SMDR records if it detects a communications failure with destination address. If the cache is full, the IP Office will begin discarding the oldest records for each new record. For IP Office 4.2+ the maximum number of records that can be buffered has been increased to 3000 for all systems other than the Small Office Edition.

- **Call Splitting for Diverts:** *Default = Off.*
  When enabled, for calls forwarded off-switch using an external trunk, the SMDR may produce separate initial call and forwarded call records. This applies for calls forwarded by forward unconditional, forward on no answer, forward on busy, DND or mobile twinning. It also applies to calls forwarded off-switch by an incoming call route. The two sets of records will have the same Call ID. The call time fields of the forward call record are reset from the moment of forwarding on the external trunk. For full details see SMDR Call Records 818.

6.3.13 VCM

This form allows adjustment of the operation of Voice Compression Modules (VCM's) installed in the IP Office control unit.

- The options for IP400 VCM controls are supported on IP400 systems from the IP Office 3.2/4.0 Q2 2007 Maintenance Releases onwards.
  - The same controls are supported for IP400 VCM cards in IP500 systems from IP Office 4.1 Q1 2008 Maintenance Release onwards.
- The options for IP500 VCM controls are supported from IP Office 4.2 onwards.

These settings should only be adjusted under the guidance of Avaya support.

System | VCM	
Control Unit	SOE ✗, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+ (IP Office 3.2/4.0 Q2 2007 Maintenance Releases).
Mergeable	✓.

Echo
Echoes are typically generated by impedance mismatches when a signal is converted from one circuit type to another, most notably from analog to IP. To resolve this issue, an estimated echo signal can be created from one output and then subtracted from the input to hopefully remove any echo of the output.

- **Echo Return Loss (dB):** *Default = 6dB, IP400 and IP500 VCM's.*
  IP400 and IP500 VCM's. This control allows adjustment of expected echo loss that should be used for the echo cancellation process. The options are ***0dB***, ***3dB***, ***6dB*** and ***9dB*** *(IP400 VCM only)*.

Comfort Noise
A low level of comfort noise is required on digital lines during periods where there would normally be just silence. This is necessary to reassure users that the call is still connected. These controls allow adjustment of the comfort noise generated by the VCM.

- **Nonlinear Processor Mode:** *Default = Adaptive, IP400 and IP500 VCM's.*
  Allows selection of one of the following options:
  - ***Adaptive***
    Adaptive means the comfort noise generated by the NLP will try to match background noise.
  - ***Silence***
    Silence means the NLP will not generate comfort noise at all
  - ***Disabled***
    NLP is not applied, in which case some residual echo may be heard.
- **NLP Comfort Noise Attenuation:** *Default = -9dB, IP500 VCM's only.*
  Options are ***-3dB***, ***-6dB*** and ***-9dB***.
- **NLP Comfort Noise Ceiling:** *Default =-30dB, IP500 VCM's only.*
  Options are ***-30dB*** and ***-55dB***.

6.3.14 SBCC

SBCC (Small Business Contact Center) is an IP Office application that collects and displays information on the current status of SBCC Agent hunt groups and users.

System | SBCC	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.2+.
Mergeable	✓.

- **Busy Not Available Reason Codes**
  SBCC Agents users who indicate that they are in a 'busy not available' state can be prompt to also indicate the reason for being in that state. This menu allows descriptions for the possible reasons to be entered. The descriptions are then used in menus from which the Agent's make selections when setting themselves into busy not available state and in reports on Agent status.
  - **Code/Reason**
    Rows 1 to 8 can be used to contain descriptions of up to 31 characters each. Rows **0** and **9** are fixed as ***Unsupported*** and ***Automatic***.
- **Default After Call Work Time (seconds):** *Default = 10, Range = 10 to 999 seconds.*
  If an SBCC agent is automatically placed into the After Call Work (ACW) state (User \| Telephony \| Supervisor Settings \| Automatic After Call Work 266), this field sets the duration of that state. This duration can be overridden by the Agent's own setting (User \| Telephony \| Supervisor Settings \| After Call Work Time 266). During ACW state, hunt group calls are not presented to the user.

6.4 Line Settings



The line settings shown in the IP Office configuration will change according to the types of trunk cards installed in the IP Office control unit or added using external expansion modules. Some models of IP Office Small Office Edition control units include up to 4 integral analog trunk ports.

- **WARNING: Changing Trunk Cards**
  Changing the trunk card installed in an IP Office control unit will result in line settings for both the previous trunk card and the currently installed trunk card. In order to change the trunk card type in a particular card slot, the configuration must be defaulted. This does not apply if replacing an existing card with one of a higher capacity or fitting a trunk card into a previously unused slot.

General Line Operation
The following are general principles for line operation with an IP Office system. Some particular line types may operate differently.

- **Routing Calls to/from Lines - Line Groups**
  Each trunk channel belongs to an Incoming Line Group and an Outgoing Line Group. These are used as follows:
  - **Incoming Call Routes - Routing Incoming Calls** 328
    Within the IP Office configuration, Incoming Call Routes are used to determine where calls should be presented. The route used is determined by matching information received with the call such as incoming number, ICLID, call type and the Incoming Line Group of the line on which the call arrived.
  - **Short Codes - Routing Outgoing Calls** 308
    Short codes are used in several areas of the IP Office configuration to match digits dialed. Short codes that result in a number to be dialed includes a Line Group setting. This can specify a matching Outgoing Line Group from which a line should be seized if available or for IP Office 4.0 and higher an ARS form.
    - **ARS (Alternate Route Selection)** 377
      Calls can be routed to ARS forms. These forms for scenarios where different lines are used at different times or where no line in the outgoing line group is available.
- **Clock Quality**
  Calls between systems using digital trunks (for example E1, E1R2, T1 PRI and BRI) require an common clock signal. The IP Office will try to obtain this clock signal from an exchange through one of its digital trunks. This is done by setting the Clock Quality setting of that Line to Network. If there are multiple trunks to public exchanges, another trunk can be set as Fallback should the primary clock signal fail. Other trunks should be set as Unsuitable.
- **Removing Unused Trunks**
  In cases where a trunk is not connected, it is important to ensure that the trunk is set as being Out of Service within the configuration. Failure to do this may cause the IP Office to attempt to present outgoing calls to that trunk. Similarly, where the number of channels subscribed is less than those supportable by the trunk type, the unsubscribed channels should be disabled. On E1 and BRI trunks this can be done by setting the Number of Channels correctly. On all trunk types it can also be done by setting the Direction of the unsubscribed channels to Incoming.

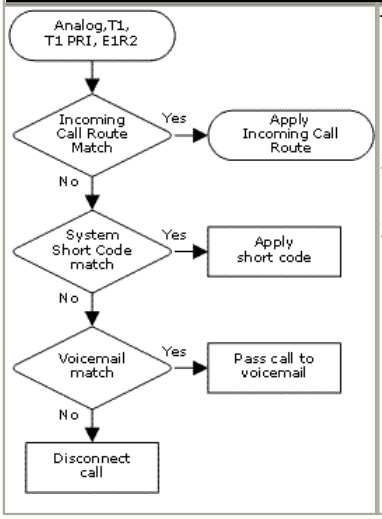
6.4.1 Line (Analog)



Analog trunks can be provided within the IP Office systems in the following ways. In all cases the physical ports are labeled as Analog. For full details of installation refer to the IP Office Installation manual.

- **Using ICLID**
  The IP Office can route incoming calls using the ICLID received with the call. However ICLID is not sent instantaneously. On analog trunks set to Loop Start ICLID, there will be a short delay while the IP Office waits for any ICLID digits before it can determine where to present the call.
- **Line Status**
  Analog line do not indicate call status other than whether the line is free or in use. Some IP Office features, for example retrieving unanswered forwards and making twinned calls make use of the call status indicated by digital lines. This is not possible with analog lines. Once an analog line has been seized the IP Office has to assume that the call is connected and treats it as having been answered.
- **Dialing Complete**
  The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.
- **Ground Start**
  This type of analog trunk is only supported through the Analog Trunk external expansion module.

Incoming Call Routing: Analog, BRI, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. **Incoming Call Route**
   Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.
2. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
3. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

6.4.1.1 Line

This tab covers general settings for a line being used with IP Office.

Line | Line (Analog)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number**
  This parameter is not configurable, it is allocated by the system.
- **Card/Module:** *Software level = 4.1+.*
  Indicates the card slot being used for the device providing the line.
  - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upward, for example the module on Expansion Port 1 is shown as 4.
  - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example the module on Expansion Port 1 is shown as 5.
- **Port:** *Software level = 4.1+.*
  Indicates the port on the Card/Module above to which the configuration entry relates.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** (System | Telephony | Telephony) is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **Telephone Number**
  Used to remember the external telephone number of this line to assist with loop-back testing. For information only.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Outgoing Channels:** *Default = 1 (not changeable)*
- **Voice Channels:** *Default = 1 (not changeable)*
- **Prefix:** *Default = Blank.*
  Enter the number to prefix to any ICLID received with incoming calls. If the IP Office has been configured, using short codes, to require users to dial a prefix to make external calls, adding the same prefix to incoming ICLID numbers allows those numbers to be used for return calls.
  - For outgoing calls: For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **National Prefix:** *Default = 0 (not changeable)*
- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
  Allows a number to be assigned to the line to identify it. On phone's that support call appearance buttons, a Line Appearance button with the same number will show the status of the line and can be used to answer calls on the line. For full details refer to the IP Office Key & Lamp Manual. The line appearance ID must be unique and not match any extension number.

6.4.1.2 Analog Options

This tab covers analog line specific settings.

Line | Analog Options	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Channel:**
  Set by the system. Shown for information only.
- **Trunk Type:** *Default = Loop Start*
  Sets the analog line type (***Ground Start***, ***Loop Start***, ***Loop Start ICLID***, ***Out of Service***).
  - **Ground Start**
    Ground Start is only supported on trunks provided by the Analog Trunk 16 expansion module. It requires that the module and the IP Office control unit are grounded. Refer to the IP Office installation manual.
  - **Delay Waiting for Caller ID Information.**
    As the IP Office can use ICLID to route incoming calls, on analog Loop Start ICLID trunks there is a few seconds delay while ICLID is received before the call routing can be determined.
- **Signaling Type:** *Default = DTMF Dialing*
  Sets the signaling method used on the line (DTMF Dialing or Pulse Dialing).
- **Direction:** *Default = Both Directions*
  Sets the allowed direction of operation of the line (Incoming, Outgoing or Both Directions).
- **Bearer:** *Default = Any*
  Sets the type of traffic carried by the line (Voice, Data or Any).
- **Impedance**
  This field is only available for certain system locales. The range of values available will depend on the system locale. The value used for ***Default*** is set by the system **Locale**.
  - **Brazil:** *Default = 900R*
    Adjustable between 600R and 900R as required by the line provider.
  - **Korea:** *Default = Default, Software level = 3.2 and 4.0 Q2 2007+.*
    In addition to the default impedance settings, and alternate set of impedance values can be selected.
  - **United States:** *Default = Default, Software level = 3.2 and 4.0 Q2 2007+.*
    In addition to the default impedance setting, one of two alternate sets of impedance values ***Alternate1***, ***Alternate2*** and ***Alternate3*** can be selected.
    - For IP500 systems running IP Office 4.2+, the range of selectable analog impedance settings has been expanded. The additional options are 600+2150nF, 600, 900+2150nF, 900, 220+820||115nF, 370+620||310nF, 270+750||250nF, 320+1050||230nF, 350+1000||210nF, 800+100||210nF. These settings are also used by the **Automatic Balance Impedance Matching** option.
- **Quiet Line:** *IP500, North American Locales only, Default = Off, Software level = 4.2+.*
  This setting may be required to compensate for signal loss on long lines.
- **Automatic Balance Impedance Match:** *IP500, North American Locales only, Software level = 4.2+.*
  These controls can be used to test the impedance of a line and to then display the best match resulting from the test. Testing should be performed with the line connected but the IP Office system otherwise idle. To start testing click Start. The IP Office will then send a series of signals to the line and monitor the response, repeating this at each possible impedance setting. Testing can be stopped at any time by clicking Stop. When testing is complete, Manager will display the best match and ask whether that match should be used for the line. If ***Yes*** is selected, Manager will also ask whether the that match should be applied to all other analog lines provided by the same analog trunk card or module.
- **Allow Analog Trunk to Trunk Connect:** *Default = Not selected (Off).*
  When not enabled, users cannot transfer or forward external calls back off-switch using an analog trunk if the calls was originally made or received on another analog trunk. This prevents transfers to trunks that do not support disconnect clear.
- **BCC:** *Default = Not selected [Brazil locale only]*
- **Secondary Dial Tone:** *Default = Off*
  Configures the use of secondary dial tone on analog lines. This is a different mechanism from secondary dial tone using short codes. This method is used mainly within the Russian locale. When selected, the following additional settings are accessible:
  - **Await time:** *Default = 3000ms, Range = 0 to 25500ms.*
    Used when secondary dial tone (above) is selected. Sets the delay.

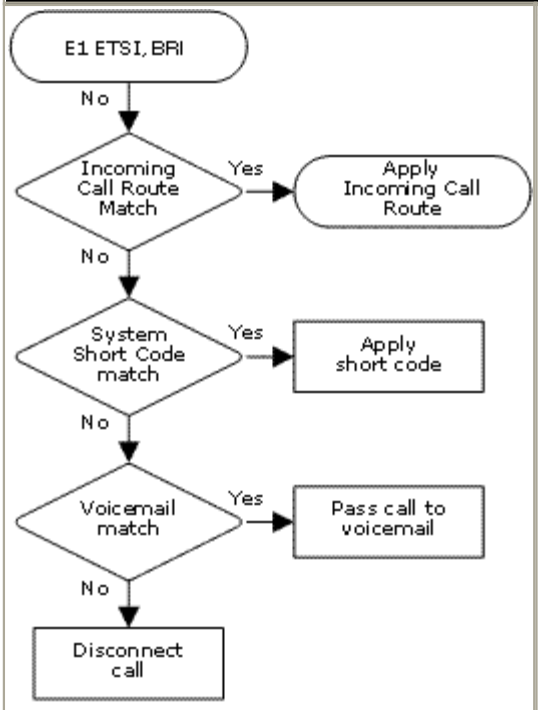
  - **After n Digits:** *Default = 1, Range = 0 to 10.*
    Sets where in the dialing string, the delay for secondary dial tone, should occur.
  - **Matching Digit:** *Default =8, Range = 0 to 9.*
    The digit which, when first matched in the dialing string, will cause secondary dial tone delay.
- **Long CLI Line:** *Default = Off*
  The CLI signal on some long analog lines can become degraded and is not then correctly detected. If you are sure that CLI is being provided but not detected, selecting this option may resolve the problem.
- **Modem Enabled:** *Default = Off*
  The first analog trunk on Small Office Edition controls units, IP400 ATM4 trunk cards and IP500 Analog Trunk cards can be set to modem operation (V32 with V42 error correction). This allows the trunk to answer incoming modem calls and be used for system maintenance. When on, the trunk can only be used for analog modem calls. The default system short code *9000* can be used to toggle this setting. For the Small Office Edition control unit, when on, the control unit status LED flashes alternate red/green.
- **Ring Persistency:** *Default = Set according to system locale, Range = 0 to 2550ms.*
  The minimum duration of signal required to be recognized.
- **Ring Off Maximum:** *Default = Set according to system locale, Range = 0 to 25500ms.*
  The time required before signaling is regarded as ended.
- **Flash Pulse Width:** *Default = 500ms, Range = 0 to 2550ms.*
- **DTMF Mark:** *Default = 80 (80ms), Range = 0 to 255.*
- **DTMF Space:** *Default = 80 (80ms), Range = 0 to 255.*
- **Intermediate Digit Pause:** *Default = 500ms, Range = 0 to 2550ms.*
- **Voice Recording:** *Default = Low*
  Used to adjust the volume level of calls recorded by voicemail. Options are Low, Medium and High.
- **Disconnect Clear**
  Disconnect clear (also known as Line Break or Reliable Disconnect) is a method used to signal from the line provider that the call has cleared. The IP Office also uses Tone Disconnect, which clears an analog call after 6 seconds of continuous busy or NU tone, configured through the **Busy Tone Detection** 179 (System | Telephony | Tones & Music) 179 settings.
  - **Enable:** *Default = On*
    Enables the use of disconnect clear.
  - **Units:** *Default = 500ms, Range = 0 to 2550ms.*
    This time must be less than the actual disconnect time period used by the line provider by at least 150ms.
- **Pulse Width On:** *Default = 40ms, Range = 0 to 255ms.*
- **Pulse Width Off:** *Default = 60ms, Range = 0 to 255ms.*
- **Await Dial Tone:** *Default = 3000ms, Range = 0 to 25500ms.*
  Sets how long the system should wait before dialing out.
- **BCC Flash Pulse Width:** *[Brazil locale only] Default = 100 (1000ms), Range = 0 to 255.*
- **Gains:**
  These settings should not be adjusted without guidance from the line provider.
  - **A -> D:** *Default = 0dB*
    Sets the analog to digital gain. Range -4.0dB to +3.5dB in 0.5dB steps.
  - **D -> A:** *Default = 0dB*
    Sets the digital to analog gain. Range -4.0dB to +3.5dB in 0.5dB steps.
- **Echo Cancellation:** *Default = 16ms.*
  Only useable with the IP400 ATM4 Universal and IP500 Analog trunk card. Allows settings of ***Off***, ***8***, ***16***, ***32***, ***64*** and ***128*** milliseconds. The echo cancellation should only be adjusted as high as required to remove echo problems. Setting it to a higher value than necessary can cause other distortions.
- **Mains Hum Filter:** *Default = Off, Software level = IP500 4.2+.*
  If mains hum interference on the lines is detected or suspected, this settings can be used to attempt to remove that interference. Useable with ATM16 trunks and IP500 ATM4U trunks. Options are ***Off***, ***50Hz*** or ***60Hz***.

6.4.2 Line (BRI)



BRI trunks are provided by the installation of an Quad BRI trunk card into the IP Office control unit. This card provides 4 BRI ports. Each port supports 2 channels for calls. For full details of installation refer to the IP Office Installation manual.

Incoming Call Routing: E1 ETSI, BRI



The following options are used to route incoming calls received on this type of trunk.

1. **Incoming Call Route**
   The IP Office checks for a match to the Incoming Line Group plus, if set, the incoming number and or ICLID.
2. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
3. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

Point-to-Point or Multipoint

BRI lines can be used in either Point-to-Point or Point-to-Multipoint mode. Point-to-Point lines are used when only one device terminates a line in a customer's office. Point-to-Multipoint lines are used when more than one device may be used on the line at the customer's premises. There are major benefits in using Point-to-Point lines:-

1. The exchange knows when the line/terminal equipment is down/dead, thus it will not offer calls down that line. If the lines are Point-to-Multipoint, calls are always offered down the line and fail if there is no response from the terminal equipment. So if you have two Point-to-Multipoint lines and one is faulty 50% of incoming calls fail.
2. You get a green LED on the Control Unit when the line is connected. With Point-to-Multipoint lines some exchanges will drop layer 1/2 signals when the line is idle for a period.
3. The timing clock is locked to the exchange. If layer 1/2 signals disappear on a line then the Control Unit will switch to another line, however this may result in some audible click when the switchover occurs.

The IP Office's default Terminal Equipment Identifier (TEI) will normally allow it to work on Point-to-Point or Point-to-Multipoint lines. However if you intend to connect multiple devices simultaneously to an BRI line, then the TEI should be set to 127. With a TEI of 127, the IP Office control unit will ask the exchange to allocate a TEI for operation.

Note: When connected to some manufactures equipment, which provides an S0 interface (BRI), a defaulted Control Unit will not bring up the ISDN line. Configuring the Control Unit to a TEI of 127 for that line will usually resolve this.

6.4.2.1 BRI Line

Settings

Line | BRI Line	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Card:** *Software level = 4.1+.*
  Indicates the card slot being used for the device providing the line.
  - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upward, for example the module on Expansion Port 1 is shown as 4.
  - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example the module on Expansion Port 1 is shown as 5.
- **Port:** *Software level = 4.1+.*
  Indicates the port on the Card above to which the configuration entry relates.
- **Line Number**
  This parameter is not configurable; it is allocated by the system.
- **Line Sub Type:** *Default = ETSI*
  Select to match the particular line type provided by the line provider.
  - ***S-Bus:*** *Software level = 4.2+ (IP500 BRI daughter card only).*
    IP500 BRI daughter cards can be configured for So (S-Bus) operation for connection to ISDN terminal devices. Note that this requires the addition of terminating resistors at both the IP Office and remote ends, and the use of a suitable cross-over cable. For full details refer to the IP Office Installation manual.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** (System | Telephony | Telephony) is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **Telephone Number:**
  Used to remember the external telephone number of this line to assist with loop-back testing. For information only.
- **Prefix:** *Default = Blank.*
  The prefix is used in the following ways:
  - **For incoming calls**
    The ISDN messaging tags indicates the call type (National, International or Unknown). If the call type is unknown, then the number in the Prefix field is added to the ICLID.
  - **For outgoing calls**
    For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **National Prefix:** *Default = 0*
  This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 1923000000 is converted to 01923000000.
- **International Prefix:** *Default = 00*
  This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 00441923000000.
- **TEI:** *Default = 0*
  The Terminal Equipment Identifier. Used to identify each device connected to a particular ISDN line. For Point-to-Point lines this is 0. It can also be 0 on a Point to Multipoint line, however if multiple devices are sharing a Point-to-Multipoint line it should be set to 127 which results in the exchange allocating the TEI's to be used.
- **Number of Channels:** *Default = 2. Range = 0 to 2.*
  Defines the number of operational channels that are available on this line.
- **Outgoing Channels:** *Default = 2. Range = 0 to 2.*
  This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as Number of Channels field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls.
- **Voice Channels:** *Default = 2. Range = 0 to 2.*
  The number of channels available for voice use.
- **Data Channels:** *Default = 2. Range = 0 to 2.*
  The number of channels available for data use. If left blank, the value is 0.

- **Clock Quality:** *Default = Network*
  Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to ***Network***. If multiple lines are set as ***Network***, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, ***Fallback*** can be used to specify a clock source to use should the ***Network*** source not be available. Lines from which the clock source should not be taken should be set as ***Unsuitable***. If no clock source is available the IP Office uses its own internal 8KHz clock source. In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.

- **Supports Partial Rerouting:** *Default = Off, Software level = 4.0+.*
  Partial rerouting (PR) is an ISDN feature. It is supported on external (non-network and QSIG) ISDN exchange calls. When an external call is transferred to another external number, the transfer is performed by the ISDN exchange and the channels to the IP Office are freed. Use of this service may need to be requested from the line provider and may incur a charge.

- **Support Call Tracing:** *Default = Off, Software level = 4.0+.*
  IP Office 4.0+ supports the triggering of malicious caller ID (MCID) tracing at the ISDN exchange. Use of this feature requires liaison with the ISDN service provider and the appropriate legal authorities to whom the call trace will be passed. The user will also need to be enabled for call tracing and be provider with either a short code or programmable button to activate MCID call trace. Refer to Malicious Call Tracing 674 in the Telephone Features section for full details.

- **Active CCBS Support:** *Default = Off, Software level = 4.0+.*
  Call completion to a busy subscriber (CCBS). It allows automatic callback to be used on outgoing ISDN calls when the destination is busy. This feature can only be used on point-to-point trunks. Use of this service may need to be requested from the line provider and may incur a charge.

- **Passive CCBS:** *Default = Off, Software level = 4.0+.*

- **Cost Per Charging Unit:** *Software level = 4.0+.*
  Advice of charge (AOC) information can be display on T3/T3IP phones and stored by the IP Office Delta Server application. The information is provided in the form of charge units. This setting is used to enter the call cost per charging unit set by the line provider. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line. Refer to Advice of Charge 673 in the Telephone Features section.

6.4.2.2 Channels

This tab allows settings for individual channels within the trunk to be adjusted. To edit a channel either double-click on it or click the channel and then select **Edit**.

To edit multiple channels at the same time, select the required channels using Ctrl or Shift and then click **Edit**. When editing multiple channels, fields that must be unique such as **Line Appearance ID** are not shown.

Line | Channels (BRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
  Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number. Line appearance is not supported for trunks set to QSIG operation and is not recommended for trunks be used for DID.

6.4.3 Line (E1)

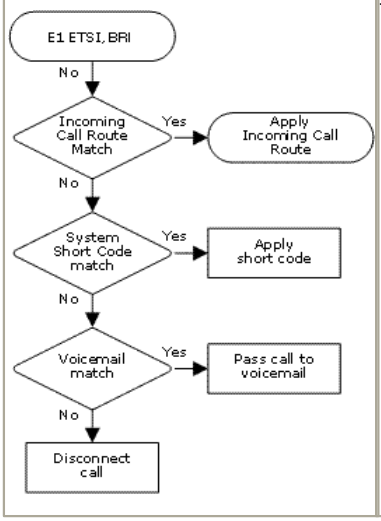


E1 PRI trunks are provided by the installation of an E1 PRI trunk card into the IP Office control unit. E1 PRI trunk cards are not supported with the IP Office Small Office Edition control unit. Dual port E1 PRI trunk cards are only supported with the IP412 control unit and in Slot A of the IP406 V2 control unit. For full details of installation refer to the IP Office Installation manual.

Each physical E1 PRI trunk port supports up to 30 channels for calls.

E1 trunks can be set to either ETSI or QSIG operation modes. The selected mode affects how incoming calls are handled.

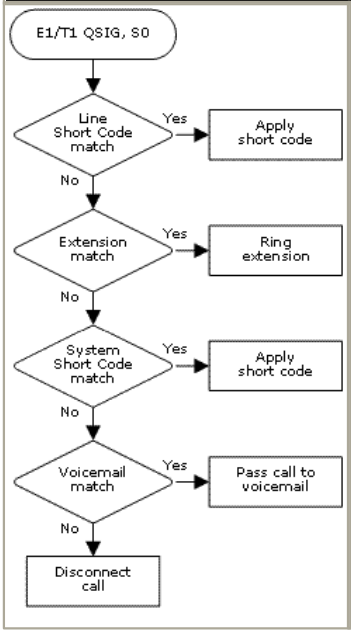
Incoming Call Routing: E1 ETSI, BRI



The following options are used to route incoming calls received on this type of trunk.

1. **Incoming Call Route**
   The IP Office checks for a match to the Incoming Line Group plus, if set, the incoming number and or ICLID.
2. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
3. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

Incoming Call Routing: E1 QSIG and S0 Lines



The following options are used to route incoming calls received on this type of trunk.

1. **Line Short Code Match**
   The IP Office checks for a short code match based on the incoming number.
2. **Extension Match**
   The IP Office checks for an extension match based on the incoming number.
3. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
4. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

6.4.3.1 PRI Line

These settings are also used for a US T1 PRI trunk card set to ETSI or QSIG operation.

The IP500 PRI-U card supports E1, T1 and E1-R2 PRI modes. To select the mode required, right-click on the line in the group or navigation pane and select Change Universal PRI Card Line Type. The IP Office systems supports 8 B-channels on each IP500 PRI-U port fitted. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration, using in-service channels from port 9 of slot 1 upwards. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the number of calls in progress on B-channels.
- For T1 and E1R2 trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the channels set as in service.

Line | PRI Line (E1)	
Control Unit	SOE ✗, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number**
  This parameter is not configurable; it is allocated by the system.
- **Line Sub Type:**
  Select to match the particular line type provided by the line provider. E1 PRI trunks support ***ETSI***, ***ETSI CHI***, ***QSIG A*** or ***QSIG B***.
  - ***ETSI CHI*** is used to send the channel allocation ID (CHI) in the call setup signalling. This is a request to use a particular B-channel rather than use any B-channel allocated by the central office exchange.
  - ***QSIG*** is not supported on IP500 systems without IP500 Voice Networking licenses.
- **Card:** *Software level = 4.1+.*
  Indicates the card slot being used for the device providing the line.
  - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upward, for example the module on Expansion Port 1 is shown as 4.
  - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example the module on Expansion Port 1 is shown as 5.
- **Port:** *Software level = 4.1+.*
  Indicates the port on the Card above to which the configuration entry relates.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** (System | Telephony | Telephony) is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **Telephone Number:**
  Used to remember the external telephone number of this line to assist with loop-back testing. For information only.
- **Channel Allocation:** *Default = 30->1, Software level = 4.2+.*
  For lines set to ***ETSI CHI***, this option allows the IP Office to select the default order in which channels should be used for outgoing calls. Typically this is set as the opposite of the default order in which the central office exchange uses channels for incoming calls.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
  - For IP Office 4.2+, for lines set to the **Line Sub Type** of ***ETSI CHI***, the **Incoming Group ID** is set as part of the individual channel settings.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
  - For IP Office 4.2+, for lines set to the **Line Sub Type** of ***ETSI CHI***, the **Incoming Group ID** is set as part of the individual channel settings.
- **Prefix:** *Default = Blank.*
  The prefix is used in the following ways:
  - For incoming calls, the ISDN messaging tags indicates the call type; National, International or Unknown. If the call type is unknown, then the number in the Prefix field is added to the ICLID.

- For outgoing calls: For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.

- **National Prefix:** *Default = 0*
  This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 1923000000 is converted to 01923000000.

- **International Prefix:** *Default = 00*
  This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 00441923000000.

- **TEI:** *Default = 0*
  The Terminal Equipment Identifier. Used to identify each Control Unit connected to a particular ISDN line. For Point to Point lines this is typically (always) 0. It can also be 0 on a Point to Multi-Point line, however if multiple devices are sharing a Point to Multi-Point line it should be set to 127 which results in the exchange deciding on the TEI's to be used.

- **Number of Channels**
  Defines the number of operational channels that are available on this line. Up to 30 for E1 PRI, 23 for T1 PRI - depending upon the number of channels subscribed.

- **Outgoing Channels**
  This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as Number of Channels field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls.

- **Voice Channels**
  The number of channels available for voice use.

- **Data Channels**
  The number of channels available for data use.

- **CRC Checking:** *Default = On*
  Switches CRC on or off.

- **Line Signalling:** *Default = CPE*
  This option is not used for lines where the **Line SubType** is set to ***QSIG***. Select either ***CPE*** (customer premises equipment) or ***CO*** (central office). The ***CO*** feature is intended to be used primarily as a testing aid. It allows PRI lines to be tested in a back-to-back configuration, using crossover cables.

  - The CO feature operates on this line type by modifying the way in which incoming calls are disconnected for IP Office configuration in Brazil and Argentina. In these locales, the CO setting uses Forced-Release instead of Clear-Back to disconnect incoming calls. The Brazilian Double-Seizure mechanism, used to police Collect calls, is also disabled in CO mode.

- **Clock Quality:** *Default = Network*
  Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to ***Network***. If multiple lines are set as ***Network***, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, ***Fallback*** can be used to specify a clock source to use should the ***Network*** source not be available. Lines from which the clock source should not be taken should be set as ***Unsuitable***. If no clock source is available the IP Office uses its own internal 8KHz clock source. In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.

- **Add 'Not-end-to-end ISDN' Information Element:** *Default = Never*, Software level = 4.2+.*
  Sets whether the optional 'Not end-to-end ISDN' information element should be added to outgoing calls on the line. The options are ***Never***, ***Always*** or ***POTS*** (only if the call was originated by an analog extension). *The default is ***Never*** except for the following locales; for Italy the default is ***POTS***, for New Zealand the default is ***Always***.

- **Supports Partial Rerouting:** *Default = Off, Software level = 4.0+.*
  Partial rerouting (PR) is an ISDN feature. It is supported on external (non-network and QSIG) ISDN exchange calls. When an external call is transferred to another external number, the transfer is performed by the ISDN exchange and the channels to the IP Office are freed. Use of this service may need to be requested from the line provider and may incur a charge.

  - **Force Number Plan to ISDN:** *Default = Off, Software level = 4.2+.*
    This option is only configurable when Support Partial Rerouting is also enabled. When selected, the plan/type parameter for Partial Rerouting is changed from Unknown/Unknown to ISDN/Unknown. For IP Office 4.0 and 4.1 the plan/type is fixed as Unknown/Unknown. The use of this setting will depend on line provider requirements for partial rerouting.

- **Support Call Tracing:** *Default = Off, Software level = 4.0+.*
  IP Office 4.0+ supports the triggering of malicious caller ID (MCID) tracing at the ISDN exchange. Use of this feature requires liaison with the ISDN service provider and the appropriate legal authorities to whom the call trace will be passed. The user will also need to be enabled for call tracing and be provider with either a short code or programmable button to activate MCID call trace. Refer to Malicious Call Tracing 674 in the Telephone Features section for full details.

- **Active CCBS Support:** *Default = Off, Software level = 4.0+.*
  Call completion to a busy subscriber (CCBS). It allows automatic callback to be used on outgoing ISDN calls when the destination is busy. This feature can only be used on point-to-point trunks. Use of this service may need to be requested from the line provider and may incur a charge.
- **Passive CCBS:** *Default = Off, Software level = 4.0+.*
- **Cost Per Charging Unit:** *Software level = 4.0+.*
  Advice of charge (AOC) information can be display on T3/T3IP phones and stored by the IP Office Delta Server application. The information is provided in the form of charge units. This setting is used to enter the call cost per charging unit set by the line provider. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line. Refer to Advice of Charge 673 in the Telephone Features section.

The following fields are shown for a US T1 trunk card set to ETSI or QSIG operation. These cards have the same settings E1 PRI trunk cards set to ETSI or QSIG but only support 23 channels.

- **CSU Operation**
  Tick this field to enable the T1 line to respond to loop-back requests from the line.
- **Haul Length:** *Default = 0-115 feet*
  Sets the line length to a specific distance.
- **Channel Unit:** *Default = Foreign Exchange*
  This field should be set to match the channel signaling equipment provided by the Central Office. The options are Foreign Exchange, Special Access or Normal.

6.4.3.2 Short Codes

Line short codes can be applied to the digits received with incoming call. The stage at which they are applied also varies depending on the trunk type.

- **IP Trunks**
  Line short codes are used if Small Community Networking (SCN) is not being used or no SCN user extension match occurs on the digits received.
- **QSIG and SO Trunks**
  S_0 trunks, and E1 and T1 trunks set to QSIG mode use line short code.

Line | Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

6.4.3.3 Channels

This tab allows settings for individual channels within the trunk to be adjusted. To edit a channel either double-click on it or click the channel and then select **Edit**.

To edit multiple channels at the same time, select the required channels using Ctrl or Shift and then click **Edit**. When editing multiple channels, fields that must be unique such as **Line Appearance ID** are not shown.

Line | Channels (E1 PRI)	
Control Unit	SOE ✗, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
  Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number. Line appearance is not supported for trunks set to QSIG operation and is not recommended for trunks be used for DID.
  - For IP Office 4.2+, if the trunk Line Sub Type is set to ETSI CHI, outgoing line appearance calls must use the correspond channel.

For IP Office 4.2+, the following additional fields are shown for lines where the **Line Sub Type** is set to ***ETSI CHI***.

- **Incoming Group:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Direction:** *Default = Bothways*
  Controls the direction of calls allowed on the channel. Options are ***Bothways***, ***Incoming*** or ***Outgoing***.
- **Bearer:** *Default = Any.*
  Allows selection of the type of call that can use the channel. Options are ***Any***, ***Data*** or ***Voice***.
- **Admin:** *Default = In Service.*
  This field can be used to indicate whether the channel is in use or not. On trunks where only a limited number of channels have been requested from the trunk provider (known as sub-equipped trunks), those channels not provided should be set as ***Out of Service***. For channels that are available but are temporarily not being used select ***Maintenance***.
- **Tx Gain:** *Default = 0dB, Range = -10dBb to +5dB.*
  The transmit gain in dB.
- **Rx Gain:** *Default = 0dB, Range = -10dBb to +5dB.*
  The receive gain in dB.

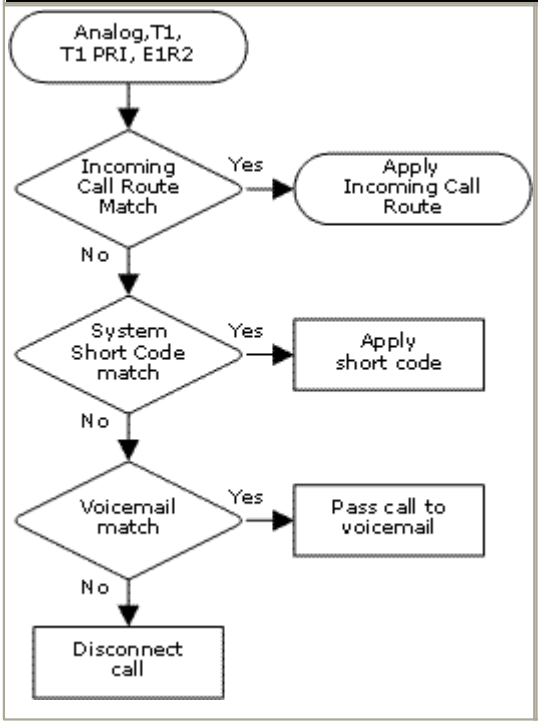
6.4.4 Line (E1R2)



E1-R2 PRI trunks are provided by the installation of an E1-R2 PRI trunk card into the IP Office control unit. E1-R2 PRI trunk cards are not supported with the IP Office Small Office Edition control unit. Dual port E1-R2 PRI trunk cards are only supported with the IP412 control unit and in Slot A of the IP406 V2 control unit. These trunk cards are available in RJ45 connector or coaxial connector versions. For full details of installation refer to the IP Office Installation manual.

Each physical E1 PRI trunk port supports up to 30 channels for calls.

Incoming Call Routing: Analog, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. **Incoming Call Route**
   Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.
2. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
3. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

6.4.4.1 E1-R2 Options (Line)

The IP500 PRI-U card supports E1, T1 and E1-R2 PRI modes. To select the mode required, right-click on the line in the group or navigation pane and select Change Universal PRI Card Line Type. The IP Office systems supports 8 B-channels on each IP500 PRI-U port fitted. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration, using in-service channels from port 9 of slot 1 upwards. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the number of calls in progress on B-channels.
- For T1 and E1R2 trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the channels set as in service.

Line | Line (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

- **Card:** *Software level = 4.1+.*
  Indicates the card slot being used for the device providing the line.
  - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upward, for example the module on Expansion Port 1 is shown as 4.
  - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example the module on Expansion Port 1 is shown as 5.
- **Port:** *Software level = 4.1+.*
  Indicates the port on the Card above to which the configuration entry relates.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** 177 (System | Telephony | Telephony) 177 is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **Line Number:**
  Allocated by the system.
- **Line SubType:** *Default = E1-R2*
  Supported options are ***E1-R2***, ***ETSI***, ***QSIGA*** or ***QSIGB***.
  - QSIG is not supported on IP500 systems without IP500 Voice Networking licenses.
- **Channel Allocation:** *Default = 30 -> 1*
  The order, ***30 -> 1*** or ***1 -> 30***, in which channels are used.
- **Country (Locale):** *Default = Mexico.*
  Select the locale that matches the area of usage. Note that changing the locale will return the MFC Group settings to the defaults for the selected locale. Currently supported locales Argentina, Brazil, China, India, Korea, Mexico and None.

The table at the base of the form displays the settings for the individual channels provided by the line. For details of the channel settings see Edit Channel (E1-R2) 210.

To edit a channel, either double-click on it or right-click and select Edit. This will display the Edit Channel 210 dialog box. To edit multiple channels at the same time select the channels whilst pressing the Shift or Ctrl key. Then right-click and select Edit.

6.4.4.2 Channels

This tab allows settings for individual channels within the trunk to be adjusted. To edit a channel, select the required channel or channels and click **Edit**.

Line | Channels (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

The channel settings are split into two sub-tabs, **E1R2 Edit Channel** and **Timers**.

E1R2 Edit Channel Settings

- **Channel**
  The channel or channels being edited.
- **Incoming Group:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Direction:** *Default = Both Directions*
  The direction of calls on the channel (***Incoming***, ***Outgoing*** or ***Both Directions***).
- **Bearer:** *Default = Any*
  The type of traffic carried by the channel (***Voice***, ***Data*** or ***Any***).
- **Line Signaling Type:** *Default = R2 Loop Start*
  The signaling type used by the channel. Current supported options are: ***R2 Loop Start***, ***R2 DID***, ***R2 DOD***, ***R2 DIOD***, ***Tie Immediate Start***, ***Tie Wink Start***, ***Tie Delay Dial***, ***Tie Automatic***, ***WAN Service*** and ***Out of Service***.
- **Dial Type:** *Default = MFC Dialing*
  The type of dialing supported by the channel; ***MFC Dialing***, ***Pulse Dialing*** or ***DTMF Dialing***.

Timers Settings

This sub-tab displays the various timers provided for E1-R2 channels. These should only be adjusted when required to match the line provider's settings.

6.4.4.3 MFC Group

These tabs show the parameter assigned to each signal in an MFC group. The defaults are set according to the Country (Locale) on the Line tab. All the values can be returned to default by the **Default All** button on the **Advanced** tab.

To change a setting either double-click on it or right-click and select **Edit**.

Line | MFC Group (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

6.4.4.4 Advanced

Line | Advanced (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

- **Zero Suppression:** *Default = HDB3*
  Selects the method of zero suppression used (HDB3 or AMI).
- **Clock Quality:** *Default = Network*
  For digital calls the IP Office requires a clock source for call signalling and synchronization. Preferably the clock source from a central office exchange should be used. Network indicates that this line can be used as the clock source. When multiple Network sources are available the IP Office will use the first available source. A line set to Fallback is only used if no line set to Network is available. Lines set to Unsuitable are not used.
- **Pulse Metering Bit:** *Default = A Bit*
  Sets which bit should be used to indicate the pulse metering signal; ***A Bit***, ***B Bit*** or ***C Bit***.
- **Line Signaling:** *Default = CPE*
  Select either ***CPE*** or ***CO***. The ***CO*** feature is intended to be used primarily as a testing aid. It allows T1 and E1 lines to be tested in a back-to-back configuration, using crossover (QSIG) cables.
- The CO feature operates by modifying the way in which incoming calls are disconnected for IP Office configuration in Brazil and Argentina. In these locales, the CO setting uses Forced-Release instead of Clear-Back to disconnect incoming calls. The Brazilian Double-Seizure mechanism used to police Collect calls, is also disabled in CO mode.
- **Incoming Routing Digits:** *Default = 4*
  Sets the number of incoming digits used for incoming call routing.
- **CRC Checking:** *Default = Ticked (On)*
  Switches CRC on or off.
- **Default All Group Settings**
  Default the MFC Group tab settings.
- **Line Signaling Timers:**
  To edit one of these timers, either double-click on the timer or right-click on a timer and select the action required.

6.4.5 Line (T1)



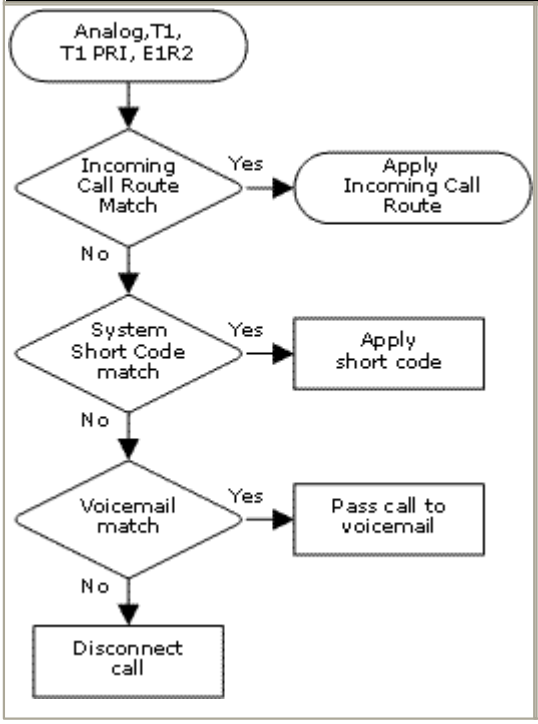
T1 trunks are provided by the installation of an T1 PRI trunk card into the IP Office control unit. The trunks on these cards can be configured for T1, PRI or QSIG operation. For full details of installation refer to the IP Office Installation manual.

Dual port T1 PRI trunk cards are only supported with the IP412 control unit and in Slot A of the IP406 V2 control unit.

Each physical trunk port supports up to 24 channels in T1 mode, 23 channels in PRI and QSIG modes.

- **Dialing Complete**
  The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.

Incoming Call Routing: Analog, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. **Incoming Call Route**
   Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.
2. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
3. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

6.4.5.1 Line

The IP500 PRI-U card supports E1, T1 and E1-R2 PRI modes. To select the mode required, right-click on the line in the group or navigation pane and select Change Universal PRI Card Line Type. The IP Office systems supports 8 B-channels on each IP500 PRI-U port fitted. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration, using in-service channels from port 9 of slot 1 upwards. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the number of calls in progress on B-channels.
- For T1, E1R2 and ETSI CHI trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the channels set as in service.

Line | Line (T1)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number:**
  Allocated by the system.
- **Card:** *Software level = 4.1+.*
  Indicates the card slot being used for the device providing the line.
  - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upward, for example the module on Expansion Port 1 is shown as 4.
  - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example the module on Expansion Port 1 is shown as 5.
- **Port:** *Software level = 4.1+.*
  Indicates the port on the Card above to which the configuration entry relates.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** (System | Telephony | Telephony) is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **Line Sub Type:** *Default = T1*
  Set to T1 for a T1 line. For PRI see Line Form (US PRI). If set to ETSI, QSIG A or QSIG B see Line (E1).
- **Channel Allocation:** *Default = 24 -> 1*
  The order, 24 to 1 or 1 to 24, in which channels are used.
- **Prefix:** *Default = Blank*
  Enter the number to prefix to all incoming numbers for callback. This is useful if all users must dial a prefix to access an outside line. The prefix is automatically placed in front of all incoming numbers so that users can dial the number back.
- **Framing:** *Default = ESF*
  Selects the type of signal framing used (***ESF*** or ***D4***).
- **Zero Suppression:** *Default = B8ZS*
  Selects the method of zero suppression used (***B8ZS*** or ***AMI ZCS***).
- **Clock Quality:** *Default = Network*
  Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to ***Network***. If multiple lines are set as ***Network***, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, ***Fallback*** can be used to specify a clock source to use should the ***Network*** source not be available. Lines from which the clock source should not be taken should be set as ***Unsuitable***. If no clock source is available the IP Office uses its own internal 8KHz clock source. In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.
- **Haul Length:** *Default = 0-115 feet*
  Sets the line length to a specific distance.
- **Channel Unit:** Default = Foreign Exchange
  This field should be set to match the channel signaling equipment provided by the Central Office. The options are Foreign Exchange, Special Access or Normal.
- **CRC Checking:** *Default = On*
  Turns CRC on or off.

- **Line Signaling:** *Default = CPE*
  This field affects T1 channels set to Loop-Start or Ground-Start. The field can be set to either CPE (Customer Premises Equipment) or CO (Central Office). This field should normally be left at its default of CPE. The setting CO is normally only used in lab back-to-back testing.
- **Incoming Routing Digits:** Default=0 (present call immediately)
  Sets the number of routing digits expected on incoming calls. This allows the line to present the call to the system once the expected digits have been received rather than waiting for the digits timeout to expire. This field only affects T1 line channels set to E&M Tie, E&M DID, E&M Switched 56K and Direct Inward Dial.
- **CSU Operation:**
  Tick this field to enable the T1 line to respond to loop-back requests from the line.
- **Enhanced Called Party Number:** *Default = Off*
  This option is not supported for systems set to the United States locale. Normally the dialed number length is limited to 15 digits. Selecting this option increases the allowed dialed number length to 30 digits.

6.4.5.2 Channels

The settings for each channel can be edited. Users have the option of editing individual channels by double-clicking on the channel or selecting and editing multiple channels at the same time. Note that the Line Appearance ID cannot be updated when editing multiple channels.

When editing a channel or channels, the settings available are displayed on two sub-tabs; T1 Edit Channel and Timers.

Line | Channels (T1)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

T1 Edit Channel Sub-Tab Settings

- **Channel**
  Allocated by the system.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999*.
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
  Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number. Line appearance is not supported for trunks set to QSIG operation and is not recommended for trunks be used for DID.
- **Direction:** *Default = Bothway*
  The direction of calls on the channel (***Incoming***, ***Outgoing*** or ***Bothway***).
- **Bearer:** *Default = Voice*
  The type of traffic carried by the channel.
- **Type:** *Default = Ground-Start*
  The T1 emulates the following connections (***Ground-Start***, ***Loop-Start***, ***E&M - TIE***, ***E&M - DID***, ***E&M Switched 56K***, ***Direct Inward Dial***, ***Clear Channel 64K*** or ***Out of Service***). Trunks set to E&M DID will only accept incoming calls.
  - If E&M-TIE is selected and the Outgoing Trunk Type is set to Automatic, no secondary dial tone is provided for outgoing calls on this line/trunk.
- **Dial Type:** *Default = DTMF Dial*
  Select the dialing method required (***DTMF Dial*** or ***Pulse Dial***).
- **Incoming Trunk Type:** *Default = Wink-Start*
  Used for E&M types only. The handshake method for incoming calls (Automatic, Immediate, Delay Dial or Wink-Start).
- **Outgoing Trunk Type:** *Default = Wink-Start*
  Used for E&M types only. The handshake method for outgoing calls (Automatic, Immediate, Delay Dial or Wink-Start).
  - If the line Type is set to E&M-TIE and the Outgoing Trunk Type is set to Automatic, no secondary dial tone is provided for outgoing calls on this line/trunk.
- **Tx Gain:** *Default = 0dB*
  The transmit gain in dB.
- **Rx Gain:** *Default = 0dB*
  The receive gain in dB.

Timers Sub-Tab Settings

This sub-tab allows various timers relating to operation of an individual channel to be adjusted. These should only be adjusted to match the requirements of the line provider. The following is a list of the default values. To reset a value, click on the current value and then right click and select from the default, minimize and maximize options displayed.

- **Outgoing Seizure:** 10.
- **Wink Start:** 5000.
- **Wink Validated:** 80.
- **Wink End:** 350.
- **Delay End:** 5000.
- **Wink Signal:** 200.
- **Incoming Dial Guard:** 50.
- **First Incoming Digit:** 15000.
- **Incoming Inter Digit:** 5000.
- **Maximum Inter Digit:** 300.

- **Outgoing Dial Guard:** 590.
- **Outgoing IMM Dial Guard:** 1500.
- **Outgoing Pulse Dial Break:** 60.
- **Outgoing Pulse Dial Make:** 40.
- **Outgoing Pulse Dial Inter Digit:** 720.
- **Outgoing Pulse Dial Pause:** 1500.
- **Flash Hook Generation:** 500.
- **Outgoing End of Dial:** 1000.
- **Answer Supervision:** 300.
- **Incoming Confirm:** 20.
- **Incoming Automatic Delay:** 410.
- **Incoming Wink Delay:** 100.
- **Flash Hook Detect:** 240.
- **Incoming Disconnect:** 300.
- **Incoming Disconnect Guard:** 800.
- **Disconnected Signal Error:** 240000.
- **Outgoing Disconnect:** 300.
- **Outgoing Disconnect Guard:** 800.
- **Ring Verify Duration:** 220.
- **Ring Abandon:** 6300.
- **Ping Verify:** 600.
- **Long Ring Time:** 1100.
- **Silent Interval:** 1100.

6.4.6 Line (T1 PRI)



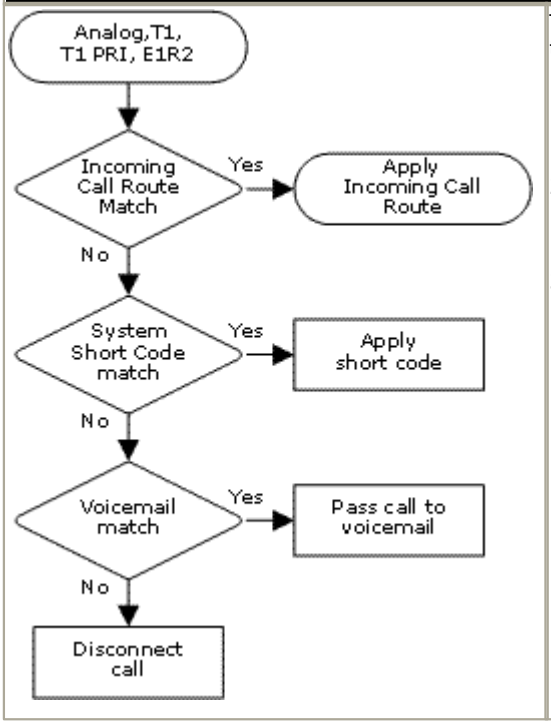
T1 PRI trunks are provided by the installation of an T1 PRI trunk card into the IP Office control unit. The trunks on these cards can be configured for T1 operation or T1 ISDN operation. For full details of installation refer to the IP Office Installation manual.

Dual port T1 PRI trunk cards are only supported with the IP412 control unit and in Slot A of the IP406 V2 control unit.

Each physical trunk port supports up to 24 channels in T1 mode, 23 channels in PRI and QSIG modes.

- **Dialing Complete**
  The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.
- **AT&T Provider Settings**
  For AT&T operation two information elements, TNS (Transit Network Selector) and NSF (Network Specific Facility), are sent in the call setup to the service provider. On IP Office, the values for TNS, NSF and the actual phone number presented to the line are determined by parsing the number dialed through, in sequence, the TNS, Special and Call by Call tabs. These tabs appear when the Provider setting on the Line tab is set to AT&T. Note also that B-channels within the same line can be brought from different service providers. Additionally some B-channels can be used 'call by call', that is, use a different service provider for each call.

Incoming Call Routing: Analog, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. **Incoming Call Route**
   Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.
2. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
3. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

6.4.6.1 Line

The IP500 PRI-U card supports E1, T1 and E1-R2 PRI modes. To select the mode required, right-click on the line in the group or navigation pane and select Change Universal PRI Card Line Type. The IP Office systems supports 8 B-channels on each IP500 PRI-U port fitted. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration, using in-service channels from port 9 of slot 1 upwards. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the number of calls in progress on B-channels.
- For T1, E1R2 and ETSI CHI trunks, IP500 Universal PRI (Additional Channels) licenses are consumed by the channels set as in service.

Line | Line (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number:**
  Allocated by the system.
- **Card:** *Software level = 4.1+.*
  Indicates the card slot being used for the device providing the line.
  - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upward, for example the module on Expansion Port 1 is shown as 4.
  - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example the module on Expansion Port 1 is shown as 5.
- **Port:** Software level = 4.1+.
  Indicates the port on the Card above to which the configuration entry relates.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** 177 (System | Telephony | Telephony) 177 is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **Line SubType:** *Default = PRI*
  Set to **PRI**. If set to T1 see Line Form (T1) 212. If set to ***ETSI***, ***ETSI CHI***, ***QSIG A*** or ***QSIG B*** see Line (E1) 203.
  - IP Office 4.2 adds support for ***ETSI CHI***.
  - QSIG is not supported on IP500 systems without IP500 Voice Networking licenses.
- **Channel Allocation:** *Default = 23 -> 1*
  The order, 23 to 1 or 1 to 23, in which channels are used.
- **Switch Type:** *Default = NI2*
  Options ***4ESS***, ***5ESS***, ***DMS100*** and ***NI2***.
- **Provider:** *Default = Local Telco*
  Select the PSTN service provider (***AT&T***, ***Sprint***, ***WorldCom*** or ***Local Telco***).
- **Prefix:** *Default = Blank*
  Enter the number to prefix to all incoming numbers for callback. This is useful if all users must dial a prefix to access an outside line. The prefix is automatically placed in front of all incoming numbers so that users can dial the number back.
- **Add 'Not-end-to-end ISDN' Information Element:** *Default = Never*, Software level = 4.2+.*
  Sets whether the optional 'Not end-to-end ISDN' information element should be added to outgoing calls on the line. The options are ***Never***, ***Always*** or ***POTS*** (only if the call was originated by an analog extension). *The default is ***Never*** except for the following locales; for Italy the default is ***POTS***, for New Zealand the default is ***Always***.
- **Test Number:**
  Used to remember the external telephone number of this line to assist with loop-back testing. For information only.
- **Framing:** *Default = ESF*
  Selects the type of signal framing used (ESF or D4).
- **Zero Suppression:** *Default = B8ZS*
  Selects the method of zero suppression used (B8ZS or AMI ZCS).

- **Clock Quality:** *Default = Network*
  Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to ***Network***. If multiple lines are set as ***Network***, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, ***Fallback*** can be used to specify a clock source to use should the ***Network*** source not be available. Lines from which the clock source should not be taken should be set as ***Unsuitable***. If no clock source is available the IP Office uses its own internal 8KHz clock source. In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.

- **CSU Operation**
  Tick this field to enable the T1 line to respond to loop-back requests from the line.

- **Haul Length:** *Default = 0-115 feet*
  Sets the line length to a specific distance.

- **Channel Unit:** *Default = Foreign Exchange*
  This field should be set to match the channel signaling equipment provided by the Central Office. The options are ***Foreign Exchange***, ***Special Access*** or ***Normal***.

- **CRC Checking:** *Default = On*
  Turns CRC on or off.

- **Line Signaling:**
  The field can be set to either ***CPE*** (Customer Premises Equipment) or ***CO*** (Central Office). This field should normally be left at its default of ***CPE***. The setting ***CO*** is normally only used in lab back-to-back testing.

- **Incoming Routing Digits:** *Default=0 (present call immediately)*
  Sets the number of routing digits expected on incoming calls. This allows the line to present the call to the system once the expected digits have been received rather than waiting for the digits timeout to expire. This field only affects T1 line channels set to ***E&M Tie***, ***E&M DID***, **E&M Switched 56K** and ***Direct Inward Dial***.

6.4.6.2 Channels

This tab allows settings for individual channels within the trunk to be adjusted. This tab is not available for trunks sets to ETSI or QSIG mode.

Line | Channels (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Channel**
  Allocated by the system.
-
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
  Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number.
- **Direction:** *Default = Both Directions*
  The direction of calls on the channel (***Incoming***, ***Outgoing*** or ***Both Directions***).
- **Bearer:** *Default = Any*
  The type of traffic carried by the channel (***Voice***, ***Data*** or ***Any***).
- **Service:** *Default = No Service or None.*
  If the line provider is set to AT&T, selects the type of service provided by the channel from ***Call by Call***, ***SDN*** (inc GSDN), ***MegaCom800***, ***MegaComWats***, ***Accunet***, ***NLDS***, ***I800***, ***ETN***, ***Private Line***, ***AT&T Multiquest***. For other providers the service options are ***None*** or ***No Service***.
- **Admin:** *Default = In Service*
  Used to indicate the channel status (***In Service***, ***Out of Service*** or ***Maintenance***).
- **Tx Gain:** *Default = 0dB*
  The transmit gain in dB.
- **Rx Gain:** *Default = 0dB*
  The receive gain in dB.

6.4.6.3 TNS

This tab is shown when the line Provider is set to AT&T. It allows the entry of the Network Selection settings. These are prefixes for alternative long distance carriers. When a number dialed matches an entry in the table, that pattern is stripped from the number before being sent out. This table is used to set field in the TNS (Transit Network Selection) information element for 4ESS and 5ESS exchanges. It is also used to set fields in the NSF information element.

Line | TNS (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **TNS Code:**
  The pattern for the alternate long distance carrier. For example: The pattern 10XXX is added to this tab. If 10288 is dialed, 10 is removed and 288 is placed in the TNS and NSF information.

6.4.6.4 Special

This tab is shown when the line Provider is set to AT&T. This table is used to set additional fields in the NSF information element after initial number parsing by the TNS tab. These are used to indicate the services required by the call. If the channel is set to Call by Call, then further parsing is done using the entries in the Call by Call tab.

Line | Special (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Short code:**
  The number which results from the application of the rules specified in the User or System Short code tables and the Network Selection table and the Call-by-call table to the number dialed by the user.
- **Number:**
  The number to be dialed to line.
- **Special:** *Default = No Operator*
  (***No Operator***, ***Local Operator*** or ***Presubscribed Operator***).
- **Plan:** *Default = National*
  (***National*** or ***International***).

Typical values are:

Short code	Number	Service
011N	N	No Operator, International
010N	N	Local Operator, International
01N	N	Local Operator, National
00N	N	Presubscribed Operator, National
0N	N	Presubscribed Operator, National
1N	1N	No operator, National

6.4.6.5 Call By Call

This tab is shown when the line Provider is set to AT&T. Settings in this tab are only used when calls are routed via a channel which has its **Service** set to ***Call by Call***.

It allows short codes to be created to route calls to a different services according to the number dialed. Call By Call reduces the costs and maximizes the use of facilities. Call By Call chooses the optimal service for a particular call by including the Bearer capability in the routing decision. This is particularly useful when there are limited resources.

Line | Call By Call (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

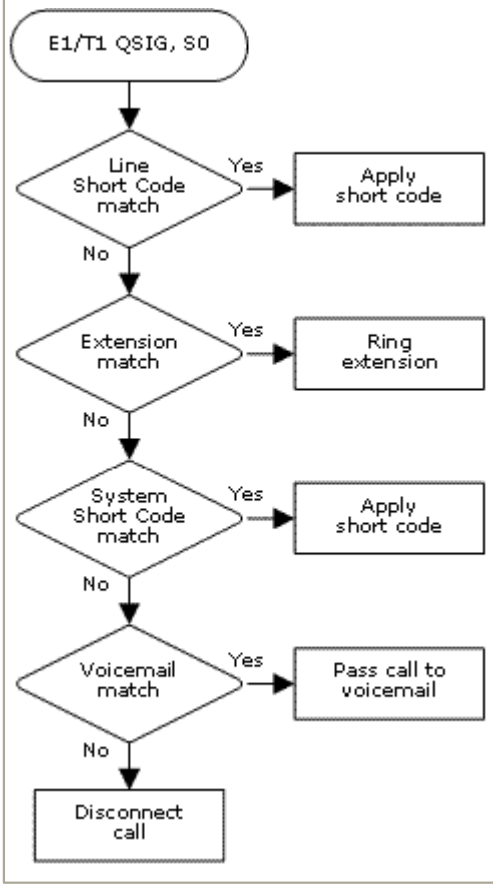
- **Short Code:**
  The number which results from the application of the rules specified in the User or System Short code tables and the Network Selection table to the number dialed by the user.
- **Number:**
  The number to be dialed to line.
- **Bearer:** *Default = Any*
  The type of channel required for the call (Voice, Data or Any).
- **Service:** *Default = AT&T*
  The service required by the call (***SDN*** (inc GSDN), ***MegaCom800***, ***MegaCom***, ***Inwats***, ***Wats***, ***Accunet***, ***NLDS***, ***I800*** , ***ETN***, ***Private Line***, ***AT&T Multiquest***).

6.4.7 Line (S0)



These settings are used for S0 ports provided by an S08 expansion module connected to the IP Office control unit. Though displayed as lines, these BRI ports are used for connection of ISDN2 devices such as video conferencing units or ISDN PC cards. For full details of installation refer to the IP Office Installation manual.

Incoming Call Routing: E1 QSIG and S0 Lines



The following options are used to route incoming calls received on this type of trunk.

1. **Line Short Code Match**
   The IP Office checks for a short code match based on the incoming number.
2. **Extension Match**
   Based on matching an user or hunt group extension number.
3. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
4. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

6.4.7.1 Line

Line | Line (S0)	
Control Unit	SOE ✗, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number**
  This parameter is not configurable. It is allocated by the system.
- **Telephone Number:**
  Used to remember the telephone number of this line. For information only.
- **Prefix:** *Default = Blank.*
  On Incoming Calls the ISDN messaging tags the incoming call source location as either National or International (see their respective prefixes above). This determines the addition of the relevant 0 or 00 respectively (0 is default for National and 00 is default for International). If the ISDN message flags the call source as unknown, then the number in the Prefix field is added to the ICLID.
  - For outgoing calls: For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **National Prefix:** *Default = 0*
  This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 7325551234 is converted to 17325551234.
- **International Prefix:** *Default = 00*
  This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 001441923000000.
- **TEI:** *Default = 0*
  Not used. The Control Unit will ignore any entry.
- **Number of Channels:** *Default = 2*
  Defines the number of operational channels that are available on this line. 2 for BRI and up to 30 for PRI - depending upon the number of channels subscribed.
- **Outgoing Channels:** *Default = 2*
  This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as Number of Channels field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls.
- **Voice Channels:** *Default = 2*
  The number of channels available for voice use.
- **Data Channels:** *Default = 2*
  The number of channels available for data use. If left blank the value is 0.

6.4.7.2 Short Codes

Line short codes can be applied to the digits received with incoming call. The stage at which they are applied also varies depending on the trunk type.

- **IP Trunks**
  Line short codes are used if Small Community Networking (SCN) is not being used or no SCN user extension match occurs on the digits received.
- **QSIG and SO Trunks**
  S_0 trunks, and E1 and T1 trunks set to QSIG mode use line short code.

Line | Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

6.4.7.3 Channels

This tab allows settings for individual channels within the trunk to be adjusted. For So channels this form is not used.

Line | Channels (S0)	
Control Unit	SOE ✗, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Appearance ID**
  Not used with So lines.

6.4.8 Line (IP)

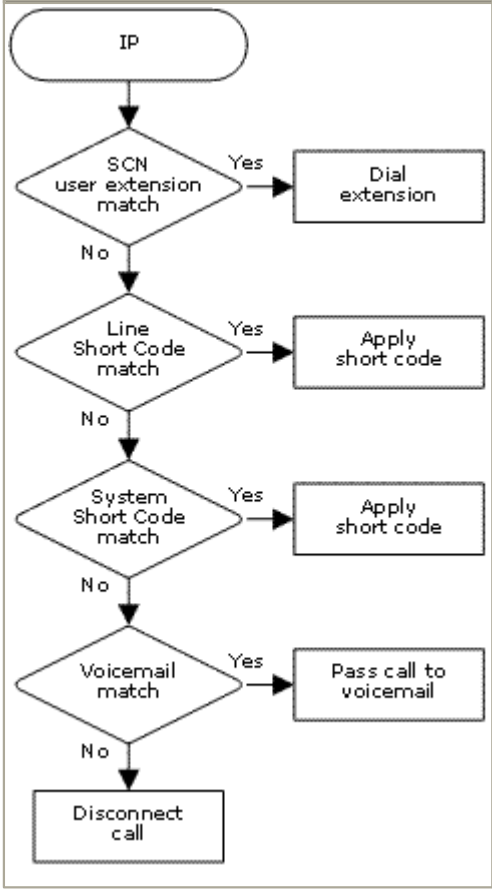


These lines are added manually. They allow voice calls to be routed over data links within the IP Office system. They are therefore dependent on the IP data routing between the IP Office and the destination having being configured and tested.

Network Assessments
Not all data connections are suitable for voice traffic. A network assessment is required for internal network connections. For external network connections a service level agreement is required from the service provider. Avaya cannot control or be held accountable for the suitability of a data connection for carrying voice traffic. Refer to the IP Office Installation Manual for further details of Network Assessments and VoIP requirements.

- IP Trunks are not supported on IP500 systems without IP500 Voice Networking licenses.

Incoming Call Routing: IP Lines



The following options are used to route incoming calls received on this type of trunk.

1. **SCN User Extension**
   If the line is configured for Small Community Networking, the IP Office checks the incoming digits for a match to a user extension.
2. **Line Short Code**
   The IP Office checks for a short code match based on the incoming number.
3. **System Short Code**
   The IP Office checks for a short code match based on the incoming number.
4. **Voicemail Match**
   The IP Office checks for a call flow start point name matching the incoming number.

6.4.8.1 IP Trunk Fallback

IP Office 3.1 to 3.2 supports IP Trunk Fallback. When setting up a call over an IP trunk, if the remote PBX fails to respond within an adjustable timeout (default 5 seconds), the IP Office can attempt to reroute the call.

IP trunk fallback is performed separately for each call. The use of fallback for a preceding call does not alter the routing attempted for any following call to the same IP trunk.

Within a Small Community Network, calls to remote user are automatically routed to an IP trunk setup for connections to the appropriate remote IP Office. If the remote IP Office doesn't respond to the call attempt with the set timeout, the call is rerouted as follows:

- First the call is rerouted to any other trunk with the same outgoing group. If this is the case, that trunk must be able to route calls to the correct remote IP Office without any further dialing. This would typically require the fallback trunk to be a private leased line.
- If the call is still not connected an attempt is made to reroute the call via either LCR (IP Office 3.1 and 3.2) or ARS (IP Office 4.0+) short code matching of the original dialed number. This later method is the preferred case as the LCR/ARS short code matching allows number manipulation to make the outgoing dialing suitable for rerouting across the PSTN. To make this the preferred case, the IP trunk should be put into its own unique Outgoing Trunk Group ID.

In cases where the call is routed to the IP trunk by LCR or ARS in the first place, the timeout used for IP trunk fallback is the Timeout defined for the current LCR or ARS form being used. A value of ***0*** disables IP trunk fallback.

Setting the Default IP Trunk Fallback Timeout

The default timeout for IP trunk fallback is 5 seconds. This timeout can be changed for specific IP trunks and or all IP trunks. The required timeout is set through the Source Numbers tab of the NoUser user. The entry or entries take the form ***H323SetupTimerNoLCR line_number timeout*** where the ***line_number*** should be ***ALL*** for all IP trunks or the specific **Line Number** used for the IP trunk on its Line configuration tab, and the ***timeout*** is set in seconds.

For IP Office 4.2+ this option is now set through the IP trunk setting **Call Initiation Timeout** 229.

6.4.8.2 Line

IP Trunks are not supported on IP500 systems without IP500 Voice Networking licenses.

Line | Line (IP)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number:** *Default = 0, Range = 1 to 249.*
  Enter the line number that you wish. Note that this must be unique.
- **Telephone Number:**
  Used to remember the telephone number of this line. For information only.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** (System | Telephony | Telephony) is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
  The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Prefix:** *Default = Blank.*
  On Incoming Calls the ISDN messaging tags the incoming call source location as either National or International (see their respective prefixes above). This determines the addition of the relevant 0 or 00 respectively (0 is default for National and 00 is default for International). If the ISDN message flags the call source as unknown, then the number in the Prefix field is added to the ICLID.
  - For outgoing calls: For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **National Prefix:** *Default = 0*
  This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 7325551234" is converted to 17325551234".
- **International Prefix:** *Default = 00*
  This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 001441923000000.
- **Number of Channels:** *Default = 20, Range 0 to 120.*
  Defines the number of operational channels that are available on this line.
- **Outgoing Channels:** *Default = 20, Range 0 to 120.*
  This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as Number of Channels field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls.
- **Data Channels:** *Default = 20, Range 0 to 120.*
  The number of channels available for data use. If left blank the value is 0.
- **Voice Channels:** *Default = 20, Range 0 to 120.*
  The number of channels available for voice use.
- **TEI:** *Default = 0, Range = 0 to 127.*
  The Terminal Equipment Identifier. Used to identify each Control Unit connected to a particular ISDN line. For Point to Point lines this is typically (always) 0. It can also be 0 on a Point to Multi-Point line, however if multiple devices are actually sharing a Point to Multi-Point line it should be set to 127 which will result in the exchange deciding on the TEI's to be used by this Control Unit.

6.4.8.3 Short Codes

Line short codes can be applied to the digits received with incoming call. The stage at which they are applied also varies depending on the trunk type.

- **IP Trunks**
  Line short codes are used if Small Community Networking (SCN) is not being used or no SCN user extension match occurs on the digits received.
- **QSIG and SO Trunks**
  S_0 trunks, and E1 and T1 trunks set to QSIG mode use line short code.

Line | Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

6.4.8.4 VoIP Settings

Line | VoIP Settings (IP)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Gateway IP Address:** *Default = Blank*
  Enter the IP address of the remote control unit. This address must not be shared by any other IP, IP DECT or SIP line in the IP Office system configuration.
- **Voice Payload Size**
  This is the length of time represented by each VoIP packet in milliseconds. This is automatically defaulted to match the Compression Mode selected. Values are G.711/G.729 = 20ms, G.723=30ms.
- **Compression Mode:** *Default = Automatic Selection*
  This defines the compression method to be used for this line.
  - ***Automatic Selection*** - During call setup the IP Office negotiates the compression mode using the following order of preference: ***G729a***, ***G.723.1***, ***G711 ALAW***, ***G711 ULAW***.
  - If required a specific codec can be selected from: ***G.711 ALAW 64K***, ***G.711 ULAW 64K***, ***G.729(a) 8K CS-ACELP***, ***G.723.1 6K3 MP-MLQ***. If during connect with a specific codec, connect fails, the IP Office will fallback to using automatic selection.
- **H450 Support:** *Default = H450*
  Selects the supplementary service signaling method for use across H.323 connections. Options are ***None***, ***QSIG*** and ***H450***. Note that the selected method must be supported by the remote end. For IP Office to IP Office connections, ***H450*** is preferred.
- **Call Initiation Timeout:** *Default = 4 seconds, Range = 1 to 99 seconds, Software level = 4.2+.*
  This option sets how long the IP Office should wait for a response to its attempt to initiate a call before following the alternate routes set in an ARS 379 form.
- **VoIP Silence Suppression:** *Default = Off*
  When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not supported on IP lines using ***G711*** between IP400 and IP500 systems.
- **Enable FastStart:** *Default = Off*
  A fast connection procedure. Reduces the number of messages that need to be exchanged before an audio channel is created. This option should be used with lines being used for Small Community Networking.
- **Local Tones:** *Default = Off*
  When selected, the tones are generated by the local IP Office system to which the phone is registered. This option should not be used with lines being used for Small Community Networking. For the IP Office Small Office Edition control unit, this field should not be enabled.
- **Enable RSVP:** *Default = Disabled (Grayed out)*
- **Out of Band DTMF:** *Default = On*
  When on, DTMF is sent as a separate signal rather than as part of the encoded voice stream ("In Band"). This is recommended for low bit-rate compression modes such as G.729 and G.723 where DTMF in the voice stream can become distorted.
- **Allow Direct Media Path:** *Default = On*
  This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.
  - If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
  - If disabled or not supported one end of the call, all call are routed via the IP Office.
    - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
    - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel.
- **Voice Networking:** *Default = Off*
  Enables Small Community Networking (SCN) 728 support to another IP Office. Also requires **H450 Support** set to ***H450***.
  - When Voice Networking is enabled, a number of other settings on this tab are ignored. They are **Local Tones** (treated as off) and **Out of Band DTMF** (treated as on). For IP Office 4.0+ **Fast Start** is treated as on. All other fields are remain configurable.

- **Fax Transport Support:** *Default = Off*
  When selected, this option will provide support for faxing over a H.323 connection to another IP Office with the same setting.
- **Progress Ends Overlap Send:** *Default = Off, Software level = 3.2+.*
  Some telephony equipment, primarily AT&T switches, over IP trunks send a H323 Progress rather than H323 Proceeding message to signal that they have recognised the digits sent in overlap state. IP Office by default expects an H323 Proceeding message. This option is not available by default. If required, the value ProgressEndsOverlapSend must be entered into the Source Numbers tab of the NoUser user.
- **Default Name for Information Element:** *Default = Off, Software level = 4.2+.*
  This option should not be enabled on Small Community Networking lines.

6.4.9 Line (IP DECT)



This type of line can be manually added. They are used to route voice calls over an IP data connection to an Avaya IP DECT system. Only one IP DECT line can be added to an IP Office system. Refer to the IP Office IP DECT Installation manual for full details.

For North American locales, an IP DECT line is only supported with the IP Office 4.0 Q2 2007 maintenance release and higher.

6.4.9.1 Line

Currently only one IP DECT line is supported on an IP Office system. For North American locales, an IP DECT line is only supported with the IP Office 4.0 Q2 2007 maintenance release and higher.

Line | Line (IP DECT)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✗.

- **Line Number**
  This number is allocated by the system and is not adjustable.
- **Number Of Channels:** *Default = 0 (Grayed out)*
  Defines the number of operational channels that are available on this line. This will match the number of associated IP DECT extensions.
- **Outgoing Channels:** *Default = 0 (Grayed out)*
  This defines the number of channels available, on this line, for outgoing calls. This will match the number of associated IP DECT extensions.
- **Voice Channels:** *Default = 0 (Grayed out)*
  The number of channels available for voice use. This will match the number of associated IP DECT extensions.
- **Incoming Group ID:** *Default = 240 (Grayed out)*
  This number is allocated by the system and is not adjustable. The incoming group ID number should not be used for the routing of calls within IP Office incoming call routes.
- **Outgoing Group ID:** *Default = 240 (Grayed out)*
  This number is allocated by the system and is not adjustable. The outgoing group ID number should not be used to match short codes dialed on the system with trunks to use.
- **Extensions**
  Lists all the DECT extensions associated with the IP DECT line. Adding and deleting IP DECT extensions is done via the Manager extension list.

6.4.9.2 Gateway

Line | Gateway (IP DECT)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✗.

- **Gateway IP Address:** *Default = Blank*
  Enter the IP address of the IP DECT base station that will be the Avaya IP DECT Mobility Manager (ADMM). If Enable DHCP Support is enabled, this address should be from the range of assignable IP Office DHCP addresses. This address must not be shared by any other IP, IP DECT or SIP line in the IP Office system configuration.
- **Compression Mode:** *Default = Automatic Selection*
  This defines the type of compression which is to be used for calls on this line.
  - ***Automatic Selection*** - During call setup, the IP Office negotiates the compression mode using the following order of preference: G729a, G.723.1, G711 ALAW, G711 ULAW. This order is an optimum balance of quality and bandwidth for most scenarios.
  - Other available options are: ***G.711 ALAW 64K***, ***G.711 ULAW 64K***, ***G.729(a) 8K CS-ACELP***, *G.729 Simple*, ***G.723.1 6K3 MP-MLQ***.
- **Gain:** *Default = Default*
  Allow adjustment of the gain applied to calls between the IP DECT system and the IP Office.
- **Enable DHCP Support:** *Default = Off*
  The IP DECT base stations require DHCP and TFTP support. Enable this option if the IP Office is being used to provide that support, using IP addresses from its DHCP range (LAN1 or LAN2) and its TFTP server setting. If not enabled, alternate DHCP and TFTP options must be provided during the IP DECT installation.
  - If it is desired to use the IP Office for DHCP support of the ADMM and IP DECT base stations only, the IP Office address range should be set to match that number of addresses. Those addresses are then taken during the IP Office restart and will not be available for other DHCP responses following the restart.
  - For Small Office Edition and IP406V2 control units, use of the embedded voicemail memory card slot for the TFTP server is recommended for small IP DECT installations. See System | TFTP IP Server Address 165. For other control units, or larger IP DECT installations, the use of a non-embedded TFTP software option other than Manager is recommended.

When Enable DHCP Support is selected, the following fields are also enabled:

- **Boot File:** *Default = ADMM_RFP_1_0_0.tftp, Range = Up to 31 characters.*
  The name and path of the ADMM software file. The path is relative to the TFTP server root directory.
- **ADMM MAC Address:** *Default = 00:00:00:00:00:00*
  This field must be used to indicate the MAC address of the IP DECT base station that should load the ADMM software file and then act as the IP DECT system's ADMM. The address is entered in hexadecimal format using comma, dash, colon or period separators.
- **VLAN ID:** *Default = Blank, Range = 0 to 4095.*
  If VLAN is being used by the IP DECT network, this field sets the VLAN address assigned to the base stations by the IP Office if Enable DHCP Support is selected.
  - The IP Office itself does not apply or use VLAN marking. It is assumed that the addition of VLAN marking and routing of VLAN traffic is performed by other switches within the customer network.
  - An ID of zero is not recommended for normal VLAN operation.
  - When blank, no VLAN option is sent to the IP DECT base station.
- **Base Station Address List:** *Default = Empty*
  This box is used to list the MAC addresses of the IP DECT base stations, other than the base station being used as the ADMM and entered in the ADMM MAC Address field. Right-click on the list to select Add or Delete. or use the Insert and Delete keys. The addresses are entered in hexadecimal format using comma, dash, colon or period separators.
- **Silence Suppression**: *Default = Off*
  When selected H.323 terminals will not send data if they are silent, this is useful when optimizing data traffic.
- **Enable RSVP:** *Default = Disabled (Grayed out)*
  This setting is allocated by the system and is not adjustable. RSVP is not support on the IP DECT system.
- **Out of Band DTMF:** *Default = On (Grayed out)*
  This setting is allocated by the system and is not adjustable. When on, DTMF is sent as a separate signal rather than as part of the encoded voice stream ("In Band"). This is recommended for low bit-rate compression modes such as G.729 and G.723 where DTMF in the voice stream can become distorted.

- **Allow Direct Media Path:** *Default = On*
  When disabled the media (voice) path always passes through the IP Office Control Unit. When enabled the remote end may be told of a new IP address for the media path if for example the call is transferred to a H.323 extension. Enabling this option may cause some vendors problems with changing the media path in mid call.

- **Auto-create Extension:** *Default = Off, Software level = 4.0+.*
  If enabled, subscription of a handset with the IP DECT ADMM causes the auto-creation of a matching numbered extension and user within the IP Office configuration.

6.4.10 SIP Line

IP Office 4.0 and higher supports SIP voice calls through the addition of SIP trunks to the IP Office configuration. This approach allows users with non-SIP phones to make and receive SIP calls.

Use of SIP requires the following:

1. **SIP Service Account**
   An account or accounts with a SIP internet service provider (ITSP). The method of operation and the information provided will vary. The key requirement is a SIP URI, a web address of the form ***name@example.com***. This is the equivalent of a SIP telephone number for making and receiving calls via SIP.

2. **Voice Compression Channels**
   SIP calls use IP Office voice compression channels in the same way as used for standard IP trunks and extensions. These are provided by the installation of VCM modules within the IP Office control unit. RTP relay is applied to SIP calls where applicable.

3. **Licensing**
   SIP Trunk Channels licenses is required in the IP Office configuration. These set the maximum number of simultaneous SIP calls supported by the IP Office. Multiple licenses can be added to achieve a cumulative maximum number of channels supported.

4. **Firewall Traversal**
   Routing traditional H323 VoIP calls through firewalls often fails due to the effects of NAT (Network Address Translation). For SIP a number of ways of ensuring successful firewall traversal have been created.

   - **STUN (Simple Traverse of UDP NAT)**
     UDP SIP can use a mechanism called STUN to cross firewalls between the switch and the ITSP. This requires the ITSP to provide the IP address of their STUN server and the IP Office to then select from various STUN methods how to connect to that server. The IP Office can attempt to auto-detect the required settings to successfully connect. These settings are part of the System | LAN1 168 and System | LAN2 173 forms. STUN is not required is the ITSP used Session Border Control (SBC).

   - **TURN (Traversal Using Relay NAT)**
     TCP SIP can use a mechanism called TURN (Traversal Using Relay NAT). IP Office does not currently support this method of firewall traversal.

   - **IP Office Firewall**
     The IP Office firewall between LAN1 and LAN2 is not applied to SIP calls.

5. **SIP Trunks**
   These trunks are manually added to the IP Office configuration. Typically a SIP trunk is required for each SIP ITSP being used. As the configuration provides methods for multiple URI's from that ITSP to use the same trunk. For each trunk at least one SIP URI entry is required, up to 150 SIP URI's are supported on the same trunk. Amongst other things this sets the incoming and outgoing groups for call routing.

6. **Outgoing Call Routing**
   The initial routing uses any standard short code with a dial feature. The short code's Line Group ID should be set to match the Outgoing Group ID of the SIP URI 241 channels to use. However the short code must also change the number dialed into a destination SIP URI suitable for routing by the ITSP. In most cases, if the destination is a public telephone network number, a URI of the form ***123456789@example.com*** is suitable. For example:

   - **Code:** 9N#
   - **Feature:** Dial
   - **Telephone Number:** N"@itsp.com"
   - **Line Group ID:** 100

7. **Incoming Call Routing**
   Incoming SIP calls are routed in the same way as other incoming external calls. The caller and called information in the SIP call header can be used to match Incoming CLI and Incoming Number settings in normal IP Office Incoming Call Route 330 entries.

8. **DiffServe Marking**
   DiffServe marking is applied to calls using the DiffServer Settings on the System | LAN | Gatekeeper 169 tab of either LAN1 or LAN2 as set by the line's Use Network Topology Info setting.

SIP URIs

Calls across SIP require URI's (Uniform Resource Identifiers), one for the source and one for the destination. Each SIP URI consists of two parts, the user part (for example ***name***) and the domain part (for example ***example.com***) to form a full URI (in this case ***name@sip.com***). SIP URI's can take several forms:

- name@117.53.22.2
- name@example.com
- 012345678@example.com

Typically each account with a SIP service provider will include a SIP URI or a set of URI's. The domain part is then used for the SIP trunk configured for routing calls to that provider. The user part can be assigned either to an individual user if you have one URI per user for that ITSP, or it can also be configured against the line for use by all users who have calls routed via that line.

Resource Limitation
A number of limits can affect the number of SIP calls. When one of these limits is reached the following occurs: any further outgoing SIP calls are blocked unless some alternate route is available using ARS; any incoming SIP calls are queued until the required resource becomes available. Limiting factors are:

- the number of licensed SIP channels.
- the number of SIP channels configured for a SIP URI.
- the number of voice compression channels.
  - **SIP Line Call to/from Non-IP Devices**
    Voice compression channel required.
  - **Outgoing SIP Line Call from IP Device**
    No voice compression channel required.
  - **Incoming SIP Line Call to IP Device**
    Voice compression channel reserved until call connected.

SIP Information Display
For Delta Server the full from and to SIP URI will be recorded for use by SMDR, CBC and or CCC. For all other applications and for telephone devices, the SIP URI is put through system directory matching the same as for incoming CLI matching. First a match against the full URI is attempted, then a match against the user part of the URI. Directory wildcards can also be used for the URI matching.

SIP Standards
The IP Office implementation of SIP conforms to the following SIP RFC's.

RFC	Description
2833 [7]	RTP Payload for DTMF digits, telephony tones and telephony signals.
3261 [8]	SIP Session Initiation Protocol.
3264 [11]	An Offer/Answer Model with Session Description Protocol (SDP).
3323 [14]	A Privacy Mechanism for SIP
3489 [18]	STUN - Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators (NAT's).
3824 [24]	Using E.164 Numbers with the Session Initiation Protocol (SIP). E.164 is the ITU-T recommendation for international public telecommunication numbering plans.

6.4.10.1 Incoming Call Routing

Incoming SIP calls are routed using IP Office Incoming Call Routes in the same way as call arriving on other external trunks. The following Incoming Call Route fields are used to determine which route is the best match for a call.

- **Line Group ID**
  This field is matched against the Incoming Group settings of the SIP URI (Line | SIP URI). This must be an exact match.
- **Incoming Number**
  This field can be used to match the called details (TO) in the SIP header of incoming calls. It can contain a number, SIP URI or Tel URI. For SIP URI's the domain part of the URI is removed before matching by incoming call routing occurs. For example, for the SIP URI mysip@sipitsp.com , only the user part of the URI, ie. mysip, is used for matching.
- **Incoming CLI**
  This field can be used to match the calling details (FROM) in the SDP header of incoming SIP calls. It can contain a number, SIP URI, Tel URI or IP address received with SIP calls. For all types of incoming CLI except IP addresses a partial entry can be used to achieve the match, entries being read from left to right. For IP addresses only full entry matching is supported.

The fields Bearer Capability and Incoming Sub Address are not used for matching of incoming SIP calls. The remain Incoming Call Route fields, including those voice recording, as used as for all call types.

6.4.10.2 SIP Line

Line | SIP Line	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✗.

- **Line Number:** *Default = Automatically assigned.*
  By default a value is assigned by the IP Office. This value can be changed but it must be unique.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** 177 (System | Telephony | Telephony) 177 is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **ITSP Domain Name:** *Default = Blank.*
  This field is used to enter the domain part of the SIP URI provided by the ITSP. For example, in the SIP URI ***name@example.com***, the domain part of the URI is ***example.com***. For outgoing calls the user part of the SIP URI is determined in a number of ways:
  - For the user making the call, the user part of the FROM SIP URI is determined by the settings of the SIP URI 241 channel entry being used to route the call. This will use one of the following:
    - a specific name entered in Local URI field of the channel entry.
    - or specify using the primary or secondary authentication name set for the line below
    - or specify using the SIP Name set for the user making the call (**User | SIP | SIP Name** 286).
  - For the destination of the call, the user part of the TO SIP URI is determined by the dialing short codes of the form 9N / N"@example.com" where N is the user part of the SIP URI.
- **ITSP IP Address:** *Default = 0.0.0.0*
  This value is provided by the SIP ITSP. This address must not be shared by any other IP, IP DECT or SIP line in the IP Office system configuration.
- **Primary Authentication Name:** *Default = Blank.*
  This value is provided by the SIP ITSP. Depending on the settings on the Local URI tab associated with the SIP call it may also be used as the user part of the SIP URI.
  - If the **From** field on the Local URI 241 being used for the call is set to Use Authentication Name and the Registration is set to Primary, this value is used as the user part of the SIP URI for calls.
- **Primary Authentication Password:** *Default = Blank.*
  This value is provided by the SIP ITSP.
- **Primary Registration Expiry:** *Default = 60 minutes.*
  This setting defines how often registration with the SIP ITSP is required following any previous registration.
- **Secondary Authentication Name:** *Default = Blank.*
  This value is provided by the SIP ITSP. Depending on the settings on the Local URI tab associated with the SIP call it may also be used as the user part of the SIP URI.
  - If the **From** field on the Local URI 241 being used for the call is set to Use Authentication Name and the Registration is set to Secondary, this value is used as the user part of the SIP URI for calls.
- **Secondary Authentication Password:** *Default = Blank.*
  This value is provided by the SIP ITSP.
- **Secondary Registration Expiry:** *Default = 60 minutes.*
  This setting defines how often registration with the SIP ITSP is required following any previous registration.
- **Call Initiation Timeout:** *Default = 4 seconds, Range = 1 to 99 seconds, Software level = 4.2+.*
  This option sets how long the IP Office should wait for a response to the SIP packet it sends attempting to initiate a call (INVITE) before following the alternate routes set in an ARS 379 form.
- **Registration Required:** *Default = Off.*
  If selected, the SIP trunk will register with the ITSP using the value in the ITSP Domain Name field.
- **In Service:** *Default = On.*
  When this field is not selected, the SIP trunk is unregistered and not available to incoming and outgoing calls.
- **Use Tel URI:** *Default = Off.*
  Use Tel URI format (for example TEL: +1-425-555-4567) rather than SIP URI format (for example name@example.com). This affects the From field of outgoing calls. The To field for outgoing calls will always use the format specified by the short codes used for outgoing call routing.

- **VoIP Silence Suppression:** *Default = Off.*
  When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods.
- **Out of Band DTMF:** *Default = Off.*
  This field is greyed out and cannot be changed. When on, DTMF is sent as a separate signal rather than as part of the encoded voice stream ("In Band"). This is recommended for low bit-rate compression modes such as G.729 and G.723 where DTMF in the voice stream can become distorted.
  - IP Office supports RFC2833 to allow DTMF transport over SIP trunks. IP Office does not support the INFO method used by a few service providers for out-of-band DTMF.
- **Local Tones:** *Default = On.*
  This field is greyed out and cannot be changed. When on, call tones are generated by the local IP Office system to which the phone is registered.
- **Fax T38:** *Default = Off.*
  This field is greyed out and cannot be changed.
- **RE-INVITE Supported:** *Default = Off.*
  When enabled, Re-INVITE can be used during a session to change the characteristics of the session, for example when the target of an incoming call or a transfer does not support the codec originally negotiated on the trunk. Requires the ITSP to also support Re-Invite.
- **Use Offerer's Codec:** *Default = Off, Software level = 4.2+.*
  Normally the SIP call answerer's codec preference is used. This option can be used to override that behaviour and use the codec offered by the line provider.
- **Voice Packet Size**
  This is the length of time represented by each VoIP packet in milliseconds. This is automatically defaulted to match the Compression Mode selected. Values *are G.711/G.729 = 20ms, G.723=30ms.*
- ***Compression Mode:*** *Default = Automatic*
  This defines the compression method to be used for this line.
  - ***Automatic Selection*** - During call setup the IP Office negotiates the compression mode using the following order of preference: G729a, G.723.1, G711 ALAW, G711 ULAW.
  - If required a specific codec can be selected from: ***G.711 ALAW 64K***, ***G.711 ULAW 64K***, ***G.729(a) 8K CS-ACELP***, ***G.723.1 6K3 MP-MLQ***. If during connect with a specific codec, connect fails, the IP Office will fallback to using automatic selection.

Network Configuration

- **Layer 4 Protocol:** *Default = UDP*
  This field sets whether the line uses UDP SIP or TCP SIP.
- **Use Network Topology Info:** *Default = LAN1*
  This field associates the SIP line with the **System | LAN1 | Network Topology** 168 settings of either LAN1 or LAN2. If None is selected, IP Office STUN lookup is not applied and routing is determined by the IP Office routing tables.
- **Send Port:** *Default = 5060*
  This field sets the port to which IP Office send outgoing SIP calls.
- **Listen Port:** *Default = 5060*
  This field sets the port on which the IP Office listens for incoming SIP calls.

6.4.10.3 SIP URI

Having setup the SIP trunk to the SIP ITSP, the SIP URI's registered with that ITSP are entered on this tab. A SIP URI (Uniform Resource Identifier) is similar to an internet email address, for example name@example.com, or 01555326978@example.com and represents the source or destination for SIP connection. The URI consists of two parts, the user part (eg. name) and the host part (eg. example.com).

In the case of IP Office each SIP URI acts as a set of trunk channels. Outgoing calls can then be routed to the required URI by short codes that match that URI's Outgoing Group setting. Incoming calls can be routed by incoming call routes that match the URI's Incoming Group setting.

Note that the IP Office only supports up to 150 URI entries on a SIP line.

Line | SIP URI	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✗.

- **Via**
  This field is for information only and cannot be edited. It shows the IP address of the IP Office LAN interface with which the SIP trunk is associated.
- **Local URI:** *Default = Use Authentication Name*
  This field sets the 'From' for outgoing SIP calls using this URI. The value can either be entered manually or the options ***Use Authentication Name*** or ***Use User Data*** selected.
  - ***Use Authentication Name***
    Use the appropriate Authentication Name on the SIP Line tab as indicated by the Registration setting below.
  - ***Use User Data***
    Use the SIP Name value from the User | SIP 286 tab of the user making the SIP call.
- **Contact:** ***Default = Use Authentication Name***
  This field sets the 'Contact' details for SIP calls using this URI. The value can either be entered manually or the options ***Use Authentication Name*** or ***Use User Data*** selected.
  - ***Use Authentication Name***
    Use the appropriate Authentication Name on the SIP Line tab as indicated by the Registration setting below.
  - ***Use User Data***
    Use the Contact value from the User | SIP 286 tab of the user making the SIP call.
- **Display Name:** *Default = Use Authentication Name*
  This field sets the 'Name' value for SIP calls using this URI. The value can either be entered manually or the options ***Use Authentication Name*** or ***Use User Data*** selected.
  - ***Use Authentication Name***
    Use the appropriate Authentication Name on the SIP Line tab as indicated by the Registration setting below.
  - ***Use User Data***
    Use the SIP Display Name (Alias) value from the User | SIP 286 tab of the user making the SIP call.
- **Registration:** *Default = Primary*
  This field sets whether the primary or secondary authentication name values set on the SIP line tab are used.
- **Incoming Group:** *Default = 0, Range 0 to 99999.*
  The Incoming Group to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls.
- **Outgoing Group:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID.
- **Max Calls per Channel:** *Default =10*
  This field sets the maximum number of simultaneous calls that can use the URI before the IP Office returns busy to any further calls.

6.4.11 SES Line

IP Office SES lines are used for connection to an Avaya SIP Enablement Service (SES) server within an Avaya SIP for Branch network. This is a variant of TCP SIP line and requires SIP Trunk Channels licenses in the IP Office configuration for the number of simultaneous SIP and or SES calls. The SES server supports up to 1000 branches arranged in a star network configuration.

With an Avaya SIP for Branch network, all extensions are reachable from any branch. Using short codes, the IP Office should be configured to route calls for other branches in the network to the SES server via a SES line. The SES server acts as a SIP proxy. It holds a table of all branch prefixes and uses that table to reroute each call to the appropriate destination branch. The SES server will only route calls to the branch if the number match both the branch prefix and the expected extension number length.

Related Fields

There are a number of fields in the IP Office configuration which are used with SES lines but are not on the SES Line form. The following are located on the System | System 165 tab:

- **Branch Prefix:** *Default = Blank, Range = 1 to 65535, Software Level = 4.1+.*
  Used to identify the IP Office system within an Avaya SIP for Branch network via an SES server. The branch prefixes of each branch within the network must unique and must not overlap. For example 85, 861 and 862 are okay but 86 and 861 overlap.
  - For ease of routing and maintenance the prefixes should be the same length and begin with the same digit, for example 800, 801, 802 and so on. Routing of calls to the SES line can then be based on the leading digit used for branch prefixes.
- **Local Number Length:** *Default = Blank (Off), Range = Blank (Off) or 3 to 9, Software level = 4.1+.*
  Sets the default length for extension numbers for extensions, users and hunt groups. Entry of an extension number of a different length will cause an error warning within IP Office Manager. This field is intended for IP Office systems being used in an Avaya SIP for Branch network linked via an SES server, where fixed extension lengths must be used. Note that the Branch Prefix and the Local Number Length must not exceed 15 digits.
  - Using the same local number length for all branches is highly recommended. In addition to simplifying call routing it allows for a common number plan within the network. For example, key services such as reception or security at each branch can be given the same extension number. Those services can then be contacted at any branch simply by knowing the branch prefix and the common number for the service.

Short Codes

Calls are routed to the SES line using short codes in the same was as for other line types. The short codes can route calls directly to the SES line's Outgoing Group ID or to an ARS form configured for the SES line. If at all possible, requiring a short code for each branch within the SIP for Branch Network should be avoided.

- **Common Branch Prefix Leading Digit Routing**
  If a common digit has been used at the start of all branch prefixes, that digit can be used as the key for a single SES routing short code. For example, first use a single range for branch prefixes, ie. 80 to 89 in a small network, 800 to 899 in a medium network or 8000 to 8999 in a large network. At each branch a single short code of the form 8N could then be used to start SES routing.
- **Common Branch Prefix and Extension Length Routing**
  If the above method cannot be used, maintaining a common branch prefix and local number length throughout the network is another option to simplify routing. For example, if all branches have a two digit branch prefixes and then 4 digit extension numbers, a short code of the form XXXXXX; could be used to only match dialed six digit numbers. Longer dialing is still possible so long as the first additional digit is dialed within the Dial Delay Time setting of the IP Office system.
- **SES Line Prefix**
  The SES line includes a prefix field that can be added to any calling number information supplied with calls received on a SES line. That prefix can then be used as the mechanism to route return calls back to the SES line. For example, if the line prefix is 3, a short code of the form 3N/N can be used.

Additional Notes

1. **Voice Compression Channels**
   SES calls use IP Office voice compression channels in the same way as used for standard IP trunks and extensions. These are provided by the installation of VCM modules within the IP Office control unit. RTP relay is applied to SES calls where applicable.

2. **Licensing**
   SIP Trunk Channels licenses is required in the IP Office configuration. These set the maximum number of simultaneous SIP and SES calls supported by the IP Office. Multiple licenses can be added to achieve a cumulative maximum number of channels supported.

3. **IP Office Firewall**
   The IP Office firewall between LAN1 and LAN2 is not applied to SES calls.

4. **Incoming Call Routing**
   Incoming SES calls are routed as if being internal calls. The dialed branch prefix is removed and the remaining extension number is used as if dialed on switch.

5. **DiffServe Marking**
   DiffServe marking is applied to calls using the DiffServe Settings on the **System | LAN | Gatekeeper** 169 tab of either LAN1 or LAN2 as set by the line's Use Network Topology Info setting.

Resource Limitation

A number of limits can affect the number of SES calls. When one of these limits is reached the following occurs: any further outgoing SES calls are blocked unless some alternate route is available using ARS; any incoming SES calls are queued until the required resource becomes available.

Limiting factors are:

- the number of licensed SIP channels.
- the **Max Calls** setting of the SES line.
- the number of voice compression channels.
  - **SES Line Call to/from Non-IP Devices**
    Voice compression channel required.
  - **Outgoing SES Line Call from IP Device**
    No voice compression channel required.
  - **Incoming SIP Line Call to IP Device**
    Voice compression channel reserved until call connected.
- If the IP Office also used SIP trunks, the same resources are shared between SES and SIP calls.

Line | SES Line	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.1+.
Mergeable	✗.

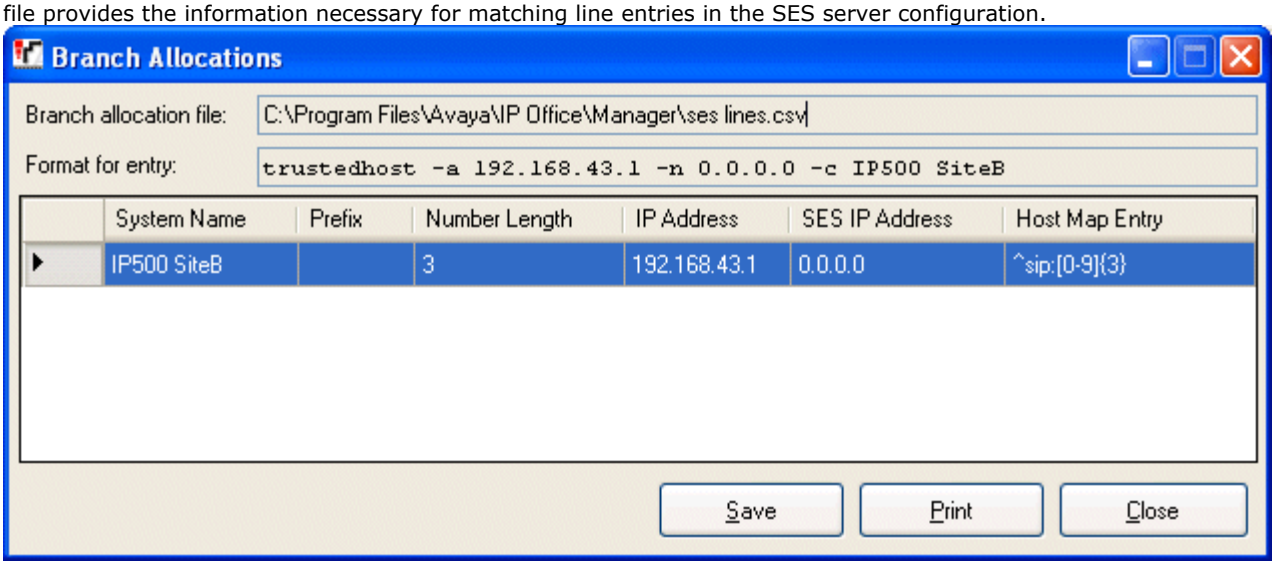
- **Line Number:** *Default = Automatically assigned.*
  By default a value is assigned by the IP Office. This value can be changed but it must be unique.
- **Network Type:** *Default = Public, Software level = 4.2+.*
  This option is available if **Restrict Network Interconnect** (System | Telephony | Telephony) is enabled. It allows the trunk to be set as either ***Public*** or ***Private***. The IP Office will return number unobtainable indication to any attempt to connect a call on a ***Private*** trunk to a ***Public*** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
- **SES Domain Name:** *Default = Blank.*
  This field is used to enter the domain part of the SIP URI provided by the ITSP. For example, in the SIP URI mysip@example.com, the domain part of the URI is example.com. For outgoing calls the user part of the SIP URI is the Branch Prefix and the extension number.
- **SES Address:** *Default = 0.0.0.0*
  This value is the public IP address of the SES server. This address must not be shared by any other IP, IP DECT or SIP line in the IP Office system configuration.
- **Inactivity Timeout (seconds):** *Default = 120, Range = 0 to 99999 seconds.*
  If no SIP messages or signalling have been sent or received during this period the IP Office will close the connection.
- **Outgoing Group:** *Default = 0, Range 0 to 99999.*
  Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID.
- **Max Calls:** *Default =10*
  This field sets the maximum number of simultaneous calls that can use the URI before the IP Office returns busy to any further calls.
- **Prefix:** *Default = Blank.*
  This prefix will be added to any source number received with incoming calls. Normally this should match a dialing short code configured to route matching calls to the SES line's Outgoing Group ID number.
- **In Service:** *Default = On.*
  When this field is not selected, the SIP trunk is unregistered and not available to incoming and outgoing calls.
- **VoIP Silence Suppression:** *Default = Off.*
  When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods.
- **Out of Band DTMF:** *Default = Off.*
  This field is grayed out and cannot be changed. When on, DTMF is sent as a separate signal rather than as part of the encoded voice stream ("In Band"). This is recommended for low bit-rate compression modes such as G.729 and G.723 where DTMF in the voice stream can become distorted.
  - IP Office supports RFC2833 to allow DTMF transport over SIP trunks. IP Office does not support the INFO method used by a few service providers for out-of-band DTMF.
- **Local Tones:** *Default = On.*
  This field is grayed out and cannot be changed. When on, call tones are generated by the local IP Office system to which the phone is registered.
- **Fax T38:** *Default = Off.*
  This field is grayed out and cannot be changed.
- **RE-INVITE Supported:** *Default = Off.*
  When enabled, Re-INVITE can be used during a session to change the characteristics of the session, for example when the target of an incoming call or a transfer does not support the codec originally negotiated on the trunk.
- **Voice Packet Size**
  This is the length of time represented by each VoIP packet in milliseconds. This is automatically defaulted to match the Compression Mode selected. Values are G.711/G.729 = 20ms, G.723=30ms.
- **Compression Mode:** *Default = Automatic*
  This defines the compression method to be used for this line.
  - ***Automatic Selection*** - During call setup the IP Office negotiates the compression mode using the following order of preference: G729a, G.723.1, G711 ALAW, G711 ULAW.
  - If required a specific codec can be selected from: ***G.711 ALAW 64K***, ***G.711 ULAW 64K***, ***G.729(a) 8K CS-ACELP***, ***G.723.1 6K3 MP-MLQ***. If during connect with a specific codec, connect fails, the IP Office will fallback to using automatic selection.

- **Network Configuration**
  - **Layer 4 Protocol:** *Default = TCP*
    This field cannot be changed.
  - **Use Network Topology Info:** *Default = LAN1*
    For various settings, this field indicates whether the SES line uses the System | LAN 170 settings of either LAN1 or LAN2. For instance the DiffServe Settings applied to outgoing SES calls and the IP address (see description of Via Nat below).
  - **Send Port:** *Default = 5060*
    This field cannot be changed.
  - **Listen Port:** *Default = 5060*
    This field cannot be changed.
  - **Via NAT:** *Default = Off.*
    This option controls which address should be used as the IP address of the IP Office system that is entered into the SES server configuration.
    - If disabled, the address used is the IP Address 168 of the IP Office system as set on the LAN Settings sub-tab of LAN1 or LAN2. The selection of LAN1 or LAN2 is determined by the Use Network Topology field above.
    - If enabled, the address used is the Public IP Address 170 as set on the Network Topology sub-tab of LAN1 or LAN2. The selection of LAN1 or LAN2 is determined by the Use Network Topology field above.

Prefix Allocation Check
As SES lines are configured within each IP Office system in the SIP for Branch network, details of the IP Office system can be written to a CSV file. This file can then be used to ensure the following:

1. **Check branch allocation**
   Check that the settings of the IP Office and SES line being added are both complete and do not conflict with those of other IP Office systems already added to the CSV file. Select this option and click Execute , then select the CSV file containing details of the other IP Offices with SES lines.

2. **List branch allocations**
   Provide the source of the details that need to be entered in the SES server configuration for each IP Office. Select this option and click Execute to select and display the CSV file containing details of existing IP Office SES line settings. This file provides the information necessary for matching line entries in the SES server configuration.



6.5 Control Unit



The Control Unit configuration form gives details for devices connected to the system. This includes some modules within the control unit as well as external expansion modules.

For most units, this information is allocated by the system and is not configurable.

The New and Delete actions on this form have special functions.

- **New**
  This action is used to added a WAN3 expansion module. If when a WAN3 is added to the system, the WAN3 is not recognized following a system reboot, New on this form can be used to scan for the WAN3 module.
- **Delete**
  This action can only be used with external expansion modules. It cannot be applied to the control unit and modules inside the control unit. The action should used with caution as deleting an expansion module will also delete any extensions or lines associated with that expansion module. If the module is physically present, those entries will be recreated following a reboot but with default settings.

Control Unit | Control Unit	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Device Number**
  This is automatically allocated by the system.
- **Unit Type**
  The name of the device.
- **Version**
  The version of software running on each unit.
- **Serial Number**
  This is the number the system uses to tie a physical Control Unit to a device configuration (device number). For the control unit and WAN3 modules this is the MAC address. For a device connected to an Expansion port it is the Expansion port number plus 1.
- **Unit IP Address**
  This field shows the IP address for the control unit (LAN1) and if present, WAN3 expansion module.
- **Interconnect Number**
  For external expansion modules this is the control unit expansion port used for connection. For other devices this is 0.
- **Module Number**
  For external expansion modules this is the control unit expansion port used for connection. For internal devices in the control unit, **Control Unit** is displayed.

6.6 Extension Settings



The IP Office supports both physical extensions and IP extensions.

By default, each extension is normally associated with a user and uses that user's directory number and other setting. Users with a log in code can move between extensions by logging in and out, so the directory number is not a fixed property of the extension.

- **Physical Extensions**
  Physical extension ports are either integral to the IP Office control unit or added by the installation of an IP Office analog or digital phone expansion module. Extension entries are automatically created for each physical extension port within the system. These ports cannot be added or deleted manually.
  -  **Standard Telephone**
    An analog extension port (PHONE or POT) or an Avaya digital station port (DS) within the IP Office system.
  -  **Quiet Headset**
    Used for analog extension devices that are permanently off-hook.
  -  **IVR Port**
    Used for analog ports connected to devices that require a specific disconnect clear signal at the end of each call.
  -  **Paging Speaker**
    An analog extension port set to be used as a paging speaker connection.
- IP Extensions
  These are used for H.323 IP phone devices or applications.
  -  **IP**
    This icon indicates an IP extension. For Avaya IP hardphones the IP extensions is either added manually or by the automatic detection the phone being connected, refer to the IP Office IP Phone Installation Manual. IP extensions can also be added manually to support a Phone Manager Pro PC Softphone or a third-party IP phone device. Note that third-party IP phone devices require entry of an IP End-Points license.
  -  **IP DECT**
    An extension port manually added to match extensions within an Avaya IP DECT system connected to the IP Office via an IP DECT line.

6.6.1 Extn

This tab contains settings applicable to most types of extension.

Extension | Extn	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗. *For IP Office 4.1+, Base Extension and Disable Speakerphone are mergeable.

- **Extension ID**
  The physical ID of the extension port. Except for IP extensions, this settings is allocated by the system and is not configurable.
- **Base Extension:** *Range = 2 to 9 digits.*
  This is the directory number of the extension's default associated user. For IP Office 4.1+, changes to the Base Extension are mergeable.
  - For IP Office 4.0 and higher, following a restart the system will attempt to log in the last user associated with the extension. For pre-4.0 IP Office systems the extension's default associated user is logged in. In either case this does not occur it that user is set to Force Login (**User | Telephone** 265).
  - If another user logs onto an extension, when they log out, the extension returns to its default associated user unless they have logged in elsewhere or are set to Force Login.
  - In the US the Base Extension number is used for E911 calls. Any change to an extension's base extension must be matched by changes to the E911 adjunct database, see E911 Overview 381. The extensions default associated user should not be deleted.
  - Extensions associated with IP phones should not be given extension numbers greater than 7 digits.
  - Extension numbers in the range 8897 to 9999 are reserved for use by the IP Office Delta Server.
  - Users for Delta Server, CBC and CCC should only use up to 4 digit extension numbers.
- **Caller Display Type:** *Default = On.*
  Controls the presentation of caller display information. For digital extensions this value is fixed as On. Analog extension devices expect caller ID information either in DTMF signalling or FSK (Frequency Shift Keying) signalling, typically before ringing. See Caller Display 676.
  - ***Off:*** Disables caller display.
  - ***On:*** Enables caller display using the caller display type appropriate to the System Locale, see Supported Country and Locale Settings 750. If a different setting is required it can be selected from the list of supported options. For an analog extension connected to a fax server or other device that requires the pass through of DTMF tones, select ***DTMFF***.
  - ***UK:*** FSK before the first ring conforming to BT SIN 227. Name and number.
  - ***UK20:*** As per UK but with a maximum length of 20 characters. Name and number.
  - ***DTMFA:*** Caller ID in the DTMF pattern A<caller ID>C. Number only.
  - ***DTMFB:*** Caller ID in DTMF after call connection. Number only.
  - ***DTMFC:*** Caller ID in the DTMF pattern A<caller ID>#. Number only.
  - ***DTMFD:*** Caller ID in the DTMF pattern D<caller ID>C. Number only.
  - ***DTMFF:*** Sends the called number in DTMF after call connection. Number only.
    - Used for fax servers. When calls are delivered via a hunt group it is recommended that hunt group queuing is not used. For IP Office 4.2 if hunt group queuing is being used, set the **Queue Type** to ***Assign Call on Agent Alert***.
  - ***FSKA:*** Variant of UK used for BT Relate 1100 phones. Name and number.
  - ***FSKB:*** ETSI specification with 0.25 second leading ring. Name and number.
  - ***FSKC:*** ETSI specification with 1.2 second leading ring. Name and number.
  - ***FSKD:*** Conforms to Belcore specification. Name and number.
  - All others are currently not used and default to matching UK.
- **Reset Volume after Calls:** *Default = Off.*
  Resets the phone's handset volume after each call. This option is supported on Avaya 1700, 2400, 4400, 4600, 5400, 5600 and 6400 Series phones.
- **Device Type**
  This field is for information only. It indicates, if possible, the type of phone connected to the extension port when the configuration was received from the IP Office.

- Analogue extension ports always report as ***Analog Handset*** since the presence or absence of actual analog phone cannot be detected.
- Digital extension ports report the type of digital phone connected or ***Unknown digital handset*** if no phone is detected.
- VoIP extensions reports the type of IP phone registered or ***Unknown IP handset*** if no phone is currently registered as that extension.

- **Module**
  This field indicates the external expansion module on which the port is located. ***BP*** indicates an analogue phone extension port on the base or control unit. ***BD*** indicates a digital station (DS) port on the control unit. For the IP500 control unit, ***BD*** and ***BP*** is also followed by the slot number. VoIP extensions report as ***0***.
- **Port**
  This field indicates the port number on the **Module** indicated above. VoIP extensions report as ***0***.
- **Disable Speakerphone:** *Default = Off (Speakerphone enabled), Software level = 4.1+.*
  When selected, disables the fixed **SPEAKER** button if present on the phone using this extension port. An audible beep is sounded when a disabled **SPEAKER** button is pressed. Incoming calls such as pages and intercom calls are still connected but the speech path is not audible until the user goes off-hook using the handset or headset. Similarly calls made or answered using other buttons on the phone are not audible unless the user goes off-hook using the handset or headset. This field is not available for Analog and IP DECT extension ports. Currently connected calls are not affected by changes to this setting.

6.6.2 Analog

This tab contains settings that are applicable to analog extensions. These extensions are provided by ports marked as ***POT*** or ***PHONE*** on IP Office control units and expansion modules.

Extension | Analog	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Equipment Classification:** *Default = Standard Telephone*
  Only available for analog extension ports. Note that changing this settings should be followed by a system reboot.
  -  ***Quiet Headset***
    On extensions set to ***Quiet Headset***, the audio path is disabled when the extension is idle. Ringing is presented in the audio path. Caller ID is not supported on the phone. This option can be used with analog extensions where the handset is replaced by a headset since in such a scenario audio is only desired when a call is connected. Since the audio path is disabled when idle, the ***Quiet Headset*** extension cannot dial digits to make calls. Therefore to make and answer calls this option is typically used with the user **Offhook Station** 265 (User | Telephony | Call Settings) 265 setting which allows the extension user to make and answer calls using IP Office applications such as Phone Manager.
  -  ***Paging Speaker***
    Used for analog ports connected to a paging amplifier. This extension will present busy and cannot be called or be used to make calls. It can only be accessed using Dial Paging 421 features. For IP Office 4.0+, when using a UPAM connected to an analog extension port, the extension's **Equipment Classification** 250 (Extension | Analog) 250 should be set to ***IVR Port*** and not ***Paging Speaker***.
  -  ***Standard Telephone***
    Use for normal analog phones.
  - ***Door Phone 1/Door Phone 2***
    These two options are currently not used and so are grayed out.
  -  ***IVR Port***
    Used for analog ports connected to devices that require a disconnect clear signal (ie. a break in the loop current) at the end of each call. When selected the **Disconnect Pulse Width** is used. For pre-3.2 IP Office systems, this option was only supported on systems with the locale set to United States or Saudi Arabia.
- **Message Waiting Lamp Indication Type:** *Default = None*
  Allows the selection of the message waiting indication (MWI) mode for analog and IP DECT extensions.
  - For control unit and Phone V1 module analog extensions, the options ***None***, ***On***, ***51V Stepped***, ***81V***, ***Line Reversal A*** and ***Line Reversal B*** are available. ***On*** defaults the MWI using the system locale,.

'On'	Locale
81V	Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Netherlands, Norway, Poland, Portugal, Russia, Saudi Arabia, Sweden, Switzerland, Turkey, United Kingdom.
51V Stepped	Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Japan, Korea, Mexico, New Zealand, Peru, South Africa, Spain, United States.

  - For Phone V2 module extensions, the additional option 101V is available.
- **Hook Persistency:** *Default = 100ms, Range = 50 to 255ms.*
  Defines the time frame (in milliseconds) in which the system will wait before determining that the phone is off-hook.
- **Flash Hook Pulse Width**
  The following options are only available for analog extension ports. They define the length of loop break that will be considered a time break recall (TBR) signal.
  - **Use System Defaults:** *Default = Selected (On)*
    Use the default values appropriate to the system's locale. See Appendix A: Locale Settings 750.
  - **Minimum Width:** *Range = 0 to 99 x 10ms.*
    Minimum hook flash length used if Use System Defaults is not selected. Shorter breaks are ignored a glitches.
  - **Maximum Width:** *Range = 0 to 255 x10ms.*
    Maximum hook flash length used if Use System Defaults is not selected. Longer breaks are treated as clearing.
- **Disconnect Pulse Width:** *Default = 0ms, Range = 0 to 2550ms*
  This setting is used with analog extensions where the **Equipment Classification** above has been set to ***IVR Port***. It sets the length of loop current break used to indicate call clearing.

6.6.3 VoIP

This tab is only available for IP extensions.

Extension | VoIP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **IP Address:** *Default = 0.0.0.0*
  The IP address of the H323 phone. The default entry accepts connection to any address.
- **MAC Address:** *Default = 0000000000000 (Grayed out)*
  This field is grayed out and not used.
- **Voice Payload Size**
  This is the length of time represented by each VoIP packet in milliseconds. This settings is automatically defaulted to match the selected Compression Mode selected. Values are G.711/G.729 = 20ms, G.723=30ms. For T3 IP phones the value 10ms is shown.
- **Compression Mode:** *Default = Automatic Selection*
  This defines the compression method to be used for this extension.
  - **Automatic Selection**
    During call setup the IP Office negotiates the compression mode using the following order of preference: G729a, G.723.1, G711 ALAW, G711 ULAW.
  - If required a specific codec can be selected from: ***G.711 ALAW 64K***, ***G.711 ULAW 64K***, ***G.729(a) 8K CS-ACELP***, ***G.723.1 6K3 MP-MLQ***. If during connect with a specific codec, connect fails, the IP Office will fallback to using automatic selection.
- **Gain:** *Default = Default, Software level = 3.0 to 4.1.*
  Allows adjustment of the volume. The gain is selectable from -31dB to +31dB in 1 dB increments.
- **TDM->IP Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
  Allows adjustment of the gain on audio from the IP Office TDM interface to the IP connection. Previously labeled **TX Gain**.
- **IP->TDM Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
  Allows adjustment of the gain on audio from the IP connection to the IP Office TDM interface. Previously labeled **RX Gain**.
- **H450 Support:** *Default = H450, Software level = 4.0+.*
  Selects the supplementary service signaling method for use with non-Avaya IP devices. Options are ***None***, ***QSIG*** and ***H450***. For H450, hold and transfer are supported. Note that the selected method must be supported by the remote end.
- **VoIP Silence Suppression:** *Default = Off*
  When selected H.323 phones will not send data if they are silent, this is useful when optimizing data traffic.
- **Enable Faststart for non-Avaya IP Phones:** *Default = Off*
  A fast connection procedure. Reduces the number of messages that need to be exchanged before an audio channel is created.
- **Fax Transport Support:** *Default = Off*
  When selected, this option provides support for faxing over a H.323 connection to another IP Office with the same setting.
- **Out of Band DTMF:** *Default = On*
  When on, DTMF is sent as a separate signal ("Out of Band") rather than as part of the encoded voice stream ("In Band"). The "Out of Band" signaling is inserted back into the audio by the remote end. This is recommended for low bit-rate compression modes such as G.729 and G.723 where DTMF in the voice stream can become distorted. Switch off for T3 IP extensions.
- **Local Tones:** *Default = Off*
  When selected, the H.323 phones generate their own tones. This option is not supported by Avaya IP phones and Phone Manager Pro PC Softphone.
- **Enable RSVP:** *Default = Disabled (Grayed out)*
- **Allow Direct Media Path:** *Default = On*
  This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.

- If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
- If disabled or not supported one end of the call, all call are routed via the IP Office.
  - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
  - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel. T3 IP phones must be configured to 20ms packet size to use RTP relay.
  - With the IP Office 4.0 Q2 2007 maintenance release, previous restrictions on T3 IP phones using direct media were removed. The phone must have firmware T246 or higher as provided on the IP Office Administrator Applications CD.

- **VPN Phone Allowed:** *Default = Off, Software level = 4.1+.*
  Indicates that the extension can be used with Avaya IP Office VPNremote Phone firmware. The phones must be licensed using a VPN IP Extensions licenses added to the IP Office configuration for the number of VPN IP phones required. Note that the field is grayed out if there are no available licenses.

6.6.4 IP DECT

This tab is displayed for IP DECT extensions. These are created manually after a IP DECT line has been added to the configuration. They should match the extensions configured on the IP DECT system. Refer to the IP Office IP DECT Installation manual.

Extension | IP DECT	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✗.

- **DECT Line ID**
  Use the drop-down list to select the IP DECT line from the IP Office to the Avaya IP DECT system.
- **Message Waiting Lamp Indication Type:** *Default = On*
  Allows selection of the message waiting indication to use with the IP DECT extension. Options are: ***None***, ***On***.

6.7 User Settings



Users are the people who use the IP Office system. They do not necessary have to be an extension user, for example users are used for RAS dial in data access. In addition, more users can be created than there are extensions, with users logging in to an extension when they want to receive calls.

By default, a user is automatically created to match each extension. They are numbered from 201 upwards and the first 16 are placed in the hunt group Main (200), which is the default destination for incoming calls.

-  **Standard User:** A standard user.
-  **No User:** Used to apply settings for extensions which currently have no associated user.
-  **Remote Manager:** Used as the default settings for dial in user connections.
-  **Hot Desking User:** Users with a Login Code can move between extensions by logging in and off.

When a user is deleted
When a user is deleted, any calls in progress continue until completed. The ownership of the call is shown as the NoUser user. Merging the deletion of a user causes all references to that deleted user to be removed from the system.

Changing a user's extension
Changing a user's extension automatically logs the user out of their current extension and into their new extension provided that this new extension exists and the user doesn't have **Forced Login** 265 enabled. If **Forced Login** is enabled, then the user remains on the current extension being used until they logs out and log in at the new extension.

Note that changing a user's extension number affects the user's ability to collect Voicemail messages from their own extension. Each user's extension is set up as a "trusted location" under the Source Numbers tab of the User configuration form. This "trusted location" allows the user to dial *17 to collect Voicemail from his own extension. Therefore if the extension number is changed so must the "trusted location".

The following related configuration items are automatically updated when a user extension is changed:

- User, Coverage and Bridged Appearance buttons associated with the user.
- Hunt group membership (disabled membership state is maintained).
- Forwards and Follow Me's set to the user as the destination.
- Incoming call routes to this destination.
- Dial in source numbers for access to the user's own voicemail.
- Direct call pickup buttons are updated.
- The extension number of an associated extension is updated.

Creating a User Rights Based on an Existing User

1. Select  **User Rights**.
2. In the group pane, right-click and select **New User Rights from a User**.
3. Select the user and click **OK**.

Associating User Rights to a User

1. Select  **User Rights** or  **User**.
2. In the group pane, right-click and select **Apply User Rights to Users**.
3. Select the user rights to be applied.
4. On the **Members of this User Rights** sub tab select the users to which the user rights should be applied as their Working Hours User Rights.
5. On the **Members when out of hours** sub tab select which users should use the selected user rights as their out of hours user rights.
6. Click **OK**.

or

1. Select the required user to display their settings in the details pane.
2. Select the **User** tab.
3. Use **Working Hours User Rights** drop-down to select the user rights required.
4. If required a **Working Hours Time Profile** and **Out of Hours User Rights** can be selected.
5. Click **OK**.

Copy User Rights Settings over a User's Settings

This process replaces a user's current settings with those that are part of the selected user rights. It does not associate the user with the user rights.

1. Select  **User Rights**.
2. In the group pane, right-click and select **Copy user rights values to users**.
3. Select the user rights to be applied.
4. Click **OK**.

6.7.1 User

Users are the people who use the system or are Dial In users for data access. A system User may or may not have an Extension Number that physical exists - this is useful if users do not require a physical extension but wish to use system features, for example voicemail, forwarding etc.

- **NoUser** is used to apply settings to extensions which have no associated user.
- **Remote Manager** is used as the default settings for dial in connections.

A symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

User | User	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name:** *Range = Up to 15 characters*
  This is the user's account name used for RAS Dial In, Caller Display and voicemail mailbox. As the display on Caller Display telephones is normally only 16 digits long it is useful to keep the name short. Only alphanumeric characters and space are supported in this field. Do not use punctuation characters such as #, ?, /, -, _ and ,. Do not start names with a numeric character. This field is case sensitive and must be unique.
  - Voicemail uses the name to match a user to their mailbox. Changing a user's name will route their voicemail calls to a new mailbox. Note however that Voicemail Pro is not case sensitive and will treat names such as "Steve Smith", "steve smith" and "STEVE SMITH" as being the same.
- **Password:** *Default = Blank, Range = Up to 31 digits.*
  This password is used by the IP Office Phone Manager, SoftConsole and TAPI applications. It is also used for user's with Dial In access. Note that this is not the users voicemail mailbox password (see User | Voicemail | Voicemail Code 259) or their phone log in code (see User | Telephony | Supervisor Settings | Login Code 266).
  - For IP Office 4.2+ and Phone Manager 4.2+, users can change the Password using the ***File | Change Password*** option within Phone Manager.
- **Full Name:** *Default = Blank*
  Use this field to enter the entire user's name. When set, the Full Name is used in place of the Name for display by phones and IP Office user applications. Only alphanumeric characters and spaces are supported in this field. Do not use punctuation characters such as #, ?, /, -, _ , ^, > and ,. The entry in this field also cannot start with either a space or a numeral
- **Extension:** *Range = 2 to 9 digits.*
  Any number up to 9 digits. In general all extensions should have the same number of digits. This setting can be left blank for users used just for dial in data connections.
  - Users for Delta Server, CBC and CCC should only use up to 4 digit extension numbers.
  - Users associated with IP phones or who may log in as such devices should not be given extension numbers greater than 7 digits.
  - Extension numbers in the range 8897 to 9999 are reserved for use by the IP Office Delta Server.
- **Locale:** *Default = Blank (Use system locale 165)*
  Configures the language used for voicemail prompts played to the user, assuming the language is available on the voicemail server. See Supported Country and Locale Settings 750. On a digital extension it also controls the display language used for messages from the IP Office. Note however that some phones have their own menu options for the selected language for the phone menus.
- **Priority:** *Default = 5, Range = 1 (Lowest) to 5 (Highest)*
  This setting is used by Least Cost Routing 346 (pre-IP Office 4.0) or ARS 377 (IP Office 4.0+).
- **Restrictions:** *Default = None, Software level = Up to 3.1.*
  Sets which set of User Restrictions applies to the user. See User Restrictions 362.
- **Phone Manager Type:** *Default = Lite, Software level = Up to 3.1.*
  Determines the mode in which the user's copy of the Phone Manager application will operate. Modes are Lite, Pro and VoIP (Phone Manager Pro PC Softphone). Note that the number of users able to simultaneously use Pro and VoIP modes is controlled by licenses entered into the IP Office configuration. *In IP Office 3.2 configurations this option has moved to the Phone Manager Options tab.
- **Book a Conferencing Center in Phone Manager:** *Default = Off, Software level = Up to 3.1.*
  When enabled, displays links in the user's Phone Manager application for access to the IP Office Conferencing Center application if installed. Note that to book a conference requires the user to have a Conferencing Center user ID and password. This feature also requires the Conference Center IP Address and Conference Center URL to be set (System | System). *In IP Office 3.2 configurations this option has moved to the Phone Manager Options tab.

- **Ex Directory:** *Default = Off*
  When on, the user does not appear in the directory list shown by the Phone Manager application and on phones with a directory function. The user is still visible in other applications such as the SoftConsole directory.
- **Device Type:**
  This field shows the type of phone at which the user is either current logged in. If the user is logged out but is associated with a **Base Extension** the device type for the extension port is shown. If the user has been logged out and is not associated with a **Base Extension**, the device type is listed as ***Device Type Unknown***.
- **User Rights View:** *Software level = 3.2+.*
  This field affects Manager only. It allows you to switch between displaying the user settings as affected by their associated Working Hours User Rights or Out of Hours User Rights.
- **Working Hours Time Profile:** *Default = <None> (Continuous), Software level = 3.2+.*
  If set, the selected time profile defines when the user's Working Hours User Rights are applied. Outside the time profile, the user's Out of Hours User Rights are applied.
- **Working Hours User Rights:** *Default = Blank (No rights restrictions), Software level = 3.2+.*
  This field allows selection of user rights which may set and lock some user settings. If a Working Hours Time Profile has been selected, the Working Hours User Rights are only applied during the times defined by that time profile, otherwise they are applied at all times.
- **Out of Hours User Rights:** *Default = Blank (No rights restrictions), Software level = 3.2+.*
  This field allows selection of alternate user rights that are used outside the times defined by the user's Working Hours Time Profile.

6.7.2 Voicemail

If a voicemail server application is being used on your system, each user has use of a voicemail mailbox. You can use this form to enable this facility and various user voicemail settings.

A symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

User | Voicemail	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Voicemail Code:** *Default = Blank, Range = 0 (no code) to 15 digits.*
  A code (1-15 digits) used by the voicemail server to validate access to this mailbox. If remote access is attempted to a mailbox that has no voicemail code set, the prompt "Remote access is not configured on this mailbox" is played. Whether the caller will be prompted to enter this code varies as follows:
  - **Embedded Voicemail**
    The voicemail code is used if set.
  - **Trusted Source Access**
    The voicemail code is required when accessing the mailbox from a location that is not set as a trusted number in the user's Source Numbers 263 list. Also Voicemail Pro call flows containing an action where the action's PIN code set to $ will prompt the user for their voicemail code.
    - Users can set their own code through the mailbox telephone user interface. In this case the user is forced to enter at least 4 digits.
    - Codes set through the Voicemail Pro telephone user interface are restricted to valid sequences. For example, attempting to enter a code that matches the mailbox extension, repeat the same number (1111) or a sequence of numbers (1234) are not allowed. If these types of code are required they can be entered through Manager.
  - **Changing the Code**
    All of the voicemail interfaces except IMS and IMAP provide options for the user to change the voicemail code themselves. In addition, Voicemail Pro running in Intuity emulation mode will request that the user sets a code when they first log in to their mailbox using the phone.
- **Voicemail Email:** *Default = Blank*
  When a new voicemail message is received by the user, the file created can be sent to an email account. This field is used to store the user's email address. Whether to send the email is set through the Voicemail Email options below. This address is also used for Voicemail Email Reading if enabled and for Phone Manager instant messaging. This setting is not used for IMS operation. Voicemail Email is supported by Voicemail Pro and Voicemail Lite voicemail servers. For IP Office 4.2+ (excluding Small Office Edition), voicemail email is also supported on Embedded Voicemail.
- **Voicemail On:** *Default = On*
  This feature enables the user's voicemail mailbox to answer calls which ring unanswered or arrive when the user is busy. It does not disable the voicemail mailbox being used as the target for other functions such as call recording or messages forwarded from other mailboxes.
- **Voicemail Help:** *Default = Off*
  For voicemail systems running IP Office mailbox mode, this option controls whether users retrieving messages are automatically given an additional prompt *"For help at any time press 8."* If switched off, users can still press 8 for help. For voicemail systems running in Intuity emulation mode, this option has no effect. On those systems the default access greeting always includes the prompt *"For help at any time, press *4"* (*H in the US locale).
- **Voicemail Ringback:** *Default = Off*
  When enabled and a new message has been received, the voicemail server calls the user's extension to attempt to deliver the message each time the telephone is put down. Voicemail will not ring the extension more than once every 30 seconds.
- **Voicemail Email Reading:** *Default = Off*
  When you log into you voicemail box, it will detect your email messages and read them to you. This email text to speech feature is set-up through Voicemail Pro.
- **UMS Web Services:** *Default = Off, Software level = 4.2+.*
  This option is used with Voicemail Pro 4.2+. If enabled, the user can use either an IMAP email client or a web browser to access their voicemail mailbox messages. ***UMS Web Service*** licenses are required for the number of users configured. Note that the user must have a voicemail code set in order to use either of the UMS interfaces.
  - In the **License** 353 section, double-clicking on the UMS Web Services license display a menu that allows you to add and remove users from the list of those enabled for UMS Web Services without having to open the settings of each individual user.
- **Voicemail Email Mode:** *Default = Off*
  Controls the method of operation of Voicemail Email above. These settings are not used by IMS.

- ***Off***
  Do not automatically send a new message to the email account
- ***Copy***
  Copy each message to the email account as a .wav file attachment.
- ***Forward***
  Forward all messages to the email account and delete from the Voicemail Server.
- ***Alert***
  Send an email message without attaching the Voicemail file. This may be used with Email gateways to Pagers or Mobile telephone Short Message Services. Includes the caller's Caller ID if available.

- **Reception / Breakout (DTMF 0):** *Default = Blank*
  When connected to a user's voicemail, the caller can press 0 (*0 on Embedded Voicemail) to be transferred to either an internal number or external number. Enter here the telephone number to be used. The user should announce this facility in their greeting message, for example "John Smith is not available today, you may leave a message or press 0 for Reception". Note that the breakout is done as an unsupervised blind transfer.
- **Breakout (DTMF 2/3):** *Default = Blank, Software level = 3.2+.*
  These two fields are supported by Voicemail Pro (Intuity mode) on IP Office 3.2+ and Embedded Voicemail on IP Office 4.0+. They allow users to have two further breakout numbers in addition to the Reception number above. These two additional breakouts are triggered by the caller pressing 2 or 3 (*2 or *3 on Embedded Voicemail). These additional numbers allow a simple personal auto attendant to be created. The options setup should be included in the user's mailbox greeting. Note that the breakout is done as an unsupervised blind transfer.

6.7.3 DND

Do not disturb prevents the user from receiving hunt group and page calls. Direct callers hear busy tone or are diverted to voicemail if available. It overrides any call forwarding, follow me and call coverage settings. A set of exception numbers can be added to list numbers from which the user still wants to be able to receive calls when they have do not disturb in use.

The user can switch do not disturb on/off using short codes, pre-programmed keys on their phone or IP Office Phone Manager application. See Do Not Disturb 690 in the Telephone Features section.

A symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

User | DND	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Do Not Disturb:** *Default = Off*
  When checked the user's extension is considered busy, except for calls coming from sources listed in their Do Not Disturb Exception List. When a user has do not disturb in use, their normal extension will give alternate dialtone 752 when off hook.
  - For IP Office 4.2+, users with DND on are indicated as 'busy' on any BLF indicators set to that user.
- **Do Not Disturb Exception List:** *Default = Blank*
  This is the list of telephone numbers that are still allowed through when Do Not Disturb is set. For example this could be an assistant or an expected phone call. Internal extension numbers or external telephone numbers can be entered. If you wish to add a range of numbers, you can either enter each number separately or make use of the wildcards "N" and "X" in the number. For example, to allow all numbers from 7325551000 to 7325551099, the DND Exception number can be entered as either 73255510XX or 73255510N.

6.7.4 Short Codes

Short codes entered in this list can only be dialed by the user. They will override any matching user rights or system short code. See Short Codes 386 for details.

User and User Rights short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.

- **WARNING**
  User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

A symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

User | Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

- ***FWD**
  Short codes of this form are inserted by the IP Office. They are used in conjunction with the **User | Forwarding** settings to remember previously used forwarding numbers. They can be accessed on that tab by using the drop-down selector on the forwarding fields.

6.7.5 Source Numbers

This form is used to enter values that have special usages. These are entered using the Add, Edit or Remove buttons.

User | Source Numbers	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

The following types of entry can be added to a user's source numbers.

- **V<Caller's ICLID>**
  For systems using Voicemail Lite or Voicemail Pro, strings prefixed with a V indicate numbers from which access to the users mailbox is allowed without requiring entry of the mailbox's voicemail code. This is referred to as "trusted source".
  - For Voicemail Pro running in Intuity mode, trusted source is used for calls from programmable buttons set to Voicemail Collect and Visual Voice. Other controls are prompted for the mailbox number and then password.
- **R<Caller's ICLID>**
  To allow Dial In/RAS call access only from a specified number prefix the number with a "R", for example ***R7325551234***.
- **H<Group Name>**
  Allows the user to receive message waiting indication of new group messages. Enter H followed by the group name, for example ***HMain***.
  - On suitable display extensions, the hunt group name and number of new messages is displayed. Refer to the appropriate telephone user guide.
  - If the user is using Phone Manager, the Messages tab shows the hunt group name and number of new messages.
  - If the user is not a member of the group, a voicemail code must be set for the group's mailbox. See Voicemail Code on the Hunt Group | Voicemail 292 tab.
- **P<Telephone Number>**
  This entry sets the destination for callback (outbound alert) calls from voicemail. Enter P followed by the telephone number including any necessary external dialing prefix, for example P917325559876. This facility is only available when using Voicemail Pro through which a default Callback or a user specific Callback start point has been configured. Refer to the Voicemail Pro documentation. This feature is separate from voicemail ringback.
- **RESERVE_LAST_CA=** *Software level = Up to 3.2.*
  Used for users with multiple call appearance buttons. When present, this string stops the users last call appearance button from being used to receive incoming calls. This ensures that the user always has a call appearance button available to make outgoing calls and to initiate transfers and conferences. For IP Office 4.0 and higher this option has been replaced by **Reserve Last CA** 265 (User | Telephony | Multi-line Options) 265.
- **AT<string>**
  Strings beginning with AT can be used with a user called ***DTEDefault*** to configure the default settings of the IP Office control unit's DTE port.

NoUser User Source Numbers

The following source numbers can also be used on the Source Numbers tab of the NoUser user. These affect all users on the system. Note that changes to these source numbers require a reboot of the IP Office system to become effective.

- **ACD_QUEUE_DELAY=*nn*** *Software level = Up to 3.2.*
  Used to change the timeout for still queued messages. The parameter ***nn*** can be replace with a time in seconds between 20 and 180. For IP Office 4.0+ this has been replaced by Hunt Group | Announcements 300.
- **ALLOW_5410_UPGRADES** *Software level - 4.1 Q1 2008 Maintenance Release+.*
  Previously the only control over the upgrading of 5410 phones was controlled by the use of the turn_on.bat and turn_off.bat batch files installed with the IP Office Manager application. Now in addition this option must be present for 5410 phones to update their firmware. Refer to the IP Office Installation manual for full details.
- **DISTINCT_HOLD_RINGBACK** *(Software level = 4.1+)*
  Used to display a specific message about the call type for calls returning after timing out from being parked or held. If set, such call display Return Call - Held or Return Call – Parked rather than connected party name or line name.
- **ExtendDirectLimit <*optional limit*>** *(Software level = 4.1+)*
  This command allows the number of directory entries that can be added to the configuration to be controlled. By default Manager imposes a limit of 1000 directory entries. If this command is used without specifying an optional limit, the limit set is determined by the type of IP Office control unit; refer to the table below. Note that specifying or allowing a large directory limit may affect the performance of applications that use and display the directory, for example IP Office Phone Manager.

- **ExtendLDAPDirectLimit <*optional limit*>** *(Software level = 4.1+)*
  This command allows the number of LDAP directory entries that the IP Office will read to be controlled. By default the IP Office will only support up to 500 LDAP directory entries. If this command is used without specifying an optional limit, the limit set is determined by the type of IP Office control unit; refer to the table below. Note that specifying or allowing a large directory limit may affect the performance of applications that use and display the directory, for example IP Office Phone Manager.

Control Unit	IP Office Directory Entries	LDAP Entries
Small Office Edition	100	1000
IP406 V2	2500	10000
IP412	10000	10000
IP500	10000	10000

- **H323SetupTimerNoLCR** *Software level = 3.2 only.*
  Used to set the fallback time from VoIP trunks to non-VoIP trunks within LCR. See IP Trunk Fallback 228. For IP Office 4.2+ the setting **Call Initiation Timeout** is available on SIP and IP trunks.
- **HIDE_CALL_STATE**
  Used to hide the call status information, for example Dial, Conn, etc, on DS phones. Used in conjunction with the LONGER_NAMES option.
- **LONGER_NAMES**
  Used to increase the length of names sent for display on DS phones. See Caller Display 676.
- **ProgressEndsOverlapSend**
  See Line | VoIP 231.
- **VM_TRUNCATE_TIME=*X*** *(Range X = 0 to 7 seconds, Software level = 3.2 Maintenance Releases and 4.0+)*
  On analog trunks, call disconnection can occur though busy tone detection. When such calls go to voicemail to be recorded or leave a message, when the call ends the IP Office indicates to the voicemail system how much to remove from the end of the recording in order to remove the busy tone segment. This amount varies by system locale 750, the defaults being listed below. For some systems it may be necessary to override the default if analog call recordings are being clipped or include busy tone. That can be done by adding a **VM_TRUNCATE_TIME=** setting with the required value in the range 0 to 7 seconds.
  - **New Zealand, Australia, China, Saudi Arabia and Custom:** 5 seconds.
  - **Korea:** 3 seconds.
  - **Italy, Mexico, Chile, Colombia and Brazil:** 2 seconds.
  - **Argentina, United States, Canada and Turkey:** 0 seconds.
  - **All other locales:** 7 seconds.

6.7.6 Telephony

This form allows you to set telephony related features for the user. These override any matching setting in the System | Telephony 177 tab. For details of the ringing tones, see Ring Tones 683. DefaultRing uses the system default setting set through the System | Telephony 177 tab.

A symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

User | Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

Call Settings

- **Outside Call Sequence:** *Default = Default Ring (Use system setting 177)*
  Applies only to analog phones. Sets the ring pattern used for external calls to the user. The distinctive ring patterns used for other phones are fixed. Note that changing the pattern for users associated with fax and modem device extensions may cause those devices to not recognize and answer calls.
- **Inside Call Sequence:** *Default = Default Ring (Use system setting 177)*
  Applies only to analog phones. Sets the ring pattern used for internal calls to the user. The distinctive ring patterns used for other phones are fixed.
- **Ring Back Sequence:** *Default = Default Ring (Use system setting 177)*
  Applies only to analog phones. Sets the ring pattern used for ringback calls to the user. The distinctive ring patterns used for other phones are fixed.
- **No Answer Time:** *Default = Blank (Use system setting 177), Range = 1 to 99999 seconds.*
  Sets how long a call rings the user before following forwarded on no answer if set or going to voicemail. Leave blank to use the system default setting.
- **Wrap-up Time (secs):** *Default = 2 seconds, Range 0 to 99999 seconds.*
  Specifies the amount of time after ending one call before another call can ring. During this interval the user is treated as still being on a call. You may wish to increase this in a "call center" environment where users may need time to log call details before taking the next call. It is recommended that this option is not set to less than the default of 2 seconds. 0 is used to allow immediate ringing.
  - For users set as an SBCC Agent, the **After Call Work Time** 266 (User | Telephony | Supervisor Settings) 266 setting is used.
- **Transfer return Time (secs):** *Default = Blank (Off), Range 1 to 99999 seconds.*
  Sets the delay after which any call transferred by the user, which remains unanswered, should return to the user. Note that pre-3.2 IP Office the recall only occurs if the user has no other connected call. For IP Office 3.2+ transfer returns will occur if the user has available call appearance buttons. Recalled calls will continue ringing and do not follow forwards or go to voicemail.
- **Call Cost Mark-Up:** *Default = 100, Software level = 4.0+.*
  This setting is used for ISDN advice of charge (AOC). The markup is applied to the cost calculations based on the number of units and the line base cost per charging unit. The field is in units of 1/100th, for example an entry of 100 is a markup factor of 1. This value is included in the IP Office SMDR output.
- **Call Waiting On:** *Default = Off*
  For users on phones without appearance buttons, if the user is on a call and a second call arrives for them, an audio tone can be given in the speech path to indicate a waiting call (the call waiting tone varies according to locale). The waiting caller hears ringing rather than receiving busy. There can only be one waiting call, any further calls receive normal busy treatment. If the call waiting is not answered within the no answer time, it follows forward on no answer or goes to voicemail as appropriate. User call waiting is not used for users on phones with multiple call appearance buttons. Call waiting can also be applied to hunt group calls, see Hunt Group | Hunt Group | Call Waiting 289. Call waiting should not be used for fax and modem devices.
- **Answer Call Waiting on Hold (Analog):** *Default = On*
  Applies to analog and IP DECT extension users only. If the user has a call waiting and places their current call on hold, the waiting call is automatically connected.
- **Busy on Held:** *Default = On*
  If on, when the user has a call on hold, new calls receive busy treatment. They will follow the users forward on busy setting or are diverted to voicemail. Otherwise busy tone (ringing for incoming analog calls) is played. This overrides call waiting when the user has a call on hold. The use of Busy on Held for users with multiple call appearance buttons is deprecated and Manager will prompt whether it should switch off busy on held for such a user.

- **Offhook Station:** *Default = Off*
  Off-hook station allows an analog extension to be left permanently off-hook, with calls being made and answered using an IP Office application such as IP Office Phone Manager, SoftConsole or TAPI. When enabled, the analog extension user is able to control calls using the IP Office application in the following ways:
  - Offhook station does not disable the physical off-hook on the phone. When starting with the phone on-hook, making and answering calls is the same as normal analog extension operation. Additionally however calls can be initiated from the IP Office application. After entering the required number and making the call, the on-hook analog extension receives a ringback showing the users own caller ID and when answered the outgoing call leg to the dialed number is started.
    - On pre-4.0 systems, calls to a busy destination are cleared immediately without hearing busy tone. On 4.0+ calls to a busy destination present busy tone before being cleared.
  - The IP Office application can be used to end a call with the analog extension still off-hook. Instead of hearing disconnect tone the user hears silence and can use the IP Office application to make another call. Though off-hook the user is indicated as idle on BLF indicators. Without off-hook Station set the user would be indicated as busy when off-hook, whether on a call or not.
  - If off-hook and idle (having cleared a previous call), incoming call alerts by presenting ringing through the audio path. The call can be answered using the IP Office application or going on-hook/off-hook or by pressing recall. Note that if the phone normally displays call ID, any caller ID displayed on the phone is not updated in this mode, however the call ID in the IP Office application will be that of the current call.
  - If on-hook, an incoming call alerts as normal using the phone's ringer and is answered by going off-hook. The answer call option in the IP Office application cannot be used to answer calls to an on-hook analog extension.
  - While off-hook and idle, the analog extension user will receive page calls.
  - If the analog extension handset is replaced with a headset, changing the **Extension Classification** 250 ***(Extn | Analog)*** 250 to ***Quiet Handset*** is recommended.
  - Offhook Station is not intended for non-analog phone extension. However since it enables the answer calls control in IP Office Phone Manager it is recommended that the option is selected for non-analog extension users.
- **System Phone:** *Default = Off*
  Allows the user, on DS phones with a **MENU** key, to alter the date and time displayed on the phones. On those phones it is accessed by pressing ***Menu | Menu | Func | Setup***. Pre-IP Office 4.0, this option also allowed SoftConsole users to use the SoftConsole's **Send Message** function. See System Phone 687.
  - IP Office 4.0 Q2 2007 maintenance release allows users with this setting enabled to use a short code to set the IP Office system date and time. Refer to Date and Time 685 in the Telephony Features section.
  - IP Office 4.1+ allows users with this setting enabled to use a programmable button to set the time, date and to view the IP Office system type and version.
  - IP Office 4.2+ (and 4.1 Q4 maintenance release) allows users with this setting to user **Change Login Code** 412 short codes to change the login code of other users.
- **Remote Homeworker/Agent:** *Default = Off, Software level = Up to 3.2 only.*
  Select if the user has been configured as a remote extension on an Avaya INDeX telephone system. Refer to the INDeX Level 10 documentation for full details. Only available in Locales where the Avaya INDeX switch is supported.

Supervisor Settings

- **Login Code:** *Default = Blank, Range = Up to 31 digits.*
  The code that has to be entered, as part of a log in sequence, to allow a user to make use of an extension as if it was their own phone. This log in code can be used for hot desking as well as logging back onto your phone after it has been used by a hot desking user. This entry must be at least 4 digits for DS port users. Login codes of up to 15 digits are supported with **Extn Login** 561 buttons 561. Login codes of up to 31 digits are supported with **Extn Login** 429 short codes 429.
  - IP Office 4.0+ supports hot desking between IP Office systems. To log in at a remote IP Office requires that IP Office to have a **Advanced Small Community Networking** license.
  - For IP Office 4.0+ users can only log out if they have a **Login Code** set.
  - For IP Office 4.2+ users can log out without having a **Login Code** set if they are currently logged in at an extension whose **Base Extension Number** 248 (Extension | Extn) 248 no longer matches their own **Extension** 257 (User | User) 257.
  - IP Office 4.1 2008 Q2 maintenance release and higher supports the short code feature **Change Login Code** 412.
- **Login Idle Period (secs):** *Default = Blank (Off), Range = 0 (Off) to 99999.*
  If the telephone is not used for this period; the user currently logged in is automatically logged out. This option should be used only in conjunction with Force Login (see below).
- **Monitor Group:** *Default = <None>*
  Sets the hunt group whose members the user can monitor if silent monitoring is setup. See Call Listen 404.

- **Status on No Answer:** *Default = Logged On, Software level = 4.0+.*
  Hunt groups can change the status of call center agents (users with a log in code and set to forced log in) who do not answer a hunt group call presented to them before it is automatically presented to the next agent. Use of this is controlled by the **Agent's Status on No Answer Applies To** 289 setting of the hunt group.
  - ***Logged On***
    If this option is selected, the user's status is not changed.
  - ***Busy Wrap-Up***
    If this option is selected the user's membership status of the hunt group triggering the action is changed to disabled. The user can still make and receive calls and will still continue to receive calls from other hunt groups to which they belong.
  - ***Busy Not Available***
    If this option is selected the user's status is changed to do not disturb. This is the equivalent of DND and will affect all calls to the user.
  - ***Logged Off***
    If this option is selected the users status is changed to logged out. In that state they cannot make calls or receive calls. Hunt group calls go to the next available agent and personal calls treat the user as being busy.
- **Reset Longest Idle Time:** *Default = All Calls, Software level = 4.0+.*
  This setting is used in conjunction with hunt groups set to Longest Waiting (also known as Idle and Longest Waiting). It defines what type of calls reset the idle time of users who are members of these hunt groups. Options are ***All Calls*** and ***External Incoming***.
- **Force Login:** *Default = Off*
  If checked, the user must log in using their Login Code to use any extension including an extension to which they are the default associated user (Base Extension). For example, if Force Login is ticked for user A and user B has logged onto A's phone, when B logs off user A is not automatically associated with their normal phone and instead must log back on. If Force Login was not ticked, A would be automatically logged back in.
  - For users set as **SBCC Agents**, **Forced Login** is automatically enabled and cannot be switched off.
  - Note that users with a **Login Code** and set to **Forced Login** are treated as call center agents. These users consume CCC agents licenses and their status is reported within CBC and CCC applications.
- **Force Account Code:** *Default = Off*
  If checked, the user must enter a valid account code to make an external call.
- **Force Authorization Code:** *Default = Off, Software level = 3.2+.*
  If checked, the user must enter a valid authorization code to make an external call. That authorization code must be one associated with the user or the user rights to which the user belongs. See Authorization Codes 375.
- **Outgoing Call Bar:** *Default = Off*
  When enabled, this setting stops a user from making any external calls except those that use dial emergency features. On many Avaya display phones, this causes a **B** to be displayed.
  - IP Office 4.1 2008 Q2 Maintenance release adds a number of features that can be used in conjunction with the outgoing call bar setting. These include short codes for **Outgoing Call Bar On** 444, **Outgoing Call Bar Off** 444 and **Change Login Code** 412.
- **Inhibit Off-Switch Forward/Transfers:** *Default = Off, Software level = 3.2+.*
  When enabled, this setting stops the user from transferring or forwarding calls externally. This does not stop another user transferring the restricted users calls off-switch on their behalf. Note that a number of other controls may inhibit the transfer operation, see Off-Switch Transfer Restriction 703.
- **Can Intrude:** *Default = Off*
  Check this option if the User can interrupt other user's calls. This setting and the setting below are used to control the use of the following short code and button features: Call Intrude, Call Listen, Call Steal and Dial Inclusion.
- **Cannot be Intruded:** *Default = On (Pre-4.0 - Off in Italy)*
  If checked, this user's calls cannot be interrupted or acquired. In addition to the features listed above, this setting also affects whether other users can use their appearance buttons to bridge into a call to which this user has been the longest present user.
- **Can Trace Calls:** *Default = Off, Software level = 4.0+.*
  This settings controls whether the user is able to make used of ISDN MCID controls.
- **Can Accept Collect Calls:** *Default = Off [Brazil Only]*
  Determines whether the user is able to receive and accept collect calls.
- **SBCC Agent:** *Default = Off, Software level = 4.2+.*
  This field is used by the IP Office SBCC application to indicate which users are Agents monitored by that application. It also indicate to the IP Office those users who can use other SBCC features within the IP Office configuration. If a user is set as an SBCC Agent, **Forced Login** is enabled and greyed out from being changed and a warning is given if the user does not have a log in code set.

- The number of simultaneous logged in SBCC Agents supported by the IP Office is controlled by licenses entered into the configuration. If all SBCC Agent licenses on a system have been used, additional agents are prevented from logging in.

- **Automatic After Call Work:** *Default = Off, Software level = 4.2.*
  SBCC Agents (see above) can be automatically put into ***After Call Work*** (ACW) state after ending a hunt group call. During ACW state, further hunt group calls are not presented to the agent.
- **After Call Work Time (secs):** *Default = System Default, Range = 0 (No ACW) to 999 seconds., Software level = 4.2 +.*
  For SBCC Agents with **Automatic After Call Work** enabled, this value sets the duration of the ACW period. If set to ***System Default***, the value set in **System | SBCC | Default After Call Work Time** 192 is used. A value of 0 disable the user from using ACW.

Multi-line Options

- **Individual Coverage Time (secs):** *Default = 10 seconds, Range 1 to 99999 seconds, Software level 3.0+.*
  This function sets how long the phone will ring at your extension before also alerting at any call coverage users. This time setting should not be equal to or greater than the **No Answer Time** applicable for the user.
- **Ring Delay:** *Default = Blank (Use system setting), Range = 0 (use system setting 177) to 98 seconds, Software level = 3.2+.*
  This setting is used when any of the user's programmed appearance buttons is set to Delayed ringing. Calls received on that button will initially only alert visually. Audible alerting will only occur after the ring delay has expired.
- **Ringing Line Preference:** *Default = On, Software level = 3.0+.*
  For users with multiple appearance buttons. When the user is free and has several calls alerting, ringing line preference assigns currently selected button status to the appearance button of longest waiting call. Ringing line preference overrides idle line preference.
- **Idle Line Preference:** *Default = On, Software level = 3.0+.*
  For users with multiple appearance buttons. When the user is free and has no alerting calls, idle line preference assigns the currently selected button status to the first available appearance button.
- **Delayed Ring Preference:** *Default = Off, Software level = 4.0+.*
  This setting is used in conjunction with appearance buttons set to delayed or no ring. It sets whether ringing line preference should use or ignore the delayed ring settings applied to the user's appearance buttons.
  - When on, ringing line preference is only applied to alerting buttons on which the ring delay has expired.
  - When off, ringing line preference can be applied to an alerting button even if it has delayed ring applied. This is the same as pre-4.0 ringing line preference operation.
- **Answer Pre-Select:** *Default = Off, Software level = 4.0+.*
  Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling Answer Pre-Select allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call until the user either presses that button again or goes off-hook. Note that when both Answer Pre-Select and Ringing Line Preference are enabled, once current selected status is assigned to a button through ringing line preference it is not automatically moved to any other button.
- **Reserve Last CA:** *Default = Off, Software level = 4.0+.*
  Used for users with multiple call appearance buttons. When selected this option stops the user's last call appearance button from being used to receive incoming calls. This ensures that the user always has a call appearance button available to make an outgoing call and to initiate actions such as transfers and conferences. For pre-4.0 IP Office this option is set by adding the **RESERVE_LAST_CA=** option on the User | Source Numbers 263 tab.
- **Abbreviated Ring:** *Default = On, Software level = 4.1+.*
  This option controls the type of alerting ring given for additional appearance calls when a call is already connected. When on, additional calls alert with a single short ring. When off, additional calls alert will normal ringing. The audible alert is still subject to ring delay settings if enabled.

6.7.7 Forwarding

This form can be used to check and adjust a user's call forwarding and follow me settings.

Follow Me is intended for use when the user is present to answer calls but for some reason is working at another extension. For example; temporarily sitting at a colleague's desk or in another office or meeting room. As a user, you would use Follow Me instead of Hot-Desking if you don't have a log in code or you don't want to interrupt you colleague also receiving their own calls. Multiple users can use follow me to the same phone.

Forwarding is intended for use when, for some reason, the user is unable to answer a call. They may be busy on other calls, unavailable or simply don't answer. Calls may be forwarded to internal or, subject to the user's call barring controls, external numbers.

To bar a user from forwarding calls to an external number, the **Inhibit Off-Switch Forward/Transfers** 266 (User | Telephony | Supervisor Settings) 266 option should be selected. To bar all users from forwarding calls to external numbers the **Inhibit Off-Switch Forward/Transfers** 177 (System | Telephony | Telephony) 177 option should be selected.

Note that analog lines doe not provide call progress signalling. Therefore calls forwarded off-switch via an analog line are treated as answered and are not recalled.

A symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

User | Forwarding	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Follow Me Number:** *Default = Blank. Range = Internal extension number.*
  Redirects the user's calls to the internal extension number entered. If the redirected call receives busy or is not answered, it follows the user's forwarding and or voicemail settings as if it had been presented to their normal extension. When a user has follow me in use, their normal extension will give alternate dialtone 752 when off hook. For further details see Follow Me 692.
  - Calls targeting longest waiting type hunt groups ignore Follow Me.
  - Calls triggered by actions at the user's original extension, for example voicemail ringback, ignore Follow Me.
  - Park, hold and transfer return calls will go to the extension at which the user initiated the park, hold or transfer action.
- **Forward Unconditional:** *Default = Off*
  This option, when checked and a **Forward Number** is also set, forwards all external calls immediately. Additional options allow this forwarding to also be applied to internal calls and to hunt group calls if required. Using **Follow Me** overrides **Forward Unconditional**. When a user has forward unconditional in use, their normal extension will give alternate dialtone 752 when off hook.
  - **Forward Number:** *Default = Blank. Range = Internal or External number. Up to 32 characters.*
    This option sets the destination number to which calls are forwarded when **Forward Unconditional** is checked. The number can be an internal or external number. This option is also used for **Forward on Busy** and **Forward on No Answer** if no separate **Forward Number** is set for those features.
  - **Forward Internal Calls:** *Default = On, Software level = 3.2+.*
    This option, when checked, sets that internal calls should be also be forwarded immediately when forward unconditional is active.
  - **Forward Hunt Group Calls:** *Default = Off*
    Hunt group calls are not normally presented to a user who has forward unconditional active. Instead they are presented to the next available member of the hunt group. This option, when checked, sets that hunt group calls are also forwarded when forward unconditional is active. The group's **Ring Type** must be ***Sequential*** or ***Rotary***, not ***Collective*** or ***Longest Waiting***. The call is forwarded for the period defined by the hunt group's **No Answer Time** after which it returns to the hunt group if unanswered. Note also that hunt group calls cannot be forwarded to another hunt group.
- **Forward On Busy:** *Default = Off*
  When checked and a forward number is set, external calls are forwarded when the user's extension is busy. The number used is either the **Forward Number** set for **Forward Unconditional** or if set, the separate **Forward Number** set under **Forward On Busy**. Having **Forward Unconditional** active overrides **Forward on Busy**.
  - If the user has **Busy on Held** selected, if forward on busy is active it is applied when the user is free to receive calls but already has a call on hold.
  - If the user's phone has multiple call appearance buttons, the system will not treat them as busy until all the call appearance buttons are in use unless the last appearance button has been reserved for outgoing calls only.
- **Forward On No Answer:** *Default = Off*
  When checked and a forward number is set, calls are forwarded when the user does not answer within their set **No Answer Time** 265 (User | Telephony | Call Settings) 265. Having **Forward Unconditional** active overrides **Forward on No Answer**.

- **Forward Number:** *Default = Blank. Range = Internal or External number. Up to 32 characters.*
  If set, this number is used as the destination for **Forward On Busy** and **Forward On No Answer** when on. If not set, the **Forward Number** set for **Forward Unconditional** is used.
- **Forward Internal Calls:** *Default = On, Software level = 3.2+.*
  When checked, this option sets that internal calls should be also be forwarded when forward on no answer or forward on busy is active.

6.7.8 Dial In

Use this dialogue box to enable dial in access for a remote user. An Incoming Call Route and RAS service must also be configured.

User | Dial In	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Dial In On:** *Default = Off*
  When enabled, dial in access into the system is available via this User account.
- **Dial In Time Profile:** *Default = <None>*
  Select the Time Profile 336 applicable to this User account. A **Time Profile** can be used to set time restrictions on dial in access via this User account. Dial In is allowed during the times set in the Time Profile form. If left blank, then there are no restrictions.
- **Dial In Firewall Profile:** *Default = <None>*
  Select the Firewall Profile 338 to restrict access to the system via this User account. If blank, there are no Dial In restrictions.

6.7.9 Voice Recording

This tab is used to activate the automatic recording of user's external calls. This requires Voicemail Pro to be installed and running. Call recording also requires available conference resources similar to a 3-way conference.

This tab also allows the destination for manually triggered and automatic recordings to be changed from the normal default of the user's own mailbox.

IP Office 4.0+ introduces the following changes to user recording:

- Calls to and from IP devices including those using Direct media can be recorded.
- User recording stops if the call is transferred to another user.
- Calls parked or held by the user pause recording until the user unparks the call or takes it off hold.

User | Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Record Outbound:** *Default = None*
  Select whether outgoing external calls are recorded. Options for recording are:
  - **On:** Record the call if possible.
  - **Mandatory:** If not possible to record block the call and return busy tone.
  - **Percentages of calls:** Various percentages of calls made by the user will be recorded.
- **Record Inbound:** *Default = None*
  The same as **Record Outbound** but applied to inbound external calls to the user.
- **Record Time Profile:** *Default = <None> (Any time)*
  Used to select a time profile 336 during which automatic call recording setting above apply.
- **Auto Recording Mailbox:** *Default = <user's own mailbox>*
  Sets the mailbox into which automatically triggered recordings are placed.
  - **Voice Recording Library (Auto):** *Default = Not Enabled, Software level = 3.0+.*
    When checked, this setting overrides the **Auto Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.
- **Manual Recording Mailbox:** *Default = <user's own mailbox>*
  Sets the mailbox into which recordings triggered by the user are placed.
  - **Voice Recording Library (Manual):** *Default = Blank (Not Enabled), Software level = 3.0+.*
    When checked, this setting overrides the **Manual Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

6.7.10 Coverage

Call coverage allows calls ringing at one extension (the 'Sender') to also be presented and answered at other defined extensions (the 'Covering Extensions').

User | Coverage	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.3 to 3.0DT only.
Mergeable	✓.

- **Covering Extension**
  The number of the extension that will be receiving the calls from the selected extension.
- **Covering User**
  This is the user's account name associated with the covering extension.

To add a covering extension

1. Right-click within the **Coverage** window and select **Add**.
2. Choose from the list of extension/users.
3. Click **OK**.

Senders

Senders are extensions that share their alerting calls with other extensions, referred to as their covering extensions. The only calls that are not shared are:

- Hunt Group calls that alert at the sender.
- Automatic Intercom calls.
- Calls that have been forwarded/diverted to the sender.
- Paging calls.
- Calls that are being covered for another station.
- Calls from one of their covering extensions.

Covering Extensions

When the sender's extension rings, the covering extensions also ring and show the call on a free call appearance button. The display indicates that the call is from the sender by showing the incoming call's name or number and the sender's name.

Covering Extensions can receive their own calls as well as calls for the Sender. A Covering Extension can receive a call when:

- Send All Calls/Do Not Disturb is not active.
- Forwarding/Divert is not active.
- They have an available Call Appearance button to accept the call.

Notes
To help covering extensions handle coverage calls efficiently it is suggested that the following buttons are programmed.

- **Program additional Call Appearance buttons**
  Covering extensions must have enough call appearance buttons for their own calls and for the extensions they are covering. By default each extension has three call appearance buttons. A suggested minimum extra is one less than the number of call appearance buttons on the sender's extension.
- **Program a Voicemail Collect button for the Sender**
  This will allow the covering extension to transfer a call directly to the sender's voicemail.
- **Program an Automatic Intercom button for the Sender**
  This allows the covering extension to place a voice announcement. If you do not wish to make voice announcement calls, use Dial Intercom instead.
- **Program a Send All Calls button**
- **Program a Drop Button**
  This helps in transferring calls.

Call Alerting Scenarios
Listed below are examples of how calls to the sender's extension are handled in specific scenarios.

- **Sender and Covering Extensions available**
  An incoming call alerts both the sender's and covering extension's on call appearance buttons. It alert the sender's extension for their set No Answer Time and then alerts the covering extension only until the call is answered or the caller hangs up.
- **Sender available/Covering Extension not available**
  An incoming call alerts the sender only. The call remains alerting until it is answered or the caller hangs up.
- **Sender not available/Covering Extension available**
  The call will alert the covering extension but not the sender. The call remains alerting until the call is answered or the call hangs up.
- If voicemail is available and enabled for the sender, then in all the above scenarios, following the sender's No Answer Time the call is redirected to the Sender's voicemail.
- **Sender and Covering Extension not available**
  The caller hears busy tone or is redirected to the sender's voicemail.

6.7.11 Button Programming

This tab is used to assign functions to the programmable keys provided on many Avaya telephones. For full details of button programming refer to the section **Button Programming** 468.

- **T3 Phones**
  T3 phone buttons have default functions. These are not shown in the configuration file but can be overridden by settings added to the configuration file. Buttons left blank or set to call appearance will use the phone's default function for that button.

A  symbol indicates that the button has been set and locked by the user's associated user rights 364.

User | Button Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.1+.
Mergeable	✓.

- **Button No.**
  The number of the DSS key against which the function is being set. To set a function against a button double-click it or select it and then click **Edit**.
- **Label** 474
  This is a text label for display on the phone. It is used on phones where the button status is indicated by the adjacent display space rather than paper labels. use of the label is dependent on the phone type.
- **Action**
  Defines the action taken by the button.
- **Action Data**
  This is a parameter used by the selected action. The options here will vary according to the selected button action.
- **Display All**
  The number of button displayed is based on the phone associated with the user when the configuration was loaded. This can be overridden by selecting **Display All Buttons**. This may be necessary for users who switch between different phones using hot desking or have an expansion unit attached to their phone.

6.7.12 Menu Programming

Some Avaya DS phones have a Menu key, sometimes marked with an  icon (4412, 4424, 4612, 4624, 6408, 6416 and 6424).

When Menu is pressed, a number of default functions are displayed. The < and > keys can be used to scroll through the functions while the keys below the display can be used to select the required function.

The default functions can be overwritten by selections made within this tab.

User | Menu Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

6.7.13 T3 Options

This tab is only applicable to users using Avaya T3 phones. It is divided into several sub-tabs.

User | T3 Options	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✓.

T3 Telephony

- **Third Party Forwarding**
  Avaya T3 phone users can be given menu options to change the forwarding settings of other users. In addition to the following controls, this functionality is protected by the forwarding user's log in code.
  - **Allow Third Party Forwarding:** *Default = Off*
    Sets whether this user can change the forwarding settings of other users.
  - **Protect from Third Party Forwarding:** *Default = On*
    Sets whether this user's forwarding settings can be changed by other users.
- **Advice of Charge**
  - **Display Charges:** *Default = On, Software level = 4.0+.*
    This setting is used to control whether the user sees ISDN AOC information when using a T3 phone.

Hunt Group Settings

Avaya T3 phones are able to display the status (in-service, out-of-service or night-service) of up to 5 hunt groups. T3 phones can also display the phone user's membership status (enabled or disabled) for up to 5 hunt groups and allow the user to change that status.

- **Hunt Group Service Status**
  This list shows all the hunt groups on the IP Office system. Up to 10 of these groups can be checked. The user is then able to view and change the service status of the checked groups through their T3 phones menus (***Menu -> Group State***).
  - For IP Office 4.2+, in addition to changing the status of the individual hunt groups displayed via **Menu -> Group State**, the menu also displays option to change the status of all the groups; **All in service**, **All night service** and **All out service**.
- **Hunt Group Membership Status**
  This list shows the hunt groups of which the user is a member. Up to 5 of these groups can be checked; those group and the users current membership status are then displayed on the phone's idle display. The user can select one of the displayed groups and change their membership status.
  - Pre-IP Office 4.2: For the selected group, their status can be viewed and changed from the phone by the user using ***Menu -> Settings -> Display/Audio ->Group Membership***.
  - IP Office 4.2+: The selected hunt groups and the user's current membership status are displayed on the T3 phones status display. That display can be used to change the status.

Personal Directory

T3 phones are able to display a personal directory of numbers to speed dial. Each user can have up to 100 personal directory numbers. Unlike system directory numbers, these entries are not matched against incoming ICLID numbers.

- **Name**
  Enter the text, without spaces, to be used to identify the number.
- **Number**
  Enter the number, without spaces, to be dialed.

6.7.14 Phone Manager Options

This tab is used to configure the user's Phone Manager options.

A symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

User | Phone Manager Options	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Allow user to modify Phone Manager settings:** *Default = On*
  This setting is used with the **Phone Manager Status Options**, **Screen Pop Options** and **Hide Options** below. It controls whether those options are applied every time the user starts Phone Manager or only the first time the user starts Phone Manager.
  - If this setting is enabled, then the IP Office configuration setting of those options are only applied the first time a user starts Phone Manager on a PC. Those settings become part of the user's Phone Manager profile on that PC. They can be changed by the user through Phone Manager. On subsequent Phone Manager starts the Manager settings are ignored.
  - If this setting is not enabled, the IP Office configuration settings are applied every time the user starts Phone Manager and cannot be overridden by the user.
- **Agent Mode:** *Default = Off*
  This option controls the setting of the Agent Mode option on the **Configure Preferences | Agent Mode** tab within Phone Manager Pro. When enabled, the user has additional toolbar controls for Busy Wrap Up, Busy Not Available and Select Group. Note that the options on the Phone Manager Pro Agent Mode tab can be grayed out from user changes by the Agent Mode setting in Configuration Options below.
- **Phone Manager Type:** *Default = Lite*
  Determines the mode in which the user's copy of the Phone Manager application operates. Note that the number of users able to simultaneously use modes other than Lite is controlled by licenses entered into the IP Office configuration. This setting cannot be changed by the user. * For pre-3.2 IP Office systems this setting was located on the User | User 257 tab.
  - ***Lite***
    Basic Phone Manager mode. This mode does not require any licenses.
  - ***Pro***
    Advanced Phone Manager mode that enables a range of additional functions. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.
  - ***Phone Manager PC Softphone***
    This is the VoIP IP phone mode of Phone Manager Pro. This mode requires both an available Phone Manager Pro license and a Phone Manager Pro IP Audio Enabled license. The user must be associated with an VoIP extension within the IP Office configuration.
  - ***Pro Telecommuter:*** *Software level = 4.1+.*
    This version of Phone Manager Pro is supported with Phone Manager 4.1+. It allows the user to make and receive calls via an external phone specified at Phone Manager log in. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.
- **VoIP Mode:** *Default = On*
  This option only appears if the selected **Phone Manager Type** is set to ***Phone Manager PC Softphone***. It sets the **Enable VoIP** control within the user's Phone Manager PC Softphone.
  - For IP Office 4.2+ this setting is automatically enabled and greyed out.
- **Book a Conference in Phone Manager:** *Default = Off*
  When enabled, displays links in the user's Phone Manager application for access to the IP Office Conferencing Center application if installed. Note that to book a conference requires the user to have a Conferencing Center user ID and password. This feature also requires the **Conference Center URL** 165 (System | System) 165 to be set. This setting cannot be changed by the user. *For pre-3.2 IP Office systems this setting was located on the User | User 257 tab.
- **Configuration Options**
  These options allow the user to changes the settings on the indicated configure preferences tabs within Phone Manager.
  - The controllable tabs for Phone Manager Lite are **Telephone** and **Do Not Disturb**.
  - The additional controllable tabs for Phone Manager Pro and Phone Manager PC Softphone are **Screen Pop**, **Compact Mode**, **Agent Mode**, **Voicemail** and in IP Office 4.0 and higher **Mobile Twinning**.

- **Screen Pop Options**
  These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone screen pop options Ringing, Answering, Internal, External and Outlook.
  - The **Allow user to modify Phone Manager** setting controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.
- **Phone Manager Status Options**
  These options allow selection of the tabs to show within the call history area of the user's Phone Manager.
  - The tabs selectable for Phone Manager are **All**, **Missed**, **Status** and **Messages**.
  - The additional tabs selectable for Phone Manager Pro and PC Softphone are **Incoming**, **Outgoing** and **Account Codes**.
  - The **Allow user to modify Phone Manager** setting controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.
- **Hide Options**
  These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone options **Hide on close** and **Hide on no calls**.
  - The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.

6.7.15 Hunt Group Memberships

This tab displays the hunt group of which the user has been made a member. The tick boxes indicate whether the user's membership of each of those groups is currently enabled or disabled.

6.7.16 Mobility (Twinning)

These settings relate to twinning features. These are where a user has a main or primary extension but also regularly answer calls at a secondary or twinned phone. These features are intended for a single user, they are not aimed at two users answering calls presented to a single primary extension.

Twinning

Twinning allows a user's calls to be presented to both their current extension and to another number. The IP Office supports two modes of twinning:

	Internal	Mobile
Twinning Destination	IP Office extensions only	External numbers only.
Supported in	All locales.*	All locales.
License Required	No	Yes

*IP Office 4.0 Q2 2007 maintenance release and higher only. Prior to IP Office 4.0 Q2 2007 maintenance release, Internal twinning was not supported in North American locales.

Internal Twinning

Internal twinning is available on IP Office 3.1 and higher systems. It can be used to link two IP Office extensions to act as a single extension. Typically this would be used to link a users desk phone with some form of wireless extension such as a DECT or WiFi handset.

Internal twinning is an exclusive arrangement, only one phone may be twinned with another. When twinned one acts as the primary phone and the other as the secondary phone. With internal twinning in operation, calls to the user's primary phone are also presented to their twinned secondary phone. Other users cannot dial the secondary phone directly.

- If the primary or secondary phones have call appearance buttons, they are used for call alerting. If otherwise, call waiting tone is used, regardless of the users call waiting settings. In either case, the Maximum Number of Twinned Calls setting applies.
- Calls to and from the secondary phone are presented with the name and number settings of the primary.
- The twinning user can transfer calls between the primary and secondary phones.
- Logging out or setting do not disturb at the primary stops twinned calls alerting at the secondary also.
- Logging out or setting do not disturb at the secondary only affects the secondary.
- User buttons set to monitor the status of the primary also reflect the status of the secondary.
- Depending on the secondary phone type, calls alerting at the secondary but then answered at the primary may still be logged in the secondary's call log. This occurs if the call log is a function of the phone rather than the IP Office system.
- Call alerting at the secondary phone ignoring any Ring Delay settings applied to the appearance button being used at the primary phone. The only exception is buttons set to No Ring, in which case calls are not twinned.

Mobile Twinning

This licensed method of twinning can be used with external numbers. Calls routed to the secondary remain under control of the IP Office and can be pulled back to the primary if required. If either leg of an alerting twinned call is answered, the other leg is ended.

- For IP Office 4.2+, the **Mobile Twinning** license is now called the **Mobility Features** license, reflecting the fact that it can be used for Mobile Call Control and one-X Mobile Client support in addition to just mobile twinning. The mode of license operation has also changed. Prior to IP Office 4.2, the license was only consumed by users who had Mobile Twinning enabled. For IP Office 4.2 it is consumed by a user when they are configured for any of the mobility features, including mobile twinning even if they have turned mobile twinning off.

A number of controls are available in addition to those on this tab.

- **Button Programming Actions**
  The **Emulation | Twinning** action can be used to control use of mobile twinning. Set on the primary extension, when that extension is idle the button can be used to set the twinning destination and to switch twinning usage on/off. When a twinned call has been answered at the twinned destination, the button can be used to retrieve the call at the primary extension.
- **Short Code Features**
  The following short code actions are available for use with mobile twinning.
  - **Set Mobile Twinning Number.**
  - **Set Mobile Twinning On.**
  - **Set Mobile Twinning Off.**

- **Mobile Twinned Call Pickup.**

- **Caller ID**
  The options on the **System | Twinning** tab can be used to control which caller ID is sent with calls sent to the twinned destination. The use of those options may be restricted by the trunk type carrying the twinned call and the services provided by the line provider.

Mobile twinning is only applied to normal calls. It is not applied to:

- Intercom, dial direct and page calls since these are answered automatically.
- Calls alerting on line appearance, bridged appearance and call coverage buttons.
- Returning held, returning parked, returning transferred and automatic callback calls.
- Follow me calls.
- Additional calls when the primary extension is active on a call or the twinning destination has a connected twinned call.

User BLF indicators and application speed dials set to the primary user will indicate busy when they are connected to a twinned call including twinned calls answered at the mobile twinning destination.

Analog Lines
These types of lines do not provide call progress signalling. Once a twinned call has been sent to an analog line, the IP Office assumes that it has been answered and stops ringing the primary extension.

Settings

A  symbol indicates that the setting can also be set and locked by the user's associated user rights 364.

Internal Twinning Settings

User | Mobility | Internal Twinning	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+ (For North American locales only supported from the IP Office 4.0 Q2 2007 maintenance release).
Mergeable	✓.

- **Internal Twinning:** *Software level = 3.1+.*
  Select this option to enable internal twinning for a user. **Internal Twinning** cannot be selected for a user if they already have **Mobility Features** selected.
  - **Twinned Handset:** *Default = Blank.*
    For internal twinning, the drop-down list can be used to select an available user as the twinned calls destination. Users not displayed in the list are already twinned with another user. If the list is grayed out, the user is a twinning destination and the primary to which they are twinned is displayed. The secondary phone must be on the same IP Office.
  - **Maximum Number of Twinned Calls:** *Default = 1.*
    If set to one, when either the primary or secondary phone are in use, any additional incoming call receives busy treatment. If set to two, when either phone is in use, it receives call waiting indication for any second call. Any further calls above two receive busy treatment.
  - **Twin Bridge Appearances:** *Default = Off, Software level = 4.1+.*
    By default only calls alerting on the primary phone's call appearance buttons also alert at the secondary. When this option is enabled, calls alerting on a bridged appearance button at the primary can also alert at the secondary.
  - **Twin Coverage Appearances:** *Default = Off, Software level = 4.1+.*
    By default only calls alerting on the primary phone's call appearance buttons also alert at the secondary. When this option is enabled, calls alerting on a coverage appearance button at the primary can also alert at the secondary.
  - **Twin Line Appearances:** *Default = Off, Software level = 4.1+.*
    By default only calls alerting on the primary phone's call appearance buttons also alert at the secondary. When this option is enabled, calls alerting on a line appearance button at the primary can also alert at the secondary.

Mobility Features Settings

The use of mobile twinning requires entry of a ***Mobility Features*** license into the configuration.

User | Mobility | Mobility Features	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.1 ✗, 3.0DT ✗, 3.0 ✗, 3.1 ✗, 3.2 ✓, 4.0 ✓, 4.1 ✓.
Mergeable	✓.

- **Mobility Features:**
  Enabling this option requires the IP Office to have a ***Mobility Features*** license available. When all available licenses have been consumed, the Mobility features option is greyed out. **Mobility Features** cannot be selected for a user if they already have **Internal Twinning** selected.
  - **Mobile Twinning:** *Software level = 3.2+.*
    If selected, the user is enable for mobile twinning.
    - **Twinned Mobile Number:** *Default = Blank*.
      This field sets the external destination number for mobile twinned calls. It is subject to normal short code processing and should include any external dialing prefix if necessary.
    - **Twinning Time Profile:** *Default = <None> (Any time)*
      This field allows selection of a time profile during which mobile twinning will be used.
    - **Mobile Dial Delay:** *Default = 2 seconds*
      This setting controls how long calls should ring at the user's primary extension before also being routed to ring at the twinning destination number. This setting may be used at the user's choice, however it may also be a necessary control. For example, if the twinning number is a mobile device that has been switched off, the mobile service provider may immediately answer the call with their own voicemail service. This would create a scenario where the user's primary extension does not ring or ring only briefly.
    - **Mobile Answer Guard:** *Default = 0 (Off), Range = 0 to 99 seconds, Software level = 4.2+.*
      This control can be used in situations where calls sent to the twinned destination are automatically answered by a voicemail service or automatic message if the twinned device is not available. If a twinned call is answered before the **Mobile Answer Guard** expires, the IP Office will drop the call to the twin.

- **Hunt group calls eligible for mobile twinning:** *Default = Off*
  This setting controls whether hunt group calls ringing the user's primary extension should also be presented to the mobile twinning number.
- **Forwarded calls eligible for mobile twinning:** *Default = Off*
  This setting controls whether calls forwarded to the user's primary extension should also be presented to the mobile twinning number.
- **Twin When Logged Out:** *Default = Off, Software level = 4.2+.*
  If enabled, if the user logs off their primary extension, calls to that extension will still alert at their twinned device rather than going immediately to voicemail or busy.
  - When logged out but twinned, **Mobile Dial Delay** is not applied.
  - Hunt group calls (all types) will be twinned if **Hunt group calls eligible for mobile twinning** is enabled. When this is the case the user's idle time is reset for each externally twinned call answered (note that calls twinned over analog and analog emulation trunks are automatically treated as answered).
  - When the user's **Mobile Time Profile**, if configured, is not active they will not get twinning calls. Calls will be treated the same as the user was logged out user with no twinning.
  - Callback calls initiated by the user will mature to the **Twinned Mobile Number**. It will also be possible to initiate Automatic Callback to the user with external twinning and their busy/free state will be tracked for all calls via the IP Office.
  - Any Bridged Appearance set to the user will not alert. Coverage appearance buttons for the user will continue to operate.
  - The BLF/user button status shown for a logged out user with **Logged Off Mobile Twinning** is as follows:
    - If there are any calls alerting or in progress through the IP Office to the twin the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have Busy on Held enabled.
    - If the user enables DND through Mobile Call Control or one-X Mobile client their status will show as DND/busy.
    - Calls from the IP Office di8aled direct to the users twinned destination rather than directed by twinning from their primary extension will not change the user's status.
- **Can have one-X Mobile Client:** *Default = Off, Software level = 4.2+ (IP500 digital trunks only).*
  one-X Mobile Client is a software application that can be installed on Windows Mobile and Symbian mobile cell phones. It allows the user to access a number of IP Office features. For details see one-X Mobile Client 669.
- **Can do Mobile Call Control:** *Default = Off, Software level = 4.2+ (IP500 digital trunks only).*
  Mobile call control is only supported on IP500 systems and only on digital trunks. It allows a user receiving a call on their twinned device to access IP Office dial tone and then perform dialing action including making calls and activating short codes. For details see Mobile Call Control 667.

6.7.17 Announcements

IP Office 4.0 supports user announcements with Voicemail Pro 4.0 and higher. Announcements are played to callers waiting to be answered.

- User announcements are supported with Voicemail Pro 4.0+ and Embedded Voicemail.
- If no voicemail channel is available for an announcement when required, the announcement is not played.
- In conjunction with Voicemail Pro, IP Office 4.0+ allows a number of voicemail channels to be reserved for announcements. See System | Voicemail 175.
- With Voicemail Pro, the announcement can be replaced by the action specified in a Queued (1st announcement) or Still Queued (2nd announcement) start point call flow for the user. Refer to the Voicemail Pro Installation and Maintenance documentation for details.
- Calls can be answered while hearing announcements. If it is a mandatory requirement that announcements should be heard before a call is answered then a Voicemail Pro call flow should be used before the call is presented to the user.
- If a call is rerouted, for example forwarded, the announcement plan of the original user is still applied until the call is answered. The exception is calls rerouted to a hunt group at which point the hunt group announcement settings are applied.
- For announcements to be used effectively, either the user's no answer time must be extended beyond the default 15 seconds or Voicemail On should be deselected.

Recording Announcements

- **Voicemail Pro**
  There is no mechanism within the telephony user interfaces (TUI) to record user announcements. To provide custom announcements, user queued and still queued start points must be configured with Voicemail Pro with the required prompts played by a generic action.
- **Embedded Voicemail**
  Embedded Voicemail does not include any default announcement or method for recording an announcement. The **Record Message** 447 short code feature is provided to allow the recording of announcements. The telephone number field of short codes using this feature requires the extension number followed by either ".1" for announcement 1 or ".2" for announcement 2. For example, for extension number 300, the short codes *1N# | Record Message | N".1" and *2N# | Record Message | N".2" could be used to allow recording of the announcements by dialing *1300# and *2300#.

User | Announcements	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **Announcements On:** *Default = Off, Software level = 4.0+.*
  Enables use of user announcements.
- **Wait before 1st announcement:** *Default = 10 seconds. Range = 0 to 9999 seconds.*
  This setting sets the time delay from the calls presentation to the user, either ringing or queued, after which the first announcement should be played to the caller.
- **Flag call as answered:** *Default = Off.*
  Normally for reporting purposes with the IP Office CCC and SBCC applications, a call is not regarded as answered until it has been answered by a person or by a Voicemail Pro action set to **Flag call as answered**. This setting allows the call to be marked as answered once the caller has heard the first announcement.
- **Post announcement tone:** *Default = Silence.*
  Following the first announcement, you can select whether the caller should hear Music on Hold, Ringing or Silence until answered or played another announcement.
- **2nd Announcement:** *Default = On.*
  If selected, a second announcement can be played to the caller if they have still not been answered.
- **Wait before 2nd announcement:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
  This setting sets the wait between the 1st and the 2nd announcement.
- **Repeat last announcement:** *Default = On.*
  If selected, the last announcement played to the caller is repeated until they are answered or hang-up.
- **Wait before repeat:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
  If Repeat last announcement is selected, this setting sets wait applied between each repeat of the last announcement.

6.7.18 SIP

This tab is only available when a SIP trunk with a SIP URI 241 entry has been added to the IP Office configuration.

Various fields within the URI settings used by SIP trunks can be set to Use User Data. When that is the case, the values from this tab are used inserted into the URI when the user makes or receives a SIP call.

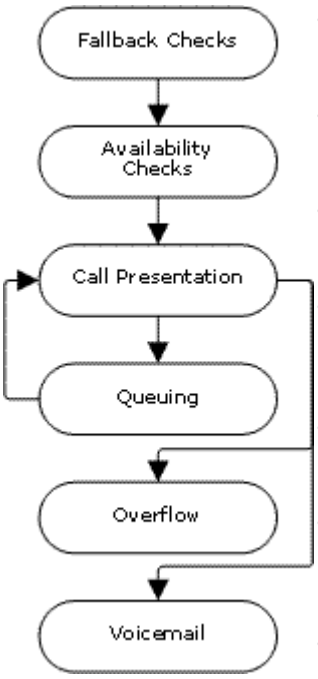
User | SIP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **SIP Name:** *Default = User name.*
  The value from this field is used when the From field of the SIP URI being used for a SIP call is set to ***Use User Data***.
- **SIP Display Name (Alias):** *Default = User name.*
  The value from this field is used when the Display Name field of the SIP URI being used for a SIP call is set to ***Use User Data***.
- **Contact:** *Default = User name.*
  The value from this field is used when the Contact field of the SIP URI being used for a SIP call is set to ***Use User Data***.
- **Anonymous:** *Default = Off.*
  If the From field in the SIP URI is set to ***Use User Data***, selecting this option inserts ***Anonymous*** into that field rather than the SIP Name set above.

6.8 Hunt Group Settings



A hunt group is a collection of users accessible through a single directory number. Calls to that hunt group can be answered by any available member of the group. The order in which calls are presented can be adjusted by selecting different group types and adjusting the order in which group members are listed. For a full overview of hunt groups, see Hunt Groups in the Telephone Features section.



- **Call Presentation**
  The order in which the available members of the hunt group are used for call presentation is selectable.
- **Availability**
  There are a range of factors which control whether hunt group calls are presented to a user in addition to that user being a member of the hunt group.
- **Queuing**
  This optional feature allows calls to be queued when the number of calls to be presented exceeds the number of available hunt group members to which call can be presented.
- **Announcements**
  On systems with a voicemail server (Voicemail Pro, Voicemail Lite or Embedded Voicemail), announcements can be played to callers waiting to be answered. That includes calls that are ringing and calls that are queued.
- **Overflow**
  This optional feature can be used to redirect calls to an overflow group or groups when not answered within a set time.
- **Fallback**
  A hunt group can be taken out of operation manually or using a time profile. During fallback, calls can be redirected to a fallback group or sent to voicemail or just receive busy tone. Two types of fallback are supported; night service and out of service.
- **Voicemail**
  Calls can be redirected to voicemail. The IP Office allows selection of whether hunt group calls remain in the hunt group mailbox or are copied to the individual mailboxes of the hunt group members. When messages are stored in the hunt group's own mailbox, selection of who receives message waiting indication is possible.

Changing the name of a hunt group has the following effects:

- A new empty mailbox is created on voicemail with the new hunt group name.
- Entries in other groups' Overflow lists will be updated.
- Out-of-Service and Night-Service fallback references are updated.

Modifying the extension number of a hunt group updates the following:

- Group buttons.
- Overflow, Out of Service Fallback and Night Service Fallback group entries.
- Incoming call route entries.

When a hunt group is deleted, all references to the deleted group will be removed including:

- Entry in Incoming call routing table.
- Transfer target in internal auto-attendant.
- Overflow, Night-Service or Fallback-Service on other groups.
- DSS keys monitoring group status.

Hunt Groups in a Small Community Network (SCN)

In a Small Community network, the extension numbers of users are automatically shared between IP Office systems and become diallable from other systems without any further programming.

The above does not apply to hunt group extension numbers. In order for users on one system to dial a hunt group on another system, short codes are required to route the call to the correct system. Through the addition of Advanced Small Community Networking licenses to each system, IP Office 4.0 introduces a number of options that make hunt groups automatically useable across an SCN without the addition of short codes.

- **Advertised Hunt Groups**
  Each hunt group can be set as being 'advertised'. The hunt group can then be dialed from other systems within the SCN. The hunt groups extension number and name must be unique within the network. Non-advertised hunt group numbers remain local only to system hosting the hunt group.
- **Distributed Hunt Groups**
  Hunt groups on a system can include users located on other IP Office systems within the SCN network. Distributed hunt groups are automatically advertised to other systems within the SCN. Note that distributed hunt groups can only be edited on the system on which they were created.

6.8.1 Hunt Group

Hunt Group | Hunt Group	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name:** *Range = Up to 15 characters*
  The name to identify this Hunt Group. Only alphanumeric characters with no spaces should be used. Do not start names with a numeric character. This field is case sensitive and must be unique.
  - Voicemail uses the name to match a group and its mailbox. Changing a group's name will route its voicemail calls to a new mailbox. Note however that Voicemail Pro will treat names such as "Sales", "sales" and "SALES" as being the same.
- **SBCC Agent Group:** *Default = Off, Software level = 4.2+.*
  This option is used in conjunction with IP Office SBCC application to indicate the groups for which it collects information. SBCC Agent Hunt Groups should only contain users who have been configured as **SBCC Agents** 266 (User | Telephony | Supervisor Settings) 266 option. When selected, the menus to select hunt group members will only show users configured as SBCC Agents and a warning will be given if the group already contains any users who are not SBCC Agents.
- **Extension:** *Range = 2 to 9 digits.*
  This sets the directory number for calls to the hunt group.
  - Groups for CBC and CCC should only use up to 4 digit extension numbers.
  - Extension numbers in the range 8897 to 9999 are reserved for use by the IP Office Delta Server.
- **Ring Mode:** *Default = Sequential*
  Sets how the IP Office determines which hunt group member to ring first and the next hunt group member to ring if unanswered. This is used in conjunction with the **Extension List** which list the order of group membership.
  - ***Collective*** (previously known as ***Group***)
    All available phones in the **Extension List** ring simultaneously.
  - ***Collective Call Waiting*** *(Software level = 3.0+)*
    This is a ***Collective*** hunt group as above but with hunt group call waiting also enabled (previous versions of Manager used a separate **Call Waiting On** control to select this option for a ***Collective*** group). When an additional call to the hunt group call is waiting to be answered, users in the group who are already on a call will receive call waiting indication. On phones with call appearance buttons, the call waiting indication takes the form of an alert on the next available call appearance button. On other phones, call waiting indication is given by a tone in the speech path (the tone is locale specific).
    - For pre-IP Office 4.0, all the users in the group must also have their own **Call Waiting On** 265 setting enabled.
    - For IP Office 4.0+ the user's own **Call Waiting On** setting is overridden when they are using a phone with call appearances. Otherwise the user's **Call Waiting On** setting is used in conjunction with the hunt group setting.
  - ***Sequential*** (previously known as ***Linear*** and ***Hunt***)
    Each extension is rung in order, one after the other, starting from the first extension in the list each time.
  - **Rotary** (previously known as ***Circular***)
    Each extension is rung in order, one after the other. However, the last extension used is remembered. The next call received rings the next extension in the list.
  - ***Longest Waiting*** (previously known as ***Idle*** and ***Most Idle***)
    The extension that has been unused for the longest period rings first, then the extension that has been idle second longest rings, etc. For extensions with equal idle time, 'sequential' mode is used.
    - For IP Office 4.2+, where hunt group calls are being presented to a twinned extension, the longest waiting status of the user can be reset by calls answered at either their master or twinned extension.
- **No Answer Time (secs):** *Default = System Default. Range = System Default or 1 to 99999 seconds.*
  The number of seconds an extension rings before the call is passed to another extension in the list. This applies to all telephones in this group and the Overflow Groups (if used). For collective hunt groups the idea of moving to the next member when the No Answer Time expires does not apply. Calls will ring until the call is answered or another timeout is applied. Note that Manager will display a warning if this value is set to over 3600 seconds.
- **Overflow Mode:** *Default = Group, Software level = 4.2+.*
  This option allows selection of whether overflow of queued calls is determined on a call by call basis or applied to all calls for the hunt group once any one call overflows.

- **Group**
  In this mode, once one call overflows all additional queued calls overflow immediately. This is equivalent to the overflow mode used by IP Office 4.0-4.1 systems.
- **Call**
  In this mode, each individual call will follow the groups overflow time settings before it overflows. This is equivalent to the overflow mode used by pre-IP Office 4.0 system.

- **Overflow Time:** *Default = Blank, Range = Off or 1 to 99999 seconds.*
  Calls that ring the hunt group members without being answered can be redirected to an overflow group or groups set in the **Overflow Group List** below. The **Overflow Time** setting is used to determine when a call should overflow. Note that Manager will display a warning if this value is set to over 3600 seconds.
  - If **Queuing** is off and all members of the hunt group are busy, a call presented to the group will overflow immediately, irrespective of the **Overflow Time**.
  - If **Queuing** is on and all members of the hunt group are busy, a call presented to the group may queue for up to the **Overflow Time** before overflowing.
  - If the call is currently ringing a hunt group member when the **Overflow Time** expires, it will complete ringing using the group's **No Answer Time** before overflowing.
  - If the **Overflow Time** is off, a call will overflow when it has rung each available hunt group member without being answered.
  - When a call overflows, it is still controlled by a number of settings of the hunt group from which it has overflowed.
    - Calls that overflow use the announcement settings of the original group from which they overflowed.
    - Calls that overflow use the Voicemail Time of the original group from which they overflowed.
    - Calls that overflow are included in the Queue Length and Calls In Queue Threshold of the hunt group from which they overflowed. They are not included in those values for the hunt group to which they overflow.
- **Hold Music Source:** *Default = No Change, Software level =4.2+ (Not Small Office Edition).*
  IP Office 4.2+ supports up to 4 music on hold sources, the ***System Source*** (either an internal file or the external source port or tones) plus up to 3 additional internal wav files, see System | Telephony | Tones & Music 179. Before reaching a hunt group, the source used is set by the IP Office system setting or by the **Incoming Call Route** 330 that routed the call. If the system has several hold music sources available, this field allows selection of the source to associate with calls presented to this hunt group or to leave it unchanged. The new source selection will then apply even if the call is forwarded or transferred out of the hunt group unless changed again by another hunt group. If the call is routed to another IP Office 4.2+ system in a Small Community Network, the matching source is used if available.
  - Calls overflowing from a hunt group will use the hold music source setting of the original hunt group and ignore the setting of the overflow group.
  - Calls going to night service or out of service fallback group use the hold music source setting of the original hunt group and then, if different, the setting of the fallback group. The setting of further fallback groups from the first are ignored.
- **Voicemail Answer Time:** *Default = 45 seconds, Range = Off, 1 to 99999 seconds, Software level = 4.0+.*
  This setting sets how long a call should be presented to a hunt group, and its overflow groups if set, before going to voicemail. When exceeded the call goes to voicemail (if available) regardless of any announcements, overflow, queuing or any other actions. If set to **Off**, voicemail is used when all available members of the hunt group have been altered for the no answer time.
- **Agent's Status on No-Answer Applies To:** *Default = None (No status change), Software level = 4.0+.*
  For call center agents, that is hunt group members with a log in code and set to forced log in, the IP Office can change the agent's status if they do not answer a hunt group call presented to them before being automatically presented to the next available agent.
  - This setting defines what type of hunt group calls should trigger use of the agent's Status on No Answer setting. The options are None, Any Call and External Inbound Calls Only.
  - The new status is set by the agent's **Status on No Answer** 266 (User | Telephony | Supervisor Settings) 266 setting.
  - This action is only applied if the call is unanswered at the agent for the hunt group's No Answer Time or longer. It does not apply if the call is presented and before the No Answer Time expires is answered elsewhere or the caller disconnects.
- **Central System:** *Software level = 4.0+.*
  This field is only visible if the IP Office has an Advanced Small Community Networking license. The field is for information only. It displays the IP Office system where the hunt group was created and can be configured.
- **Advertise Group:** *Default = Off, Software level = 4.0+.*
  This field is only visible if the IP Office has an Advanced Small Community Networking license. If On, details of the hunt group are advertised to the other systems within a Small Community Network and the hunt group can be dialled from those other systems without the need for routing short codes.
  - Advertised groups must have an extension number that is unique within the SCN. If an advertised hunt group's extension number conflicts with a local groups extension number, the advertised group is ignored.

- Group's set as advertised will appear in the configuration of other IP Office systems that also have an Advanced Small Community Networking license. However an advertised group can only be edited on the IP Office system on which it was created.
- Hunt groups that contain members from other IP Office systems are automatically advertised.
- Advertised groups are not saved as part of the configuration file when File | Save Configuration As is used.

- **Call Waiting On:** *Default = Off, Software level = 3.0+.*
  For IP Office Manager 6.2 and above, this control has been combined with the **Ring Type** option ***Collective***. See the **Ring Mode** setting ***Collective Call Waiting*** above.
- **Extension List**
  This is an ordered list of the users who are members of the hunt group. For Sequential and Rotary groups it sets the order in which members are used.
  - Repeated numbers can be used, for example 201, 202, 201, 203, etc. Each extension will ring for the number of seconds defined by the No Answer Time before moving to the next extension in the list, dependent on the Hunt Type chosen.
  - The check box next to each member indicates the status of their membership. Checked boxes appear for members whose membership is enabled. The order of the users can be changed by dragging the existing entries to the required position.
  - To add entries select Add. The available users are shown in the left-hand column. Those already in the group are shown in the right-hand column. Select a user or users and use the >> and << buttons to move them between the columns.
  - If the system has a **Advanced Small Community Networking** license, then users on remote systems in a Small Community Network with the same license can be included. Groups containing remote members are automatically advertised within the SCN. This feature requires entry of a **Advanced Small Community Networking** license on each system.
- **Overflow Group List**
  If a call cannot be answered by the extensions shown in the **Extension List**, the call can be passed to the available members of another hunt group or groups listed here. The hunt group ring mode type and no answer time of the overflow group are applied while it rings members of that overflow group. Other settings applied are those of the hunt group from which the call has overflowed.

6.8.2 Voicemail

IP Office supports voicemail for hunt groups in addition to individual user voicemail mailboxes.

- **When is voicemail used?**
  If voicemail is available and enabled for a hunt group, it is used in the following scenarios.
  - **Voicemail Answer Time**
    This timeout is supported by IP Office 4.0 and higher. The default is 30 seconds. When exceeded the call goes to voicemail (if available) regardless of any announcements, overflow, queuing or any other actions.
  - **Unanswered Calls**
    When a call has rung unanswered at all the available hunt group members. If overflow is being used that will include being unanswered by the available overflow group members.
  - **Queue Limit Reached**
    If queuing is being used, it overrides use of voicemail prior to expiry of the Voicemail Answer Time, unless the number of queued callers exceeds the set Queue Limit. By default there is no set limit.
  - **Night Service**
    When the hunt group is in night service with no Night Service Fallback Group set.
  - **Out of Service**
    When the hunt group is out of service with no Out of Service Fallback Group set.
  - **Automatic Call Recording**
    Incoming calls to a hunt group can be automatically recorded using the settings on the Hunt Group | Voice Recording 299 tab.
- **Which Mailbox is Used**
  For IP Office 3.2 and earlier, when voicemail was invoked, the mailbox of whichever hunt group was currently handling the call was used, for example the mailbox of the overflow or night service hunt group might be used if the call had gone from the original hunt group to an overflow or night server hunt group. For IP Office 4.0 and higher, the mailbox of the originally targeted hunt group is used even if the call has overflowed or gone to a night server hunt group.
- **Who Receives Message Waiting Indication?**
  By default no user is configured to receive message waiting indication when a hunt group voicemail mailbox contains new messages. Message waiting indication is configured by adding a **H*groupname*** entry to a user's SourceNumbers tab (User | Source Numbers 263).
- **Accessing Hunt Group Messages**
  By default no mechanism is provided for access to specific hunt group mailboxes.
  - **Phone Manager**
    User's with hunt group message waiting indication can access the hunt group mailbox through Phone Manager.
  - **Intuity Emulation Mailbox Mode**
    For IP Office systems using Intuity emulation mode mailboxes, the hunt group extension number and voicemail code can be used during normal mailbox access.
  - **IP Office Mailbox Mode**
    For IP Office mode mailbox access, short codes are required to access the mailbox directly.
- **Broadcast**
  The voicemail system can be instructed to automatically forward messages to the individual mailboxes of the hunt group members. The messages are not stored in the hunt group mailbox.

Hunt Group | Voicemail	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Voicemail Code:** *Default = Blank, Range = 0 to 15 digits*
  A code (1-15 digits) used by the voicemail server to validate access to this mailbox. If remote access is attempted to a mailbox that has no voicemail code set, the prompt "Remote access is not configured on this mailbox" is played. Whether the caller will be prompted to enter this code varies as follows:
  - **Embedded Voicemail**
    The voicemail code is used if set.
  - **Voicemail Lite/Voicemail Pro in IP Office mode**
    The voicemail code is required when accessing the mailbox from a location that is not set as a trusted number in the user's Source Numbers 263 list. Also Voicemail Pro call flows containing an action where the action's PIN code set to $ will prompt the user for their voicemail code.
  - **Voicemail Pro in Intuity Emulation mode**
    By default the voicemail code is required for all mailbox access. The first time the mailbox is accessed the user will be prompted to change the password. Also if the voicemail code setting is left blank, the caller will be prompted to set a code when they next access the mailbox. The requirement to enter the voicemail code can be removed by adding a customized user or default collect call flow, refer to the Voicemail Pro manuals for full details. Also Voicemail Pro call flows containing an action where the action's PIN code set to $ will prompt the user for their voicemail code.
  - Codes set through the Voicemail Pro telephone user interface are restricted to valid sequences. For example, attempting to enter a code that matches the mailbox extension, repeat the same number (1111) or a sequence of numbers (1234) are not allowed. If these types of code are required they can be entered through Manager.
- **Voicemail Email:** *Default = Blank (Disabled)*
  Messages for this hunt group can be sent to an email account. Enter the email address, for example jbloggs@example.com. Select the required Voicemail Email mode below. The Voicemail message is received by the email application as a .wav file and played through the speakers of the PC. Refer to the Voicemail Installation & Administration Manual for full details. This entry is not used for IMS.
- **Voicemail On:** *Default = On*
  This field enables the use of voicemail to take messages for the hunt group. It does not disable the voicemail mailbox being used as the target for other functions such as call recording or messages forwarded from other mailboxes.
- **Voicemail Help:** *Default = Off*
  For voicemail systems running IP Office mailbox mode, this option controls whether users retrieving messages are automatically given an additional prompt "For help at any time press 8." If switched off, users can still press 8 for help. For voicemail systems running in Intuity emulation mode, this option has no effect. On those systems the default access greeting always includes the prompt "For help at any time, press *4."
- **Broadcast:** *Default = Off, Software level = 3.0+.*
  If a voicemail message is left for the hunt group and Broadcast is enabled, copies of the message are forwarded to the mailboxes of the individual group members. The original message in the hunt group mailbox is deleted unless it occurred as the result of call recording.
- **Voicemail Email mode:** *Default = Off*
  If a Voicemail Email address has been entered above, select one of the following modes:
  - ***Off***
    Voicemail messages or notifications are not sent to the email account automatically.
  - ***Copy***
    A copy of the Voicemail message is sent to the email account.
  - ***Forward***
    Voicemail messages are sent to the email account and deleted from the Voicemail server.
  - ***Alert***
    Notification that a new Voicemail message has been received is sent to the email account.

6.8.3 Fallback

Fallback settings can be used to make a hunt group unavailable and to set where the hunt group's calls should be redirected at such times. Hunt groups can be manually placed In Service, Out of Service or in Night Service. Additionally using a time profile, a group can be automatically placed in Night Service when outside the Time Profile settings.

Summary: Fallback redirects a hunt group's calls when the hunt group is not available, for example outside normal working hours. It can be triggered either manually or using an associated time profile.

- **Hunt Group Service States**
  A hunt group can be in one of three states; In Service, Out of Service and Night Service. When In service, calls are presented as normal. In any other state calls are redirected.
- **Call Redirection During Fallback**
  The following options are possible when a hunt group is either Out of Service or in Night Service.
  - **Fallback Group**
    If an Out of Service Fallback Group or Night Service Fallback Group has been set, calls are redirected to that group.
  - **Voicemail**
    If no fallback group has been set but voicemail is available, calls are redirected to voicemail.
  - **Busy Tone**
    If no fallback group has been set and voicemail is not available, busy tone is returned to calls.
- **Manually Controlling the Service State**
  Manager and or short codes can be used to change the service state of a hunt group. The short code actions can also be assigned to programmable buttons on phones.
  - The  icon is used for a hunt group manually set to **Night Service** mode.
  - The  icon is used for a hunt group manually set to **Out of Service** mode.
- **Time Profile**
  A time profile can be associated with the hunt group. When outside the time profile, the hunt group is automatically place into night service. When inside the time profile, the hunt group uses manually selected mode.
  - When outside the time profile and therefore in night service, manual night service controls cannot be used to override the night service. However the hunt group can be put into out of service.
  - When a hunt group is in Night Service due to a time profile, this is not indicated within Manager.
  - For IP Office 4.0+, time profile operation does not affect hunt groups set to Out of Service.

Hunt Group | Fallback	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- Time Profile: Default = <None> (No automatic night service)

This field allows selection of a previously created Time Profile 336. That profile then specifies the times at which it should use the manually selected Service Mode settings. Outside the period defined in the time profile, the hunt group behaves as if set to Night Service mode.

Please note that when a hunt group is in Night Service due to it associated time profile, this is not reflected by the Service Mode on this tab. Note also that the manual controls for changing a hunt group's service mode cannot be used to take a hunt group out of time profile night service.

- **Out of Service Fallback Group:** *Default = <None> (Voicemail or Busy Tone)*
  This field sets the alternate hunt group destination for calls when this hunt group is in Out of Service mode. If left blank, calls are redirected to voicemail if available or otherwise receive busy tone.
- **Night Service Fallback Group:** *Default = <None> (Voicemail or Busy Tone)*
  This field sets the alternate hunt group destination for calls when this hunt group is in Night Service mode. If left blank, calls are redirected to voicemail if available or otherwise receive busy tone.
- **Service Mode:** *Default = In Service*
  This field is used to manually select the current service mode for the hunt group.
  - **Out of Service**
    When selected, calls are redirected using the Out of Service Fallback Group setting. This setting can also be manually controlled using the short code and button programming features Set Hunt Group Out of Service and Clear Hunt Group Out of Service.
  - or : **In Service**
    When selected the hunt group is enabled. This is the default mode.
  - **Night Service**
    When selected, calls are redirected using the Night Service Fallback Group setting. This setting can also be manually controlled using the short code and button programming features Set Hunt Group Night Service and Clear Hunt Group Night Service.

Hunt Group Fallback Controls

Hunt Group Fallback	
Manager	Hunt group fallback selection is done through the Hunt Group | Fallback 294 tab. A time profile if required is set through the Time Profile | Time Profile tab.
Controls	The following short code features/button programming actions can be used: **Feature/Action** | **Short Code** | **Default** | **Button** Set Hunt Group Night Service 454 | ✓ | *20*N# | ✓ - Toggles. Clear Hunt Group Night Service 414 | ✓ | *21*N# | ✓ Set Hunt Group Out of Service 454 | ✗ | ✗ | ✓- Toggles. Clear Hunt Group Out of Service 414 | ✗ | ✗ | ✓ Note that for a hunt group using a time profile, these controls only are only applied when the hunt group is within the specified time profile period. When outside its time profile, the hunt group is in night service mode and cannot be overridden.
Phone Manager	There are no specific controls for the operation of hunt group fallback.
SoftConsole	There are no specific controls for the operation of hunt group fallback.
Voicemail	There are no specific controls for the operation of hunt group fallback.

6.8.4 Queuing

When is a Call Queued
The definition of when a call is in a queue can vary:

- For pre-4.0 IP Office systems, calls to a hunt group were only queued when the number of calls waiting exceeded the number of available hunt group members that could be ringing. Using that definition, calls that were actually ringing were not regarded as queued.
- For IP Office 4.0+, any calls waiting to be answered at a hunt group are regarded as being queued. The **Normalise Queue Length** control allows selection of whether features that are triggered by the queue length should include or exclude ringing calls.

- **Additional Calls**
  Once one call is queued, any further calls are also queued. When an available hunt group member becomes idle, the first call in the queue is presented.
- **How Many Calls Can be Queued?**
  Calls are added to the queue until the hunt group's Queue Limit, if set, is reached.
  - When the queue limit is reached, any further calls are redirected to the hunt group's voicemail if available.
  - If voicemail is not available excess calls receive busy tone. An exception to this are analog trunk and T1 CAS trunk calls which will remain queued regardless of the queue limit if no alternate destination is available.
  - If an existing queued call is displaced by a higher priority call, the displaced call will remain queued even if it now exceeds the queue limit.
- **Queue Announcements**
  The method of hunt group announcements depends on the IP Office software level:
  - For pre-4.0 IP Office systems with Voicemail Pro or Voicemail Lite, announcements are applied to queued calls.
  - For IP Office 4.0+, hunt group announcements are separate from queuing. Announcements can be used even if queuing is turned off and are applied to ringing and queued calls. See Hunt Group | Announcements 306.
- **Queue Monitoring**
  There are several methods of displaying a hunt group queue.
  - **Group Button**
    On phones, with programmable buttons, the **Group** function can be assigned to monitor a specified group. The button indicates when there are calls ringing within the group and also when there are calls queued. The button can be used to answer the longest waiting call.
  - **Phone Manager and SoftConsole**
    Both these applications can display queue monitors for selected hunt groups, 2 using Phone Manager, 7 using SoftConsole. This requires the hunt group to have queuing enabled. These queues can be used to answer calls.
- **What Happens When A Hunt Group Members Becomes Available**
  When a hunt group member becomes available, the first call in the queue is presented to that member. If several members become available, the first call in the queue is simultaneously presented to all the free members.
- **Overflow Calls**
  Calls that overflow are counted in the queue of the original hunt group from which they overflow and not that of the hunt group to which they overflow. This affects the **Queue Limit** and **Calls in Queue Threshold**.

Hunt Group | Queuing	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Queuing On:** *Default = On*

  This settings allows calls to this hunt group to be queued. The normal  icon is replaced .

- **Queue Limit:** *Default = No Limit. Range = No Limit, 1 to 999 calls.*
  This setting can be used to limit the number of calls that can be queued. Calls exceeding this limit are passed to voicemail if available or otherwise receive busy tone. This value is affected by Normalize Queue Length setting.

  - If voicemail is not available excess calls receive busy tone. An exception to this is analog trunk and T1 CAS trunk calls which will remain queued regardless of the queue limit if no alternate destination is available. This is due to the limited call status signalling supported by those trunks which would otherwise create scenarios where the caller has received ringing from the local line provider and then suddenly gets busy from the IP Office, creating the impression that the call was answered and then hung up.
  - If priority is being used with incoming call routes, high priority calls are place ahead of lower priority calls. If this would exceed the queue limit the limit is temporarily increased by 1.
  - If an existing queued call is displaced by a higher priority call, the displaced call will remain queued even if it now exceeds the queue limit.

- **Normalize Queue Length:** *Default = Off, Software level = 4.0+.*
  Prior to IP Office 4.0 the call queue only included calls waiting to ring and did not include calls actually ringing. For IP Office 4.0+ calls both waiting to ring and ringing are regarded as being queued. This therefore affects the use of the Queue Limit and Calls in Queue Alarm thresholds. If Normalize Queue Length is enabled, the number of hunt group members logged in and not on DND is added to those thresholds.

  - **Example:** A customer has two products that it is selling through a call center with 10 available agents; one product with a $10 margin and one with a $100 margin. Separate hunt groups with the same 10 members are created for each product.
    - The $100 product has a Queue Limit of 5 and Normalize Queue Length is on. The maximum number of $100 calls that can be waiting to be answered will be 15 (10 ringing/connected + 5 waiting to ring).
    - The $10 product has a Queue Limit of 5 and Normalize Queue Length is off. The maximum number of $10 calls that can be waiting to be answered is 5 (5 ringing/connected).

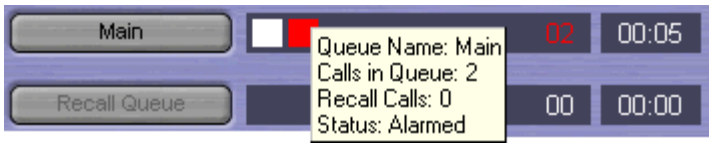
- **Queue Type:** *Default = Assign Call On Agent Answer, Software level = 4.2+.*
  When queuing is being used, the call that the agent receives when they answer can be assigned in one of two ways:

  - **Assign Call On Agent Answer**
    In this mode the call answered by the hunt group member will always be the longest waiting call of the highest priority. The same call will be shown on all ringing phones in the group. At the moment of answering that may not necessarily be the same call as was shown by the call details at the start of ringing. This is the default mode for IP Office 4.0+.
  - **Assign Call on Agent Alert**
    In this mode, once a call has been presented to a hunt group member, that is the call they will answer if they go off hook. This is similar to the method used for IP Office 3.2 and earlier. This mode should be used when calls are being presented to applications which use the call details such as a fax server, CTI or TAPI.

- **Queue Ring Time (secs):** *Default = 10 seconds. Range = 0 to 99999 seconds, Software level = Up to 3.2 only.*
  On systems with Voicemail Lite or Voicemail Pro, the voicemail system can provide announcements to queued callers. This setting controls the time before the first queued announcement is played to a queued caller. For IP Office 4.0+ this has been replaced by the Hunt Group \| Announcement 300 tab controls.

- **Calls In Queue Alarm:** *Software Level = 4.1+.*
  The IP Office can be set to send an alert to a specified extension when the number of calls queued for the hunt group reaches the specified threshold.

  - **Calls In Queue Threshold:** *Default = 1, Range = 1 to 99, Software level = 4.1+.*
    Alerting is triggered when the number of queued calls reaches this threshold. Alerting will stop only when the number of queued calls drops back below this threshold. This value is affected by **Normalize Queue Length** setting.
  - **Analog Extension to Notify:** *Default = <None>, Software Level = 4.1+.*
    This should be set to the extension number of a user associated with an analogue extension. The intention is that this analog extension port should be connected to a loud ringer or other alerting device and so is not used for making or receiving calls. The list will only shown analog extensions that are not members of any hunt group or the queuing alarm target for any other hunt group queue. Attempting to answer the alerting device will just give dial tone. The alert does not follow user settings such as forwarding, follow me, DND, call coverage, etc or receive ICLID information.

Hunt Group Queue Settings	
Manager	Hunt group queuing is enabled using the **Queuing On** option on the Hunt Group | Queuing 296 tab. When enabled, the  icon is used for the hunt group.
Controls	The following short code features/button programming actions can be used: <table><tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr><tr><td>Group</td><td>✗</td><td>✗</td><td>✓</td></tr></table>
Phone Manager	Phone manager Pro can be used to monitor up to two hunt group queues. This is configured by clicking and then on the Queue ID tab selecting the two hunt groups. During normal operation the Phone Manager user then has access to a Queue tab which is automatically given focus when calls become queued.
SoftConsole	SoftConsole can display up to 7 hunt group queues (an eight queue is reserved for recall calls). They are configured by clicking and selecting the Queue Mode tab. For each queue alarm threshold can be set based on number of queued calls and longest queued call time. Actions can then be selected for when a queue exceeds its alarm threshold; Automatically Restore SoftConsole, Ask me whether to restore SoftConsole or Ignore the Alarm.  Within the displayed queues, the number of queued calls is indicated and the time of the longest queued call is shown. Exceeding an alarm threshold is indicated by the queue icons changing from white to red. The longest waiting call in a queue can be answered by clicking on the adjacent button.

6.8.5 Voice Recording

When the IP Office system has a Voicemail Pro server installed, that server can be used for automatic recording of external calls. By default call recordings are placed into the hunt group's mailbox. Call recording also requires available conference resources similar to a 3-way conference.

- IP Office 4.0+ introduces the following changes to hunt group recording:
  - Calls to and from IP devices including those using Direct media can be recorded.
  - Hunt group recording stops if the call is transferred to another user who is not a member of the hunt group.
  - Calls parked or held by the user, pause recording until a member of the hunt group unparks the call or takes it off hold.
- For IP Office 4.1+, a destination mailbox other than the hunt group's own mailbox can be specified as the destination for recordings.

Hunt Group | Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Record Inbound:** *Default = None*
  Select whether inbound external calls to group members should be recorded. Options are ***On***, ***Mandatory*** and then various percentages of the calls received by the group members.
  - ***On***
    Record the call if possible.
  - ***Mandatory***
    If not possible to record, return busy tone to the caller.
- **Record Time Profile:** *Default = <None> (Any time)*
  Used to select a time profile 336 during which automatic call recording setting above apply.
- **Auto Recording Mailbox:** *Default = <hunt group's own mailbox>, Software level = 4.1+.*
  Sets the mailbox into which automatically triggered recordings are placed.
  - **Voice Recording Library:** *Default = Off, Software level = 3.0+.*
    When checked, this setting overrides the **Auto Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

6.8.6 Announcements

This tab is new for IP Office 4.0 and higher. Unlike pre-4.0 IP Office systems, this method of using announcements is independent of hunt group queuing.

Announcements are played to callers waiting to be answered. This includes callers being presented to hunt group members, ie. ringing, and callers queued for presentation.

- IP Office 4.0+ supports hunt group announcement using Voicemail Pro, Voicemail Lite and Embedded Voicemail.
- If no voicemail channel is available for an announcement when required, the announcement is not played.
- In conjunction with Voicemail Pro, IP Office 4.0+ allows a number of voicemail channels to be reserved for announcements. See System | Voicemail 175.
- With Voicemail Pro, the announcement can be replaced by the action specified in a Queued (1st announcement) or Still Queued (2nd announcement) start point call flow for the hunt group. Refer to the Voicemail Pro Installation and Maintenance documentation for details.
- Calls can be answered while hearing announcements. If it is a mandatory requirement that announcements should be heard before a call is answered then a Voicemail Pro call flow should be used before the call is presented to the hunt group.
- If a call is rerouted to a hunt group's Night Service Group or Out of Service Fallback Group, the announcements of the new group are applied.
- If a call overflows, the announcements of the original group are still applied, not those of the overflow group.
- For announcements to be used effectively, the hunt group's **Voicemail Answer Time** must be extended or **Voicemail On** must be unselected.

Recording the Hunt Group Announcement

Voicemail Lite and Voicemail Pro provide the default announcement *"I'm afraid all the operators are still busy but please hold and you will be transferred when somebody becomes available"*. This default is used for announcement 1 and announcement 2 if no specific hunt group announcement has been recorded. Embedded Voicemail does not provide any default announcement.

The maximum length for announcements is 10 minutes. New announcements can be recorded using the following methods:

- **Voicemail Lite**
  Access the hunt group mailbox and press 3. Then press either 3 to record the 1st announcement for the hunt group or 4 to record the 2nd announcement for the hunt group.
- **Voicemail Pro - IP Office Mode**
  This is the same as Voicemail Lite above.
- **Voicemail Pro - Intuity Emulation Mode**
  There is no mechanism within the Intuity telephony user interface (TUI) to record hunt group announcements. To provide custom announcements, hunt group queued and still queued start points must be configured with Voicemail Pro with the required prompts played by a generic action.
- **Embedded Voicemail**
  Embedded Voicemail does not include any default announcement or method for recording an announcement. The **Record Message** 447 short code feature is provided to allow the recording of announcements. The telephone number field of short codes using this feature requires the extension number followed by either ".1" for announcement 1 or ".2" for announcement 2. For example, for extension number 300, the short codes *1N# | Record Message | N".1" and *2N# | Record Message | N".2" could be used to allow recording of the announcements by dialing *1300# and *2300#.

Hunt Group | Announcements	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **Announcements On:** *Default = Off.*
  This setting enables or disables announcements for the hunt group.
- **Wait before 1st announcement:** *Default = 10 seconds. Range = 0 to 9999 seconds.*
  This setting sets the time delay from the calls presentation to the hunt group, either ringing or queued, after which the first announcement should be played to the caller. If Synchronize Calls is selected (see below), the actual wait may vary between immediate (0) and the wait interval plus the announcement length.
- **Flag call as answered:** *Default = Off.*
  Normally for reporting purposes with the IP Office CCC and SBCC applications, a call is not regarded as answered until it has been answered by a person or by a Voicemail Pro action set to **Flag call as answered**. This setting allows the call to be marked as answered once the caller has heard the first announcement.
- **Post announcement tone:** *Default = Music on hold.*
  Following the first announcement, you can select whether the caller should hear Music on Hold, Ringing or Silence until answered or played another announcement.
- **2nd Announcement:** *Default = On.*
  If selected, a second announcement can be played to the caller if they have still not been answered.
- **Wait before 2nd announcement:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
  This setting sets the wait between the 1st and the 2nd announcement. If **Synchronize Calls** is selected (see below), the actual wait may vary between immediate (0) and the wait interval plus the announcement length.
- **Repeat last announcement:** *Default = On.*
  If selected, the last announcement played to the caller is repeated until they are answered or hang-up.
- **Wait before repeat:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
  If Repeat last announcement is selected, this setting sets wait applied between each repeat of the last announcement. If Synchronize Calls is selected, this value is grayed out and set to match the Wait before 2nd announcement setting.
- **Synchronize calls:** *Default = Off*
  This option can be used to restrict how many voicemail channels are required to provide the groups announcements.
  - When **Synchronize** calls is off (the default), the announcement pattern is followed individually for each call. This requires a separate voicemail channel each time an announcement is played to each caller. While this ensures accurate following of the timing of the announcement pattern, it does not make efficient use of voicemail channels.
  - When **Synchronize calls** is on, if a required announcement is already being played to another caller, pending callers for the same announcement wait until it has been completed and can be restarted. In addition when a caller has waited for the set wait period and the announcement is started, any other callers waiting for the same announcement hear it even if they have not waited for the full wait period. Using this the maximum number of voicemail channels ever needed by the hunt group for announcements is 1 or 2 depending on the number of selected announcements. When on, the wait for each announcement may vary.
    - **Note: Interaction with Voicemail Pro Queued and Still Queued Start Points**
      If either custom **Queued** or **Still Queued** start point call flows are being used for the announcements, when **Synchronize Calls** is enabled those call flows will support the playing of prompts only. Voicemail Pro actions such as **Speak ETA**, **Speak Position**, **Menu**, **Leave Mail**, **Transfer** and **Assisted Transfer**, etc. are not supported.

6.8.7 Hunt Group Operation

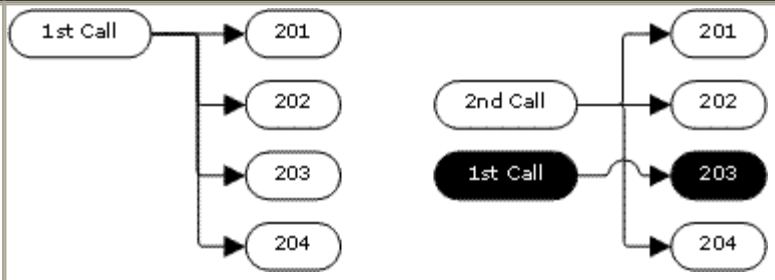
6.8.7.1 Hunt Types

At its most basic, a hunt groups settings consist of a hunt group name, an extension number, a list of hunt group members and a hunt type selection. It is the last two settings which determine the order in which incoming calls are presented to hunt group members.

The available hunt types are; Collective, Sequential, Rotary and Longest Waiting. These work are follows:

Collective Group (formerly Group Group)

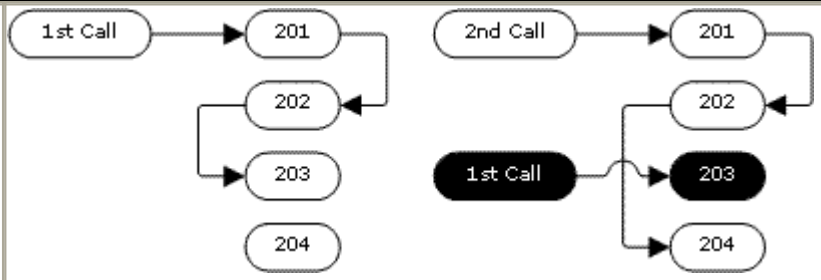
An incoming call is presented simultaneously to all the available hunt group members.



Sequential Group (formerly Hunt or Linear Group)

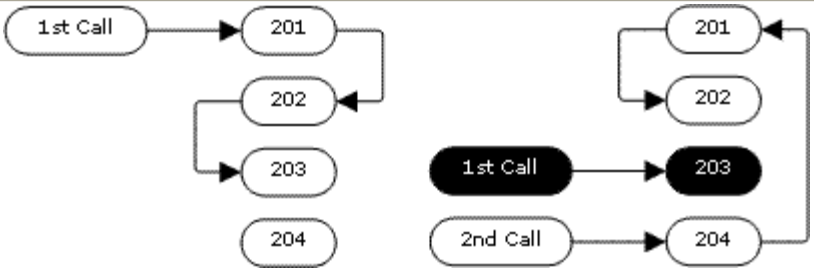
An incoming call is presented to the first available member in the list. If unanswered, it is presented to the next available member in the list.

The next incoming call uses the same order. It is presented to the available members starting again from the top of the list.



Rotary Hunt Type (formerly Circular Group)

This hunt type operates similarly to Sequential. However the starting point for call presentation is the first available member after the last member to answer a call.



Longest Waiting Hunt Type (formerly Idle or Most Idle)

This hunt type does not present calls to hunt group members in the order that they are listed. It presents calls using the order of how long the available hunt group members have been idle.

An incoming call is first presented to the available member who has been idle the longest. If unanswered it is presented to the next longest idle member.

- For IP Office 4.2+, where hunt group calls are being presented to a twinned extension, the longest waiting status of the user can be reset by calls answered at either their master or twinned extension.

6.8.7.2 Call Presentation

Summary: Calls are presented to each available hunt group member in turn. If having been presented to all the available members, none answers, the call is redirected to voicemail if available, otherwise it continues to be presented to the next available member.

In addition to the summary, options exist to have calls queued or to have calls redirected to overflow groups.

- **First and Next Available Members**
  The first available member to which a call is presented and the order of the next available members to which a call is presented are determined by the hunt group's Hunt Type 302 setting.
- **Additional Calls**
  When additional calls are waiting to be presented, additional available hunt group members are alerted using the hunt group type. The way additional calls are presented if there are available members depends on the IP Office software level.
  - **Pre-IP Office 4.0**
    Additional calls ring around the group separately. This means that additional calls may be answered ahead of the first call.
  - **IP Office 4.0 and Higher**
    When any member answers a call it will be the first waiting call that is answered.
- **No Available Members**
  If the number of incoming calls exceeds the number of available members to which calls can be presented, the following actions are usable in order of precedence.
  - **Queuing**
    If queuing has been enabled for the hunt, it is applied to the excess calls up to the limits specified for the number of queued calls or length of time queued.
  - **Voicemail**
    If voicemail has been enabled for the hunt group, excess calls are directed to voicemail.
  - **Busy Tone**
    Busy tone is returned to the excess calls (except analogue and T1 CAS calls which remain queued).
- **No Answer Time**
  This value is used to determine how long a call should ring at a hunt group member before being presented to the next available hunt group member. The **System | Telephony | Telephony | No Answer Time** setting is used unless a specific **Hunt | Hunt Group | No Answer Time** is set.
- **Voicemail**
  If voicemail is being used, if having been presented to all the available group members the call is still not answered then it goes to voicemail. For IP Office 4.0 and higher, the call will also go to voicemail when the hunt groups Voicemail Answer Time is exceeded.
  - For IP Office 3.2 and earlier, when voicemail was invoked, the mailbox of whichever hunt group was currently handling the call was used, for example the mailbox of the overflow or night service hunt group might be used if the call had gone from the original hunt group to an overflow or night server hunt group. For IP Office 4.0 and higher, the mailbox of the originally targeted hunt group is used even if the call has overflowed or gone to a night server hunt group.
- **Calls Not Being Answered Quick Enough - Overflow**
  In addition to ringing at each available member for the No Answer Time, a separate Overflow Time can be set. When a calls total ring time against the group exceeds this, the call can be redirected to an overflow group or groups.
- **No Available Member Answers**
  If a call has been presented unanswered to all the available members, either of two actions can be applied. If voicemail is available, the call is redirected to voicemail. If otherwise, the call will continue being presented to hunt group members until answered or, if set, overflow is used.
- **Call Waiting**
  For hunt groups using the Group hunt type, call waiting can be used.

6.8.7.3 Member Availability

Summary: Details when a hunt group member is seen as being available to be presented a hunt group call.

The Hunt Group settings within Manager list those users who are members of the hunt group and therefore may receive calls directed to that hunt group. However there are a range of factors that can affect whether a particular hunt group member is available to take hunt group calls at any time.

- **Existing Connected Call**
  Users with an existing connected call are not available to further hunt group calls. This is regardless of the type of connected call, whether the user has available call appearance buttons or is using call waiting.
  - **Hunt Group Call Waiting**
    For Collective hunt groups call waiting can be enabled using the **Ring Type** of ***Collective Call Waiting***.
- **Logged On/Logged Off**
  IP Office allows user's to log in and out extensions, a process known as 'hot desking'. Whilst a user is logged out they are not available to receive hunt group calls.
  - For IP Office 4.2, Mobile Twinning users with both **Hunt group calls eligible for mobile twinning** and **Twin when logged out** selected will still receive hunt group calls unless they switch off twinning.
- **Membership Enabled/Disabled**
  The IP Office provides controls to temporarily disable a users' membership of a hunt group. Whilst disabled, the user is not available to receive calls directed to that hunt group.
- **Do Not Disturb**
  This function is used by users to indicate that they do not want to receive any calls. This includes hunt group calls. In call center environments this state is also known as 'Busy Not Available'. See Do Not Disturb 690.
- **Busy on Held**
  When a user has a held call, they can receive other calls including hunt group calls. The Busy on Held settings can be used to indicate that the user is not available to further calls when they have a held call.
- **Forward Unconditional**
  Users set to Forward Unconditional are by default not available to hunt group calls. The IP Office allows the forwarding of hunt group calls to be selected as an option.
- **Idle /Off Hook**
  The hunt group member must be idle in order to receive hunt group call ringing.
- **No Available Members**
  If queuing has been enabled, calls will be queued. If queuing has not been enabled, calls will go to the overflow group if set, even if the overflow time is not set or is set to 0. If queuing is not enabled and no overflow is set, calls will go to voicemail. If voicemail is not available, external calls go to the incoming call routes fallback destination while internal calls receive busy indication.

Hunt Group Member Availability Settings	
Manager	Forwarding and do not disturb controls for a user are found on the User | Forwarding 269 and User | DND 261 tabs. Enabling and disabling a users hunt group membership is done by ticking or unticking the user entry in the hunt group's extensions list on the Hunt Group | Hunt Group 289 tab.
Controls	The following short code features/button programming actions can be used:

Feature/Action	Short Code	Default	Button
Hunt Group Enable 441	✓	✗	✓HGEna - Toggles.
Hunt Group Disable 441	✓	✗	✓HGDis
Forward Hunt Group On 433	✓	✓-*50	✓FwDH+ - Toggles
Forward Hunt Group Off 433	✓	✓-*51	✓FwDH-
Busy on Held 402	✓	✗	✓BusyH
Do Not Disturb On 427	✓	✓-*08	✓DNDOn - Toggles
Do Not Disturb Off 427	✓	✓-*09	✓DNDOf
Extn Login 429	✓	✓-*35*N#	✓Login
Extn Logout 429	✓	✓-*36	✓Logof

Phone Manager	DND, Forwarding and Busy on Held can all be controlled through Phone Manager. They are accessed by clicking and then selecting the Do Not Disturb, Forwarding or Telephone tabs respectively. Phone Manager Pro users can select agent mode by clicking, selecting the Agent Mode tab and selecting Agent Mode. In this mode, Phone Manager provides icons for Busy Wrap Up (Hunt group disable) and Busy Not Available (DND). It also allows individual selection of which group memberships are enabled. Phone Manager can also be used to log in and log out when the application is started or stopped.
SoftConsole	A SoftConsole user can view and edit a user's settings. Through the directory, select the required user. Their current status including DND, Logged In and hunt group membership states are shown and can be changed. Forwarding settings can be accessed by then selecting Forwarding.

6.8.7.4 Example Hunt Group

The follow are simple examples of how a department might use the facilities of an IP Office hunt group.

1. Basic Hunt Group	
Scenario	The Sales department want all sales related calls to be presented first to Jane, then Peter and finally Anne.
Actions	1. Create a hunt group named Sales and assign it an extension number. 2. Set the Hunt Type to Sequential. 3. Add Jane, Peter and Ann to the Extension List in that order. 4. Turn off queuing on the Queuing tab and voicemail on the Voicemail tab. 5. Route relevant calls to the Sales group by selecting it as the destination in the appropriate Incoming Call Routes.
Results	Any call received by the Sales hunt group is first presented to Jane if she is available. If Jane is not available or does not answer within 15 seconds the call is presented to Peter. If Peter is not available or does not answer within 15 seconds the call goes Anne. Since voicemail is not on, the call will continue to be presented around the group members in that order until it is answered or the callers hangs up.

2. Adding Voicemail Support	
Scenario	An IP Office voicemail server (Voicemail Lite or Voicemail Pro) has now been added to the IP Office system. The Sales department wants to use it to take messages from unanswered callers. When messages are left, they want Jane to receive message waiting indication.
Actions	1. Open the Sales hunt group settings and select Voicemail On on the Voicemail tab. 2. Select the User settings for Jane. On the Source Numbers tab, add the entry HSales.
Results	Once a call to the Sales group has been presented to all the available members, if it is still unanswered then the call will be redirected to the group's voicemail mailbox to leave a message. When a message has been left, the message waiting indication lamp on Jane's phone is lit.

3. Using the Queuing Facility	
Scenario	The Sales department now wants calls queued when no one is available to answer. However if the number of queued calls exceeds 3 they then want any further callers directed to voicemail.
Actions	1. Open the Sales hunt group settings and select Queuing On on the Queuing tab. 2. Set the Queue Limit to 3.
Results	When the Sales group are all on calls or ringing, any further calls to the group are queued and receive queuing announcements from the voicemail server. When the number of queued calls exceeds 3, any further calls are routed to the group's voicemail mailbox.

4. Using Out of Service Fallback	
Scenario	During team meetings, the Sales department want their calls redirected to another group, for this example Support.
Actions	1. Open the Sales hunt group settings and select the Fallback tab. In the Out of Service Fallback Group field select the Support group. 2. Create a system short code *98 / 300 / Set Hunt Group Out of Service. 3. Create a system short code *99 / 300 / Clear Hunt Group Out of Service.
Results	Prior to team meetings, dialing *98 puts the Sales group into out of service mode. Its calls are then redirected to the Support group. Following the meeting, dialing *99 puts the Sales group back In Service.

5. Using a Night Service Time Profile	
Scenario	Outside their normal business hours the Sales department want their group calls automatically sent to voicemail. This can be done using a time profile and leaving the Night Service Fallback Group setting blank.

Actions	1. Create a Time Profile called Sales Hours and in it enter the time during which the Sales department are normally available. 2. Open the Sales hunt group settings and select the Fallback tab. 3. In the Time Profile field select Sales Hours.
Results	Outside the normal business hours set in the time profile, the Sales hunt group is automatically put into Night Service mode. Since no Night Service Fallback Group has been set, calls are redirected to voicemail.

6.8.7.5 CBC/CCC Agents and Hunt Groups

The use of and reporting on hunt groups is a key feature of call center operation. For IP Office, reporting is provided through the Compact Business Center (CBC) or Compact Contact Center (CCC) applications.

In order for these applications to provide hunt group and hunt group user (agent) reports, the following rules apply:

- The hunt group names must be restricted to a maximum of 12 characters.
- The hunt group and user extension numbers should be a maximum of 4 digits.
- Hunt group members should be given a Login Code and set to Force Login.
- The agent state Busy Not Available is equivalent to Do Not Disturb. The agent state Busy Wrap Up is equivalent to hunt group disable.

6.9 Short Code Form



This form is used to create System Short Codes. System short codes can be dialed by all IP Office users. However the system short code is ignored if the user dialing matches a user short code or user restriction short code. For full details on short code usage and parameter see the section Short Codes 386.

Short Code | Short Code	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Short Code** 387
  The dialing digits used to trigger the short code. Maximum length 31 characters.
- **Telephone Number** 387
  The number dialed by the short code or parameters for the short code feature. This field can contain numbers and characters. For example, it can contain Voicemail Pro start point names, user names, hunt group names and telephone numbers (including those with special characters). Maximum length 31 characters.
  - **Dialing Complete**
    The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.
- **Line Group ID:** *Default = 0*
  For short codes that result in the dialing of a number, that is short codes with a Dial feature, this field is used to enter the initially routing destination of the call. The drop down can be used to select the following from the displayed list:
  - **Outgoing Group ID**
    The Outgoing Group ID's current setup within the IP Office configuration are listed. If an **Outgoing Group ID** is selected, the call will be routed to the first available line or channel within that group.
  - **ARS**
    For IP Office 4.0+ systems, the ARS entries currently configured in the system are listed. If an ARS entry is selected, the call will be routed by the setting within that ARS entry. Refer to ARS Overview 377.
- **Feature** 398
  Select the action to be performed by the short code.
- **Locale** 750**:** *Default = Blank*
  For short codes that route calls to voicemail, this field can be used to set the prompts locale that should be used if available on the voicemail server. See
- **Force Account Code:** *Default = Off.*
  For short codes that result in the dialing of a number, this field trigger the user being prompted to enter a valid account code before the call is allowed to continue.
- **Force Authorization Code:** *Default = Off*
  This option is only shown on systems where authorization codes have been enabled, see Authorization Codes 375. If selected, then for short codes that result in the dialing of a number, the user is required to enter a valid authorization code in order to continue the call.

6.10 Service Settings



Services are used to configure the settings required when a user or device on the IP Office LAN needs to connect to a off-switch data service such as the Internet or another network. Services can be used when making data connections via trunk or WAN interfaces.

Once a service is created, it can be used as the destination for an IP Route entry. One service can also be set as the Default Service. That service will then be used for any data traffic received by the IP Office for which no IP Route is specified.

The IP Office supports three types of service:

-  **Normal Service**
  This type of service should be selected when for example, connecting to an ISP.
-  **WAN Service**
  This type of service is used when creating a WAN link. A User and RAS Service will also be created with the same name. These three entries are automatically linked and each open the same form. Note however, that this type of Service cannot be used if the Encrypted Password option is checked. In this case the RAS Service name must match the Account Name. Therefore either create each entry manually or create an Intranet Service.
-  **Intranet Service**
  This type of service can be selected to automatically create a User with the same name at the same time. These two entries are linked and will each open the same form. The User's password is entered in the Incoming Password field at the bottom on the Service tab. An Intranet Services shares the same configuration tabs as those available to the WAN Service.

6.10.1 Service

Service | Service	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name**
  The name of the service. It is recommended that only alphanumeric characters be used.
- **Account Name**
  The User Name that is used to authenticate the connection. This is provided by the ISP or remote system.
- **Password:** *Default = Blank*
  Enter the password that is used to authenticate the connection. This is provided by the ISP or remote system.
- **Telephone Number:** *Default = Blank*
  If the connection is to be made via ISDN enter the telephone number to be dialed. This is provided by the ISP or remote system.
- **Firewall Profile:** *Default = Internet01 if present, otherwise <None>*
  From the list box select the Firewall Profile that is used to allow/disallow protocols through this Service.
- **Encrypted Password:** *Default = Off*
  When enabled the password is authenticated via CHAP (this must also be supported at the remote end). If disabled, PAP is used as the authentication method.
- **Default Route:** *Default = Off*
  When enabled this Service is the default route for data packets unless a blank IP Route has been defined in the IP Office IP Routes 343. A green arrow appears to the left of the Service in the Configuration Tree. Only one Service can be the default route. If disabled, a route must be created under IP Route.
- **Incoming Password:** *Default = Blank*
  Shown on WAN and Intranet services. Enter the password that will be used to authenticate the connection from the remote Control Unit. (If this field has appeared because you have created a Service and User of the same name, this is the password you entered in the User's Password field).

6.10.2 Bandwidth

These options give the ability to make ISDN calls between sites only when there is data to be sent or sufficient data to warrant an additional call. The calls are made automatically without the users being aware of when calls begin or end. Using ISDN it is possible to establish a data call and be passing data in less that a second. Note: the system will check **Minimum Call Time** first, then **Idle Period**, then the **Active Idle Period**.

Service | Bandwidth	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Minimum No of Channels:** *Default = 1. Range = 1 to 30.*
  Defines the number of channels used to connect for an outgoing connection. The initial channel must be established and stable, before further calls are made.
- **Maximum No of Channels:** *Default = 1. Range = 1 to 30.*
  Defines the maximum number of channels to can be used. This field should contain a value equal to or greater than the Minimum Channels field.
- **Extra BW Threshold:** *Default = 50%. Range = 0 to 100%.*
  Defines the utilization threshold at which extra channels are connected. The value entered is a %. The % utilization is calculated over the total number of channels in use at any time, which may be one, two etc.
  - For example, if **Minimum Channels** set to 1, **Maximum Channels** set to 2 and **Extra Bandwidth** set to 50 - once 50% of first channel has been used the second channel is connected.
- **Reduce BW Threshold:** *Default = 10%. Range = 0 to 100%.*
  Defines the utilization threshold at which additional channels are disconnected. The value entered is a %. Additional calls are only dropped when the % utilization, calculated over the total number of channels in use, falls below the % value set for a time period defined by the Service-Idle Time. The last call (calls - if Minimum Calls is greater than 1) to the Service is only dropped if the % utilization falls to 0, for a time period defined by the Service-Idle Time. Only used when 2 or more channels are set above.
  - For example, if Minimum Channels set to 1, Maximum Channels set to 2 and Reduce Bandwidth is set to 10 - once the usage of the 2 channels drops to 10% the number of channels used is 1.
- **Callback Telephone Number:** *Default = Blank*
  The number that is given to the remote service, via BAP, which the remote Control Unit then dials to allow the bandwidth to be increased. Incoming Call routing and RAS Services must be appropriately configured.
- **Idle Period (secs):** *Default = 10 seconds. Range = 0 to 999999 seconds.*
  The time period, in seconds, required to expire after the line has gone idle. At this point the call is considered inactive and is completely closed.
  - For example, the 'Idle Period' is set to X seconds. X seconds before the 'Active Idle Period' timeouts the Control Unit checks the packets being transmitted/received, if there is nothing then at the end of the 'Active Idle Period' the session is closed & the line is dropped. If there are some packets being transmitted or received then the line stays up. After the 'Active Idle Period' has timed out the system performs the same check every X seconds, until there are no packets being transferred and the session is closed and the line dropped.
- **Active Idle Period (secs):** *Default = 180 seconds. Range = 0 to 999999 seconds.*
  Sets the time period during which time the line has gone idle but there are still active sessions in progress (for example an FTP is in process, but not actually passing data at the moment). Only after this timeout will call be dropped.
  - For example, you are downloading a file from your PC and for some reason the other end has stopped responding, (the remote site may have a problem etc.) the line is idle, not down, no data is being transmitted/ received but the file download session is still active. After the set time period of being in this state the line will drop and the sessions close. You may receive a remote server timeout error on your PC in the Browser/FTP client you were using.
- **Minimum Call Time (secs):** *Default = 60 seconds. Range = 0 to 999999 seconds.*
  Sets the minimum time that a call is held up after initial connection. This is useful if you pay a minimum call charge every time a call is made, no matter the actual length of the call. The minimum call time should be set to match that provided by the line provider.
- **Extra BW Mode:** *Default = Incoming Outgoing*
  Defines the mode of operation used to increases bandwidth to the initial call to the remote Service.
  - ***Outgoing Only***
    Bandwidth is added by making outgoing calls.
  - ***Incoming Only***
    Bandwidth is added by the remote service calling back on the BACP number (assuming that BACP is successfully negotiated).
  - ***Outgoing Incoming***
    Uses both methods but bandwidth is first added using outgoing calls.

- ***Incoming Outgoing***
  Uses both methods but bandwidth is first added using incoming BACP calls.

6.10.3 IP

The fields in this tab are used to configure network addressing for the services you are running. Depending on how your network is configured, the use of Network Address Translation (NAT) 712 may be required.

Service | IP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **IP Address:** *Default = 0.0.0.0 (address assigned by ISP)*
  An address should only be entered here if a specific IP address and mask have been provided by the Service Provider. Note that if the address is in a different domain from the IP Office then NAT is automatically enabled.
- **IP Mask:** *Default = 0.0.0.0 (use NAT)*
  Enter the IP Mask associated with the IP Address if an address is entered.
- **Primary Transfer IP Address:** *Default = 0.0.0.0 (No transfer)*
  This address acts as a primary address for incoming IP traffic. All incoming IP packets without a session are translated to this address. This would normally be set to the local mail or web server address.
  - For IP Office control units supporting a LAN1 and LAN2, the primary transfer address for each LAN can be set through the System | LAN1 168 and System | LAN2 173 tabs.
- **Request DNS:** *Default = Off*
  When selected, DNS information is obtained from the service provider. To use this, the DNS Server addresses set in the IP Office configuration (System | DNS 174) should be blank. The PC making the DNS request should have the IP Office set as its DNS Server. For DHCP clients the IP Office will provide its own address as the DNS server.
- **Forward Multicast Messages:** *Default = On*
  By default this option is on. Multicasting allows WAN bandwidth to be maximized through the reduction of traffic that needs to be passed between sites.
- **RIP Mode:** *Default = None*
  Routing Information Protocol (RIP) is a method by which network routers can exchange information about device locations and routes. RIP can be used within small networks to allow dynamic route configuration as opposed to static configuration using.
  - ***None***
    The LAN does not listen to or send RIP messages.
  - ***Listen Only (Passive)***
    Listen to RIP-1 and RIP-2 messages in order to learn RIP routes on the network.
  - ***RIP1***
    Listen to RIP-1 and RIP-2 messages and send RIP-1 responses as a sub-network broadcast.
  - ***RIP2 Broadcast (RIP1 Compatibility)***
    Listen to RIP-1 and RIP-2 messages and send RIP-2 responses as a sub-network broadcast.
  - ***RIP2 Multicast***
    Listen to RIP-1 and RIP-2 messages and send RIP-2 responses to the RIP-2 multicast address.

6.10.4 Autoconnect

Fields in this tab enable you to set up automatic connections to the specified Service.

Service | Autoconnect	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Auto Connect Interval (mins):** *Default = 0 (disabled). Range = 0 to 99999 minutes.*
  This field defines how often this Service will automatically be called ("polled"). For example setting 60 means the system will call this Service every hour in the absence of any normally generated call (this timer is reset for every call; therefore if the service is already connected, then no additional calls are made). This is ideal for SMTP Mail polling from Internet Service Providers.
- **Auto Connect Time Profile:** *Default = <None>*
  Allows the selection of any configured Time Profiles. The selected profile controls the time period during which automatic connections to the service are made. It does NOT mean that connection to that service is barred outside of these hours. For example, if a time profile called "Working Hours" is selected, where the profile is defined to be 9:00AM to 6:00PM Monday to Friday, then automatic connection to the service will not be made unless its within the defined profile. If there is an existing connection to the service at 9:00AM, then the connection will continue. If there is no connection, then an automatic connection will be made at 9:00AM.

6.10.5 Quota

Quotas are associated with outgoing calls, they place a time limit on calls to a particular IP Service. This avoids excessive call charges when perhaps something changes on your network and call frequency increases unintentionally.

Service | Quota	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Quota Time (mins):** *Default = 240 minutes. Range = 0 to 99999 minutes.*
  Defines the number of minutes used in the quota. When the quota time is used up no further data can be passed to this service. This feature is useful to stop things like an internet game keeping a call to your ISP open for a long period.
  - Warning: Setting a value here without selecting a Quota period below will stop all further calls after the Quota Time has expired.
- **Quota:** *Default = Daily, Range = None, Daily, Weekly or Monthly*
  Sets the period during which the quota is applied. For example, if the **Quota Time** is 60 minutes and the **Quota** is set to ***Daily***, then the maximum total connect time during any day is 60 minutes. Any time beyond this will cause the system to close the service and prevent any further calls to this service. To disable quotas select ***None*** and set a **Quota Time** of zero.
  - Note: The **ClearQuota** 415 feature can be used to create short codes to refresh the quota time.

6.10.6 PPP

Fields in this tab enable you to configure Point to Point Protocol (PPP) in relation to this particular service. PPP is a protocol for communication between two computers using a Serial interface.

Service | PPP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Chap Challenge Interval (secs):** *Default = 0 (disabled). Range = 0 to 99999 seconds.*
  The period between CHAP challenges. Blank or 0 disables repeated challenges. Some software such as Windows 95 DUN does not support repeated CHAP challenges.
- **Bi-Directional Chap:** *Default =Off.*
- **Header Compression:** *Default = None selected*
  Enables the negotiation and use of IP Header Compression. Supported modes are IPHC and VJ. IPHC should be used on WAN links.
- **PPP Compression Mode:** *Default = MPPC*
  Enables the negotiate and use of compression. Do not use on VoIP WAN links.
  - ***Disable***
    Do not use or attempt to use compression.
  - ***StacLZS***
    Attempt to use STAC compression (Mode 3, sequence check mode).
  - ***MPPC***
    Attempt to use MPPC compression. Useful for NT Servers.
- **PPP Callback Mode:** *Default = Disable*
  - ***Disable***
    Callback is not enabled
  - ***LCP:*** *(Link Control Protocol)*
    After authentication the incoming call is dropped and an outgoing call to the number configured in the Service is made to re-establish the link.
  - ***Callback CP:*** *(Microsoft's Callback Control Protocol)*
    After acceptance from both ends the incoming call is dropped and an outgoing call to the number configured in the Service is made to re-establish the link.
  - ***Extended CBCP:*** *(Extended Callback Control Protocol)*
    Similar to Callback CP except the Microsoft application at the remote end prompts for a telephone number. An outgoing call is then made to that number to re-establish the link.
- **PPP Access Mode:** *Default = Digital64*
  Sets the protocol, line speed and connection request type used when making outgoing calls. Incoming calls are automatically handled (see RAS services).
  - ***Digital64***
    Protocol set to Sync PPP, rate 64000 bps, call presented to local exchange as a "Data Call".
  - ***Digital56***
    As above but rate 56000 bps.
  - ***Voice56***
    As above but call is presented to local exchange as a "Voice Call".
  - ***V120***
    Protocol set to Async PPP, rate V.120, call presented to local exchange as a "Data Call". This mode runs at up to 64K per channel but has a higher Protocol overhead than pure 64K operation. Used for some bulletin board systems as it allows the destination end to run at a different asynchronous speed to the calling end.
  - ***V110***
    Protocol is set to Async PPP, rate V.110. This runs at 9600 bps, call is presented to local exchange as a "Data Call". It is ideal for some bulletin boards.
  - ***Modem***
    Allows Asynchronous PPP to run over an auto-adapting Modem to a service provider (requires a Modem2 card in the main unit)
- **Data Pkt. Size:** *Default = 0, Range = 0 to 2048.*
  Sets the size limit for the Maximum Transmissible Unit.

- **BACP:** *Default = Off*
  Enables the negotiation and use of BACP/BCP protocols. These are used to control the addition of B channels to increase bandwidth.
- **Incoming traffic does not keep link up:** *Default = On*
  When enabled, the link is not kept up for incoming traffic only.
- **Multilink/QoS:** *Default = Off*
  Enables the negotiation and use of Multilink protocol (MPPC) on links into this Service. Multilink must be enabled if there is more than one channel that is allowed to be Bundled/Multilinked to this RAS Service.

6.10.7 Fallback

These options allow you to set up a fallback for the Service. For example, you may wish to connect to your ISP during working hours and at other times take advantage of varying call charges from an alternative carrier. You could therefore set up one Service to connect during peak times and another to act as fallback during the cheaper period.

You need to create an additional Service to be used during the cheaper period and select this service from the Fallback Service list box (open the Service form and select the Fallback tab).

If the original Service is to be used during specific hours and the Fallback Service to be used outside of these hours, a Time Profile can be created. Select this Time Profile from the Time Profile list box. At the set time the original Service goes into Fallback and the Fallback Service is used.

A Service can also be put into Fallback manually using short codes, for example:

- **Put the service "Internet" into fallback:**
  - **Short Code:** *85
  - **Telephone Number:** "Internet"
  - **Line Group ID:** 0
  - **Feature:** SetHuntGroupNightService

- **Take the service "Internet" out of fallback:**
  - **Short Code:** *86
  - **Telephone Number:** "Internet"
  - **Line Group ID:** 0
  - **Feature:** ClearHuntGroupNightService

Service | Fallback	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **In Fallback:** *Default = Off*
  This option indicates whether the Service is in Fallback or not. A service can be set into fallback using this setting. Alternatively a service can be set into fallback using a time profile or short codes.
- **Time profile:** *Default = <None> (No automatic fallback)*
  Select the time profile you wish to use for the service. The time profile should be set up for the hours that you wish this service to be operational, out of these hours the Fallback Service is used.
- **Fallback Service:** *<None>*
  Select the service that is used when this service is in fallback.

6.10.8 DialIn

Only available for WAN and Intranet Services. This tab is used to define a WAN connection.

Service | Dial In	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

To define a WAN connection

1. Right-click within the DialIn window and select Add.
2. Enter WAN if the service is being routed via a WAN port on a WAN3 expansion module.

6.11 WAN Port Settings

These entries are used to configure the operation of IP Office WAN ports. These are the 37-way D-type WAN ports found on the rear of all IP Office control units except the Small Office Edition.

Additional WAN ports can be added by the installation of up to two WAN3 expansion modules, each module providing 3 additional WAN ports. On the Small Office Edition control unit, a single WAN port can be added by the installation of a WAN trunk card at the rear of the unit. For full details of installing additional WAN ports, refer to the IP Office Installation Manual.

Physical WAN are not supported on the IP500.

Creating a Virtual WAN Port

WAN services can be run over a T1 PRI trunk connection. This requires creation of a virtual WAN port. For full details refer to Using a Dedicated T1/PRI ISP Link 714 in Appendix A.

1. Select **WAN Port**.
2. Click and select **PPP**.
3. In the **Name** field, enter either ***LINEx.y*** where:
   - ***LINE*** must be in uppercase.
   - ***x*** is the line number. For a PRI/T1 module in Slot A, this will be 1. For a PRI/T1 module in Slot B, this will be 5.
   - ***y*** is the lowest numbered channel number to be used by the WAN link minus 1. For example, if the lowest channel to be used is channel 1 then y = 1 - 1 = 0.
4. In the **Speed** field, enter the total combined speed of the maximum number of channels sets in the Service. In this example, 12 channels x 64000 bits = 76800.
   - Note: The maximum number of channels that can be used will be limited by the number of data channels supported by the IP Office Control Unit and not already in use.
5. In the **RAS Name** field, select the RAS name created when the new Service of that name was created.
6. Click **OK**.

6.11.1 WAN Port

Use this form to configure the leased line connected to the WAN port on the Control Unit. Normally this connection is automatically detected by the IP Office control unit. If a WAN Port is not displayed, connect the WAN cable, reboot the Control Unit and receive the configuration. The WAN Port configuration form should now be added.

WAN Port | WAN Port	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Name**
  The physical ID of the Extension port,. This parameter is not configurable; it is allocated by the system.
- **Speed**
  The operational speed of this port. For example for a 128K connection, enter 128000. This should be set to the actual speed of the leased line as this value is used in the calculation of bandwidth utilization. If set incorrectly, additional calls may be made to increase Bandwidth erroneously.
- **Mode:** *Default = SyncPPP*
  Select the protocol required:
  - ***SyncPPP***
    For a data link.
  - ***SyncFrameRelay***
    For a link supporting Frame Relay.
- **RAS Name**
  If the **Mode** is ***SyncPPP***, selects the RAS service to associate with the port. If the **Mode** is ***SyncFrameRelay***, the RAS Name is set through the DCLIs tab.

6.11.2 Frame Relay

This tab is only available for Frame Relay entries. These show ***SyncFrameRelay*** as the **Mode** on the WAN Port tab.

WAN Port | Frame Relay	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Frame Management Type**
  This must match the management type expected by the network provider. Selecting ***AutoLearn*** allows the IP Office to automatically determine the management type based on the first few management frames received. If a fixed option is required the following are supported: ***Q933 AnnexA 0393***, ***Ansi AnnexD*** , ***FRFLMI*** and ***None***.
- **Frame Learn Mode**
  This parameter allows the DLCIs that exist on the given WAN port to be provisioned in a number of different ways.
  - ***None***
    No automatic learning of DLCIs. DLCIs must be entered and configured manually.
  - ***Mgmt***
    Use LMI to learn what DLCIs are available on this WAN.
  - ***Network***
    Listen for DLCIs arriving at the network. This presumes that a network provider will only send DLCIs that are configured for this particular WAN port.
  - ***NetworkMgmt***
    Do both management and network listening to perform DLCI learning and creation.
- **Max Frame Length**
  Maximum frame size that is allowed to traverse the frame relay network.
- **Fragmentation Method**
  Options are ***RFC1490*** or ***RFC1490+FRF12***.

6.11.3 DLCIs

This tab is only available for Frame Relay entries. These show ***SyncFrameRelay*** as the **Mode** on the **WAN Port** 321 tab.

The tab lists the DLCIs created for the connection. These can be edited using the **Add**, **Edit** and **Remove** buttons.

WAN Port | DLCIs	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Frame Link Type:** *Default = PPP*
  Data transfer encapsulation method. Set to the same value at both ends of the PVC (Permanent Virtual Channel).
  - ***None***
  - ***PPP***
    Using PPP offers features such as out of sequence traffic reception, compression and link level connection management.
  - ***RFC 1490***
    RFC 1490 encapsulation offers performance and ease of configuration and more inter-working with third party CPE.
  - ***RFC1490 + FRF12***
    Alternate encapsulation to PPP for VoIP over Frame Relay. When selected all parameters on the Service | PPP tab being used are overridden.
- **DLCI:** *Default = 100*
  This is the Data Link Connection Identifier, a unique number assigned to a PVC end point that has local significance only. Identifies a particular PVC endpoint within a user's physical access channel in a frame relay.
- **RAS Name**
  Select the RAS Service you wish to use.
- **Tc:** *Default = 10*
  This is the Time Constant in milliseconds. This is used for measurement of data traffic rates. The Tc used by the IP Office can be shorter than that used by the network provider.
- **CIR:** *(Committed Information Rate) Default = 64000 bps*
  This is the Committed Information Rate setting. It is the maximum data rate that the WAN network provider has agreed to transfer. The committed burst size (Bc) can be calculated from the set Tc and CIR as Bc = CIR x Tc. For links carrying VoIP traffic, the Bc should be sufficient to carry a full VoIP packet including all its required headers. See the example below.
- **EIR:** *(Excess Information Rate) Default = 0 bps*
  This is the maximum amount of data in excess of the CIR that a frame relay network may attempt to transfer during the given time interval. This traffic is normally marked as De (discard eligible). Delivery of De packets depends on the network provider and is not guaranteed and therefore they are not suitable for UDP and VoIP traffic. The excess burst size (Be) can be calculated as Be = EIR x Tc.

Example: Adjusting the Tc Setting
G.729 VoIP creates a 20 byte packet every 20ms. Adding typical WAN PPP headers results in a 33 byte packet every 20ms.

For a Committed Information Rate (CIR) of 14Kbps, with the Time Constant (Tc) set to 10ms; we can calculate the Committed Burst size:

Bc = CIR x Tc = 14,000 x 0.01 = 140 bits = 17.5 bytes.

Using 10ms as the Tc, a full G.729 VoIP packet (33 bytes) cannot be sent without exceeding the Bc. The most likely result is lost packets and jitter.

If the Tc is increased to 20ms:

Bc = CIR x Tc = 14,000 x 0.02 = 280 bits = 35 bytes.

The Bc is now sufficient to carry a full G.729 VoIP packet.

Notes

1. Backup over Frame Relay is not supported when the Frame Link Type is set to RFC1490.
2. When multiple DLCIs are configured, the WAN link LED is switched off if any of those DLCIs is made inactive, regardless of the state of the other DLCIs. Note also that the WAN link LED is switched on following a reboot even if one of the DLCIs is inactive. Therefore when multiple DLCIs are used, the WAN link LED cannot be used to determine the current state of all DLCIs.
3. When the Frame Link Type is set to RFC1490, the WAN link LED is switched on when the WAN cable is attached regardless other whether being connected to a frame relay network.

6.11.4 Advanced

The settings on this tab are used for Frame Relay connections.

WAN Port | Advanced	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Address Length**
  The address length used by the frame relay network. The network provider will indicate if lengths other than two bytes are to be used.
- **N391:** *Full Status Polling Counter*
  Polling cycles count used by the CPE and the network provider equipment when bidirectional procedures are in operation. This is a count of the number of link integrity verification polls (T391) that are performed (that is Status Inquiry messages) prior to a Full Status Inquiry message being issued.
- **N392:** *Error Threshold Counter*
  Error counter used by both the CPE and network provider equipment. This value is incremented for every LMI error that occurs on the given WAN interface. The DLCIs attached to the given WAN interface are disabled if the number of LMI errors exceeds this value when N393 events have occurred. If the given WAN interface is in an error condition then that error condition is cleared when N392 consecutive clear events occur.
- **N393:** *Monitored Events Counter*
  Events counter measure used by both the CPE and network provider equipment. This counter is used to count the total number of management events that have occurred in order to measure error thresholds and clearing thresholds.
- **T391:** *Link Integrity Verification Polling Timer*
  The link integrity verification polling timer normally applies to the user equipment and to the network equipment when bidirectional procedures are in operation. It is the time between transmissions of Status Inquiry messages.
- **T392:** *Polling Verification Timer*
  The polling verification timer only applies to the user equipment when bidirectional procedures are in operation. It is the timeout value within which to receive a Status Inquiry message from the network in response to transmitting a Status message. If the timeout lapses an error is recorded (N392 incremented).

6.12 RAS Settings

6.12.1 RAS



A Remote Access Server (RAS) is a piece of computer hardware which sits on a corporate LAN and into which employees dial on the public switched telephone network to get access to their email and to software and data on the corporate LAN.

This form is used to create a RAS service that the system offers Dial In users. A RAS service is needed when configuring modem dial in access, digital (ISDN) dial in access and a WAN link. Some systems may only require one RAS service since the incoming call type can be automatically sensed.

RAS | RAS	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name**
  A textual name for this service. If Encrypted Password (see below) is used this name must match the Account Name entered in the Service Form.
- **Extension**
  Enter an extension number if this service is to be accessed internally.
- **COM Port**
  For future use.
- **TA Enable:** *Default = Off*
  Select to enable or disable - if enabled RAS will pass the call onto a TA port for external handling.
- **Encrypted Password:** *Default = Off*
  This option is used to define whether Dial In users are asked to use PAP or CHAP during their initial log in to the RAS Service. If the Encrypted Password box is checked then Dial In users are sent a CHAP challenge, if the box is unchecked PAP is used as the Dial In Authorization method.

6.12.2 PPP

PPP (Point-to-Point Protocol) is a Protocol for communication between two computers using a Serial interface, typically a personal computer connected by phone line to a server.

RAS | PPP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **CHAP Challenge Interval (secs):** *Default = 0 (disabled). Range = 0 to 99999 seconds.*
  The period between successive CHAP challenges. Blank or 0 disables repeated challenges. Some software, for example Windows 95 DUN, does not support repeated CHAP challenges.
- **Header Compression:** *Default = Off*
  Enables the negotiation and use of IP Header Compression as per RFC2507, RFC2508 and RFC2509.
- **PPP Compression Mode:** *Default = MPPC*
  This option is used to negotiate compression (or not) using CCP. If set to MPPC or StacLZS the system will try to negotiate this mode with the remote Control Unit. If set to Disable CCP is not negotiated.
  - ***Disable***
    Do not use or attempt to use compression.
  - ***StacLZS***
    Attempt to use and negotiate STAC compression (the standard, Mode 3)
  - ***MPPC***
    Attempt to use and negotiate MPPC (Microsoft) compression. Useful for dialing into NT Servers.
- **PPP Callback Mode:** *Default = Disable*
  - ***Disable***:
    Callback is not enabled
  - ***LCP:*** *(Link Control Protocol)*
    After authentication the incoming call is dropped and an outgoing call to the number configured in the Service will be made to reestablish the link.
  - ***Callback CP:*** *(Microsoft's Callback Control Protocol)*
    After acceptance from both ends the incoming call is dropped and an outgoing call to the number configured in the Service is made to reestablish the link.
  - ***Extended CBCP:*** *(Extended Callback Control Protocol)*
    Similar to Callback CP however the Microsoft application at the remote end will prompt for a telephone number. An outgoing call will then be made to that number to reestablish the link.
- ***Data Pkt. Size:*** *Default = 0, Range = 0 to 2048.*
  This is the number of data bytes contained in a Data Packet.
- **BACP:** *Default = Off*
  Allows negotiation of the BACP/BCP protocols. These are used to control the addition of additional B channels to simultaneously improve data throughput.
- **Multilink:** *Default = Off*
  When enabled the system attempts to negotiate the use of the Multilink protocol (MPPC) on the link(s) into this Service. Multilink must be enabled if the more than one channel is allowed to be Bundled/Multilinked to this RAS Service.

6.13 Incoming Call Route Settings



Incoming call routes are used to determine the destination of voice and data calls received by the IP Office. Determining which incoming call route is used is based on the call matching number of criteria. In order of priority, these are:

The bearer capability indicated, if any, with the call. For example voice, data, video.

- The incoming line group ID of the trunk or trunk channel on which the call was received.
- The incoming number received with the call.
- The incoming sub address received with the call.
- The incoming caller ID of the call.

Each incoming route can include a fallback destination for when the primary destination is busy. It can also include a time profile which control when the primary destination is used. Outside the time profile calls are redirected to a night service destination.

- For IP Office 4.1+, multiple time profiles can be associated with an incoming call route. Each time profile used has its own destination and fallback destination specified.

On IP Office systems where a large number incoming call routes need to be setup for DID numbers, the MSN/DID Configuration 150 tool can be used. Select **Tools | MSN Configuration**.

Incoming Call Routing Examples

Example: Incoming Numbers

For this example, the customer has subscribes to receive two 2-digit DID numbers. They want calls on one routed to a Sales hunt group and calls on the other to a Services hunt group. Other calls should use the normal default route to hunt group Main.

The following incoming call routes were added to the configuration to achieve this:

Line Group	Incoming Number	Destination
0	77	Sales
0	88	Services
0	blank	Main

Note that the incoming numbers could have been entered as the full dialed number, for example 7325551177 and 7325551188 respectively. The result would still remain the same as incoming number matching is by default performed on the right hand digits.

Right-hand matching gets complicated when the number of incoming digits is greater than the number of digits specified in the Incoming Number field. Consider the example below for when the incoming number digits 77 are received. The entries 677 and 77 have the same number of matching digit places and no non-matching places. However the 77 entry is the shorter match and so is used by the IP Office.

Line Group	Incoming Number	Destination
0	677	Support
0	77	Sales
0	7	Services
0	blank	Main

In the following example the 677 entry is used as the match for 77 as it has more matching digits than the 7 entry and no non-matching digits.

Line Group	Incoming Number	Destination
0	677	Support
0	7	Services
0	blank	Main

If this case the digits 777 are received. The 677 entry had a non-matching digit, so it isn't a match. The entry 7 is used as it has one matching digit and no non-matching digits.

Line Group	Incoming Number	Destination
0	677	Support
0	7	Services
0	blank	Main

6.13.1 Incoming Call Route



Incoming call routes are used to match call received with destinations. Routes can be based on the incoming line group, the type of call, incoming digits or the caller's ICLID. If a range of MSN/DID numbers has been issued, this form can be populated using the MSN Configuration tool (see MSN Configuration 156).

- **Default Blank Call Routes**
  By default the configuration contains two incoming calls routes; one set for Any Voice calls (including analog modem) and one for Any Data calls. Whilst the destination of these default routes can be changed it is strongly recommended that they are not deleted.
  - Deleting the default call routes, may cause busy tone to be returned to any incoming external call that does not match another incoming call route.
  - Setting any route to a blank destination field, may cause the incoming number to be matched against system short codes for a match. This may lead to the call being rerouted off-switch.
- Calls received on IP, S_0 and QSIG trunks do not use incoming call routes. Routing for these is based on incoming number received as if dialed on-switch. Line short codes on those trunks can be used to modify the incoming digits.
- If there is no matching incoming call route for a call, matching is attempted against system short codes and finally against voicemail nodes before the call is dropped.
- **SIP Calls**
  For SIP calls, the following fields are used for call matching:
  - **Line Group ID**
    This field is matched against the Incoming Group settings of the SIP URI (Line | SIP URI). This must be an exact match.
  - **Incoming Number**
    This field can be used to match the called details (TO) in the SIP header of incoming calls. It can contain a number, SIP URI or Tel URI. For SIP URI's the domain part of the URI is removed before matching by incoming call routing occurs. For example, for the SIP URI mysip@sipitsp.com , only the user part of the URI, ie. mysip, is used for matching.
  - **Incoming CLI**
    This field can be used to match the calling details (FROM) in the SDP header of incoming SIP calls. It can contain a number, SIP URI, Tel URI or IP address received with SIP calls. For all types of incoming CLI except IP addresses a partial entry can be used to achieve the match, entries being read from left to right. For IP addresses only full entry matching is supported.

Incoming Call Route | Standard	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Bearer Capability:** *Default = Any Voice*
  The type of call selected from the list of standard bearer capabilities: Any, Any Voice, Any Data, Speech, Audio 3K1, Data 56K, Data 64K, Data V110, Video.
- **Line Group ID:** *Default = 0, Range = 0 to 99999.*
  Matches against the Incoming Line Group to which the trunk receiving the call belongs.
- **Incoming Number:** *Default = Blank (Match any unspecified)*
  Matches to the digits presented by the line provider. A blank entry matches all calls that do not match other entries. By default this is a right-to-left match.
  - **–** : Using a - in front of the number causes a left-to-right match.
  - **X** or **x** : Use X's to enter a single digit wild card character. For example -91XXXXXXXXXX will only match when 13 digits, starting with 91, are received. N, n and ? cannot be used.
  - **i** : The i character does not affect the incoming number matching. It is used for Outgoing Caller ID Matching, see notes below.
- **Incoming Sub Address:** *Default = Blank (Match all)*
  Matches any sub address component sent with the incoming call. If this field is left blank, it matches all calls.
- **Incoming CLI:** *Default = Blank (Match all)*
  Enter a number to match the caller's ICLID provided with the call. This field is matched left-to-right. Number options are:
  - Full telephone number.
  - Partial telephone number, for example just the area code.
  - **!** : Matches calls where the ICLID was withheld.
  - **?** : for number unavailable.
  - Blank for all.
- **Locale:** *Default = Blank (Use system setting)*
  This option specifies the language prompts, if available, that voicemail should use for the call if it is directed to voicemail.
- **Priority:** *Default = 1-Low, Range = 1-Low to 3-High.*
  This setting allows incoming calls to be assigned a priority. Other calls such as internal calls are assigned priority ***1-Low***. Note that using priority is not recommended for destinations where queue ETA and position messages are being provided by Voicemail Pro.
  - In situations where calls are queued, high priority calls are placed before calls of a lower priority. If this causes the queue length to exceed the hunt group's Queue Length limit, the limit is temporarily raised by 1, ie. calls already accepted as queued are not rerouted by the arrival of a higher priority call.
  - IP Office 4.2+ supports the use of a timer to increase the priority of queued calls, see System | Telephony | Telephony | Call Priority Promotion Time 177.
  - For IP Office 4.2+, the current priority of a call can be changed through the use of the **p** short code character 387 in a short code used to transfer the call.
- **Tag:** *Default = Blank (No tag), Software level = 4.1+.*
  Allows a text tag to be associated with calls routed by this incoming call route. This tag is displayed with the call within applications such as Phone Manager and SoftConsole (note that those application can also be used to change the tag text when transferring calls). See Call Tagging 671.
- **Hold Music Source:** *Default = System source, Software level = 4.2+ (Not Small Office Edition).*
  IP Office 4.2+ supports up to 4 music on hold source, the ***System Source*** (either an internal file or the external source port or tones) plus up to 3 additional internal wav files, see System | Telephony | Tones & Music 179. If the system has several hold music sources available, this field allows selection of the source to associate with calls routed by this incoming call route. The new source selection will then apply even if the call is forwarded or transferred away from the Incoming Call Route destination. If the call is routed to another IP Office 4.2+ system in a Small Community Network, the matching source is used if available. The hold music source associated with a call can also be changed by a hunt group's Hold Music Source 289 setting.

- **Destination:** *Default = Blank, Software Level = Up to 4.0 only.*
  For IP Office 4.1+ this option has moved to the Incoming Call Route | Destinations 334 tab. Select the destination for the call from the drop-down list box which contains all available extensions, users, groups, RAS services and voicemail. System short codes and dialing numbers can be entered manually. Once the incoming call is matched the call is passed to that destination.
  - **Drop-Down List Options**
    The following options appear in the drop-down in the following order:
    - Voicemail allows remote mailbox access with Embedded Voicemail, Voicemail Lite and Voicemail Pro. Callers are asked to enter the extension ID of the mailbox required and then the mailbox access code.
    - User Names
    - Hunt Groups Names
    - AA:Name directs calls to an Embedded Voicemail auto-attendant services.
  - **Manually Entered Options**
    The following options can be entered manually into the field.
    - VM:Name Directs calls to the matching start point in Voicemail Pro.
    - A **.** matches the Incoming Number field. This can be used even when X wildcards are being used in the Incoming Number field.
    - A **#** matches all X wildcards in the Incoming Number field. For example, if the Incoming Number was - 91XXXXXXXXXX, the Destination would be XXXXXXXXXX.
    - Text and number strings entered here are passed through to system short codes, for example to direct calls into a conference. Note that not all short code features are supported.
- **Fallback Extension:** *Default = Blank (No fallback), Software level = Up to 4.0 only.*
  For IP Office 4.1+ this option has moved to the Incoming Call Route | Destinations 334 tab. Defines an alternate destination which should be used when the current destination, set in the Destination or Night Service Destination field, cannot be obtained. For example if the primary destination is a hunt group returning busy and without queuing or voicemail.
- **Night Service Profile:** *Default = <None> (No night service), Software level = Up to 4.0 only.*
  A time profile during which the Night Service Destination should be used rather than the Destination.
- **Night Service Destination:** *Default = Blank, Software level = Up to 4.0 only.*
  Set the destination to be used during periods defined by the Night Service Profile. The same range of values can be used as for the Destination field.

Outgoing Caller ID Matching

In cases where a particular Incoming Number is routed to a specific individual user, the IP Office will attempt to use that Incoming Number as the user's caller ID when they make outgoing calls. This requires that the Incoming Number is a full number suitable for user as outgoing caller ID and acceptable to the line provider.

When this is the case, the character i can also be added to the Incoming Number field. This character does not affect the incoming call routing. However when the same Incoming Number is used for an outgoing caller ID, the calling party number plan is set to ISDN and the type is set to National. This option may be required by some network providers.

6.13.2 Voice Recording

This tab is used to activate the automatic recording of incoming calls that match the incoming call route. This requires Voicemail Pro to be installed and running. Call recording also requires available conference resources similar to a 3-way conference.

- Calls to and from IP devices including those using Direct media can be recorded.
- Incoming call route recording continues for the duration of the call on the system.
- Calls parked or held by the user pause recording until the call is unparked or taken off hold.

Incoming Call Route | Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **Record Inbound:** *Default = None*
  Applied to inbound external calls.
  - ***On:*** Record the call if possible.
  - ***Mandatory:*** If not possible to record, return busy tone.
  - ***Percentages of calls:*** Various percentages of calls made by the user will be recorded.
- **Record Time Profile:** *Default = <None> (Any time)*
  Used to select a time profile 336 during which automatic call recording setting above apply.
- **Recording Mailbox:** *Default = <None>*
  Sets the mailbox into which automatically triggered recordings are placed.
  - **Voice Recording Library:** *Default = Not Enabled*
    When checked, this setting overrides the **Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

6.13.3 Destinations

IP Office 4.1+ allows multiple time profiles to be associated with an incoming call route. For each time profile, a separate Destination and Fallback Extension can be specified.

When multiple entries are added, they are resolved from the bottom up. The entry used will be the first one, working from the bottom of the list upwards, that is currently 'true', ie. the current day and time or date and time match those specified by the Time Profile. If no match occurs the Default Value options are used.

Once a match is found, the IP Office does not use any other destination set even if the intended Destination and Fallback Extension destinations are busy or not available.

Incoming Call Route | Standard	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.1+.
Mergeable	✓.

- **Time Profile**
  This column is used to specify the time profiles 336 used by the incoming call routes. The entry displays a drop-down list of existing time profiles from which a selection can be made. To remove an existing entry, select it by clicking on the button on the left of the row, then right-click on the row and select **Delete**.
  - **Default Value**
    This entry is fixed and is used if no match to a time profile below occurs.
- **Destination:** *Default = Blank*
  Select the destination for the call from the drop-down list box which contains all available extensions, users, groups, RAS services and voicemail. System short codes and dialing numbers can be entered manually. Once the incoming call is matched the call is passed to that destination.
  - **Drop-Down List Options**
    The following options appear in the drop-down in the following order:
    - Voicemail allows remote mailbox access with Embedded Voicemail, Voicemail Lite and Voicemail Pro. Callers are asked to enter the extension ID of the mailbox required and then the mailbox access code.
    - User Names.
    - Hunt Groups Names.
    - **AA:*Name*** directs calls to an Embedded Voicemail auto-attendant services.
  - **Manually Entered Options**
    The following options can be entered manually into the field.
    - ***VM:Name*** Directs calls to the matching start point in Voicemail Pro.
    - A **.** matches the Incoming Number field. This can be used even when X wildcards are being used in the Incoming Number field.
    - A **#** matches all X wildcards in the Incoming Number field. For example, if the Incoming Number was - 91XXXXXXXXXX, the Destination would be XXXXXXXXXX.
    - Text and number strings entered here are passed through to system short codes, for example to direct calls into a conference. Note that not all short code features are supported.
- **Fallback Extension:** *Default = Blank (No fallback)*
  Defines an alternate destination which should be used when the current destination, set in the **Destination** field cannot be obtained. For example if the primary destination is a hunt group returning busy and without queuing or voicemail.

6.14 Directory Entry



Directory entries are used to store external telephone numbers and to associate names with those numbers. They have two main functions:

- **Making External Calls**
  Directory entries can displayed and then used to make calls from IP Office applications such as Phone Manager, SoftConsole and Conference Center. They can also be used to make calls from Avaya digital phones that support the Dir function on a programmable key.
- **Name Matching**
  Directory entries can be used to match the ICLID received with an incoming call to a name. That name is then displayed by IP Office applications and phones receiving the call. Note that the Phone Manager and SoftConsole applications have their own directories which are also used for name matching and, for that user, can override the system directory name match.
  - Name matching is not performed when a name is supplied with the incoming call, for example QSIG trunks.

A maximum of 1000 entries are supported in the IP Office system directory. For IP Office 4.1+, the number can be increased using entries in the **NoUser** user's **Source Numbers** 263 tab.

The IP Office also supports LDAP (Lightweight Directory Access Protocol). Directory entries obtained by LDAP are only shown in the directory of the Phone Manager and SoftConsole applications. They are not shown or used in the IP Office configuration.

Directory | Directory Entry	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name**
  Enter the text, without spaces, to be used to identify the number. Names should not begin with numbers.
- **Number**
  Enter the number, without spaces, to be matched with the above name. Any brackets or - characters used in the number string are ignored. The directory number match is done on reading from the left-hand side of the number string. Note that if the system has been configured to use an external dialing prefix, that prefix should be added to directory numbers.
  - ? Wild-card characters can be used at the right-hand end of the number string. For example:
    - **Name:** Holmdel
    - **Number:** 732555????
      The number must be padded with question marks to the correct length; in this example local numbers are 10 digits long so 4 question marks are required. This displays Holmdel:1234 for a call from 7325551234.

6.15 Time Profile



Time Profiles are used by different IP Office services to change their operation when required. In most areas where time profiles can be used, not setting a time profile is taken as meaning 24-hour operation.

- Pre-IP Office 4.1 time profiles consist of recurring weekly patterns of days and times when the time profile is in effect.
- IP Office 4.1 time profiles can include time periods on specified calendar days when the time profile is in effect. Calendar entries can be entered for the current and following calendar year.

Time profiles are used by the following entry types:



Hunt Group can use time profiles in the following ways:

- A time profile can be used to determine when a hunt group is put into night service mode. Calls then go to an alternate Night Service Fallback group if set, otherwise to voicemail if available or busy tone if not. See Hunt Group | Fallback 294.
- For automatic voice recording, a time profile can be used to set when voice recording is used. See Hunt Group | Voice Recording 299.



Service can use time profiles in the following ways:

- A time profile can be used to set when a data service is available. Outside its time profile, the service is either not available or uses an alternate fallback service if set.
- For services using auto connect, a time profile can be used to set when that function is used. See Service | Autoconnect 314.



User can use time profiles in the following ways:

- Users being used for Dial In data services such as RAS can have an associated time profile that defines when they can be used for that service. See User | Dial In 271.
- Users can be associated with a working hours and an out of hours user rights. A time profile can then be used to determine which user rights is used at any moment. See User | User 257.
- For automatic voice recording, a time profile can be used to set when that voice recording is used. See User | Voice Recording 272.
- For mobile twinning, a time profile can be used to define when twinning should be used. See User | Twinning 280.



Incoming Call Routes can use an alternate night service destination. A time profile is then used to set when that destination is used. See Incoming Call Route | Incoming Call Route 330.

- For IP Office 4.0 and higher incoming call routes can also use time profiles to specify when calls should be recorded.
- For IP Office 4.1 and higher, multiple time profiles can be associate with an incoming call route, each profile specifying a destination and fall back destination.



Least Cost Route use time profiles to determine when the routes should be used. See Least Cost Route | LCR 348.

ARS forms use time profile to determine when the ARS form should be used or calls rerouted to an out of hours route.



Account Codes can use automatic voice recording triggered by calls with particular account codes. A time profile can be used to set when this function is used. See Account Code | Voice Recording 352.



Auto Attendant supported by embedded voicemail on IP406 V2 and Small Office systems, use time profiles to control the different greetings played to callers. See Auto Attendant | Actions 373.

For a time profile with multiple entries, for example a week pattern and some calendar entries, the profile is valid when any entry is valid.

Time Profile | Time Profile	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Name:** *Range = Up to 31 characters*
  This name is used to select the time profile from within other tabs.
- **Time Entry List**
  This list shows the current periods during which the time profile is active. Clicking on an existing entry will display the existing settings and allows them to be edited if required. To remove an entry, selecting it and then click on Remove or right-click and select Delete.
- **Recurrence Pattern (Weekly Time Pattern)**
  When a new time entry is required, click Add Recurring and then enter the settings for the entry using the fields displayed. Alternately right-click and select Add Recurring Time Entry. This type of entry specific a time period and the days on which it occurs, for example 9:00 - 12:00, Monday to Friday. A time entry cannot span over two days. For example you cannot have a time profile starting at 18:00 and ending 8:00. If this time period is required two Time Entries should be created - one starting at 18:00 and ending 11:59, the other starting at 00:00 and ending 8:00.
  - **Start Time**
    The time at which the time period starts.
  - **End Time**
    The time at which the time period ends.
  - **Days of Week**
    The days of the week to which the time period applies.
- **Recurrence Pattern (Calendar Date):** *Software Level = 4.1+.*
  When a new calendar date entry is required, click Add Date and then enter the settings required. Alternately right-click and select Add Calendar Time Entry. Calendar entries can be set for up to the end of the next calendar year.
  - **Start Time**
    The time at which the time period starts.
  - **End Time**
    The time at which the time period ends.
  - **Year**
    Select either the current year or the next calendar year.
  - **Date**
    To select or de-select a particular day, double-click on the date. Selected days are shown with a dark gray background. Click and drag the cursor to select or de-select a range of days.

6.16 Firewall Profile Settings



The IP Office can act as a firewall, allowing only specific types of data traffic to start a session across the firewall and controlling in which direction such sessions can be started.

- **Static NAT** 342
  IP Office 4.2+ adds support for Static NAT address translation by IP Office Firewall Profiles. If the Firewall Profile contains any Static NAT entries, all packets received by the firewall must match one of those static NAT entries to not be blocked.

IP Office firewall profiles can be applied in the following areas of IP Office operation.

-  **System** 173
  A firewall profile can be selected to be applied to traffic between LAN1 and LAN2.
-  **User** 271
  Users can be used as the destination of incoming RAS calls. For those users a firewall profile can be selected on the user's Dial In 271 tab.
-  **Service** 310
  Services are used as the destination for IP routes connection to off-switch data services such as the internet. A Firewall Profile can be selected for use with a service.
-  **Logical LAN** 360
  Where a logical LAN is created for use as an IP Route destination, a Firewall Profile can be selected for use with the logical LAN.

If Network Address Translation (NAT) is used with the firewall (which it typically is), then you must also configure a Primary Incoming Translation Address (see IP 313 tab of the Service configuration form) if you wish sessions to be started into your site (typically for SMTP) from the Internet.

6.16.1 Standard

By default, any protocol not listed in the standard firewall list is dropped unless a custom firewall entry 340 is configured for that protocol.

Firewall | Standard	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name:** *Range = Up to 31 characters*
  Enter the name to identify this profile.
- **Protocol Control**
  For each of the listed protocols, the options ***Drop***, ***In*** (Incoming traffic can start a session), ***Out*** (Outgoing traffic can start a session) and ***Both Directions*** can be selected. Once a session is started, return traffic for that session is also able to cross the firewall.

Protocol	Default	Description
TELNET	Out	Remote terminal log in.
FTP	Out	File Transfer Protocol.
SMTP	Out	Simple Mail Transfer Protocol.
TIME	Out	Time update protocol.
DNS	Out	Domain Name System.
GOPHER	Drop	Internet menu system.
FINGER	Drop	Remote user information protocol.
RSVP	Drop	Resource Reservation Protocol.
HTTP	Out	Hypertext Transfer Protocol.
POP3	Out	Post Office Protocol.
NNTP	Out	Network News Transfer Protocol.
SNMP	Drop	Simple Network Management Protocol.
IRC	Out	Internet Relay Chat.
PPTP	Drop	Point to Point Tunneling Protocol.
IGMP	Drop	Internet Group Membership Protocol.
H323	Drop	This option is not supported and so is grayed out.

- **IP Office Service Control:** *Software level = 4.0+.*
  For each of the listed services, the options ***Drop***, ***In***, ***Out*** and ***Both Directions*** can be selected. Once a session is started, return traffic for that session is also able to cross the firewall.

Protocol	Default	Description
SSI	In	System Status Application access.
SEC	Drop	TCP security settings access.
CFG	Drop	TCP configuration settings access.

6.16.2 Custom

The tab lists custom firewall settings added to the firewall profile. The Add, Edit and Remove controls can be used to amend the settings in the list.

Firewall | Custom	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Notes**
  For information only. Enter text to remind you of the purpose of the custom firewall entry.
- **Remote IP Address**
  The IP address of the system at the far end of the link. Blank allows all IP addresses.
- **Remote IP Mask**
  The mask to use when checking the Remote IP Address. When left blank no mask is set, equivalent to 255.255.255.255 - allow all.
- **Local IP Address**
  The address of devices local to this network (pre-translated). Blank allows all IP addresses.
- **Local IP Mask**
  The mask to use when checking the Local IP Address. When left blank no mask is set, equivalent to 255.255.255.255 - allow all.
- **IP Protocol**
  The value entered here corresponds to the IP Protocol which is to be processed by this Firewall profile: 1 for ICMP, 6 for TCP, 17 for UDP or 47 for GRE. This information can be obtained from the "pcol" parameter in a Monitor trace.
- **Match Offset**
  The offset into the packet (0 = first byte of IP packet) where checking commences for either a specific port number, a range of port numbers, or data.
- **Match Length**
  The number of bytes to check in the packet, from the Match Offset point, that are checked against the Match Data and Match Mask settings.
- **Match Data**
  The values the data must equal once masked with the Match Mask. This information can be obtained from "TCP Dst" parameter in a Monitor trace (the firewall uses hex so a port number of 80 is 50 in hex)
- **Match Mask**
  This is the byte pattern, which is logically ANDed with the data in the packet from the offset point. The result of this process is then compared against the contents of the "Match Data" field.
- **Direction**
  The direction that data may take if matching this filter.

Drop	All matching traffic is dropped.
In	Incoming traffic can start a session.
Out	Outgoing traffic can start a session.
Both Directions	Both incoming and outgoing traffic can start sessions.

Example Custom Firewall Entries

Example: Dropping NetBIOS searches on an ISPs DNS
We suggest that the following filter is always added to the firewall facing the Internet to avoid costly but otherwise typically pointless requests from Windows machines making DNS searches on the DNS server at your ISP.

- **Direction:** Drop
- **IP Protocol:** 6 (TCP)
- **Match Offset:** 20
- **Match Length:** 4
- **Match Data:** 00890035
- **Match Mask:** FFFFFFFF

Example: Browsing Non-Standard Port Numbers
The radio button for HTTP permits ports 80 and 443 through the firewall. Some hosts use non-standard ports for HTTP traffic, for example 8080, 8000, 8001, 8002, etc. You can add individual filters for these ports as you find them.

You wish to access a web page but you cannot because it uses TCP port 8000 instead of the more usual port 80, use the entry below.

- **Direction:** Out
- **IP Protocol:** 6 (TCP)
- **Match Offset:** 22
- **Match Length:** 2
- **Match Data:** 1F40
- **Match Mask:** FFFF

A more general additional entry given below allows all TCP ports out.

- **Direction:** Out
- **IP Protocol:** 6 (TCP)
- **Match Offset:** 0
- **Match Length:** 0
- **Match Data:** 00000000000000000000000000000000
- **Match Mask:** 00000000000000000000000000000000

Example: Routing All Internet Traffic through a WinProxy
If you wish to put WinProxy in front of all Internet traffic via the Control Unit. The following firewall allows only the WinProxy server to contact the Internet : -

1. Create a new Firewall profile and select ***Drop*** for all protocols
2. Under Custom create a new Firewall Entry
3. In Notes enter the name of the server allowed. Then use the default settings except in Local IP Address enter the IP address of the WinProxy Server, in Local IP Mask enter 255.255.255.255 and in Direction select Both Directions.

Stopping PINGs
You wish to stop pings - this is ICMP Filtering. Using the data below can create a firewall filter that performs the following; Trap Pings; Trap Ping Replies; Trap Both.

- **Trap Pings:** Protocol = 1, offset = 20, data = 08, mask = FF
- **Trap Ping Replies:** Protocol = 1, offset = 20, data = 00, mask = FF
- **Trap Both:** Protocol = 1, offset = 20, data = 00, mask = F7, Traps Both.

6.16.3 Static NAT

The **Static NAT** table allows the firewall to perform address translation between selected internal and external IP addresses. Up to 64 internal and external IP address pairs can be added to the Static NAT section of a Firewall Profile.

This feature is intended for incoming maintenance access using applications such as PC-Anywhere, IP Office Manager and the Voicemail Pro Client. The address translation is used for destinations such an IP Office Voicemail Pro server or the IP Office's own LAN1 address.

- If there are any entries in the **Static NAT** settings of a Firewall Profile, each packet attempting to pass through the firewall must match one of the static NAT pairs or else the packet will be dropped.
- The destination address of incoming packets is checked for a matching **External IP Address**. If a match is found, the target destination address is changed to the corresponding **Internal IP Address**.
- The source address of outgoing packets is checked for a matching **Internal IP Address**. If a match is found, the source address is changed to the corresponding **External IP Address**.
- Even when a static NAT address match occurs, the other settings on the Firewall Profile **Standard** 339 and **Custom** 340 tabs are still applied and may block the packet.

6.17 IP Route Settings



The IP Office acts as the default gateway for its DHCP clients. It can also be specified as the default gateway for devices with static IP addresses on the same subnet as the IP Office. When devices on LAN1 and LAN2 want to send data to IP addresses on a different subnet, they will send that data to their default gateway for onward routing.

The IP Route table is used by the IP Office to determine where data traffic should be forwarded. This is done by matching details of the destination IP address to IP Route entries and then using the Destination specified by the matching IP route. These are referred to as 'static routes'.

- **Automatic Routing (RIP)**
  The IP Office can support RIP (Routing Information Protocol) on LAN1 and or LAN2. This is a method through which the IP Office can automatically learn routes for data traffic from other routers that also support matching RIP options, see RIP 345. These are referred to as 'dynamic routes'.
- **Dynamic versus Static Routes**
  By default, static routes entered into the IP Office override any dynamic routes it learns by the use of RIP. This behavior is controlled by the Favor RIP Routes over static routes option on the **System | System** 165 tab.
- **Static IP Route Destinations**
  The IP Office allows the following to be used as the destinations for IP routes:
  - ***LAN1*** 168
    Direct the traffic to the IP Office's LAN1.
  - ***LAN2*** 173
    On IP Office Small Office Edition, IP412 and IP500 systems, traffic can be directed to LAN2. For IP Office 4.1+, LAN port 8 on IP406 V2 control units can be enabled as LAN2.
  - ***Service*** 309
    Traffic can be directed to a service. The service defines the details necessary to connect to a remote data service.
  - ***Logical LAN*** 360
    Traffic can be directed to a logical LAN already added to the configuration.
  - ***Tunnel*** 355
    Traffic can be directed to an IPSec or L2TP tunnel.
- **Default Route**
  IP Office provides two methods of defining a default route for IP traffic that does not match any other specified routes. Use either of the following methods:
  - ***Default Service***
    Within the settings for services, one service can be set as the **Default Route** (**Service | Service** 310).
  - ***Default IP Route***
    Create an IP Route entry with a blank IP Address and blank IP Mask set to the required destination for default traffic.

6.17.1 IP Route

This tab is used to setup static IP routes from the IP Office. These are in addition to RIP if RIP is enabled on LAN1 and or LAN2. Up to 100 routes are supported.

IP Route | IP Route	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **IP Address**
  The IP address to match for ongoing routing. Any packets meeting the IP Address and IP Mask settings are routed to the entry configured in the Destination field. When left blank then an IP Address of 255.255.255.255 (all) is used.
- **IP Mask**
  The Subnet Mask used to mask the IP Address for ongoing route matching. If blank the mask used is 255.255.255.255 (all).
  - A ***0.0.0.0*** entry in the IP Address and IP Mask fields routes all packets for which there is no other specific IP Route available. The Default Route option with Services 310 can be used to do this if a blank IP route is not added.
- **Gateway IP Address:** *Default = Blank*
  The address of the gateway where packets for the above address are to be sent. If this field is set to ***0.0.0.0*** or is left blank then all packets are just sent down to the Destination specified, not to a specific IP Address. This is normally only used to forward packets onto another Router on the local LAN.
- **Destination**
  Allows selection of LAN1, LAN2 (if supported) and any configured Service, Logical LAN or Tunnel.
- **Metric:** *Default = 1*
  The number of "hops" this route counts as.
- **Proxy ARP:** *Default = Off*
  This allows the IP Office to respond on behalf of this IP address when receiving an ARP request.

6.17.2 RIP

Routing Information Protocol (RIP) is a protocol which allows routers within a network to exchange routes of which they are aware approximately every 30 seconds. Through this process, each router adds devices and routes in the network to its routing table.

Each router to router link is called a 'hop' and routes of up to 15 hops are created in the routing tables. When more than one route to a destination exists, the route with the lowest metric (number of hops) is added to the routing table.

When an existing route becomes unavailable, after 5 minutes it is marked as requiring 'infinite' (16 hops). It is then advertised as such to other routers for the next few updates before being removed from the routing table. The IP Office also uses 'split horizon' and 'poison reverse'.

RIP is a simple method for automatic route sharing and updating within small homogeneous networks. It allows alternate routes to be advertised when an existing route fails. Within a large network the exchange of routing information every 30 seconds can create excessive traffic. In addition the routing table held by each IP Office is limited to 100 routes (including static and internal routes).

RIP is supported with IP Office system's from Level 2.0 upwards. The normal default is for RIP to be disabled. It can be enabled on LAN1, LAN2 and individual services.

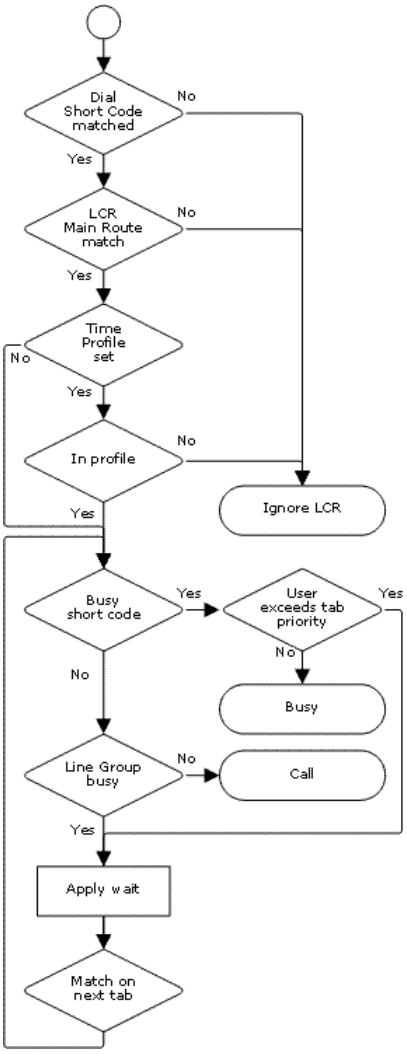
- **Listen Only (Passive):**
  The IP Office listens to RIP1 and RIP2 messages and uses these to update its routing table. However the IP Office does not respond.
- **RIP1:**
  The IP Office listens to RIP1 and RIP2 messages. It advertises its own routes in a RIP1 sub-network broadcast.
- **RIP2 Broadcast (RIP1 Compatibility):**
  The IP Office listens to RIP1 and RIP2 messages. It advertises its own routes in a RIP2 sub-network broadcast. This method is compatible with RIP1 routers.
- **RIP2 Multicast:**
  The IP Office listens to RIP1 and RIP2 messages. It advertises its own routes to the RIP2 multicast address (249.0.0.0). This method is not compatible with RIP1 routers.

Broadcast and multicast routes (those with addresses such as 255.255.255.255 and 224.0.0.0) are not included in RIP broadcasts. Static routes (those in the IP Route table) take precedence over a RIP route when the two routes have the same metric.

6.18 Least Cost Routing Settings

Summary: Least cost routes allow short code matching on the number being dialed from the system rather than the number originally dialed by the user or application.

For IP Office 4.0, Least Cost Routes have been replaced by ARS 377. When an IP Office system is upgraded to IP Office 4.0, the LCR entries are automatically replaced by ARS entries and appropriate short codes.



When a line, user, user rights or system short code results in a number to be dialed off-switch, the resulting telephone number to be dialed can be further processed by matching to Least Cost Route (LCR) short codes.

LCR short codes are grouped in sets. Within each set, the short codes are grouped into tabs called Main Route, Alternate Route 1 and Alternate Route 2. Each tab also has a priority and a timeout setting.

- **Using a Time Profile**
  Each LCR set can have an associated time profile. LCR sets without a time profile are active all the time. LCR sets with a time profile are only active within the times defined by that profile.
- **Which Number is Used For Matching**
  The telephone number output by the original matched short code is checked against the Main Route tab short codes of the active LCR sets.
  - If a match is found, that set is used for processing.
  - If no match is found, the calls is dialed without LCR.
- **Returning Busy**
  If the LCR short code match is set to the Busy feature:
  - If the user's priority is higher than the LCR tabs, the IP Office will immediately look for a matching short code on the next tab and use that short code if found.
  - Otherwise the user receives busy tone.
- **Switching Outgoing Line Groups**
  If the LCR short code match is a dial feature, the IP Office will attempt to seize a line from the outgoing line group specified by the LCR short code.
  - If a line cannot be seized within the time specified on the LCR tab, the IP Office will look in the next tab for an alternate LCR short code match. If an alternate match is found it is used.

Least Cost Routing Example

Site A has two outgoing line groups. Outgoing line group 0 contains external lines to the public telephone network. Outgoing line group 1 contains private lines to Site B.

Requirements

- **Scenario 1**
  The external public number for Site B is 123456. The internal speed dial number is 600. When a user dials 600, the administrator want the call to be routed by the private lines if possible.
- **Scenario 2**
  The sales hot line at Site B has the public number 654321. The administrator only want high priority users at Site A to be able to dial that number to test its performance.

Settings

- **System Short Code 1:** 600/123456/Dial/0.
- **System Short Code 2:** 654321/N/Dial/0.
- **User 1:** Priority 2. User 2: Priority 4.

Least Cost Route "SiteB"	Main Route	Alternate Route 1
Timeout	10	30
Priority	3	5
Short Codes	123456/N/Dial/1	123456/N/Dial/0
	654321/N/Busy	654321/N/Dial/0

Effects

Scenario 1
When a user dials 123456, it matches system short code 1. That short code specifies dialing Site B via the public lines (Outgoing line group 0).

The number to be dialed is checked against the least cost routing Main Route tabs for any match. In this example a match occurs in the SiteB least cost route. The short code there specifies dialing the number using the private lines (Outgoing line group 1).

If the IP Office cannot seize a line for the call from that group within 10 seconds, it looks for an alternate short code match in Alternate Route 1 tab of the Site B least cost route. In this example that match changes the call to using the public lines (Outgoing line group 0).

Scenario 2
When a user dials 654321, it matches system short code 2. That short code specifies dialing the Site B sale hot line number via the public lines (Outgoing line group 0).

Since this short code is set to a Dial feature, the number to be dialed is checked against the least cost routing Main Route tabs for any match. In this example a match occurs in the SiteB least cost route. The short code there specifies Busy and so returns busy to callers.

User 1 has a priority of 2. They will receive busy tone when they dial 654321.

User 2 has a priority of 4 which is higher than the Main Route tab in the Site B least cost route. Therefore the IP Office will immediately check for a further match in the Alternate Route 1 tab. In this example the short code match for 654321 in the Alternate 1 tab allows the number to be dialed to the public lines.

6.18.1 LCR

Least Cost Routing | LCR	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Name**
  The name to identify the LCR set.
- **Time Profile:** *Default = Blank*
  Selects a time profile 336 that is used to define when this least cost route can be used. If no profile is selected the route settings apply at all times.

6.18.2 Main Route

This tab is used for the initial short code matching. The match is performed on the telephone number outputs by a Line, User, User Rights or System short code that resulted in a number to dial. If a match is found it is used, otherwise the call is dialed using the original short code.

Least Cost Routing | Main Route	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Timeout (secs):** *Default = 30 seconds. Range = 1 to 99999 seconds or 0 (No IP trunk fallback).*
  If an LCR short code match is found, the IP Office will attempt to seize a line in the outgoing line group specified by that short code. If, after this timeout period has expired, the IP Office still cannot seize a line, it will look for a alternate short code match in the Alternate Route 1 349 tab.
- **Priority:** *Default = 5, Range 1 (lowest) to 5 (highest).*
  Normally, if the LCR short code match is a short code set to Busy, the user will receive busy tone. For users whose own Priority 257 setting (User | User | Priority) is higher than the Main Route tab's, the IP Office will look for an alternate short code match in the Alternate Route 1 349 tab.
- **Allow Bump:** *Default = Off*
  When a line indicated by the LCR short code match cannot be seized because lines in that outgoing line group are being used for a multilink PPP data call, this options allows a line to be seized from the data call.
- **Short Code List**
  These are the short codes used for matching against the telephone number output Line, User, User Right or System dial short code.
  - The only short code features that should be used in a Least Cost Route short code are: ***Dial***, ***Dial3K1***, ***Dial56K***, ***Dial64K***, ***DialEmergency***, ***DialSpeech***, ***DialV110***, ***DialV120***, ***DialVideo*** and ***Busy***.
  - The **;** character and **[ ]** characters cannot be used.
  - Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

6.18.3 Alternate Route 1

This tab of a Least Cost Route is used in the following cases:

- The short code match on the Main Route 348 tab is set to Busy but the user has a higher priority than that tab.
- The Main Route 348 tab timeout has expired while trying to seize a line from the outgoing line group specified by the short code match on that tab.

In either case the IP Office will look for an alternate short code match on this tab. The match is performed on the telephone number outputs by a Line, User, User Rights or System short code that resulted in a number to dial. If a match is found it is used, otherwise the call receives busy.

Least Cost Routing | Alternate Route 1	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Timeout (secs):** *Default = 30 seconds. Range = 1 to 99999 seconds or 0 (No IP trunk fallback).*
  If an LCR short code match is found, the IP Office will attempt to seize a line in the outgoing line group specified by that short code. If, after this timeout period has expired, the IP Office still cannot seize a line, it will look for a alternate short code match in the Alternate Route 2 350 tab.
- Priority: *Default = 5, Range 1 (lowest) to 5 (highest).*
  Normally, if the LCR short code match is a short code set to Busy, the user will receive busy tone. For users whose own Priority 257 setting (User | User | Priority) is higher than the Main Route tab's, the IP Office will look for an alternate short code match in the Alternate Route 2 350 tab.
- **Allow Bump:** *Default = Off*
  When a line indicated by the LCR short code match cannot be seized because lines in that outgoing line group are being used for a multilink PPP data call, this options allows a line to be seized from the data call.
- **Short Code List**
  These are the short codes used for matching against the telephone number output Line, User, User Right or System dial short code.
  - The only short code features that should be used in a Least Cost Route short code are: ***Dial***, ***Dial3K1***, ***Dial56K***, ***Dial64K***, ***DialEmergency***, ***DialSpeech***, ***DialV110***, ***DialV120***, ***DialVideo*** and ***Busy***.
  - The ***;*** character and ***[ ]*** characters cannot be used.
  - Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

6.18.4 Alternate Route 2

This tab of a Least Cost Route is used in the following cases:

- The short code match on the Alternate Route 1 349 tab is set to Busy but the user has a higher priority than that tab.
- The Alternate Route 1 349 tab timeout has expired while trying to seize a line from the outgoing line group specified by the short code match on that tab.

In either case the IP Office will look for an alternate short code match on this tab. The match is performed on the telephone number outputs by a Line, User, User Rights or System short code that resulted in a number to dial. If a match is found it is used, otherwise the call receives busy.

Least Cost Routing | Alternate Route 2	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Timeout (secs)**
  Not used. This is the last tab within a Least Cost Route.
- **Priority**
  Not used. This is the last tab within a Least Cost Route.
- **Allow Bump:** *Default = Off*
  When a line indicated by the LCR short code match cannot be seized because lines in that outgoing line group are being used for a multilink PPP data call, this options allows a line to be seized from the data call.
- **Short Code List**
  These are the short codes used for matching against the telephone number output Line, User, User Right or System dial short code.
  - The only short code features that should be used in a Least Cost Route short code are: **Dial**, ***Dial3K1***, ***Dial56K***, ***Dial64K***, ***DialEmergency***, ***DialSpeech***, ***DialV110***, ***DialV120***, ***DialVideo*** and **Busy**.
  - The **;** character and **[ ]** characters cannot be used.
  - Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

6.19 Account Code Settings



Account codes are commonly used to control cost allocation and out-going call restriction. The account code used on a call is included in the call information output by the system's call log. Incoming calls can also trigger account codes automatically by matching the Caller ID stored with the account code.

Once a call has been completed using an account code, the account code information is removed from the user's call information. This means that redial functions will not re-enter the account code.

The maximum recommended number of accounts codes is 1000.

Setting a User to Forced Account Code

1. Receive the system configuration if one is not opened.
2. In the left-hand panel, click  **User**. The list of existing user is shown in the right-hand panel.
3. Double-click the required user.
4. Select the **Telephony** tab.
5. Tick the **Force Account Code** option.
6. Click **OK**.
7. Merge the configuration.

Forcing Account Code Entry for Specific Numbers

Account code can be set a being required for any dialing that matches a particular short code. This is done by ticking the Force Account Code option found in the short code settings. Note that the account code request happens when the short code match occurs. Potentially this can be in the middle of dialing the external number, therefore the use of X wildcards in the short code to ensure full number dialing is recommended.

Entering Account Codes

The method for entering account codes depends on the type of phone being used. Refer to the relevant telephone User's Guide for details.

- **Account Code Button**
  The **Account Code Entry** action (**User | Button Programming | Emulation | Account Code Entry**) and **Set Account Code** action (**User | Button Programming | Advanced | Set | Set Account Code**) can be assigned to a programmable button on some phones. They both operate the same. The button can be preset with a specific account code or left blank to request account code entry when pressed. The button can then be used to specify an account code before a call or during a call.
- **Phone Manager**
  The IP Office Phone Manager application can be used to enter account codes before or during calls. For full details refer to the Phone Manager documentation.
  - To enter an account code before making a call or during a call select **Actions | Account Code**. A valid account code can then be selected from the Account Code drop down.
  - The **Account Codes** tab can be used to create icons to speed dial specific numbers and account codes that are regularly used.
- **Setting an Account Code using Short Codes**
  The **Set Account Code** feature allows short codes to be created that specify an account code before making a call.
- **Show Account Code Setting** (System | Telephony | Telephony)
  This setting controls the display and listing of system account codes:
  - When on
    - When entering account codes through Phone Manager, users can select from a drop-down list of available account codes.
    - When entering account codes through a phone, the account code digits are shown while being dialed.
  - When off
    - Within Phone Manager the drop-down list of available account codes is not useable, instead account codes must be entered using the Phone Managers PIN Code features.
    - When entering account codes through a phone, the account code digits are replaced by s characters on the display.

6.19.1 Account Code

This tab is used to define an individual account code.

Account Code | Account Code	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Account Code**
  Enter the account code required. The code can include alphabetic characters for users dialing via Phone Manager. It can also include wildcards; ***?*** matches a single digit and ***** matches any digits.
- **Caller ID**
  A caller ID can be entered and used to automatically assign an account code to calls made to or received from caller ID.

6.19.2 Voice Recording

This tab is used to activate the automatic recording of external calls when the account code is entered at the start of the call or automatically assigned by call ID matching when the call is received. This requires Voicemail Pro to be installed and running. Call recording also requires available conference resources similar to a 3-way conference.

The recordings are placed in the mailbox of the user making or receiving the call. This option cannot be triggered by entry of the account code during a call.

- IP Office 4.0+ introduces the following changes to user account code recording:
  - Calls to and from IP devices including those using Direct media can be recorded.
  - User account code recording stops if the call is transferred to another user.
  - Calls parked or held by the user pause recording until the user unparks the call or takes it off hold.
- For IP Office 4.1+, the destination mailbox for the recording can be specified.

Account Code | Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Record Outbound:** *Default = None*
  Select whether outbound external calls are recorded. Options are On, Mandatory and then various percentages of calls made by the user.
  - ***On:*** Record the call if possible.
  - ***Mandatory:*** If not possible to record, return busy tone to the caller.
- **Record Inbound:** *Default = None, Software level = Up to 3.2 only.*
  Select whether inbound external calls are recorded. Requires the account code to be assigned to the call by matching the caller ID associated with the account code on the Account Code \| Account Code 352 tab. For IP Office 4.0 and higher, recording calls from a particular caller ID can be setup using incoming call route voice recording.
- **Record Time Profile:** *Default = Blank (Any time)*
  Used to select a time profile 336 during which the settings above are used for call recording. Outside this period calls are not recorded using these settings.
- **Auto Recording Mailbox:** *Default = <None> (Calling user's mailbox), Software level = 4.1+.*
  Sets the mailbox into which automatically triggered recordings are placed.
  - **Voice Recording Library (Auto):** *Default = Off, Software level = 3.0+.*
- When checked, this setting overrides the **Auto Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

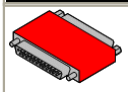
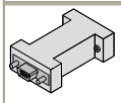
6.20 License



This form is used to display the function, value and status of license keys entered into the IP Office configuration. License keys are 32 character strings uniquely based on the feature they active and the serial number of a Feature Key dongle being used by the IP Office control unit.

IP Office Feature Key dongles are available in several types. Each IP Office system only supports license validation against a single dongle and vice versa. The licenses in the IP Office systems configuration must match the serial number of the Feature Key dongle. Depending on the dongle type, it is installed either directly on the IP Office control unit or onto a PC running the IP Office Feature Key Server application.

- Each IP Office will only support license validation against one feature key dongle.
- If being used, a Feature Key Server PC will only validate licenses for the first IP Office to which it connects after starting.
- For parallel and USB feature keys, the address of the PC hosting the dongle and running the IP Office Feature Key Server software is set by the License Server IP Address setting on the System | System 165 tab. For serial key dongles, the address is set to 0.0.0.0.
- Note that for the IP500 control unit, a smart card Feature Key dongle must be present even if no licensed features are being used. For the IP500 control unit, the dongle fitted controls default operation.
- The serial number and whether the control unit has an local (serial or smart card) or remote (parallel or USB) Feature Key dongle are indicated by the Dongle Serial Number field on the System | System 165 tab.

IP Office Feature Key Dongle		Server PC	License Server IP Address	SOE	IP403	IP406 V1	IP406 V2	IP412	IP500
	**Parallel** This type of feature key dongle is plugged into the parallel port of a PC running the IP Office Feature Key Server software.	✓	255.255.255.255 or server PC address.	✓	✓	✓	✓	✓	✗
	**USB** This type of feature key dongle is plugged into the USB port of a PC running the IP Office Feature Key Server software.	✓	255.255.255.255 or server PC address.	✓	✓	✓	✓	✓	✗
	**Serial** This type of feature key dongle is plugged into the 9-pin serial port on the back of IP Office Small Office Edition and IP406 V2 control units. No separate PC running IP Office Feature Key software is required.	✗	0.0.0.0	✓	✗	✗	✓	✓	✗
	**Smart Card** This type of feature key dongle, a credit-card sized memory card, is used with the IP500 control unit. No separate PC running IP Office Feature Key software is required.	✗	Not used.	✗	✗	✗	✗	✗	✓

Importing License Keys
It is recommended that licenses are cut and pasted electronically. This removes the chances of errors due to mistyping and misinterpretation of characters fonts. Where multiple licenses need to be added, the CSV import option can be used (**File | Import/Export | Import**). Licenses imported this way may be listed as invalid until the configuration is saved and then reloaded

License | License	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **License Key**
  This field is used to enter the 32-character license key.
- **License Type**
  For information only. If the key is recognized, its function will be listed here. Invalid indicates that the License Key has not been recognized as enabling any feature, regardless of the Feature Key dongle serial number. For a list of licenses and their purpose refer to the IP Office Installation manual.
- **License Status**
  For information only. This field indicates the current validation status of the license key against the serial number of the Feature Key dongle being used by the IP Office system.
  - Unknown is shown for newly entered licenses until the configuration is sent to the IP Office and then retrieved again.
  - Valid is shown if the license key matches the Feature Key dongle serial number.
  - Invalid is shown if the license key does not match the Feature Key dongle serial number.
- **Instances**
  For information only. Some licenses enable a number of port, channels or users. When that is the case, the number of such is indicated here. Multiple licenses for the same feature are usually cumulative.
- **Expiry Date**
  For information only. License can be set to expire within a set period from their issue by Avaya. The expiry date is shown here.

- **UMS Web Services License**
  For IP Office 4.2+, clicking on the UMS Web Services license in the group pane 76 will display a list of users for whom UMS Web Services has been enabled. This dialog can be used to add or remove users from the list.

6.21 Tunnel Settings



Tunneling allows additional security to be applied to IP data traffic. This is useful when sites across an unsecure network such as the public internet. The IP Office supports two methods of tunneling, L2TP and IPSec. Once a tunnel is created, it can be used as the destination for selected IP traffic in the IP Route 344 table.

Two types of tunneling are supported:

- **L2TP - Layer 2 Tunneling Protocol** 356
  PPP (Point to Point Protocol) authentication normally takes place between directly connected routing devices. For example when connecting to the internet, authentication is between the customer router and the internet service provider's equipment. L2TP allows additional authentication to be performed between the routers at each end of the connection regardless of any intermediate network routers. The use of L2TP does not require an IP Office license.

- **IPSec** 358
  IPSec allows data between two locations to be secured using various methods of sender authentication and or data encryption. The use of IPSec requires entry of an IPSec Tunneling license (IP400 IPSec VPN RFA) into the IP Office at each end.

6.21.1 L2TP Tunnel

6.21.1.1 Tunnel

Tunnel | Tunnel (L2TP)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Name:** *Default = Blank.*
  A unique name for the tunnel. Once the tunnel is created, the name can be selected as a destination in the IP Route table.
- **Local Configuration**
  The account name and password is used to set the PPP authentication parameters.
  - **Local Account Name**
    The local user name used in outgoing authentication.
  - **Local Account Password/Confirm Password**
    The local user password. Used during authentication.
  - **Local IP Address**
    The source IP address to use when originating an L2TP tunnel. By default (un-configured), IP Office uses the IP address of the interface on which the tunnel is to be established as the source address of tunnel.
- **Remote Configuration**
  The account name and password is used to set the PPP authentication parameters.
  - **Remote Account Name**
    The remote user name that is expected for the authentication of the peer.
  - **Remote Account Password/Confirm Password**
    The password for the remote user. Used during authentication.
  - **Remote IP Address**
    The IP address of the remote L2TP peer or the local VPN line IP address or the WAN IP address.
- **Minimum Call Time (Mins):** *Default = 60 minutes, Range = 1 to 999.*
  The minimum time that the tunnel will remain active.
- **Forward Multicast Messages:** *Default = On*
  Allow the tunnel to carry multicast messages when enabled.
- **Encrypted Password:** *Default = Off*
  When enabled, the CHAP protocol is used to authenticate the incoming peer.

6.21.1.2 L2TP

Tunnel | L2TP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Shared Secret/Confirm Password**
  User setting used for authentication. Must be matched at both ends of the tunnel. This password is separate from the PPP authentication parameters defined on the **L2TP|Tunnel** 356 tab.
- **Total Control Retransmission Interval:** *Default = 0, Range = 0 to 65535.*
  Time delay before retransmission.
- **Receive Window Size:** *Default = 4, Range = 0 to 65535.*
  The number of unacknowledged packets allowed.
- **Sequence numbers on Data Channel:** *Default = On*
  When on, adds sequence numbers to L2TP packets.
- **Add checksum on UDP packets:** *Default = On.*
  When on, uses checksums to verify L2TP packets.
- **Use Hiding:** *Default = Off*
  When on, encrypts the tunnel's control channel.

6.21.1.3 PPP

Tunnel | PPP (L2TP)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **CHAP Challenge Interval (secs):** *Default = 0 (Disabled), Range = 0 to 99999 seconds.*
  Sets the period between CHAP challenges. Blank or 0 disables repeated challenges. Some software (such as Windows 95 DUN) does not support repeated challenges.
- **Header Compression:** *Default = None*
  Select header compression. Options are: IPHC and/or VJ.
- **PPP Compression Mode:** *Default = MPPC*
  Select the compression mode for the tunnel connection. Options are: Disable, StacLZS or MPPC.
- **Multilink / QoS:** *Default = Off*
  Enable the use of Multilink protocol (MPPC) on the link.
- **Incoming traffic does not keep link up:** *Default = On*
  When enabled, the link is not kept up when the only traffic is incoming traffic.
- **LCP Echo Timeout (secs):** *Default = 6, Range = 0 to 99999 seconds.*
  When a PPP link is established, it is normal for each end to send echo packets to verify that the link is still connected. This field defines the time between LCP echo packets. Four missed responses in a row will cause the link to terminate.

6.21.2 IP Security Tunnel

6.21.2.1 Main

Tunnnel | Main (IPSec)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Name:** *Default = Blank.*
  A unique name for the tunnel. Once the tunnel is created, the name can be selected as a destination for traffic in the IP Route 344 table.
- **Local Configuration**
  The IP Address and IP Mask are used in conjunction with each other to configure and set the conditions for this Security Association (SA) with regard to inbound and outbound IP packets.
  - **IP Address**
    The IP address or sub-net for the start of the tunnel.
  - **IP Mask**
    The IP mask for the above address.
  - **Tunnel Endpoint IP Address**
    The local IP address to be used to establish the SA to the remote peer. If left un-configured, IP Office will use the IP address of the local interface on which the tunnel is to be configured.
- **Remote Configuration**
  The IP Address and IP Mask are used in conjunction with each other to configure and set the conditions for this Security Association (SA) with regard to inbound and outbound IP packets.
  - **IP Address**
    The IP address or sub-net for the end of the tunnel.
  - **IP Mask**
    The IP mask for the above address.
  - **Tunnel Endpoint IP Address**
    The IP address of the peer to which a SA must be established before the specified local and remote addresses can be forwarded.

6.21.2.2 IKE Policies

Tunnel | LKE Policies (IPSec)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Shared Secret/Confirm Password**
  The password used for authentication. This must be matched at both ends of the tunnel.
- **Exchange Type:** *Default = ID Prot*
  Aggressive provides faster security setup but does not hide the ID's of the communicating devices. ***ID Prot*** is slower but hides the ID's of the communicating devices.
- **Encryption:** *Default = DES CBC*
  Select the encryption method used by the tunnel. The options are: ***DES CBC***, ***3DES*** or ***Any***.
- **Authentication:** *Default = MD5*
  The method of password authentication. Options are: MD5, SHA or Any.
- **DH Group:** *Default = Group 1*
- **Life Type:** *Default = KBytes*
  Sets whether **Life** (below) is measured in seconds or kilobytes.
- **Life:** *Range = 0 to 99999999.*
  Determines the period of time or the number of bytes after which the SA key is refreshed or re-calculated.

6.21.2.3 IPSec Policies

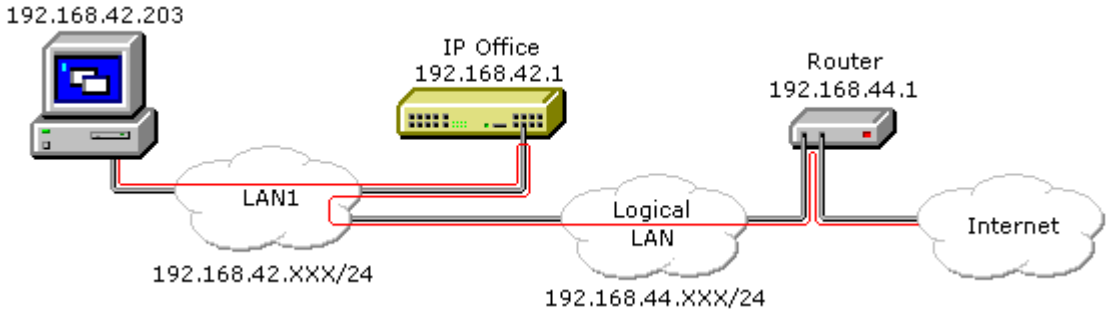
Tunnel | IPSec Policies	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Protocol:** ***Default = ESP***
  ESP (Encapsulated Security Payload) or ***AH*** (Authentication Header, no encryption).
- **Encryption:** ***Default = DES***
  Select the encryption method used by the tunnel. The options are: ***DES CBC***, ***3DES*** or ***Any***.
- **Authentication:** *Default = HMAC MD5*
  The method of password authentication. Options are: **HMAC MD5**, ***HMAC SHA*** or ***Any***.
- **Life Type:** *Default = KBytes*
  Sets whether Life (below) is measured in seconds or kilobytes.
- **Life**
  Determines the period of time or the number of bytes after which the SA key is refreshed or re-calculated.

6.22 Logical LAN

IP Office Small Office Edition and IP412 control units support two separate LAN interfaces (LAN1 and LAN2). These are separately addressed and the IP Office's IP route table and firewalls can be used to control traffic between device attached to the two LAN's.

On other IP Office control units only a single LAN (LAN1) is available. A logical LAN allows these systems to support a second separately addressed LAN on the same interface. Traffic between the IP Office LAN1 and the logical LAN can then be controlled by the IP Office's IP route table and firewalls.



Logical LAN | Logical LAN	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Name:** *Default = Blank. Range = Up to 31 characters.*
  A unique name for the logical LAN. This name becomes selectable as a destination in the IP Route table.
- **IP Address:** *Default = 0.0.0.0*
  The IP address provided by the internet service provider for the logical LAN.
- **IP Mask:** *Default = 0.0.0.0*
  The IP address mask provided by the internet service provider for the logical LAN.
- **Gateway IP Address:** *Default = 0.0.0.0*
  The IP address of the router on the logical LAN.
- **Gateway Mac Address:** *Default = 00:00:00:00:00:00*
  The MAC address of the router. If the MAC address isn't known, from a PC that can ping the router's IP address, use the command arp -a <ip address>.
- **Firewall Profile:** *Default = Blank*
  This field allows selection of an existing IP Office firewall profile that should be applied to traffic to and from the logical LAN.
- **Enable NAT:** *Default = On (Grayed out).*
  NAT is applied to all traffic from the IP Office LAN to the logical LAN. The use of NAT is not compatible with H.323 VoIP operation, therefore a VPN tunnel should also be applied to traffic being routed

6.23 Wireless Settings



The Small Office Edition control unit can act as an 802.11b wireless access point. To do this requires the insertion of an Avaya supplied IP Office wireless card into one of the control unit's PCMCIA slots and entry of a Small Office Edition WiFi license into the configuration. The IP Office Wireless settings can then be configured.

In order to connect to the IP Office LAN, wireless devices must be configured to match the IP Office Wireless settings. Additionally the wireless device must match the control unit's LAN1 or LAN2 network settings unless using IP Office DHCP.

6.23.1 SSID

This tab is used to set the general identity of the wireless connection to the IP Office LAN.

Wireless | SSID	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✗, IP412 ✗, IP500 ✗.
Software Level	2.0+.
Mergeable	✗.

- **Network Name:** *Default = IP Office Wireless.Net*
  A unique name used to identify and distinguish the IP Office wireless LAN from other wireless LAN's. This is the wireless LAN's Service Set Identifier (SSID).
- **Wireless Mac Address**
  Displays a list of the MAC addresses of the devices currently connected to the wireless LAN.
- **Frequency/Channel:** *Default = 6*
  The 802.11b wireless frequency band is sub-divided into a number of channels. In locations where there are multiple wireless LAN's or multiple access points to the same wireless LAN, each access point should use a separate channel. Devices connecting to a wireless LAN will automatically connect to the channel providing the strongest signal.
  - The number of channels available is country specific. In the US channels 1 to 11 are available. In most of Europe, channels 1 to 13 are available. In Japan only channel 14 is available.
  - The channel frequencies overlap. For instance, channel 2 shares part of the same frequency band as channels 1 and 3. In areas with multiple access points or LAN, use widely spaced channels. For example uses channels 1, 6 and 11 on different access points.
- **Accept Any:** *Default = Off*
  If on, allows any wireless device to connect to the wireless LAN without having to have a matching wireless network name (SSID) set. When off, only devices configured with a matching wireless network name can connect to the wireless LAN.

6.23.2 Security

This tab allows for additional security through the use of WEP wireless encryption keys. If enabled, in addition to encrypting the wireless traffic, only devices using a matching encryption key can connect to the wireless LAN.

Wireless | Security	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✗, IP412 ✗, IP500 ✗.
Software Level	2.0+.
Mergeable	✗.

- **Encryption:** *Default = Disabled*
  Allows selection of 50/64 bit or 128 bit security. Note: 50/64 bit encryption is also know as 40/64 encryption in some locales.
- **Alpha/Hex:** *Default = Hex*
  Switch key entry between hexadecimal and alphabetic entry modes.
- **Key 1/4**
  Allows entry of the security key and selection of which key is the current key to use.

6.24 User Restrictions Settings

User Restrictions are only available in pre-IP Office 3.2 configurations. For IP Office 3.2 and higher they have been replaced by User Rights 364.

Within Manager, users can be grouped by the types of numbers they are allowed to dial or not allowed to dial. For example, those who are allowed to dial 1900 or international numbers.

The User Restriction form allows named groups of dialing short codes/restrictions to be created. These short codes can then be applied to a user by associating them with the User Restriction name rather than having to recreate the short codes for each user.

To set up a restriction within the User Restriction form

1. Click User Restriction form within the Configuration Tree.
2. Enter a name for the restriction.
3. Click the Short Code List tab and create a short code.
4. Merge the configuration.

To apply a User Restriction to a specific user

1. Click the User form within the Configuration Tree.
2. Double-click the user for whom you want this restriction applied.
3. Within the User tab, click the Restriction drop down box and select the User Restriction you want applied to this user.
4. Merge the configuration.

6.24.1 User Restrictions

User Restrictions are only available in pre-IP Office 3.2 configurations. For IP Office 3.2 and higher they have been replaced by User Rights 364.

User Restrictions | Restrictions	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	2.0 to 3.1 only.
Mergeable	✓.

- **Name:** *Default = Blank*
  A name used to identify the set of user restrictions and allow its selection through the **Restrictions** field in each individual user's User settings.
- **Priority:** *Default = 5 (highest), Range 0 to 5*
  The priority that should be applied to user calls if routed via a Least Cost Route 346. This overrides the priority of the individual user.
- **Outgoing Call Bar:** *Default = Off.*
  When on, bars users making external calls.

6.24.2 Short Codes

User Restrictions are only available in pre-IP Office 3.2 configurations. For IP Office 3.2 and higher they have been replaced by User Rights 364.

- WARNING
  User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

Allows entry of short codes for dialing by associated users. These short codes override any match system short codes but not individual user short codes.

User Restrictions | Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	2.0 to 3.1 only.
Mergeable	✓.

6.25 User Rights Settings



User Rights act as templates for users, locking selected user settings to the template value. For most of the settings within the user rights tabs, the following options can be selected from an adjacent drop down list. Note that some settings are grouped and are set and locked as a group.

- **Apply User Rights Value**
  Apply the value set in the user rights to all associated users.
  - The matching user setting is grayed out and displays a lock symbol.
  - Users attempting to change the settings using short codes receive inaccessible tone.
  - Within the user's Phone Manager the associated fields are grayed out or hidden.
- **Not Part of User Rights**
  Ignore the setting.

Adding User Rights

1. Select **User Rights**.
2. Click and select **User Rights**.
3. Enter a name.
4. Configure the user rights as required.
5. Click **OK**.

Creating User Rights Based on an Existing User

1. Select **User Rights**.
2. In the group pane, right-click and select **New User Rights from User**.
3. Select the user and click **OK**.

Associating User Rights to a User

1. Select **User Rights** or **User**.
2. In the group pane, right-click and select **Apply User Rights to Users**.
3. Select the user rights to be applied.
4. On the **Members of this User Rights** sub tab select the users to which the user rights should be applied as their **Working Hours User Rights**.
5. On the **Members when out of hours** sub tab select which users should use the selected user rights as their out of hours user rights.
6. Click **OK**.

or

1. Select the required user to display their settings in the details pane.
2. Select the **User** tab.
3. Use **Working Hours User Rights** drop-down to select the user rights required.
4. If required a **Working Hours Time Profile** and **Out of Hours User Rights** can be selected.
5. Click **OK**.

Copy User Rights Settings over a User's Settings

This process replaces a user's current settings with those that are part of the selected user rights. It does not associate the user with the user rights.

1. Select  **User Rights** or  **User**.
2. In the group pane, right-click and select **Copy user rights values to users**.
3. Select the user rights to be applied.
4. Click **OK**.

Default User Rights

For defaulted IP Office systems, the following user rights are created as a part of the default configuration. Fields not listed are not part of the user rights.

✓ = Set to On. ✗ = Set to Off. – = Not part of the user rights.

User Rights	Call Center Agent	Boss	Application	Default	IP Hard Phone	Mailbox	Paging	T3
Priority	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5
Voicemail	✓	–	–	–	–	✓	–	–
Voicemail Ringback	✗	✗	✗	✗	✗	✗	–	✗
Outgoing Call Bar	✗	✗	✗	✗	✗	✗	✗	✗
No Answer Time	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0
Transfer Return Time	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0
Individual Coverage Time	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10
Busy on Held	✓	✗	✓	✗	✗	–	–	✗
Call Waiting	✗	✗	✓	✗	✗	✗	✗	✓
Can be Intruded	✗	✗	✗	✗	✗	✗	✗	✗
Cannot be Intruded	✗	✗	✓	✓	✓	✗	✗	✗
Force Login	✓	–	–	–	–	–	–	–
Force Account Code	✗	✗	✗	✗	✗	✗	✗	✗
Button Programming	1: a= 2: b= 4: HGEna 5: DNDOn 6: Busy	1: a= 2: b= 3: c= 6: DNDOn 7: Dial *17	–	1: a= 2: b= 3: c=	1: a= 2: b= 3: c= 6: Dial *17	–	–	–
Phone Manager Type	✓ Pro	✓ Lite	✓ Pro	✓ Lite	✓ Lite	✓ Lite	✓ Lite	✓ Lite

6.25.1 User

This tab is used to set and lock various user settings.

User Rights | User	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Name**
  The name for the user rights . This must be set in order to allow the user rights to be selected within the User Rights drop down list on the User | User 257 tab of individual users.
- **Locale:** *Default = Blank*
  Sets and locks the language used for voicemail prompts to the user, assuming the language is available on the voicemail server. On a digital extension it also controls the display language used for messages from the IP Office to the phone. See Supported Country and Locale Settings 750.
- **Priority:** *Default = 5, Range 1 (Lowest) to 5 (Highest)*
  Sets and locks the user's priority setting for least cost routing.
- **Voicemail On:** *Default = On*
  Sets and locks the user's voicemail on setting.
- **Voicemail Ringback:** *Default = Off*
  Sets and locks the user's voicemail ringback setting.
- **Do Not Disturb:** *Default = Off*
  Sets and locks the user's DND status setting.
- **Outgoing Call Bar:** *Default = Off*
  When set, bars the user from making external calls.

6.25.2 Short Codes

This tab is used to set and lock the user's short code set. The tab operates in the same way as the **User | Short Codes** tab. Where the same short code exists in both the **User | Short Codes** tab and the associated **User Rights | Short Codes** tab, the IP Office will use the user short code.

User and User Rights short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.

- **WARNING**
  User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

User Rights | Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

6.25.3 Telephony

This tab allows various user telephony settings to be set and locked. These match settings found on the **User | Telephony** 265 tab.

User Rights | Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

Call Settings

- **No Answer Time:** *Default = Blank (Use system setting), Range = 1 to 99999 seconds.*
  Sets how long a call rings the user before following forwarded on no answer if set or going to voicemail. Leave blank to use the system default setting.
- **Transfer return Time (secs):** *Default = Blank (Off), Range 1 to 99999 seconds.*
  Sets the delay after which any call transferred by the user, which remains unanswered, should return to the user if possible.
- **Wrap up Time (secs):** *Default = 2 seconds, Range 0 to 99999 seconds.*
  Specifies the amount of time after ending one call before another call can ring. You may wish to increase this in a "call center" environment where users may need time to log call details before taking the next call. It is recommended that this option is not set to less than the default of 2 seconds. 0 is used for immediate ringing.
- **Call waiting on/Enable call waiting:** *Default = Off*
  For users on phones without appearance buttons, if the user is on a call and a second call arrives for them, an audio tone can be given in the speech path to indicate a waiting call (the call waiting tone varies according to locale). The waiting caller hears ringing rather than receiving busy. There can only be one waiting call, any further calls receive normal busy treatment. If the call waiting is not answered within the no answer time, it follows forward on no answer or goes to voicemail as appropriate. User call waiting is not used for users on phones with multiple call appearance buttons. Call waiting can also be applied to hunt group calls, see Hunt Group | Hunt Group | Call Waiting 289.
- **Busy on held/Enable busy on Held:** *Default = On*
  If on, when the user has a call on hold, new calls receive busy tone (ringing for incoming analog call) or are diverted to voicemail if enabled, rather than ringing the user. Note this overrides call waiting when the user has a call on hold.

Supervisor Settings

- **Can Intrude:** *Default = Off*
  Check this option if the User can interrupt other user's calls. This setting and the setting below are used to control the use of the following short code and button features: Call Intrude, Call Listen, Call Steal and Dial Inclusion.
- **Cannot be Intruded:** *Default = On*
  If checked, this user's calls cannot be interrupted or acquired. In addition to the features listed above, this setting also affects whether other users can use their appearance buttons to bridge into a call to which this user has been the longest present user.
- **Force Login:** *Default = Off*
  If checked, the user must log in using their Login Code to use an extension. For example, if Force Login is ticked for User A and user B has logged onto A's phone, after B logs off A must log back. If Force Login was not ticked, A would be automatically logged back in.
- **Force Account Code:** *Default = Off*
  If checked, the user must enter a valid account code to make an external call.
- **Inhibit Off-Switch Forward/Transfer:** *Default = Off*
  When enabled, this setting stops the user from transferring or forwarding calls externally. Note that all user can be barred from forwarding or transferring calls externally by the System | Telephony | Telephony | Inhibit Off-Switch Forward/Transfers 177 setting.
- **SBCC Agent:** *Default = Off, Software level = 4.2+.* 
  This field is used by the IP Office SBCC application to indicate which users are Agents monitored by that application. It also indicate to the IP Office those users who can use other SBCC features within the IP Office configuration. If a user is set as an SBCC Agent, **Forced Login** is enabled and greyed out from being changed and a warning is given if the user does not have a log in code set.
  - The number of simultaneous logged in SBCC Agents supported by the IP Office is controlled by licenses entered into the configuration. If all SBCC Agent licenses on a system have been used, additional agents are prevented from logging in.
- **After Call Work Time:** *Default = System Default, Range = 10 to 999 seconds, Software level = 4.2+.*
  SBCC Agents (see above) can be automatically put into ***After Call Work*** (ACW) state after ending a hunt group call. During ACW state, hunt group calls are not presented to the user. If set to ***System Default***, the value set in **Default After Call Work** 192 (System | SBCC) 192 is used.
- **Enable Automatic After Call Work:** *Default = Off, Software level = 4.2+.*
  For SBCC Agents with **Automatic After Call Work** enabled, this value sets the duration of the ACW period.

Multi-line Options

- **Individual Coverage Time (secs):** *Default = 10 seconds, Range 1 to 99999 seconds.*
  This function sets how long the phone will ring at your extension before also alerting at any call coverage users. This time setting should not be equal to or greater than the No Answer Time.

6.25.4 Button Programming

This tab is used to set and lock the user's programmable button set. When locked, the user cannot use **Admin** or **Admin1** buttons on their phone to override any button set by their user rights.

Buttons not set through the user rights can be set through the user's own settings.

When **Apply user rights value** is selected, the tab operates in the same manner as the **User | Button Programming** 275 tab.

User Rights | Button Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

Adding Blank Buttons

There are scenarios where users are able to program their own buttons but you may want to force certain button to be blank. This can be done through the user's associated User Rights as follows:

1. Assign the action **Emulation | Inspect** to the button. Enter some spaces as the button label.
2. When pressed by the user, this button will not perform any action. However it cannot be overridden by the user.

6.25.5 Menu Programming

This tab is used to set and lock the user's programmable button set.

When **Apply User Rights value** is selected, the tab operates in the same manner as the **User | Menu Programming** 276 tab.

User Rights | Menu Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

6.25.6 Phone Manager

This tab is used to set and lock which parts of Phone Manager the associated users can use or adjust.

User Rights | Phone Manager	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Allow user to modify Phone Manager settings:** *Default = On*
  This setting is used with the Phone Manager Status Options, Screen Pop Options and Hide Options. It controls whether those options are applied every time the user starts Phone Manager or only the first time the user starts Phone Manager.
  - If this setting is enabled, then the IP Office configuration setting of those options are only applied the first time a user starts Phone Manager on a PC. Those settings become part of the user's Phone Manager profile on that PC. They can be changed by the user through Phone Manager. On subsequent Phone Manager starts the Manager settings are ignored.
  - If this setting is not enabled, the IP Office configuration settings are applied every time the user starts Phone Manager and cannot be overridden by the user.
- **Agent Mode:** *Default = Off*
  This option controls the setting of the Agent Mode option on the **Configure Preferences | Agent Mode** tab within Phone Manager Pro. When enabled, the user has additional toolbar controls for Busy Wrap Up, Busy Not Available and Select Group. Note that the options on the Phone Manager Pro Agent Mode tab can be grayed out from user changes by the Agent Mode setting in Configuration Options below.
- **Phone Manager Type:** *Default = Lite*
  Determines the mode in which the user's copy of the Phone Manager application operates. This setting cannot be changed by the user. * For pre-3.2 IP Office systems this setting is located on the **User \| User** 257 tab.
  - **Lite**
    Basic Phone Manager mode. This mode does not require any licenses.
  - **Pro**
    Advanced Phone Manager mode that enables a range of additional functions. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.
  - **Phone Manager PC Softphone**
    This is the VoIP IP phone mode of Phone Manager Pro. This mode requires both an available Phone Manager Pro license and a Phone Manager Pro IP Audio Enabled license. The user must be associated with an VoIP extension within the IP Office configuration.
  - **Pro Telecommuter:** *Software level = 4.1+.*
    This version of Phone Manager Pro is supported with Phone Manager 4.1+. It allows the user to make and receive calls via an external phone specified at Phone Manager log in. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.
- **Enable VoIP:** *Default = Off*
  This option only appears if the selected Phone Manager Type is Phone Manager PC Softphone. It enables or disables the matching setting on the user's Phone Manager PC Softphone.
- **Configuration Options**
  These options allow the user access to the indicated configure preferences tabs within Phone Manager. The controllable tabs for Phone Manager Lite are **Telephone** and **Do Not Disturb**. The additional controllable tabs for Phone Manager Pro and Phone Manager PC Softphone are **Screen Pop**, **Compact Mode**, **Agent Mode**, **Voicemail** (Voicemail and Voicemail Ringback controls only) and in IP Office 4.0 and higher **Mobile Twinning**.
- **Screen Pop Options**
  These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone screen pop options Ringing, Answering, Internal, External and Outlook. The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.
- **Phone Manager Status Options**
  These options allow selection of the tabs to show within the call history area of the user's Phone Manager. The tabs selectable for Phone Manager are **All**, **Missed**, **Status** and **Messages**. The additional tabs selectable for Phone Manager Pro and PC Softphone are **Incoming**, **Outgoing** and **Account Code**. The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.
- **Hide Options**
  These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone options Hide on close and Hide on no calls. The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.

6.25.7 Twinning

This tab is used to set and lock the following settings relating to the use of mobile twinning. Use of mobile twinning requires entry of a mobile twinning license. This tab is no long available for IP Office 4.2+.

User Rights | Twinning	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2 to 4.1 only.
Mergeable	✓.

- **Mobile Dial Delay**
  Sets and locks the dial delay applied to calls eligible for mobile twinning.
- **Hunt group calls eligible for mobile twinning**
  Sets whether mobile twinning is applied to hunt group calls.
- **Forwarded calls eligible for mobile twinning**
  Sets whether mobile twinning is applied to forwarded calls.

6.25.8 User Rights Membership

The tabs display the users associated with the user rights. and allows these to be changed.

User Rights | User Rights Membership	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Members of this User Rights**
  This tab indicates those users associated with the user rights. If the user has an associated Working hours time profile, their association to the user rights applies only during the periods defined by the time profile. If the user does not have an associated Working hours time profile, they are associated with the user rights at all times.
- **Members when out of service**
  This tab indicates those users associated with the user rights outside the time periods defined by their Working hours time profile. The Members when out of service tab is not populated unless there are time profiles available within the configuration.

6.26 Auto Attendant Settings



The IP Office Small Office Edition, IP406 V2 and IP500 control units support embedded voicemail. This is setup by adding an Avaya embedded voicemail memory card to the control unit and then selecting Embedded Voicemail as the Voicemail Type on the System | Voicemail 175 tab.

- For full details on configuration and operation of Embedded Voicemail auto-attendants refer to the IP Office Embedded Voicemail Installation Manual.

The IP406 V2 and IP500 support up to 4 simultaneous calls to embedded voicemail services. The Small Office Edition supports up to 10 simultaneous calls to embedded voicemail depending on available voice compression channels. A call from an IP device to voicemail uses two voice compression channels on the Small Office Edition.

- For pre-IP Office 4.1 systems up to 4 auto-attendant services are supported.
- For IP Office 4.1 and higher systems up to 40 auto-attendant services are supported. Due to this increase in the number of possible auto attendant, the method of automatic short code creation for recording prompts has been amended.

In addition to basic mailbox functionality, embedded voicemail can also provide auto-attendant operation. Each auto attendant can use existing time profiles to select the greeting given to callers and then provide follow on actions relating to the key presses 0 to 9, * and #.

- **Time Profiles**
  Each auto attendant can use up to three existing time profiles 336, on each for Morning, Afternoon and Evening. These are used to decide which greeting is played to callers. They do not change the actions selectable by callers within the auto attendant. If the time profiles overlap or create gaps, then the order of precedence used is morning, afternoon, evening.
- **Greetings**
  Four different greetings are used for each auto attendant. One for each time profile period. This is then always followed by the greeting for the auto-attendant actions. By default a number of system short codes are automatically created to allow the recording of these greetings from an IP Office extension. See below.
- **Actions**
  Separate actions can be defined for the DTMF keys 0 to 9, * and #. Actions include transfer to a specified destination, transfer to another auto-attendant transfer to a user extension specified by the caller (dial by number) and replaying the greetings.
  - IP Office 4.0+ supports a **Fax** action. This can be used to reroute fax calls when fax tone is detected by the auto-attendant.
- **Short Codes**
  Adding an auto attendant automatically adds a number of system short codes. These use the Auto Attend short code feature. These short codes are used to provide dialing access to record the auto attendant greetings.
  - For pre-IP Office 4.1 system, 4 short codes are added for each auto attendant. These use the form AA:Name.1 where Name is the Auto Attendant name.
  - For IP Office 4.1+ these take the form short code *81XX with the number "AA:"N".1" where N is the replaced with the auto attendant number when dialing. Four such short codes (*81XX, *82XX, *83XX and *84XX) are added, one each for the morning, afternoon, evening and menu options greetings.
- **Routing Calls to the Auto Attendant**
  The telephone number format ***AA:Name*** can be used to route callers to an auto attendant. It can be used in the destination field of incoming call routes and telephone number field of short codes set to the Auto Attend feature.

6.26.1 Auto Attendant

This tab is used to define the name of the auto attendant service and the time profiles that should control which auto attendant greetings are played.

Auto Attendant | Auto Attendant	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✗, IP500 ✓.
Software Level	2.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Name:** *Range = Up to 12 characters*
  This field sets the name for the auto-attendant service. External calls can be routed to the auto attendant by entering AA:Name in the destination field of an Incoming Call Route.
- **Maximum Inactivity:** *Default = 8 seconds; Range = 1 to 20 seconds, Software level = 3.0+.*
  This field sets how long after playing the prompts the Auto Attendant should wait for a valid key press. If exceeded, the caller is either transferred to the Fallback Extension set within the Incoming Call Route used for their call or else the caller is disconnected.
- **Enable Local Recording:** *Default = On, Software level = 4.0+ (Q2 2007 Maintenance release)*
  When off, use of short codes to record auto-attendant prompts is blocked. The short codes can still be used to playback the greetings.
- **AA Number:** *Software level = 4.1+.*
  This number is assigned by the IP Office and cannot be changed. It is used in conjunction with short codes to access the auto attendant service or to record auto attendant greetings.
- **Morning/Afternoon/Evening/Menu Options:**
  Each auto-attendant can consist of three distinct time periods, defined by associated time profiles. A greeting can be recorded for each period. The appropriate greeting is played to callers and followed by the Menu Options greeting which should list the available actions.
  - **Time Profile**
    The time profile that defines each period of auto-attendant operation. When there are overlaps or gaps between time profiles, precedence is given in the order morning, afternoon and then evening.
  - **Short code**
    These fields indicate the system short codes automatically created to allow recording of the time profile greetings and the menu options prompt.
  - **Recording Name:** *Default = Blank. Range = Up to 31 characters, Software level = 4.0+ (Q2 2007 Maintenance release).*
    This field appears next to the short code used for manually recording auto-attendant prompts. It is only used is using pre-recorded wav files as greeting rather than manually recording greetings using the indicated short codes. If used, note that the field is case sensitive and uses the name embedded within the wav file file header rather than the actual file name.
    - For IP Office 4.0 this field is only useable for IP Offices being managed through the Avaya Integrated Management (AIM) 56 application. As part of the Auto Attendant template this field defines the name of the file that should sent to the IP Office system when the template is merged with that IP Office system's configuration settings. The .wav file is automatically converted to the required format for the control unit before being transferred.
    - For IP Office 4.1+ this field can be used with all systems supporting embedded voicemail. The utility for converting .wav files to the correct format is provided with Manager and can be launched via File \| Advanced \| LVM Greeting Utility 148. Files then need to be manually transferred to the embedded voicemail memory card. For full details refer to the IP Office Embedded Voicemail Installation manual.

6.26.2 Actions

This tab defines the actions available to callers dependant on which DTMF key they press. To change an action, select the appropriate row and click **Edit**. When the key is configured as required click **OK**.

Auto Attendant | Actions	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✗, IP500 ✓.
Software Level	2.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Key**
  The standard telephone dial pad keys, 0 to 9 plus * and #.
  - For IP Office 4.0+ the option **Fax** is available. This can be set to a Blind Transfer to the required fax destination and will then be triggered by fax tone detection. If left as **Not Defined**, fax calls will follow the incoming call routes fallback settings once the auto-attendant Maximum Inactivity Time set on the Auto Attendant | Auto Attendant 373 tab is reached.
- **Action**
  The following actions can be assigned to each key.
  - ***Not Defined***
    The corresponding key takes no action.
  - ***Blind Transfer:*** *Software level = 4.0+.*
    Transfer the call to the selected destination. This is an unsupervised transfer, if the caller is not answered they will be handled as per a direct call to that number.
  - ***Dial By Number:*** *Software level = 4.0+.*
    This option allows callers with DTMF phones to dial the extension number of the user they require. No destination is set for this option. The prompt for using this option should be included in the auto attendant Menu Options greeting. A uniform length of extension number is required for all users and hunt group numbers.
  - ***Transfer to Attendant:*** *Software level = 4.0+.*
    This action can be used to transfer calls to another existing auto attendant.
  - ***Transfer to Operator:*** *Software level = Up to 3.2 only.*
    Transfer the caller to the selected destination. Operates the same as the Normal Transfer option below.
  - ***Normal Transfer***
    Transfer the caller to the selected destination. This is an unsupervised transfer, if the caller is not answered they will be handled as per a direct call to that number. If no destination is set, the caller can dial the user extension number that they require.
  - ***Replay Greeting***
    Replay the auto-attendant greetings again.
- **Destination**
  Sets the destination extension or group number. Note that if the destination field is left blank, callers can dial the user extension number that they require. Note however that no prompt is provided for this option so it should be included in the auto attendant Menu Options greeting.

6.27 Authorization Codes



Authorization codes are not shown by default. Manager must be modified in order to support authorization codes. Similarly in order to record authorization codes used with calls in the IP Office SMDR, the IP Office Delta Server software must be modified.

Each authorization code is associated with a particular user or user rights set. The user or users associated with the user rights, can then dial numbers which are set to trigger forced authorization code entry. Once a code is entered, the short code settings of the user or user rights with which the code is associated are used to completed the call.

This can be used to allow authorized users to make otherwise restricted calls from any extension without first having to log in to that extension and then log out after the call. Authorization code usage can be recorded along with the call details by the IP Office Delta Server in its SMDR output, including valid/invalid code entry and the code used.

- **Example**
  The system short code for dialing international calls is set to require a forced authorization code. This bars most users from making international calls. An authorization code is created and associated with User A. User A also has a short code that allows international dialing with no restriction. They can now go to any extension, start dialing an international number and when authorization code entry is triggered, enter their code to complete the call using their international dialing short code.
- **WARNING: Changing PC Registry Settings**
  Avaya accepts no liability for any issues arising from the editing of a PC's registry settings. If you are in any doubt about how to perform this process you should not proceed. It is your responsibility to ensure that the registry is correctly backed up before any changes are made.

Enabling Authorization Codes in Manager

To enable support for authorization codes within Manager requires a change to the Manager PC registry settings. Once this change is made, various authorization code related features are visible when Manager is restarted and a configuration from a 3.2 or higher system is loaded.

1. Close Manager.
2. Locate the registry key ***HKEY_CURRENT_USER\Software\Avaya\IP400\Manager\EnableAuthorisationCodes*** and change its value from ***0*** to ***1***.
3. Restart Manager and load a configuration from an IP Office 3.2 or higher system.

Enabling Authorization Codes in Delta Server

The use of authorization codes can be included in the SMDR output logged by the IP Office Delta Server application. Again this requires changes to the registry of the PC running the Delta Server application.

1. Open the registry and locate the ***HKEY_LOCAL_MACHINE\Software\Avaya\CCCServer\Setup*** registry keys.
2. Add two new **DWORD** registry keys and set their values to 1. They are:
   - **AllowAuthorization**
   - **ShowAllowAuthorization**
3. Open the browser to the Delta Server configuration screens.
4. Select SMDR. An **Add Authorization Fields to SMDR** option should now be available. Select this to enable logging of authorization codes to the SMDR log file.

Authorization codes are only logged to the SMDR log file. Two new fields are added to the end of each call log record in the SMDR log file. The first new field is the authorization code used or n/a if no authorization code was used. The second field is 1 for valid authorization or 0 for invalid authorization.

Forcing Authorization Codes

There are two methods to force a user to enter an authorization code in order to complete dialing an external call.

- **To Force Authorization Codes on All External Calls**
  A user can be required to enter an authorization code for all external calls. This is done by selecting **Force Authorization Code** 265 (User | Telephony | Supervisor Settings) 265.
- **To Force Authorization Codes on Specific Calls**
  To require entry of an authorization code on a particular call or call type, the Force Authorization Code option should be selected in the short code settings. This can be used in user, user rights or system short codes in order to apply its effect to a user, group of users or all users respectively. You need to ensure that the user cannot dial the same number by any other method that would by pass the short code, for example with a different prefix.

Entering an Authorization Code
Where possible, when an authorization code is required, the user can enter it through their phones display. However this is not possible for all type of phone, for example it is not possible with analog phones and Avaya XX01 or XX02 phones. The users of these device must either enter the authorization code using Phone Manager or by using a short code set to the Set Authorization Code feature immediately before making the call.

When entry of an authorization code is triggered, the user can enter any authorization code with which they are either directly associated or associated through their current user rights.

Note

1. If account code entry is setup for a particular number, calls forwarded or transferred to that number will also trigger account code entry.
2. On systems using line appearances to BRI trunk channels to make outgoing calls, account code entry may not be triggered. This can be resolved by adding a short code such as [9]XN;/Dial/XN/0 (adjust the prefix and line group as necessary).

Authorization Code | Authorization Code	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Authorization Code:** *Range = Up to 12 digits.*
  The digits used for the authorization code. Each code must be unique. Wildcards are not useable with authorization codes.
  - **User Rights**
    This field is used to select the user right with which the authorization code is associated. The authorization code can then be used to authorize calls made by users currently associated with that set of user rights.
  - **User**
    This field is used to select a user with which the authorization code is associated. The authorization code can then be used to authorize calls made by that user.

6.28 ARS



ARS (Alternate Route Selection) is used by IP Office 4.0+. It replaces LCR (Least Cost Routing) used by previous releases of IP Office. It also replaces the need to keep outgoing call routing short codes in the system short codes.

When a dialed number matches a short code that specifies that the number should be dialled, there are two methods by which the routing of the outgoing call can be controlled.

- **Routing Calls Directly to a Line**
  Every line and channel belongs has an Outgoing Group ID setting. Several lines and channels can have belong to the same Outgoing Group ID. Within short codes that should be routed via a line within that group, the required Outgoing Group ID is specified in the short code's Line Group ID setting.
- **Routing Calls via ARS**
  The short code for a number can specify an ARS form as the destination. The final routing of the call is then controlled by the setting available within that ARS form.

ARS Features

- **Secondary Dial Tone**
  The first ARS form to which a call is routed can specify whether the caller should receive secondary dial tone.
- **Out of Service Routing**
  ARS forms can be taken out of service, rerouting any calls to an alternate ARS form while out of service. This can be done through the configuration or using short codes.
- **Out of Hours Routing**
  ARS forms can reroute calls to an alternate ARS form outside the hours defined by an associated time profile.
- **Priority Routing**
  Alternate routes can be made available to users with sufficient priority if the initial routes specified in an ARS form are not available. For users with insufficient priority, a delay is applied before the alternate routes become available.
- **Line Types**
  ARS can be used with all line types except Small Community Network (SCN) trunks.
  - For IP Office 4.2+, SIP lines is treated as busy and can follow alternate routes based on the SIP line setting **Call Initiation Timeout** 239. Previously a SIP line was only seen as busy if all the configured channels were in use.
  - IP lines use the NoUser Source Number setting H323SetupTimerNoLCR to determine how long to wait for successful connection before treating the line as busy and following ARS alternate routing. For IP Office 4.2+ this is now set through the IP line option **Call Initiation Timeout** 229.
- **Small Community Network**
  Calls to SCN users are always routed using the appropriate SCN trunk. ARS can be configured for SCN numbers but will only be used if the SCN call fails due to congestion or network failure. However if the SCN becomes available before ARS finds an alternate route then SCN is used. This also applies to calls made across the SCN using the **Break Out** 401 feature.
- **Main Route**
  The ARS form 50, named "Main" cannot be deleted. For defaulted IP Office systems it is used as a default route for outgoing calls.

Routing Calls to ARS

1. Create the ARS form.
2. Create the required system, user or user rights short code to match the user dialing.
   2.1. In the Telephone Number field define the digits that will be used to match a short code in the ARS form.
   2.2. Use the Line Group ID field drop-down to select the ARS form required for routing the call.

Example ARS Operation

Default ARS

The simplest example for ARS operation are the settings applied to defaulted IP Office 4.0 systems. These vary between MU-Law systems and A-LAW systems.

A-Law IP Office Systems

This set of defaults is applied to A-Law systems, typically supplied to locales other than North America. The defaults allow any dialing that does not match an internal number to be routed off-switch as follows:

1. **System Short Code - ? / . / Dial / 50:Main**
   The default system short code ? will match any dialing for which no other user, user rights or system short code match is found. This short code is set to route all the digits dialed to ARS form 50.

2. **ARS Form - 50:Main**
   This form contains just a single short code.

   - **? / . / Dial3K1 / 0**
     This short code matches any digits passed to the ARS form. It then dials the digits out on the first available line within line group 0 (the default outgoing line group for all lines).

MU-Law IP Office Systems

This set of defaults is applied to MU-Law systems, typically supplied to locales in North America. The defaults route any dialing prefixed with a 9 to the ARS and secondary dial tone.

1. **System Short Code - 9N / N / Dial / 50:Main**
   The default system short code 9N is used to match any dialing that is prefixed with a 9. It passes any digits following the 9 to ARS form 50.

2. **ARS Form - 50:Main**
   This form has secondary dial tone enabled. It contains a number of short codes which all pass any matching calls to the first available line within line group 0 (the default outgoing line group for all lines). Whilst all these short code route calls to the same destination, having them as separate items allows customization if required. The short codes are:

   - **11 / 911 / Dial Emergency / 0**
     This short code matches an user dialing 911 for emergency services.
   - **911 / 911 / Dial Emergency / 0**
     This short code matches an user dialing 9911 for emergency services.
   - **0N; / 0N / Dial 3K1 / 0**
     This short code matches any international calls.
   - **1N; / 1N / Dial 3K1 / 0**
     This short code matches any national calls.
   - **N; / N / Dial 3K1 / 0**
     This short code matches 7 digit local numbers.
   - **XXXXXXXXXX / N / Dial 3K1 / 0**
     This short code matches 10 digit local numbers.

6.28.1 ARS

Each ARS form contains short codes which are used to match the result of the short code that triggered use of the ARS form, ie. the Telephone Number resulting from the short code is used rather than the original number dialed by the user.

ARS | ARS	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **ARS Route ID**
  This value is automatically assigned and cannot be edited.
- **Route Name:** *Default = Blank, Range = Up to 15 characters.*
  The name is used for reference and is displayed in other areas when selecting which ARS to use.
- **Dial Delay Time:** *Default = System. Range = 1 to 30 seconds.*
  This settings defines how long ARS should wait for further dialing digits before assuming that dialing is complete and looking for a short code match against the ARS form short codes. When set to ***System***, the system's **Dial Delay Time** 177 (System \| Telephony \| Telephony) 177 value is used.
- **Secondary Dial Tone:** *Defaults = Off.*
  When on, this setting instructs the IP Office to play secondary dial tone to the user. The tone used is set by the field below. The options are **System Tone** (normal dial tone) or **Network Tone** (secondary dial tone). Both tone types are generated by the IP Office in accordance with the system specific locale setting 750. Note that in some locales normal dial tone and secondary dial tone are the same.
  - When **Secondary Dial Tone** is selected, the ARS form will return tone until it receives digits with which it can begin short code matching. Those digits can be the result of user dialing or digits passed by the short code which invoked the ARS form. For example with the following system short codes:

    In this example the 9 is stripped from the dialed 9 and is not part of the telephone number passed to the ARS form. So in this case secondary dial tone is given until the user dials another digit or dialing times out.
    - **Code:** 9N
    - **Telephone Number:** N
    - **Line Group ID:** 50 Main

    In this example the dialed 9 is included in the telephone number passed to the ARS form. This will inhibit the use of secondary dial tone even though secondary dial tone is selected on the ARS form.
    - **Code:** 9N
    - **Telephone Number:** 9N
    - **Line Group ID:** 50 Main
- **Check User Call Barring:** *Default = Off*
  If enabled, the dialing user's Outgoing Call Bar setting and any user short codes set to the function Busy are checked to see whether they are appropriate and should be used to bar the call.
- **In Service:** *Default = On*
  This field is used to indicate whether the ARS form is in or out of service. When out of service, calls are rerouted to the ARS form selected in the **Out of Service Route** field.
  - Short codes can be used to take an ARS form in and out of service. This is done using the short code features Disable ARS Form 424 and Enable ARS Form 427 and entering the ARS Route ID as the short code **Telephone Number** value.
- **Out of Service Route:** *Default = None.*
  This is the alternate ARS form used to route calls when this ARS form is not in service.
- **Time Profile:** *Default = None.*
  Use of a ARS form can be controlled by an associate time profile. Outside the hours defined within the time profile, calls are rerouted to an alternate ARS form specified in the Out of Hours Route drop-down. Note that the Time Profile field cannot be set until an Out of Hours Route is selected.
- **Out of Hours Route:** *Default = None.*
  This is the alternate ARS form used to route calls outside the hours defined within the Time Profile 336 selected above.
- **Short Codes**
  Short codes within the ARS form are matched against the "Telephone Number" output by the short code that routed the call to ARS. The IP Office then looks for another match using the short codes with the ARS form.
  - Only short codes using the following features are supported within ARS: ***Dial***, ***Dial Emergency***, ***Dial Speech***, ***Dial 56K***, ***Dial64K***, ***Dial3K1***, ***DialVideo***, ***DialV110***, ***DialV120*** and ***Busy***.
  - Multiple short codes with the same **Code** field can be entered so long as they have differing **Telephone Number** and or **Line Group ID** settings. In this case when a match occurs the IP Office will use the first match that points to a route which is available.

- **Alternate Route Priority:** *Default = 3. Range = 1 (low) to 5 (high).*
  If the routes specified by this form are not available and an Alternate Route has been specified, that route will be used if the users priority is equal to or higher than the value set here. User priority is set through the **User | User** form and by default is ***5***. If the users priority is lower than this value, the Alternate Route Wait Time is applied. This field is grayed out and not used if an ARS form has not been selected in the Alternate Route field.
- **Alternate Route Wait Time:** *Default = 30 seconds*
  If the routes specified by this form are not available and an Alternate Route has been specified, users with insufficient priority to use the alternate route immediately must wait for the period defined by this value. During the wait the user hears camp on tone. If during that period a route becomes available it is used. This field is grayed out and not used if an ARS form has not been selected in the Alternate Route field.
- **Alternate Route:** *Default = None.*
  This field is used when the route or routes specified by the short codes are not available. The routes it specifies are checked in addition to those in this ARS form and the first route to become available is used.

6.29 E911 System Settings



The central office routes 911 emergency calls into a dedicated emergency network. The calls are then distributed to the correct emergency operator by using either the automatic line identification information (ALI) received with the emergency call or the registered billing address of the line on which the call was made.

E911 is system whereby emergency calls are routed through an E911 Adjunct with adds additional location information to the call based on the . Support for this is only available on control units shipped with a U-Law default and set to United States locale.

The use of E911 may be mandatory in some locations and may include the provision of an adjunct owned and managed by a third party or the central office.

Dial Emergency Short Codes
On all IP Office systems, regardless of locale, system and or ARS short codes using the Dial Emergency feature should be created for any required emergency service numbers. Those short codes should be useable by all users from all extensions. Those short codes should route the calls to suitable lines. If the system uses prefixes for external dialing, the dialing of emergency numbers with and without the prefix should be allowed. Note that the blocking of emergency numbers or the routing of emergency numbers to a intermediate destination other than the emergency network may be against local and nation laws.

For systems with a United States locale, the Dial Emergency short code acts differently. Calls matched to Dial Emergency short codes are routed using the details contained in the E911 forms. This routing will then be either via installed E911 Adjunct equipment or via grouped set of trunks and extensions called zones.

- **Emergency Dialing without an E911 Adjunct**
  If E911 is not enabled, all emergency calls are routed using the zones configured on the E911 | Zones 383 form. By default all lines and all extensions are added to a default zone and the first available line is used for emergency calls.

  1. Ensure that the appropriate Dial Emergency short codes have been configure either in system short codes or in an ARS form.
  2. The lines used to route an extension's emergency calls must be correctly registered to the physical location of the extension.
  3. Create E911 Zones for each registered location. Include the extensions and lines that serve that location in the zones settings.

- **Emergency Dialing with an E911 Adjunct**
  An E911 adjunct is an additional piece of equipment. It holds a database of location information based on the base extension number passed to it by the IP Office. Connection from the IP Office is by loop-start analog trunks. The adjunct is then connected to the central office's 911 emergency network by CAMA (Centralized Automatic Message Accounting) trunks.

  When E911 is enabled and operating, all Dial Emergency calls are routed to the adjunct. The base extension ID is used to add the appropriate location information to the calls ALI before passing it to the emergency network.

  - If Dial Emergency calls cannot be routed to the E911 adjunct due to congestion, the IP Office will automatically fallback to using the E911 Zones.
  - The E911 adjunct includes an alarm switch that can be connected to an IP Office analog extension port. Dial Emergency calls will fallback to using E911 Zones if the E911 adjunct indicates an alarm.

  If you are using E911 with an E911 Adjunct, the following needs to be administered:

  1. Ensure that the appropriate Dial Emergency short codes have been configure either in system short codes or in an ARS form.
  2. On the E911 Adjunct tab select Enable.
  3. In the Adjunct Trunks list select those trunks that are connected to the E911 Adjunct.
  4. In the Alarm Station field, indicate the extension number of the user to which the E911 adjunct's alarm connection has been connected.
     - On an operator or security extension, a programmable button can be set to monitor the status of this user. That button will then indicate in use (busy) when the E911 adjunct is in its alarm state.
  5. E911 Zones should still be configured. These are used if the IP Office cannot seize one of the Adjunct Trunks or the Alarm Station is busy (indicating a fault with the E911 adjunct connections).

6.29.1 E911 Adjunct

The settings on this tab relate to the use of an E911 adjunct if installed.

Dial Emergency calls routed to the E911 adjunct include the extension ID of the extension on the IP Office system. This is used to lookup information stored in a database on the E911 Adjunct and then send that information to the central office. The extension ID of each extension is shown on the Extension | Extn tab.

- To call an extension using its Extension ID number, the short code feature Dial Physical Extn by ID can be used. This is normally provided by the default short code *71*N# when N can be replaced by the required extension ID.

E911 System | E911 Adjunct Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Enable:** *Default = Off (Not Selected)*
  When selected, all Dial Emergency calls are routed via the selected Adjunct Trunks and includes the extension ID of the dialing extension. This may differ from the extension number of the user current logged in at that extension if hot desking is being used.
- **Alarm Station:** *Default = Blank*
  This is an analog extension port on the IP Office system, connected to the alarm switch provided on the E911 adjunct. When the E911 adjunct detects an error, for example disconnection of the CAMA trunks, it will indicate this by taking the alarm connection off-hook, making the analog extension busy.
  - When an alarm occurs and is indicated to the IP Office by the alarm station being busy, the IP Office will reroute Dial Emergency calls using the **E911 | Zones** 383 settings.
  - To monitor the status of the alarm connection a user should be associated with the analog extension (one should exist by default). Another user such as the reception desk or security desk can then be provided with a programmable button set to the action User and the appropriate user. That button will then indicate busy when the alarm connection is in an alarm state.
- **Adjunct Trunks:**
  This section lists all the analog and digital trunks (except VoIP trunks) available on the IP Office system. Only the trunks which are connected to the E911 Adjunct should be selected.

6.29.2 Zones

Zones are used for Dial Emergency calls on US systems where no E911 adjunct is installed. They are also used when a trunk to an install E911 adjunct cannot be seized or the E911 adjunct is indicating an alarm through its alarm station being off-hook (busy).

Zones allow extensions in the same location to be grouped and to have the external trunks registered to the same location associated with them. This billing address of those trunks or other information held by the trunk provider can then be used identify the correct emergency center that should respond to Dial Emergency calls from extensions in that zone.

The extension number used for this function is the Base Extension number set through the Extension | Extn tab. This allows the physical extension to be correctly identified even if currently being used by a hot desking user with a different associated extension number.

A zone named Default is maintained by the IP Office. By default all extensions and lines are included in this zone. This zone can be edited but cannot be removed. Any extension included in another zone and then removed is automatically placed back into the Default zone. Trunks can be deleted as some trunks will not be public trunks suitable for emergency calls.

- To call an extension using its Base Extension number, the short code feature Dial Physical Extn by Number can be used. This is normally provided by the default short code *70*N# when N can be replaced by the required Base Extension number.

Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

This tab shows the existing E911 zones, the number of stations (extensions) and trunks in each zone and the base extension numbers of the extensions. The settings can be edited by clicking on an existing zone and selecting Edit. A new zone can be created by selecting Add.

- **Name:** *Default = Default, Range = Up to 15 characters.*
  Allows a unique name to be assigned to each zone.
- **Stations:** *Default = Contains all Extension ID's*
  Lists the extensions in the zone. Click **Add** to add and remove extensions. To just remove extensions, select the extension or extensions and click Remove. Extensions removed from any zone are automatically included in the Default zone and cannot be removed from that zone except by inclusion in another zone. Each extension can only be included in one zone.
- **Trunks:** *Default = Blank*
  List the trunks associated with the zone. Click **Add** to add and remove trunks. To just remove trunks, select the trunk or trunks and click Remove. Each trunk can only be included in one zone. Dial emergency calls will seize the first available trunk. If no available trunk can be seized, the call will fallback to using the routing indicated with the Line Group ID of the Dial Emergency short code and final to using any available analog or digital trunk.

Chapter 7.
Short Codes

7. Short Codes

The IP Office uses short codes to match the number dialed to an action. The number dialed or part of the number dialed can be used as parameter for the feature.

- **WARNING**
  User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

Examples

The method of detailing a short codes settings lists the short code fields separated by a /.

- ***17/?U/VoicemailCollect**
  A user dialing ***17*** is connected to voicemail.
- ***14*N#/N/FollowMeTo**
  If a user dials ***14*210#*** at their own extension, their calls are redirected to extension 210.

Dialing Short Codes

The following types of short code applied to on-switch dialing. The result may be an action to be performed by the IP Office, a change to the user's settings or a number to be dialed. The order below is the order of priority in which they are used when applied to user dialing.

- **User Short Codes**
  These are useable by the specific user only.
- **User Rights/User Restrictions Short Codes**
  These are useable by any users associated with the user rights or restrictions in which they are set. They can be overridden by individual user short codes.
- User and User Rights short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.
- **System Short Codes**
  These are available to all users on the IP Office system. They can be overridden by user or user rights short codes.

Post-Dialing Short Codes

When any the short code above result in a number to be dialed, further short code can be applied to that number to be dialed. This is done using the following types of short codes.

- **ARS (Alternate Route Selection) Short Codes**
  The short code that matches dialing can specify that the resulting number should be passed to an ARS form. The ARS form can specify which routes should be used for the call by using further short code matches and also provide option to use other ARS forms based on other factors such as time and availability of routes. In IP Office 4.0+ ARS has replaced Least Cost Routes.
- **Least Cost Route Short Codes**
  Least Cost Routes are used by pre-4.0 IP Office system only. On these systems any short code that results in a number to be dialed, has is telephone number further checked for a match against LCR short codes. Time profiles can be used to control when particular sets of LCR short codes are used.
- **Transit Network Selection (TNS) Short Codes**
  Used on T1 ISDN trunks set to use AT&T as the Provider. Applied to the digits presented following any other short code processing.

Incoming Number Short Codes

On certain types of trunks short codes can be applied to the incoming digits received with calls.

- **Line Short Codes**
  These short codes are used to translate incoming digits received with calls. The stage at which they are applied varies between different line types and may be overridden by an extension number match.

7.1 Short Code Fields and Characters

Each short code, regardless of its type, has the following fields:

- **Short Code:** *Default =Blank, Range = Up to 31 characters.*
  The digits which if matched trigger use of the short code. Characters can also be used to create short codes which cannot be dialed from a phone but can be dialed from application speed dials. However some characters have special meaning, see the table below.
- **Telephone Number:** *Default = Blank, Range = Up to 32 characters.*
  The number output by the short code. When necessary, this is used as parameter for the selected short code Feature. See the table below for the special characters that can be used here.
- **Line Group ID:** *Default = 0*
  This field is used for short codes that result in a number to be dialed. It acts as a drop-down from which either an outgoing line group or, for IP Office 4.0+, an ARS form can be selected.
- **Feature:** *Default = Dial*
  This sets the action performed by the short code when used. See Short Code Features 398.
- **Locale:** *Default = Blank*
  Features that transfer the caller to Voicemail Lite or Voicemail Pro can indicate the language locale required for prompts. This is subject to the language being supported and installed on the voicemail server.
- **Force Account Code:** *Default = Off*
  When selected, for short codes that result in the dialing of a number, the user is prompted to enter a valid account code before the call is allowed to continue.

Short Code Field Characters

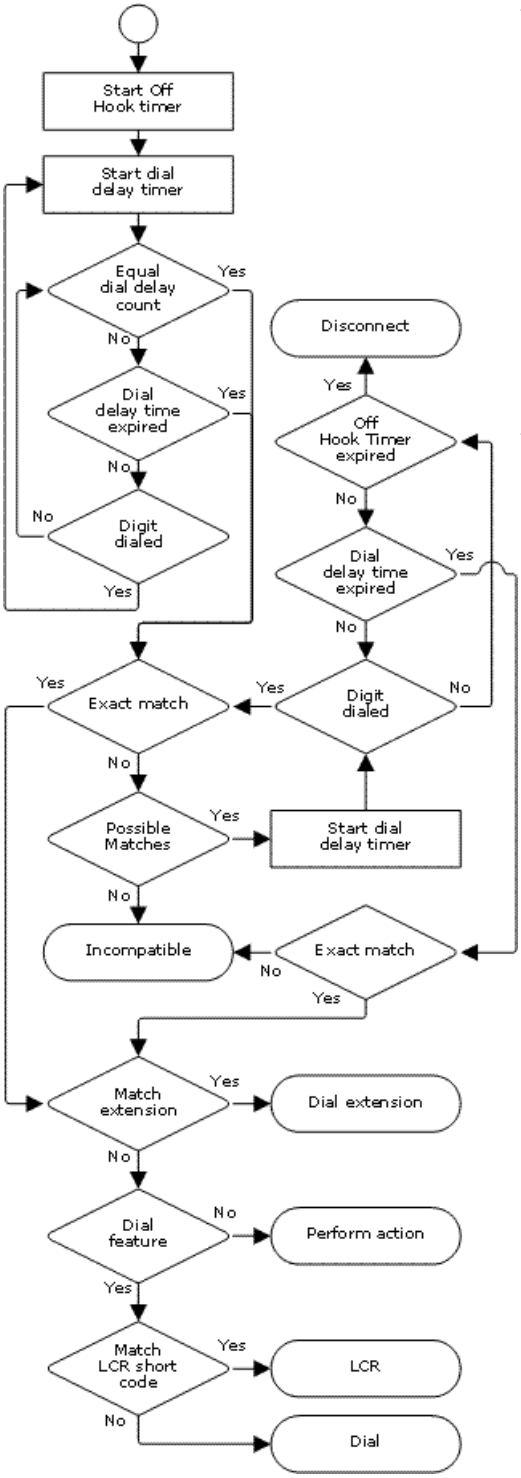
Character	Meaning
?	Used on its own to create a short code match in the absence of any other short code match. Only supported as a system short code except for ?D below. For example, the system short code ?/./Dial/0 will route any dialing for which no other match is found to outgoing line group 0. See **? Short Codes** 392.
?D	This character combination makes a call to the defined phone number as soon as the user goes off-hook. See **? Short Codes** 392.
N	Matches a sequence of one or more dialed digits. The Dial Delay Time or a following matching character is used to resolve when dialing is complete.
X	Matches a single digit. When a group of X's is used, the short code matches against the total number of X's.
[ ]	For pre-4.0 IP Office systems used to trigger secondary dial tone. Not used for IP Office 4.0+. See **Secondary Dial Tone** 391.
;	Receive sending complete. When used this must be the last character in the short code string. It instructs the system to wait for the number to be fully dialed, using the Dial Delay Time or the user dialing #, before acting on the short code. • **Dialing Complete** The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.

Telephone Number Field Characters

Character	Meaning
A	Allow the calling party number sent with the call to be used. This character may be required by service providers in some locales.
C	Place any following digits in the outgoing call's Called number field rather than the Keypad field.
D	Wait for a connect message before sending any following digits as DTMF.
E	Replace with the extension number of the dialing user. Note that if a call is forwarded this will be the replaced with the extension number of the forwarding user.
I	Send data in an Information Packet rather than Set-up Packet.
K	Place any following digits in the outgoing call's Keypad field rather than the Called Number field. Only supported on ISDN and QSIG.
L	Use the last number received.
N	Substitute with the digits used for the **N** or **X** character match in the Short Code number field.
p	IP Office 4.2+: The priority 330 of a call is normally assigned by the Incoming Call Route or else is ***1-Low*** for all other calls. **Dial Extn** 420 short codes can use **p(*x*)** as a suffix to the **Telephone Number** to change the priority of a call. Allowable values for ***x*** are ***1***, ***2*** or ***3*** for low, medium or high priority respectively. • Note that the queue time associated with a call is not reset when its priority is increased. This means that a call will jump ahead of other calls of the same priority if the newly promoted call has a longer time in queue. Due to this, the use of call priority promotion is not recommended on systems where Voicemail Pro is being used to provide estimate time to answer and position in queue information to the callers.
S	Place any following digits into the outgoing call's calling number field. Not supported on SIP lines.
SS	Pass through the Calling Party Number. For example, to provide the incoming ICLID at the far end of a VoIP connection, a short code ? with telephone number .SS should be added to the IP line. Not supported on SIP lines.
i	Both the ***S*** and ***SS*** characters can be followed by an ***i***, that is ***Si*** and ***SSi***. Doing this sets the calling party number plan to ISDN and number type to National. This may be required for some network providers.
t	Set the maximum duration in minutes for a call plus or minus a minute. Follow the character with the number of minutes in brackets, for example ***t(5)***.
U	Replace with the User Name of the dialing user. Used with voicemail.
W	Withhold the sending of calling ID number. Operation is service provider dependent. Not supported on SIP lines.
Y	Wait for a Call Progress or Call Proceeding message before sending any following digits as DTMF. For example, the Y character would be necessary at a site where they have signed up with their telephone service provider to withhold international dialing until a DTMF pin/account number is entered that initiates the call progress/proceeding message.
@	Enter any following digits into the sub-address field.
.	Replace with the full set of dialed digits that triggered the short code match.
,	Add a one second pause in DTMF dialing.
" "	Use to enclose any characters that should not be interpreted as possible short code special characters by the IP Office. For example characters being passed to the voicemail server.

7.2 User Dialing

Summary: Looks at how the IP Office looks for possible short code matches to user dialing.



The following IP Office settings influence user dialing.

- **Dial Delay Count:** *Default = 0 (US/Japan), 4 (ROW)*
  This value sets the number of digits dialed before the IP Office looks for a short code match.
- **Dial Delay Time:** *Default = 4000ms (US/Japan), 1000ms (ROW)*
  This value sets the maximum allowed interval between the dialing of each digit. If exceeded, the IP Office looks for a short code match even if the Dial Delay Count has not been reached.
- **Off-Hook Timer:** *Length Fixed by locale.*
  When a user goes off-hook, the IP Office starts a 30 second off-hook timer (10 seconds in Italy). If the off-hook timer expires before a short code match occurs, the user is disconnected.

The following rules are used when short code matching is performed for user dialing:

- A short code is used immediately an exact match is found unless followed by a ;.
- If no match is found but partial matches exist, the user can continue dialing.
- If no match or partial matches are found, incompatible is returned.
- The following precedence is used to determine which short codes are used:
- Extension number matches override all short codes.
- User short codes override user rights and system short codes.
- User Rights short code matches override system short codes.
- When multiple exact matches occur,
  - The match with the most specified digits rather than wildcards is used.
  - If there are still more than one match, the match with the most exact length is used. This means X wildcards will override N when both match.

7.3 Application Dialing

Numbers speed dialed by IP Office applications such as Phone Manager and SoftConsole are treated differently. Since the digits are received en bloc as a single group, they can override some short code matches. The same applies to short codes used within IP Office configuration settings such as Incoming Call Route destinations.

Example:

- Telephone Number: 12345678
- Short Code 1: 1234XX/207/DialExtn
- Short Code 2: 12345678/210/DialExtn

If dialed manually by the user, as soon as they have dialed 123456 a match to short code 1 occurs. They can never dial short code 2.

If dial using a Phone Manager speed dial, 12345678 is sent as a string and a match to short code 2 occurs.

Partial Dialing

If the application dialing does not trigger an exact match, the user can dial additional digits through their extension. The processes for normal user dialing are applied.

Non-Digit Short Codes

Short codes can be created that use alphabetic characters instead of numbers. While these short codes cannot be dialed from a phone, they can be dialed using application speed dials and settings. However characters that are interpreted as special short code characters will still be interpreted as such.

7.4 Secondary Dial Tone

Some locales prefer to provide users with secondary dial tone once they have started dialing external calls. This dial tone is heard by the user until they have completed dialing and a trunk is seized at which point call progress tones are provided by the trunk, or camp on/busy tone is provided by the IP Office if the required trunk cannot be seized.

IP Office 4.0 and Higher

For IP Office 4.0 and higher, the use of secondary dial tone is provided through the **Secondary Dial Tone** check box option on the ARS 377 form to which the call is routed. When on, this setting instructs the IP Office to play secondary dial tone to the user. Tone options are ***System Tone*** (normal dial tone) or ***Network Tone*** (secondary dial tone). Both tone types are generated by the IP Office in accordance with the system specific locale setting 750. Note that in some locales normal dial tone and secondary dial tone are the same.

- Calls requiring secondary dial tone do not get that tone until they routed to an ARS form that has secondary dial tone selected.
- When **Secondary Dial Tone** is selected, the ARS form will return tone until it receives digits with which it can begin short code matching. Those digits can be the result of user dialing or digits passed by the short code which invoked the ARS form. For example with the following system short codes:

  In this example the 9 is stripped from the dialed 9 is not part of the telephone number passed to the ARS form. So in this case secondary dial tone is given until the user dials another digit or dialing times out.
  - **Code:** 9N
  - **Feature:** Dial
  - **Telephone Number:** N
  - **Line Group ID:** 50 Main

  In this example the dialed 9 is included in the telephone number passed to the ARS form. This will inhibit the use of secondary dial tone even though secondary dial tone is selected on the ARS form.
  - **Code:** 9N
  - **Feature:** Dial
  - **Telephone Number:** 9N
  - **Line Group ID:** 50 Main

Pre-4.0 IP Office Secondary Dial Tone

Pre-4.0 IP Office systems provided dial tone through the use of the short code feature Secondary Dial Tone and the [ ] special characters. For example, on a system where 9 is used as a prefix for external dialing, the system short code 9/./Secondary Dial Tone/0 will trigger secondary dial tone when users dial a number prefixed with 9. This method is not supported by IP Office 4.0 which provides ARS forms for the control of outgoing calls.

In order to allow further digit matching, the digits dialed are put back through short code matching against any short codes that start with [n] where n is the digit used to trigger the system secondary dial tone short code.

- On all systems where secondary dial tone is used, a ; should also be used in dialing short codes that contain N.

For example:

- System Short Codes
  - 9/./SecondaryDialTone
  - [9]0N;/Dial/0
- User Short Code
  - [9]0N;/Busy/0

The user dials 90114445551234. The 9 is matches the system secondary dial tone short code and unlike other short codes this is applied immediately. The user's dialing is put through short code matching again using the normal order of precedence but matched to possible short codes beginning [9]. In this case the user's [9]0N; short code would take precedence over the system [9]0N; short code.

7.5 ? Short Codes

The ? character is normally used in two ways;

- **Default Short Code Matching**
  On IP Office systems outside North America, the system short code ?/./Dial/0 is added as a default short code. This short code provides a match for any dialing to which there is no other match. Therefore, on systems with this short code, the default is that any unrecognized number will be dialed to Outgoing Line Group 0.
  - A ? short code used in user or user rights short codes is overridden by a ? system short code.
- **Hot-Line Dialing**
  A user short code ?D can be used to perform a short code action immediately the user extension goes off-hook. This is supported with Dial type short code features (except **Dial Direct Hotline**). Typically it is used with door, lift and lobby phones to immediately connect the phone to a number such as the operator or reception.

The ? character can appear in the **Telephone Number** field of a short code. This is done with short codes using the **VoicemailCollect** feature. In this instance the ? character is not interpreted by the IP Office, it is used by the voicemail server.

7.6 Short Code Matching Examples

The following examples are not meant as practical examples. However they are simple to implement and test on real system without conflicting with its normal operation. They illustrate the interaction between different short codes in resolving which short code is an exact match. They assume that extension numbers are in the 200 to 299 range.

The term 'dials' means dialing the indicated digit or digits without the inter-digit Dial Delay Time expiring.

The term 'pause' means a wait that exceeds the inter-digit Dial Delay Time.

Scenario 1

Short Code 1 = 60/203/DialExtn.
Dial Delay Count = 0. Dial Delay Time = 4 seconds.

Test	Dialing	Effect
1	8	No possible match, incompatible returned immediately
2	6	No exact match but there is a potential match, so the system waits. When the Dial Delay Time expires, no exact match is found so incompatible is returned.
3	60	Exact match to Short Code 1. Extension 203 called immediately.
4	61	No possible match, the system returns incompatible.

Scenario 2

Short Code 1 = 60/203/DialExtn.
Short Code 2 = 601/210/Dial Extn.
Dial Delay Count = 0. Dial Delay Time = 4 seconds.

Test	Dialing	Effect
1	8	No possible match, incompatible returned immediately
2	60	Exact match to Short Code 1. Extension 203 called immediately.
3	601	Exact match to Short Code 1 as soon as the 0 is dialed. The user cannot manually dial 601. The only way they can dial 601 is using a Phone Manager speed dial set to dial that string.

Scenario 3

Short Code 1 = 60/203/DialExtn.
Short Code 2 = 601/210/Dial Extn.
Dial Delay Count = 3. Dial Delay Time = 4 seconds.

Test	Dialing	Effect
1	8	Insufficient digits to trigger matching. The system waits for additional digits or for Dial Delay Time to expire. When Dial Delay Time expires, no possible match is found so incompatible is returned.
2	60	Insufficient digits to trigger matching. The system waits for additional digits or for Dial Delay Time to expire. When Dial Delay Time expires, matching started and exact match to Short Code 1 occurs. .
3	601	Third digit triggers matching. Exact match to Short Code 2. Extension 210 dialed immediately.
4	60#	# is treated as a digit and as the third digit triggers matching. No exact match found. The system returns incompatible.

Scenario 4		
Short Code 1 = 60;/203/DialExtn. Short Code 2 = 601/210/Dial Extn. Dial Delay Count = 3. Dial Delay Time = 4 seconds.		
Test	**Dialing**	**Effect**
1	8	Insufficient digits to trigger matching. The system waits for additional digits or for Dial Delay Time to expire. When Dial Delay Time expires, no possible match is found so incompatible is returned.
2	6	Insufficient digits to trigger matching. The system waits for additional digits or for the interdigit Dial Delay Time to expire. If the Dial Delay Time expires, a potential match exists to a short code that uses ; so the system waits for an additional digit until the off-hook timer expires.
3	60	As above but an additional digit now may create a match. If 1 is dialed, it creates an exact match to Short Code 2 and is used immediately. If 0, * or 2 to 9 is dialed, no possible match exists. The system returns incompatible. If the next digit is a #, it is treated as signaling dialing complete rather than being a digit. Short code 1 becomes an exact match and is used immediately.
4	601	Third digit triggers matching. Exact match to Short Code 2. Extension 210 dialed immediately.

Scenario 5		
Short Code 1 = 601/203/DialExtn. Short Code 2 = 60N/210/Dial Extn. Dial Delay Count = 0. Dial Delay Time = 4 seconds.		
Test	**Dialing**	**Effect**
1	6	No exact match but there is a potential match, so the system waits for additional dialing. If the Dial Delay Time expires, no exact match is found so incompatible is returned.
2	60	Potential match to both short codes. The system waits for additional dialing. If the Dial Delay Time expires, Short Code 2 becomes an exact match with N blank.
3	601	Exact match to Short Code 1. Used immediately
4	602	Exact match to Short Code 2. Used immediately.

Scenario 6		
Short Code 1 = 601/203/DialExtn. Short Code 2 = 60N/210/Dial Extn. Short Code 3 = 60X/207/DialExtn. Dial Delay Count = 0. Dial Delay Time = 4 seconds.		
Test	**Dialing**	**Effect**
1	6	No exact match but there are potential matches so the system waits for additional dialing. If the Dial Delay Time expires, no exact match has occurred so incompatible is returned.
2	60	Potential match to all short codes. System waits for additional dialing. If the Dial Delay Time expires, Short Code 2 becomes an exact match with N blank. If a digit is dialed, Short Code 3 becomes a more exact match and is used.
3	601	Exact match all short code, however Short Code 1 is treated as being more exact (more matching digits) and is used immediately
4	602	Exact match to short codes 2 and 3, however the Short Code 3 is treated as being more exact (length match) and is used immediately.

Scenario 7		
Short Code 1 = 601/203/DialExtn. Short Code 2 = 60N/210/Dial Extn. Short Code 3 = 6XX/207/DialExtn. Dial Delay Count = 0. Dial Delay Time = 4 seconds.		
Test	**Dialing**	**Effect**
1	6	No exact match but there are potential matches so the system waits for additional dialing. If the Dial Delay Time expires, no exact match has occurred so incompatible is returned.
2	60	Potential match to all short codes. System waits for additional dialing. If the Dial Delay Time expires, Short Code 2 becomes an exact match with N blank. If a digit is dialed, Short Code 3 becomes an more exact match and is used.
3	601	Exact match all short code, however Short Code 1 is treated as being more exact (more matching digits) and is used immediately
4	602	Exact match to short codes 2 and 3, however the Short Code 2 is treated as being more exact (more matching digits) and is used immediately.
5	612	Exact match to Short Code 3.

7.7 Default System Short Code List

Most IP Office control units are available in A-Law and MU-Law models. Typically MU-Law models are supplied to North American locales, A-Law models are supplied to the rest of the world. In addition to the using different default companding for digital lines and phone, A-Law and MU-Law models support different default short codes.

The following table lists the default system short codes present in an IP Office 4.2+ system's configuration.

Short Code	Telephone Number	Feature	A-Law	MU-Law
*00	Blank	Cancel All Forwarding 411	✓	✓
*01	Blank	Forward Unconditional On 437	✓	✓
*02	Blank	Forward Unconditional Off 437	✓	✓
*03	Blank	Forward On Busy On 435	✓	✓
*04	Blank	Forward On Busy Off 435	✓	✓
*05	Blank	Forward On No Answer On 436	✓	✓
*06	Blank	Forward On No Answer Off 436	✓	✓
*07*N#	N	Forward Number 434	✓	✓
*08	Blank	Do Not Disturb On 427	✓	✓
*09	Blank	Do Not Disturb Off 427	✓	✓
*10*N#	N	Do Not Disturb Exception Add 426	✓	✓
*11*N#	N	Do Not Disturb Exception Del 426	✓	✓
*12*N#	N	Follow Me Here 431	✓	✓
*13*N#	N	Follow Me Here Cancel 432	✓	✓
*14*N#	N	Follow Me To 432	✓	✓
*15	Blank	Call Waiting On 410	✓	✓
*16	Blank	Call Waiting Off 410	✓	✓
*17	?U	Voicemail Collect 462	✓	✓
*18	Blank	Voicemail On 464	✓	✓
*19	Blank	Voicemail Off 464	✓	✓
*20*N#	N	Set Hunt Group Night Service 454	✓	✓
*21*N#	N	Clear Hunt Group Night Service 414	✓	✓
*22*N#	N	Suspend Call 460	✓	✗
*23*N#	N	Resume Call 449	✓	✗
*24*N#	N	Hold Call 439	✓	✗
*25*N#	N	Retrieve Call 450	✓	✗
*26		Clear CW 413	✓	✗
*27*N#	N	Hold CW 440	✓	✗
*28*N#	N	Suspend CW 460	✓	✗
*29	Blank	Toggle Calls 461	✓	✓
*30	Blank	Call Pickup Any 405	✓	✓
*31	Blank	Call Pickup Group 406	✓	✓
*32*N#	N	Call Pickup Extn 405	✓	✓
*33*N#	N	Call Queue 408	✓	✓
*34N;	Blank	Hold Music 440	✓	✓
*35*N#	N	Extn Login 429	✓	✓
*36	Blank	Extn Logout 429	✓	✓
*37*N#	N	Park Call 445	✓	✓
*38*N#	N	Unpark Call 461	✓	✓
*39	1	Relay On 448	✓	✓
*40	1	Relay Off 448	✓	✓
*41	1	Relay Pulse 449	✓	✓
*42	2	Relay On 448	✓	✓
*43	2	Relay Off 448	✓	✓
*44	2	Relay Pulse 449	✓	✓
*45*N#	N	Acquire Call 409	✓	✓
*46	Blank	Acquire Call 409	✓	✓
*47	Blank	Conference Add 415	✓	✓
*48	Blank	Voicemail Ringback On 465	✓	✓

Short Code	Telephone Number	Feature	A-Law	MU-Law
*49	Blank	Voicemail Ringback Off 465	✓	✓
*50	Blank	Forward Huntgroup On 433	✓	✓
*51	Blank	Forward Huntgroup Off 433	✓	✓
*52	Blank	Cancel or Deny 413	✓	✓
*53*N#	N	Call Pickup Members 407	✓	✓
*57*N#	N	Forward On Busy Number 434	✓	✓
*70	Blank	Call Waiting Suspend 410	✓	✗
*70*N#	N	Dial Physical Extn By Number 422	✗	✓
*71*N#	N	Dial Physical Extn By ID 422	✗	✓
9000	"MAINTENANCE"	Relay On 448	✓	✓
*91N;	N".1"	Record Message 447	✓	✓
*92N;	N".2"	Record Message 447	✓	✓
9N	N	Dial 416	✗	✓
?	.	Dial 416	✓	✗

Additional short codes of the form *DSSN, *SDN, *SKN, *#N and **N may also visible. These are used by the IP Office system for internal functions and should not be removed or altered.

For IP Office 4.2+, the default ***34*** short code for music on hold has changed to ***34N;***.

7.8 Short Code Features

This following section details the available IP Office short code features.

Acquire Call 399
AOC Previous Call 400
AOC Reset Total 400
AOC Total 400
Auto Attendant 401
Break Out 401
Busy 402
Busy On Held 402
Call Intrude 403
Call Listen 404
Call Pickup Any 405
Call Pickup Extn 405
Call Pickup Line 406
Call Pickup Group 406
Call Pickup Members 407
Call Pickup User 407
Call Queue 408
Call Record 408
Call Steal 409
Call Waiting On 410
Call Waiting Off 410
Call Waiting Suspend 410
Cancel All Forwarding 411
Cancel Ring Back When Free 411
Channel Monitor 411
Clear Call 413
Clear CW 413
Clear Hunt Group Night Service 414
Clear Hunt Group Out Of Service 414
Clear Quota 415
Change Login Code 412
Conference Add 415
Conference Meet Me 415
CW 415
Dia 416
Dial 3K1 417
Dial 56K 417
Dial 64K 417
Dial CW 418
Dial Direct 419
Dial Direct Hot Line 419
Dial Emergency 420
Dial Extn 420
Dial Inclusion 421
Dial Paging 421
DialPhysicalExtensionByNumber 422
DialPhysicalNumberByID 422
Dial Speech 423
Dial V110 423
Dial V120 423
Dial Video 423
Disable ARS Form 424
Disable Internal Forwards 424
Disable Internal Forward Unconditional 424
Disable Internal Forward Busy or No Answer 425
Display Msg 425
Do Not Disturb Exception Add 426
Do Not Disturb Exception Delete 426
Do Not Disturb On 427
Do Not Disturb Off 427
Enable ARS Form 427
Enable Internal Forwards 428
Enable Internal Forward Unconditional 428
Enable Internal Forward Busy or No Answer 428
Extn Login 429
Extn Logout 429
Flash Hook 430
FNE 430
Follow Me Here 431
Follow Me Here Cancel 432
Follow Me To 432
Forward Hunt Group Calls On 433
Forward Hunt Group Calls Off 433
Forward Number 434
Forward On Busy Number 434
Forward On Busy On 435
Forward On Busy Off 435
Forward On No Answer On 436
Forward On No Answer Off 436
Forward Unconditional On 437
Forward Unconditional Off 437
Group Listen Off 438
Group Listen On 438
Headset Toggle 439
Hold Call 439
Hold CW 440
Hold Music 440
Hunt Group Disable 441
Hunt Group Enable 441
Last Number Redial 442
MCID Activate 442
Mobile Twinned Call Pickup 442
Off Hook Station 443
Outgoing Call Bar Off 444
Outgoing Call Bar On 444
Park Call 445
Private Call 445
Private Call Off 446
Private Call On 446
Priority Call 447
Record Message 447
Relay On 448
Relay Off 448
Relay Pulse 449
Resume Call 449
Retrieve Call 450
Ring Back When Free 450
Secondary Dial Tone 451
Set Absent Text 452
Set Account Code 453
Set Authorization Code 453
Set Hunt Group Night Service 454
Set Hunt Group Out Of Service 454
Set Inside Call Seq 455
Set No Answer Time 457
Set Mobile Twinning Number 456
Set Mobile Twinning On 456
Set Mobile Twinning Off 456
Set Outside Call Seq 457
Set Ringback Seq 458
Set Wrap Up Time 458
Shut Down Embedded Voicemail 459
Suspend Call 460
Suspend CW 460
Toggle Calls 461
Unpark Call 461
Voicemail Collect 462
Voicemail Node 463
Voicemail On 464
Voicemail Off 464
Voicemail Ringback On 465
Voicemail Ringback Off 465

For each feature the following are listed:

- **Telephone Number:** The parameter required for the short code feature.
- **Default Short Code:** Whether the short code feature is used by any default system short code.
- **Phone Manager Control:** Whether the same action can be performed by a user control within Phone Manager application.
- **SoftConsole Control:** Whether the same action can be performed by a user control within the SoftConsole application.
- **Programmable Button Control:** Whether the same action can be assigned to a programmable button.
- **Toggling Short Codes**
  Previously the Set Hunt Group Night Service 454, Set Hunt Group Out of Service 454 and Hunt Group Enable 441 short code features toggled. That behaviour is not supported in 4.0+.

7.8.1 Acquire Call

See Call Steal 409.

7.8.2 AOC Previous Call

Display of advice of charge information is only supported on T3 phones, T3 IP phones and Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

7.8.3 AOC Reset Total

Display of advice of charge information is only supported on T3 phones, T3 IP phones and Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

7.8.4 AOC Total

Display of advice of charge information is only supported on T3 phones, T3 IP phones and Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

7.8.5 Auto Attendant

This feature is used with embedded voicemail on Small Office Edition, IP406 V2 and IP Office 500 systems. It allows the recording of the greetings used by auto-attendant services and the transfer of calls to that auto attendant. This feature was previously called **Record Greeting**.

- **Telephone Number:** ✓
  - For pre-IP Office 4.1, the number takes the form **AA:*Name.x*** where ***Name*** is the auto-attendant service name and ***x*** is the greeting (1 = morning, 2 = afternoon, 3 = evening and 4 = options menu). The .x part can be omitted in which case the short code is used to connect the caller to the named auto attendant service.
  - For IP Office 4.1+ each auto attendant is assigned a number. This can be used in numbers that take the form "AA:"N".x", where N is the auto attendant number. The x part is used as above.
- **Default Short Code:** ✓ See Configuration Settings | Auto Attendant 372.
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 2.0+.

7.8.6 Break Out

Unless a user short code match occurs user dialing is normally processed using the system and ARS short codes of the IP Office system on which the user extension is located. Break out allows another IP Office system to be specified and the user dialing to then be processed using the settings of that other system.

This is a Small Community Advanced Networking feature and requires entry of the Small Community Advanced Networking license on each system in the network.

This feature is intended mainly for Remote Hot Desking users who when logged in on a remote IP Office may need to still dial some short code that are valid on their home IP Office but unknown or treated differently on the remote system.

- **Telephone Number:** The IP Address or Name of the IP Office system, using * characters in place of . characters.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** BkOut 525
- **IP Office Software Level:** 4.0+.

Example
On a system, to break out via a system called RemoteSwitch with the IP Address 192.168.42.3, either of the following short codes could be used.

Example 1	Example 2
• **Code:** *80*N#	• **Code:** *81
• **Telephone Number:** N	• **Telephone Number:** RemoteSwitch
• **Feature:** Break Out	• **Feature:** Break Out

Example 1 allows break out using any remote switch by dialing its IP address, for example *80*192*168*42*3#. Example 2 does this for a specific remote system by dialing just *81.

7.8.7 Busy

This short code feature can be used for call barring by using the short code as the call destination.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 1.0+.

7.8.8 Busy On Held

When on, busy on held returns busy to new calls when the user has an existing call on hold. This short code feature is useful when a user does not want to be distracted by an additional incoming call when they have a call on hold.

- **Telephone Number:** ✓ Y or 1 for on, N or 0 for off.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ BusyH 527
- **IP Office Software Level:** 1.0+.

Example: Turning Busy on Held on

If on, when the user has a call on hold, new calls receive busy tone (ringing if analog) or are diverted to Voicemail if enabled, rather than ringing the user. Note: this overrides call waiting when the user has a call on hold.

- **Short Code:** *12
- **Telephone Number:** Y
- **Feature:** BusyOnHeld

Example: Turning Busy on Held off

Another short code must be created to turn the Busy on Held feature off. If off, when the uses has a call on hold, new calls will still get directed to the user.

- **Short Code:** *13
- **Telephone Number:** N
- **Feature:** BusyOnHeld

7.8.9 Call Intrude

This feature intrudes on the existing connected call of the specified target extension. All call parties are put into a conference and can talk to and hear each other. Use of this feature is subject to the Can Intrude status of the intruder and the Cannot be Intruded status of the target.

A Call Intrude attempt to a user who is idle becomes a Priority Call 447.

- Note that this feature requires conference resources from the IP Office system for the duration of the intrusion.
- IP Office 4.0+ provides privacy features that allow users to indicate that a call cannot be intruded on. See Private Calls 678.
- For IP Office 4.2+, intruding onto an a user doing silent monitoring (Call Listen 404) is turned into a silent monitoring call.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✓ Actions | Intrude.
- **Programmable Button Control:** ✓ Intru 529
- **See also:** Call Listen 404, Dial Inclusion 421.
- **IP Office Software Level:** 1.0+.

7.8.10 Call Listen

This feature allows a user to monitor another user's call without being heard. Monitoring is different from call intrusion. Note that this feature requires conference resources from the IP Office system for the duration of the intrusion.

- **WARNING**
  Monitoring is not enabled by default. The use of monitoring is may be subject to local laws and regulations. Before enabling monitoring you must ensure that you have complied with all applicable local laws and regulations. Failure to do so may result in severe penalties.

The use of call listen is dependant on:

- The target being a member of the group set as the user's **Monitor Group** 266 (User | Telephony | Supervisor Settings) 266.
- The Can Intrude setting of the user listening and the Cannot be Intruded setting of the target. Monitoring is independent of the settings of the third party to the call if they are internal.
- IP Office 4.0+ provides privacy features that allow users to indicate that a call cannot be monitored. See Private Calls 678.
- IP Office 4.0+ allows the monitoring of IP extensions including those using direct media.
- For IP Office 4.2+, intruding onto an a user doing silent monitoring (Call Listen 404) is turned into a silent monitoring call.

Monitoring can be accompanied by a tone heard by all parties. Use of the tone is controlled by the **Beep on Listen** setting on the **System | Telephony | Tones & Music** tab. The default for this setting is on.

- **Telephone Number:** ✓ Target extension number (extension must be local).
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Listn 530
- **See also:** Call Intrude 403, Dial Inclusion 421.
- **IP Office Software Level:** 1.0+.

Example
User 'Extn205' wants to be able to monitor calls received by members of the Hunt Group 'Sales'.

1. For user 'Extn205', in the **Monitor Group** 266 (User | Telephony | Supervisor Settings) 266 list box select the hunt group.
2. Ensure that **Can Intrude** is checked.
3. Create a user short vode to allow Extn205 to start monitoring.
   - **Short Code:** *99*N#
   - **Telephone Number:** N
   - **Line Group ID:** 0.
   - **Feature:** CallListen
4. For each member of the hunt group, check that their **Cannot be Intruded** setting is unchecked.
5. Now when a member of the 'Sales' hunt group is on a call, Extn205 can replace N in the short code with the extension number of that member and monitor their call.

7.8.11 Call Pickup Any

Pick up the first available ringing call.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *30
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ PickA 533
- **See also:** Call Pickup Extn 405, Call Pickup Group 406, Call Pickup Members 407, Acquire Call 409, Call Pickup Line 406, Call Pickup User 407.
- **IP Office Software Level:** 1.0+.

Example
Below is an example of the short code setup:

- **Short Code:** *30
- **Feature:** CallPickupAny

7.8.12 Call Pickup Extn

Pick up a ringing call from a specific extension.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✓ *32*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ CpkUp 533
- **See also:** Call Pickup Any 405, Call Pickup Group 406, Call Pickup Members 407, Acquire Call 409, Call Pickup Line 406, Call Pickup User 407.
- **IP Office Software Level:** 1.0+.

Example
This short code is a default within the Manager configuration. N represents the specific extension. For example, if a user dials *32*201#, they will pick up the call coming into extension 201.

- **Short Code:** *32*N#
- **Telephone Number:** N
- **Feature:** CallPickupAny

7.8.13 Call Pickup Group

Pick up a call ringing any hunt group of which the user is a member.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *31
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ PickG 534
- **See also:** Call Pickup Any 405, Call Pickup Extn 405, Call Pickup Members 407, Acquire Call 409, Call Pickup Line 406, Call Pickup User 407.
- **IP Office Software Level:** 1.0+.

Example
Below is an example of the short code setup.

- Short Code: *31
- Feature: CallPickupGroup

7.8.14 Call Pickup Line

Pick up an incoming call which is alerting, parked or held. The pickup uses the Line Appearance ID specified in Telephone Number field of the short code. It cannot be used to pickup conferenced calls. The normal user intrusion features are not applied to this pickup feature. This feature is not supported on T3 phones.

- **Telephone Number:** ✓ Target Line Appearance ID.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Call Pickup Any 405, Call Pickup Extn 405, Call Pickup Group 406, Call Pickup Members 407, Acquire Call 409, Call Pickup User 407.
- **IP Office Software Level:** 4.0+ (Added in the IP Office 4.0 Q2 2007 maintenance release).

Example
This short code is a default within the Manager configuration. N represents the specific Line Appearance ID.

- **Short Code:** *99*N#
- **Telephone Number:** N
- **Feature:** CallPickupLine

7.8.15 Call Pickup Members

This feature can be used to pick up a ringing or queuing call at an extension that is a member of the Hunt Group specified. The incoming call can be as a result of a DID call to that extension, an internal call to that extension or an internal or external call to the Hunt Group.

Note that this function will not work for calls to a hunt group member who currently has their membership disabled.

- **Telephone Number:** ✓ Group number or "Group name".
- **Default Short Code:** ✓ *53*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ PickM 534
- **See also:** Call Pickup Any 405, Call Pickup Extn 405, Call Pickup Group 406, Acquire Call 409, Call Pickup Line 406, Call Pickup User 407.
- **IP Office Software Level:** 1.0+.

Example
Below is an example of the short code setup. N represents the extension number of the Hunt Group. For example, if a user dials *53*500#, they will pick up the call coming into extension 500 (the hunt group's extension).

- Short Code: *53*N#
- Telephone Number: N
- Feature: CallPickupMembers

7.8.16 Call Pickup User

Pick up an incoming call which is alerting, parked or held. The pickup uses the user extension number specified in Telephone Number field of the short code. If there are multiple calls, priority is given to picking up alerting, then parked and then held in that order of priority. It cannot be used to pickup conferenced calls. The normal user intrusion features are not applied to this pickup feature. This feature is not supported on T3 phones.

- **Telephone Number:** ✓ Target user extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Call Pickup Any 405, Call Pickup Extn 405, Call Pickup Group 406, Call Pickup Members 407, Acquire Call 409, Call Pickup Line 406.
- **IP Office Software Level:** 4.0+ (Added in the IP Office 4.0 Q2 2007 maintenance release).

Example
N represents the specific user.

- **Short Code:** *99*N#
- **Telephone Number:** N
- **Feature:** CallPickupUser

7.8.17 Call Queue

Queue the current call to the destination phone, even when the destination phone is busy. This is the same as a transfer except it allows you to transfer to a busy phone.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✓ *33*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Queue 535
- **IP Office Software Level:** 1.0+.

Example
Below is an example of the short code setup. N represents the extension the caller wishes to queue for. For example, if a user dials *33*201# while connected to a caller, this caller will be queued for extension 201.

- **Short Code:** *33*N#
- **Telephone Number:** N
- **Feature:** CallQueue

7.8.18 Call Record

This feature allows you to record a conversation. To use this requires Voicemail Pro. Refer to your local regulations in relation to the recording of calls. Call recording also requires available conference resources similar to a 3-way conference.

IP Office 4.0+ provides privacy features that allow users to indicate that a call should not be recorded. See Private Calls 678.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Recor 535
- **IP Office Software Level:** 1.0+.

Example: Record your own extension's call
To use this short code, the user should place the call on hold and dial *55. They will automatically be reconnected to the call when recording begins.

- **Short Code:** *55
- **Telephone Number:** None
- **Feature:** CallRecord

7.8.19 Call Steal

This function can be used with or without a specified user target.

- If the specified target has alerting calls, the function will connect to the longest waiting call.
- If the specified target has no alerting calls but does have a connected call, the function will take over the connected call, disconnecting the original user. This usage is subject to the **Can Intrude** setting of the user and the **Cannot Be Intruded** setting of the target. The feature is independent the intrude settings of the third party to the call.
- If no target is specified, the function attempts to reclaim the users last transferred call if it has not been answered or has been answered by voicemail.

- **Telephone Number:** ✓ Target extension number or blank for last call transferred.
- **Default Short Code:** ✓ *45*N# and *46
- **Phone Manager Control:** ✓ Actions | Reclaim
- **SoftConsole Control:** ✓ Actions | Reclaim Call.
- **Programmable Button Control:** ✓ Aquire 519
- **IP Office Software Level:** 2.1 ✓, 3.0DT ✓, 3.0 ✓, 3.1 ✓, 3.2 ✓, 4.0 ✓, 4.1 ✓.

Example: Taking Over a Call
In this example, N represents the extension to be taken over. For example, if a user dials *45*201#, they will take over the current call on extension 201.

- **Short Code:** *45*N#
- **Telephone Number:** N
- **Feature:** Call Steal

Example: Reclaiming a Call
This short code reclaims the last call from your extension. This function is useful when you want to catch a call you have just missed that has gone off to Voicemail.

- **Short Code:** *46
- **Feature:** Call Steal

7.8.20 Call Waiting On

Enables call waiting on the user's extension. When on, if the user receives a second calls when already on a call, they hear a call waiting tone in the speech path.

Call waiting settings are ignored for users with multiple call appearance buttons. In this case the appearance buttons are used to indicate additional calls. Call waiting is automatically applied for users with 'internal twinned' phones.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *15
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ CWOn 537
- **See also:** Call Waiting Off 410, Call Waiting Suspend 410.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *15
- **Feature:** CallWaitingOn

7.8.21 Call Waiting Off

Disables call waiting on the user's extension. Call waiting may be applied for users with internal twinned phones regardless of their call waiting settings.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *16
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ CWOff 537
- **See also:** Call Waiting On 410, Call Waiting Suspend 410.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *16
- **Feature:** Call Waiting Off

7.8.22 Call Waiting Suspend

For phones using call waiting, this feature temporarily disables call waiting for the duration of the user's next call.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *70 (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ CWSus 538
- **See also:** Call Waiting On 410, Call Waiting Off 410.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup. This short code is a default within the Manager configuration.

- **Short Code:** *70
- **Feature:** CallWaitingSuspend

7.8.23 Cancel All Forwarding

This feature cancels all forms of forwarding on the user's extension including "Follow Me" and "Do Not Disturb".

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *00
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwdOf 538
- **See also:** Forward On Busy On 435, Forward On Busy Off 435, Forward On No Answer On 436, Forward On No Answer Off 436, Forward Unconditional On 437, Forward Unconditional Off 437, Do Not Disturb On 427, Do Not Disturb Off 427.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *00
- **Feature:** CancelCallForwarding

7.8.24 Cancel Ring Back When Free

Cancels any existing ring back (also known as callback) set by the user.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ RBak- 539
- **See also:** Ring Back When Free 450.
- **IP Office Software Level:** 1.0+.

Example: Cancel Ring Back When Free
This example Short Code will cancel Ring Back When Free on the specified extension. N represents the target extension from which you have set a ring back. For example, if Paul has set a ring back on extension 201, he must dial *84*201# to cancel that ring back request.

- Short Code: *84*N#
- Telephone Number: N
- Feature: CancelRingBackWhenFree

7.8.25 Channel Monitor

For Avaya use only.

- **IP Office Software Level:** 1.0+.

7.8.26 Change Login Code

Allows a user to change their log in code.

- **Telephone Number:** ✓ The user's current and new log in codes separated by a *, see the examples below.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.2+ (Also added to IP Office 4.1 2008Q2 Maintenance release).

Example
The user has a **Login Code** of ***1234*** and wants to change it to ***5678***. To use the short code below below, the user must dial ****60*1234*5678#***.

- **Short Code:** *60*N#
- **Telephone Number:** N
- **Feature:** Change Login Code.

Example
For a user with no login code currently set, they can still use the short code to set a login code. For example using the short code created above to set their login code to 1234 they should dial ***60**1234#**.

Example
System phone users can also use this short code to change the login code of an other user. For example 403 is configured as a System Phone 687 with a logon code of ***1234***. User 410 has forgotten their login code and needs it changed. User 403 can do this by dialing the following:

- ***60*410*1234***<*new code*>**#**

7.8.27 Clear Call

This feature can be used to end the current call.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *52
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ Clear 541
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup. This example could be used in a situation where you are doing a supervised transfer and the party to be transferred to does not want to take the call. In this scenario, you can put the call on hold and dial *52. This will clear the last connected call (for example the party who has just refused the transfer), and retrieve the original call or dial tone.

- **Short Code:** *52
- **Feature:** Deny/ClearCall

7.8.28 Clear CW

This feature is most commonly used to end the user's current call and answer the waiting call. Note: Call waiting settings are ignored for users with multiple call appearance buttons.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *26 (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ ClrCW 541
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *26
- **Feature:** ClearCW

7.8.29 Clear Hunt Group Night Service

This feature changes the specified hunt group from 'Night Service' mode to 'In Service' mode. This will not override a hunt group in night service due to a time profile.

- **Telephone Number:** ✓ Hunt group extension number. For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✓ *21*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HGNS- 542
- **See also:** Clear Hunt Group Out Of Service 414, Set Hunt Group Night Service 454, Set Hunt Group Out Of Service 454.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup. N represents the telephone number of the hunt group to be taken out of "Night Service" mode and placed into "In Service" mode. For example, when *21*201# is dialed, the hunt group associated with extension 201 will be taken out of "Night Service" mode.

- **Short Code:** *21*N#
- **Telephone Number:** N
- **Feature:** ClearHuntGroupNightService

7.8.30 Clear Hunt Group Out Of Service

This feature changes the specified hunt group from 'Out of Service' mode to 'In Service' mode. This will not override a hunt group in night service due to a time profile.

- **Telephone Number:** ✓ Hunt group extension number. For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HGOS- 542
- **See also:** Clear Hunt Group Night Service 414, Set Hunt Group Night Service 454, Set Hunt Group Out Of Service 454.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample short code using the Clear Hunt Group Out Of Service feature. N represents the telephone number of the hunt group to be taken out of "Out of Service" mode. For example, when *55*201# is dialed, the hunt group associated with extension 201 will be placed into "In Service" mode.

- **Short Code:** *55*N#
- **Telephone Number:** N
- **Feature:** ClearHuntGroupOutOfService

7.8.31 Clear Quota

This feature refreshes the time quota for all services or a specific service.

- **Telephone Number:** ✓ "Service name" or "" (all services).
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Quota 543
- **IP Office Software Level:** 1.0+.

7.8.32 Conference Add

Places any calls the user has on hold into a conference with the user. This feature is useful for impromptu conferences.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *47
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Conf+ 543
- **See also:** Conference Meet Me 415.
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *47
- **Feature**: ConferenceAdd

7.8.33 Conference Meet Me

This feature allows a user to join a specific conference. Note that this feature is not supported on IP Office IP500 systems running in IP Office Standard Edition mode.

- **Telephone Number:** ✓ Conference number. This can be an alphanumeric value up to 15 characters.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ CnfRv 544
- **See also:** Conference Add 415.
- **IP Office Software Level:** 1.0+.

7.8.34 CW

Pick up the waiting call. This feature provides same functionality as pressing the Recall or Hold key on the phone. Unlike the Clear CW feature, this feature does not disconnect you from the existing call when the second call is picked up.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 1.0+.

7.8.35 Dial

This short code feature allows users to dial the number specified to an outside line.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✓ Various depending on locale.
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ Dial 546
- **See also:** Dial Direct 419, Dial Emergency 420, Dial Extn 420, Dial Inclusion 421, Dial Paging 421.
- **IP Office Software Level:** 1.0+.

Example: Creating a Speed Dial
In this example, users entering 401 on their telephone key pad will dial the New Jersey Office on 212 555 0000.

- **Short Code:** 401
- **Telephone Number:** 2125550000

Example: Replace Outgoing Caller ID
This short code is useful in a "call center" environment where you do not want customers to have access to the number of your direct line; you want the general office number displayed. The sample short code below will force the outgoing caller ID to display 123. Note: The usability of this feature is dependent upon your local service provider.

- **Short Code:** ?
- **Telephone Number:** .s123

Example: External Dialing Prefix
The short code is for dialing a prefix for an outside line N represents the external number you want to call.

- **Short Code:** 9N
- **Telephone Number:** N

Example: Blocking Caller ID
This is for blocking Caller ID for external calls. This feature can be applied to specific external numbers or to all out going calls. In most situations, the company will choose to block the caller ID for all external calls or leave it available for all external calls.

- **Short Code:** 9N
- **Telephone Number:** NW

Example: Maximum Call Length
The character t can be used in dialing short codes to set the maximum allowed duration of a call. For example, the following short code will dial a number but then disconnect the call after 20 minutes (plus or minus a minute).

- **Short Code:** 9N
- **Telephone Number:** Nt(20)

7.8.36 Dial 3K1

Sets the ISDN bearer capabilities to 3.1Khz audio call.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ D3K1 546
- **IP Office Software Level:** 1.0+.

7.8.37 Dial 56K

Sets the ISDN bearer capabilities to 56Kbps data call.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ D56K 547
- **IP Office Software Level:** 1.0+.

7.8.38 Dial 64K

Sets the ISDN bearer capabilities to 64Kbps data call.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ D64K 547
- **IP Office Software Level:** 1.0+.

7.8.39 Dial CW

Call the specified extension number and force call waiting indication on if the extension is already on a call.

If the user has call appearance buttons programmed, call waiting will not get activated. The next incoming call will appear on an available call appearance button. When there are no available call appearance buttons, the next incoming call will receive busy tone.

- **Telephone Number:** ✓ Extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ DCW 548
- **IP Office Software Level:** 1.0+.

Example
N represents the extension number to be dialed. For example, a user dialing *97*201# will force call waiting indication on at extension 201 if extension 201 is already on a call.

- **Short Code:** *97*N#
- **Telephone Number:** N
- **Feature:** DialCW

7.8.40 Dial Direct

Call the extension specified and force automatic answer if supported by the telephone type.

- **Telephone Number:** ✓ Extension number
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Dirct 548
- **See also:** Dial Paging 421.
- **IP Office Software Level:** 1.0+.

Example
This allows the extension specified to be automatically answered. N represents the extension that will be forced to automatically answer. For example, when a user dials *83*201#, extension 201 will be forced to automatically answer the call.

- **Short Code:** *83*N#
- **Telephone Number:** N
- **Feature:** DialDirect

7.8.41 Dial Direct Hot Line

When the line appearance is mapped to a short code using the DialDirectHotLine short code feature, no secondary dial tone is generated and the number is dialed directly. This feature should not be confused with the hot line feature enabled using **?D** 392 short codes.

- **Telephone Number:** ✓
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 3.0+.

Example
Below is a sample short code using the DialDirectHotLine feature. The short code *83* should then be set as the prefix for the particular line required.

- **Short Code:** *83*
- **Telephone Number:** .
- **Feature:** DialDirectHotLine

7.8.42 Dial Emergency

Dials the number specified regardless of any call barring applicable to the user.

On all IP Office systems, regardless of locale, system and or ARS, short codes using the Dial Emergency feature should be created for any required emergency service numbers. Those short codes should be useable by all users from all extensions. Those short codes should route the calls to suitable lines. If the system uses prefixes for external dialing, the dialing of emergency numbers with and without the prefix should be allowed. Note that the blocking of emergency numbers or the routing of emergency numbers to a intermediate destination other than the emergency network may be against local and national laws.

For systems with a United States locale, the Dial Emergency short code acts differently. Calls matched to Dial Emergency short codes are routed using the details contained in the E911 forms 381. This routing will then be either via installed E911 Adjunct equipment or via grouped set of trunks and extensions called zones.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Emrgy 549
- **IP Office Software Level:** 1.0+.

7.8.43 Dial Extn

This feature can be used to dial an internal extension number (user or hunt group).

- **Telephone Number:** ✓ Extension number.
  - IP Office 4.2+ can use **p(*x*)** as a suffix to the **Telephone Number** to change the priority 330 of a call. Allowable values for ***x*** are ***1***, ***2*** or ***3*** for low, medium or high priority respectively. For example ***Np(1)***.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Dial Direct 419, Dial Paging 421, DialPhysicalExtensionByNumber 422, DialPhysicalNumberByID 422.
- **IP Office Software Level:** 1.0+.

Example: Dial on Pick up
The following user short code dials the extension specified the moment the user's handset is picked up.

- **Short Code:** ?D
- **Telephone Number:** 201
- **Line Group ID:** 0
- **Feature:** DialExtn

7.8.44 Dial Inclusion

This feature intrudes on the existing call of the specified target extension. The intruder and the target extension can then talk but cannot be heard by the other party. This can include intruding into a conference call, where the conference will continue without the intrusion target.

During the intrusion all parties hear a repeated intrusion tone. When the intruder hangs-up the original call parties are reconnected.

Use of this feature is subject to the Can Intrude status (configured in Manager via the User form's Telephony 265 tab) of the intruder and the target extension (the extension to be intruded upon).

Attempting to hold a dial inclusion call simply ends the intrusion part of the call. The inclusion cannot be parked.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Inclu. 549
- **See also:** Call Intrude 403.
- **IP Office Software Level:** 1.4+.

Example
N represents the extension to be intruded upon. For example, if a user dials *97*201# while extension 201 is on a call, then the user is intruding into extn. 201's current call.

- **Short Code:** *97*N#
- **Telephone Number:** N
- **Feature:** DialInclusion

7.8.45 Dial Paging

This feature makes a page call to an extension or group. The target extension or group members must support page calls (that is be able to auto-answer calls).

- **Telephone Number:** ✓ Extension or group number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✓ (Groups only)
- **Programmable Button Control:** ✓ Page 551
- **See also:** Dial Direct 419.
- **IP Office Software Level:** 1.0+.

Paging Limits
The table below lists the maximum recommended size for paging groups.

IP Office	Software Level	
	3.2	4.0+
IP500	–	64
IP412	24	48
IP406 V2	16	32
Small Office Edition	16	16
IP406	16	–
IP403	16	–

7.8.46 Dial Physical Extension By Number

Dial a specified extension number regardless of the current user logged in at that extension and any forwarding, follow me or do not disturb settings applied by the current extension user. Note that the extension number used is the Base Extension number set against the extension configuration settings.

- **Telephone Number:** ✓ Base Extension number.
- **Default Short Code:** ✓ *70*N# (MU-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ PhyEx 552
- **See also:** Dial Physical Number By ID 422, Priority Call 447.
- **IP Office Software Level:** 1.4+.

Example
The example below allows the extension with the base extension number 200 to be called regardless of the extension number of the user currently logged in at that extension.

- **Short Code:** *97
- **Telephone Number:** 201
- **Feature:** DialPhysicalExtnByNumber

7.8.47 Dial Physical Number By ID

Dial a specific extension using its system ID. This may be necessary in hot desking environments where some extensions have been created with no default extension number. Without an extension number, a call can not be made to that extension unless a short code is created.

- **Telephone Number:** ✓ Extension ID
- **Default Short Code:** ✓ *71*N# (MU-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ DialP 552
- **See also:** DialPhysicalExtensionByNumber 422, Priority Call 447.
- **IP Office Software Level:** 1.4+.

Example
In the above example, if the telephone at extension ID 16 is not associated with an extension number, a user can dial *97 to connect to that phone. This may be useful in hot desking environments where some extensions may not have a dedicated base extension number.

- **Short Code:** *97
- Telephone Number: 16
- **Feature:** DialPhysicalNumberByID

7.8.48 Dial Speech

This feature allows a short code to be created to force the outgoing call to use the Speech bearer capability.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ DSpch 553
- **IP Office Software Level:** 1.0+.

7.8.49 Dial V110

Sets the ISDN bearer capabilities to V110. The call is presented to local exchange as a "Data Call".

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ DV110 553
- **IP Office Software Level:** 1.0+.

7.8.50 Dial V120

Sets the ISDN bear capabilities using V.120. .

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ DV120 554
- **IP Office Software Level:** 1.0+.

7.8.51 Dial Video

The call is presented to the local exchange as a "Video Call".

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Dvide 555
- **IP Office Software Level:** 1.0+.

7.8.52 Disable ARS Form

This feature can be used to put an ARS form out of service. It can be used with ARS forms for which an Out of Service Route has been configured in Manager. The short code feature Enable ARS Form can be used to return an ARS form to in service.

- **Telephone Number:** ARS form number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Enable ARS Form 427
- **IP Office Software Level:** 4.0+.

7.8.53 Disable Internal Forwards

This feature turns off the forwarding of internal calls for the user. It applies to Forward Unconditional, Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** Disable Internal Forward Unconditional 424, Disable Internal Forward Busy or No Answer 425, Cancel All Forwarding 411, Enable Internal Forwards 428, Enable Internal Forward Unconditional 428, Enable Internal Forward Busy or No Answer 428.
- **IP Office Software Level:** 3.2+.

7.8.54 Disable Internal Forward Unconditional

This feature turns off the forwarding of internal calls for the user. It applies to Forward Unconditional only.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** Disable Internal Forwards 424, Disable Internal Forward Busy or No Answer 425, Cancel All Forwarding 411, Enable Internal Forwards 428, Enable Internal Forward Unconditional 428, Enable Internal Forward Busy or No Answer 428.
- **IP Office Software Level:** 3.2+.

7.8.55 Disable Internal Forward Busy or No Answer

This feature turns off the forwarding of internal calls for the user. It applies to Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** Disable Internal Forwards 424, Disable Internal Forward Unconditional 424, Cancel All Forwarding 411, Enable Internal Forwards 428, Enable Internal Forward Unconditional 428, Enable Internal Forward Busy or No Answer 428.
- **IP Office Software Level:** 3.2+.

7.8.56 Display Msg

Allows the sending of special functions to DS port display phone extensions.

- **Telephone Number:** ✓ The telephone number takes the format ***xxxx;[0)nnn/ppppppp*** where:
  - ***xxx*** is the target extension.
  - ***nnn*** is the Definity feature number of the emulation feature.
  - ***ppppppp*** is the parameter data if required.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Displ 554
- **IP Office Software Level:** 1.0+.

7.8.57 Do Not Disturb Exception Add

This feature adds a number to the user's "Do Not Disturb Exception Numbers List". This can be an internal extension number or external ICLID. For further details see Do Not Disturb (DND) 690 in the Telephone Features section.

- **Telephone Number:** ✓ Telephone number or ICLID. Up to 31 characters.
  For ICLID numbers any prefix added by the IP Office system must also be included.
- **Default Short Code:** ✓ *10*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ DNDX+ 558
- **See also:** Do Not Disturb Exception Delete 426, Do Not Disturb On 427, Do Not Disturb Off 427.
- **IP Office Software Level:** 1.0+.

Example
N represents the number to be added to the user's "Do Not Disturb Exception List". For example, when a user has DND turned on and dials *10*4085551234#, incoming calls from telephone number (408) 555-1234. All other calls, except those numbers on the exception list hear busy tones or are redirected to voicemail if available.

- **Short Code:** *10*N#
- **Telephone Number:** N
- **Feature:** DoNotDisturbExceptionAdd

Example
In this example, the last number received by the user is added to their exception list.

- **Short Code:** *99
- **Telephone Number:** L
- **Feature:** DoNotDisturbExceptionAdd

7.8.58 Do Not Disturb Exception Delete

This feature removes a number from the user's "Do Not Disturb Exception List". For further details see Do Not Disturb (DND) 690 in the Telephone Features section.

- **Telephone Number:** ✓ Telephone number or ICLID.
- **Default Short Code:** ✓ *11*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ DNDX- 558
- **See also:** Do Not Disturb Exception Add 426, Do Not Disturb On 427, Do Not Disturb Off 427.
- **IP Office Software Level:** 1.0+.

Example
N represents the number to be deleted from the user's "Do Not Disturb Exception List". For example, when a user has DND turned on and the telephone number (408) 555-1234 in their "Do Not Disturb Exception List", dialing *10*4085551234# will remove this phone number from the list. Incoming calls from (408) 555-1234 will no longer be allowed through; instead they will hear busy tone or be redirected to voicemail if available.

- **Short Code:** *11*N#
- **Telephone Number:** N
- **Feature:** DoNotDisturbExceptionDel

7.8.59 Do Not Disturb On

This feature puts the user into 'Do Not Disturb' mode. When on, all calls, except those from numbers in the user's exception list hear busy tones or are redirected to voicemail if available. For further details see Do Not Disturb (DND) 690 in the Telephone Features section.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *08
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ DNDOn 559
- **See also:** Do Not Disturb Off 427, Do Not Disturb Exception Add 426, Do Not Disturb Exception Delete 426.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *08
- **Feature:** DoNotDisturbOn

7.8.60 Do Not Disturb Off

Cancels the user's 'do not disturb' mode if set. For further details see Do Not Disturb (DND) 690 in the Telephone Features section.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *09
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ DNDOf 559
- **See also:** Do Not Disturb On 427, Do Not Disturb Exception Add 426, Do Not Disturb Exception Delete 426.
- **IP Office Software Level:** 1.0+.

Example
This short code is a default within the Manager configuration. Below is a sample of the short code setup.

- **Short Code:** *09
- **Feature:** DoNotDisturbOff

7.8.61 Enable ARS Form

This feature can be used to put an ARS form in service. It can be used with ARS forms that have been put out of service through Manager or the use of a Disable ARS Form short code.

- **Telephone Number:** ARS form number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+

7.8.62 Enable Internal Forwards

This feature turns on the forwarding of internal calls for the user. It applies to Forward Unconditional, Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** Disable Internal Forwards 424, Disable Internal Forward Unconditional 424, Disable Internal Forward Busy or No Answer 425, Cancel All Forwarding 411, Enable Internal Forward Unconditional 428, Enable Internal Forward Busy or No Answer 428.
- **IP Office Software Level:** 3.2+.

7.8.63 Enable Internal Forward Unconditional

This feature turns on the forwarding of internal calls for the user. It applies to Forward Unconditional only.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** Disable Internal Forwards 424, Disable Internal Forward Unconditional 424, Disable Internal Forward Busy or No Answer 425, Cancel All Forwarding 411, Enable Internal Forwards 428, Enable Internal Forward Busy or No Answer 428.
- **IP Office Software Level:** 3.2+.

7.8.64 Enable Internal Forward Busy or No Answer

This feature turns on the forwarding of internal calls for the user. It applies to Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** Disable Internal Forwards 424, Disable Internal Forward Unconditional 424, Disable Internal Forward Busy or No Answer 425, Cancel All Forwarding 411, Enable Internal Forwards 428, Enable Internal Forward Unconditional 428.
- **IP Office Software Level:** 3.2+.

7.8.65 Extn Login

This feature allows a user to take over ownership of an extension. This requires the user to have a **Login Code** 265 (User | Telephony | Supervisor Settings) 266.

Note that on some phones, the dialed digits are recorded and may include the log in code used.

Login codes of up to 15 digits are supported with **Extn Login** 561 buttons. Login codes of up to 31 digits are supported with **Extn Login** 429 short code 429.

- **Telephone Number:** ✓ Extension Number*Login Code.
  If just a single number is dialed containing no * separator, the IP Office assumes that the extension number to use is the physical extension's Base Extension 248 number and that the number dialed is the log in code.
- **Default Short Code:** ✓ *35*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Login 561
- **See also:** Extn Logout 429.
- **IP Office Software Level:** 1.0+.

Example: Individual Hot Desking
Based on the above sample short code, Paul (extension 204) can go to another phone (even if it is already logged in by another user) and log in as extension 204 by simply dialing 299. Once Paul has logged onto this phone, extension 204 is logged out at Paul's original phone. For Paul to make use of this short code, his log in code must match that configured in the above short code. When Paul logs out of the phone he has "borrowed", his original extension will automatically be logged back in.

- **Short Code:** 299
- **Telephone Number:** 204*1234
- **Feature:** Extnlogin

Example: Log In
The default short code for logging into a phone is configured as shown below. N represents the users extension number followed by a * and then their log in code, for example *35*401*123#.

- **Short Code:** *35*N#
- **Telephone:** N
- **Feature:** ExtnLogin

7.8.66 Extn Logout

This feature logs the user off the phone at which they are logged in.

For IP Office 4.0 and higher this feature cannot be used by a user who does not have a log in code or by the default associated user of an extension unless they are set to forced log in.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *36
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Logof 561
- **See also:** Extn Login 429.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample short code using the Extn Logout feature. This short code is a default within the Manager configuration.

- **Short Code:** *36
- **Feature:** ExtnLogout

7.8.67 Flash Hook

This feature sends a hook flash signal to the currently connected line if it is an analog line.

- **Telephone Number:** ✗ Pre-IP Office 4.0/ ✓ IP Office 4.0+: Optional
  For IP Office 4.0 and higher, the telephone number field can be used to set the transfer destination number for a Centrex Transfer 704. In this case the use of the short code Forced Account Code and Forced Authorization Code are not supported and the Line Group Id must match the outgoing line to the Centrex service provider.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Flash 562
- **IP Office Software Level:** 1.4+.

Example
Below is a sample short code using the Flash Hook feature.

- **Short Code:** *96
- **Feature:** FlashHook

7.8.68 FNE

This short code feature is used for Mobile Call Control 667 and one-X Mobile Client 669 support.

- **Telephone Number:** ✓
  This number sets the required FNE function. For a list of supported functions see one-X Mobile Control 669.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.2+.

7.8.69 Follow Me Here

Causes calls to the extension number specified to be redirected to the extension initiating the 'Follow Me Here'. If the redirected call receives a busy tone or is not answered, then the call behaves as though the User's extension had failed to answer. For further details see Follow Me 692 in the Telephone Features section.

- **Telephone Number**: ✓ Extension to redirect to the dialing extension.
- **Default Short Code:** ✓ *12*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Here+ 563
- **See also:** Follow Me Here Cancel 432, Follow Me To 432.
- **IP Office Software Level:** 1.0+.

Example

This feature is used at the Follow Me destination. N represents the extension number of the user wanting their calls redirected to that destination. For example, User A's extension is 224. However they are working at extension 201 and want their calls redirected there. If the following short code is available, they can do this by dialing *12*224# at extension 201.

- **Short Code:** *12*N#
- **Telephone Number:** N
- **Feature:** FollowMeHere

7.8.70 Follow Me Here Cancel

Cancels any Follow Me set on the specified extension. This action can only be performed at the extension to which the Follow Me Here is targetted. For further details see Follow Me 692 in the Telephone Features section.

- **Telephone Number:** ✓ Extension being redirected to the dialing extension.
- **Default Short Code:** ✓ *13*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Here- 563
- **See also:** Follow Me Here 431, Follow Me To 432.
- **IP Office Software Level:** 1.0+.

Example

This feature is used at the Follow Me destination. N represents the extension number of the user whose calls are being redirected to that destination. For example, User A's extension is 224. However they are working at extension 201 and so have set a Follow Me on their own extension to redirect their calls to 201. If the following short code is available, they can cancel the Follow Me by dialing *13*224# at extension 201.

- **Short Code:** *13*N#
- **Telephone Number:** N
- **Feature:** FollowMeHereCancel

7.8.71 Follow Me To

Causes calls to the extension to be redirected to the Follow Me destination extension specified. For further details see Follow Me 692 in the Telephone Features section.

- **Telephone Number:** ✓ Target extension number or blank (cancel Follow Me To)
- **Default Short Code:** ✓ *14*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FolTo 564
- **See also:** Follow Me Here 431, Follow Me Here Cancel 432.
- **IP Office Software Level:** 1.0+.

Example

This feature is used at the extension that wants to be redirected. N represents the extension number to which the user wants their calls redirected. For example, User A's extension is 224. However they are working at extension 201 and want their calls redirected there. If the following short code is available, they can do this by dialing *14*201# at extension 224.

- **Short Code:** *14*N#
- **Telephone Number:** N
- **Feature:** FollowMeTo

7.8.72 Forward Hunt Group Calls On

Forward the user's hunt group calls to their forward number when the user has Forward Unconditional active. For further details see Forward Unconditional 694 in the Telephone Features section.

This option is only applied for calls to Sequential and Rotary type hunt groups. Calls from other hunt group types are not presented to the user when they have Forward Unconditional active. Note also that hunt group calls cannot be forwarded to another hunt group.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *50
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwdH+ 565
- **See also:** Forward Hunt Group Calls Off 433, Forward Unconditional On 437, Forward Unconditional Off 437.
- **IP Office Software Level:** 1.0+.

Example
This short code is useful if the hunt group member temporarily uses another workstation and so does not require a permanent extension change.

- **Short Code:** *50
- **Feature:** ForwardHuntgroupCallsOn

7.8.73 Forward Hunt Group Calls Off

This feature cancels the forwarding of the user's hunt group calls. For further details see Forward Unconditional 694 in the Telephone Features section.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *51
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwdH- 565
- **See also:** Forward Hunt Group Calls On 433, Forward Unconditional On 437, Forward Unconditional Off 437.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *51
- **Feature:** ForwardHuntgroupCallsOff

7.8.74 Forward Number

Sets the number to which the user's calls are redirected. This can be an internal or external number. The number is still subject to the user's call barring settings. For further details see Forward Unconditional 694 in the Telephone Features section.

This feature does not activate forwarding; it only sets the number for the forwarding destination.

This number is used for all forward types; Forward Unconditional, Forward on Busy and Forward on No Answer, unless the user has a separate Forward on Busy Number set for forward on busy and forward on no answer functions.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✓ *07*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwdNo 566
- **See also:** Forward On Busy Number 434.
- **IP Office Software Level:** 1.0+.

Example
N represents the forward destination. For example, if extension 224 wants to set the forwarding number to extension 201, the user can dial *07*201#.

- **Short Code**: *07N*#
- **Telephone Number:** N
- **Feature:** ForwardNumber

7.8.75 Forward On Busy Number

Sets the number to which the user's calls are forwarded when Forward on Busy or Forward on No Answer are on. If no Forward on Busy Number is set, those functions use the Forward Number.

This feature does not activate the forwarding, it only sets the number for the forwarding destination.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✓ *57*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwBNo 566
- **See also:** Forward Number 434.
- **IP Office Software Level:** 1.0+.

Example
N represents the extension number to be forwarded to. For example, if Paul (whose extension is 224) wants to set the forwarding number for his 'Forward on Busy' and/or 'Forward on No Answer' feature to extension 201, Paul can dial *57*201# followed by the short code for the forwarding function.

- **Short Code:** *57N*#
- **Telephone Number:** N
- **Feature:** ForwardOnBusyNumber

7.8.76 Forward On Busy On

This feature enables forwarding when the user's extension is busy. It uses the Forward Number destination or, if set, the Forward on Busy Number destination.

If the user has call appearance buttons programmed, the system will not treat them as busy until all the call appearance buttons are in use.

For IP Office 3.2 and higher, Forward Internal (User | Forwarding) can also be used to control whether internal calls are forwarded.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *03
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwBOn 567
- **See also:** Forward On Busy Off 435, Cancel All Forwarding 411, Enable Internal Forward Busy or No Answer 428.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *03
- **Feature:** ForwardOnBusyOn

7.8.77 Forward On Busy Off

This feature cancels forwarding when the user's extension is busy.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *04
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwBOf 567
- **See also:** Forward On Busy On 435, Cancel All Forwarding 411.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *04
- **Feature:** ForwardOnBusyOff

7.8.78 Forward On No Answer On

This feature enables forwarding when the user's extension is not answered within the period defined by their No Answer Time. It uses the Forward Number destination or, if set, the Forward on Busy Number destination.

For IP Office 3.2 and higher, Forward Internal (User | Forwarding) can also be used to control whether internal calls are forwarded.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *05
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwNOn 568
- **See also:** Forward On No Answer Off 436, Cancel All Forwarding 411.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup. Remember that the forwarding number for this feature uses the 'Forward on Busy Number'.

- **Short Code:** *05
- **Feature:** ForwardOnNoAnswerOn

7.8.79 Forward On No Answer Off

This feature cancels forwarding when the user's extension is not answered.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *06
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwNOf 568
- **See also:** Forward On No Answer On 436.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *06
- **Feature:** ForwardOnNoAnswerOff

7.8.80 Forward Unconditional On

This feature enables forwarding of all calls, except group calls, to the Forward Number set for the user's extension. To also forward hunt group calls, Forward Hunt Group Calls On must also be used. For further details see Forward Unconditional 694 in the Telephone Features section.

For IP Office 3.2 and higher, Forward Internal (User | Forwarding) can also be used to control whether internal calls are forwarded.

- **Telephone Number:** ✗
- **Default Short Code:** ✓
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwUOn 569
- See also: Forward Unconditional Off 437.
- **IP Office Software Level:** 1.0+.

Example
Remember that this feature requires having a forward number configured.

- **Short Code:** *01
- **Feature:** ForwardUnconditionalOn

7.8.81 Forward Unconditional Off

This feature cancels forwarding of all calls from the user's extension. Note: This does not disable Forward on No Answer and or Forward on Busy if those functions are also on. For further details see Forward Unconditional 694 in the Telephone Features section.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *02
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ FwUOf 569
- **See also:** Forward Unconditional On 437.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *02
- **Feature:** ForwardUnconditionalOff

7.8.82 Group Listen Off

Disables the group listen function for the user's extension. See Group Listen On 438.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ GroupListenOn 571
- **IP Office Software Level:** 4.1+.

Example
Below is a sample short code using the Group Listen Off feature.

- **Short Code**: *27
- **Feature:** GroupListenOff

7.8.83 Group Listen On

Using group listen allows callers to be heard through the phone's handsfree speaker but to only hear the phone's handset microphone. When group listen is enabled, it modifies the hands free functionality of the user's phone in the following manner

- When the user's phone is placed in handsfree / speaker mode, the speech path from the connected party is broadcast on the phone speaker but the phone's base microphone is disabled.
- The connected party can only hear speech delivered via the phone's handset microphone.
- Group listen is not supported for IP phones or when using a phone's **HEADSET** button.
- Currently connected calls are not affected by changes to this setting. If group listen is required it must be selected before the call is connected.

This enables listeners at the user's phone to hear the connected party whilst limiting the connected party to hear only what is communicated via the phone handset.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ GroupListenOn 571
- **IP Office Software Level:** 4.1+.

Example
Below is a sample short code using the Group Listen Off feature.

- **Short Code:** *28
- **Feature:** GroupListenOn

7.8.84 Headset Toggle

Toggles between the use of a headset and the telephone handset.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HdSet 573
- **IP Office Software Level:** 1.4+.

Example
Below is a sample short code using the Headset Toggle feature. This short code can be used to toggle the feature on/off. If an Avaya supported headset is connected to your telephone, this short code can be used to toggle between using the headset and the telephone handset.

- **Short Code:** *55
- **Feature:** HeadsetToggle

7.8.85 Hold Call

This uses the Q.931 Hold facility, and "holds" the incoming call at the ISDN exchange, freeing up the ISDN B channel. The Hold Call feature "holds" the current call to a slot. The current call is always automatically placed into slot 0 if it has not been placed in a specified slot. Only available if supported by the ISDN exchange.

- **Telephone Number:** ✓ Exchange hold slot number or blank (slot 0).
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Hold 573
- **See also:** Hold CW 440, Hold Music 440, Suspend Call 460.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample short code using the Hold Call feature. This short code is a default within the Manager configuration. N represents the exchange hold slot number you want to hold the call on. For example, while connected to a call, dialing *24*3# will hold the call onto slot 3 on the ISDN.

- **Short Code:** *24*N#
- **Telephone Number:** N
- **Feature:** HoldCall

7.8.86 Hold CW

This uses the Q.931 Hold facility, and "holds" the incoming call at the ISDN exchange, freeing up the ISDN B channel. The Hold CW feature "holds" the current call to an exchange slot and answers the call waiting. The current call is always automatically placed into slot 0 if it has not been placed in a specified slot. Only available if supported by the ISDN exchange.

- **Telephone Number:** ✓ Exchange slot number or blank (slot 0).
- **Default Short Code:** ✓ *27*N# (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HoldCW 574
- **See also:** Hold Call 439, Suspend Call 460.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample short code using the Hold CW feature.

- **Short Code:** *27*N#
- **Feature:** HoldCW

7.8.87 Hold Music

This feature allows the user to check the system's music on hold. See Music On Hold 684 for more information.

- **Telephone Number:** *Optional.*
  IP Office 4.2+ (not Small Office Edition) supports up to 4 hold music sources, numbered 1 to 4. 1 represents the System Source 179. 2 to 4 represent the Alternate Sources 179. If no number is specified, the default system source is assumed.
- **Default Short Code:** ✓
  - For IP Office 4.2+, ****34N;*** where N is the number of the hold music source required, see above.
  - For pre-IP Office 4.2, ****34***. If a system is upgraded from pre-4.2 to 4.2+, existing hold music short codes may need to be modified.
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Music 574
- **IP Office Software Level:** 1.0+.

Example
Below is a sample short code using the Hold Music feature. This short code is a default within the Manager configuration.

- **Short Code:** *34
- **Feature:** HoldMusic

7.8.88 Hunt Group Disable

This feature disables the user's membership of the specified hunt group. They will no longer receive call to that hunt group until their membership is enabled again. To use this feature, you must already belong to the hunt group. See also Hunt Group Enable 441.

- **Telephone Number:** ✓ Group number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ HGDis 576
- **See also:** Hunt Group Enable 441.
- **IP Office Software Level:** 1.0+.

Example
N represents the hunt group number from which the user wants to be disabled from. For example, if Paul wants to be disabled from the Sales hunt group (extn. 500), he needs to dial *90*500#.

- **Short Code:** *90*N#
- **Telephone Number:** N
- **Feature:** HuntGroupDisable

7.8.89 Hunt Group Enable

This feature enables the user's membership of a hunt group so they can begin to receive calls to the specified hunt group. To use this feature, the user must already belong to the hunt group. This short code can not be used to add someone to a hunt group, that must be done within Manager's Hunt Group 289 form.

- **Telephone Number:** ✓ Group number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ HGEna 575
- **See also:** Hunt Group Disable 441.
- **IP Office Software Level:** 1.0+.

Previously in IP Office 3.2 the Set Hunt Group Night Service, Set Hunt Group Out of Service and Hunt Group Enable short code features toggled. That behaviour is not supported in 4.0 and higher.

Example
This short code can be used to turn the feature on. N represents the hunt group number for which the user wants to start receiving calls. For example, if Paul is already a member of the sales hunt group (extn. 500) but has changed his availability status for that hunt group using hunt group disable, he can make himself available for receiving calls to the Sales hunt group again by dialing *91*500#.

- **Short Code:** *91*N#
- **Telephone Number:** N
- **Feature:** HuntGroupEnable

7.8.90 Last Number Redial

This feature allows an extension to redial the last number they dialed.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 3.0+.

7.8.91 MCID Activate

This feature should only be used in agreement with the ISDN service provider and the appropriate local legal authorities. It allows users with **Can Trace Calls** 266 (User | Telephony | Supervisor Settings) 266 set to trigger a malicious call trace of their previous call at the ISDN exchange. Refer to Telephone Features Malicious Call Tracing 674 for further details.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** Advanced | Miscellaneous | MCID Activate.
- **IP Office Software Level:** 4.0+.

7.8.92 Mobile Twinned Call Pickup

This short code feature allows the user to pickup a call ringing or connected at the destination of their mobile twinning number. This short code can only be used from the primary extension which is being used for the twinning operation.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Set Mobile Twinning Number 456, Set Mobile Twinning On 456, Set Mobile Twinning Off 456.
- **IP Office Software Level:** 3.2+.

7.8.93 Off Hook Station

Enables or disables whether the user's extension acts as a fully hands free unit. Typically this is used when the answering and clearing of calls is done through an application such as Phone Manager. This feature is also configurable via Phone Manager. For more details see **Off Hook Station** 265 (User | Telephony | Call Settings) 265.

- **Telephone Number:** ✓ "Y" for on or "N" for off.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ OHStn 582
- **IP Office Software Level:** 1.0+.

Example: Turning the off hook station off

- **Short Code:** *99
- **Telephone Number:** N
- Feature: OffHookStation

Example: Turning the off hook station on

- **Short Code:** *98
- **Telephone Number:** Y
- **Feature:** OffHookStation

7.8.94 Outgoing Call Bar Off

Allows a user to switch off their outgoing call bar status. The short code user must enter their log in code, if set, in order to be successful.

- If you add a short code using this feature to a system it is recommended that you also assign a login code to the **No User** 688 user to prevent the short code being used to change the status of that user.

- **Telephone Number:** ✓ The user's log in code.
  - System phone 687 users can use *<target user>**<system phone user's login code>*.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.1+ (Added to IP Office 4.1 2008Q2 Maintenance release).

Example
The user has a **Login Code** of ***1234***. To use the short code below below, the user must dial ****59*1234#***.

- **Short Code:** *59*N#
- **Telephone Number:** N
- **Feature:** Outgoing Call Bar Off.

Example
A user set as a System Phone 687 can also switch off the Outgoing Call Bar status of another user. This is done using their own login code. For example the system phone 401 with login code 1234 can switch off the outgoing call bar status of extension 403 as follows:

- ***59*403*1234**

7.8.95 Outgoing Call Bar On

Allows a user to switch on their outgoing call bar status.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.1+ (Added to IP Office 4.1 2008Q2 Maintenance release).

Example
To use the short code below below, the user must dial ****58***.

- **Short Code:** *58
- **Telephone Number:** <blank>
- **Feature:** Outgoing Call Bar On.

7.8.96 Park Call

Parks the user's current call into the specified park slot number. The call can then be retrieved by other extensions (refer to the appropriate telephone user guide). While parked the caller hears music on hold if available.

Park Timeout 177 (System | Telephony | Telephony) 177 controls how long a call will remain parked. When this expires the call will recall to the parking user if they are idle or when they next become idle. The recall call will continue ring and does follow any forwards or go to voicemail.

The 'Unpark Call 461' feature can be used to retrieve calls from specific park slots.

- **Telephone Number:** ✓ Park slot number.
  If no park slot number is specified when this short code is used, the system automatically assigns a park slot number based on the extension number of the user parking the call plus one digit 0 to 9.
- **Default Short Code:** ✓ *37*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓Park 584
- **See also:** Unpark Call 461.
- **IP Office Software Level:** 1.0+.

Example
This short code is a default within the Manager configuration. This short code can be used to toggle the feature on/off. N represents the park slot number in which the call will be parked. For example, if a user wants to park a call to slot number 9, the user would dial *37*9#. The call will be parked there until retrieved by another extension or the original extension.

- **Short Code:** *37*N#
- **Telephone Number:** N
- **Feature:** ParkCall

7.8.97 Private Call

Short codes using this feature toggle on or off private call status. When on, any subsequent calls cannot be intruded on, bridged into or silently monitored until the user's private call status is switched off.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to Cannot be Intruded, switching private calls off does not affect that status. To allow private calls to be used to fully control the user status, Cannot be Intruded should be disabled for that user.

Private call status can also be switched on or off using a short code features Private Call On 446 and Private Call Off 446 feature or a programmed button set to the Private Call action.

Note that a user logging in or off causes privacy to be reset to off.

- **Telephone Number:** Optional. Number to dial for private call.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

7.8.98 Private Call Off

Short codes using this feature turn off private call status for the user if set. The short code features Private Call 445 and Private Call On 446 can be used to turn private call on.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to Cannot be Intruded, switching private calls off does not affect that status. To allow private calls to be used to full control the user status, Cannot be Intruded should be disabled for that user.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** Advanced | Call | Private Call. 586
- **IP Office Software Level:** 4.0+.

7.8.99 Private Call On

Short codes using this feature turn on the private call settings for the user regardless of their Cannot Be Intruded setting. Any subsequent calls cannot be intruded on, bridged into or silently monitored until the user's private call status is switched off.

Private call status can be switched off using a short code with the Private Call Off 446 feature or a programmed button set to the Private Call action. To enable private call status for a single following call only the Private Call 445 short code feature should be used.

Note that a user logging in or off causes privacy to be reset to off.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** Advanced | Call | Private Call. 586
- **IP Office Software Level:** 4.0+.

7.8.100 Priority Call

This feature allows the user to call another user even if they are set to 'do not disturb'. Priority calls to a user without DND will follow forwarding and follow me settings but will not go to voicemail.

- **Telephone Number:** ✓ Extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ PCall 585
- **See also:** DialPhysicalExtensionByNumber 422, DialPhysicalNumberByID 422.
- **IP Office Software Level:** 1.0+.

Example

N represents the extension number to be called, despite the extension being set to 'do not disturb'. For example, if extension 201 has 'do not disturb' enabled, a user can dial *71*201# and still get through. This short code is useful for companies that frequently use the 'do not disturb' feature and can be given to Managing Directors or people who may need to get through to people regardless of their 'do not disturb' status.

- **Short Code:** *71*N#
- **Telephone Number:** N
- **Feature:** PriorityCall

7.8.101 Record Message

This short code feature is used to record hunt group announcements on Embedded Voicemail, see Hunt Group | Announcements 300.

- **Telephone Number:** ✓ The hunt group number followed by ".1" for announcement 1 or ".2" for announcement 2.
- **Default Short Code:** ✓ *91N; and *92N;
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- IP **Office Software Level:** 4.0+.

Example

For a hunt group with extension number 300, the default short codes ***91N; | Record Message | N".1"** and ***92N; | Record Message | N".2"** can be used to allow recording of the announcements by dialing ***91300#** and ***92300#**.

7.8.102 Relay On

This feature closes the specified switch in the system's external output (EXT O/P) port.

- **Telephone Number:** ✓ Switch number (1 or 2).
- **Default Short Code:** ✓ *39 (Switch 1), *42 (Switch 2), *9000*
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ Rely+ 587
- **See also:** Relay Off 448, Relay Pulse 449.
- **IP Office Software Level:** 1.0+.

Example
This short code is a default within the Manager configuration. This short code is useful for companies that have external devices, such as door controls, connected to the IP Office switch. Based on this sample short code, a user dialing *42 is closing switch number 2 to activate an external device.

- **Short Code:** *42
- **Telephone Number:** 2
- **Feature:** RelayOn

Analog Modem Control
On systems with an analog trunk card and on the Small Office edition, the first analog trunk can be set to answer V.32 modem calls. This is done by selecting the Modem Enabled option on the analog line settings 196 or using the default short code *9000* to toggle this service on or off. This short code uses the **RelayOn** feature with the Telephone Number set to "MAINTENANCE". Note that the short code method is always returned to off following a reboot or if used for accessing the system date and time menu.

7.8.103 Relay Off

This feature opens the specified switch in the system's external output (EXT O/P) port.

- **Telephone Number:** ✓ Switch number (1 or 2).
- **Default Short Code:** ✓ *40 (Switch 1), *43 (Switch 2)
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ Rely- 587
- **See also:** Relay On 448, Relay Pulse 449.
- **IP Office Software Level:** 1.0+.

Example
This short code is a default within the Manager configuration. This short code is useful for companies that have external devices, such as door controls, connected to the IP Office switch. Based on this sample short code, a user dialing *43 is opening switch number 2 to activate an external device.

- **Short Code:** *43
- **Telephone Number:** 2
- **Feature:** RelayOff

7.8.104 Relay Pulse

This feature closes the specified switch in the system's external output (EXT O/P) port for 5 seconds and then opens the switch.

- **Telephone Number:** ✓ Switch number (1 or 2).
- **Default Short Code:** ✓ *41 (Switch 1), *44 (Switch 2)
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ Relay 588
- **See also:** Relay On 448, Relay Off 448.
- **IP Office Software Level:** 1.0+.

Example
This short code is a default within the Manager configuration. This short code is useful for companies that have external devices, such as door controls, connected to the IP Office switch. Based on this sample short code, a user dialing *44 is opening switch number 2 to activate an external device.

- **Short Code:** *44
- **Telephone Number:** 2
- **Feature:** RelayPulse

7.8.105 Resume Call

Resume a call previously suspended to the specified ISDN exchange slot. The suspended call may be resumed from another phone/ISDN Control Unit on the same line.

- **Telephone Number:** ✓ Exchange suspend slot number.
- **Default Short Code:** ✓ *23*N# (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Resum 589
- **See also:** Suspend Call 460.
- **IP Office Software Level:** 1.0+.

Example
Below is sample short code using the Resume Call feature. N represents the exchange slot number from which the call has been suspended. For example, if a user has suspended a call on slot number 4, this user can resume that call by dialing *23*4#.

- **Short Code:** *23*N#
- **Telephone Number:** N
- **Feature:** ResumeCall

7.8.106 Retrieve Call

Retrieves a call previously held to a specific ISDN exchange slot.

- **Telephone Number:** ✓ Exchange hold slot number.
- **Default Short Code:** ✓ *25*N# (A-law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Retriv 589
- **See also:** Hold Call 439.
- **IP Office Software Level:** 1.0+.

Example
Below is sample short code using the Retrieve Call feature. N represents the exchange slot number from which the call has been placed on hold. For example, if a user has placed a call hold on slot number 4, the user can resume that call by dialing *25*4#.

- **Short Code:** *25*N#
- **Telephone Number:** N
- **Feature:** RetrieveCall

7.8.107 Ring Back When Free

This feature sets a ringback on the specified extension. This sets a 'ringback when free' on an extension currently on a call or a 'ringback when next used' for an extension that is free but does not answer.

When the target extension is next used or ends its current call, the users is rung and when they answer a call is made to the target extension.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ RBak+ 590
- **See also:** Cancel Ring Back When Free 411.
- **IP Office Software Level:** 1.0+.

Example
N represents the target extension from which you want to receive the callback. For example, if you call extension 201 but the line is busy, hang up and then dial *71*201#. When extension 201 disconnects from its current call, your phone will ring. Once you pick up the phone, extension 201's line will start ringing to indicate an incoming call.

- **Short Code:** *71*N#
- **Telephone Number:** N
- **Feature:** RingBackWhenFree

7.8.108 Secondary Dial Tone

Secondary dial tone is a system feature to generate a secondary dial tone after the user has begun dialing an external number. This dial tone is then played until the number dialing and an external trunk seized.

For IP Office 4.0 and higher the use of this short code feature has been replaced by the Secondary Dial Tone check box option on ARS forms.

For pre-4.0 IP Office systems secondary dial tone is triggered through the use of the secondary dial tone short code feature.

- **Telephone Number:** ✓ Digit which triggers secondary dial tone.
- **Default Short Code:** ✓ 9 (MU-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 1.0+.

Example
For pre-4.0 IP Office systems secondary dial tone works in two parts. The following system short code will trigger secondary dial tone. To use it to trigger secondary dial tone and then continue dialing, other user, user rights and system short codes should begin with [9].

- **Short Code:** 9
- **Telephone Number:** .
- **Feature:** Secondary Dial Tone

7.8.109 Set Absent Text

This feature can be used to select the user's current absence text. This text is then displayed to internal callers who have suitable display phones or IP Office applications. It doesn't changes the users status.

The text is displayed to callers even if the user has forwarded their calls or is using follow me. Absence text is supported across a Small Community Network (SCN).

The absence text message is limited to 128 characters. Note however that most amount displayed will depend on the caller's device or application.

- **Telephone Number:** ✓ The telephone number should take the format ***"y,n,text"*** where:
  - ***y*** = 0 or 1 to turn this feature on or off.
  - ***n*** = the number of the absent statement to use, see the list below:
    - 0 = None.
    - 1 = On vacation until.
    - 2 = Will be back.
    - 3 = At lunch until.
    - 4 = Meeting until.
    - 5 = Please call.
    - 6 = Don't disturb until.
    - 7 = With visitors until.
    - 8 = With cust. til.
    - 9 = Back soon.
    - 10 = Back tomorrow.
    - 11 = Custom.
  - ***text*** = any text to follow the absent statement.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Absnt 594
- **IP Office Software Level:** 1.0+.

Example
The following short code can be used to turn an absent text message on:

- **Short Code:** *88
- **Telephone Number:** "1,5,my assistant on 208"
- **Line Group ID:** 0
- **Feature:** SetAbsentText

Example
The following short code could be used to turn this facility off. In the Telephone Number the first 0 is used to turn this facility off and the second 0 is used to select the absent statement "None".

- **Short Code:** *89
- **Telephone Number:** "0,0"
- **Line Group ID:** 0
- **Feature:** SetAbsentText

7.8.110 Set Account Code

This short code feature is used to allow system users to enter a valid account code prior to making a phone call. This short code feature is essential for allowing analog phone users to enter account codes. Once this short code is set up, any account code can be used in conjunction with it.

- **Telephone Number:** ✓ A valid account code.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ Acct. 595
- **IP Office Software Level:** 2.1+.

Example

In this example, N represents any valid account code. For the purpose of this example, we will imagine the account code to be 1234. Once this short code is created, a user can dial 11*1234# to get a dial tone for dialing the restricted telephone number or the phone number needing to be tracked for billing purposes.

- **Short code:** 11*N#
- **Telephone Number:** N
- **Feature:** SetAccountCode

7.8.111 Set Authorization Code

This short code feature is only available on systems configured to use authorization codes. See Authorization Codes 375. The feature is used to allow a user to enter a valid authorization code prior to making a phone call.

This short code feature is essential for allowing analog phone users to enter authorization codes. Note that the authorization code must be associated with the user or the user rights to which the user belongs.

- **Telephone Number:** ✓ A valid authorization code.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 3.2+.

7.8.112 Set Hunt Group Night Service

This feature puts the specified hunt group into 'Night Service' mode.

- **Telephone Number:** ✓ Hunt group extension number.
  For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✓ *20*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HGNS+ 596
- **See also:** Set Hunt Group Out Of Service 454, Clear Hunt Group Night Service 414, Clear Hunt Group Out Of Service 414 .
- **IP Office Software Level:** 1.0+.

Previously in IP Office 3.2 the Set Hunt Group Night Service, Set Hunt Group Out of Service and Hunt Group Enable short code features toggled. That behaviour is not supported in 4.0 and higher.

Example
This short code is a default within the Manager configuration. N represents the telephone number of the hunt group to be placed into "Night Service" mode. For example, when *20*201# is dialed, the hunt group associated with extension 201 will be placed into "Night Service" mode.

- **Short Code:** *20*N#
- **Telephone Number:** N
- **Feature:** SetHuntGroupNightService

7.8.113 Set Hunt Group Out Of Service

This feature manually puts the specified hunt group into 'Out of Service' mode.

If a time profile has also been defined to control hunt group night service, the action may vary:

- **Pre-4.0 IP Office**
  Set Hunt Group Out of Service cannot be used to override a hunt group put into night service by a time profile.
- **4.0 IP Office and Higher**
  This option can be used to override a time profile and change a hunt group from night service to out of service.

- **Telephone Number:** ✓ Hunt group extension number.
  For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HGOS+ 597
- **IP Office Software Level:** 1.0+.
  Previously the Set Hunt Group Night Service 454 and Set Hunt Group Out of Service 454 short code features toggled. That behaviour is not supported in 4.0 and higher.

Example
Below is a sample short code using the Set Hunt Group Out Of Service feature. N represents the telephone number of the hunt group to be placed into "Out of Service" mode. For example, when *56*201# is dialed, the hunt group associated with extension 201 will be placed into "Out of Service" mode.

- **Short Code:** *56*N#
- **Telephone Number:** N
- **Feature:** SetHuntGroupOutOfService

7.8.114 Set Inside Call Seq

This feature allows the user to select the ringing used on their extension for internal calls. The number entered corresponds to the ring pattern required. This is 0 for Default Ring, 1 for RingNormal, 2 for RingType1, etc. For more information on selectable ringing patterns, see Ring Tones.

Use of this short code function is applicable to analog phone users only. The distinctive ring used by DS port phones is fixed by the phone type.

- **Telephone Number:** ✓ Number corresponding to the desired ring pattern. See Ring Tones 683.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ ICSeq 598
- **See also:** Set Ringback Seq 458, Set Inside Call Seq 455.
- **IP Office Software Level:** 1.0+.

Example
This Short Code allows a user to change their inside call pattern. N represents the number corresponding to the Call Sequence the user wishes to choose, the numbering starts at 0 selecting Default Ring, 1 selects Ring Normal, 2 selects RingType1, etc. For example, if a user wants to set her/his internal ring pattern to RingType1, the user would dial *80*2# because 2 corresponds to RingType1. This short code is useful for distinguishing an external call from an internal one simply by the ring tone.

- **Short Code:** *80*N#
- **Telephone Number:** N
- **Feature:** SetInsideCallSeq

7.8.115 Set Mobile Twinning Number

This short code feature can be used to set a mobile twinning number. The destination can be any external number the user is able to dial normally. It should include any prefix if necessary.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✓ Twinning destination.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Set Mobile Twinning On 456, Set Mobile Twinning Off 456, Mobile Twinned Call Pickup 442.
- **IP Office Software Level:** 3.2+.

7.8.116 Set Mobile Twinning On

This short code feature turns on the user's mobile twinning. It requires a mobile twinning number to have been set for the user. That can be done through using the Set Mobile Twinning Number 456 short code feature or through the User | Twinning 280 tab within Manager.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Set Mobile Twinning Off 456, Set Mobile Twinning Number 456, Mobile Twinned Call Pickup 442.
- **IP Office Software Level:** 3.2+.

7.8.117 Set Mobile Twinning Off

This short code feature turns off the user's mobile twinning.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also**: Set Mobile Twinning On 456, Set Mobile Twinning Number 456, Mobile Twinned Call Pickup 442.
- **IP Office Software Level:** 3.2+.

7.8.118 Set No Answer Time

This short code feature allows the user to change their **No Answer Time** 265 (User | Telephony | Call Settings) 265.

- **Telephone Number:** ✓ Time in seconds.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ NATim 600
- **See also:** Set Wrap Up Time 458.
- **IP Office Software Level:** 1.0+.

Example
This short code allows a user to change the length of time they have to answer the phone before it goes to divert or voicemail. N represents the number of seconds. For example, if a user wants to set the allocated answer interval to 15 seconds, the following information needs to be entered: *81*15#.

- **Short Code:** *81*N#
- **Telephone Number:** N
- **Feature:** SetNoAnswerTime

7.8.119 Set Outside Call Seq

This feature allows the user to select the ringing used on their extension for external calls. The number entered corresponds to the ring pattern required. This is 0 for Default Ring, 1 for RingNormal, 2 for RingType1, etc. For more information on selectable ringing patterns, see Ring Tones. Use of this short code function is applicable to analog phone users only. The distinctive ring used by DS port phones is fixed by the phone type.

- **Telephone Number:** ✓ Number corresponding to the desired ring pattern. See Ring Tones 683.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ OCSeq 600
- **See also:** Set Ringback Seq 458, Set Outside Call Seq 457.
- **IP Office Software Level:** 1.0+.

Example
This short code allows a user to change the ringing tone for an external call. N represents the number corresponding to the Call Sequence the user wishes to choose, the numbering starts at 0 selecting Default Ring, 1 selects RingNormal, 2 selects RingType1, etc. For example, if a user wants to set her/his ring pattern for external calls to RingType1, the user would dial *81*2# because 2 corresponds to RingType1. This short code is useful for distinguishing an external call from an internal one simply by the ring tone.

- **Short Code:** *81*N#
- **Telephone Number:** N
- **Feature:** SetOutsideCallSeq

7.8.120 Set Ringback Seq

This feature allows the user to select the ringing used on their extension for ringback calls. The number entered corresponds to the ring pattern required. This is 0 for Default Ring, 1 for RingNormal, 2 for RingType1, etc. For more information on selectable ringing patterns, see Ring Tones.

Use of this short code function is applicable to analog phone users only. The distinctive ring used by DS port phones is fixed by the phone type.

- **Telephone Number:** ✓ Number corresponding to the desired ring pattern. See Ring Tones 683.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ RBSeq 600
- **See also:** Set Outside Call Seq 457, Set Inside Call Seq 455.
- **IP Office Software Level:** 1.0+.

Example
This short code allows a user to change the ringing tone for a ringback call. N represents the number corresponding to the ring tone the user wishes to choose, the numbering starts at 0 selecting Default Ring, 1 selects RingNormal, 2 selects RingType1, etc. For example, if a user wants to set her/his ring pattern for ringback calls to RingType1, the user would dial *81*2# because 2 corresponds to RingType1. This short code is useful for distinguishing a ringback call from any other call simply by the ring tone.

- **Short Code:** *81*N#
- **Telephone Number:** N
- **Feature:** SetRingbackSeq

7.8.121 Set Wrap Up Time

Allows users to change their **Wrap-up Time** 265 (User | Telephony | Call Settings) 265 setting, which specifies the amount of time, after disconnecting from a call, before the user can take another call.

- **Telephone Number:** ✓ Time in seconds.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ WUTim 601
- **See also:** Set No Answer Time 457.
- **IP Office Software Level:** 1.0+.

Example
N represents the number of seconds. For example, if a user wants to set her/his wrap up time to 8 seconds, this user would dial *82*5#. This short code is useful in a "call center" environment where users may need time to log call details before taking the next call. If set to 0 the user does not receive any calls. It is recommended that this option is not set to less than the default of 2 seconds.

- **Short Code:** *82*N#
- **Telephone Number:** N
- **Feature:** SetWrapUpTime

7.8.122 Shutdown Embedded Voicemail

Allows the Embedded Voicemail service to be closed down without having to switch off the IP Office. Once shutdown the Embedded Voicemail memory card can be safely removed.

The short code has the following effects:

1. Immediately disconnect all current users within embedded voicemail. This is not a polite shutdown
2. Mark the embedded voicemail as inactive so that it will not receive any new calls.
3. Shutdown the file system so that the call data is correctly written to the flash card.
4. Extinguish the **C/F** LED on the IP406 V2 or IP 500 when it is safe to remove the memory card.

Once Embedded Voicemail is shutdown, it is restarted by removal and then reinsertion of a memory card.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Call Pickup Any 405, Call Pickup Group 406, Call Pickup Members 407, Acquire Call 409.
- **IP Office Software Level:** 4.0+ (Added in the IP Office 4.0 Q2 2007 maintenance release).

7.8.123 Suspend Call

This feature uses the Q.931 Suspend facility. It suspends the incoming call at the ISDN exchange, freeing up the ISDN B channel. The call is placed in exchange slot 0 if a slot number is not specified.

- **Telephone Number:** ✓ Exchange slot number or blank (slot 0).
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Suspe 602
- **See also:** Resume Call 449.
- **IP Office Software Level:** 1.0+.

7.8.124 Suspend CW

This feature uses the Q.931 Suspend facility. Suspends the incoming call at the ISDN exchange and answer the call waiting. The call is placed in exchange slot 0 if a slot number is not specified. Only available when supported by the ISDN exchange.

- **Telephone Number:** ✓ Exchange slot number or blank (slot 0).
- **Default Short Code:** ✓ *28*N# (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ SusCW 602
- **See also:** Resume Call 449.
- **IP Office Software Level:** 1.0+.

Example

Sample short code using the Suspend CW feature.

- **Short Code:** *28*N#
- **Feature:** Suspend CW

7.8.125 Toggle Calls

This feature cycles through each call that the user has on hold on the IP Office system. This feature is useful when a user with a single-line telephone has several calls on hold and needs to respond to each one in turn.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *29
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ Toggl 604
- **IP Office Software Level:** 1.0+.

Example
Below is sample short code using the Toggle Calls feature (via Manager).

- **Short Code:** *29
- **Feature:** ToggleCalls

7.8.126 Unpark Call

Retrieve a parked call from a specified system park slot. In pre-3.2 IP Office this feature was call Ride Call.

- **Telephone Number:** ✓ System park slot number.
- **Default Short Code:** ✓ *38*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ Ride 605
- **See also:** Park Call 445.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample short code using the Unpark Call feature. N represents the park slot number in which the call you want to retrieve was parked. For example, if a user parked a call to slot number 9, you can retrieve that call by dialing *38*9#.

- **Short Code:** *38*N#
- **Telephone Number:** N
- **Feature:** Unpark Call

7.8.127 Voicemail Collect

This feature connects to the voicemail system. Normally the telephone number field is used to indicate the name of the mailbox to be accessed, for example "?Extn201" or "#Extn201". The ? indicates 'collect messages' and the # indicates 'leave a message'. Placing the text within quote marks stops it being interpreted by the IP Office as special short code characters.

When using Voicemail Pro, names of specific call flow start points can also be used to directly access those start points via a short code. In these cases, ? is not used and # is only used if ringing is required before the start point's call flow begins.

Note: Short codes using the Voicemail Collect feature, with either "Short Codes.name" and "#Short Codes.name" entries in the Telephone Number field are automatically converted to the Voicemail Node feature and name.

- **Telephone Number:** ✓ See above.
- **Default Short Code:** ✓ *17
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ VMCol 607
- **See also:** Voicemail On 464, Voicemail Off 464, Voicemail Node 463.
- **IP Office Software Level:** 1.0+.

Example: Retrieve Messages from Specific Mailbox
This short code allows a user to retrieve messages from the mailbox of the hunt group 'Sales'. This usage is not supported on Voicemail Pro running in Intuity emulation mode unless a custom call flow has been created for the hunt group, refer to the Voicemail Pro help.

- **Short Code:** *99
- **Telephone Number:** "?Sales"
- **Feature:** VoicemailCollect

Example: Record Message to Specific Mailbox
To allow users to deposit a message directly to Extn201's Voicemail box. This short code is useful when you know the person is not at her/his desk and you want to immediately leave a message rather than call the person and wait to be redirected to voicemail.

- **Short Code:** *201
- **Telephone Number:** "#Extn201"
- **Feature:** VoicemailCollect

Example: Accessing a Specific Voicemail Pro Module
This short code can be used in instances where you have a conference bridge set up on the IP Office and a module has been created via Voicemail Pro to access this conference bridge. A short code can be created for internal access to the module. In the sample short code below, the telephone number field contains the name of the module. In this example, if a short burst of ringing is required before connecting the module, "#conferenc" would be used as the telephone number.

- **Short Code:** *100
- **Telephone Number:** "conferenc"
- **Feature:** VoicemailCollect

7.8.128 Voicemail Node

Similar to Voicemail Collect but used for calls being directed to a Voicemail Pro Short Codes start point. Useful if you have set up a short code start point with Voicemail Pro and want to give direct internal access to it.

- **Telephone Number:** ✓ Voicemail Pro Short Code start point name without quotation marks.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** Voicemail Collect 462.
- **IP Office Software Level:** 2.0+.

Example

Having created a short codes start point call flow called Sales, the following IP Office short code can be used to route calls to that call flow:

- **Short Code:** *96
- **Telephone Number:** Sales
- **Feature:** VoicemailNode

7.8.129 Voicemail On

This feature enables the user's voicemail mailbox to answer calls which ring unanswered or arrive when the user is busy.

- **Telephone Number:** ✗ None.
- **Default Short Code:** ✓ *18
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ VMOn 608
- **See also:** Voicemail Off 464.
- **IP Office Software Level:** 1.0+.
  For IP Office 3.2, the Voicemail On and Voicemail Ringback On short code features toggled. For IP Office 4.0 and higher they no longer toggle.

Example

This short code can be used to toggle the feature on.

- **Short Code:** *18
- **Feature:** VoicemailOn

7.8.130 Voicemail Off

This feature disables the user's voicemail mailbox box from being used to answer calls. It does not disable the voicemail mailbox being used as the target for other functions such as call recording or messages forwarded from other mailboxes.

- **Telephone Number:** ✗ None.
- **Default Short Code:** ✓ *19
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ VMOff 608
- **See also:** Voicemail On 464.
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *19
- **Feature:** VoicemailOff

7.8.131 Voicemail Ringback On

This feature enables voicemail ringback to the user's extension. Voicemail ringback is used to call the user when they have new voicemail messages. The ringback takes place each time the extension is used. This feature is useful for users who do not have voicemail light/button indicators on their telephone.

If the user has been configured to receive message waiting indication for any hunt groups, a separate voicemail ringback will occur for each such group and for the users own mailbox.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *48
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ VMRB+ 609
- **See also:** Voicemail Ringback Off 465.
- **IP Office Software Level:** 1.0+.
  For IP Office 3.2, the Voicemail On and Voicemail Ringback On short code features toggled. For IP Office 4.0 and higher they no longer toggle.

Example
This short code can be used to turn the feature on.

- **Short Code:** *48
- **Feature:** VoicemailRingbackOn

7.8.132 Voicemail Ringback Off

This feature disables voicemail ringback to the user's extension. This feature is also available on Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *49
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ VMRB- 609
- **See also:** Voicemail Ringback On 465.
- **IP Office Software Level:** 1.0+.

Example
Below is a sample of the short code setup.

- **Short Code:** *49
- **Feature:** VoicemailRingbackOff

Chapter 8.
Button Programming

8. Button Programming

This section covers the IP Office actions that can be assigned to programmable buttons on Avaya phones. This assignment can be done through the IP Office configuration using Manager and for some functions using the phone itself.

- **Appearance Functions**
  The functions ***Call Appearance***, ***Bridged Appearance***, ***Coverage*** and ***Line Appearance*** are collectively known as "appearance functions". For full details of their operation and usage refer to the Key and Lamp Operation 612 section. The following restrictions must be observed for the correct operation of phones.
  - On systems running IP Office 2.1 or 3.0DT software, the first programmable button should be set as a call appearance button. This requirement is necessary for the correct operation of phone functions such as call log.
  - For systems running IP Office 3.0 or higher (excluding 3.0DT), the first 3 programmable buttons on most phone be used as call appearance buttons. These requirements are necessary for the correct operation of functions such as transfer and conference. The only exceptions are analog phones, T3 and IP DECT phones.
    - On phones with only two physical programmable buttons both buttons must be used as call appearance buttons.

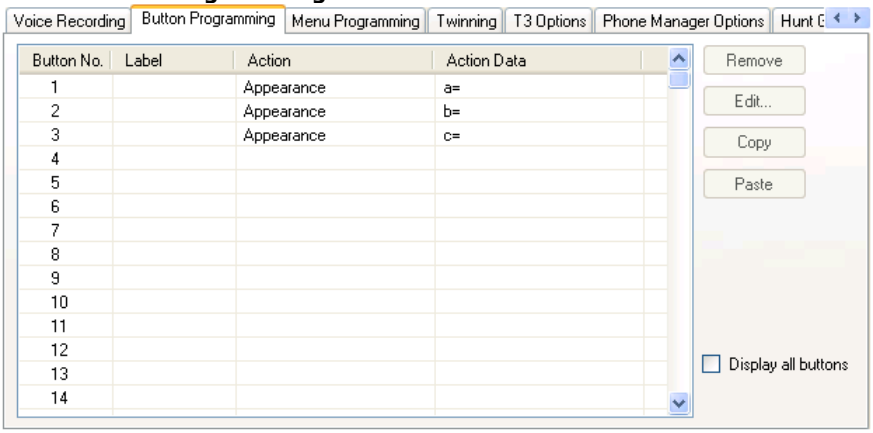
- **Phone Support**
  Note that not all functions are supported on all phones with programmable buttons. Where possible exceptions have been indicated.
  - Actions that use status feedback are only supported on buttons that provide that feedback through lamps or icons. The action may partially work on buttons without feedback but is not supported.

8.1 Programming Buttons

8.1.1 Programming Buttons with Manager

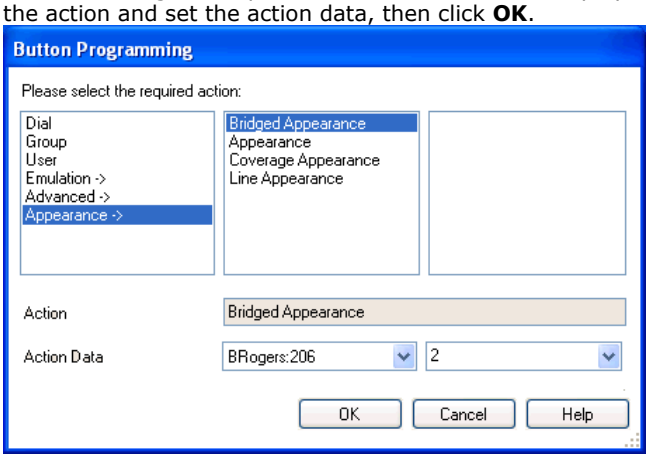
Using IP Office Manager, if only button programming changes are required, the configuration changes can be merged back to the IP Office system without requiring a reboot.

1. Using Manager load the current configuration from the IP Office.
2. Select the  **User** required to display their configuration details.
3. Select **Button Programming**.



   - The number of button displayed is based on the phone associated with the user when the configuration was loaded. This can be overridden by selecting **Display All Buttons**. This may be necessary for users who switch between different phones using hot desking or have an expansion unit attached to their phone.

4. For the required button, either select the button and then click **Edit** or double-click the button.
5. Edit the settings as required. Use the **...** button to display the menu for selecting the required button action. Select the action and set the action data, then click **OK**.



6. Click **OK**. Repeat for any other buttons.
7. Click **OK**.

An alternate method for the above programming is to right-click on the various fields. To do this start with the **Action** field, then **Action Data** and then **Label** if required.

8.1.2 Programming Button via the Menu Key

On 4412D+, 4424D+, 4612IP, 4624IP, 6408D, 6416D, 6424D phones the **Menu** button can be used to program some functions against other buttons. This programming also includes programmable buttons on any associated add-on units associated with the phone. Buttons already programmed as appearance buttons cannot be altered using these methods.

- A **Self-Administer** 592 button can also be added to allow the phone user to program the functions on their other buttons, see Self-Administer 592.
- For IP Office 4.2+, T3 phone users can also program buttons using a Menu function, see T3 Self-Administration 473 .

Setting a Button to Dial a Number

This process sets the selected programmable button to the Dial 546 function in the IP Office configuration.

1. With the phone idle and on-hook, press **MENU** .
2. Press ▶ and select **PROG**.
3. Enter the number required. The left-most display button can be used to backspace and the right-most display button can be used to **Clear** the whole number.
4. Press the programmable button against which the number should be set.
5. If the button is already programmed, options to replace (**Repla**), keep (**Keep**) or delete (**Delet**) the buttons existing programming appear. Select the option required.
6. The message **BUTTON PROGRAMMED!** indicates that the button is now programmed. Select **Cont** and then press **Exit** .

Setting a Button to a Switch Function

This process allows users to program there own Group 570, User 606 and Park 583 slot monitor buttons. It also allows the programming of Dial 546 and Flash Hook 562 buttons.

1. With the phone idle and on-hook, press **Menu** twice.
2. Press ▶ and select **ProgA**.
3. Press ▶ and select **DSS**.
4. Use the ◀ and ▶ buttons to display the function required. Press the display button below the function to select it.
5. If the function requires a telephone number value set, enter the number. The left-most display button can be used to backspace and the right-most display button can be used to **Clear** the whole number.
6. Press the programmable button against which the number should be set.
7. If the button is already programmed, options to replace (**Repla**), keep (**Keep**) or delete (**Delet**) the buttons existing programming appear. Select the option required.
8. The message **BUTTON PROGRAMMED!** indicates that the button is now programmed. Select **Cont** and then press **Exit** .

Setting Buttons to Admin Function

Phones with a **Menu** key can program a range of self-administer functions onto their programmable buttons. These are:

- Dir - Directory. 557
- Drop - Drop. 560
- HFAns - Internal Auto-Answer. 578
- Timer - Timer. 603
- AutCB - Automatic Callback. 523
- Prog - Abbreviated Dial Program. 516
- CFrwd - Call Forwarding All. 528
- CPark - Call Park. 531
- SAC - Send All Calls. 593
- TmDay - Time of Day. 603
- Admin - Self-Administer. 592
- Acct - Account Code Entry. 517
- AD - Abbreviated Dial. 515
- Park - Call Park to Other Extn. 583
- GrpPg - Group Paging. 572
- CPkUp - Call Pickup. 533
- DPkUp - Directed Call Pickup. 556
- RngOf - Ringer Off. 591
- Spres - AD Suppress. 520
- HdSet - Headset Toggle. 573
- HGNS+ - Set Hunt Group Night Service. 596

This is the same set of functions that can be programmed by users with a button set to Self-Administer (see Self-Administer 592).

1. With the phone idle and on-hook, press **Menu**.
2. Press ▶ twice and select **Admin**.
3. Use the ◀ and ▶ keys to display the function required and then select it by pressing the display button below the feature.
   - Selecting **Expl?** changes the display from short name mode to long name mode. In this mode the full names of the features are displayed. Select **SHORTMODE** to return to that mode.
4. If the function requires a telephone number value set, enter the number. The left-most display button can be used to backspace and the right-most display button can be used to **Clear** the whole number.
5. Press the programmable button against which the number should be set.
6. If the button is already programmed, options to replace (**Repla**), keep (**Keep**) or delete (**Delet**) the buttons existing programming appear. Select the option required.
7. The message **BUTTON PROGRAMMED!** indicates that the button is now programmed. Select **Cont** and then press **Exit**.

8.1.3 Programming Button via an Admin Button

The **Admin** [592] (also called **Self-Administer** [592]) function can be assigned to a programmable button on a user's phone. That button then allows the user to program functions against other programmable buttons on their phone, except those already set as appearance buttons.

- **Admin** buttons are only supported on **2410**, **2420**, **4406D+**, **4412D+**, **4424D+**, **4606IP**, **4612IP**, **4624IP**, **5410**, **5420**, **6408D**, **6416D** and **6424D**.
- On **4412D+, 4424D+, 4612IP, 4624IP, 6408D, 6416D, 6424D** phones:
  - **Admin** can be permanently accessed via **Menu** , ▶, ▶, **Admin**.
  - **Admin1** can be permanently accessed via **Menu** , **Menu** , ▶, **ProgA**, , ▶, **DSS**.

8.1.4 T3 Self-Administration

IP Office 4.2+ supports functions for T3 phone users to be able to program their own buttons. This is similar to the existing Self-Administer 592 button supported on other phones but is configured and accessed via different methods.

The user accesses button programming through Menu -> Settings -> Button programming. This function is not available by default, instead it must be configured as available for the user using the method detailed below.

Once enabled, the user is able to configure the following functions on buttons:

Function	Description
empty	Returns the button to it normal default function.
Account Code	Allows the user to enter an account code before or during a call. The account code can be preset or entered after the button press. See the Account Code Entry 517 function.
Callback	Set a callback from the currently dialed extension number. See the Automatic Callback 523 function.
Call list	Displays a list of calls received. See the Call List 529 function.
Call Tracing	Activate malicious call tracing. See the MCID Activate 581 function and Malicious Call Tracing (MCID) 674.
Dial	Dial a preset number or partial number that can be completed after the button press. See the Dial 546 function.
Directory	Display the IP Office directory. See the Directory 557 function.
Do not disturb	Toggle the phone between do not distrub on and off. See the Send All Calls 593 function.
Follow me here	Activate/cancel follow me here. See the Follow Me Here 563 function.
Forward unconditional	Activate/cancel forward all calls. See the Forward Unconditional On 569 function.
Group Paging	Page a group of phones. See the Group Paging 572 function.
Group Membership	Enable/disable the user membership of a group or all groups. See the Hunt Group Enable 575 function.
Group State	Change a hunt group's out of service status. See the Set Hunt Group Out of Service 597 function.
Headset	Switch between handset and headset modes. See the Headset Toggle 573 function.
Internal Auto-Answer	Auto connect internal calls after a single tone. See the Internal Auto Answer 578 function.
Login	Access the menu for phone log in. See the Extn Login 561 function.
Logout	Log out from the phone. See the Extn Logout 561 function.
Night Service	Change a hunt group's night service status. See the Set Hunt Group Night Service 596 function.
Paging	Page an extension or group. See the Dial Paging 551 function.
Pickup	Answer a call alerting on the system. See the Call Pickup 533 function.
Pickup Member	Answer a call alerting the hunt group of which the user is a member. See the Call Pickup Members 534 function.
Twinning	Switch mobile twinning on/off and set the twinning destination. Also used to pull a call answered at the twinned number back to the users primary extension. See the Twinning 604 function.
User	Monitor the status of a user. Also used to call them or to pickup calls alerting them. See the User 606 function.
Voicemail	Equivalent to the Voicemail Collect 607 function.
Voicemail on/off	Switch the use of the user's mailbox to answer unanswered calls calls on/off. See the Voicemail On 608 function.

The user will need to be made aware of which physical buttons can be programmed as this varies between the different T3 phones. See T3 Compact 506, T3 Classic 507 and T3 Comfort 508.

Configuring a T3 User for Button Programming

1. Using Manager, receive the configuration from the system.
2. Select the T3 user and then select **Menu Programming**.
3. Set the action for one of the menus to **Self-Administer**.
4. Send the configuration back to the IP Office.
5. The user will now be able to access button programming from their phone via ***Menu -> Settings -> Button programming***.

8.1.5 Customizing Text Labels

On Avaya phones where the programmable button has an adjacent display area, a text label is displayed to indicate the button's function.

Each function has a default label. However this default label can be replaced by a custom text label of up to 13 characters (A-Z, a-z, 0-9 plus ., *, - and #). This custom label can be entered either by the user from their phone or through the IP Office configuration.

Entering a Custom Label from a Phone

This option is supported on 2410, 2420, 4610, 4620, 4621, 4625, 5410, 5420, 5610, 5620 and 5621 phones.

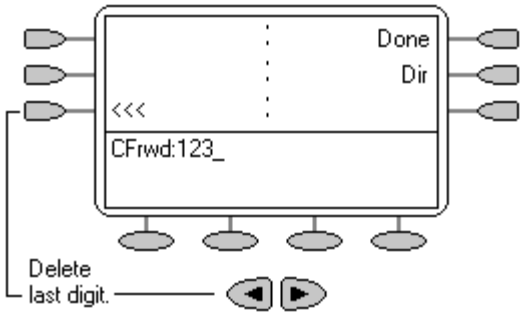
1. First exit any other phone menu mode and ensure that the phone is idle.
2. The next step depends on the type of phone:
   - **2410, 5410:** Press any key below the display. The press **Label**.
   - **2420, 5420:** Press **Label**.
   - **IP Phones:** Press Options. Press and then **Feature Button Labeling**.
3. The options may vary slightly between phone types but are similar.
   - **Edit** or **Relabel feature buttons** allows you replace the current labels, see the steps below.
   - **Inspect** or **View default labels** displays the default labels.
   - **Restore** or **Restore default labels** replaces any custom labels with the default labels.
   - **Done** exits the button labelling options.
4. Press **Edit**.
5. Select the function key whose label you wish to change.
6. Begin entering the **New Label** text using the telephone keypad.
   - Each number key is marked with the letters it provides. You may have to press the key more than once depending on the character required. For example, the key **6** is also marked as **M**, **N** and **O**. To enter an **O**, re-press the **6** key until an **O** is displayed.
   - If the next character you want is on another key, simply key the next character.
   - If the next character you want to enter is on the same key just used, press to move the cursor right and then enter the character.
   - Pressing the ***** key once enters a **.** (period). Pressing it twice enters a *****.
   - Pressing the **#** key once enters a **-** (dash). Pressing it twice enters a **#**.
   - By default the first letter entered and the first letter after any space are entered in upper-case whilst all other character are entered in lower-case. To change the case of the current character press **Case**.
   - To enter a space press **Space**.
   - Use the key to move the cursor one space right.
   - If you make a mistake, use **Backspace** to delete the character to the left of the cursor.
   - If you have made a mistake in the middle of a character string and do not wish to backspace and re-enter all the characters use the key to step back to one character before the point where you wish to edit. Either insert the new character or press **Backspace** to delete the character to the left of the cursor.
   - Press **Clear** to delete all the current text.
7. When the new name is set as required, press **Save**. To return to the label options screen without saving the changes, press **Cancel**.
8. Select another button to re-label or press **Done**.

8.1.6 Interactive Button Menus

For IP Office 4.0 and higher, a number of changes have been made to the behaviour of some functions on large screen Avaya display phones. That description covers the 2410, 2420, 4610, 4620, 4621, 4625, 4510, 5420, 5610, 5620.

The new behaviour applies to functions that require an extension number but where the button has been configured without a specific number. In this case pressing the button allows the user to see and set the current number value, using the Directory function if necessary to select the required number.

For example the **Emulation | Call Forwarding All** appears as follows:



The **<<<** and **Done** controls only appear when a number is already set or when a valid number has been entered. Press **Done** or **#** to complete entry.

The **Dir** option allows user and or group selection using the IP Office internal directory.

8.2 Phone Details

The table below lists the feature phones supported by IP Office. Note that the range of phones supported varies with the IP Office control unit software level. For some phones the annotation 24 (4x6) or similar is used. This can be read as 24 programmable buttons, typically arranged as 4 screen pages with 6 physical buttons.

Phone	Programmable Buttons		Call Appearances	Button Type	Add -On	Software Level
1703 480	✓	3	✓		-	4.2+
1708 480	✓	8	✓		-	4.2+
1716 480	✓	16	✓		BM32	4.2+
2010	✗	-	✗	-	-	2.1-3.0DT
2030 482	✓	8	✗		20DS 484	2.1-3.0DT
2050 483	✓	8	✗		20DS 484	2.1-3.0DT
20CC 483	✓	8	✗		20DS 484	2.1-3.0DT
20DT	✗	0	✗	-	-	2.1+
2402D 485	✓	2 (+12)	✓		-	3.0+
2410D 486	✓	12 (2x6)	✓	CA1	-	3.0+
2420 487	✓	24 (3x8)	✓	CA1	EU24	2.1+
3616 489	✓	6	✓	1	-	2.1+
3620 489	✓	6	✓	1	-	3.2+
3626 489	✓	6	✓	1	-	2.1+
3641 490	✓	12	✓	1	-	4.0+
3645 490	✓	12	✓	1	-	4.0+
3701	✗	0	✗	-	-	3.1+
3711	✗	0	✗	-	-	3.1+
3810 491	✓	4	✓	-	-	2.1+
4406D 492	✓	6	✓		-	2.1+
4412D 493	✓	24	✓	/	4450 495	2.1+
4424D 494	✓	24	✓		4450 495	2.1+
4601 497	✓	2	✓		-	3.0+
4602IP/SW 498	✓	2	✓		-	2.1+
4606 492	✓	6	✓		-	2.1-3.2
4610SW 499	✓	24 (4x6)	✓	CA1	-	3.0+
4612 500	✓	12	✓		-	2.1-3.2
4620 501	✓	24 (2x12)	✓	CA1	EU24BL	2.1+
4621 501	✓	24 (2x12)	✓	CA1	EU24BL	3.1+
4624 494	✓	24	✓		-	2.0-3.2
4625 501	✓	24 (2x12)	✓	CA1	EU24BL	3.2+
5402 485	✓	2 (+12)	✓		-	3.0+
5410 486	✓	12 (2x6)	✓	CA1	-	3.0+
5420 487	✓	24 (3x8)	✓	CA1	EU24	3.0+
5601 497	✓	2	✓		-	3.0+
5602IP/SW 498	✓	2	✓		-	3.0+
5610SW 499	✓	24 (4x6)	✓	CA1	-	3.0+
5620 501	✓	24 (2x12)	✓	CA1	EU24BL	3.0+
5621 501	✓	24 (2x12)	✓	CA1	EU24BL	3.2+
6408D 502	✓	8	✓		-	2.1+
6416D 503	✓	16	✓		XM24	2.1+
6424D 504	✓	24	✓		XM24	2.1+
9040 505	✓	8 (2x4)	✓	1	-	2.1-3.2
T3 Compact 506	✓	4	✓ *Line only.**		T3 DSS	3.1+
T3 Classic 507	✓	10	✓ *Line only.**	(4 plus icons)	T3 DSS	3.1+
T3 Comfort 508	✓	18	✓ *Line only.**	(10 plus icons)	T3 DSS	3.1+
T3 IP Compact 506	✓	4	✓ *Line only.**		T3 DSS	3.2+
T3 IP Classic 507	✓	10	✓ *Line only.**	(4 plus icons)	T3 DSS	3.2+
T3 IP Comfort	✓	18	✓ *Line only.**	(10 plus icons)	T3 DSS	3.2+

Phone	Programmable Buttons		Call Appearances	Button Type	Add -On	Software Level
508						

- A number of phones only have two physical programmable buttons. On systems running IP Office 3.0 or higher (excluding 3.0DT) these button should only be used as call appearance buttons.
- The 2402 and 5402 phones have an additional 12 programmable slots that can be accessed by pressing **FEATURE** .
- *T3 and T3 IP phones support line appearance buttons only and only for IP Office 4.2+.

8.2.1 Phone Add-Ons

The following add-on's can be used to provide some Avaya phones will additional programmable buttons. Those additional buttons can then be used for key & lamp functions.

- Those marked ✓✗ symbol support programmable buttons but those buttons cannot be used as appearance buttons.
- Those marked ✓✓ symbol support programmable buttons which can be used as appearance buttons.

- **4450:** ✓✗ *+60 (50 x , 10 x)*
  Add-on for 4412D+ and 4424D+ phones. Provides an additional 60 programmable buttons with a single lamp - red except for the bottom two rows which are green. Due to the single lamp not recommended for appearance functions as not all button states can be indicated. Up to two 4450 units can be connected to an existing phone. A maximum of two 4450 units per IP Office DS module and/or control unit are supported.
- **BM32:** ✓✗ *+32*
  Add-on for the 1716 that provides two columns of 16 buttons. Up to 2 BM32's are supported with any 1716 up to a maximum of 16 BM32's on the IP Office system.
- **EU24:** ✓✓ *+24 (2x12)*
  Add-on for the 2420, 4620, 4620SW, 4625, 5420, 5620, 5620SW and 5621. Provides an additional 24 programmable buttons. Button display icons are on two switchable pages with 12 icons on each page. Connects direct to the phone. One per phone. Maximum of eight per IP Office system.
  - **EU24BL:** ✓✓ *+24 (2x12)*
    As per the EU24 above but with a backlight function to match the 4621. Note supported on the 2420 and 5420.
- **XM24:** ✓✓ *+24*
  Add-on for 6416D and 6424D phones. Provides an additional 24 programmable buttons. Connects direct to phone. One per phone. Maximum of two per IP Office DS module or control unit.
- **T3 DSS:** ✓✗ *+36 LED*
  Up to 3 of these units can be connected to any of the IP Office T3 phones. Each provides an additional 36 programmable buttons. Each button includes a single red status LED. Connection of the T3 DSS varies:
  - With non-IP models, the first T3 DSS connects directly to a link port on the phone. No additional power supplies are required.
  - With T3 IP Models, the first T3 DSS connects to a DSS Link Unit fitted to the phone. A power supply is required for the DSS.
- **20DS:** ✓✗ *+42*
  Add-on for 2030, 2050 and 20CC phones. One per phone. Provides an additional 42 programmable buttons with dual-color lamps.

8.2.2 Button Types

Key & lamp operation requires Avaya phones with programmable buttons. These are found on the majority of Avaya phones supported by IP Office.

The list below shows different programmable button types and the phones on which they are found.

- **1703, 1708, 1716**
  Programmable button with twin lamps.
- **2030**
  Programmable button with no lamp.
- **2050, 20CC, 20DS**
  Programmable button with dual-color lamp (red or green).
- **4406D, 4412D, 4424D, 4606, 4612, 4624 Phones**
  Programmable button with twin lamps. For appearance functions the red lamp is used to indicate the current selected button.
- **4412 Phone**
  Programmable button with no lamps. Found on the last 12 buttons on the Avaya 4412 phone.
- **4450 Phone Add-On**
  Programmable buttons with a single lamp (either red or green). Not recommended for appearance functions as not all button states can be indicated.
- **4601, 5601**
  Programmable button with single red lamp.
- **6408D, 6416D, 6424D Phones and XM24 Add-On**
  Programmable button with twin lamps. For appearance functions the red lamp is used to indicate the current selected button.
- CA1 **2410D, 2420, 5410, 5420, EU24**
  Display key with adjacent icon and text label display area. For appearance functions an _ underscore on the text label is used to indicate the current selected button.
- 0:01 **4610SW, 4620, 4621, 4625, 5610SW, 5620, 5621**
  Display key with adjacent icon and text label display area. For appearance functions a * symbol is used to indicate the current selected button.
  2402D, 4602, 4602SW, 5402, 5602, 5602SW Phones
  Display key with adjacent icon display area but no text label display. For appearance functions a ***** symbol is used to indicate the current selected button.
  - The **2402D** and **5402** have an additional 12 programmable buttons. These are accessed by pressing **FEATURE** and then any key from **0** to **9**, ***** and **#**. These additional buttons are not suitable for appearance functions.
- **Transtalk 9040**
  Display keys with icon display area above. For appearance functions a ◂ icon is used to indicate the current selected button.
- **3616, 3620, 3626**
  Accessed by pressing **LINE** followed by the required button number.
- **3641, 3645**
  Accessed by pressing **LINE** or **FCN** followed by the required button number.
- **T3 Compact, T3 Classic and T3 Comfort**
  4, 10 and 18 buttons respectively which a combination of buttons having indicator lamps. On each phone 0, 4 and 10 of those button are located below the display and use display icons to indicate their status if applicable.

8.2.3 1703, 1708, 1716

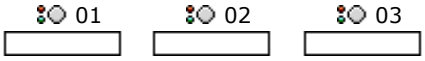
These phones support 3, 8 or 16 programmable buttons respectively. These phones are physically and functionally similar to the 1600 Series equivalents but are only supported on IP Office systems.

For the 1716, additional buttons can be added using a BM32 module. Up to 2 BM32's are supported with any 1716 up to a maximum of 16 BM32's on the IP Office system. Use of a BM32 requires the associated phone to be powered by a 1700 Series power supply unit rather than PoE.

- **1703:** IP Office 4.2+.



1703

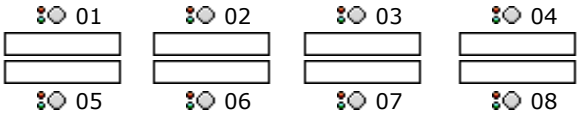


As the 1703 only has 3 programmable buttons, those buttons should only be used for call appearance buttons.

- **1708:** IP Office 4.2+.



1708



- **1716:** IP Office 4.2+.



1716

01	
02	
03	
04	
05	
06	
07	
08	
09	
10	
11	
12	
13	
14	
15	
16	

8.2.4 2030

This phone has 8 programmable buttons. They do not include any status indicator lamps.

- **2030:** Up to IP Office 3.0DT.



8.2.5 2050 and 20CC

These phones have 8 programmable buttons. Each button includes a dual status indicator lamp.

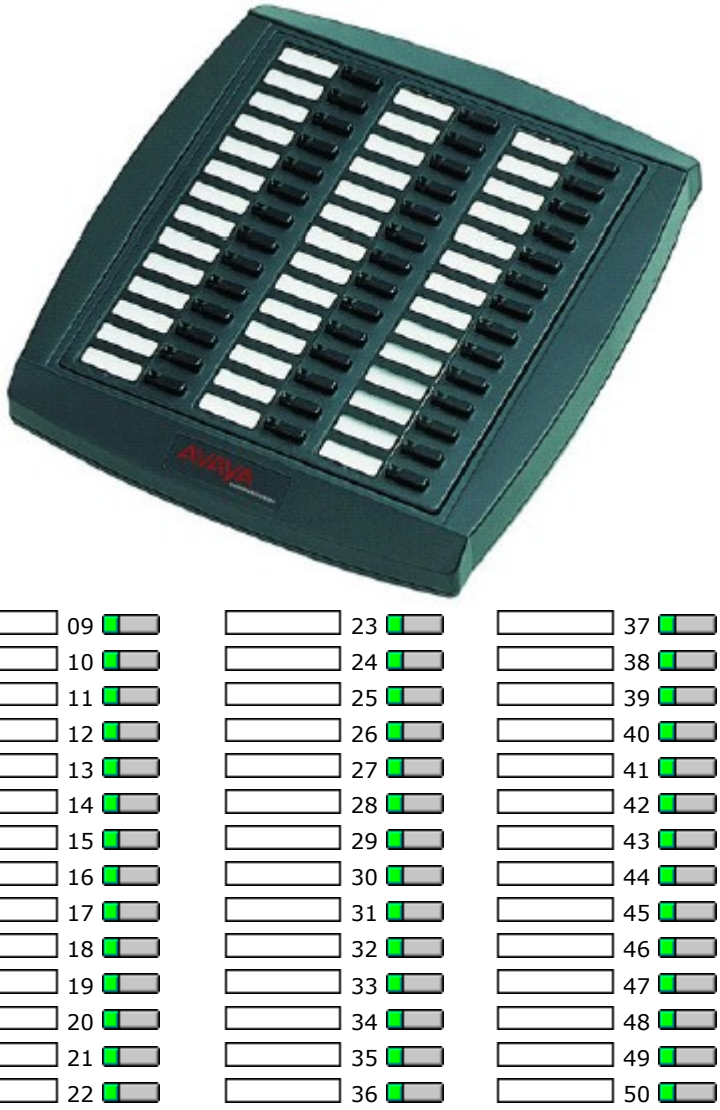
- **2050:** Up to IP Office 3.0DT only.
- **20CC:** Up to IP Office 3.0DT only.



8.2.6 20DS

This add-on is used with 2030, 2050 and 20CC phones. It provides an additional 42 programmable buttons with dual status indicator lamps. The unit requires a power supply and is connected to the next DT port on the same expansion module as the phone with which it is associated.

- **20DS:** Up to IP Office 3.0DT only.



8.2.7 2402D, 5402D

These phones only have two physical programmable buttons with no display text labels. For systems running IP Office 3.0 or higher (excluding 3.0DT) these buttons should only be used for call appearance buttons.

Display icons are used for status indication with a * used for current selected appearance button indication. For appearance functions, these only display active, alerting, held here and current selected button. They do not display in use elsewhere and on hold elsewhere.

Another 12 programmable buttons (buttons 4 to 15) are accessed by the user pressing **FEATURE** and then any key from **0** to **9**, ***** and **#**.

- **2402D:** IP Office 3.0+.
- **5402D:** IP Office 3.0+.



1

2

4 = **FEATURE** + **1**

5 = **FEATURE** + **2**

6 = **FEATURE** + **3**

7 = **FEATURE** + **4**

8 = **FEATURE** + **5**

9 = **FEATURE** + **6**

10 = **FEATURE** + **7**

11 = **FEATURE** + **8**

12 = **FEATURE** + **9**

13 = **FEATURE** + *

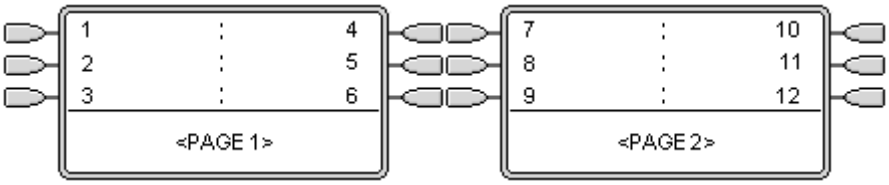
14 = **FEATURE** + **0**

15 = **FEATURE** + #

8.2.8 2410, 5410

These phones have 6 physical display keys that provide 12 programmable buttons arranged in two pages. The ◄ and ► keys are used to switch the display between different button display pages as shown below.

- **2410/5410:** IP Office 3.0+.





8.2.9 2420, 5420

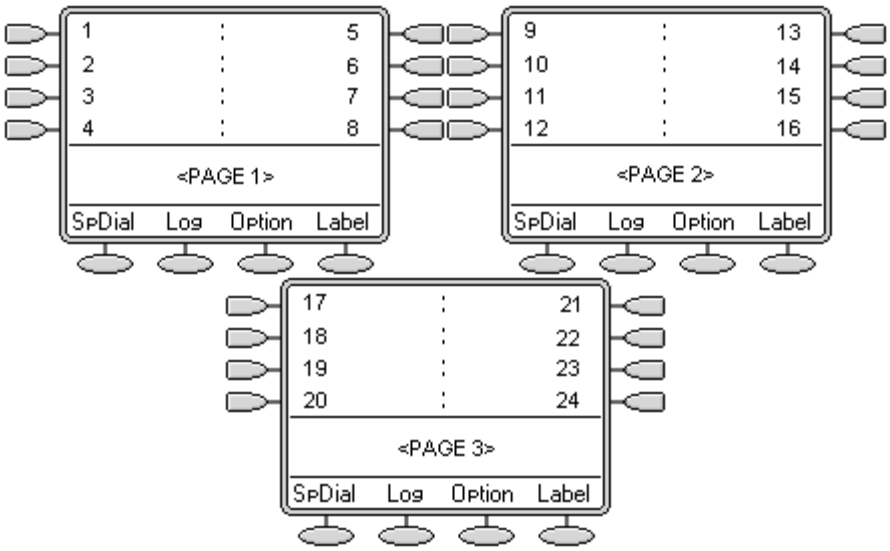
These phones have 8 physical display keys and 24 programmable buttons. The ◄ and ► keys are used to switch the display between different button display pages as shown below.

These phones support two modes of button display, selected by the user through the phone (press **Option -> Display Mode -> Call Center Mode**).

- **2420:** IP Office 2.1+.
- **5420:** IP Office 3.0+.

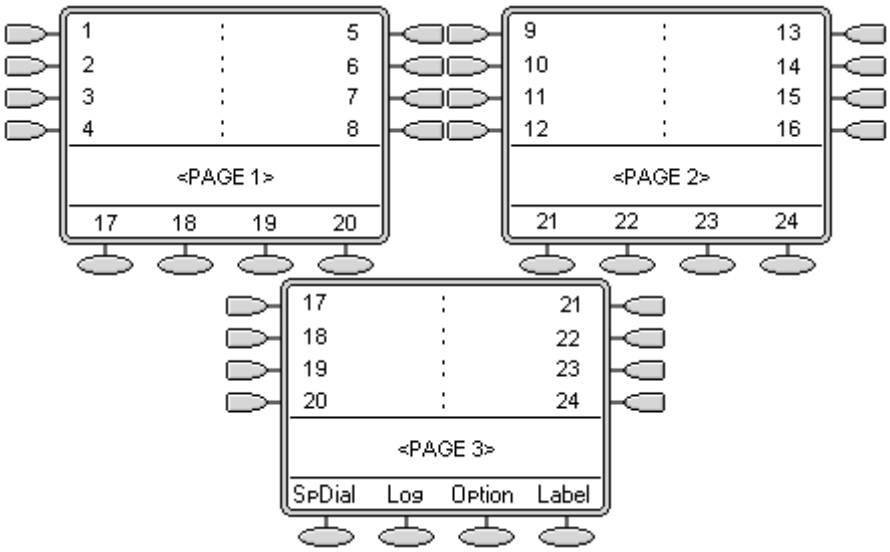


Normal Mode



Call Center Mode

In this mode, several of the programmable button position are repeated and replace the normal functions on the base on the phone display.



8.2.10 3616, 3620, 3626

These phones support 6 programmable buttons. These are accessed by pressing **LINE** and then 1 to 6 when the phone is off hook. The **FCN** options are not re-programmable.

- **3616:** IP Office 2.1+.
- **3626:** IP Office 3.2+.
- **3620:** IP Office 3.2+.



IP Office Button	3616/3626 Button
1	**LINE** + **1**
2	**LINE** + **2**
3	**LINE** + **3**
4	**LINE** + **4**
5	**LINE** + **5**
6	**LINE** + **6**

The following should be noted with these phones:

- 'In use' is indicated by the button number being shown. The same indication is used for 'In use elsewhere' and 'On Hold elsewhere' are not distinguished from 'In use'.
- 'Alerting' and 'Held here' are indicated by the button number flashing.
- No indication is shown when the 3616 or 3626 is idle. Only an alerting call will override idle.
- When off hook, the phones do not give any abbreviated ringing to indicate an alerting button.

8.2.11 3641, 3645

These phones support up to 12 programmable buttons (the IP Office option within the phone menu must be selected, otherwise only 6 programmable buttons are provided). These are accessed by pressing **LINE** or **FCN** and then 1 to 6 when the phone is off hook.

- **3641/3645:** IP Office 4.0+.*
  *Supported from the IP Office 4.0 Q2 2007 Maintenance release onwards.



IP Office Button	3641/3645 Button
1	LINE 1
2	LINE 2
3	LINE 3
4	LINE 4
5	LINE 5
6	LINE 6
7	FCN 1
8	FCN 2
9	FCN 3
10	FCN 4
11	FCN 5
12	FCN 6

The following should be noted with these phones:

- 'In use' is indicated by the button number being shown. The same indication is used for 'In use elsewhere' and 'On Hold elsewhere' are not distinguished from 'In use'.
- 'Alerting' and 'Held here' are indicated by the button number flashing.
- No indication is shown when the 3616 or 3626 is idle. Only an alerting call will override idle.
- When off hook, the phones do not give any abbreviated ringing to indicate an alerting button.

8.2.12 3810

This phone supports 4 programmable buttons.

- **3810:** IP Office 2.1+.



IP Office Button	3810 Button
8	1
9	2
1	3
2	4

Note that the correspondence between IP Office button numbers and the phone buttons is not logical. If call appearance buttons are programmed, only the first two will be useable and will appear as buttons 3 and 4 on the actual phone.

Line, bridged and call appearance buttons would need to be programmed as IP Office buttons 8 and 9 and would appear on buttons 1 and 2 on the phone. If all four buttons are required as call appearances, then buttons 1 to 9 must be programmed as call appearance buttons in the configuration.

8.2.13 4406D+, 4606

These phones has 6 programmable buttons with twin lamps; one green, one red.

- **4406D+:** IP Office 2.1+.
- **4606:** Up to IP Office 3.2 only.



8.2.14 4412D+

This phone has 24 programmable buttons. The first 12 have twin lamps; one green, one red. The last 12 buttons do not include lamps.

- **4412D+:** IP Office 2.1+.

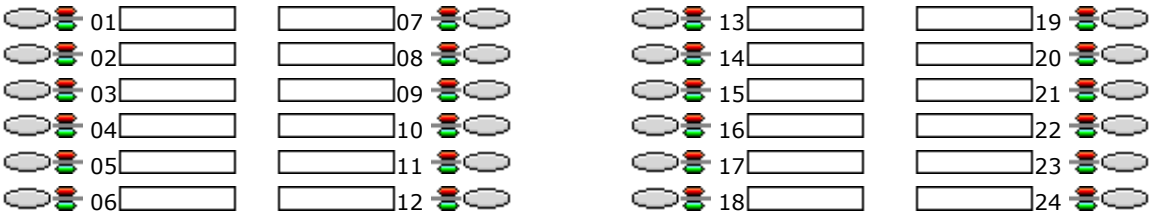




8.2.15 4424D+, 4624

These phones have 24 programmable buttons with twin lamps; one green, one red. Note: No more than 10 4424D+ units are supported on any DS30 module. This restriction does not apply to DS16 V2 units.

- **4424D+:** IP Office 2.1+.
- **4624:** Up to IP Office 3.2 only.





8.2.16 4450

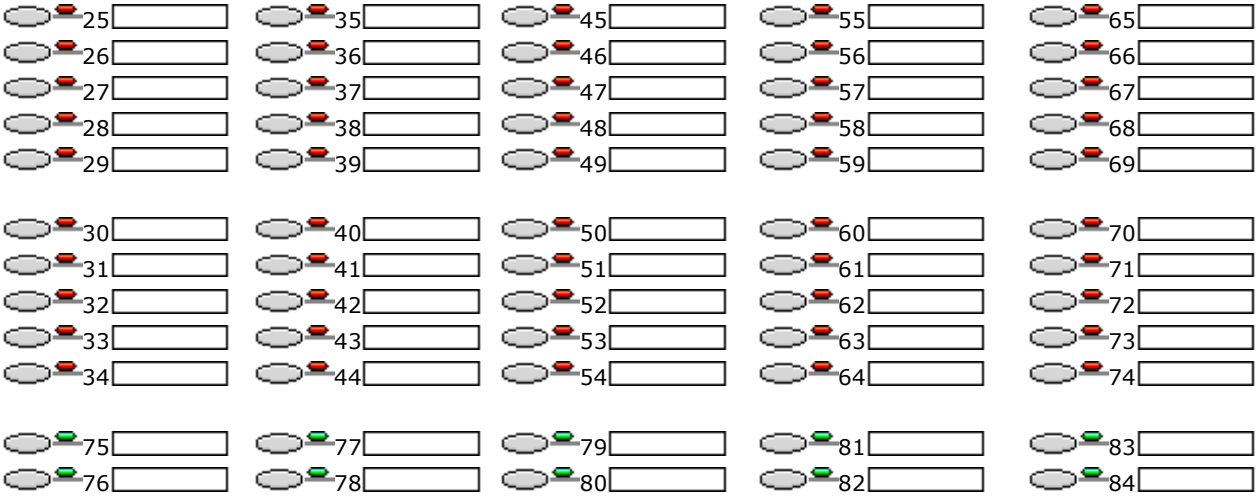
Add-on for 4412D+ and 4424D+ phones. Provides an additional 60 programmable buttons with single lamps. Up to two 4450 units can be connected to an existing phone. Not recommended for appearance functions as the current selected button and on hold elsewhere are not indicated. A maximum of two 4450 units per IP Office DS module and/or control unit are supported. The 4450 buttons cannot indicate on hold elsewhere.

- **4450:** IP Office 2.1+.

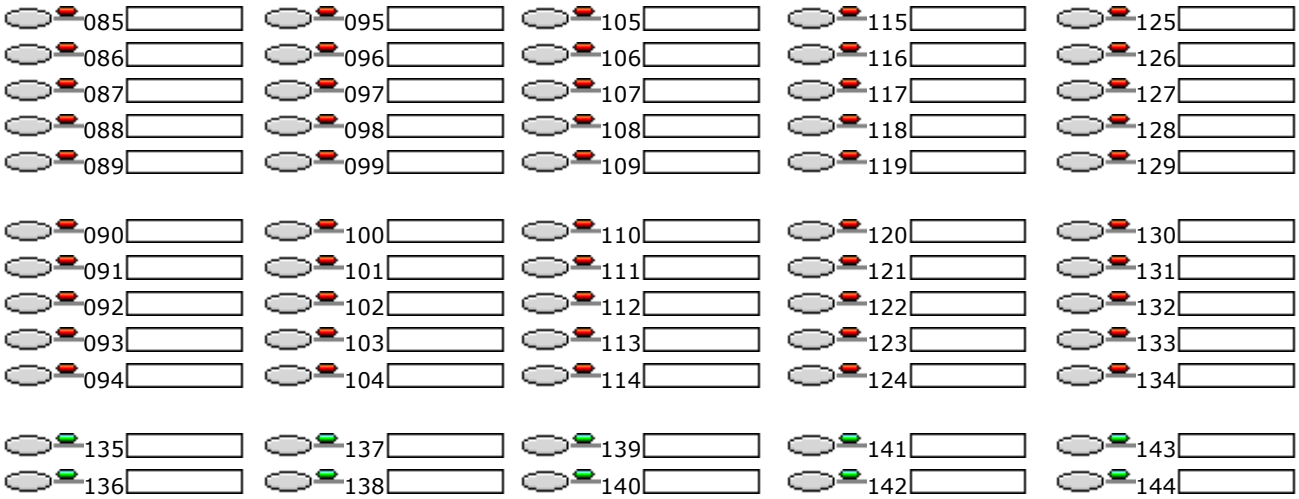
In the button maps below, note that the bottom two rows break the normal pattern of button numbering.



4450x1



4450x2


085 095 105 115 125
086 096 106 116 126
087 097 107 117 127
088 098 108 118 128
089 099 109 119 129
090 100 110 120 130
091 101 111 121 131
092 102 112 122 132
093 103 113 123 133
094 104 114 124 134
135 137 139 141 143
136 138 140 142 144

8.2.17 4601, 5601

These phones have two programmable buttons, each with a single red lamp. For systems running IP Office 3.0 or higher (excluding 3.0DT) these buttons should only be used for call appearance buttons.

- **4601:** IP Office 3.0+.
- **5601:** IP Office 3.0+.



8.2.18 4602, 4602SW, 5602, 5602SW

These phones only have two programmable buttons. For systems running IP Office 3.0 or higher (excluding 3.0DT) these buttons should only be used for call appearance buttons.

Display icons are used for status indication with a * used for current selected appearance button indication. These only display active, alerting, held here and current selected button. They do not display in use elsewhere and on hold elsewhere.

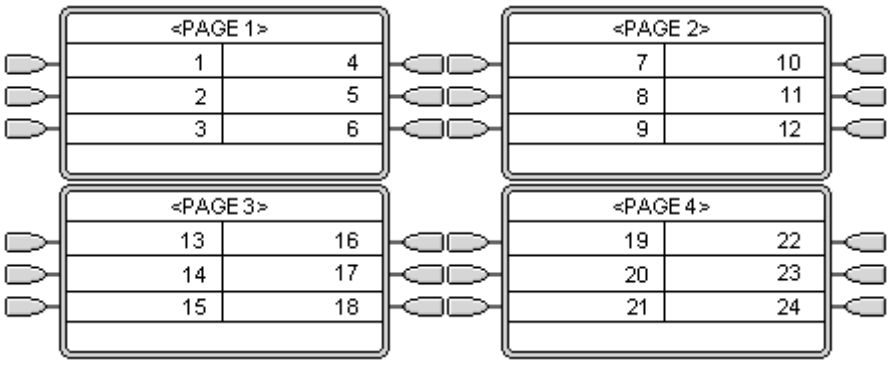
- **4602IP/4602SW:** IP Office 2.1+.
- **5602IP/5602SW:** IP Office 3.0+.



8.2.19 4610SW, 5610SW

These phones have 6 physical display keys that provide 24 programmable buttons arranged in 4 pages. The ◄ and ► keys are used to switch the display between different button display pages as shown below.

- **4610/5610:** IP Office 3.1+.

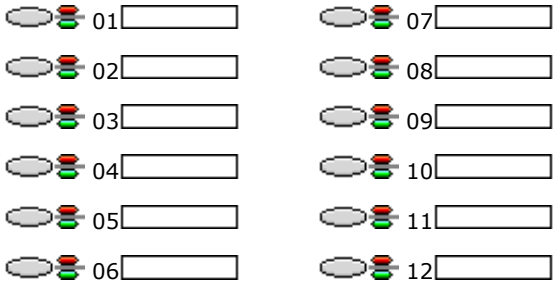




8.2.20 4612

This phone has 12 programmable buttons with twin lamps; one green, one red.

- **4612:** Up to IP Office 3.2 only.





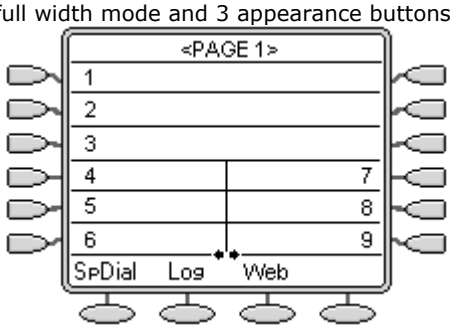
8.2.21 4620, 4620SW, 4621, 4625, 5620, 5620SW, 5621

These phones have 12 physical display keys that provide 24 programmable buttons arranged in two pages. The ◄ and ► keys are used to switch the display between different button display pages as shown below.

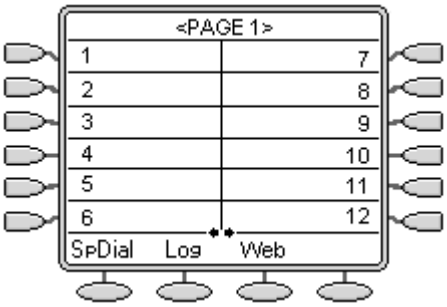
- **4620/4620SW:** IP Office 2.1+.
- **4621:** IP Office 3.1+.
- **4625SW:** IP Office 3.2+.
- **5620/5620SW:** IP Office 3.1+.
- **5621:** IP Office 3.2+.

By default appearance actions use a full screen width display line and can be accessed by the display key on either side. The numbering of buttons and the number of display pages available is adjusted accordingly up 4 pages. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

Button numbering with call appearance width set to full width mode and 3 appearance buttons.



Button numbering with call appearance width set to half width mode.





8.2.22 6408D

This phone has 8 programmable buttons. Each button includes twin lamps; one red, one green.

- **6408D:** IP Office 2.1+.



8.2.23 6416D

This phone has 16 programmable buttons. Each button includes twin lamps; one red, one green.

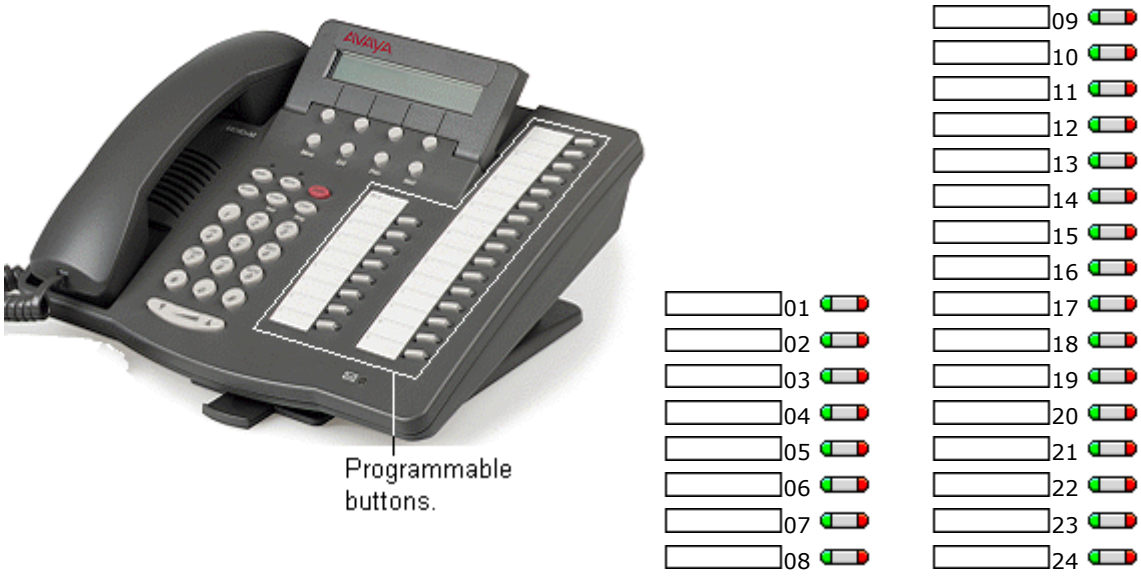
- **6416D:** IP Office 2.1+.



8.2.24 6424D

This phone has 24 programmable buttons. Each button includes twin lamps; one red, one green.

- **6424D:** IP Office 2.1+.



8.2.25 9040

The 9040 has four display keys. These relate to two rows of display labels shown above, **1** to **4** and **A** to **D**. A < symbol is shown next to the currently selected row of labels, selection can be switched using the **^** shift key.

- **9040:** Pre IP Office 2.1 only.



9040 display buttons labeled **1** to **4** correspond with IP Office user buttons 1 to 4. 9040 display buttons labeled **A** to **D** correspond with IP Office user buttons 8 to 11.

It is only possible to use 9040 buttons 1, 2, A and B (buttons 1, 2, 8 and 9 in the IP Office configuration) as appearance buttons. If all four of those buttons are required as call appearances, then buttons 1 to 9 must be programmed as call appearance buttons in the configuration. However button 3 and 4 on the handset will become disabled.

8.2.26 T3 Compact/T3 IP Compact

This phone has eight buttons on the right-hand edge, however only 4 (those numbered below) are programmable buttons, the remainder are fixed feature buttons. Note that some of the programmable buttons have default features and, if not programmed to a specific function in the IP Office configuration, they will perform their default function.

- **T3 Compact:** IP Office 3.1+.
- **T3 IP Compact:** IP Office 3.2+.

	Handsfree/Monitoring
01	Call List
02	Voicemail
03	Do Not Disturb
04	Forward Unconditional
	Menu
	Redial
	Hold



8.2.27 T3 Classic/T3 IP Classic

This phone supports 10 programmable buttons (those numbered below). Note that some of the programmable buttons have default features and, if not programmed to a specific function in the IP Office configuration, they will perform their default function.

- **T3 Classic:** IP Office 3.1+.
- **T3 IP Classic:** IP Office 3.2+.

The four buttons below the display act as two pages of four using the display above. The four buttons on page one can be programmed and match IP Office buttons 1 to 4. The other page cannot be programmed. In addition, some of the buttons in the two columns of buttons on the right can be programmed.

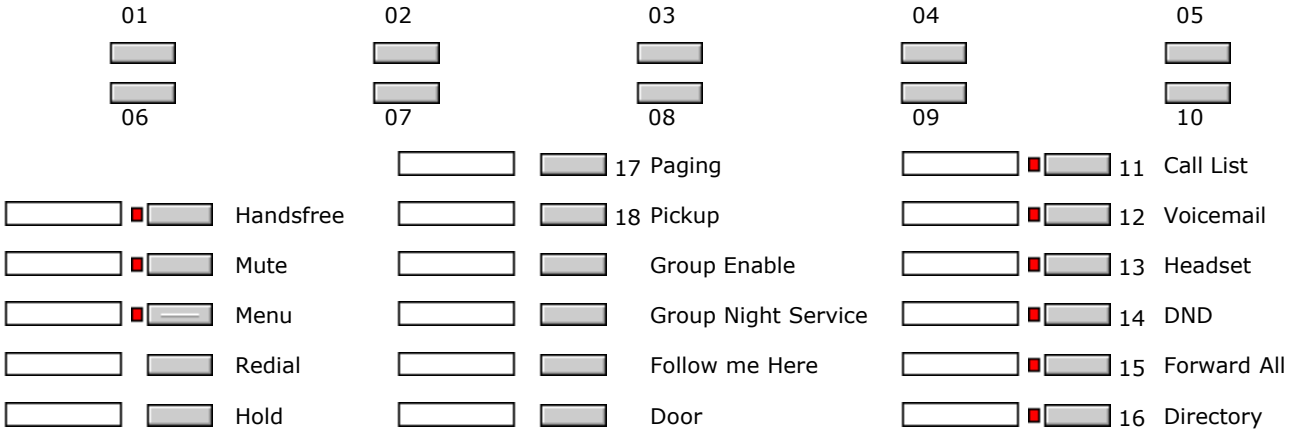


8.2.28 T3 Comfort/T3 IP Comfort

This phone supports 18 programmable buttons (those numbered below). Note that some of the programmable buttons have default features and, if not programmed to a specific function in the IP Office configuration, they will perform their default function.

- **T3 Comfort:** IP Office 3.1+.
- **T3 IP Comfort:** IP Office 3.2+.

The ten buttons below the display act as eight pages of ten using the display above. The ten buttons on page one can be programmed and match IP Office buttons 1 to 10. The other pages cannot be programmed. In addition, some of the buttons in the three columns of buttons on the right can be programmed.





8.3 Actions

The following sections provide details for each of the button actions supported by IP Office. For each the following details are listed:

- **IP Office Software Level**
  Indicates the IP Office software levels on which the action is supported.
- **Action**
  Indicates the selection path to the action from within the list of actions displayed in IP Office Manager.
- **Action Data**
  Indicates the type of data required by the action. For some actions no data is required while for others action data may be optional. The option to enter the data after pressing the button is not available for all phones, see Interactive Button Menus 475.
- **Default Label**
  This is the default text label displayed if possible on phones which provide a display area next to programmable buttons. Alternate labels can be specified in the IP Office configuration or entered by the phone user (see Customizing Text Labels 474). Note that for buttons with action data set, the action data may also be displayed as part of the default label.
- **Toggles**
  Indicates whether the action toggles between two states, typically on or off.
- **Status Indication**
  Indicates whether the button provides status indication relevant to the feature if the button has status lamps or display.
  - If the **Status Indication** is listed as ***Required*** it indicates that the button action is only supported on programmable buttons that can provide status indication.
- **User Admin**
  This item indicates that users with a Self-Administer 592 button can assign the action to other buttons themselves.
- **Phone Support 476**
  This is only a general indication of support or otherwise of an action by phones within particular series. On phones with 3 or less programmable buttons those button can only be used for the Call Appearance 522 action. In addition some actions are only supported on phones where the programmable buttons provide status indication and or a display for data entry once the feature is invoked.

Table of Button Programming Actions

The following tables list the actions available for programmable buttons on IP Office.

- **Login Code Required**
  For IP Office 4.0+, some function may require the user to enter their log in code. This typically applies when the action data is left blank for entry when the button is pressed.

General

Action	Action Data	IPO	Default Label
Dial 546	Any number.	1.0+	Dial
Group 570	"Group name" in quote marks.	1.0+	<Group name>
Park 583	Park slot ID (alphanumeric).	1.0 to 3.2	Park
User 606	"User name" in quote marks.	1.0+	<User name>

Appearance

Action	Action Data	IPO	Default Label
Appearance 522	None.	3.0+	**a=**
Bridged Appearance 526	User name and call appearance button number.	3.0+	*<user name><appearance label>*
Coverage Appearance 545	User name.	3.0+	*<user name>*
Line Appearance 580	Line appearance ID.	3.0+	**Line**

Emulation

Action	Action Data	IPO	Default Label
Abbreviated Dial 515	Any number.	1.0+	AD
Abbreviated Dial Pause 515	None.	1.0+	Pause
Abbreviated Dial Program 516	None.	1.0+	Prog
Abbreviated Dial Stop 516	None.	1.0+	Stop
Account Code Entry 517	Account code or blank for entry when pressed.	1.0+	Acct
ACD Agent Statistics 518	None.	1.0+	Stats
ACD Stroke Count 518	None.	1.0+	Count
AD Special Function Mark 519	None.	1.0+	Mark
AD Special Function Wait 520	None.	1.0+	Wait
AD Special Functions 519	None.	1.0+	Sfunc
AD Suppress 520	None.	1.0+	Spres
Automatic Callback 523	None.	1.0+	AutCB
Automatic Intercom 524	User number or name.	1.0+	Iauto
Call Forwarding All 528	Any number or blank for entry when pressed.	1.0+	CFrwd
Call Park 531	Park slot ID (alphanumeric) or blank for menu of slots in use.	1.0+	CPark
Call Park To Other Extension 532	User number.	1.0+	RPark
Call Pickup 533	None.	1.0+	CpkUp
Cancel Leave Word Calling 539	None.	1.0+	CnLWC
Consult 544	None.	1.0+	Cnslt
Dial Intercom 550	User number or name or blank for entry when pressed.	1.0+	Idial
Directed Call Pickup 556	User number or name or group number or name or or blank for entry when pressed..	1.0+	DpkUp
Directory 557	None.	1.0+	Dir
Drop 560	None.	1.0+	Drop
Group Paging 572	User or group number or name or blank for entry when pressed.	1.0+	GrpPg
Headset Toggle 573	None or FF (IP Office 4.1+).	1.4+	HdSet
Inspect 577	None.	1.0+	Inspt
Internal Auto-Answer 578	None.	1.0+	HfAns
Leave Word Calling 579	None.	1.0+	LWC
Manual Exclude 581	None.	1.0+	Excl
Priority Calling 585	None.	1.0+	Pcall
Ringer Off 591	None.	1.0+	RngOf
Self-Administer 592	Blank or 1 or 2 (IP Office 4.1+).	1.0+	Admin
Send All Calls 593	None.	1.0+	SAC
Stored Number View 601	None.	1.0+	BtnVu
Time of Day 603	None.	1.0+	TmDay
Timer 603	None.	1.0+	Timer
Twinning 604	None.	3.2+	Twinning
Visual Voice 607	None.	4.0+	Voice

Advanced

Action	Action Data	Category	IPO	Default Label
Acquire Call 519	User number or blank for last call transferred.	Call	1.1+	**Acquire**
After Call Work 521			4.2+	
Break Out 525	System name or IP address or blank for selection when pressed.	Dial	4.0+	**BkOut**
Busy 527	None.	Busy	1.1+	**Busy**
Busy On Held 527	0 (off) or 1 (on).	Busy	1.1+	**BusyH**
Call Intrude 529	User number.	Call	1.1+	**Intru**
Call List 529	None.	Call	3.1+	**LIST**
Call Listen 530	User number.	Call	1.1+	**Listn**
Call Pickup Any 533	None.	Call	1.1+	**PickA**
Call Pickup Group 534	None.	Call	1.1+	**PickG**
Call Pickup Members 534	Group number or name.	Call	1.1+	**PickM**
Call Queue 535	User number.	Call	1.1+	**Queue**
Call Record 535	None.	Call	1.1+	**Recor**
Call Steal 536	User number or blank for last call transferred.	Call	1.1+	**Steal**
Call Waiting Off 537	None.	Call	1.1+	**CWOff**
Call Waiting On 537	None.	Call	1.1+	**CWOn**
Call Waiting Suspend 538	None.	Call	1.1+	**CWSus**
Cancel All Forwarding 538	None.	Call	1.1+	**FwdOf**
Cancel Ring Back When Free 539	None.	Miscellaneous	1.0+	**RBak-**
Channel Monitor 540	Channel number.	Call	1.1+	**ChMon**
Clear Call 541	None.	Call	1.1+	**Clear**
Clear CW 541	None.	Call	1.1+	**ClrCW**
Clear Hunt Group Night Service 542	Group number.	Call	1.1+	**HGNS-**
Clear Hunt Group Out Of Service 542	Group number.	Call	1.1+	**HNOS-**
Clear Quota 543	"Service name" within quote marks or "" for all services.	Call	1.1+	**Quota**
Conference Add 543	None.	Call	1.1+	**Conf+**
Conference Meet Me 544	Conference name or number.	Call	1.1+	**CnfRv**
Dial 3K1 546	Any number.	Dial	1.1+	**D3K1**
Dial 56K 547	Any number.	Dial	1.1+	**D56K**
Dial 64K 547	Any number.	Dial	1.1+	**D64K**
Dial CW 548	User number.	Dial	1.1+	**DCW**
Dial Direct 548	User number or name.	Dial	1.1+	**Dirct**
Dial Emergency 549	Any number.	Dial	1.1+	**Emrgy**
Dial Inclusion 549	User number or name or blank for entry when pressed.	Dial	1.4+	**Inclu**
Dial Paging 551	User or group number or name or blank for entry when pressed.	Dial	1.1+	**Page**
Dial Physical Extn by Number 552	Extension port Base Extension number.	Dial	1.4+	**PhyEx**
Dial Physical Extn by ID 552	Extension port ID number.	Dial	1.4+	**DialP**
Dial Speech 553	Any number.	Dial	1.1+	**DSpch**
Dial V110 553	Any number.	Dial	1.1+	**DV110**
Dial V120 554	Any number.	Dial	1.1+	**DV120**
Dial Video 555	Any number.	Dial	1.1+	**Dvide**
Display Msg 554	Command string.	Dial	1.0+	**Displ**
Do Not Disturb Exception Add 558	Any number.	Do Not Disturb	1.1+	**DNDX+**
Do Not Disturb Exception Delete 558	Any number.	Do Not Disturb	1.1+	**DNDX-**
Do Not Disturb Off 559	None.	Do Not Disturb	1.1+	**DNDOf**
Do Not Disturb On 559	None.	Do Not Disturb	1.1+	**DNDOn**

Action	Action Data	Category	IPO	Default Label
Extn Login 561	None.	Extension	1.1+	Login
Extn Logout 561	None.	Extension	1.1+	Logof
Flash Hook 562	None.	Miscellaneous	1.4+	Flash
Follow Me Here 563	User number.	Follow Me	1.1+	Here+
Follow Me Here Cancel 563	User number or blank for entry when pressed.	Follow Me	1.1+	Here-
Follow Me To 564	User name or user number or blank for entry when pressed.	Follow Me	1.1+	FolTo
Forward Hunt Group Calls On 565	None.	Forward	1.1+	FwdH+
Forward Hunt Group Calls Off 565	None.	Forward	1.1+	FwdH-
Forward Number 566	Any number or, IP Office 4.0+, blank for entry when pressed.	Forward	1.1+	FwdNo
Forward On Busy Number 566	Any number or, IP Office 4.0+, blank for entry when pressed.	Forward	1.1+	FwBNo
Forward On Busy Off 567	None.	Forward	1.1+	FwBOf
Forward On Busy On 567	None.	Forward	1.1+	FwBOn
Forward On No Answer Off 568	None.	Forward	1.1+	FwNOf
Forward On No Answer On 568	None.	Forward	1.1+	FwNOn
Forward Unconditional Off 569	None.	Forward	1.1+	FwUOf
Forward Unconditional On 569	None.	Forward	1.1+	FwUOn
Group Listen On 571	None	Extension	4.1+	GroupListenOn
Hold Call 573	ISDN Exchange slot number.	Hold	1.1+	Hold
Hold CW 574	None.	Hold	1.1+	HoldCW
Hold Music 574	None.	Hold	1.1+	Music
Hunt Group Disable 576	Group number or name or blank for all groups.	Hunt Group	1.1+	HGDis
Hunt Group Enable 575	Group number or name or blank for all groups.	Hunt Group	1.1+	HGEna
MCID Activate 581	None.	Miscellaneous	4.0+	MCID
Off Hook Station 582	None.	Miscellaneous	1.1+	OHStn
Park Call 584	Park slot number.	Call	1.0 to 3.2	Park
Priority Call 585	User number or name.	Call	1.1+	PCall
Private Call 586	None.	Call	4.0+	PrivC
Relay Off 587	1 or 2.	Relay	1.1+	Rely-
Relay On 587	1 or 2.	Relay	1.1+	Rely+
Relay Pulse 588	1 or 2.	Relay	1.1+	Relay
Resume Call 589	ISDN Exchange slot number.	Call	1.1+	Resum
Retrieve Call 589	ISDN Exchange slot number.	Call	1.1+	Retriv
Ring Back When Free 590	None.	Miscellaneous	1.1+	RBak+
Set Absent Text 594	String for selected message and custom text.	Set	1.1+	Absnt
Set Account Code 595	Blank or valid account code.	Set	2.1+	Acct
Set Hunt Group Night Service 596	Group number.	Set	1.1+	HGNS+
Set Hunt Group Out Of Service 597	Group number.	Set	1.1+	HGOS+
Set Inside Call Seq 598	Value 0 to 10.	Set	1.1+	ICSeq
Set Night Service Group 598	Group number.	Set	4.2+	SetNSG
Set No Answer Time 600	Time in seconds (range 1 to 99999).	Set	1.1+	NATim
Set Outside Call Seq 600	Value 0 to 10.	Set	1.1+	OCSeq
Set Out of Service Group 599	Group number.	Set	4.2+	SetOOSG
Set Ringback Seq 600	Value 0 to 10.	Set	1.1+	RBSeq
Set Wrap Up Time 601	Time in seconds (range 0 to 99999).	Set	1.1+	WUTim

Action	Action Data	Category	IPO	Default Label
Suspend Call 602	ISDN Exchange slot number.	Suspend	1.1+	**Suspe**
Suspend CW 602	ISDN Exchange slot number.	Suspend	1.1+	**SusCW**
Toggle Calls 604	None.	Call	1.1+	**Toggl**
Unpark Call 605	Park slot ID (alphanumeric).	Call	1.1+	**Ride**
Voicemail Collect 607	See notes.	Voicemail	1.1+	**VMCol**
Voicemail Off 608	None.	Voicemail	1.1+	**VMOff**
Voicemail On 608	None.	Voicemail	1.1+	**VMOn**
Voicemail Ringback Off 609	None.	Voicemail	1.1+	**VMRB-**
Voicemail Ringback On 609	None.	Voicemail	1.1+	**VMRB+**

8.3.1 Abbreviated Dial

This function allows quick dialing of a stored number.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial.
- **Action Data:** Telephone number or partial number.
  - **Full Number**
    The number is dialled.
  - **Partial Number**
    The partial number is dialled and the user can then complete dialing the full number.
- **Default Label:** AD.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.2 Abbreviated Dial Pause

Not supported. Provided for CTI emulation only. Allows a user to enter a pause character when programming an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial Pause.
- **Action Data:** *None.*
- **Default Label:** Pause.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.3 Abbreviated Dial Program

Not supported. Provided for CTI emulation only. Allows a user to program abbreviated dialing numbers against other programmable buttons. This function cannot be used to overwrite call appearance buttons.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial Program.
- **Action Data:** *None*.
- **Default Label:** Prog.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✗
  - **2400 Series:** ✗
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✗
  - **5400 Series:** ✗
  - **4600 Series:** ✗
  - **5600 Series:** ✗
  - **6400 Series:** ✗
  - **9040:** ✗
  - **T3/T3 IP Series:** ✗

8.3.4 Abbreviated Dial Stop

Not supported. Provided for CTI emulation only. Allows a user to enter a stop character when programming an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial Stop.
- **Action Data:** *None*.
- **Default Label:** Stop.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.5 Account Code Entry

Enter an account code for a call. This button can be used before dialing a number or during a call.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Account Code Entry.
- **Action Data:** Optional. If an code is set it must match an account code set in the account codes list. If no account code is set, the phone display will request entry of a valid code. This option is not supported on XX02 phones.
- **Default Label:** Acct.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays **1234**.
  - **DSS Link LED:** None.

8.3.6 ACD Agent Statistics

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> ACD Agent Statistics.
- **Action Data:** *None*.
- **Default Label:** Stats.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.7 ACD Stroke Count

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> ACD Stroke Count.
- **Action Data:** *None*.
- **Default Label:** Count.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.8 Acquire Call

See Call Steal 536.

8.3.9 AD Special Functions

Not supported. Provided for CTI emulation only. Allows a user to enter a special character (mark, pause suppress, wait) when entering an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Special Functions.
- **Action Data:** *None*.
- **Default Label:** Sfunc.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.10 AD Special Function Mark

Not supported. Provided for CTI emulation only. Allows a user to enter a mark character when programming abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Special Function Mark.
- **Action Data:** *None*.
- **Default Label:** Mark.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.11 AD Special Function Wait

Not supported. Provided for CTI emulation only. Allows a user to enter a Wait for Dial Tone character when programming an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Special Function Wait.
- **Action Data:** *None*.
- **Default Label:** Wait.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.12 AD Suppress

Suppresses the display of dialed digits on the telephone display. Dialed digits are replaced with an **s** character.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Suppress.
- **Action Data:** *None*.
- **Default Label:** Spres.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**Spres**	**Spres**	Green on.
- Off.	**Spres**	**Spres**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.13 After Call Work

This button is used by users configured as an **SBCC Agent** 266 (User | Telephony | Supervisor Settings 266)and working with the Small Business Contact Center (SBCC) application. It shows the SBCC Agent their current After Call Work (ACW) status and allow them to manually change status. While in ACW state, the agent will not receive hunt group calls.

SBCC Agents can be automatically put into and taken out of ACW by the IP Office if the user is configured for **Automatic After Call Work** 266 (User | Telephony | Supervisor Settings) 266. Those users must have an **After Call Work** button.

- **IP Office Software Level:** 4.2+.
- **Action:** Advanced -> Miscellaneous -> After Call Work
- **Action Data:** None.
- **Default Label:** ACWrk.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**ACWrk**	**ACWrk**	Green on.
- Off.	**ACWrk**	**ACWrk**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** *1✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✗
  - **5400 Series:** ✓
  - **4600 Series:** ✓*2
  - **5600 Series:** ✓*2
  - **6400 Series:** ✗
  - **9040:** ✗
  - **T3/T3 IP Series:** ✓*3
    - **1: Not 1703.*
    - **2: Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
    - **3: Not T3 Compact or T3 IP Compact.*

8.3.14 Appearance

Creates a call appearance button. This can be used to answer and make calls. Users with multiple call appearance buttons can handle multiple calls. For full details refer to the IP Office Key & Lamp Manual.

Call appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's **Ring Delay** 268 (User | Telephony | Multi-line Options) 268 setting.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Appearance.
- **Action Data:** Optional text label.
- **Default Label:** a=.
- **Toggles:** ✗.
- **Status Indication:** ✓ *Required.* See Call Appearance Button Indication 619.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓
  - **5600 Series:** ✓
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗

8.3.15 Automatic Callback

Sets a ringback on the extension being called. When the target extension ends its current call, the ringback user is rung (for their set No Answer Time/Allocated Answer Interval) and if they answer, a new call is made to the target extension.

Ringback can also be cleared using the Cancel Ring Back When Free 539 function.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Automatic Callback.
- **Action Data:** *None*.
- **Default Label:** AutCB.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**AutCB**	**AutCB**	Green on.
- Off.	**AutCB**	**AutCB**	Off.

- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - ***✗** *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.16 Automatic Intercom

Call an extension and have the call automatically answered on speaker phone if the extension is free. The extension called must support a handsfree speaker.

If the extension is not free when called, the call is presented as a normal call on a call appearance button if available.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Automatic Intercom.
- **Action Data:** User number or name. For IP Office 4.0+ this field can be left blank for number entry when pressed.
- **Default Label:** Iauto.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays followed by the set number.
  - **DSS Link LED:** None.

8.3.17 Break Out

This feature is usable within an IP Office Small Community Network. It allows a user on one system in the network to specify that the following dialing be processed by another IP Office system on the network as if the user dialed it locally on that other system.

On phones with a multi-line display, if the target IP Office system is not specified in the button settings, a menu of the available systems in the network is displayed from which a selection can be made.

- **IP Office Software Level:** 4.0+.
- **Action:** Advanced -> Dial -> Break Out.
- **Action Data:** Optional. The system name or IP address of the required IP Office system can be specified. If no system name or IP address is set, on display phones a list of systems within the Small Community Network is displayed when the button is pressed.
- **Default Label:** BkOut.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **4600 Series:** ✓*
  - **5400 Series:** ✓
  - **5600 Series:** ✓
  - **6400 Series:** ✗
  - **9040:** ✗
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602.*

8.3.18 Bridged Appearance

Creates an appearance button that follows the state of another user's call appearance button. The bridged appearance can be used to make and answer calls on behalf of the call appearance user. For full details refer to the IP Office Key & Lamp Manual.

The bridged appearance button user must also have at least one call appearance button programmed.

Bridged appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's **Ring Delay** 268 (User | Telephony | Multi-line Options) 268 setting.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Bridged Appearance.
- **Action Data:** User name and call appearance button number.
- **Default Label:** *<user name><call appearance label>*.
- **Toggles:** ✗.
- **Status Indication:** ✓ *Required*. See Bridge Appearance Button Indication 625.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓
  - **5600 Series:** ✓
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗

8.3.19 Busy

Not used.

8.3.20 Busy On Held

When on, busy on held returns busy to new calls while the user has an existing call on hold.

While this feature can be used by users with appearance keys, it is not recommended as this overrides the basic call handling intent of appearance keys.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Busy -> Busy on Held.
- **Action Data:** 1 for on, 0 for off.
- **Default Label:** BusyH.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.21 Call Forwarding All

Switches forward unconditional on and sets the forward number to the number specified or prompts the user to enter a number if none is specified.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Call Forwarding All.
- **Action Data:** Telephone number or blank for entry when pressed.
  - If blank, the phone displays the user's current forward number and allows it to be changed if required. This option is not supported on XX02 phone models. Also, if blank, IP Office 4.0+ user's with a log in code will be prompted to enter that code to use this function.
- **Default Label:** CFrwd.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**CFrwd◀**	**CFrwd**	Green on.
- Off.	**CFrwd**	**CFrwd**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.22 Call Intrude

Intrudes on the existing call of the specified target extension. All call parties are put into a conference and can talk. Use of this feature is subject to the **Can Intrude** status of the intruder and the **Cannot be Intruded** status of the other call parties.

If the target is idle, the function is changed to a normal call.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Intrude.
- **Action Data:** User number.
- **Default Label:** Intru.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.23 Call List

This function is only supported for T3 phones. It provides access to a list of received calls.

- **IP Office Software Level:** 3.1+.
- **Action:** Advanced -> Call -> Call List.
- **Action Data:** *None*.
- **Default Label:** LIST.
- **Toggles:** ✗.
- **Status Indication:** ✓ *Required*.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✗
  - **2400 Series:** ✗
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✗
  - **5400 Series:** ✗
  - **4600 Series:** ✗
  - **5600 Series:** ✗
  - **6400 Series:** ✗
  - **9040:** ✗
  - **T3/T3 IP Series:** ✓
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays **LIST**.
  - **DSS Link LED:** On when calls are in the list. Flashes when new calls are in the list.

8.3.24 Call Listen

This feature allows a user to monitor another conversation without being heard. It requires the user being monitored to be a member of the group set as the button user's **Monitor Group** 266 (User | Telephony Supervisor Settings) 266 in the IP Office configuration. The use of call listen is also controlled by the Can Intrude setting of the user and the Cannot Be Intruded settings of the target. It is not affected by the settings of the third party to the call if they are internal.

- **Warning:** The use of monitoring may be subject to local and national restrictions. This feature should only be used in compliance with those restrictions.
- **Note:** On pre-4.0 IP Office systems, IP phone extensions can be used to monitor but cannot be monitored.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Listen.
- **Action Data:** User number.
- **Default Label:** Listn.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.25 Call Park

Allows the user to park and unpark calls. The button can be used in two ways, either associated with a specified park slot number or unspecified.

- When associated with a specific park slot number, the button will park and unpark calls from that park slot and indicate when a call is parked in that park slot.
- When not associated with a specific park slot number, the button will park calls by assigning them a park slot number based on the users extension number. For example, for extension *XXX*, the first parked call is assigned to park slot *XXX0*, the next to *XXX1* and so on up to *XXX9*. The button will indicate when there are parked calls in any of those slots.
  - With a call connected, pressing the button will park that call using a park slot number assigned by the system based on the extension number.
  - With no call connected, pressing the button will display details of any calls parked by the extension and allow their retrieval.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Call Park.
- **Action Data:** Optional. Either blank or a specific park slot number.
- **Default Label:** CPark.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- Calls parked by extension	**CPark**◆	**CPark**	Green flash.
- Call Parked by other extension	**CPark**	**CPark**	Red flash.
- No parked calls	**CPark**	**CPark**	Off.

- **User Admin:** 592 ✓.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.26 Call Park To Other Extension

Allows the user to park their current call against another user's extension. The parked call indication on that extension is then activated according to the telephone type.

If the target extension has a Call Park button with no specific park slot number, the parked call will be indicated by that button and can be unparked from the list of parked calls shown when that button is pressed.

- **Pre-IP Office 4.0**
  The park slot number assigned to the parked call is based on the number of the extension against which the call is being parked. For example, calls parked against extension 203 are assigned park slot ID 2030, 2031 and so on up to 2039 depending on the number of calls parked.
- **IP Office 4.0+**
  The park slot number assigned to the parked call is based on the number of the extension parking the call. For example, calls parked by extension 201 are assigned the park slot ID 2010, 2011 and so on up to 2019 depending on the number of calls parked.
  - **IP Office Software Level:** 1.0+.
  - **Action:** Emulation -> Call Park to Other Extension.
  - **Action Data:** User number. For IP Office 4.0+ this field can be left blank for number entry when pressed.
  - **Default Label:** RPark *("Park" in pre-4.0 IP Office)*.
  - **Toggles:** ✗ Pre-4.0/✓ 4.0+.
  - **Status Indication:** ✗ Pre-4.0/✓ 4.0+.
    This is the status indication on the extension parking the call.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- Parked Call	**RPark◆**	**RPark**	Green flash.
- No parked call	**RPark**	**RPark**	Off.

  - **User Admin:** 592 ✓.
  - **Phone Support** 476
    Note that support for particular phone models is also dependant on the IP Office software level.
    - **Analog:** ✗
    - **1700 Series:** ✓
    - **20 Series:** ✓
    - **2400 Series:** ✓*
    - **3600 Series:** ✗
    - **3700 Series:** ✗
    - **3810:** ✓
    - **4400 Series:** ✓
    - **5400 Series:** ✓*
    - **4600 Series:** ✓*
    - **5600 Series:** ✓*
    - **6400 Series:** ✓
    - **9040:** ✓
    - **T3/T3 IP Series:** ✗
      - ***✗** *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.27 Call Pickup

Answer an alerting call on the system.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Call Pickup.
- **Action Data:** *None*.
- **Default Label:** CpkUp.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:** Displays a menu for entry of the extension number from which to pickup a call.
  - **Classic/Comfort icon:** Displays .
  - **DSS Link LED:** None.

8.3.28 Call Pickup Any

Pick up the first available ringing call on the system.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Pickup Any.
- **Action Data:** *None*.
- **Default Label:** PickA.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:** Displays a list of call ringing from which the user can select a call to answer.
  - **Classic/Comfort icon:** Displays .
  - **DSS Link LED:** None.

8.3.29 Call Pickup Group

Pick up a call ringing any hunt group of which the user is a member.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Pickup Group.
- **Action Data:** *None*.
- **Default Label:** PickG.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:** Displays a list of calls ringing the hunt group from which the user can select which call to answer.
  - **Classic/Comfort icon:** Displays followed by group name.
  - **DSS Link LED:** None.

8.3.30 Call Pickup Members

This feature can be used to pick up any call to an extension that is a member of the hunt group specified. The incoming call can be as a result of a **DID** call to that extension, an internal call to that extension, an internal or external call to the Hunt Group or a call to a phone from another hunt group.

Note that this function will not work for calls to a hunt group member who currently has their membership disabled.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Pickup Members.
- **Action Data:** Group number or name.
- **Default Label:** PickM.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:** Displays a list of calls ringing the hunt group from which the user can select which call to answer.
  - **Classic/Comfort icon:** Displays followed by group name.
  - **DSS Link LED:** None.

8.3.31 Call Queue

Transfer the call to the target extension if free or busy. If busy the call is queued to wait for the phone to become free. This is similar to transfer except it allows you to transfer calls to a busy phone.

If the target

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Queue.
- **Action Data:** User number.
- **Default Label:** Queue.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.32 Call Record

This feature allows you to record a conversation and requires Voicemail Pro to be installed. An advice of recording warning will be given if configured on the voicemail system. The recording is placed in the mailbox specified by the user's **Manual Recording Mailbox** setting. Call recording also requires available conference resources similar to a three-party conference.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Record.
- **Action Data:** None.
- **Default Label:** Recor.
- **Toggles:** ✗.
- **Status Indication:** ✓.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.33 Call Steal

This function can be used with or without a specified user target.

- If the specified target has alerting calls, the function will connect to the longest waiting call.
- If the specified target has no alerting calls but does have a connected call, the function will take over the connected call, disconnecting the original user. This usage is subject to the **Can Intrude** setting of the **Call Steal** user and the **Cannot Be Intruded** setting of the target. The feature is independent the intrude settings of the third party to the call.
- If no target is specified, the function attempts to reclaim the users last ringing or transferred call if it has not been answered or has been answered by voicemail.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Acquire Call.
- **Action Data:** User number or blank for last call transferred.
- **Default Label:** Aquire.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.34 Call Waiting Off

Switches call waiting off for the user. This button function is obsolete, the Call Waiting On 537 button function toggles on/off and indicates current status.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Waiting Off.
- **Action Data:** *None*.
- **Default Label:** CWOff.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.35 Call Waiting On

Enables call waiting on the user's extension. When the user is on a call and another call arrives, they will hear a call waiting tone. Note: Call waiting does not operate for user's with call appearance buttons. See Call Waiting 679.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Waiting On.
- **Action Data:** *None*.
- **Default Label:** CWOn.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	CWOn	CWOn	Green on.
- Off.	CWOn	CWOn	Off.

- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.36 Call Waiting Suspend

Disables call waiting, if on, for the duration of the extension's next call.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Waiting Suspend.
- **Action Data:** *None*.
- **Default Label:** CWSus.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.37 Cancel All Forwarding

Cancels forward unconditional, forward on busy, forward on no answer, follow me and do not disturb if any of those are active on the user's extension.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Cancel All Forwarding.
- **Action Data:** *None*.
- **Default Label:** FwdOf.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.38 Cancel Leave Word Calling

Not supported. Provided for CTI emulation only. Cancels the last Leave Word Calling message originated by the user.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Cancel Leave Word Calling.
- **Action Data:** *None*.
- **Default Label:** CnLWC.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.39 Cancel Ring Back When Free

Cancels any existing ringback set by the user, see Ring Back When Free 590. Note the Ring Back When Free buttons provide both status indication of when set and toggle to cancel or set ringback when free.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Miscellaneous -> Cancel Ring Back When Free.
- **Action Data:** *None*.
- **Default Label:** RBak-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.40 Channel Monitor

For Avaya use only.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Channel Monitor.
- **Action Data:** *Channel*.
- **Default Label:** ChMon.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.41 Clear Call

This feature can be used to end the last call put on hold. This can be used in scenarios where a first call is already on hold and simply ending the second call will cause an unsupervised transfer of the first call.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Call.
- **Action Data:** *None*.
- **Default Label:** Clear.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.42 Clear CW

End the user's current call and answer any call waiting. Requires the user to also have call waiting indication on. This function does not work for users with multiple call appearance buttons.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call **->**Clear CW.
- **Action Data:** *None*.
- **Default Label:** ClrCW.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✓
  - **2400 Series:** ✗*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✗
  - **5400 Series:** ✗*
  - **4600 Series:** ✗*
  - **5600 Series:** ✗*
  - **6400 Series:** ✗
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **✗ Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.43 Clear Hunt Group Night Service

Changes the specified hunt group from 'Night Service' mode to 'In Service' mode.

This button function is obsolete. The Set Hunt Group Night Service 596 function can be used to toggle a group in/out of service and provides lamp status indication.

Note: If the hunt group has been placed into night service mode by an associated time profile, this function cannot override that night service mode.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Hunt Group Night Service.
- **Action Data:** Group number.
  - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGNS-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.44 Clear Hunt Group Out Of Service

Changes the specified hunt groups status from 'Out of Service' mode to 'In Service' mode.

This button function is obsolete. The Set Hunt Group Out Of Service 597 function can be used to toggle a group in/out of service and provides lamp status indication.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Hunt Group Out of Service.
- **Action Data:** Group number.
  - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGOS-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.45 Clear Quota

Quotas can be assigned to IP Office on outgoing calls to data services such as internet connections. The quota defines the number of minutes available for the service within a time frame set within the service, for example each day, each week or each month.

The Clear Quota function can be used to reset the quota for a specific IP Office service or for all IP Office services.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Quota.
- **Action Data:** Service name" or "" (all services).
- **Default Label:** Quota.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.46 Conference Add

Places all the calls the user has on hold into a conference with the user.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Conference Add.
- **Action Data:** *None*.
- **Default Label:** Conf+.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.47 Conference Meet Me

This feature allows a user to join a specific numbered conference. By default, ad hoc conferences are assigned numbers starting from 100 for the first conference in progress. Therefore specifying a number away from this range ensure that the conference joined is not an ad hoc conference started by other users.

This function is not supported on IP Office IP500 systems running in IP Office Standard Edition mode.

For IP Office 4.1+ this button has been enhanced. A currently connected caller can be transferred into the conference by pressing **TRANSFER**, then the Conference Meet Me button and **TRANSFER** again to complete the transfer. This allows the user to place callers into the conference specified by the button without being part of the conference call themselves. This option is only support on Avaya phones with a fixed **TRANSFER** button (excluding T3 and T3 IP phones).

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Conference Meet Me.
- **Action Data:** Conference number. This can be an alphanumeric value up to 15 characters.
- **Default Label:** CnfMM.
- **Toggles:** ✗.
- **Status Indication:** Pre-4.1 ✗/4.1+ ✓.
  For IP Office 4.1+, buttons programmed for conference meet me will indicate when the conference is in progress.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- Conference In Use.	**CnfMM**	**CnfMM**	Green on.
- Conference Idle.	**CnfMM**	**CnfMM**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.48 Consult

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Consult.
- **Action Data:** *None*.
- **Default Label:** Cnslt.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.49 Coverage Appearance

Creates a button that alerts when a call to the specified covered user is unanswered after that users Individual Coverage Timer expires. The call coverage appearance button can be used to answer that call. For full details refer to the IP Office Key & Lamp Manual.

The call coverage appearance button user must also have at least one call appearance button programmed. The covered user does not need to be using call appearance buttons.

Coverage appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's **Ring Delay** 268 (User | Telephony | Multi-line Options) 268 setting.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Coverage Appearance.
- **Action Data:** User name.
- **Default Label:** *<user name>*.
- **Toggles:** ✗.
- **Status Indication:** ✓. See Coverage Button Indication 629.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓
  - **5600 Series:** ✓
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗

8.3.50 Dial

This action is used to dial the number contained in the Telephone Number field. A partial number can be enter for the user to complete. On buttons with a text label area, **Dial** followed by the number is shown.

- **IP Office Software Level:** 1.0+.
- **Action:** Dial.
- **Action Data:** Telephone number or partial telephone number.
- **Default Label:** Dial.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays the telephone number set.
  - **DSS Link LED:** None.

8.3.51 Dial 3K1

The call is presented to local exchange as a "3K1 Speech Call". Useful in some where voice calls cost less than data calls.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial 3K1.
- **Action Data:** Telephone number.
- **Default Label:** D3K1.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.52 Dial 56K

The call presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial 56K.
- **Action Data:** Telephone number.
- **Default Label:** D56K.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.53 Dial 64K

The call is presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial 64K.
- **Action Data:** Telephone number.
- **Default Label:** D64K.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.54 Dial CW

Call the specified extension number and force call waiting indication on if the extension is already on a call. The call waiting indication will not work if the extension called has multiple call appearance buttons in use.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial CW.
- **Action Data:** User number.
- **Default Label:** DCW.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.55 Dial Direct

Call the extension specified and force automatic answer if supported by the extension type.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Direct.
- **Action Data:** User number or name.
- **Default Label:** Dirct.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.56 Dial Emergency

Dials the number specified regardless of any outgoing call barring applicable to the user.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Emergency.
- **Action Data:** Telephone number.
- **Default Label:** Emrgy.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.57 Dial Inclusion

Intrudes on the existing connected call of the specified target extension. The intruder and the target extension can then talk but cannot be heard by the other party. If the target extension is free the button makes a normal call.

During the intrusion all parties hear a repeated intrusion tone. When the intruder hangs-up the original call parties are reconnected.

Use of this feature is subject to the **Can Intrude** status of the intruder and the **Cannot be Intruded** status of the other call parties if internal.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Dial -> Dial Inclusion.
- **Action Data:** User number or name or blank for user selection.
- **Default Label:** Inclu.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.58 Dial Intercom

Call an extension and have the call automatically answered on speaker phone if the extension is free. The extension called must support a handsfree speaker.

If the extension is not free when called, the call is presented as a normal call on a call appearance button if available.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Dial Intercom.
- **Action Data:** User number or name or blank for number entry when pressed.
- **Default Label:** Idial.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays followed by the set number.
  - **DSS Link LED:** None.

8.3.59 Dial Paging

Makes a paging call to an extension or group specified. If no number is specified, this can be dialed after pressing the button. The target extension or group members must be free and must support hands-free auto-answer in order to hear the page.

On Avaya phones with a **CONFERENCE** button, a paged user can convert the page call into a normal call by pressing that button.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Paging.
- **Action Data:** User number or name or group number or name or blank for number entry when pressed.
- **Default Label:** Page.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
  - **T3 Phones:**
    - **Classic/Comfort icon:** Displays followed by target number if set.
    - **DSS Link LED:** None.

Paging Limits
The table below lists the maximum recommended size for paging groups.

IP Office	Software Level	
	3.2	4.0+
IP500	–	64
IP412	24	48
IP406 V2	16	32
Small Office Edition	16	16
IP406	16	–
IP403	16	–

8.3.60 Dial Physical Extn by Number

Call the specified extension using its Base Extension number setting. This is regardless of the current user logged in at that extension and any forwarding, follow me or do not disturb settings applied by the extension user. This function requires the extension to be assigned a default extension number in the IP Office configuration. If the extension does not have a default extension number, Dial Physical Extn by ID 552 should be used.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Dial -> Dial Physical Extn By Number.
- **Action Data:** Extension port base extension number.
- **Default Label:** PhyEx.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.61 Dial Physical Extn by ID

Call the specified extension, if free, regardless of the current user logged in at that extension and any forwarding, follow me or do not disturb settings applied by the extension user. This function uses the port ID shown in the IP Office configuration.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Dial -> Dial Physical Extn By ID.
- **Action Data:** Extension port ID number.
- **Default Label:** DialP.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.62 Dial Speech

This feature allows a short code to be created to force the outgoing call to use the Speech bearer capability.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Speech.
- **Action Data:** Telephone number.
- **Default Label:** DSpch.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.63 Dial V110

The call is presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial V110.
- **Action Data:** Telephone number.
- **Default Label:** DV110.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.64 Dial V120

The call is presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial V120.
- **Action Data:** Telephone number.
- **Default Label:** DV120.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.65 Display Msg

Allows the sending of special functions to feature phones.

- **IP Office Software Level:** 1.0+.
- **Action:** Advanced -> Dial -> Display Msg.
- **Action Data:** The telephone number takes the format *xxxx;[0)nnn/ppppppp* where:
  - *xxx* is the target extension.
  - *nnn* is the Definity feature number of the emulation feature.
  - *ppppppp* is the parameter data if required. .
- **Default Label:** Displ.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.66 Dial Video

The call is presented to the local exchange as a "Video Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Video.
- **Action Data:** Telephone number.
- **Default Label:** Dvide.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.67 Directed Call Pickup

Pickup a call ringing at a specific extension or hunt group.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Directed Pickup.
- **Action Data:** User number or name or group number or name or blank for number entry when pressed.
- **Default Label:** DpkUp.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.68 Directory

Provides access to telephone numbers by name. Users are first able to select from **Index** (internal user names), **Group** (internal group names) or **Extrn** (system directory names). Once they have selected a category, dialing on the dial pad letter keys is used to display matching names, with controls for scrolling through the matching names and for calling the currently displayed name.

The method of name matching is controlled by the Dial by Name setting in the IP Office configuration:

- **With Dial by Name on**
  Matching is done against all the dial keys pressed. For example, dialing 527 matches names starting with JAS (for example "Jason") and KAR (for example "Karl"). Only the first 50 matches are displayed.
- **With Dial by Name off**
  Matching is done against the first letter only. For example pressing 5 displays names beginning with J. Press 5 again displays names beginning with K. Only the first 50 matches are displayed.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Directory.
- **Action Data:** *None*.
- **Default Label:** Dir.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - *✗ *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays 🕮.
  - **DSS Link LED:** None.

8.3.69 Do Not Disturb Exception Add

Adds a number to the user's "Do Not Disturb Exception List". This can be the number of an internal user or a number to match the CLI of a particular external caller. Calls from that caller will then ring even when do not disturb is set on.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Do Not Disturb -> Do Not Disturb Exception Add.
- **Action Data:** Telephone number or CLI. Up to 31 characters. For CLI numbers any prefix added by the IP Office system must also be included.
- **Default Label:** DNDX+.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.70 Do Not Disturb Exception Delete

Removes a number from the user's "Do Not Disturb Exception List". This can be the number of an internal user or a number to match the CLI of a particular external caller.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Do Not Disturb -> Do Not Disturb Exception Delete.
- **Action Data:** Telephone number or CLI.
- **Default Label:** DNDX-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.71 Do Not Disturb Off

Cancels the user's 'do not disturb' mode if set. This button function is largely obsolete as the do not disturb on 559 function toggles on/off and indicates the button status.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Do Not Disturb -> Do Not Disturb On.
- **Action Data:** *None*.
- **Default Label:** DNDOf.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.72 Do Not Disturb On

Acts the same as Send All Calls 593. Note that for T3 phones, a **Do Not Disturb On** button programmed through the phone will be shown as a **Send All Call** button in the IP Office Manager configuration.

8.3.73 Drop

This action is supported on phones which do not have a permanent **Drop** button.

- For a currently connected call, pressing **Drop** disconnects the call. When drop is used to end a call, silence is returned to the user rather than dial tone. This is intended operation, reflecting that **Drop** is mainly intended for use by call center headset users.
- If the user has no currently connected call, pressing **Drop** will redirect a ringing call using the user's **Forward on No Answer** setting if set or otherwise to voicemail if available.
- For a conference call, on phones with a suitable display, **Drop** can be used to display the conference parties and select which party to drop from the conference.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Drop.
- **Action Data:** *None*.
- **Default Label:** Drop.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✓
  - **2400 Series:** ✗
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✗
  - **4600 Series:** ✗
  - **5600 Series:** ✗
  - **6400 Series:** ✗
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗

8.3.74 Extn Login

This feature allows user configured with a log in code to take over ownership of an physical extension. That user's associated extension number becomes the number of the extension while they are logged in along with all their user settings (if appropriate to the phone type).

If the user logging in was already logged in or associated with another phone, they will be automatically logged out that phone.

When used, the user will be prompted to enter their extension number and then their log in code. Login codes of up to 15 digits are supported with **Extn Login** buttons. Login codes of up to 31 digits are supported with **Extn Login** short codes.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Extension -> Extn Login.
- **Action Data:** *None*.
- **Default Label:** Login.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**Login**	**Login**	Green on.
- Off.	**Login**	**Login**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.75 Extn Logout

Logs out a user from the phone. The phone will return to its normal default user, if an extension number is set against the physical extension settings in the configuration. Otherwise it takes the setting of the **NoUser** user. This action is obsolete as **Extn Login** 561 can be used to log out an existing logged in user.

If the user who logged out was the default user for an extension, dialing *36 will associate the extension with the user unless they are set to forced log in.

For IP Office 4.0 and higher this feature cannot be used by a user who does not have a log in code.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Extension -> Extn Logout.
- **Action Data:** *None*.
- **Default Label:** Logof.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.76 Flash Hook

Sends a hook flash signal to the currently connected line if that line is an analog line. For IP Office 4.0+ this can be used for a Centrex Transfer for calls on lines from a Centrex service provider.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Miscellaneous -> Flash Hook.
- **Action Data:** *Optional*.
  Normally this field is left blank. For IP Office 4.0+ it can contain the destination number for a Centrex Transfer for external calls on a line from a Centrex service provider.
- **Default Label:** Flash.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.77 Follow Me Here

Causes calls to the extension number specified, to be redirected to this user's extension. IP Office 4.0+ user's with a log in code will be prompted to enter that code when using this function.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Follow Me -> Follow Me Here.
- **Action Data:** User name or user number. For IP Office 4.0+ this field can be left blank for number entry when pressed.
- **Default Label:** Here+.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
  - **T3 Phones:**
    - **Classic/Comfort icon:** Displays followed by the user name.
    - **DSS Link LED:** On when active.

8.3.78 Follow Me Here Cancel

Cancels any 'Follow Me Here' set on the specified extension. Only works if entered at the extension to which the extension's calls are being sent by the follow me action.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Follow Me -> Follow Me Here Cancel.
- **Action Data:** User number or blank for number entry when pressed.
- **Default Label:** Here-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.79 Follow Me To

Leaving the extension blank prompts the user to enter the extension to which their calls should be redirected.

IP Office 4+ user's with a log in code will be prompted to enter that code when using this function.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Follow Me -> Follow Me To.
- **Action Data:** User name or user number or blank for number entry when pressed. If already enabled the button cancels the Follow Me To.
- **Default Label:** FolTo.
- **Toggles:** ✓.
- **Status Indication:** ✓.
  On/off status indication is provided is the button is programmed with a user name or number.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**FolTo**	**FolTo**	Green on.
- Off.	**FolTo**	**FolTo**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.80 Forward Hunt Group Calls Off

Cancels the forwarding of the user's hunt group calls. This function is largely obsolete since the button function Forward Hunt Group Calls On 565 toggles on/off and indicates status.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Hunt Group Calls Off.
- **Action Data:** *None*.
- **Default Label:** FwdH-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.81 Forward Hunt Group Calls On

Forward the user's hunt group calls. This function only works when forward unconditional is also on and uses the same forwarding number as forward unconditional.

This option is only applied for calls to ***Sequential*** and ***Rotary*** type hunt groups. Calls from other hunt group types are not presented to the user when they have Forward Unconditional active. Note also that hunt group calls cannot be forwarded to another hunt group.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Hunt Group Calls On.
- **Action Data:** *None*.
- **Default Label:** FwdH+.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On (no ring).	**FwdH+**	**FwDH+**	Green on.
- Off (ring).	**FwdH+**	**FwDH+**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.82 Forward Number

Sets the number to which calls are forwarded when the user has forwarding on. Used for all forwarding options unless a separate **Forward On Busy Number** is also set. Forwarding to an external number is blocked if **Inhibit Off-Switch Transfers** is selected within the system configuration.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Number.
- **Action Data:** Telephone number.
  - IP Office 4.0+ allows this field to be left blank to prompt the user for entry when the button is pressed. Also if blank, IP Office 4.0+ users with a log in code will be prompted to enter that code.
- **Default Label:** FwdNo.
- **Toggles:** ✗.
- **Status Indication:** ✓ *for IP Office 4.0+.*

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**FwdNo**	**FwdNo**	Green on.
- Off.	**FwdNo**	**FwdNo**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.83 Forward On Busy Number

Sets the number to which calls are forwarded when using 'Forward on Busy' and/or 'Forward on No Answer'. Forwarding to an external number is blocked if **Inhibit Off-Switch Transfers** is selected within the system configuration.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on Busy Number.
- **Action Data:** Telephone number.
  - IP Office 4.0+ allows this field to be left blank to prompt the user for entry when the button is pressed. Also if blank, IP Office 4.0+ users with a log in code will be prompted to enter that code.
- **Default Label:** FwBNo.
- **Toggles:** ✗.
- **Status Indication:** ✓ *for IP Office 4.0+.*

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**FwBNo**	**FwBNo**	Green on.
- Off.	**FwBNo**	**FwBNo**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.84 Forward On Busy Off

Switches forward on busy off. This button function is largely obsolete, as **Forward On Busy On** 567 can be used to switch forward on busy on/off and provides status indication.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on Busy Off.
- **Action Data:** *None*.
- **Default Label:** FwBOf.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.85 Forward On Busy On

Enables forwarding when the user's extension is busy. For users with call appearance buttons, they will only return busy when all call appearance buttons are in use. Uses the **Forward Number** as its destination unless a separate **Forward on Busy Number** is set.

For IP Office 3.2 and higher, **Forward Internal** (**User | Forwarding**) can also be used to control whether internal calls are forwarded.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on Busy On.
- **Action Data:** *None*.
- **Default Label:** FwBOn.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**FwBOn**	**FwBOn**	Green on.
- Off.	**FwBOn**	**FwBOn**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.86 Forward On No Answer Off

Switches forward on no answer off. This button function is largely obsolete, as **Forward On No Answer On** 568 can be used to switch forward on no answer on/off and provides status indication.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on No Answer Off.
- **Action Data:** *None*.
- **Default Label:** FwNOf.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.87 Forward On No Answer On

Switches forward on no answer on/off. The time used to determine the call as unanswered is the user's no answer time. Uses the **Forward Number** as its destination unless a separate **Forward on Busy Number** is set.

For IP Office 3.2 and higher, **Forward Internal** (**User | Forwarding**) can also be used to control whether internal calls are forwarded.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on No Answer On.
- **Action Data:** *None*.
- **Default Label:** FwNOn.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**FwNOn**	**FwNOn**	Green on.
- Off.	**FwNOn**	**FwNOn**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.88 Forward Unconditional Off

Switch 'forward all calls' off. This does not affect 'Forward on No Answer' and/or 'Forward on Busy' if also on. This function is largely obsolete as a button set to Forward Unconditional On 569 toggles on/off and indicates when on.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Unconditional Off.
- **Action Data:** *None*.
- **Default Label:** FwUOf.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.89 Forward Unconditional On

This function is also know as 'divert all' and 'forward all'. It forwards all calls, except hunt group and page calls, to the forward number set for the user's extension. To also forward hunt group calls to the same number 'Forward Hunt Group Calls On 565' must also be used.

For IP Office 3.2 and higher, **Forward Internal** (**User | Forwarding**) can also be used to control whether internal calls are forwarded.

In addition to the lamp indication shown below, most phones display **D** when forward unconditional is on.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Unconditional On.
- **Action Data:** *None*.
- **Default Label:** FwUOn.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On (no ring).	**FwUOn**	**FwUOn**	Green on.
- Off (ring).	**FwUOn**	**FwUOn**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
    - **T3 Phones:**
      - **Classic/Comfort icon:** Displays followed by the user name.
      - **DSS Link LED:** On when active.

8.3.90 Group

Monitors the status of a hunt group queue. This option is only supported for hunt groups with queuing enabled. The user does not have to be a member of the group.

Depending on the users button type, indication is given for when the group has alerting calls and queued calls (queued in this case is defined as more calls waiting than there are available group members).

In IP Office 4.0 the definition of queued calls has changed to include ringing calls. However for operation of the Group button, ringing calls are still regarded as different from other queued calls.

For pre-4.0 IP Office pressing the button displayed information about the longest waiting call in the queue and options to answer, drop or ignore the call. For IP Office 4.0 and higher the button has been changed to just answer the longest waiting call.

- **IP Office Software Level:** 1.0+.
- **Action:** Group.
- **Action Data:** Group name enclosed in " " double-quotes or group number.
- **Default Label:** *<group name>*.
- **Toggles:** ✗.
- **Status Indication:** ✓ *Required*.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- No calls	**Main**	**Main**	Not lit.
- Call alerting.	**Main◆**	**Main◆**	Green flash.
- Calls queued.	**Main**	**Main**	Red flash.

- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.91 Group Listen On

Using group listen allows callers to be heard through the phone's handsfree speaker but to only hear the phone's handset microphone. When group listen is enabled, it modifies the hands free functionality of the user's phone in the following manner

- When the user's phone is placed in handsfree / speaker mode, the speech path from the connected party is broadcast on the phone speaker but the phone's base microphone is disabled.
- The connected party can only hear speech delivered via the phone's handset microphone.
- Group listen is not supported for IP phones or when using a phone's **HEADSET** button.
- Currently connected calls are not affected by changes to this setting. If group listen is required it must be selected before the call is connected.

This enables listeners at the user's phone to hear the connected party whilst limiting the connected party to hear only what is communicated via the phone handset.

- **IP Office Software Level:** 4.1+.
- **Action:** Advanced -> Extension -> Group Listen On.
- **Action Data:** *None*.
- **Default Label:** Group Listen On.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	64XX
- On.	**GroupListenOn**	Green on.
- Off.	**GroupListenOn**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✗
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✗
  - **4600 Series:** ✗
  - **5400 Series:** ✓*
  - **5600 Series:** ✗
  - **6400 Series:** ✓*
  - **9040:** ✗
  - **T3/T3 IP Series:** ✗

8.3.92 Group Paging

Makes a paging call to an extension or group specified. If no number is specified, this can be dialed after pressing the button. The target extension or group members must be free and must support hands-free auto-answer in order to hear the page.

On Avaya phones with a **CONFERENCE** button, a paged user can convert the page call into a normal call by pressing that button.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Group Paging.
- **Action Data:** User number or name or group number or name. For IP Office 4.0+ this field can be left blank for number entry when pressed.
- **Default Label:** Page.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays followed by target number if set.
  - **DSS Link LED:** None.

Paging Limits
The table below lists the maximum recommended size for paging groups.

IP Office	Software Level	
	3.2	4.0+
IP500	64	–
IP412	48	24
IP406 V2	32	16
Small Office Edition	16	16
IP406	–	16
IP403	–	16

8.3.93 Headset Toggle

This function is intend for use with Avaya phones that have separate handset and headset sockets but do not provide a dedicated Headset button, for example older style 4400 and 4600 series phones. On phones without a headset socket or with a dedicated Headset button this control will have no effect.

- **IP Office Software Level:** 1.4+.
- **Action:** Miscellaneous -> Headset Toggle.
- **Action Data:** *None*.
- **Default Label:** HdSet.
- **Toggles:** ✓.
- **Status Indication:** ✓.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✗
  - **2400 Series:** ✗
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✓
  - **4600 Series:** ✓*
  - **5400 Series:** ✗
  - **5600 Series:** ✗
  - **6400 Series:** ✗
  - **9040:** ✗
  - **T3/T3 IP Series:** ✓
    - **4606, 4612 and 4624 only.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays **HdSet**.
  - **DSS Link LED:** On when active.

8.3.94 Hold Call

This uses the Q.931 Hold facility, and "holds" the incoming call at the ISDN exchange, freeing up the ISDN B channel. The Hold Call feature "holds" the current call to a slot. The current call is always automatically placed into slot 0 if it has not been placed in a specified slot. Only available if supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hold -> Hold Call.
- **Action Data:** ISDN Exchange hold slot number or blank (slot 0).
- **Default Label:** Hold.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **✗ Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.95 Hold CW

Place the user's current call on hold and answers the waiting call. This function is not supported on phones which have multiple call appearance buttons set.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hold -> Hold CW.
- **Action Data:** *None*.
- **Default Label:** HoldCW.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.96 Hold Music

This feature allows the user to listen to the system's music on hold. See Music On Hold 684 for more information.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hold -> Hold Music.
- **Action Data:** *Optional*.
  IP Office 4.2+ (not Small Office Edition) supports up to 4 hold music sources, numbered 1 to 4. 1 represents the System Source 179. 2 to 4 represent the Alternate Sources 179. If no number is specified, the default system source is assumed.
- **Default Label:** Music.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.97 Hunt Group Enable

An individual users membership of any particular hunt groups is programmed through the IP Office configuration. This control allows the user to enable or disable that membership. While enabled, the user can receive hunt group calls when logged in.

In addition to the lamp indication below, most phones display **G** when any group membership is enabled.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hunt Group -> Hunt Group Enable.
- **Action Data:** Group number or name or blank for all groups of which the user is a member.
- **Default Label:** HGEna.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On (no ring).	**HGEna**	**HGEna**	Green on.
- Off (ring).	**HGEna**	**HGEna**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
  - **T3 Phones:**
    - **Classic/Comfort icon:** Displays [🔔] followed by the group number or ***** for all if programmed with no specific group number.
    - **DSS Link LED:** On when active.

8.3.98 Hunt Group Disable

This function is obsolete, the Hunt Group Enable 575 function being able to toggle membership between enabled and disabled and providing lamp indication of when membership is enabled.

An individual user's membership of any particular hunt groups is programmed through the IP Office configuration. This control allows the user to disable that membership. They will no longer receive calls to that hunt group until their membership is enabled again.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hunt Group -> Hunt Group Disable.
- **Action Data:** Group number or blank for all groups of which the user is a member.
- **Default Label:** HGDis.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.99 Inspect

Not supported. Provided for CTI emulation only. Allows users on display phones to determine the identification of held calls. Allows users on an active call to display the identification of incoming calls.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Inspect.
- **Action Data:** None.
- **Default Label:** Inspt.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.100 Internal Auto-Answer

This function is also know as hands-free auto-answer. Sets the user's extension to automatically connect internal calls after a single ring. This function should only be used on phones that support hands-free operation.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Internal Auto-Answer.
- **Action Data:** *Optional*.
  - If left blank this function acts as described above for internal auto-answer.
  - IP Office 4.1+ supports the entry of ***FF*** as the Action Data. In that case the button will enable/disable headset force feed operation for external calls. In this mode, when headset mode is selected but the phone is idle, an incoming external call will cause a single tone and then be automatically connected. This operation is only supported on Avaya phones with a fixed **HEADSET** button. Ring delay is applied if set on the call or line appearance button receiving the call before the call is auto-connected.
- **Default Label:** HfAns.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**HFAns**	**HFAns**	Green on.
- Off.	**HFAns**	**HFAns**	Off.

- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays **HfAns**.
  - **DSS Link LED:** On when active.

8.3.101 Leave Word Calling

Not supported. Provided for CTI emulation only. Leaves a message for the user associated with the last number dialed to call the originator.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Leave Word Calling.
- **Action Data:** *None*.
- **Default Label:** LWC.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.102 Line Appearance

Creates an line appearance button linked to the activity of a specified line appearance ID number. The button can then be used to answer and make calls on that line. For full details refer to the IP Office Key & Lamp Manual.

The line appearance button user must also have at least one call appearance button programmed before line appearance buttons can be programmed.

Line appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's **Ring Delay** 268 (User | Telephony | Multi-line Options) 268 setting.

For IP Office 4.2+, line appearances are supported on T3 and T3 IP phones. These phones do not require (or support) call appearance buttons in order to use line appearances.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Line Appearance.
- **Action Data:** Line ID number.
- **Default Label:** Line *<Line ID number>*.
- **Toggles:** ✗.
- **Status Indication:** ✓. See Line Appearance Button Indication 634.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✓
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓
  - **5600 Series:** ✓
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓*
    (IP Office 4.2+ 635)

8.3.103 Manual Exclude

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Manual Exclude.
- **Action Data:** *None*.
- **Default Label:** Excl.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.104 MCID Activate

This action is used with ISDN Malicious Caller ID call tracing. It is used to trigger a call trace at the ISDN exchange. The call trace information is then provided to the appropriate legal authorities.

This option requires the line to the ISDN to have MCID enabled at both the ISDN exchange and on the IP Office. The user must also be configured with **Can Trace Calls** 265 (User | Telephony | Supervisor Settings) 266 enabled.

- **IP Office Software Level:** 4.0+.
- **Action:** Advanced -> Miscellaneous -> MCID Activate.
- **Action Data:** *None*.
- **Default Label:** MCID.
- **Toggles:** ✗.
- **Status Indication:** ✓.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **4600 Series:** ✓*
  - **5400 Series:** ✓
  - **5600 Series:** ✓*
  - **6400 Series:** ✗
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602.*

8.3.105 Off Hook Station

Enables the user's extension to be controlled by an IP Office application, for example Phone Manager or SoftConsole. Calls can then be answered and cleared through the application without having to manually go off or on hook. Requires the phone to support full handsfree operation.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Miscellaneous -> Off Hook Station.
- **Action Data:** None.
- **Default Label:** OHStn.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**OHStn**	**OHStn**	Green on.
- Off.	**OHStn**	**OHStn**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.106 Park

Monitors the status of an IP Office system park slot. The user can use the button to park a call into that slot and to also retrieve a call parked in that slot including calls parked by other users.

Park buttons with indication will indicate when the park slot is in use. Similarly the Park buttons within the Phone Manager and SoftConsole applications can be used to park, retrieve and indicate parked calls.

- **IP Office Software Level:** 1.0 to 3.2 only.
  For IP Office 4.0 and higher this function has been replaced by **Emulation | Call Park** 531.
- **Action:** Park Call.
- **Action Data:** Park slot number.
- **Default Label:** Park.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- No parked call	**PARK1**	**PARK1**	Off
- Parked here.	**PARK1**◆	**PARK1**◆	Green flash.
- Parked elsewhere.	**PARK1**	**PARK1**	Red flash.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.107 Park Call

For IP Office 4.0 and higher this function has been replaced by **Emulation | Call Park** 531.

- **IP Office Software Level:** 1.0 to 3.2 only.
- **Action:** Advanced -> Call -> Park Call.
- **Action Data:** Park slot number.
- **Default Label:** Park.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- No parked call	**PARK1**	**PARK1**	Off
- Parked here.	**PARK1◆**	**PARK1◆**	Green flash.
- Parked elsewhere.	**PARK1**	**PARK1**	Red flash.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **✗ Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.108 Priority Call

This feature allows the user to call another user even if they are set to 'do not disturb'. A priority call will follow forward and follow me settings but will not go to voicemail.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Priority Call.
- **Action Data:** User number or name.
- **Default Label:** PCall.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.109 Priority Calling

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Priority Calling.
- **Action Data:** *None*.
- **Default Label:** Pcall.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.110 Private Call

When a user has private call enabled, their calls cannot be recorded, intruded on, bridged into or monitored. If enabled during a call, any current recording, intrusion or monitoring is ended.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to **Cannot be Intruded**, switching private calls off does not affect that status. To allow private calls to be used to full control the user status, **Cannot be Intruded** should be disabled for that user.

- **IP Office Software Level:** 4.0+.
- **Action:** Advanced -> Call -> Private Call.
- **Action Data:** *None*.
- **Default Label:** PrivC.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**PrivC**	**PrivC**	Green on.
- Off.	**PrivC**	**PrivC**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **4600 Series:** ✓*
  - **5400 Series:** ✓
  - **5600 Series:** ✓*
  - **6400 Series:** ✗
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602.*

8.3.111 Relay Off

Opens the specified switch in the system's external output port (**EXT O/P**).

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Relay -> Relay Off.
- **Action Data:** Switch number (1 or 2).
- **Default Label:** Rely-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.112 Relay On

Closes the specified switch in the system's external output port (**EXT O/P**).

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Relay -> Relay On.
- **Action Data:** Switch number (1 or 2).
- **Default Label:** Rely+.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.

- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.113 Relay Pulse

Closes the specified switch in the system's external output port (**EXT O/P**) for 5 seconds and then opens the switch.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Relay -> Relay Pulse.
- **Action Data:** Switch number (1 or 2).
- **Default Label:** Relay.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
  - **T3 Phones:**
    - **Classic/Comfort icon:** Displays **S1** or **S2** dependant on switch number.
    - **DSS Link LED:** None.

8.3.114 Resume Call

Resume a call previously suspended to the specified ISDN exchange slot. The suspended call may be resumed from another phone/ISDN Control Unit on the same line.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Resume Call.
- **Action Data:** ISDN Exchange suspend slot number.
- **Default Label:** Resum.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.115 Retrieve Call

Retrieves a call previously held to a specific ISDN exchange slot. Only available when supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Retrieve Call.
- **Action Data:** Exchange hold slot number.
- **Default Label:** Retriv.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.116 Ring Back When Free

Sets a ringback on the extension being called. When the target extension ends its current call, the ringback users is rung (for their set No Answer Time/Allocated Answer Interval) and if they answer, a new call is made to the target extension.

Ringback can be cleared using the Cancel Ring Back When Free 539 function.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Miscellaneous -> Ring Back When Free.
- **Action Data:** None.
- **Default Label:** AutCB.
- **Toggles:** ✗.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**AutCB+**	**AutCB+**	Green on.
- Off.	**AutCB+**	**AutCB+**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.117 Ringer Off

Switches the phone's call alerting ring on/off.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Ringer Off.
- **Action Data:** *None*.
- **Default Label:** RngOf.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On (no ring).	**RngOf**	**RngOf**	Green on.
- Off (ring).	**RngOf**	**RngOf**	Off.

- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.118 Self-Administer

Allows a user to program features against other programmable buttons themselves. See Using an Admin Button 472 for full details. From IP Office 3.0+, Appearance 522 can no longer be used to create call appearance buttons. Similarly, existing call appearance button cannot be overwritten using any of the other Admin button functions.

- For IP Office 4.0+ user's with a log in code will be prompted to enter that code when they use this button action.
- For IP Office 4.2+, T3 phone users can access a similar set of functions for button programming, see T3 Phone Self-Administration 473.
- On 4412D+, 4424D+, 4612IP, 4624IP, 6408D, 6416D, 6424D phones:
  - **Admin** can be permanently accessed via Menu, ▶, ▶, Admin. See Using a Menu Key 470.
  - **Admin1** can be permanently accessed via **Menu**, Menu, ▶, **ProgA**, , ▶, **DSS**.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Self-Administer.
- **Action Data:** *See below.*
  - If no value is set, the button allows user programming of the following emulation actions:

Abbreviated Dial. 515
Abbreviated Dial Program. 516
Account Code Entry. 517
AD Suppress. 520
Automatic Callback. 523
Breakout (4.0+). 525
Call Forwarding All. 528
Call Park (4.0+). 531
Call Park to Other Extension (4.0+). 532
Call Pickup. 533
Directed Call Pickup. 556
Directory. 557
Drop. 560
Group Paging. 572
Headset Toggle. 573
Hook Flash (4.0+). 562
Internal Auto-Answer. 578
Park Call (pre-4.0) 583
Ringer Off. 591
Self-Administer. 592
Send All Calls. 593
Set Hunt Group Night Service. 596
Time of Day. 603
Timer. 603

  - If ***1*** is entered as the telephone number, allows user programming of the following IP Office functions:

Dial (pre-4.0). 546
Abbreviated Dial (4.0+). 515
Group. 570
Park (pre-4.0). 583
CPark (4.0+). 531
User. 606
Flash Hook. 562

  - If ***2*** is entered, the button can be used for viewing details of the IP Office control unit type and its software version. This option is available in IP Office 4.1+. If the user has a log in code set they will be prompted to enter that code.
    - System phone users (User | Telephony | Call Settings | System Phone 265) can also use the button to manually set the IP Office system's date and time 685.
  - **Default Label:** Admin.
  - **Toggles:** ✗.
  - **Status Indication:** ✗.
  - **User Admin:** 592 ✓.
  - **Phone Support** 476
    Note that support for particular phone models is also dependant on the IP Office software level.
    - **Analog:** ✗
    - **1700 Series:** ✓
    - **20 Series:** ✓
    - **2400 Series:** ✓*
    - **3600 Series:** ✗
    - **3700 Series:** ✗
    - **3810:** ✓
    - **4400 Series:** ✓
    - **5400 Series:** ✓*
    - **4600 Series:** ✓*
    - **5600 Series:** ✓*
    - **6400 Series:** ✓
    - **9040:** ✗
    - **T3/T3 IP Series:** ✓*²
    - *Not 2402, 5402, 4601, 4602, 5601 and 5602.
    - *2: IP Office 4.2+: See T3 Phone Self-Administration 473.

8.3.119 Send All Calls

Sets the user's extension into 'Do Not Disturb' mode. Callers, other than those on the user's do not disturb exception list, receive busy or are diverted to the users voicemail mailbox.

Note that with a call already connected and other calls already alerting, enabling Do Not Disturb will not affect those calls already existing.

When on, most Avaya phones display an **N** on the display. This function and the Do Not Disturb On 559 function work in parallel, ie. setting one sets the other.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Send All Call.
- **Action Data:** *None*.
- **Default Label:** SAC.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**SAC**	**SAC**	Green on.
- Off.	**SAC**	**SAC**	Off.

- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays [🔔].
  - **DSS Link LED:** On when active.

8.3.120 Set Absent Text

This feature can be used select the user's current absence text. Note: The user still has to select **Set** or **Clear** on their phone to display or hide the text. This text is then displayed to internal callers who have suitable display phones or applications.

The text is displayed to callers even if the user has forwarded their calls or is using follow me. Absence text is supported across a Small Community Network (SCN).

The absence text message is limited to 128 characters. Note however that the amount displayed will depend on the caller's telephone device or application.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Absent Text.
- **Action Data:** The telephone number should take the format "***y,n,text***" where:
  - ***y*** = 0 or 1 to turn this feature off or on repesctively.
  - ***n*** = the number of the absent statement to use:
    - 0 = None.
    - 1 = On vacation until.
    - 2 = Will be back.
    - 3 = At lunch until.
    - 4 = Meeting until.
    - 5 = Please call.
    - 6 = Don't disturb until.
    - 7 = With visitors until.
    - 8 = With cust. til.
    - 9 = Back soon.
    - 10 = Back tomorrow.
    - 11 = Custom.
  - ***text*** = any text to follow the absent statement..
  - **Default Label:** Absnt.
  - **Toggles:** ✗.
  - **Status Indication:** ✗.
  - **User Admin:** 592 ✗.
  - **Phone Support** 476
    Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1700 Series:** ✓
- **20 Series:** ✓
- **2400 Series:** ✓*
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✓
- **4400 Series:** ✓
- **5400 Series:** ✓*
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✓
- **9040:** ✓
- **T3/T3 IP Series:** ✗

  - ***✗** *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.121 Set Account Code

Dials an account code and then returns dial tone for the user to dial a number. Can also be used to enter an account code after a call has been connected.

- **IP Office Software Level:** 2.1+.
- **Action:** Advanced -> Set -> Set Account Code..
- **Action Data:** Account code or blank.
  If blank, the user is prompted to dial an account code after pressing the button. This option is not supported on XX02 phone modules.
- **Default Label:** Acct.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
  - **T3 Phones:**
    - **Classic/Comfort icon:** Displays **1234**.
    - **DSS Link LED:** None.

8.3.122 Set Hunt Group Night Service

Puts the specified hunt group into 'Night Service' mode. Calls to a group set to night service, receive busy or are diverted to voicemail if available or are diverted to the group's night service fallback group if set.

This function cannot be used to override hunt groups already set to night service mode by an associated time profile.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Hunt Group Night Service.
- **Action Data:** Hunt group extension number.
  - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGNS+.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.
  If the button is blank (no specific hunt group) it will indicate on if any one of the hunt groups of which the user is a member is set to night service. If the button is set for multiple hunt groups it will indicate on if any one of those groups is set to night service.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**HGNS+200**	**HGNS+200**	Green on.
- Off.	**HGNS+200**	**HGNS+200**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
  - **T3 Phones:** Supported on Avaya T3 Classic and Comfort phones and DSS Link units.
    - **Classic/Comfort icon:** Displays ❩ followed by the group number. The background uses the same settings as the LED below.
    - **DSS Link LED:** On when all related groups are in night service. Slow flash if related hunt groups are in mixed states.

8.3.123 Set Hunt Group Out Of Service

Puts the specified hunt group into 'Out of Service' mode. Calls to a group set to out of service receive busy or are diverted to voicemail if available or are diverted to the group's out of service fallback group if set.

For pre-IP Office 4.0 systems this function cannot be used to override hunt groups already set to night service mode by an associated time profile.

For IP Office 4.0 systems this function can be used to used to override hunt groups already set to night service mode by an associated time profile.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Hunt Group Out of Service.
- **Action Data:** Hunt group extension number.
  - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGOS+.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.
  If the button is blank (no specific hunt group) it will indicate on if any one of the hunt groups of which the user is a member is set out of service. If the button is set for multiple hunt groups it will indicate on if any one of those groups is set out of service.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**HGOS+200**	**HGOS+200**	Green on.
- Off.	**HGOS+200**	**HGOS+200**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays **–** followed by the group number. The background uses the same settings as the LED below.
  - **DSS Link LED:** On when set. On when all related groups are out of service. Slow flash if related hunt groups are in mixed states.

8.3.124 Set Inside Call Seq

Only supported for analog extensions. The distinctive ringing pattern 683 used for other phones is set by the phone type. See the Set Inside Call Seq 455 short code.

8.3.125 Set Night Service Group

This button allows the user to change the Night Service target of a hunt group. The button user does not have to be a member of the hunt group. For Small Community Networks this function can be used for hunt groups on remote systems.

When pressed, the user is prompted to enter or select a hunt group as the Night Service destination. Changing the destination does not affect calls already ringing at the hunt groups previous night service destination.

- **IP Office Software Level:** 4.2+.
- **Action:** Advanced -> Set -> Set Night Service Group.
- **Action Data:** Hunt group extension number or blank for selection when pressed. This is the group for which the night service destination is being set.
- **Default Label:** SetNSG.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓*1
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✗
  - **5400 Series:** ✓
  - **4600 Series:** ✓*1
  - **5600 Series:** ✓*1
  - **6400 Series:** ✗
  - **9040:** ✗
  - **T3/T3 IP Series:** ✓*2
    - **1: Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
    - **2: On T3 phones this option is accessible through the phone's menus.*

8.3.126 Set Out of Service Group

This button allows the user to change the Out of Service target of a hunt group. The button user does not have to be a member of the hunt group. For Small Community Networks this function can be used for hunt groups on remote systems.

When pressed, the user is prompted to enter or select a hunt group as the Out of Service destination. Changing the destination does not affect calls already ringing at the hunt groups previous Out of Service destination.

- **IP Office Software Level:** 4.2+.
- **Action:** Advanced -> Set -> Set Out of Service Group.
- **Action Data:** Hunt group extension number or blank for selection when pressed. This is the group for which the night service destination is being set.
- **Default Label:** SetOOSG.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓*1
  - **20 Series:** ✗
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✗
  - **5400 Series:** ✓
  - **4600 Series:** ✓*1
  - **5600 Series:** ✓*1
  - **6400 Series:** ✗
  - **9040:** ✗
  - **T3/T3 IP Series:** ✓*2
    - **1: Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
    - **2: On T3 phones this option is accessible through the phone's menus.*

8.3.127 Set No Answer Time

Allows the user to change their no answer time setting. This is the time calls will ring before going to voicemail or following the user's divert on no answer setting if set on.

In situations where call coverage is also being used, the user's no answer time must be greater than their individual coverage time for coverage to occur.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set No Answer Time.
- **Action Data:** Time in seconds.
- **Default Label:** NATim.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** <✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.128 Set Outside Call Seq

Only supported for analog extensions. The distinctive ringing pattern 683 used for other phones is set by the phone type. See the Set Outside Call Seq 457 short code.

8.3.129 Set Ringback Seq

Only supported for analog extensions. The distinctive ringing pattern 683 used for other phones is set by the phone type. See the Set Ringback Seq 458 short code.

8.3.130 Set Wrap Up Time

Allows the user to change their Wrap-up Time setting. Specifies the amount of time after ending one call before another call can ring. During this interval the user is treated as still being on a call. It is recommended that this option is not set to less than the default of 2 seconds. 0 is used to allow immediate ringing.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Wrap Up Time.
- **Action Data:** Time in seconds. Range 0 to 99999 seconds.
- **Default Label:** WUTim
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.131 Stored Number View

Not supported. Provided for CTI emulation only. Allows a user to view the contents of any programmed feature button.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Stored Number View.
- **Action Data:** *None*.
- **Default Label:** BtnVu.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.132 Suspend Call

Uses the Q.931 Suspend facility. Suspends the incoming call at the ISDN exchange, freeing up the ISDN B channel. The call is placed in exchange slot 0 if a slot number is not specified. Only available when supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Suspend -> Suspend.
- **Action Data:** Exchange slot number or blank (slot 0).
- **Default Label:** Suspe.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.133 Suspend CW

Uses the Q.931 Suspend facility. Suspends the incoming call at the ISDN exchange and answer the call waiting. The call is placed in exchange slot 0 if a slot number is not specified. Only available when supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Suspend -> Suspend CW.
- **Action Data:** Exchange slot number or blank (slot 0).
- **Default Label:** SusCW.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.134 Time of Day

Displays the time and date on the user's telephone. This function is ignored on those Avaya IP Office phones that display the date/time by default.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Time of Day.
- **Action Data:** *None*.
- **Default Label:** TmDay.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status Indication	24XX/ 54XX	46XX/ 56XX	44XX/64XX
- On.	**TmDay**	**TmDay**	Green on.
- Off.	**TmDay**	**TmDay**	Off.

- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - ***✗** *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.135 Timer

Starts a timer running on the display of the user's extension. The timer disappears when the user end a call. Note: This function is ignored on those Avaya IP Office phones that display a call timer by default.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Timer.
- **Action Data:** *None*.
- **Default Label:** Timer.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/ 54XX	46XX/ 56XX	44XX/64XX
- On.	**Timer**	**Timer**	Green on.
- Off.	**Timer**	**Timer**	Off.

- **User Admin:** 592 ✓.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✗
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - ***✗** *Not 2402, 4601, 4602, 5402, 5601 and 5602 models.*

8.3.136 Toggle Calls

Cycle between the user's current call and any held calls.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Toggle Calls..
- **Action Data:** *None*.
- **Default Label:** Toggl.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - *✗ *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.137 Twinning

This action can be used by user's setup for mobile twinning. Mobile twinning requires entry of a Mobility Features license and a twinning destination number in to the IP Office configuration. This action is not used for internal twinning.

The button allows the user to set and change the destination for their twinned calls. It can also be used to switch mobile twinning on/off and indicates the status of that setting.

In addition, when a call has been routed from the IP Office to the twinned destination, the twinning button can be used to retrieve the call at the twinned user's primary extension.

- **IP Office Software Level:** 3.2+.
- **Action:** Emulation -> Twinning.
- **Action Data:** *None*.
- **Default Label:** Twinning.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	44XX/64XX
- On.	**Twinning** ◀	**Twinning**	Green on.
- Off.	**Twinning**	**Twinning**	Off.
- Twinned call at secondary	**Twinning** ◀	**Twinning** ◆	Red on.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - *Not 2402, 5402, 4601, 4602, 5601 and 5602.

8.3.138 Unpark Call

This function is obsolete, since the Park 583 function can be used to both park and retrieve calls and provides visual indication of when calls are parked. Retrieve a parked call from a specified system park slot.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Unpark Call.
- **Action Data:** System park slot number. This must match a park slot ID used to park the call.
- **Default Label:** Ride.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.139 User

Monitors whether another user's phone is idle or in use. The Telephone Number field should contain the users name enclosed in double quotes. The button can be used to make calls to the user or pickup their longest waiting call when ringing. On buttons with a text label, the user name is shown.

- User buttons are supported in a Small Community Network. However the range of functions available when pressing such a button is reduced in comparison to a user button for a user on the same IP Office system.
- For IP Office 4.2+ the following changes have been made to the indication of user status via BLF (busy lamp field) indicators such as a User button:
  - The status shown for a logged out user without mobile twinning will depend on whether they have **Forward Unconditional** enabled. If they have **Forward Unconditional** enabled the user is shown as idle. If they do not have **Forward Unconditional** enabled they will show as if on DND.
  - The status shown for a logged out user with mobile twinning will be as follows:
    - If there are any calls alerting or in progress through the IP Office to the twinned destination, the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have **Busy on Held** enabled.
    - If the user enables DND through Mobile Call Control or one-X Mobile client, their status will show as DND.
    - Calls from the IP Office direct to the user's twinned destination number rather than redirected by twinning will not change the user's status.

- **IP Office Software Level:** 1.0+.
- **Action:** User.
- **Action Data:** User name enclosed in "double-quotes".
- **Default Label:** *<the user name>*.
- **Toggles:** ✗.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- Idle.	**Extn221**	**Extn221**	Not lit.
- Alerting.	**Extn221**	**Extn221**	Green flash.
- In Use/DND.	**Extn221**	**Extn221**	Green on.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓
    - ***✗** *Not 1703, 2402, 4601, 4602, 5402, 5601 and 5602 models except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
  - **Classic/Comfort icon:** Displays the user name.
  - **DSS Link LED:** On when busy, flashing when call alerting user.

8.3.140 Visual Voice

This action provides the user with a display menu for access to their mailbox. It can be used with Voicemail Pro (Intuity and IP Office modes) and Embedded Voicemail. The menu provide the user with options to listening to messages, leaving messages and managing the mailbox.

If pressed when a call is connected, the button allows entry of an extension number for direct to voicemail transfer of the connected call.

On phones that have a display but do not support full visual voice operation as indicated below, use of the button for user mailbox access using voice prompts and for direct to voicemail transfer during a call is supported (does not include T3 and T3 IP phones).

For IP Office 4.2+, access to Visual Voice on supported phones can be triggered by the phone's **MESSAGES** button rather than requiring a separate Visual Voice programmable button. This is done using the System | Voicemail 175 option **Messages button goes to Visual Voice**.

- **IP Office Software Level:** 4.0+.
- **Action:** Emulation -> Visual Voice.
- **Action Data:** *None*.
- **Default Label:** Voice.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✗
  - **2400 Series:** ✓*
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✗
  - **4400 Series:** ✓
  - **5400 Series:** ✓*
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✗
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓*²
  - *Not 2402, 5402, 4601, 4602, 5601 and 5602.
  - *2: Takes the user direct to the listen part of Visual Voice. For the full Visual Voice menu options the user should use ***Menu -> Settings -> Voicemail Settings***.

8.3.141 Voicemail Collect

Connects to the voicemail server. The telephone number must indicate the name of the Voicemail box to be accessed, eg. "?Extn201" or "#Extn201". The ? indicates "collect Voicemail" and the # indicates "deposit Voicemail". This action is not supported by voicemail using IP Office Intuity emulation mode.

When used with Voicemail Pro, names of specific call flow start points can also be used to directly access those start points via a short code. In these cases ? is not used and # is only used if ringing is required before the start points call flow begins.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Collect.
- **Action Data:** *See above*.
- **Default Label:** VMCol.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
  - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.142 Voicemail Off

Disables the user's voicemail box from answering calls that ring unanswered at the users extension. This button function is largely obsolete as the Voicemail On 608 function toggles on/off.

This does not disable the user's mailbox and other methods of placing messages into their mailbox.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Off.
- **Action Data:** *None*.
- **Default Label:** VMOff.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
  - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.143 Voicemail On

Enables the user's voicemail mailbox to answer calls which ring unanswered or arrive when the user is busy.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail On.
- **Action Data:** *None*.
- **Default Label:** VMOn.
- **Toggles:** ✗.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**VMOn**	**VMOn**	Green on.
- Off.	**VMOn**	**VMOn**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✓ *(IP Office 4.2+)*
  - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:** Supported on Avaya T3 Classic, Comfort and Compact phones for IP Office 4.2+.
  - **Classic/Comfort icon:** Displays 🔔→✉. The background uses the same settings as the LED below.
  - **DSS Link LED:** On when set.

8.3.144 Voicemail Ringback Off

This button function is largely obsolete as the Voicemail Ringback On 609 function toggles on/off. Disables voicemail ringback to the user's extension.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Ringback Off.
- **Action Data:** *None.*
- **Default Label:** VMRB-
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

8.3.145 Voicemail Ringback On

Enables voicemail ringback to the user's extension. Voicemail ringback is used to call the user when they have new voicemail messages in their own mailbox or a hunt group mailbox for which they have been configured with message waiting indication.

The ringback takes place when the user's phone returns to idle after any call is ended.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Ringback On.
- **Action Data:** None.
- **Default Label:** VMRB+.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	**VMRB+**	**VMRB+**	Green on.
- Off.	**VMRB+**	**VMRB+**	Off.

- **User Admin:** 592 ✗.
- **Phone Support** 476
  Note that support for particular phone models is also dependant on the IP Office software level.
  - **Analog:** ✗
  - **1700 Series:** ✓
  - **20 Series:** ✓
  - **2400 Series:** ✓
  - **3600 Series:** ✗
  - **3700 Series:** ✗
  - **3810:** ✓
  - **4400 Series:** ✓
  - **5400 Series:** ✓
  - **4600 Series:** ✓*
  - **5600 Series:** ✓*
  - **6400 Series:** ✓
  - **9040:** ✓
  - **T3/T3 IP Series:** ✗
    - **Not 1703, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

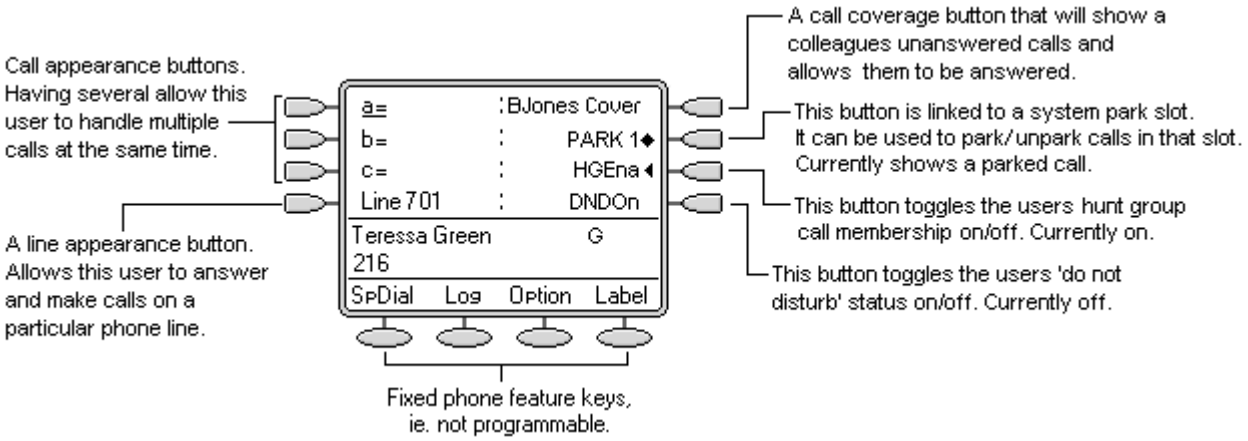
Chapter 9.
Key and Lamp Operation

9. Key and Lamp Operation

Many Avaya phones supported on IP Office have a programmable keys or buttons (the terms 'key' and 'button' mean the same thing in this context). Various actions can be assigned to each of these keys, allowing the phone user to access that action.

Many of the phones also have indicator lamps next to the programmable buttons. These lamps are used to indicate the status of the button, for example 'on' or 'off'. On other phones the programmable buttons use an adjacent area of the phones display to show status icons and text labels for the buttons.

- **Example**
  The example below shows the display and programmable buttons on an Avaya 5421 phone where a number of programmable features have been assigned to the user.



- This type of phone displays text labels for the programmed features. On other phones a paper label may have to be updated to indicate the programmed feature.

IP Office 3.0* and higher supports four 'appearance' actions - Call Appearance, Bridged Appearance, Line Appearance and Call Coverage Appearance. These actions can be assigned to the programmable buttons on a user's phone. Those 'appearance' buttons can then be used to answer, share, switch between and in some case make calls. This type of call handling is often called 'key and lamp mode'.

This document covers the programming and operation of phones using the appearance functions. Details of the other actions that can be assigned to programmable keys are covered in Button Programming 468.

Note

- *IP Office 3.0DT does not support appearance buttons.
- For all the examples within this documentation, the **Auto Hold** function is on and **Answer Pre-Select** (4.0+) is off unless otherwise stated.
- The text shown on phone displays are typical and may vary between phone types, locales and IP Office software releases.

9.1 Appearance Button Features

Appearance functions are only supported on Avaya phones which have programmable buttons and also support multiple calls, see IP Office Phones 478. Appearance functions are also only supported on those buttons that have suitable adjacent indicator lamps or a display area. Appearance buttons are not supported across Small Community Networks (SCN).

IP Office 4.2

The following key and lamp operation features were added in IP Office 4.2:

- **Line Appearances Supported on T3/T3 IP Phones** 635
  These phones can now use line appearance buttons. They can do this without needing any call appearance buttons which, along with call coverage and bridged appearance buttons, they do not support.

IP Office 4.1

The following key and lamp operation features were added in IP Office 4.1:

- **Abbreviated Ring** 656
  By default, once a user has a connected call, any addition calls alert with just a single ring, referred to as an abbreviated ring. For IP Office 4.1+ this can be changed to full ringing for additional calls. This is done through the **Abbreviated Ring** 265 (User | Telephony Multi-line Options) 268 option within the IP Office configuration.
- **Twinned Line/Bridge/Coverage Appearances**
  Users with internal twinning have calls alerting at both a primary and secondary phone. Previously that only applied to calls alerting on call appearance buttons. The **User | Twinning** options **Twin Bridge Appearances**, **Twin Coverage Appearances** and **Twin Line Appearances** cause any calls alerting on those buttons on the users primary phone to also alert on the secondary phone. Note that twinning at the secondary ignores any ring delay settings.

IP Office 4.0

The following key and lamp operation features were added in IP Office 4.0:

- **Delayed Ring Preference** 647
  This user telephony setting works in conjunction with the user's **Ringing Line Preference** setting. It sets whether ringing line preference should use or ignore the ring delay applied to the user's appearance buttons.
- **Answer Pre-Select** 643
  Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling the user telephony setting **Answer Pre-Select** allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call. To answer a call when the user has **Answer Pre-Select** enabled, the user must press the alerting button to display the call details and then either press the button again or go off-hook.
- **Reserve Last CA** 653
  Phones with appearance buttons require a free call appearance button to perform actions such as call transfers. However it is possible in some scenarios for all available call appearances to be occupied or alerting. The user telephony setting **Reserve Last C**A can be used to restrict the user's last call appearance button for outgoing calls only.

IP Office 3.2

The following key and lamp operation feature was added in IP Office 3.2:

- **Ring Delay** 645
  IP Office 3.2 adds the option of ring delay for each appearance buttons. Each individual appearance button can be set to immediate ring, delayed ring or no ring. This setting does not alter the visual alerts given when the button receives a call. The delay used for all buttons is set by the system or overridden by the user's own delay setting.

IP Office 3.0

The following key and lamp operation features were added in IP Office 3.0:

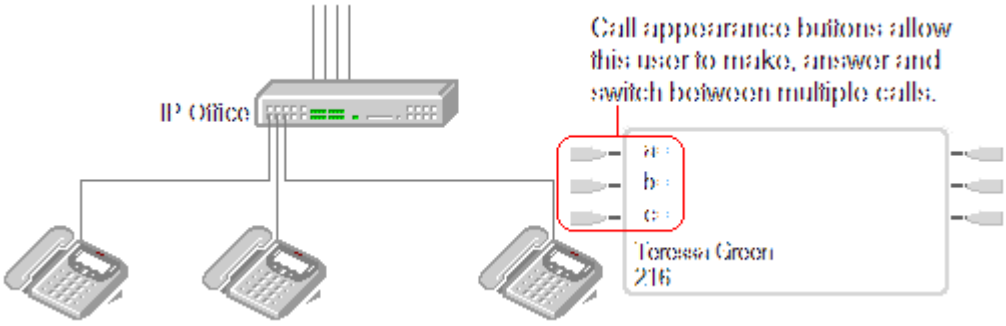
- **Call Appearance Buttons** 615
  These are used to alert the phone user of calls to their extension number or a hunt group of which they are a member. Multiple call appearance buttons allow the user to handle multiple calls simultaneously.
- **Call Coverage Buttons** 626
  A call coverage button can alert the user when a selected colleague has an unanswered call. The covered user does not need to be using appearance buttons.

- **Bridged Appearance Buttons** 620
  A bridged appearance button shows the user the status of one of a colleague's call appearance buttons. They can then answer and make calls on the colleague's behalf.
- **Line Appearance Buttons** 630
  These buttons show the user when a particular IP Office line is in use. The button can also be used to answer and make calls on that line. Supported for analog, E1 PRI, T1, T1 PRI, and BRI PSTN trunks. Not supported for E1R2, QSIG and IP trunks.
- **How Many Appearance Buttons can a user have?** 658
  The recommended limits are as follows:
  - A minimum of 3 call appearance buttons except on phones that only support two physical programmable buttons.
  - A maximum of 10 bridged appearances to the same call appearance.
  - A maximum of 10 line appearances to the same line.
  - A maximum of 10 call coverages of the same covered user.
- **Selected Button Indication** 636
  At any time, one appearance button can be indicated as the current selected button. It will then be the button used to make or answer a call if the user just goes off hook without pressing a particular button. There are a number of ways in which the current select button is determined.
  - **Idle Line Preference** 637
    Sets the current selected button to the first available call appearance or line appearance button.
  - **Ringing Line Preference** 640
    Sets the current selected button to the longest alerting appearance button.
  - If the user is already on a call then the selected button indication is given to the appearance button currently in use.
- **Auto Hold** 644
  When a user active on a call on one appearance button presses another appearance button, the system can either hold or disconnect the current call. Which action is used is set by the IP Office system's **Auto Hold** setting which for IP Office 4.0+ is on by default.
- **Collapsing Appearances** 649
  When several calls, on separate appearance buttons, are combined into a single conference, the active appearance buttons will collapse onto a single appearance button.
- **Joining a Call** 650
  Appearance buttons can indicate calls in progress between other users. That button can then, subject to some intrusion rules, also be used to join that call.
- **Multiple Alerts** 652
  It is possible for a single call to potentially alert of several appearance buttons. In such cases the IP Office employs a series of rules as to which appearance button will be used.

9.2 Call Appearance Buttons

Call appearance buttons are used to display alerts for incoming calls directed to a user's extension number or to a hunt group of which they are a member. Call appearance buttons are also used to make outgoing calls.

By having several call appearance buttons, a user is able to be alerted about several calls, select which call to answer, switch between calls and take other actions.



When all the user's call appearance buttons are in use or alerting, any further calls to their extension number receive busy treatment. Instead of busy tone, the user's forward on busy is used if enabled or otherwise voicemail if available.

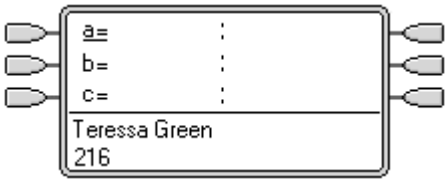
Call appearance buttons are the primary feature of key and lamp operation. None of the other appearance button features can be used until a user has some call appearance button programmed[1].

There are also addition requirements to programming call appearance buttons:

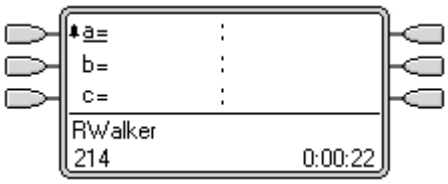
- Call appearance buttons must be the first button programmed for the user, followed by any further call appearance buttons in a continuous block.
- Programming a single call appearance button for a user is not supported. The normal default is 3 call appearances per user except on phones where only two physical buttons are available.
- [1] For IP Office 4.2+, T3 phones support the use of Line Appearance buttons. These can be programmed against buttons on T3 phones without requiring call appearance buttons. See T3 Phone Line Appearances 635.

9.2.1 Example 1

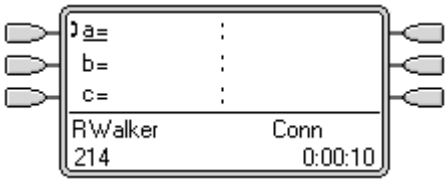
In this example, the user has multiple call appearance buttons.



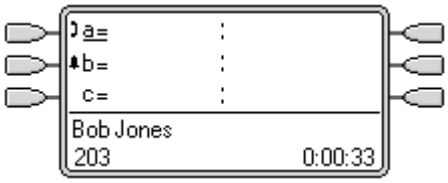
1. Phone Idle
The phone is currently idle.



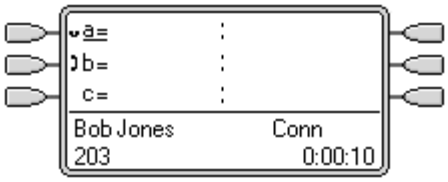
2. First Call Alerts
A call arrives. It alerts against the first available call appearance button. Pressing that button will answer the call.



3. Call Answered
The call is now connected.



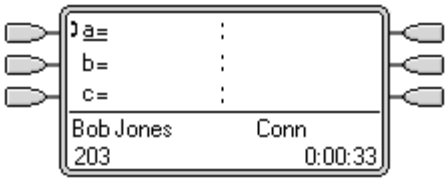
4. Second Call Alerts
A second call arrives whilst the first is still connected. It alerts against the next available call appearance button. As the user has a call in progress, the alert gives just a single ring and briefly display details of the caller.



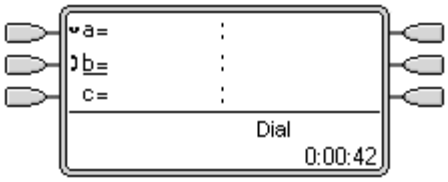
5. Pressing the Second Call Appearance
Pressing the second call appearance button will hold the first call and answer the second.

9.2.2 Example 2

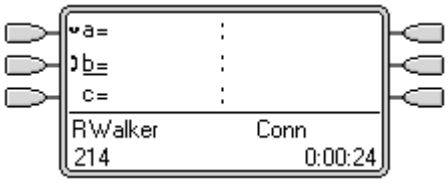
In this example, the user will use their call appearances to make two calls and start a conference between those calls.



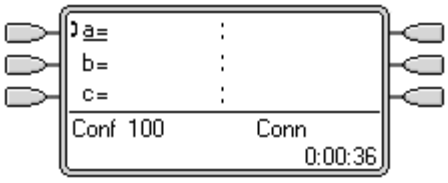
1. Initial Call
The user has a call in progress, shown on their first call appearance button. It is decided to conference another user into the call.



2. Make Conference Enquiry
Pressing the **CONFERENCE** button on the users phone automatically places the current call on hold and takes the phone off hook on the next available call appearance.



3. Enquiry in Progress
The other extension has been dialed and invited to join a conference call. The user presses the **CONFERENCE** button on their phone again.



4. Conference Starts
The conference call has started. The separate call appearances have collapsed to a single appearance that represents the conference.

9.2.3 How are Call Appearance Buttons Treated?

For incoming calls

- **Call Waiting** settings are ignored except for hunt group call waiting where the call waiting tone is replaced by an alert on a call appearance button if available.
- **Follow Me**, **Forward Unconditional** and **Forward Hunt Group Calls** are used when set.
- If **Do Not Disturb** is set, only calls from numbers in the user's Do Not Disturb Exception list will alert if a call appearance is available.

Busy status

- **For calls direct to the user's extension number**
  The user is busy when all their available call appearances are in use. Instead of busy tone, the user's forward on busy is used if enabled or otherwise voicemail if available.
- **For calls to a hunt group of which the user is a member**
  The user is busy to further hunt group calls when they have any appearance button in use on their phone. The only exception is calls to a collective hunt group with call waiting.
- In both cases above, even when busy, the user may still receive alerts on other appearance buttons; for example call coverage, line appearance and bridged appearance buttons.

For outgoing calls

- Outgoing calls are treated exactly the same as calls made by non-appearance button users.
- External Calls made on a call appearance, which route out on a line for which the user also has a line appearance, will remain on the call appearance. The line appearance will indicate 'in use elsewhere'.

For call appearance buttons matched by a bridged appearance button

- If the bridged appearance is used to make or answer calls, the state of the call appearance will match that of the bridged appearance.
- If the call is put on hold by the bridged appearance user, the call appearance will show 'on hold elsewhere'.

Other

- **Held/Parked Call Timeout**
  If the user has parked a call, the parked call timer only starts running when the user is idle rather than on another call.
- Incoming calls routed directly to the user as the incoming call routes destination on a line for which the user also has a line appearance, will only alert on the line appearance. These calls do not follow any forwarding set but can be covered.

9.2.4 Button Indication

On phones with a text display area next to the button, by default **a=**, **b=** and so on is displayed. This can be replaced by another label if required.

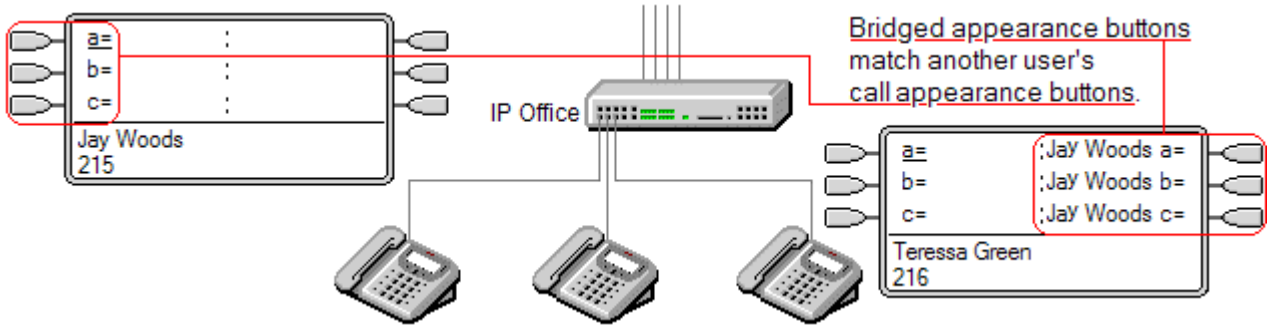
When the user is not connected to a call, the button indicated as selected is the button that will be used if the user goes off hook without pressing an appearance button. When a user is connected to a call, that call is the selected button.

The following table shows how the different states of call appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See Ring Delay 645.

5410/5420	4400 Series	Call Appearance Button State
CA1	 Red off, Green off.	**Idle** The call appearance is not in use and is not currently selected.
CA1	 Red on, Green off.	**Idle + Selected** The call appearance is not in use but is the current selected button that will be used if the user goes off hook.
CA1 Flashing icon.	 Red off, Green steady flash.	**Alerting** The matching call appearance is alerting for an incoming call. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
CA1 Flashing icon.	 Red on, Green steady flash.	**Alerting + Selected** As above but Ringing Line Preference has made this the user's current selected button.
CA1	 Red on, Green on.	**In Use Here** The user has a call connected on the call appearance or is dialing.
CA1	 Red off, Green on.	**In Use Elsewhere** The call appearance button is in use on a bridged appearance.
CA1	 Red off, Green fast flash.	**On Hold Here** The call has been put on hold by this user.
CA1	 Red off, Green intermittent flash.	**On Hold Elsewhere** A call on a bridged appearance button matched to the call appearance has been put on hold. Calls on a call appearance that are put on hold by another user will continue to show connected lamp status, though the phone display will indicate a held call.
CA1 Icon flashes off.	 Red off, Green broken flash.	**Inaccessible** The button pressed is not accessible. The call is still dialing, ringing or cannot be bridged into.

9.3 Bridged Appearance Buttons

A bridged appearance button shows the state of one of another user's call appearance buttons. It can be used to answer or join calls on that user's call appearance button. It can also be used to make a call that the call appearance user can then join or retrieve from hold.



When the user's call appearance button alerts, any associated bridged appearance buttons on other user's phones also alert. The bridged appearance buttons can be used to answer the call on the call appearance button user's behalf.

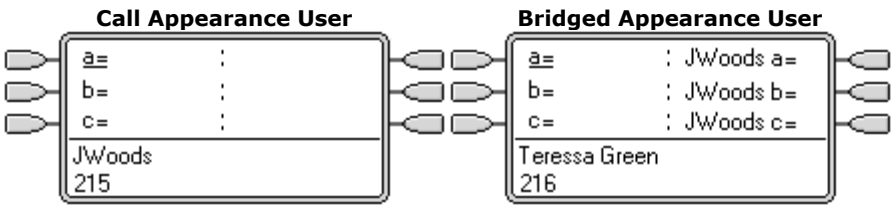
- When the call appearance button user answers or makes a call, any associated bridged appearance buttons on other users' phones show the status of the call, ie. active, on hold, etc. The bridged appearance button can be used to retrieve the call if on hold or to join the call if active (subject to intrusion permissions).

- **Note**
  Bridged appearance buttons are different from the action of bridging into a call (joining a call). See Joining Other Calls (Bridging) 650.

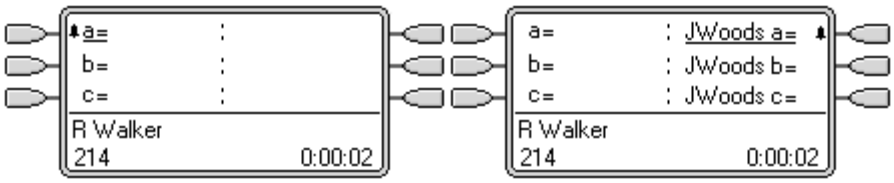
Bridged appearance buttons are not supported between users on different systems in a Small Community Network.

9.3.1 Example 1

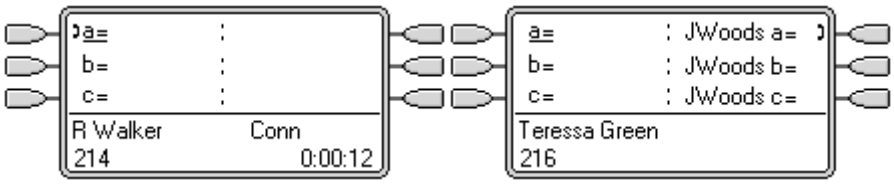
In this example, one user is able to see the status of the other user's call appearances, and when necessary answer calls for the other user. Both users have **Ringing Line Preference** and **Auto Hold** on.



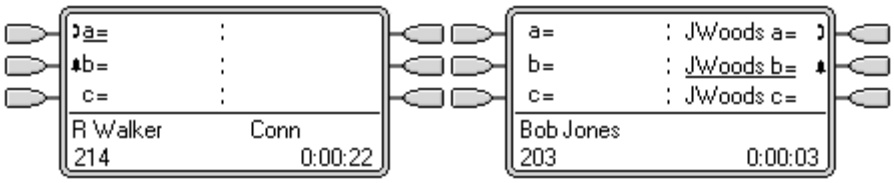
1. Both Phone Idle
Our user has bridged appearance buttons that match a colleague's call appearances buttons.



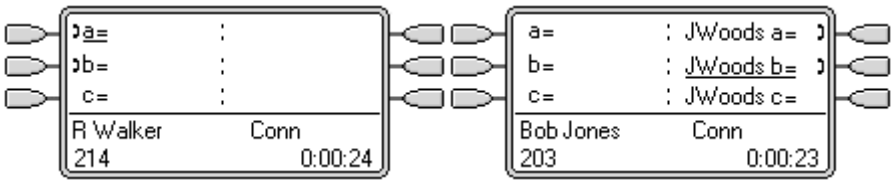
2. First Call
The colleague has a call alerting on their first call appearance button. It also alerts on our user's first bridged appearance button.



3. Call Answered
The colleague has answered the call. The bridged appearance indicates 'in use elsewhere'.



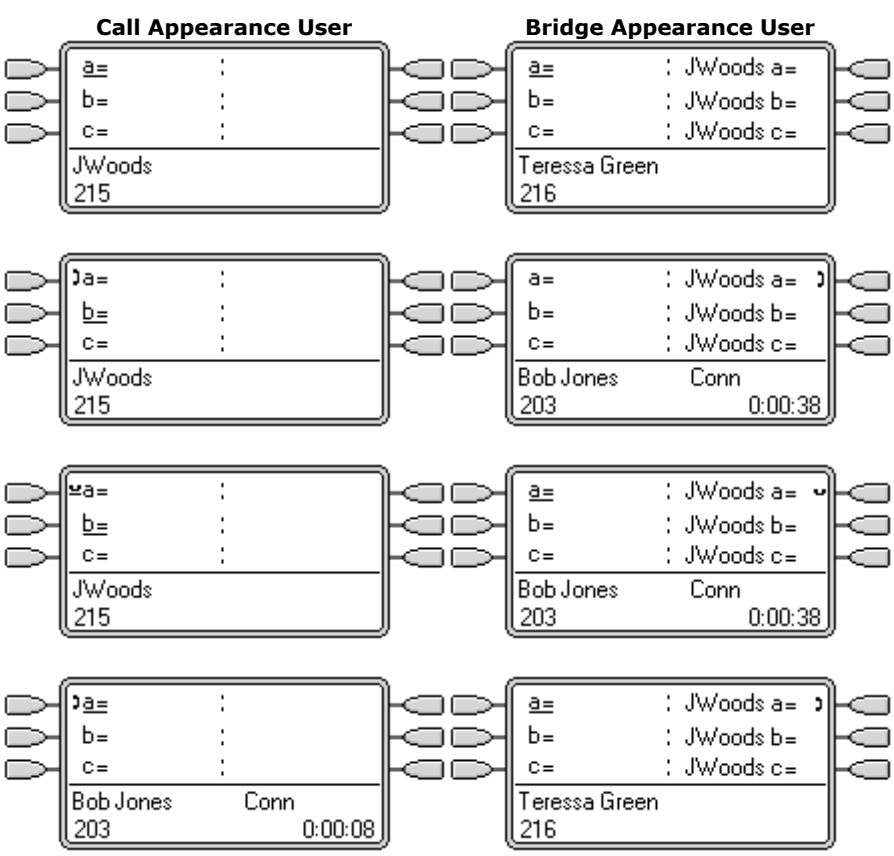
4. Second Call
Another call alerts at the colleagues phone and again is mirrored on our user's second bridged call appearance button.



5. Call Answered
Our user has gone off hook and answered the incoming call alerting on the bridged call appearance.

9.3.2 Example 2

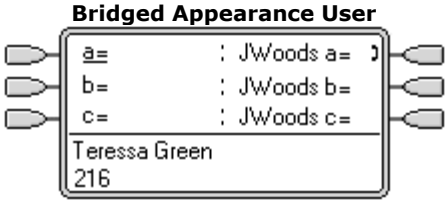
In this example, the bridged appearance user makes a call on behalf of the call appearance user. Once the call is connected, they put it on hold. The call appearance user is able to take the call off hold using their call appearance button. Both users have **Ringing Line Preference** and **Auto Hold** on.



1. **Both Phones Idle**
   Our user has bridged appearance buttons that match a colleague's call appearances buttons.
2. **Bridged User Makes Call**
   Our user has pressed a bridged appearance and made a call on it. The matching call appearance shows 'in use elsewhere'.
3. **Call Put on Hold**
   Having made the call, the bridged user puts it on hold. The matching call appearance indicates 'on hold elsewhere'.
4. **Call Taken Off Hold**
   By pressing the call appearance, the first user has answered the held call. The bridged appearance user returns to idle.

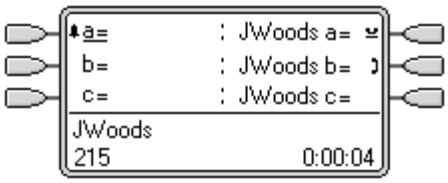
9.3.3 Example 3

In this example, a call is passed from the call appearance user to the bridged appearance user. Both users have **Ringing Line Preference** and **Auto Hold** on.



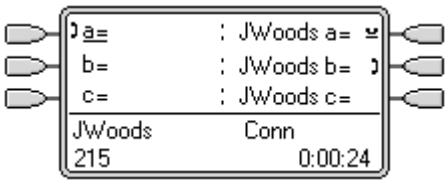
1. Call on Colleague's Phone

The call appearance user has answered a call on one of their call appearances. The bridged appearance user's matching bridged appearance shows 'in use elsewhere'.



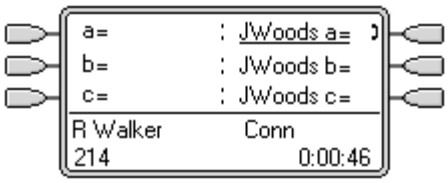
2. Call Held by Colleague

The call appearance user has put the call on hold and called the bridged appearance user. The first bridged call appearance shows a call 'on hold elsewhere' whilst the second matches the call between users.



3. Enquiry Call Between Colleagues

By going off hook, the bridged appearance user has answered the call from the call appearance user. They are asked to pickup the call on the colleagues first call appearance.



4. Call Taken Off Hold

Pressing the first bridged appearance button takes that call off hold and connects it to the bridged appearance user.

- In this example, **Auto Hold** is not set for the system, so pressing the bridged appearance button disconnected the call from the colleague.
- If **Auto Hold** had been set, the colleague's call would have been put on hold until they hung up.

9.3.4 How are Bridged Appearances Treated?

Bridged appearance buttons operate in parallel with their matching call appearance button.

- **Whose user settings control the call?**
  Until answered on a bridged appearance button, calls alerting on a bridged appearance button follow the settings of the user or hunt group to which the call was originally directed.
- If the call appearance is in use, any matching bridged appearance will indicate the same.
- If a bridged appearance is in use, the call appearance it matches will indicate the same.
- The bridge appearance will only alert if the call appearance is alerting. For example, direct intercom and paging call to the call appearance will show on the bridged appearance but will not give any audible alert.
- If the bridged appearance user put the call on hold, the call appearance will indicate 'on hold elsewhere'.
- Bridged appearances to a user who has logged out, or has logged onto a non-multi line phone, will not operate.
- If the bridged appearance user has 'do not disturb' (DND) enabled, the bridge appearance button icon or lamps will still operate but alerting and ringing line preference selection are not applied unless the caller is in their DND exception list.

Bridged appearance buttons are not supported between users on different systems in a Small Community Network.

9.3.5 Button Indication

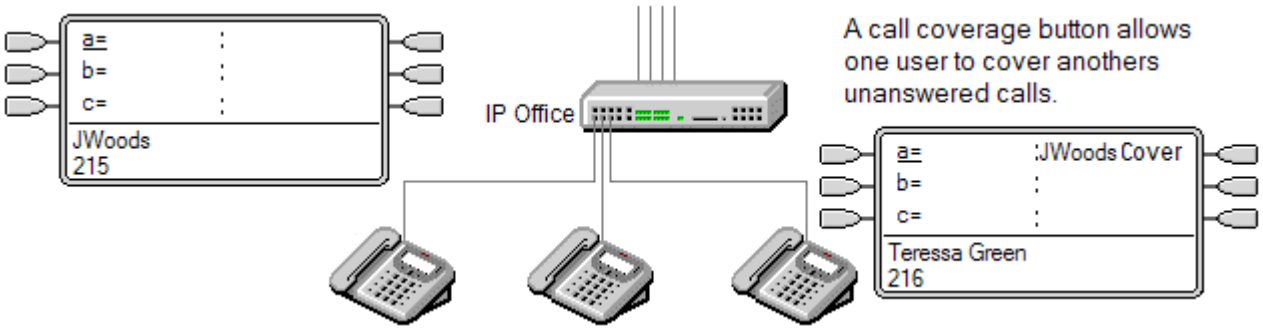
On phones with a text display area next to the button, the name of the bridged user and the label from the bridged user's call appearance key are displayed.

The following table shows how the different states of bridged appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See Ring Delay 645.

5410/5420	4400 Series	Bridge Appearance Button State
JWoods CA1	 Red off, Green off.	**Idle** The bridged appearance is not in use.
JWoods CA1 Flashing icon.	 Red off, Green steady flash.	**Alerting** The matching call appearance is alerting for an incoming call. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
JWoods CA1 Flashing icon.	 Red on, Green steady flash.	**Alerting + Selected** As above but Ringing Line Preference has made this the user's current selected button.
JWoods CA1	 Red off, Green on.	**In Use Elsewhere** The matching call appearance button is in use.
JWoods CA1	 Red on, Green on.	**In Use Here** The user has made a call or answered a call on the bridged appearance, or bridged into it.
JWoods CA1	 Red off, Green fast flash.	**On Hold Here** The call has been put on hold by this user.
JWoods CA1	 Red off, Green intermittent flash.	**On Hold Elsewhere** The call on that call appearance has been put on hold by another user.
JWoods CA1 Icon flashes off.	 Red off, Green broken flash.	**Inaccessible** The button pressed is not accessible. The call is still dialing, ringing or cannot be bridged into.

9.4 Call Coverage Buttons

Call coverage allows a user to be alerted when another user has an unanswered call.



The user being covered does not necessarily have to be a key and lamp user or have any programmed appearance buttons. Their Individual Coverage Time setting (default 10 seconds) sets how long calls will alert at their extension before also alerting on call coverage buttons set to that user.

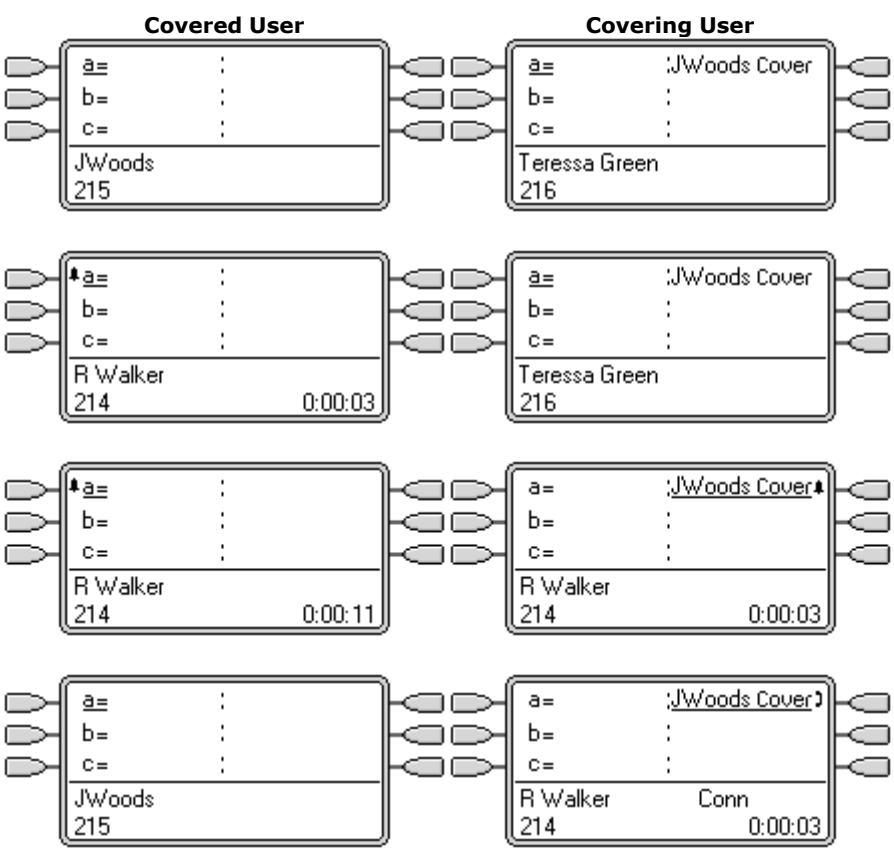
The user doing the covering must have appearance buttons including a call coverage appearance button programmed to the covered users name.

- Note: Call coverage has been supported from IP Office 1.3. However the method of programming and operation has changed with IP Office 3.0. Users of pre-3.0 IP Office systems that used call coverage should refer to "Upgrading from Pre 3.0 IP Office" 661.

Call coverage appearance buttons are not supported between users on different systems in a Small Community Network.

9.4.1 Example 1

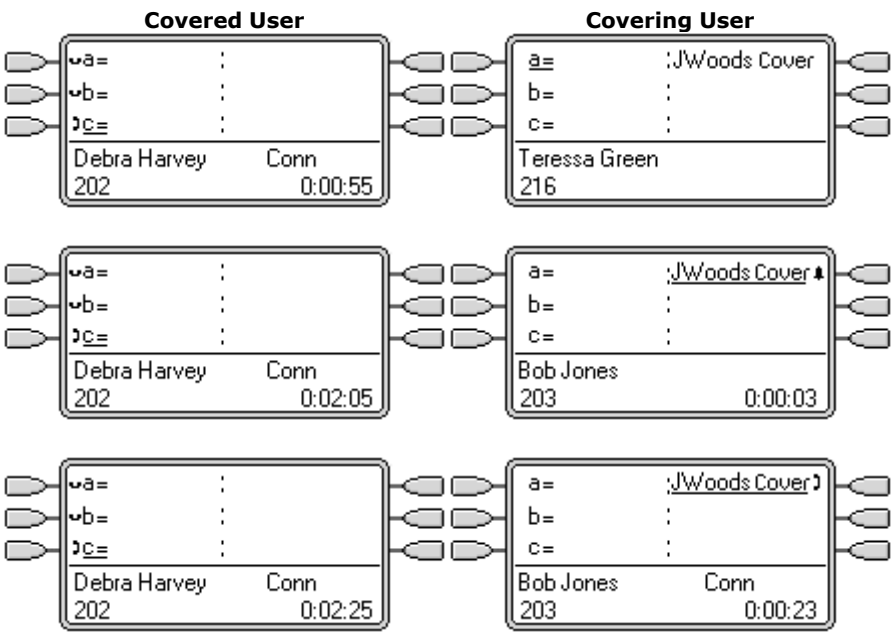
In this example, the covering user is able to answer their colleagues call when it rings unanswered. Both users have **Ringing Line Preference** and **Auto Hold** on.



1. **Both Phones Idle**
   Our user has a call coverage button to cover their colleague.
2. **Call to Covered User**
   A call arrives for the covered user.
3. **Call Alerts to Coverage**
   After ringing for the covered user's Individual Coverage Time, the call also begins alerting on the call coverage button .
4. **Covering User Answers**
   By going off hook or pressing the alerting button, the covering user has answered the call.

9.4.2 Example 2

In this example, the covered user has calls on all their available call appearances. Both users have **Ringing Line Preference** and **Auto Hold** on.



1. **Calls in Progress**
   The covered user already has a number of calls in progress on all their call appearance keys.
2. **Call Alerts to Coverage**
   The covered user is treated as busy, so their next call goes immediately to call coverage.
3. **Covering User Answers**
   The covering user has answered the call.

9.4.3 How is Call Coverage Treated?

Whose user settings control the call?

- **Until answered, calls alerting on a call coverage button follow the settings of the user to which the call was originally directed.**
- **Once answered, the call follows the user settings of the user who answered it.**

Coverage is applied to:

- Internal calls dialed to the covered user's extension number.
- External calls routed to the covered user by an IP Office incoming call route.
- Calls forwarded internally by the covered user or on follow me from the covered user.

Coverage is not applied to:

- Hunt group calls to a hunt group of which the covered user is a member.
- Calls forwarded to the covered user using forward or follow me functions.
- Calls alerting on the covered user's bridged appearance and call coverage buttons.
- Coverage is only applied to calls alerting on a line appearance if the call was also routed to that user by an incoming call route.
- Page and intercom calls.
- Parked, transferred and held calls ringing back to the user.
- Automatic callback calls set by the covered user.
- Voicemail ringback calls.
- Call coverage appearance buttons are not supported between users on different systems in a Small Community Network.

Coverage is applied:

- If the covered user's phone is available, call coverage is applied only after the covered user's Individual Coverage Time has expired.
- If the covered user's phone is busy, call coverage is applied immediately.
- If the covered user is using follow me or forward all to an internal number to divert their calls, call coverage is still applied.
- If the covered user has 'do not disturb' on, call coverage is applied immediately except for calls from numbers in the covered user's do not disturb exceptions list.

Other items:

- If the call is not answered after the covered user's **No Answer Time** it will go to the covered user's voicemail if available or follow their forward on no answer settings.
- If the covered user has several alerting calls, the call answered by the call coverage button is the covered user's longest ringing call.
- Calls will not alert at a covering user who has 'do not disturb' enabled, except when the calling number is in the covering user's do not disturb exception list.

9.4.4 Button Indication

On phones with a text display area next to the button, the name of the covered user is displayed followed by the word ***Cover***.

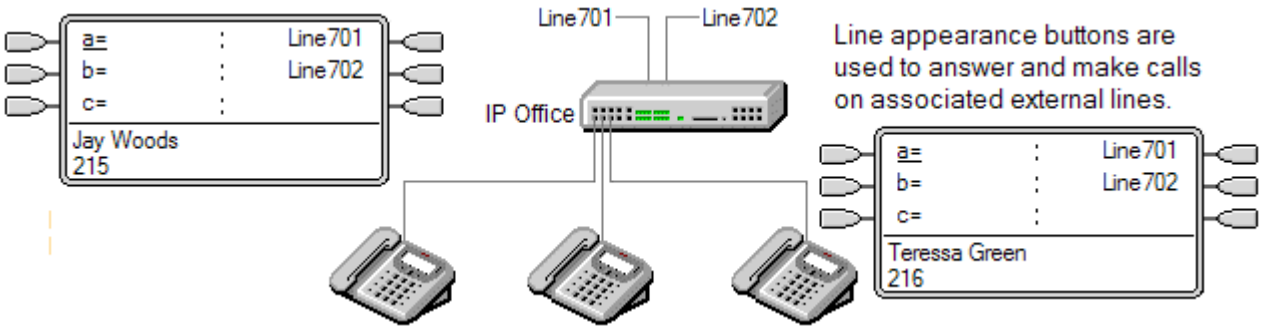
When the user is not connected to a call, the button indicated as selected is the button that will be used if the user goes off hook without pressing an appearance button. When a user is connected to a call, that call is the selected button.

The following table shows how the different states of call coverage appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See Ring Delay 645.

5410/5420	4400 Series	Call Coverage Button State
JWoods Cover	 Red off, Green off.	**Idle** The button is not in use.
JWoods Cover Flashing icon.	 Red off, Green steady flash.	**Alerting** The call coverage is alerting for an unanswered call at the covered user's phone. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
JWoods Cover Flashing icon.	 Red on, Green steady flash.	**Alerting + Selected** As above but Ringing Line Preference has made this the user's current selected button.
JWoods Cover	 Red on, Green on.	**In Use Here** The user has answered the call requiring coverage.
JWoods Cover	 Red off, Green fast flash.	**On Hold Here** The covered call has been put on hold by the call coverage button user.

9.5 Line Appearance Buttons

Line appearance buttons allow specific individual line to be used when making calls or answered when they have an incoming call. It also allows users to bridge into calls on a particular line.



IP Office incoming call routing is still used to determine the destination of all incoming calls. Line appearance buttons allow a call on a specific line to alert the button user as well as the intended call destination. When these are one and the same, the call will only alert on the line appearance but can still receive call coverage.

When alerting on suitable phones, details of the caller and the call destination are shown during the initial alert.

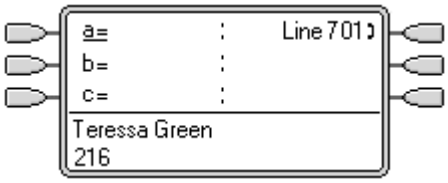
IP Office 3.0+ allows individual line appearance ID numbers to be assigned to selected lines on an IP Office system. Line appearance buttons are only supported for analog, E1 PRI, T1, T1 PRI, and BRI PSTN trunks; they are not supported for other trunks including E1R2, QSIG and IP trunks.

Line appearance buttons are not supported for lines on remote systems in a Small Community Network.

- **Using Line Appearances for Outgoing Calls**
  In order to use a line appearance to make outgoing calls, changes to the normal external dialing short codes are required. For full details see Outgoing Line Programming 660.
- **Private Lines**
  Special behaviour is applied to calls where the user has both a line appearance for the line involved and is also the Incoming Call Route destination of that call. Such calls will alert only on the Line Appearance button and not on any other buttons. These calls will also not follow any forwarding.
- **T3 Phone Line Appearances**
  For IP Office 4.2+ line appearances are supported on T3 and T3 IP phones, see T3 Phone Line Appearances 635.

9.5.1 Example 1

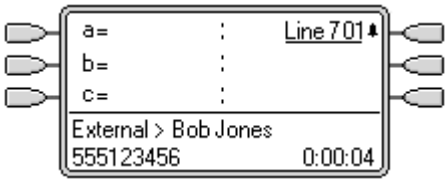
In this example, the user is able to answer a call alerting on a particular line.



1. Line Goes Active

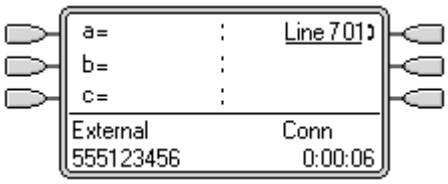
A call is active on the line with line ID number 601. This is indicated as 'in use elsewhere'.

- For an incoming call, the line will show active but will not alert until call routing has been determined. On analog ICLID lines, alerting is delayed until the ICLID that might be used to do the call routing has been received.



2. Line Appearance Alerting

The routing of the call has been complete and it is ringing against its destination. On our user's phone the line appearance also alerts and ringing line preference has made it the current selected button.

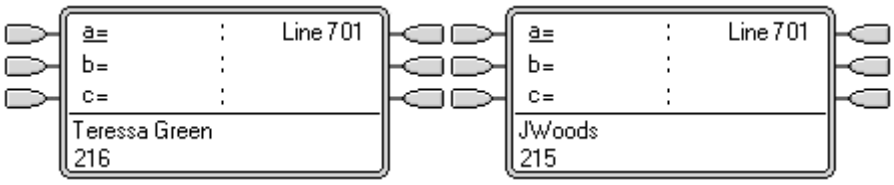


3. Answer Call

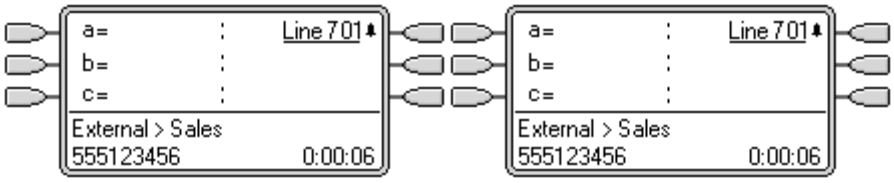
By going off hook or pressing the line appearance, our user has answered the call on that line.

9.5.2 Example 2

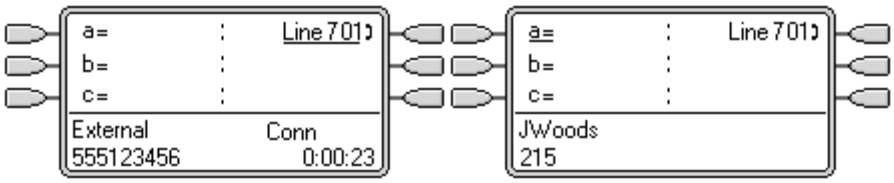
In this example, two users exchange a call using line appearance buttons set to the same line. Note that this requires that the user who first answers the call to have **Cannot be Intruded** off. Both users have **Ringing Line Preference** and **Auto Hold** on.



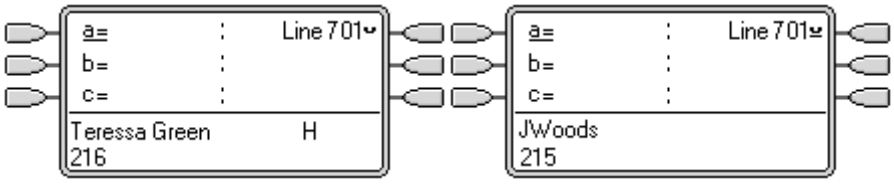
1. Idle
The two users has line appearances for the same line.



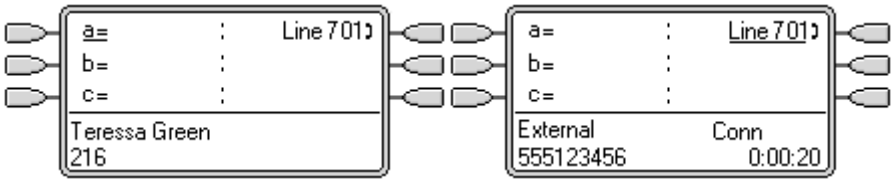
2. Call Alerts
A call arrives. Either user can answer it by pressing the alerting line appearance



3. Call Answered
The first user has answer the call.



4. Line Held
The first user has put the call on hold.



5. Line Retrieved
The second user has retrieved the held call by pressing the line appearance.

9.5.3 How are Line Appearances Treated?

Incoming Calls

- **Until answered using a line appearance button, incoming calls alerting on a line appearance, follow the settings of the incoming call route's destination group or user. They do not follow the settings of any line appearance user.**
- If an incoming calls destination is voicemail, or once the incoming call has passed from its destination to voicemail, it cannot be answered or bridged into using a line appearance button.
- If the line appearance user is also the incoming call routes destination, the call will alert on their line appearance only. In this case:
  - It will alert on the line appearance even if all call appearances are in use.
  - The call will not follow any of the user's forwarding settings.
  - The call will receive call coverage from other user's with call coverage buttons set to the line appearance user.
  - The ring delay used is that of the first free call appearance.
- For analog lines set to ICLID, any line appearances show active while the IP Office waits for ICLID information. During this time the line has not been routed and cannot be answered using a line appearance button.
- Calls alerting on a line appearance can also alert on a call coverage appearance on the same phone. If Ringing Line Preference is set, the current selected button will change from the line appearance to the call coverage appearance.
- If the line appearance user has do not disturb (DND) enabled, the line appearance button icon or lamps will still operate but alerting and ringing line preference selection are not applied unless the caller is in their DND exception list.

Outgoing Calls

- In order to be used for making outgoing calls, some additional system programming may be required. See Outgoing Line Programming 660.
- Calls made on a call appearance, which are routed out on a line for which the user also has a line appearance, will remain on the call appearance. The line appearance will indicate 'in use elsewhere'.

Additional Notes

- Calls alerting on a line appearance do not receive call coverage unless the user was the call's original incoming call route destination.
- If a call indicated by a line appearance is parked, it cannot be joined or unparked by using another line appearance.
- Where a line appearance button is used to answer a call for which automatic call recording is invoked, the recording will go to the automatic recording mailbox setting of the original call destination.
- Line appearance buttons are not supported for lines on remote systems in a Small Community Network.

9.5.4 Button Indication

On phones with a text display area next to the button, the label **Line** and the line number are displayed.

When the user is not connected to a call, the button indicated as selected is the button that will be used if the user goes off hook without pressing an appearance button. When a user is connected to a call, that call is the selected button.

The following table shows how the different states of line appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See Ring Delay 645.

5410/5420	4400 Series	Line Appearance Button State
Line 601	 All off.	**Idle** The associated line is not in use.
Line 601		**Idle + Selected** The associated line is not in use but the button is the user currently selected button.
Line 601 Flashing icon.	 Red off, Green steady flash.	**Alerting** The line is ringing at it incoming call route destination. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
Line 601 Flashing icon.	 Red on, Green steady flash.	**Alerting + Selected** As above but Ringing Line Preference has made this the user's current selected button.
Line 601	 Red off, Green on.	**In Use Elsewhere** The line is in use.
Line 601	 Red on, Green on.	**In Use Here** The user has answered the line, made a call on it or bridged into the call on the line.
Line 601	 Red off, Green fast flash.	**On Hold Here** The call on the line has been put on hold by this user.
Line 601	 Red off, Green intermittent flash.	**On Hold Elsewhere** The call on the line has been put on hold by another appearance button user.
Line 601 Icon flashes off.	 Red off, Green broken flash.	**Inaccessible** The button pressed is not accessible. The call is still dialing, ringing, routing or cannot be bridged into.

- For IP Office 4.2+ line appearances are supported on T3 and T3 IP phones, see T3 Phone Line Appearances 635.

9.5.5 T3 Phone Line Appearances

For IP Office 4.2+, line appearances are supported on T3 and T3 IP phones. As these phones do not support support call appearance, bridge appearance or call coverage appearance buttons the user can be programmed with just line appearance buttons.

Soft Key	LED Key	Line Appearance Button State
L601	Off	**Idle** The associated line is not in use.
✓**601**	Off	**Idle + Selected** The associated line is not in use but the button is the user currently selected button.
L601 alternating with bell symbol.	Fast flashing	**Alerting** The line is ringing at it incoming call route destination. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
L601 alternating with bell symbol.	Fast flashing	**Alerting + Selected** As above but Ringing Line Preference has made this the user's current selected button.
L601	On	**In Use Elsewhere** The line is in use.
✓**601**	On	**In Use Here** The user has answered the line, made a call on it or bridged into the call on the line.
L601 Slow flash	Slow flash	**On Hold Here** The call on the line has been put on hold by this user.
L601 Slow flash	Slow flash	**On Hold Elsewhere** The call on the line has been put on hold by another appearance button user.
-601	Off	**Inaccessible** The button pressed is not accessible. The call is still dialing, ringing, routing or cannot be bridged into. A single tone is also given.

Notes

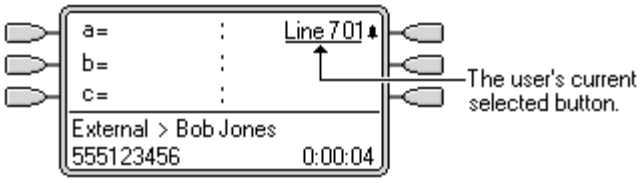
- **Hot Desking**
  The following applies to appearance button programmed for a user on a system with T3 phones.
  - **From a T3 Phone**
    If a T3 user with programmed line appearances but no programmed call appearances hot desks onto a phone type that requires call appearances, the phone will not operate correctly. This configuration is not supported by Avaya.
  - **To a T3 Phone**
    If appearance buttons other than line appearance are programmed for a user, when that user in on a T3 phone those other appearance buttons will be treated as blank. Depending on the button and type of T3 phone the button may assume its default T3 phone function. See T3 Compact 506, T3 Classic 507 and T3 Comfort 508.
- **Call Waiting**
  Line appearances will ignore the T3 phones user selected call waiting setting. So with a call connected and call waiting off, calls can still alert on line appearances.
- **Multiple Calls**
  T3 phones are limited to a maximum of 6 associated calls at any time, including calls connected, on hold and alerting.
- **Delayed Ringing**
  The only Ring Delay options supported are Immediate or No Ring. Any other delayed
- **Preference**
  Idle line preference is always used, however T3 phones will never default to using a line appearance for an outbound call.
- **Joining/Bridging**
  Joining a call active on a line appearance is supported. This is subject to the intrusion settings of the users involved. The call then becomes a conference call.

9.6 Other Appearance Controls

9.6.1 Selected Button Indication

During appearance button usage, one of the user's appearance buttons may be indicated as the user's current selected button. This is the appearance button already in use, or if idle, the appearance button that will be used if the user goes off hook by lifting the handset.

- On phones with a display area next to each button, the current selected button is indicated by either an _ underscore of the button label, a * star or a shaded background.



- On phones with twin LED lamps, the current selected button is indicated by the red lamp being on .
- On Transtalk 9040 phones, the current selected button is indicated by a ◂ icon.

The IP Office sets which appearance button is the current selected button using the following methods:

- **Idle Line Preference** 637
  This feature can be set on or off for each individual user, the default is on. When on, it sets the current selected button as the first available idle call appearance or line appearance button. See Idle Line Preference 637.
- **Ringing Line Preference** 640
  This feature can be set on or off for each individual user, the default is on. When on, it sets the current selected button as the button which has been alerting at the users phone for the longest. Ringing Line Preference overrides Idle Line Preference. See Ringing Line Preference 640.
- **Delayed Ring Preference:** 647 *4.0+.*
  This setting is used in conjunction with ringing line preference and appearance buttons set to delayed or no ring. It sets whether ringing line preference should observe or ignore the delayed ring applied to the user's appearance buttons when determining which button should have current selected button status.
- **User Selection**
  The phone user can override both **Idle Line Preference** and **Ringing Line Preference** by pressing the appearance button they want to use or answer. That button will then remain the current selected button whilst active.
  - If the user currently has a call connected, pressing another appearance button will either hold or disconnect that call. The action is determined by the IP Office system's **Auto Hold** 644 setting.
- **Answer Pre-Select:** 643 *4.0+*
  Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling the user telephony setting **Answer Pre-Select** allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call. To answer a call when the user has **Answer Pre-Select** enabled, the user must press the alerting button to display the call details and then either press the button again or go off-hook.

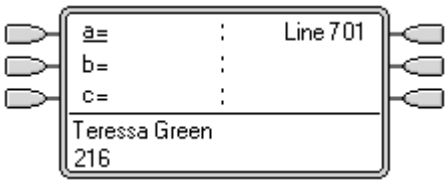
9.6.2 Idle Line Preference

Idle Line Preference determines the user's currently selected button as the first available idle call appearance or line appearance button. Selected button indication 636 is applied to that button and if the user goes off-hook, for example by lifting their handset, an outgoing call is started on that button.

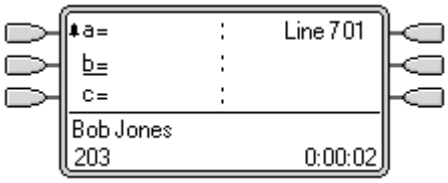
- **Idle Line Preference** is overridden by **Ringing Line Preference** if also on for the user.
- By default **Idle Line Preference** is on for all users.
- For appearance button users with **Idle Line Preference** off, going off-hook (lifting the handset or pressing **SPEAKER**, **HEADSET**, etc) will have no effect until an appearance button is pressed.
- If all the available call appearance and line appearance buttons are in use, no current selected button choice is made by **Idle Line Preference**. In this case, going off hook will have no effect.
- **?Why Would I Use Just Idle Line Preference**
  In environments that are focused on making outgoing calls, for example telemarketing, incoming calls are infrequent and user's go off-hook expecting to make a call. Using **Idle Line Preference** without **Ringing Line Preference** ensures that the user doesn't inadvertently answer a call when expecting to make a call.

Idle Line Preference Example 1

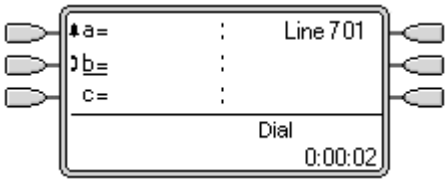
In this example, only **Idle Line Preference** has been programmed for the user. **Ringing Line Preference** has not been programmed. The user has three call appearance buttons and one line appearance button programmed.



1. **Phone Idle**
   The phone is idle. The current selected button determined by Idle Line Preference is the first available idle call appearance button. This is shown by the _ underscore of the button text.



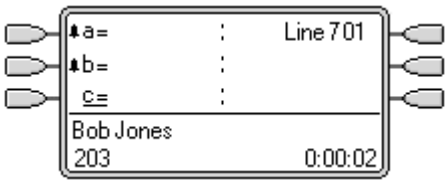
2. **First Call to User**
   A call for the user arrives. It alerts on the first available call appearance button. Idle Line Preference has changed the current selected button to the next available idle call appearance.



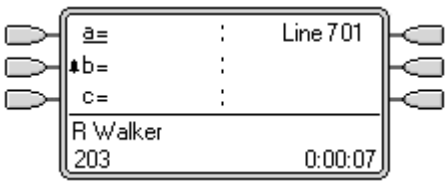
3. **User Goes Off Hook**
   With the call still alerting, if the user goes off hook, it will be interpreted as making a call using the currently selected button, not as answering the alerting button.
4. To answer the alerting call, the user should press the alerting button.

Idle Line Preference Example 2

In this example, only **Idle Line Preference** has been programmed for the user. **Ringing Line Preference** has not been not programmed. The user has three call appearance buttons and one line appearance button programmed.



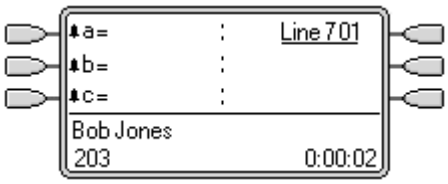
1. **Two Calls Alerting**
   The users has two incoming calls alerting. Idle Line Preference has set the currently selected button to their third call appearance.



2. **First Caller Abandons**
   If the first incoming caller disconnects, the currently selected button changes to the first call appearance as this is now the first available idle call or line appearance button.

Idle Line Preference Example 3

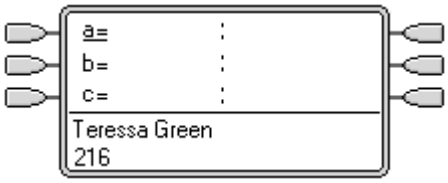
In this example, only **Idle Line Preference** has been programmed for the user. **Ringing Line Preference** has not been programmed. The user has three call appearance buttons and one line appearance button programmed.



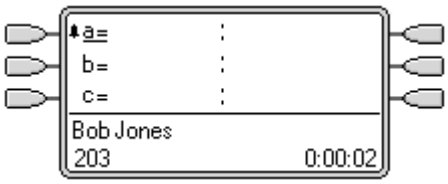
1. **All Call Appearances Alerting**
   In this case, all the users call appearance buttons are alerting incoming calls. Idle Line Preference has changed the currently selected button to the first available line appearance.

Idle Line Preference Example 4

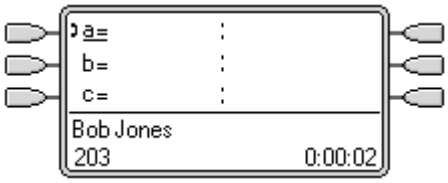
In this example, both **Idle Line Preference** and **Ringing Line Preference** are set for the user.



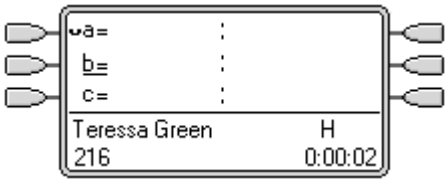
1. **Phone Idle**
   The phone is idle and ***Idle Line Preference*** has assigned current selected button to the first call appearance.



2. **Call Alerting**
   A call has arrived and ***Ringing Line Preference*** keeps the current selected button at the first call appearance.



3. **Call Answered**
   With the call answered it retains current selected button status.



4. **Call Held**
   When the call is put on hold, ***Idle Line Preference*** assigns current selected button status to the next available call appearance button.

9.6.3 Ringing Line Preference

Ringing Line Preference determines the user's currently selected button as the button which has been alerting the longest. Selected button indication 636 is applied to that button and if the user goes off-hook, for example by lifting their handset, the alerting call on that button is answered.

Ringing Line Preference includes calls alerting on call appearance, line appearance, bridged appearance and call coverage buttons.

- **Ringing Line Preference** overrides **Idle Line Preference**.
- By default **Ringing Line Preference** is on for all users.
- **Ringing Line Preference Order**
  When a user's longest waiting call alerts on several of the user's appearance buttons and Ringing Line Preference is set for the user, the order used for current selected button assignment is;

  .1.Call appearance.

  .2.Bridged appearance.

  .3.Call coverage.

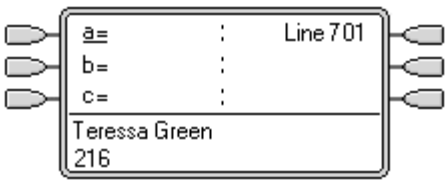
  .4.Line appearance.

  .5.**Example:**
  A user has a call to a covered user alerting initially on a line appearance button. Ringing Line Preference assigns current selected button status to the line appearance. When the same call also begins to alert on the call coverage appearance button, current selected button status switches to the call coverage appearance button.
- **Ring Delay and Ringing Line Preference**
  For IP Office 3.2 and higher appearance buttons can be set to ***Delayed Ring*** or ***No Ring***. These buttons still alert visually but do not give an audible ring or tone. Ringing line preference is still applied to alerting buttons even if set to ***Delayed Ring*** or ***No Ring***.

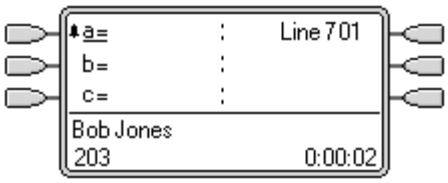
  .1.**Delayed Ring Preference**
  For IP Office 4.0 and higher, for users with Ringing Line Preference selected, their **Delayed Ring Preference** setting sets whether ringing line preference is uses or ignores buttons that are visually alerting but have ***Delayed Ring*** or ***No Ring*** set. The default is off, ie. ignore ring delay.

Ringing Line Preference Example 1

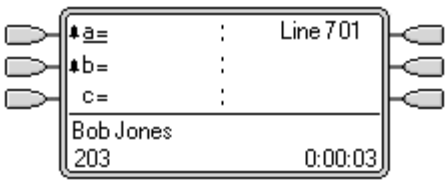
In this example, both **Ring Line Preference** and **Idle Line Preference** have been set for the user. The user has three call appearance buttons and one line appearance button programmed. They also have **Ringing Line Preference** on and **Auto Hold** is on. **Answer Pre-Select** is off.



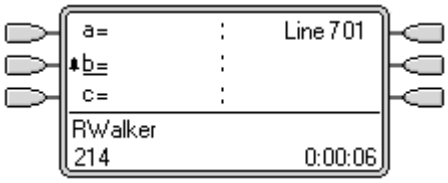
1. Phone Idle
The phone, an IP Office 5420, is idle. The current selected button has been determined by Idle Line Preference as the first available idle call appearance button. This is shown by the _ underscore next to that button.



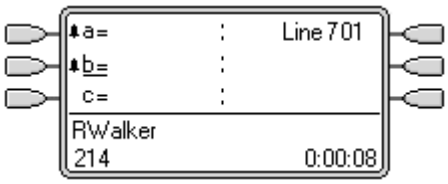
2. First Call Alerting
A call for the user arrives. It alerts on the first available call appearance button. Ringing Line Preference uses this as the currently selected button as it is the only alerting call.



3. Second Call Alerting
Another call for the user arrives. It alerts on the next available call appearance button. As the first call has been alerting longer, under Ringing Line Preference it retains the currently select button status.



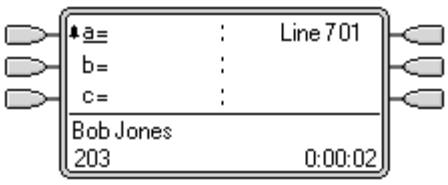
4. The First Call Abandons
The first caller disconnects. Ringing Line Preference changes the currently selected button status to the second call appearance button.



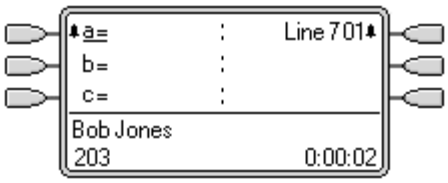
5. Another Call Arrives
Another call arrives. It alerts as the first free call appearance button. However the call at the second call appearance has been alerting longer and so under Ringing Line Preference retain the currently selected button status.

Ringing Line Preference Example 2

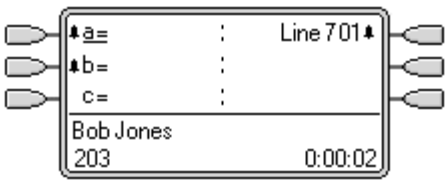
In this example, the user has both Ring Line Preference and Idle Line Preference programmed. The user has three call appearance buttons and one line appearance button programmed. They also have **Ringing Line Preference** on and **Auto Hold** is on. **Answer Pre-Select** is off.



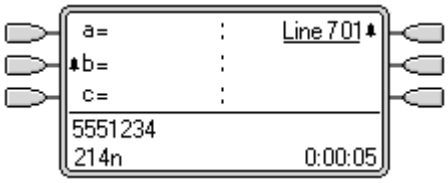
1. **First Call to User**
   A call for the user arrives. It alerts on the first available call appearance button. Ringing Line Preference uses this as the currently selected button as it is the only alerting call.



2. **Call on Line 601**
   The user's Line Appearance is alerting due to an incoming call on the associated line. Details of the call and its destination are shown. Ringing Line Preference keeps the currently selected button status on the call appearance button as this has been alerting longest.



3. **Second Call to User**
   A second call to the user arrives and alerts on the second call appearance button. Ringing Line Preference keeps the currently selected button status on the call appearance button as this has been alerting longest.



4. **The First Caller Abandons**
   The first call to the user disconnects. Ringing Line Preference passes the currently selected button status to the Line Appearance button as this has been alerting longest.

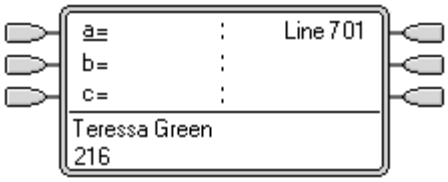
9.6.4 Answer Pre-Select

On some phones only the details of the call alerting or connected on the current selected button are shown. The details of calls alerting on other buttons are only shown briefly when they are first presented and are then replaced again by the details of the call on the current selected button.

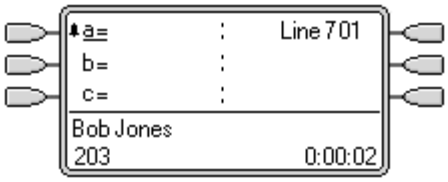
By default pressing any of the other alerting buttons will answer the call on that button. IP Office 4.0+ supports Answer Pre-Select which can be set individually for each user. Answer pre-select allows a user to press alerting buttons other than the current selected button without actually answering them. Instead the button pressed becomes the current selected button and its call details are displayed.

Note that using answer pre-select with a currently connected call will still either hold or end that call in accordance with the IP Office system's **Auto Hold** 644 setting.

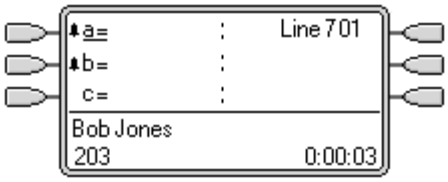
Answer Pre-Select Example 1



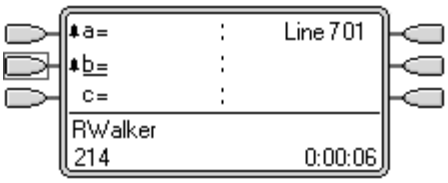
1. Phone Idle
The phone is idle. The current selected button has been determined by Idle Line Preference as the first available idle call appearance button. This is shown by the _ underscore next to that button.



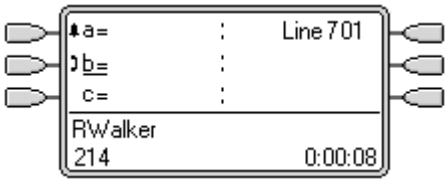
2. First Call Alerting
A call for the user arrives. It alerts on the first available call appearance button. Ringing Line Preference uses this as the currently selected button as it is the only alerting call.



3. Second Call Alerting
Another call for the user arrives. It alerts on the next available call appearance button. As the first call has been alerting longer, under Ringing Line Preference it retains the currently select button status.



4. The User Presses the Second Call Appearance
Pressing the second call appearance overrides ringing line preference and assigns current selected button status to the button without actually answering the call. The details of the caller are displayed.



5. The User Answers the Call
The user can press the button again to answer the call or just go off-hook to answer as it is now the currently selected button.

9.6.5 Auto Hold

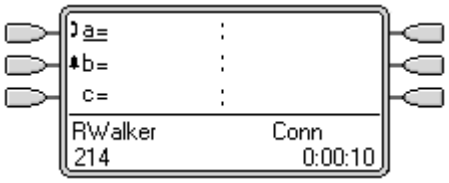
Auto Hold is a system wide feature that affects all appearance button users. This feature determines what happens when a user, who is already on a call, presses another appearance button. The options are:

- If **Auto Hold** is ***off***, the current call is disconnected.
- If **Auto Hold** is ***on***, the current call is placed on hold.

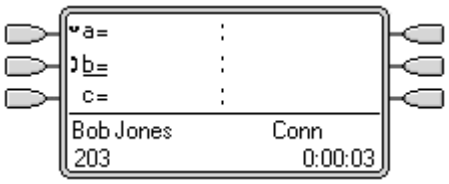
On IP Office 4.0 and higher systems **Auto Hold** is ***on*** by default. On previous levels of IP Office software the default for US was ***off***.

Auto Hold Example 1

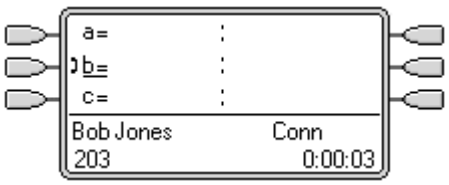
In this example, the user has two calls currently shown on call appearance buttons. **Answer Pre-Select** is off.



1. This user has three call appearance buttons. They have answer one call and are still connected to it, shown by the icon. A second call is now alerting on their second call appearance button, shown by the icon.
2. What happens when the user presses the second call appearance key is determined by the IP Office system's **Auto Hold** setting:



- **Auto Hold On**
  When the second call appearance key is pressed, that call is answered and the first call is put on hold, shown by the icon. The user can switch between calls using the call appearance buttons and make/receive other calls if they have additional call appearance buttons



- **Auto Hold Off**
  When the second call appearance key is pressed, that call is answered and the first call is disconnected.

9.6.6 Ring Delay

IP Office systems running IP Office 3.2+ software support the option of ring delay on appearance buttons. This option can be used with all types of appearance buttons and can be selected separately for each appearance button a user has. Using ring delay does not affect the buttons visual alerting through the display, and display icons or button lamps.

Ring delay is typically used with line appearance buttons for lines which a user wants to monitor but does not normally answer. However ring delay can be applied to any type of appearance button.

The selectable ring delay options for an appearance button are listed below. The option is selected as part of the normal button programming process.

- **Immediate**
  Provide audible alerting as per normal IP Office operation.
- **Delayed Ring**
  Only provide audible alerting after the system ring delay or, if set, the individual user's ring delay.
- **No Ring**
  Do not provide any audible alerting.

There are two possible sources for the delay used when delayed ringing is selected for a button.

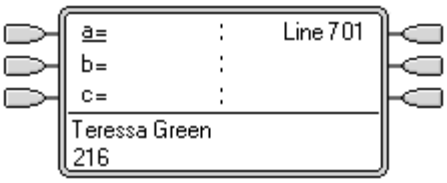
- **System | Telephony | Telephony | Ring Delay:** 177 *Default = 5 seconds, Range 1 to 98 seconds.*
  This is the setting used for all users unless a specific value is set for an individual user.
- **User | Telephony | Multi-line Options | Ring Delay:** 265 *Default = Blank (Use system setting), Range 1 to 98 seconds.*
  This setting can be used to override the system setting. It allows a different ring delay to be set for each user.

Notes

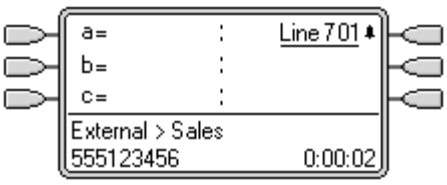
- **Calls That Ignore Ring Delay**
  Ring delay is not applied to hold recall calls, park recall calls, transfer return calls, voicemail ringback calls and automatic callback calls. For phones using Internal Twinning, ring delay settings are not applied to calls alerting at a secondary twinned extension (except appearance buttons set to ***No Ring*** which are not twinned).
- **Auto Connect Calls**
  For IP Office 3.2 and 4.0, auto-connected calls such as Internal Auto-Answer override Ring delay. For IP Office 4.1 +, ring delay is applied to these calls before auto-connection. This does not apply to page calls.
- **Multiple Alerting Buttons**
  Where a call is presented on more than one button on a user's phone, see Multiple Alerting Buttons 652, the shortest delay will be applied for all the alerting buttons. For example, if one of the alerting buttons is set to **Immediate**, that will override any alerting button set to **Delayed Ring**. Similarly if one of the alerting buttons is set to **No Ring**, it will be overridden if the other alerting button is set to **Immediate** or **Delayed Ring**.
- **Line Appearance Buttons**
  Calls routed to a user that could potentially be presented on both a call appearance button and a line appearance button are only presented on the line appearance button. In this scenario, the ring delay settings used is that of the first free call appearance button.
- **Delay on Analog Lines**
  Analog lines set to Loop Start ICLID already delay ringing whilst the IP Office waits for the full ICLID in order to resolve incoming call routing. In this scenario the ring delay operates in parallel to the routing delay.
- **Ring Delay and Ringing Line Preference**
  For IP Office 3.2 and higher appearance buttons can be set to ***Delayed Ring*** or ***No Ring***. However ringing line preference is still applied to alerting buttons even if set to ***Delayed Ring*** or ***No Ring***.
  - For IP Office 4.0 and higher, the user's **Delayed Ring Preference** setting is used to determine whether ringing line preference is used with or ignores buttons that are alerting but have ***Delayed Ring*** or ***No Ring*** set.

Ring Delay Example 1

In this example, the user has a line appearance button set but configured to no ring.



1. **Phone Idle**
   The phone is idle. The current selected button has been determined by Idle Line Preference as the first available call appearance button. This is shown by the _ underscore next to that button.



2. **Incoming Call Alerting on the Line**
   An incoming call arrives on the line and begin to alert somewhere on the system. The user's line appearance button shows this visually but doesn't ring audibly. Ringing line preference would makes the line appearance the user's currently selected button and therefore they would answer the line if they went off-hook.

9.6.7 Delayed Ring Preference

When a call is alerting at a phone, Ringing Line Preference sets the call as the currently selected button and if the user then goes off-hook they will answer that call.

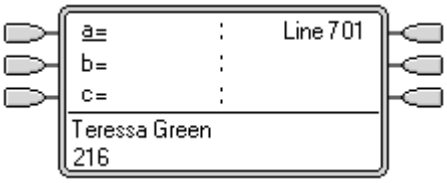
In most situations this is acceptable as the user hears ringing which informs them that there is a call waiting to be answered. If the user wants to make a call instead they can press another call appearance button to go off-hook on that other button.

When ring delay is being used there can potentially be a problem if the user lifts the handset to make a call without looking at the display. If they do this while the a call is alerting silently on a button with ring delay, the user will actually answer the waiting call rather than get dial tone to make a call.

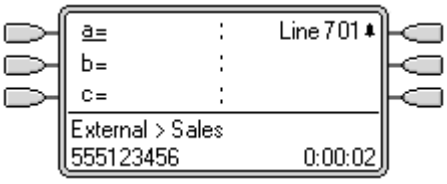
Once the call alerting on a button has currently selected call status, it retains that status even if a prior call on a button with ring delay applied comes out of its ring delay period.

Delayed Ring Preference Example 1

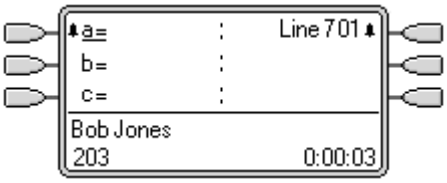
In this example the user has a line appearance button for a line they monitor. This line appearance button has been set to no ring as the user occasionally need to use that line but does not normally answer calls on that line.



1. **Phone Idle**
   The phone is idle. The current selected button has been determined by Idle Line Preference as the first available call appearance button. This is shown by the _ underscore next to that button.



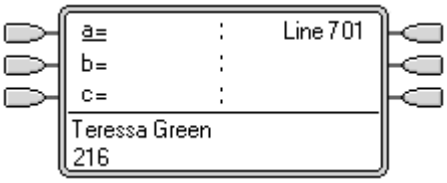
2. **Incoming Call Alerting on the Line**
   An incoming call arrives on the line and begin to alert somewhere on the system. The user's line appearance button shows this visually but doesn't ring audibly.
   - Normally ringing line preference would make the line appearance the user's currently selected button and therefore they would answer the line if they went off-hook expecting to make a call.
   - However, because **Delayed Ring Preference** is on for the user, ringing line preference is not applied and idle line preference makes their current selected button the first call appearance. If the user were to go off-hook they would be making a call on that call appearance.



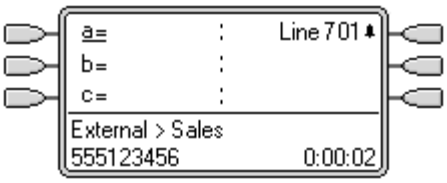
3. **Call Alerting for the User**
   A call for the user arrives. It alerts on the first available call appearance button. Ringing line preference is applied and makes that the users currently selected button. If the user goes off-hook now that will answer the call on the call appearance and not the line appearance.

Delayed Ring Preference Example 2

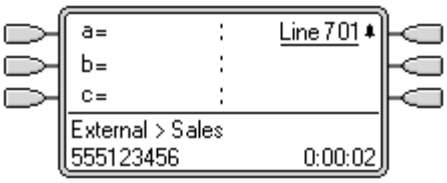
This is similar to the previous example except that the user and the line has been configured for a 15 second ring delay. This informs the users that the line has not been answered for some reason and allows them to answer it by just going off-hook.



1. **Phone Idle**
   The phone is idle. The current selected button has been determined by Idle Line Preference as the first available call appearance button. This is shown by the _ underscore next to that button.



2. **Incoming Call Alerting on the Line**
   An incoming call arrives on the line and begin to alert somewhere on the system. The user's line appearance button shows this visually but doesn't ring audibly. Because **Delayed Ring Preference** is on for the user, ringing line preference is not applied and idle line preference makes their current selected button the first call appearance. If the user were to go off-hook they would be making a call on that call appearance.



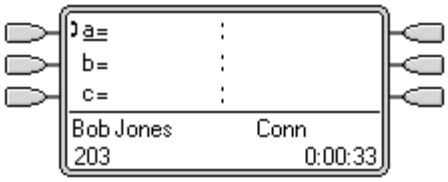
3. **Call Continues Alerting**
   When the ring delay for the line appearance expires, if no other call has taken ringing line preference it becomes the current selected call and will be answered if the user goes off-hook.

9.6.8 Collapsing Appearances

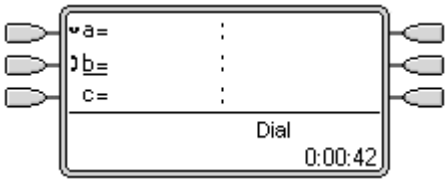
This topic covers what happens when a user with several calls on different appearance buttons, creates a conference between those calls. In this scenario, the call indication will collapse to a single appearance button and other appearance buttons will return to idle except for any line appearance buttons involved which will show 'in use elsewhere'.

Collapsing Appearances Example 1

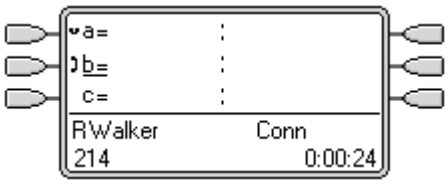
In this example, the user will setup a simple conference. **Ringing Line Preference** and **Idle Line Preference** are set for the user. **Auto Hold** for the system is on. **Answer Pre-Select** is off.



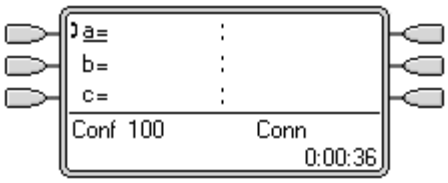
1. Initial Call
The user has a call in progress, shown on their first call appearance button. It is decided to conference another user into the call.



2. Make Conference Enquiry
Pressing the **CONFERENCE** button on the users phone automatically places the current call on hold and takes the phone off hook on the next available call appearance.



3. Enquiry in Progress
The other extension has answered and is invited to join a conference call.
The user presses the **CONFERENCE** button on their phone again.



4. Conference Starts/Call Appearances Collapse
The conference call has started. The call appearances have collapsed to a single appearance.

9.6.9 Joining Other Calls (Bridging)

Appearance buttons can be used to "join" existing calls and create a conference call. A user can join calls that are shown on their phone as 'in use elsewhere'. These can be on bridged and/or line appearances.

- This feature is often referred to as 'bridging into a call'. However this causes confusion with Bridged appearance buttons and so the term should be avoided.

The ability to join calls is controlled by the following feature which can be set for each IP Office user:

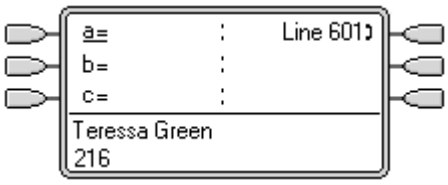
- **Cannot be Intruded:** *Default = On*
  If this option is set on for the IP Office user who has been in the call the longest, no other user can join the call. If that user leaves the call, the status is taken from the next internal user who has been in the call the longest. The exceptions are:
  - Voicemail and Conferencing Center calls are treated as **Cannot be Intruded** at all times.
  - When an external call is routed off switch by a user who then leaves the call, the **Cannot be Intruded** status used is that of the user who forwarded the call off switch.
  - Any call that does not involve an internal user at any stage is treated as **Cannot be Intruded** on. For example:
    - When an external call is routed off switch automatically using a short code in the incoming call route.
    - Small Community Network calls from other IP Offices that are routed off-switch.
    - VoIP calls from a device not registered on the IP Office.
  - The **Can Intrude** setting is not used for joining calls using appearance buttons.

The following also apply:

- **Inaccessible**
  In addition to the use of the **Cannot be Intruded** setting above, a call is inaccessible if:
  - The call is still being dialed, ringing or routed.
  - It is a ringback call, for example a call timing out from hold or park.
  - If all the internal parties, if two or more, involved in the call have placed it on hold.
- **IP Office Conferencing Resources**
  The ability to bridge depends on the available conferencing resource of the IP Office system. Those resources are limited and will vary with the number of existing parties in bridged calls and conferences. The possible amount of conferencing resource depends on the IP Office system type and whether IP Office Conferencing Center is also installed.
- **Conference Tone**
  When a call is joined, all parties in the call hear the IP Office conferencing tones. By default this is a single tone when a party joins the call and a double-tone when a party leaves the call. This is a system setting.
- **Holding a Bridged Call**
  If a user puts a call they joined on hold, it is their connection to the joined call (conference) that is put on hold. The other parties within the call remain connected and can continue talking. This will be reflected by the button status indicators. The user who pressed hold will show 'on hold here' on the button they used to join the call. All other appearance users will still show 'in use here'.
- **Maximum Two Analog Trunks**
  Only a maximum of two analog trunks can be included in a conference call.
- **Parked Calls**
  A Line Appearance button may indicate that a call is in progress on that line. IP Office 4.0 and higher allows such calls to be unparked using a line appearance.

Joining Example 1: Joining with a Line Appearance

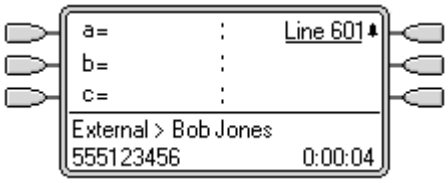
In this example, the user joins a call by pressing a line appearance button. **Answer Pre-Select** is off.



1. Line Goes Active

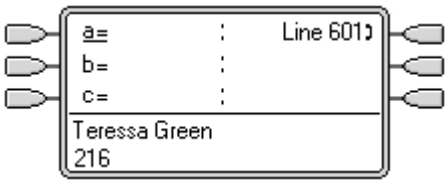
A call is active on the line with line ID number 601.

- If this is an incoming call, it will show active but will not alert until its call routing has been determined. On ICLID analog lines, alerting is delayed until the ICLID that might be used to do that routing has been received.



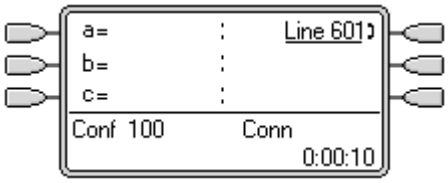
2. Line Appearance Alerting

The call routing is completed and the call is now ringing against its target. The line appearance also begins alerting and Ringing Line Preference has made it the current selected button.



3. Call Answered

Alerting on the line appearance has stopped but the line is still active. This indicates that the call has probably been answered. As our user's phone is idle, Idle Line Preference has returned the current select button to the first available call appearance button.

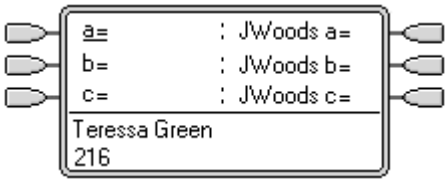


4. User Joins the Call

Our extension user has been asked by their colleague to join the call just answered on line 601. By pressing the line appearance button they have joined the call on that line and created a conference call.

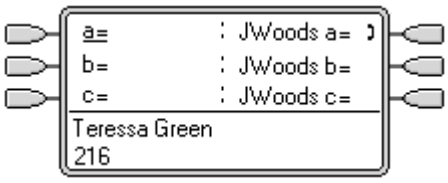
Joining Example 2: Joining with a Bridged Appearance

In this example, the user joins a call using a bridged appearance button. **Answer Pre-Select** is off.



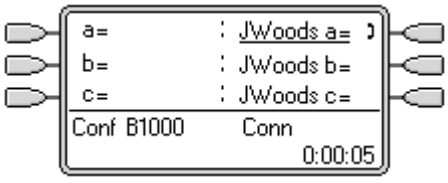
1. User with Bridged Appearance Buttons

The user has bridged appearance buttons that match their colleagues call appearance buttons.



2. **Call on Bridged Appearance**

The colleague has a call in progress on their first call appearance. This is matched on the first bridged appearance button.



3. User Joins the Call

Pressing the bridged appearance button will take our user off hook and join them into their colleagues call, creating a conference call.

9.6.10 Multiple Alerting Buttons

In some scenarios, it is may be potentially possible for the same call to alert on several appearance buttons. In this case the following apply:

- **Line appearance buttons override call and bridged appearance buttons**
  In cases where a call on a line goes directly to the user as the incoming call route's destination, the call will only alert on the line appearance. In this scenario the ring delay settings used is that of the first free call appearance button.
- **A call can alert both call appearance, line appearance and bridged appearance buttons**
  The most common example of this will be hunt group calls where the hunt group members also have bridged call appearances to each other. In this case the button used to answer the call will remain active whilst the other button will return to idle.
- **Calls on a line or bridged appearance buttons can also alert on call coverage button**
  In this case alerting on the call coverage button may be delayed until the covered user's Individual Coverage Time has expired.
- **Ringing Line Preference Order**
  When a call alerts on several of the user's appearance buttons and ***Ringing Line Preference*** is set for the user, the order used for current selected button assignment is:

  1. Call appearance.
  2. Bridged appearance.
  3. Call coverage.
  4. Line appearance.

- **Example**
  A user has a call to a covered user alerting initially on a line appearance button. ***Ringing Line Preference*** will assign current selected button status to the line appearance. When the same call also begins to alert on the call coverage appearance button, current selected button status switches to the call coverage appearance button.

Ring Delay

Where ring delays are being used, the shortest delay will be applied for all the alerting buttons. For example, if one of the alerting buttons is set to **Immediate**, that will override any alerting button set to **Delayed Ring**. Similarly if one of the alerting buttons is set to **No Ring**, it will be overridden if the other alerting button is set to **Immediate** or **Delayed Ring** .

9.6.11 Twinning

Twinning is a mechanism that allows an IP Office user to have their calls alert at two phones. The user's normal phone is referred to as the primary, the twinned phone as the secondary.

By default only calls alerting on the primary phone's call appearance buttons are twinned. For internal twinning, IP Office 4.1+ supports options to allow calls alerting on other types of appearance buttons to also alert at the secondary phone. These options are set through the **User | Twinning** section of the IP Office configuration and are **Twin Bridge Appearances**, **Twin Coverage Appearances** and **Twin Line Appearances**. In all cases they are subject to the secondary having the ability to indicate additional alerting calls.

Call alerting at the secondary phone ignoring any Ring Delay settings of the appearance button being used at the primary phone. The only exception is buttons set to No Ring, in which case calls are not twinned.

9.6.12 Busy on Held

For a user who has **Busy on Held** selected, when they have a call on hold, the IP Office system treats them as busy to any further calls. This feature is intended primarily for analog phone extension users. Within IP Office Manager, selecting **Busy on Held** for a user who also has line appearance keys will cause a prompt offering to remove the **Busy on Held** selection.

9.6.13 Reserving a Call Appearance Button

Functions such as transferring calls using a **Transfer** key require the user to have at least one available call appearance button in order to complete the outgoing call part of the process. However by default all call appearance button are available to receive incoming calls at all times.

It is possible to reserve the users last call appearance button for the making of outgoing calls only. The method for doing this depends on the IP Office system software level.

- **IP Office 4.0+**
  On the **User | Telephony | Multi-line Options** tab, select the option **Reserve Last CA**.
- **Pre-4.0 IP Office**
  On the **User | Source Numbers** tab, enter the line **RESERVE_LAST_CA=** .

9.6.14 Logging Off and Hot Desking

IP Office users can be setup to log in and log out at different phones, this is called 'hot desking'. All the users settings, including their extension number, are transferred to the phone at which the user is logged in. This includes their key and lamp settings and appearance buttons.

This type of activity has the following effect on appearance buttons:

- If logged out, or logged in at a phone that doesn't support appearance button functions:
  - Bridged appearances set to the user will be inactive.
  - Call coverage set to the user will still operate.

- If logged in at a phone with fewer buttons than programmed for the user:
  - Those buttons which are inaccessible on the logged in phone will be inactive.
  - Any bridged appearances to those button from other users will be inactive.

Remote Hot Desking

IP Office 4.0 supports, through the addition of license keys, users hot desking between systems within an IP Office Small Community Network (SCN). However the use of appearance buttons (call coverage, bridged appearance and line appearance) within a Small Community Network is not supported. Therefore when a user logs in to a remote system, any such button that they have will no longer operate. Similarly any button that other users have with the remote user as the target will not operate.

9.6.15 IP Office Applications

A number of IP Office applications can be used to make, answer and monitor calls. These applications treat calls handled using key and lamp operation follows:

- **Phone Manager/SoftConsole**
  These applications are able to display multiple calls to or from a user and allow those calls to be handled through their graphical interface.
  - All calls alerting on call appearance buttons are displayed.
  - Calls on line, call coverage and bridged appearance buttons are not displayed until connected using the appropriate appearance button
  - Connected and calls held here on all appearance button types are displayed.
  - The status of alerting call appearance calls, connected and held calls is shown in the Phone Manager's call status panel. Clicking on a call here can be used to answer or unhold a call. This action will place any current connected call on hold regardless of the system's Auto Hold setting.

9.7 Programming Appearance Buttons

9.7.1 System Settings

System settings are applied to all users and calls. The system settings that affect appearance operation are found on the **System | Telephony** tabs and are:

- **Auto Hold:** *Default = On*
  This setting sets whether a currently connected call should be held or disconnected when a user presses another appearance button. On IP Office 4.0 and higher systems **Auto Hold** is ***on*** by default. On previous levels of IP Office software the default for US was ***off***.
- **Conferencing Tone:** *Default = Entry & Exit Tones*
  The option ***Entry & Exit Tones*** allows parties already in a conference or bridged call hear a single tone when another party joins the call and a double tone when a party leaves the call. The option ***Repeating Tone*** gives all parties a tone every 10 seconds during the conference or bridged call.
- **Ring Delay:** *Default = 5 seconds. Range = 1 to 98 seconds.*
  This option is only available on IP Office 3.2+ systems. It sets the delay used for any of the user's programmable buttons which have their ringing set to ***Delayed***. This value can be overridden by a user specific **Ring Delay** value set through **User | Telephony**.

9.7.2 User Settings

User settings are applied separately to each individual IP Office user. In addition to button programming, the following user settings are applicable to appearance button operation:

- **Cannot be Intruded:** *Default = On.*
  This feature controls whether other users can use their appearance buttons to join the users call. It applies when the user is the longest present internal party already within the call.
- **Individual Coverage Time:** *Default = 10 seconds. Range = 0 (immediate) to 9999.*
  This feature sets how long a call will alert at the user's phone before also alerting on any call coverage buttons set to the user's name. It must be less than the systems **Default No Answer Time** or the user's **No Answer Time** if set.
- **Ring Delay:** *Default = Blank (Use system setting). Range = 1 to 98*
  This option is only available on IP Office 3.2+ systems. It sets the delay used for any of the user's programmable buttons which have their ringing set to ***Delayed***. This value, if set, overrides the system specific **Ring Delay** value set through **System | Telephony | Telephony**.
- **Ringing Line Preference:** *Default = On.*
  When on, this feature is used when the user has alerting calls but no connected call. It applies the currently selected button status to the appearance button that has been alerting the longest.
- **Idle Line Preference:** *Default = On.*
  When on, this feature is used when the user's phone is idle. It sets currently selected button status to the user's first available call or line appearance button.
- **Delayed Ring Preference:** *Default = Off, Software Level = 4.0+.*
  This setting is used in conjunction with ringing line preference and appearance buttons set to delayed or no ring. It sets whether ringing line preference should observe or ignore the delayed ring applied to the user's appearance buttons when determining which button should have current selected button status.
  - When on, ringing line preference is only applied to alerting buttons on which the ring delay has expired.
  - When off, ringing line preference can be applied to an alerting button even if it has delayed ring applied.
- **Answer Pre-Select:** *Default = Off, Software Level = 4.0+.*
  Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling the user telephony setting **Answer Pre-Select** allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call. To answer a call when the user has **Answer Pre-Select** enabled, the user must press the alerting button to display the call details and then either press the button again or go off-hook.
- **Reserve Last CA:** *Default = Off, Software level = 4.0+.*
  Used for users with multiple call appearance buttons. When present, this string stops the users last call appearance button from being used to receive incoming calls. This ensures that the user always has a call appearance button available to make outgoing calls and to initiate transfers and conferences. For pre-4.0 IP Office this option is set by adding the **RESERVE_LAST_CA=** option on the **User | Source Numbers** tab.
- **Abbreviated Ring:** *Default = On, Software level = 4.1+.*
  This option controls the type of alerting ring given for additional appearance calls when a call is already connected. When on, additional calls alert with a single short ring. When off, additional calls alert will normal ringing. The audible alert is still subject to ring delay settings if enabled.

9.7.3 Line Appearance ID Numbers

Line appearances are supported for analog, E1 PRI, T1, T1 PRI, and BRI PSTN trunks. They are not supported for E1R2, QSIG and IP trunks.

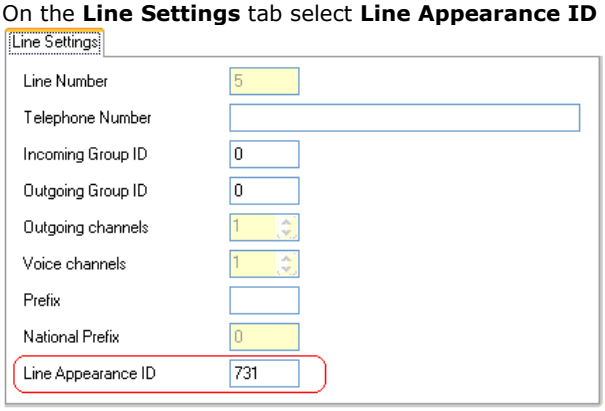
Note that setting and changing line settings including line appearance ID numbers requires the IP Office system to be rebooted.

Automatic Renumbering

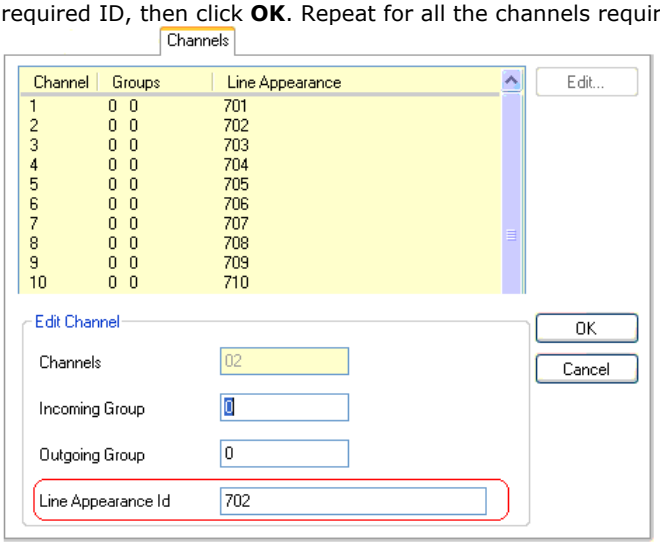
1. Select **Tools | Line Renumber**.
2. Select the starting number required for line numbering and click **OK**.
3. All lines that support **Line Appearance ID** will be numbered in sequence.

Manual Renumbering

1. Start IP Office Manager and load the current configuration from the IP Office.
2. Select  **Line**.
3. Select the line required. The tab through which line appearance ID numbers are set will vary depending on the type of line. A couple of examples are shown below.
   - **Analog Line**
     On the **Line Settings** tab select **Line Appearance ID** and enter the ID required.



   - **Basic/Primary Rate Trunks**
     On the Channels tab select the individual channel and click Edit. Select **Line Appearance ID** and enter the required ID, then click **OK**. Repeat for all the channels required.



4. Click **OK** and repeat for any other lines.

9.7.4 Appearance Buttons

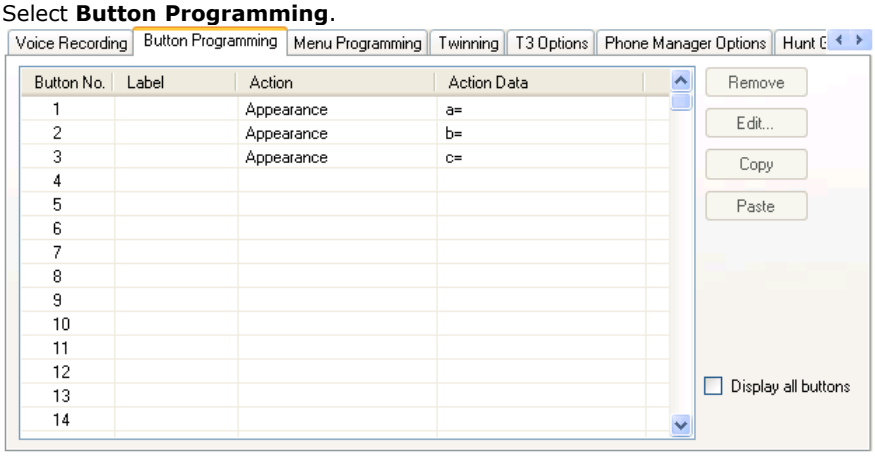
This section covers the programming of appearance buttons for users into existing IP Office configurations.

- Call appearance buttons must start with button 1 and must be setup in a single block of buttons. Programming of just one call appearance is not supported. The normal default is 3 call appearance buttons unless the user regularly uses phones that support only two appearance buttons.
- Appearance functions programmed to buttons without suitable status lamps or icons are treated as disabled. These buttons are enabled when the user logs in on a phone with suitable buttons in those positions.
- Line appearance buttons require line ID numbers to have been assigned, see Programming Line Appearance Numbers 657.
  - The use of line appearances to lines where incoming calls are routed using DID (DDI) is not recommended.
- Bridged appearance buttons require the other user to already have call appearance buttons programmed.
- **How many buttons are allowed?**
  The recommended limits are as follows:
  - A maximum of 10 bridged appearances to the same call appearance.
  - A maximum of 10 line appearances to the same line.
  - A maximum of 10 call coverages of the same covered user.

Programming Appearance Buttons Using IP Office Manager

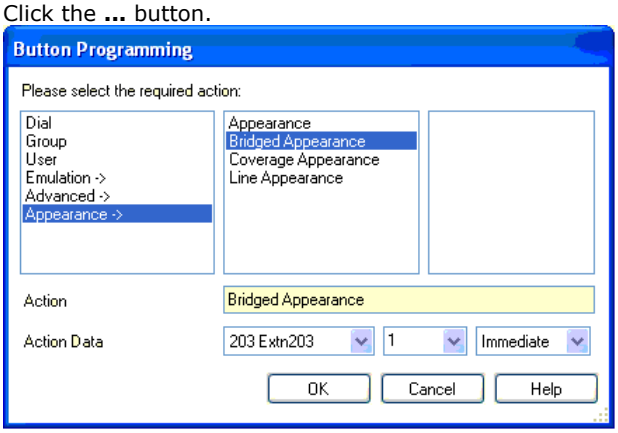
If only button programming changes are required, the configuration changes can be merged back to the IP Office system without requiring a reboot.

1. Start IP Office Manager and load the current configuration from the IP Office system.
2. Locate and select the user for whom appearance buttons are required.
3. Select **Button Programming**.



- The number of buttons displayed is based on the phone associated with the user when the configuration was loaded from the IP Office system. This can be overridden by selecting **Display all buttons**.

4. For the required button, click the button number and then click **Edit**.
5. Click the **...** button.



6. From the list of options that appears, click **Appearance**.
7. Select the type of appearance button required.
8. Use the **Action Data** drop-down fields to select the required settings. Click **OK**.
9. Repeat for any additional call appearance buttons required. Click **OK**.
10. Repeat for any other users requiring appearance buttons.

9.7.5 Outgoing Line Programming

Assigning line ID numbers to lines and associating line appearance buttons to those lines is sufficient for answering incoming calls on those lines. However, to use line appearance buttons for outgoing calls may require further programming.

Short Codes and Outgoing Line Appearance Calls

Once a line has been seized using a line appearance button, short code matching is still applied to the number dialed. That can include user, system and ARS or LCR short codes.

- The short codes matching must resolve to an off-switch number suitable to be passed direct to the line.
- The final short code applied must specify a 'dial' feature. This allows call barring of specific matching numbers to be applied using short codes set to features such as 'Busy'.

Line Appearance Hot Lines

A new short code feature has been added for scenarios where the associate line is an analog tie line or similar direct to another phone.

To use this feature:

- Create a new short code such as ***99*** with the feature **DialDirectHotLine**.
- Set ***99*** as the prefix for that line.

9.8 Upgrading from Pre-3.0 Systems

Most of the aspects of appearance functions have no effect on systems being upgraded from versions of IP Office earlier than 3.0. However the following existing IP Office configuration settings are affected:

- **Call Appearance Buttons**
  Call appearance buttons should start with button 1 and form a single block. On systems being upgraded where the call appearance buttons have been programmed differently, those buttons will be lost following the upgrade to 3.0.
- **Call Coverage**
  Call coverage support was originally added in IP Office 1.3. Call coverage operation in IP Office 3.0 is a total replacement and uses different methods of setup and operation. If upgrading from a version earlier than 3.0, all existing call coverage settings will be lost. Therefore it is necessary to make manual notes of the covered and covering users before upgrading to IP Office 3.0 or higher.
- **Outgoing Call Routing**
  If it is a requirement to use line appearance button for outgoing calls, then it will be necessary to add incoming line prefixes and to setup secondary dial tone short codes based on the same prefixes. See Outgoing Line Programming 660.

9.8.1 Call Handling Changes

People who have used phones on IP Office systems prior to IP Office software level 3.0 will find a number of changes to the way the phones operate.

- **Selected Button**
  By default one appearance button is indicated as the current selected button. This is done either by the adjacent red LED being on or the button display label being underlined.
  - The current selected button represents either the appearance button of the current connected call or the appearance button that will be used if the user goes off hook (ie. lifts the handset or presses the Speaker key).
- **Auto Hold**
  The default operation of this feature depends on the phone system's locale:
  - In the US, the default setting for **Auto Hold** is ***off***. With a current call already connected on one appearance button, pressing another appearance key will disconnect the current call.
  - Outside the US, the default setting for **Auto Hold** is on. With a current call already connected on one appearance button, pressing another appearance key will hold the current call.
  - Note that for IP Office 4.0+, on all systems regardless of locale the default for **Auto Hold** is ***off***.
- **Call Waiting**
  Call waiting features are not applied to non-hunt group calls. Hunt group call waiting is applied, subject to the normal conditions for hunt group call waiting, but with the call waiting tone replaced by a call appearance button alert.
- **Busy Status**
  For a user with call appearance buttons, you are busy when:
  - For calls direct to your extension number, you are busy only when you have no further call appearance buttons available on which to present the call.
  - For calls to any hunt group of which you are a member, you are busy to further group calls once you have a call connected unless hunt group call waiting is being used. However you may still receive additional calls dialed or forwarded direct to your extension number if you have any free call appearance buttons.
  - In either case above, even when busy, you may be alerted on other types of appearance button, for example line appearance and call coverage.
  - Busy on held can be used to return busy to further calls when you have an existing call on hold, however this is not recommended in conjunction with appearance buttons.
- **Retrieving Held Calls**
  Pressing **Hold** will put the current connected call on hold. The appearance button will indicate the held call with, depending on the phone type, a flashing green lamp or a icon. However pressing **Hold** again will not retrieve the held call.
  - To retrieve a held call, press the appearance button against which the call was held.
  - An intermittent green flashing lamp or an icon indicate a call held by another user. These can also be retrieved by pressing that appearance button.
- **Transferring Calls**
  To transfer calls, the **Transfer** function of the phone or IP Office Phone Manager application should be used.
- **Joining Another Call**
  Appearance buttons can indicate a call taking place elsewhere. You may be able to join that call by pressing the appearance button.

- Permission to join a call is controlled by the intrusion settings of the party who has been in the call the longest, not by your intrusion settings. See Joining Other Calls 650 for full details.
- The joined call is a conference call and is subject to the IP Office's conference controls. If you press **Hold**, it is your connection to the conference that is held, it does not affect the other parties in the call.

- **Unparking Calls**
  Parked calls can be indicated by buttons programmed to the Park function and a particular park slot number. These can be calls parked by the phone user or parked by other users. If the phone is idle, the parked call can be unparked by pressing the park button. If another call is connected on an appearance button, that call must be put on hold or ended before the parked call can be unparked.
- **Unprogrammed/Inaccessible Keys**
  Buttons to which no function has been set or which the function is currently not useable, will produce a short burst of tone or ringing when pressed. If the button has an associated status lamp, it will also flash briefly.
- **Call Count**
  Avaya IP Office phones with twin LED buttons display a call count. This appears as a digit count, for example **01** on the display. It increments for all calls that alert at a user's extension including missed and unanswered calls.
  - Sequential calls from the same number do not increment the count more than once.
  - Calls alerting on bridged, line and call coverage buttons are not included in the call count and history.
  - The count is reset whenever the IP Office system is restarted.
  - On Avaya 4400, 4600 and 6400 Series phones with a **MENU** key, details of the call count can be accessed and entries called or deleted. Press **MENU** | **MENU** and select **Hist**.
- **Call Log**
  On 2410, 2420, 4610, 4620, 5410, 5420, 5610 and 5620, the call count is replaced by a **Log** function instead of the call count and history detailed above.
- **Self-Administration of Appearance Keys**
  Previously users with a programmable button set to **Self-Administer** (**Admin**) could program their own call appearance buttons. In IP Office 3.0 this is no longer possible. In addition users cannot overwrite keys already programmed to an appearance function.

9.8.2 Twin LED Button Users

These notes are for users of Avaya phones which have twin LED lamps next to the programmable buttons. That is most 4400 Series, 6400 Series and older style 4600 Series phones.

- **Red LED On**
  This is called the currently selected button. It indicates either the button that will be used if you go off-hook (pickup the handset or press the **Spkr** button) or the appearance button of the call to which you are currently connected. When your phone is idle your first call appearance button will show the red LED on.
- **Green LED**
  The green LED is used as follows on appearance buttons:
  - **On/Off:** The button is in use/idle. This can include being used by another user, for example a line appearance button of a shared line.
  - **Flashing:** A call is alerting you.
  - **Fast Flash:** The call is on hold.
  - **Intermittent Flash:** The call has been put on hold by another user (on hold elsewhere).
- **Call Handling**
  Having appearance keys means:
  - You can make and answer calls by pressing the appearance buttons.
  - **Auto Hold:** When connected to a call on one appearance button, pressing another appearance button will place the first call on hold and make/answer a call on the button pressed. For US systems this changes to disconnecting the first call.
  - **Transferring Calls:** To transfer a call, press **Trnsfr**, call the transfer destination and then press **Trnsfr** again.
  - **Retrieving Held Calls:** You cannot retrieve a held call by pressing **Hold** again. To retrieve a call from hold, press the appearance key associated with that call. Held calls are indicated by a fast flashing green lamp.
- **Busy Status**
  Call appearance buttons allow you to make, receive and switch between multiple calls. This changes when the system returns busy to additional calls
  - **Hunt Group Calls:** You are seen as busy to further hunt group calls once you have any appearance button in use.
  - **Personal Calls:** You are seen as busy to further calls directed to your extension number once all your call appearance buttons are in use.
  - **Forward on busy**, if set, is only used when all your call appearance buttons are in use. Even when busy, additional calls can alert you about other calls on call coverage, bridged appearance and line appearance button if programmed for you..
  - **Busy on Held** can be used but we strongly recommend it is avoided for appearance key users.
- **Joining a Call**
  When an appearance button indicates a call in progress elsewhere. You may be able to use that button to join the call. Whether you are allowed to join the call depends on the **Cannot Be Intruded** setting of the user who has been in the call the longest.
- **Call waiting** settings are ignored for direct call to appearance button users. Hunt group call waiting can be used if setup.
- **Unprogrammed/Inaccessible Keys**
  These keys will return a short tone and flash.
- **Self-Administration:** Users with access to this function can no longer program their own appearance keys or replace the programming of existing appearance buttons.
- **Hot Desking/Logging On:** If you move to a phone that doesn't have suitable programmable keys to support appearance buttons, you are treated as a normal PBX mode user while on that phone.

Twin LED Button Users Lamp States

The table below summarizes the meaning of the twin LED lamp states.

- **Selected** refers to the button indicating either the appearance button of the currently connected call or, if idle, the appearance button that would be used if the user goes off hook.

Feature	IP Office 2.1/3.0DT	IP Office 3.0+
Call Appearance Buttons		
- Idle.	All off.	All off.
- Idle: Selected.	–	Red on.
- Alerting.	Green flash.	Green flash.
- Alerting: Selected.	–	Red on, Green flash.
- In Use: Here.	Green on.	Red on, Green on.
- In Use: Elsewhere.	–	Green on.
- Held: Here.	Red on.	Green fast flash.
- Held: Elsewhere.	–	Green intermittent flash.
Other Buttons		
- Parked: Here	Green flash.	Green flash.
- Parked: Elsewhere	Red flash.	Red flash.
- User: Ringing	Red flash.	Green flash.
- User: In use.	Red on.	Green on.
- Group: Ringing.	Green Flash.	Green flash.
- Group: Queued.	Red flash.	Red flash.
- Other toggling features: On.	Green on.	Green on.
- Other toggling features: Off.	All off.	All off.
- Non-toggling features	All off.	All off.

The flash rate on button lamps is sometimes used to indicate different status. For example a fast flash is used for calls you put on hold and a intermittent flash for calls put on hold by someone else.

- **Steady Flash: **********----------** *(0.5s on/0.5 s off/...)*
  Used mainly to indicate alerting calls.
- **Fast Flash: *-*-*-*-*-*-*-*-*-*-** *(50ms on/50ms off/...)*
  Used mainly to indicate calls put on hold by you. This flash mode is also called 'Flutter'.
- **Intermittent Flash: *----*----*----*----** (50ms on/200ms off/...)
  Used mainly to indicate calls on hold elsewhere, ie. put on hold by another user. This flash mode is also called 'Inverse Wink'.

Chapter 10.
Telephone Features

10. Telephone Features

This section provides descriptions of the following telephony functions provided by the IP Office.

- Mobile Call Control (DISA) 667
- one-X Mobile Client 669
- Advice of Charge 673
- Malicious Call Tracing 674
- Call Barring 675
- Caller Display 675
- Call Intrusion 677
- Call Tagging 677
- Private Calls 678
- Call Pickup 678
- Call Waiting 679
- Parking Calls 680
- Ring Back When Free 681
- Message Waiting Indication 682
- Ring Tones 683
- Music on Hold 684
- Date and Time 685
- System Phone Features 687
- The 'No User' User 688
- Forwarding and Transferring Calls 689
- Conferencing 705
- Hot Desk Operation 707

10.1 Mobile Call Control

Mobile call control is only supported on IP500 systems and only on digital trunks. It allows a user receiving a call on their twinned device to access IP Office dial tone and then perform dialing action including making calls and activating short codes.

After answering a twinned call, the Mobile Call Control user can dial ** (within 1 seconds of each other) to place that call on hold and instead get dial tone from the IP Office. Any dialing is now interpreted as if the user is logged onto an analog extension on the IP Office using their user settings.

- Mobility Features licenses are required in the IP Office configuration for all the users that will be configured for any of the IP Office mobility features including one-X Mobile Client usage. The same single license also allows the user to use mobile twinning and mobile call control if required. Check that the configuration contains valid **Mobility Features** licenses.
  - If a Mobile Call Control user remote hot desks to another IP Office system within an SCN, they take their licensed status with them rather than consuming or requiring a license on the remote system.
- This feature is only supported on an IP500 and only on the following trunk types:
  - IP500 Universal PRI (Not on T1 robbed-bit and E1R2 channels set to Loop Start emulation).
  - IP500 BRI.
  - SIP (RFC2833).
- Routing via trunks that do not support clearing supervision (disconnect detection) should not be used.
- DTMF detection is applied to twinned calls to a user configured for this feature. This will have the following effects:
  - DTMF dialing is muted though short chirps may be heard at the start of any DTMF dialing.
  - DTMF dialed by the user will not be passed through to other connected equipment such as IVR or Voicemail.

- **WARNING**
  This feature allows external callers to use features on your phone system and to make calls from the phone system for which you may be charged. The only security available to the system is to check whether the incoming caller ID matches a configured users' **Twinned Mobile Number** setting. The IP Office cannot prevent use of these features by caller's who present a false caller ID that matching that of a user configured for access to this feature.

Using Mobile Call Control

In addition to using ** to access mobile call control, the user has access to the following additional controls:

- **Clearing a Call: **52***
  It may be necessary to clear a connected call, for example after attempting a transfer and hearing voicemail or ringing instead. To do this dial ****** for dial tone and then ****52*** (this is a default system short code 396 and can be changed if required).
- **Return to Dial Tone: ##**
  Return to dial tone after getting busy, number unobtainable or short code confirmation tones from the IP Office.

Outgoing Mobile Call Control

Enabling Outgoing Mobile Call Control

1. **License Mobile Features**
   Enter the licenses for Mobile Twinning and confirm that they are valid by merging and retrieving the configuration.
2. **Configure the user for Mobile Twinning and Mobile Call Control**
   On the **User | Mobility** 280 tab do the following:
   - Enable **Mobility Features** for the user.
   - Set the **Twinned Mobile Number** for the user's twinned calls destination.
   - Select **Can do Mobile Call Control**.
3. On systems with some unsupported trunk types, further changes such as Outgoing Group ID, system shorts codes and ARS may be necessary to ensure that calls to the mobile twinned numbers are only routed via the

Incoming Mobile Call Control

The IP Office can be configured to allow Mobile Call Control users to use this function when making an incoming call to the IP Office. This requires the user to make the incoming call from the same CLI as their Mobile Twinning Number (even if they do not actually use Mobile Twinning).

The call will be rejected:

- If the caller ID is blank or withheld.
- If the caller ID does not match a Twinned Mobile Number of a user with Can do Mobile Call Control enabled.
- If the call is received on a trunk type that does not support Mobile Call Control.

Enabling Incoming Mobile Call Control

1. **License Mobile Features**
   Enter the licenses for Mobile Twinning and confirm that they are valid by merging and retrieving the configuration.
2. **Configure the user for incoming Mobile Call Control**
   On the **User | Mobility** 280 tab do the following:
   - Enable **Mobility Features** for the user.
   - Set the **Twinned Mobile Number** to match the CLI of the device from which the user will be making calls.
   - Select **Can do Mobile Call Control**.
3.  **Add a FNE Short Code**
   In the system short codes section of the configuration add a short code similar to the following. Key points are the use of the ***FNE Service*** feature and the **Telephone Number** value ***31***.
   - **Short Code:** *99
   - **Feature:** FNE Service
   - **Telephone Number:** 31
4.  **Add an Incoming Call Route for the user**
   Create an incoming call route that matches the user's CLI and with the FNE short code created above as its destination.
5. On systems with some unsupported trunk types, further changes such as Incoming Group ID changes may be necessary to ensure that only calls received on trunks that support Mobile Call Control are routed to this short code.

10.2 one-X Mobile Client

IP500 systems running IP Office 4.2+ support the Avaya one-X Mobile Client on Windows and Symbian mobile cell phones. Using a range of DID numbers preprogrammed against phone controls, they can then activate and use various IP Office functions. The caller's incoming CLI is checked against the mobile twinning or forwarding number of users configured for one-X Mobile operation.

- **Supported Phones and Phone Client Software**
  IP Office 4.2+ supports Avaya one-X Mobile Client on mobile cell phones that run **Windows Mobile V5/V6** and **Symbian Single-Mode (V4.0)**. For the regularly updated list refer to the Avaya one-X Mobile section of the Avaya support website (support.avaya.com). This same site is also the location of the client software files that need to be installed on the phone and how to transfer those files to the phone.
    - Each phone requires a settings file. That file is used to configure the features the user can access and the DID number that the phone should dial in order to access the feature.
- **Trunk Restrictions**
  This feature is only supported on the following trunk types:
    - IP500 Universal PRI (Not on T1 robbed-bit and E1R2 channels set to Loop Start emulation).
    - IP500 BRI.
    - SIP (RFC2833)
    - Routing via trunks that do not support clearing supervision (disconnect detection) should not be used.

    - **WARNING**
      This feature allows external callers to use features on your phone system and to make calls from the phone system for which you may be charged. The only security available to the system is to check whether the incoming caller ID matches a configured users' **Twinned Mobile Number** setting. The IP Office cannot prevent use of these features by caller's who present a false caller ID that matching that of a user configured for this feature.

Additional Documentation
The following guides include details of how to install and configure the software on the phones. These documents are available from the one-X Mobile client section of the Avaya support website (support.avaya.com).

Document	Doc Code
Avaya one-X Mobile Edition Device Compatibility List	327824
Avaya one-X Mobile Edition for S60 User Documentation	16-601288
Avaya one-X Mobile Edition for Windows Mobile 5 Pocket PC and Treo Edition Install, Admin and User Guide R4.0	16-601613
Avaya one-X Mobile Edition for Windows Mobile 5 Smartphone Edition User Guide	16-602323

Feature Name Extension (FNE) Features

The one-X Mobile client accesses IP Office features using DID numbers routed to IP Office short codes set to the FNE feature. The number set in the short code indicates the particular FNE feature required.

The table below lists the FNE features supported by IP Office. The settings file tag is the string used in the phone software settings file to associate a feature with a DID number.

Value	Function (Setting File Tag)
00	**Dial Tone (IDLE_APPEARANCE_SELECT) -** Provide IP Office dial tone to the user. Similar to Mobile Call Control 667.
01	**Active Appearance Call Select (ACTIVE_APPEARANCE_SELECT) -** Attempt a call acquire (steal) on the user's primary extension. If there is no active or ringing call to acquire, give IP Office dial tone.
02	**Automatic Callback (AUTO_CALL_BACK_TOGGLE) -** Set a ringback when free when calling an IP Office extension number that does not answer or returns busy.
03	**Automatic Callback Cancel (DISABLE_AUTO_CALL_BACK_TOGGLE)** - Cancels a pending automatic callback if set.
04	**Call Forwarding All Calls (CALL_FORWARDING_ALL_ACTIVATION) -** Switch forward unconditional on.
05	**Call Forwarding Busy (CALL_FORWARDING_BUSY_NO_ANSWER_ACTIVATION) -** Switch forward on busy and forward on no answer on.
06	**Call Forwarding Deactivation (CALL_FORWARDING_DISABLE) -** Switch all forwarding off.
07	**Call Park (CALL_PARK) -** Park call on the IP Office using the user's extension ID.
08	**Call Unpark (CALL_UNPARK) -** Unpark a call parked using the user's extension ID.
09	**Call Pickup Group (CALL_PICKUP_GROUP) -** Call Pickup Any 405
10	**Call Pickup Directed (CALL_PICKUP_DIRECTED) -** Directed Call Pickup using the entered user or hunt group number.
12	**Calling Party Number Block (CALLING_PARTY_NUMBER_BLOCK) -** Make a call from IP Office with CLI withheld.
13	**Calling Party Number Unblock (CALLING_PARTY_NUMBER_UNBLOCK) -** Make a call from the IP Office with CLI allowed.
14	**Conference on Answer (CONFERENCE_ON_ANSWER) -** Make an additional call and add them to a conference.
15	**Drop (DROP_LAST_ADDED_PARTY) -** Drop last party added to a conference.
16	**Exclusion (EXCLUSION) -** Make the existing call private 678. Repeat to remove privacy from existing call.
17	**Held Appearance Select (HELD_APPEARANCE_SELECT) -** Pickup a held call on the user's primary extension.
18	**Dial Tone (IDLE_APPEARANCE_SELECT) -** Same as 01 - Dial Tone.
19	**Off PBX Call Enable (OFF_PBX_ENABLE) -** Switch the user's Mobile Twinning on.
20	**Off PBX Call Disable (OFF_PBX_DISABLE) -** Switch the user's Mobile Twinning off.
24	**Send All Calls Enable (SEND_ALL_CALLS_ENABLE) -** Do Not Disturb On.
25	**Send All Calls Disable (SEND_ALL_CALLS_DISABLE) -** Do Not Disturb Off.
26	**Transfer On Hang Up (TRANSFER_ON_HANGUP) -** Unsupervised transfer.
27	**Transfer to Voicemail (TRANSFER_TO_COVERAGE) -** Transfer the held IP Office call to the user's voicemail mailbox.
30	**Single DDI -** *Not supported.*

Example Configuration Overview

In this example, two DID numbers are going to be used to allowed one-X Mobile users to access the FNE functions 00, 01 and 26. This will allows those users respectively to obtain IP Office dial tone, to acquire a call alerting on their normal extension and to transfer a call.

The DID numbers requested were 555 76769900, 555 76769901 and 555 76769926 with 4 digits being passed by the provided to the IP Office, ie. 9900, 9901 and 9926.

- This example is made much simpler by using both a continuous DID range and one where the last two digits of the DID numbers match the IP Office FNE short code features required. This allows implementation using an single short code and a single incoming call route.

IP Office Configuration

1. **IP Office one-X Mobile Client Licensing**
   Mobility Features licenses are required in the IP Office configuration for all the users that will be configured for any of the IP Office mobility features including one-X Mobile Client usage. The same single license also allows the user to use mobile twinning and mobile call control if required. Check that the configuration contain valid **Mobility Features** licenses.

2. **IP Office User Configuration**
   For each user, the following must be set on the User | Mobility 280 tab.
   - Select **Mobility Features**.
   - Select **Can have one-X Mobile Client**.
   - Set their **Twinned Mobile Number** to match the CLI of calls from the device on which they will be using the one-X Mobile Client software. This match is used to determine the user for the FNE feature.
     - Digits are matched from right to left.
     - The match must be at least 6 digits. If either the CLI or the Mobile Twinned Number is less than 6 digits no match will occur.
     - Matching is done for up to 10 digits. Further digits are ignored. If either the CLI or Mobile Twinned Number is less than 10 digits, matching stops at that shorter length.
     - If multiple matches occur the first user in the configuration is used. IP Office Manager will warn against configuration where such a conflict may exist.

3. **FNE System Short Code**
   This short code is used as the destination for calls received on the DID numbers requested for one-X Mobile usage.
   - **Short Code:** *77XX
   - **Number:** N
   - **Feature:** FNE 430

4. **Incoming Call Route**
   An incoming call route is required to send the DID calls to the FNE short code. Since a continuous range of DID numbers has been requested, with end digits that match the feature required, this can be done with a single incoming call route entry in the IP Office configuration.
   - **Incoming Number:** 99XX
   - **Destination:** *77#
     The # matches any digits received for the XX part of the incoming number.
   - Other fields can be configured as required. For example using line group ID's to restrict one-X Mobile client access to those trunks known to support this feature.

one-X Mobile Client Configuration

During installation of the one-X Mobile software, a settings files is installed on the phone. For Windows phones, the file is called ***settings.ini*** file, for Symbian single-mode phones the file is called ***setting.1xme*** file. For some phones, once the software has been installed, the settings file values can be changed through the phone interface.

Windows Mobile settings.ini File	Symbian settings.1xme File
PRE_IMS=Dial; DID_PREFIX = +1555776; INTERNATIONAL_DIRECT_DIAL_PREFIX = 011; NATIONAL_DIRECT_DIAL_PREFIX = 1; HOME_COUNTRY_DIAL_CODE = +1; ARS_CODE = ; EXTENSION_LENGTH = 3; NATIONAL_NUMBER_LENGTH = 10; USERS_EMERGENCY_NUMBERS = 112,999,911; SETTINGS_PIN = 1234; IDLE_APPEARANCE_SELECT = 9900; ACTIVE_APPEARANCE_SELECT = 9901; AUTO_CALL_BACK_TOGGLE = 9902; DISABLE_AUTO_CALL_BACK_TOGGLE = 9903; CALL_FORWARDING_ALL_ACTIVATION = 9904; CALL_FORWARDING_BUSY_NO_ANSWER_ACTIVATION = 9905; CALL_FORWARDING_DISABLE = 9906; CALL_PARK = 9907; CALL_UNPARK = 9908; CALL_PICKUP_GROUP = 9909; CALL_PICKUP_DIRECTED = 9910; CALL_PICKUP_GROUP_EXTENDED = ; CALLING_PARTY_NUMBER_BLOCK = 9912; CALLING_PARTY_NUMBER_UNBLOCK = 9913; CONFERENCE_ON_ANSWER = 9914; DROP_LAST_ADDED_PARTY = 9915; EXCLUSION = 9916; HELD_APPEARANCE_SELECT = 9917; OFF_PBX_ENABLE = 9919; OFF_PBX_DISABLE = 9920; SEND_ALL_CALLS_ENABLE = 9924; SEND_ALL_CALLS_DISABLE = 9925; TRANSFER_ON_HANGUP = 9926; TRANSFER_TO_COVERAGE = 9927; SUB_MENU_NAME = My Company; <Voicemail> = *17;	 DID_PREFIX = +1555776; INTERNATIONAL_DIRECT_DIAL_PREFIX = 011; NATIONAL_DIRECT_DIAL_PREFIX = 1; HOME_COUNTRY_DIAL_CODE = +1; ARS_CODE = ; EXTENSION_LENGTH = 3; NATIONAL_NUMBER_LENGTH = 10; USERS_EMERGENCY_NUMBERS = 112,999,911; SETTINGS_PIN = 1234; IDLE_APPEARANCE_SELECT = 9900; ACTIVE_APPEARANCE_SELECT = 9901; AUTO_CALL_BACK_TOGGLE = 9902; DISABLE_AUTO_CALL_BACK_TOGGLE = 9903; CALL_FORWARDING_ALL_ACTIVATION = 9904; CALL_FORWARDING_BUSY_NO_ANSWER_ACTIVATION = 9905; CALL_FORWARDING_DISABLE = 9906; CALL_PARK = 9907; CALL_UNPARK = 9908; CALL_PICKUP_GROUP = 9909; CALL_PICKUP_DIRECTED = 9910; CALL_PICKUP_GROUP_EXTENDED = ; CALLING_PARTY_NUMBER_BLOCK = 9912; CALLING_PARTY_NUMBER_UNBLOCK = 9913; CONFERENCE_ON_ANSWER = 9914; DROP_LAST_ADDED_PARTY = 9915; EXCLUSION = 9916; HELD_APPEARANCE_SELECT = 9917; OFF_PBX_ENABLE = 9919; OFF_PBX_DISABLE = 9920; SEND_ALL_CALLS_ENABLE = 9924; SEND_ALL_CALLS_DISABLE = 9925; TRANSFER_ON_HANGUP = 9926; TRANSFER_TO_COVERAGE = 9927; SUB_MENU_NAME = My Company; <Voice Mail> = *17;

- Do NOT modify the tag names shown before the equals signs.
- Do NOT remove any tag rows. If a features is not being used or is unavailable leave the value between the '=' and ';' blank.
- Do NOT remove the terminating semi-colon.
- All values MUST go between the '=' and ';'.
- For those tags that match FNE features, the value should be the DID digits that will be passed to the IP Office for routing to the appropriate short code. This value is used in conjunction with the DID prefix to form the full telephone number.
- The following tags MUST have values set (not necessarily those shown as examples below):

```
DDI_PREFIX = +1555776
INTERNATIONAL_DIRECT_DIAL_PREFIX = 011;
NATIONAL_DIRECT_DIAL_PREFIX = 1;
HOME_COUNTRY_DIAL_CODE = +1;
ARS_CODE = ;
EXTENSION_LENGTH = 3;
NATIONAL_NUMBER_LENGTH = 10;
USERS_EMERGENCY_NUMBERS = 112,999,911;
```

10.3 Advice of Charge

IP Office 4.0 supports advice of charge (AOC) on outgoing calls to ISDN exchanges that provide AOC information. It supports AOC during a call (AOC-D) and at the end of a call (AOC-E). This information is included in the IP Office Delta Server 5.2.5 and higher output.

AOC is only supported on outgoing ISDN exchange calls. It is not supported on incoming calls, reverse charge calls, QSIG and non-ISDN calls. Provision of AOC signalling will need to be requested from the ISDN service provider and a charge may be made for this service.

For users, display of AOC information is only supported on T3 phones, T3 IP phones and Phone Manager.

- The user who makes an outgoing call is assigned its charges whilst they are connected to the call, have the call on hold or have the call parked.
- If AOC-D is not available, then all indicated by AOC-E are assigned to the user who dialed the call.
- If AOC-D is available:
  - If the call is transferred (using transfer, unpark or any other method) to another user, any call charges from the time of transfer are assigned to the new user.
  - If the call is manually transferred off-switch, the call charges remain assigned to the user who transferred the call.
  - If the call is automatically forwarded off switch, subsequent call charges are assigned to the forwarding user.
  - AOC-D information will only be shown whilst the call is connected. It will not be shown when a call is parked or held.
  - Call charges are updated every 5 seconds.
- For conference calls all call charges for any outgoing calls that are included in the conference are assigned to the user who setup the conference, even if that user has subsequently left the conference.

Enabling AOC Operation

1. **Set the System Currency**
   The **Default Currency** 177 (System | Telephony| Telephony) 177 setting is by default set to match the system locale. Note that changing the currency clears all call costs stored by the IP Office except those already logged through Delta Server.
2. **Set the Call Cost per Charge Unit for the Line**
   AOC can be indicated by the ISDN exchange in charge units rather than actual cost. The cost per unit is determined by the IP Office using the **Call Cost per Charge Unit** setting which needs to be set for each line. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line.
3. **Enable User AOC Display**
   By default users do not see call charges. The **Display Charges** 277 (User | T3 Options | T3 Telephony) 277 setting is used to switch this option on or off. Note that the display of AOC information is only supported on T3 phones.
4. **Applying a Call Cost Markup**
   It may be a requirement that the cost applied to a user's calls has a mark-up (multiplier) applied to it. This can be done using the **Call Cost Markup** 265 (User | Telephony | Call Settings) 265 setting. The field is in units of 1/100th, for example an entry of 100 is a markup factor of 1.

AOC Short Codes

A number of short code features exist that can be used with AOC. These features can only be used with T3 phones.

- **AOC Previous Call**
  Displays the call costs of the user's previous call if AOC information was provided with that call.
- **AOC Total**
  Display the cumulative total cost of the user's calls for which AOC information is available.
- **AOC Reset Total**
  Set the cumulative total (units and cost) for the user's calls back to zero.

10.4 Malicious Call Tracing (MCID)

MCID (Malicious Caller ID) is an ISDN feature. It is supported by IP Office 4.0+ on BRI and PRI trunks to ISDN service provider who provide MCID.

When used it instructs the ISDN exchange to perform a call trace on the user's current call and to keep a record of the call trace for the legal authorities. Trace information is not provided to or displayed by the IP Office or IP Office phones.

The use of MCID is subject to local and national legal requirements that will vary. The feature may also not be enabled until specifically requested from the service provider. You should consult with your ISDN service provider and with appropriate legal authorities before attempting to use MCID.

Successful use of this feature is indicated by a tone on the phone and a "User Registered" message on T3 phones.

Activating MCID

1. **Liaise with the ISDN Service Provider**
   MCID should not be used with first confirming its usage with the ISDN service provider.
2. **Enabling MCID Call Tracing on a Line**
   BRI and PRI lines include a Support Call Tracing Option. which by default is off.
3. **Enabling MCID Call Tracing for a User**
   First the user must be allowed to use call tracing. Each user has a **Can Trace Calls** 265 (User | Telephony | Supervisor Settings) 266 option. This option is off by default.
4. **Providing an Active MCID Control**
   The user needs to be provides with a mechanism to trigger the MCID call trace at the exchange. This can be done using either a short code or a programmable button.
   - **MCID Activate Button**
     The action **MCID Activate** (**Advanced | Miscellaneous | MCID Activate**) can be assigned to a programmable buttons. It allows a malicious call trace to be triggered during a call.
   - **MCID Activate Short Codes**
     The feature MCID Activate can be used to create a short code to triggering a malicious call trace.

10.5 Call Barring

Call barring can be applied in a range of ways.

- **Barring a User From Making Any External Calls**
  For each user, **Outgoing Call Bar** 266 (User | Telephony | Supervisor Settings) 266 can be selected to stop that user from making any outgoing calls.
- **Barring Particular Numbers/Number Types**
  IP Office short codes are used to match user dialing and then perform a specified action. Typically the action would be to dial the number to an external line. However, short codes that match the dialing of particular numbers or types of numbers can be added and set to another function such as Busy. Those short codes can be added to a particular user, to a User Rights associated with several users or to the system short codes used by all users.
  - The IP Office allows short codes to be set at user, user rights, system and least cost route. These have a hierarchy of operation which can be used to achieve various results. For example a system short code for a particular number can be set to busy to bar dialing of that number. For a specific user, a user short code match to the same number but set to Dial will allow that user to override the system short code barring.
- **Using Account Codes**
  The IP Office configuration can include a list of account codes. These can be used to restrict external dialing only to users who have entered a valid account code.
  - **Forcing Account Code Entry for a User**
    A user can be required to enter an account code before the system will return dialing tone. The account code that they enter must match a valid account code stored in the IP Office configuration. The setting for this is **Force Account Code** 266 (User | Telephony | Supervisor Settings) 266.
  - **Forcing Account Code Entry for Particular Numbers**
    Each IP Office short code has a Force Account Code option. Again the account code entered must match a valid account code stored in the IP Office configuration. for the call to continue.
- **Barring External Transfers and Forwards**
  A user cannot forward or transfer calls to a number which they cannot normally dial. In addition there are controls which restrict the forwarding or transferring of external calls back off-switch. See Off-Switch Transfer Restrictions 703.

10.6 Caller Display

Caller display displays details about the caller and the number that they called. On internal calls the IP Office provides this information. On external calls it uses the Incoming Caller Line Identification (ICLID) received with the call. The number is also passed to IP Office applications and can be used for features such as call logging, missed calls and to make return calls.

Analog extension can be configured for caller display via the IP Office configuration (Extension | Extn | Caller Display Type).

- **Adding the Dialing Prefix**
  Some IP Office systems are configured to require a dialing prefix in front of external numbers when making outgoing calls. When this is the case, the same prefix must be added to the ICLID received to ensure that it can be used for return calls. The prefix to add is specified through the Prefix field of each line.
- **Directory Name Matching**
  The IP Office configuration contains a directory of names and numbers. If the ICLID of an incoming call matches a number in the directory, the directory name is associated with that call and displayed on suitable receiving phones.
  - The IP Office SoftConsole and Phone Manager applications also have directories that can be used for name matching. If a match occurs, it overrides the system directory name match for the name shown by that application.

Extended Length Name Display

In some locales, it may be desirable to change the way names are displayed on phones in order to maximize the space available for the called or calling name. There are two hidden controls which can be used to alter the way the IP Office displays calling and called information.

These controls are activated by entering special strings on the Source Numbers tab of the NoUser user. These strings are:

- **LONGER_NAMES**
  This setting has the following effects:
  - On DS phones, the call status display is moved to allow the called/calling name to occupy the complete upper line and if necessary wrap-over to the second line.
  - For all phone types:
    - On incoming calls, only the calling name is displayed. This applies even to calls forwarded from another user.
    - On outgoing calls, only the called name is displayed.
- **HIDE_CALL_STATE**
  This settings hides the display of the call state, for example **CONN** when a call is connected. This option is typically used in conjunction with **LONGER_NAMES** above to provide additional space for name display.

10.7 Call Intrusion

Call intrusion allows a user to join another users existing conversation. Once the intrusion has occurred, all parties can hear and talk to each other. Note that intruding uses IP Office conference resources.

The ability to intrude is controlled by two IP Office configuration settings, the **Can Intrude** 266 (User | Telephony | Supervisor Settings) 266 and the **Cannot Be Intruded** 266 (User | Telephony | Supervisor Settings) 266. By default no users can intrude and all users cannot be intruded.

- **Bridging**
  Users with call appearance buttons may be able to bridge into other calls. This is similar to intrusion but subject to different operation.
- **Privacy**
  IP Office 4.0+ provides privacy features that allow users to indicate that a call cannot be intruded on. See Private Calls 678.

Below is an example of a short code, which can be used to attempt call intrusion. Using it the intruder would dial *90*N#, replacing the N with the extension number of the user into whose call they need to intrude.

- **Short Code:** *90*N#
- **Telephone No:** N
- **Feature:** CallIntrude

The Dial Inclusion short code feature can be used instead of Call Intrude. It allows the intruder and the intrusion target to talk without the third party hearing them. During this type of intrusion, all parties hear a repeated intrusion tone. When the intruder hangs-up the original call parties are reconnected.

10.8 Call Tagging

Call tagging associates a text string with a call. That string remains with the call during transfers and forwards including across a Small Community Network (SCN).

On Avaya display phones, the text is shown whilst a call is alerting and is then replace by the calling name and number when the call is connected. On analogue phones with a caller ID display, the tag text replace the normal caller information.

IP Office applications such as Phone Manager and SoftConsole display any call tag associated with a call. If the call is parked, the tag is shown on the call park slot button used.

A call tag can be added when making a call using Phone Manager or SoftConsole. A tag can also be added to a call by an Voicemail Pro Assisted Transfer action.

10.9 Private Calls

IP Office 4.0 and higher provides features that allow users to make calls are being private. Private calls cannot be recorded, bridged into, intruded on or silently monitored. Use of private calls can be changed during a call. Enabling privacy during a call will stop any current recording, intrusion or monitoring.

Privacy only applies to the speech part of the call. Call details are still recorded in the IP Office Delta Server SMDR output and other IP Office call status displays.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to Cannot be Intruded, switching private calls off does not affect that status. To allow private calls to be used to fully control the user status, Cannot be Intruded should be disabled for that user.

- **Button Programming**
  The button programming action **Advanced | Call | Private Call** can be used to switch privacy on/off. Unlike the short code features it can be used during a call to apply or remove privacy from current calls rather than just subsequent calls. On suitable phones the button indicates the current status of the setting.
- **Short Codes**
  A number of short code features are available for privacy.
  - **Private Call**
    Short codes using this feature toggle private status on/off for the user's subsequent calls.
  - **Private Call On**
    Short codes using this feature enable privacy for all the user's subsequent calls until privacy is turn off.
  - **Private Call Off**
    Short codes using this feature switch off the user's privacy if on.

10.10 Call Pickup

Call pickup allows a user to answer a call ringing at another phone.

The following default short codes can be used:

- ***30 - Call Pickup Any**
  Answers the longest ringing call on the IP Office system. On large IP Office systems it is recommended that this short code is removed as it becomes difficult for users to predict which call they are answering.
- ***31 - Call Pickup Group**
  Pickup the longest ringing call to the hunt groups of which the user is a member.
- ***32*N# - Call Pickup Extn**
  Pick up the call ringing at a specific extension. When dial, N is replaced by the extension number.
- ***53*N# - Call Pickup Members**
  Pick up any call ringing on another extension that is a member of the Hunt group specified. The call picked up does not have to be a hunt group call. When dial, N is replaced by the hunt group extension number.

10.11 Call Waiting

Call waiting allows a user who is already on a call to be made aware of a second call waiting to be answered.

User Call Waiting

Call waiting is primarily a feature for analog extension users. The user hears a call waiting tone and depending on the phone type, information about the new caller may be displayed. The call waiting tone varies according to locale 752.

For Avaya feature phones with multiple call appearance buttons, call waiting settings are ignored as additional calls are indicated on a call appearance button if available.

To answer a call waiting, either end the current call or put the current call on hold, and then answer the new call. Hold can then be used to move between the calls.

Call waiting for a user can be enabled through the IP Office configuration (User | Telephony Call Settings | Call Waiting On 265), through the Phone Manager application and through programmable phone buttons.

Call waiting can also be controlled using short codes. The following default short codes are available when using Call Waiting.

- ***15 - Call Waiting On**
  Enables call waiting for the user.
- ***16 - Call Waiting Off**
  Disables call waiting for the user.
- ***26 - Clear Call and Answer Call Waiting**
  Clear the current call and pick up the waiting call.

Hunt Group Call Waiting

Call waiting can also be provided for hunt group calls. The hunt group **Ring Mode** must be ***Collective Call Waiting***.

On pre-IP Office 4.0 systems, all the group members must have their own call waiting setting switched on, this no longer applies for IP Office 4.0+.

On phones with call appearance buttons, the call waiting indication takes the form of an alert on the next available call appearance button. On other phones, call waiting indication is given by a tone in the speech path (the tone is locale specific).

- For pre-IP Office 4.0, all the users in the group must also have their own **Call Waiting** setting set to **On**.
- For IP Office 4.0+, the user's own **Call Waiting** setting is overridden when they are using a phone with call appearances. Otherwise the user's own **Call Waiting** setting is used in conjunction with the hunt group setting.

10.12 Parking Calls

Parking a call is an alternative to holding a call. A call parked on the IP Office system can be retrieved by any other user if they know the system park slot number used to park the call. When the call is retrieved, the action is known as Unpark Call or Ride Call. While parked, the caller hears music on hold if available.

Each parked call requires a park slot number. Attempting to park a call into a park slot that is already occupied causes an intercept tone to be played. Most park functions can be used either with or without a specified park slot number. When parking a call without specifying the park slot number, the system automatically assigns a number based on the extension number of the person parking the call plus an extra digit 0 to 9. For example if 220 parks a call, it is assigned the park slot number 2200, if they park another call while the first is still parked, the next parked call is given the park slot number 2201 and so on.

The **Park Timeout** setting in the IP Office configuration (**System | Telephony | Telephony | Park Timeout**) controls how long a call can be left parked before it recalls to the user that parked it. The default time out is 5 minutes. Note that the recall only occurs if the user is idle has no other connected call.

There are several different methods by which calls can be parked and unparked. These are:

Using Short Codes
The short code features, ParkCall and UnparkCall, can be used to create short codes to park and unpark calls respectively. The default short codes that use these features are:

- *37*N# - Parks a call in park slot number N.
- *38*N# - Unparks the call in park slot number N.

Using the Phone Manager and SoftConsole Applications
The Phone Manager and SoftConsole applications all support park buttons. Phone Manager provides 4 park slot buttons, numbered 1 to 4. SoftConsole provides 16 park slot buttons numbered 1 to 16 by default. In both cases the park slot number for each button can be changed if required. Clicking on the buttons allows the user to park or unpark calls in the park slot associated with each button.

In addition, when a call is parked in one of those slots by another user, the application user can see details of the call and can unpark it at their extension.

Using Programmable Buttons
The Call Park feature can be used to park and unpark calls. If configured with a specified park slot number, the button can be used to park a call in that slot, unpark a call from that slot and will indicate when another user has parked a call in that slot. If configured without a number, it can be used to park up to 10 calls and to unpark any of those calls.

Phone Defaults
Some telephones support facilities to park and unpark calls through their display menu options (refer to the appropriate telephone user guide). In this case parked calls are automatically put into park slots matching the extension number.

10.13 Ring Back When Free

Also called 'callback' and 'automatic callback'. If the user called is busy, setting a ringback allows you to hang up and wait until they are free. When set, once the busy extension becomes free, the system will ring your telephone when also idle and, when answered, call the original target extension.

Note

- If the extension called has multiple call appearance buttons, you will not receive busy until all its call appearance buttons are in use.
- You must be idle (have no call connected or held) to receive the ringback.

This feature can also be set via the followings methods. These options also allow a ringback to be set when the target just rings, often known as a ringback when next used.

- **Using a button programmed to the Ring Back When Free function**
  If the button has status indication, it will show that a ring back has been set. The button can also be pressed again to cancel the ringback.
- **Use a short code set to the Ring Back When Free function**
  A short code set to this function can be used to set a ringback on any extension without having to actually make a call.
- **IP Office Phone Manager**
  This application provides the user with a button to set a ringback.
- **Analog Phones**
  Analog phone users can set a ringback when free by pressing any DTMF key before hanging up when they hear busy tone.

10.14 Message Waiting Indication

Message waiting indication (MWI) or a message lamp is supported for a wide variety of phones. It is used to provide the user with indication of when their voicemail mailbox contains new messages. It can also be configured to provide them with indication when selected hunt group mailboxes contain new messages.

Avaya digital and IP phones all have in-built message waiting lamps. Also for all phone users, the IP Office Phone Manager application provides message waiting indication.

Analog Phone Message Waiting Indication

For analog phones, IP Office 3.1 provides support for a variety of analog message waiting indication (MWI) methods. Those methods are 51V Stepped, 81V, 101V and Line Reversal. The 101V method is only supported when using a Phone V2 expansion module.

81V is typically used in European countries. 51V Stepped is used in most other countries. However the actual method used for a particular model of analog phone should be confirmed with the phone manufacturer's documentation.

The method used for an individual analog extension is set for the **Extn | Extn | Message Waiting Lamp Indication Type** 248 field. This field also provides options for ***None*** (no MWI operation) and ***On***. ***On*** selects a default message waiting indication method based on the system locale 750.

'On' Method	Locale
81V	Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Netherlands, Norway, Poland, Portugal, Russia, Saudi Arabia, Sweden, Switzerland, United Kingdom.
51V Stepped	Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Japan, Korea, Mexico, New Zealand, Peru, South Africa, Spain, United States.

- For the United Kingdom system locale (eng), the default Caller Display Type (UK) allows updates of an analog phone's ICLID display whilst the phone is idle. The IP Office uses this facilities to display the number of new messages and total number of messages in the users own mailbox. This feature is not supported with other Caller Display Types.

Hunt Group Message Waiting Indication

By default no message waiting indication is provided for hunt group voicemail mailboxes. Message waiting indication can be configured by adding an H entry followed by the hunt groups name to the Source Numbers tab of the user requiring message waiting indication for that hunt group. For example, for the hunt group Sales, add HSales. Hunt group message waiting indication does not require the user to be a member of the hunt group

10.15 Ring Tones

Ring tones can be defined in the following terms:

- **Distinctive Ringing - Inside, Outside and Ringback**
  A distinctive ring tone can be given for each of the different call types: an internal call, an external call and a ringback calls (voicemail calls, ringback when free calls, calls returning from park, hold or transfer).
  - The distinctive ringing patterns used for most non-analog phones are as follows:
    - **Internal Call:** Repeated single-ring.
    - **External Call:** Repeated double-ring.
    - **Ringback Call:** Repeated single-ring followed by two short rings.
  - For analog extensions, the ringing pattern used for each call type can be set through the IP Office configuration in Manager. This is done using the settings on **System | Telephony | Tones & Music** 177 and or **User | Telephony | Call Settings** 265 tabs.
  - For non-analog extension the ringing pattern used for each call type by the IP Office is not configurable.
- **Personalized Ringing**
  This term refers to control of the ringing sound through the individual phones. For non-analog phones, while the distinctive ringing patterns cannot be changed, the ringer sound and tone may be personalized depending on the phone's own options. Refer to the appropriate IP Office telephone user guide.

Analog Phone Ringing Patterns

For analog phone users, the distinctive ringing pattern used for each call type can be adjusted. From the **System | Telephony | Tones & Music** 177 tab, the default ring tone for each call type can be configured. The setting for an individual user associated with the analog extension can be altered from the system default through the **User | Telephony | Call Settings** 265 tab.

Note that changing the pattern for users associated with fax and modem device extensions may cause those devices to not recognize and answer calls.

The selectable ringing patterns are:

- **RingNormal**
  This pattern varies to match the **Locale** set in the **System | System** tab. This is the default for external calls.
- **RingType1:** 1s ring, 2s off, etc. This is the default for internal calls.
- **RingType2:** 0.25s ring, 0.25s off, 0.25s ring, 0.25s off, 0.25s ring, 1.75s off, etc. This is the default for ringback calls.
- **RingType3:** 0.4s ring, 0.8s off, …
- **RingType4:** 2s ring, 4s off, …
- **RingType5:** 2s ring, 2s off, …
- **RingType6:** 0.945s ring, 4.5s off, …
- **RingType7:** 0.25s ring, 0.24 off, 0.25 ring, 2.25 off, …
- **RingType8:** 1s ring, 3s off, …
- **RingType9:** 1s ring, 4s off, …
- **RingType0:** Same as **RingNormal** for the United Kingdom locale.
- **Default Ring:** Shown on the **User | Telephony | Call Setting** 265 tab. Indicates follow the settings on the **System | Telephony | Tones & Music** 177 tab.

10.16 Music On Hold (MOH)

The IP Office can provide music on hold (MOH) in from either an internally stored file or from an externally connected audio input.

- **Legal Requirements**
  You must ensure that any MOH source you use complies with copyright, performing rights and other local and national legal requirements.
- **Internal Music on Hold Files**
  The IP Office can use internal music on hold files that it stores in its non permanent memory. The files are loaded as follows:
  - Following a reboot, the IP Office will try using TFTP to download the file. The file properties should be: PCM, 8kHz 16-bit, mono, maximum length 30 seconds (90 seconds on the IP500).
  - The system source file name should be holdmusic.wav. For IP Office 4.2+, the names of alternate source files are specified on the System | Telephony | Tones & Music 179 tab.
  - The initial source for TFTP download is the system's configured TFTP server (System | System | TFTP Server IP Address 165). The default for this is a broadcast to the local subnet for any PC running a TFTP server.
  - By default Manager acts as a TFTP server while it is running. If Manager is used as the TFTP server then the holdmusic.wav file should be placed in the Manager applications working directory 138.
  - For IP Office 3.1+, if no successful TFTP download occurs, the IP Office will automatically look for the files on the control unit's compact flash memory card if present and will download from there.
  - If IP Office has not loaded a hold music file it will retry loading a hold music file approximately every five minutes.
  - For IP Office 3.1+, if an internal music on hold file is downloaded, the IP Office will automatically write a copy of that file to its compact flash memory card if present. This will overwrite any existing music on hold file stored on that card.
  - If an internal music on hold file is downloaded, that file is used and overrides any external music on hold source if also connected.
- **External MOH**
  An external music source can be connected to the IP Office control unit. Connect a line out audio source to the 3.5mm port marked AUDIO on the back of the control unit.
  - If the control unit has downloaded the internal system source file ***holdmusic.wav*** file, the external audio port is ignored.
  - The IP Office can be forced to use the external port and not try downloading a holdmusic.wav file by setting the **System Source** 179 (System | Telephony | Tones & Music 179) as ***External***.
- **Default Music on Hold Tones**
  If no internal music on hold file is available and ***External*** is not selected as the **System Source**, then the system will provide a default tone for music on hold. The tone used is double beep tone (425Hz repeated (0.2/0.2/0.2/3.4) seconds on/off cadence).
  - On IP Office 3.0(50)+ this option is only supported for the Italian locale.
  - On IP Office 4.0+ this option is supported in all locales.
  - On IP Office 4.2+, ***Tone*** can be selected as the **System Source**, overriding the use of the external source port and downloading of holdmusic.wav.

Checking Music on Hold

The IP Office short code feature Hold Music 440 can be used to listen to the hold music sources. For the System Source the default system short code is ****34#*** which allows you to listen to a system's current music on hold. On IP Office 4.2+, for additional sources you can dial ****34N#***, replacing ***N*** with the source required from 1 to 4.

10.17 Date and Time

The IP Office control unit contains a battery backed clock which is used to maintain system time during normal operation and when mains power is removed. The time is normally obtained using Time protocol (RFC868) requests. Note that this is different from Network Time Protocol (NTP).

Following a reboot the IP Office control unit sends out a time request on its LAN interfaces. It first makes the request to the Voicemail Server IP address in its configuration and, if it receives no reply, it then makes a broadcast request.

The Voicemail Lite Server, Voicemail Pro Server/Service and the Manager program can all act as Time servers, giving the time as set on their host PC. If you are running Manager when the Voicemail Server starts, then Voicemail does not start as a time server. It is therefore recommended that you have no copy of Manager running when you start or restart the Voicemail Server.

A specific address for the time server that should be used can be set in the IP Office configuration using the **Time Server IP Address** 165 (System | System) 165 setting. Setting this address to 0.0.0.1 also disables the IP Office's time update requests.

When using a time server located in a different time zone from the IP Office, there are two mechanisms for applying an offset to the time. If Manager is acting as the time server, the time offset for each can be specified through the **Time Offset** of the BOOTP 162 entry for the system. Alternatively, the offset can specified in the IP Office configuration using **Time Offset** 165 (System | System) 165.

Manually Setting the System Time

For IP Office systems without access to a time server, a number of methods to manually set the system time exist. These are available in the IP Office 4.1+. The following method is only supported on these phones: 2410, 2420, 4412, 4424, 4612, 4624, 4610, 4620, 4621, 5410, 5420, 5610, 5620, 5621, 6412, 6424. It is supported on any analog, T3, T3 IP or wireless (IP DECT, 3600, 3700 Series) phones.

- Note: If the IP Office system that is still configured for automatic time updates (on by default), any manually set time and date will be overridden on the next automatic update. The use of automatic updates can be disabled by setting the **System | System | Time Server IP Address** 165 to 0.0.0.1.

Enabling a User Button for Time and Date

1. Select the user who can adjust the system time and date.
   - If necessary create a new user who can be used to log in and set the time and date before logging out.
2. On the **User | Telephony** tab, ensure that the option **System Phone** is selected.
3. On the **User | Button Programming** tab select and double-click on an available button.
4. Select **Emulation > Self-Administer** as the action.
5. In the Action Data field enter ***2***.
6. Enter an appropriate label for the button.
7. Adding another button set to the **Emulation > Time of Day** action is recommended as this will allow the user to view and confirm the systems current time.
8. Send the updated configuration to the IP Office.

Using the Programmable Button

1. Press the programmed button. If the user has a **Login Code** set it is requested.
2. The options **Date** and **Time** are displayed.
3. To set the date press **Date**.
   1. The current system date is displayed.
   2. Enter the new date, using two digits for day and month. Use the ***** or **#** keys to insert the / separators. The format for date enter matches the locale of the IP Office system.
   3. During entry the key labeled **<<<** can be used to backspace.
   4. When the full date has been entered as required, press **Next**.
   5. Press **Done**.
   6. The phone will return to idle.
4. To set the time press **Time**.
   1. The current system time is displayed.
   2. Enter the new time using 24-hour clock format. Use the ***** or **#** keys to insert the : separator.
   3. When the full time has been entered as required, press **Done**.
   4. The phone will return to idle.

10.18 System Phone Features

The user option **System Phone** (User | Telephony | Call Settings | System Phone 265) can be used to designate a user a being a System Phone user. Depending on the level of IP Office software, System Phone users can access a number of additional function not available to other phone users.

All IP Office Releases

The following functions have been supported for System Phone users since the release of IP Office:

- **MENU to set date/time**
  Restricted to 4412, 4424, 4612, 4624, 6408, 6416 and 6424 phones where supported by the IP Office. Note 4612 and 4624 not support for 4.1+. On these phones, a System Phone user can manually set the system date and time by pressing ***Menu*** **|** ***Menu*** **|** ***Func*** **|** ***Setup***.
- **SoftConsole Send Message**
  If the System Phone user is using SoftConsole, they can access the SoftConsole function **Send Message** to send a short text message (up to 16 characters) to a display phone. Refer to the SoftConsole documentation for details. Note that this is no longer required for 4.0+.

IP Office 4.1+

The following function is supported for System Phone users on IP Office 4.1+. Not supported on analog, T3, T3 IP and wireless phones.

- **Date/Time Programmable Button:** *Software level = 4.1+.*
  Allows System Phone users to manually set the system date and time through a programmable button (see Self Administer 592 and Date and Time 685).

IP Office 4.2+

The following function is supported for System Phone users on IP Office 4.2+ (and 4.1 Q4 maintenance release).

- **Change Login Code of Other Users**
  Using a short code with the Change Login Code 412 feature, system phone users can change the login code of other users on the system.
- **Outgoing Call Bar Off**
  Using a short code with the Outgoing Call Bar Off 444 feature, system phone users can switch off the outgoing call bar status of other users on the system.

10.19 The 'No User' User

It is possible to have an extension which has no default associated user. This can occur for a number of reasons:

- The extension has no Base Extension setting associating it with a user who has the same setting as their Extension to indicate that they are the extension's default associated user.
- The extension's default associated user has logged in at another extension. Typically they will be automatically logged back in at their normal extension when they log out the other phone.
- The extension's default associated user cannot be automatically logged in as they are set to Forced Login.

Phones with no current user logged in are associated with the setting of the NoUser user in the IP Office configuration. This user cannot be deleted and their Name and Extension setting cannot be edited. However their other settings can be edited to configure what functions are available at extensions with no currently associated user.

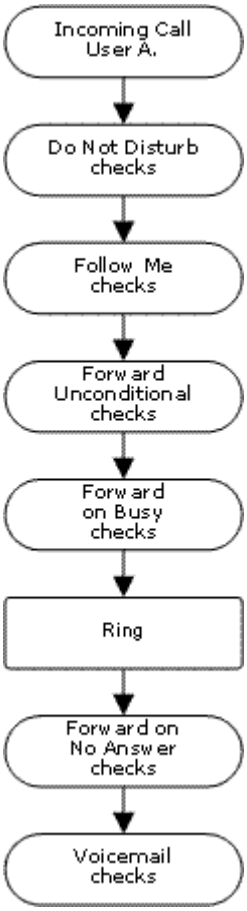
By default the **NoUser** user has **Outgoing Call Bar** enabled so that the extension cannot be used for external calls. For IP Office 4.0+ the users first programmable button is set to the **Login** action.

NoUser Source Numbers

The **SourceNumbers** tab of the **NoUser** user is used to configure a number of special options. These are then applied to all users on the IP Office system. For details refer to the **User | Source Numbers** 263 section.

10.20 Forwarding and Transferring Calls

This section contains topics looking at how users can have their calls automatically redirected. As illustrated, there is a order of priority in which the redirect methods are used.



1. **Do Not Disturb (DND)** 690
   Redirect all calls to voicemail if available, otherwise return busy tone. DND overrides all the redirect method below unless the calling number is in the user's DND Exception Numbers List.
2. **Follow Me** 692
   Redirect all calls to another extension that the users is temporarily sharing. Follow Me overrides Forward Unconditional. The Follow Me destination is busy or does not answer, the user's Forward on Busy or Forward on No Answer options can be used if set.
3. **Forward Unconditional** 694
   Redirect the user's external calls to another number. That number can be any number the user can normally dial including external numbers. Forwarding of hunt group and internal calls is optional. Forward Unconditional overrides Forward on Busy and Forward on No Answer.
4. **Forward on Busy** 696
   Redirects the user's external calls when the system sees the user as being busy. Uses the same number as Forward Unconditional unless a separate Forward on Busy Number is set. Forwarding internal calls is optional. Forward on Busy overrides Forward on No Answer.
5. **Forward on No Answer** 698
   Redirects the user's external calls when they ring for longer than the user's No Answer Time. Uses the same number as Forward Unconditional unless a separate Forward on Busy Number is set. Forwarding internal calls is optional.

Notes

- **Retrieving Externally Forwarded Calls**
  Where a call is forwarded to an external destination and receives busy or is not answered within the forwarding user's **No Answer Time**, the system will attempt to retrieve the call. If forwarded on a trunk that does not indicate its state, for example an analog loop start trunks, the call is assumed to have been answered.
- **Off-Switch Forwarding Restrictions**
  User forwarding is subject to the same restrictions as transferring calls. To bar a user from forwarding calls to an external number, the **Inhibit Off-Switch Forward/Transfers** 266 (User | Telephony | Supervisor Settings) 266 option. To bar all users from forwarding calls to external numbers the **Inhibit Off-Switch Forward/Transfers** 177 (System | | Telephony | Telephony) 177 option can be used. See Off-switch Transfer Restrictions 703.
- For IP Office 4.0 and higher, when transferring a call to another extension that has forwarding enabled, the type of call being transferred is used. For example, if transferring an external call, if the transfer target has forwarding of external calls enabled then the forward is used.

10.20.1 Do Not Disturb

Summary: Redirect all calls to busy tone or to voicemail if available except those in your DND exceptions list.

Do Not Disturb (DND) is intended for use when the user is present but for some reason does not want to be interrupted. Instead calls are sent to voicemail if available, otherwise they receive busy tone.

- **Exceptions**
  Specific numbers can be added to the user's Do Not Disturb Exception List. Calls from those numbers override DND. N and X wildcards can be used at the end of exception numbers to match a range of numbers. For external numbers, this uses the incoming caller line ID (ICLID) received with the call.
- **Priority**
  Enabling DND overrides any Follow Me or forwarding set for the user, except for calls in the user's Do Not Disturb Exception List.
- **Phone**
  When enabled, the phone can still be used to make calls. An N is displayed on DS phones. When a user has do not disturb in use, their normal extension will give alternate dialtone 752 when off hook.
- **Applied to**

Call Types Blocked		
Internal	✓	Busy or voicemail.
External	✓	Busy or voicemail.
Hunt Group	✓	Not presented.
Page	✓	Not presented.
Follow Me	✗	Rings.
Forwarded	✓	Busy.
VM Ringback	✗	Rings
Automatic Callback	✗	Rings
Transfer Return	✗	Rings.
Hold Return	✗	Rings.
Park Return	✗	Rings.

Do Not Disturb Controls

<table>
<tr><th colspan="2">Do Not Disturb</th></tr>
<tr><td>Manager</td><td>A user's DND settings can be viewed and changed through the User | DND 261 tab within the IP Office configuration settings.</td></tr>
<tr><td>Controls</td><td>The following short code features/button programming actions can be used:
<table>
<tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr>
<tr><td>Do Not Disturb On 427</td><td>✓</td><td>*08</td><td>✓ - Toggles.</td></tr>
<tr><td>Do Not Disturb Off 427</td><td>✓</td><td>*09</td><td>✓</td></tr>
<tr><td>Do Not Disturb Exception Add 426</td><td>✓</td><td>*10*N#</td><td>✓</td></tr>
<tr><td>Do Not Disturb Exception Delete 426</td><td>✓</td><td>*11*N#</td><td>✓</td></tr>
<tr><td>Cancel All Forwarding 411</td><td>✓</td><td>*00</td><td>✓</td></tr>
</table></td></tr>
<tr><td>Phone Manager</td><td>Users can enable DND and set exception numbers by clicking and select the Do Not Disturb tab.

When a user has DND enabled, it is indicated by DND in the title bar. It is indicated by a blue cross symbol on Speed Dial icons set to the user.</td></tr>
<tr><td>SoftConsole</td><td>A SoftConsole user can view and edit a user's DND settings except exception numbers. Through the directory, select the required user. Their current status including DND is shown. Double-click on the details to adjust DND on or off.</td></tr>
<tr><td>Voicemail</td><td>If voicemail is available, it is used instead of busy tone for callers not in the users exceptions list.

For Voicemail Pro, the Play Configuration Menu action can be used to let callers switch DND on or off.</td></tr>
</table>

10.20.2 Follow Me

Summary: Have your calls redirected to another user's extension, but use your coverage, forwarding and voicemail settings if the call receives busy tone or is not answered.

Follow Me is intended for use when a user is present to answer calls but for some reason is working at another extension such as temporarily sitting at a colleague's desk or in another office or meeting room. Typically you would use Follow Me if you don't have a Hot Desking log in code or if you don't want to interrupt your colleague from also receiving their own calls, ie. multiple users at one phone.

- **Priority**
  Follow Me is overridden by DND except for callers in the user's DND Exception Numbers List. Follow Me overrides Forward Unconditional but can be followed by the user's Forward on Busy or Forward on No Answer based on the status of the Follow Me destination.
- **Destination**
  The destination must be an internal user extension number. It cannot be a hunt group extension number or an external number.
- **Duration**
  The Follow Me user's no answer timeout is used. If this expires, the call either follows their Forward on No Answer setting if applicable, or goes to voicemail is available. Otherwise the call continues to ring at the destination.
- **Phone**
  When enabled, the phone can still be used to make calls. When a user has follow me in use, their normal extension will give alternate dialtone 752 when off hook.
- **Exceptions**
  - The Follow Me destination extension can make and transfer calls to the follow me source.
  - The call coverage settings of the user are applied to their Follow Me calls. The call coverage settings of the destination are not applied to Follow Me calls it receives.
- **Calls Forwarded**

Call Types Redirected		
Internal	✓	Redirected.
External	✓	Redirected.
Hunt Group	✓	Redirected*.
Page	✓	Redirected.
Follow Me	✗	Not redirected.
Forwarded	✓	Redirected.
VM Ringback	✗	Not redirected.
Automatic Callback	✗	Not redirected.
Transfer Return	✗	Not redirected.
Hold Return	✗	Not redirected.
Park Return	✗	Not redirected.

*Except calls for "Longest Waiting" type hunt groups.

Follow Me Controls

<table>
<tr><th colspan="2">Follow Me</th></tr>
<tr><td>Manager</td><td>A user's Follow Me settings can be viewed and changed through the User | Forwarding 269 tab within the IP Office configuration settings. Note that on this tab, entering a Follow Me Number also enables Follow Me.</td></tr>
<tr><td>Controls</td><td>The following short code features/button programming actions can be used:
<table>
<tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr>
<tr><td>Follow Me Here 431</td><td>✓</td><td>*12*N#</td><td>✓</td></tr>
<tr><td>Follow Me Here Cancel 432</td><td>✓</td><td>*13*N#</td><td>✓</td></tr>
<tr><td>Follow Me To 432</td><td>✓</td><td>*14*N#</td><td>✓</td></tr>
<tr><td>Cancel All Forwarding 411</td><td>✓</td><td>*00</td><td>✓</td></tr>
</table></td></tr>
<tr><td>Phone Manager</td><td>Users can set a Follow Me To Number and enable Follow Me through the Forwarding tab. Click and select the Forwarding tab.

When a user has Follow Me enabled, it is indicated by FollowTo and the destination in the title bar. It is not indicated on Speed Dial icons set to the user. Other status icons remain linked to the user's normal telephone and not to the status of the destination.</td></tr>
<tr><td>SoftConsole</td><td>A SoftConsole user can view and edit a user's Follow Me settings. Through the directory, select the required user. Their current status including Follow Me is shown. Double-click on the details and select Forwarding to alter their forwarding settings including Follow Me.</td></tr>
<tr><td>Voicemail</td><td>For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination.

For Voicemail Pro, the Play Configuration Menu action can be used to let callers alter or set their current Follow Me destination.</td></tr>
</table>

10.20.3 Forward Unconditional

Summary: Have your calls redirected immediately to another number including any external number that you can dial.

- **Priority**
  This function is overridden by DND and or Follow Me if applied. Forward Unconditional overrides Forward on Busy and Forward on No Answer.
- **Destination**
  The destination can be any number that the user can dial. If external and Inhibit Off-Switch Transfers is applied, the caller is directed to voicemail if available, otherwise they receive busy tone.
- **Duration**
  The destination is rung using the forwarding user's No Answer Time. If this expires, the call goes to voicemail if available. Otherwise the call continues to ring at the destination. Calls to an external destination sent on trunks that do not signal their state, for example analog loop start trunks, are assumed to have been answered.
- **Phone**
  When enabled, the phone can still be used to make calls. An **D** is displayed on DS phones. When a user has forward unconditional in use, their normal extension will give alternate dialtone 752 when off hook.
- **Calls Forwarded**
  Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

Call Types Forwarded		
Internal	✓	Optional.
External	✓	Forwarded.
Hunt Group	✓	Optional.*
Page	✗	Not presented.
Follow Me	✗	Rings.
Forwarded	✓	Forwarded.
VM Ringback	✗	Rings.
Automatic Callback	✗	Rings.
Transfer Return	✗	Rings.
Hold Return	✗	Ring/hold cycle.
Park Return	✗	Rings.

*Optional only for calls targeting sequential and rotary type groups.

Forward Unconditional Controls

<table>
<tr><th colspan="2">Forward Unconditional</th></tr>
<tr><td>Manager</td><td>A user's forwarding settings can be viewed and changed through the User | Forwarding 269 tab within the IP Office configuration settings.</td></tr>
<tr><td>Controls</td><td>The following short code features/button programming actions can be used:
<table>
<tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr>
<tr><td>Forward Number 434</td><td>✓</td><td>*07*N#</td><td>✓</td></tr>
<tr><td>Forward Unconditional On 437</td><td>✓</td><td>*01</td><td>✓ - Toggles.</td></tr>
<tr><td>Forward Unconditional Off 437</td><td>✓</td><td>*02</td><td>✓</td></tr>
<tr><td>Forward Hunt Group Calls On 433</td><td>✓</td><td>✗</td><td>✓ - Toggles.</td></tr>
<tr><td>Forward Hunt Group Calls Off 433</td><td>✓</td><td>✗</td><td>✓</td></tr>
<tr><td>Disable Internal Forwards 424</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Enable Internal Forwards 428</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Disable Internal Forward Unconditional 424</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Enable Internal Forward Unconditional 428</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Set No Answer Time 457</td><td>✓</td><td>✗</td><td>✓</td></tr>
<tr><td>Cancel All Forwarding 411</td><td>✓</td><td>*00</td><td>✓</td></tr>
</table></td></tr>
<tr><td>Phone Manager</td><td>Users can set a forward destination number and enable Forward Unconditional through the Forwarding tab. Click and select the Forwarding tab.

When a user has Forward Unconditional enabled, it is indicated by Fwd unconditional and the destination in the title bar. It is indicated by a green arrow symbol on Speed Dial icons set to that user.</td></tr>
<tr><td>SoftConsole</td><td>A SoftConsole user can view and edit a user's forwarding settings. Through the directory, select the required user. Their current forwarding status is shown. Double-click on the details and select Forwarding to alter their forwarding settings.</td></tr>
<tr><td>Voicemail</td><td>For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination.

For Voicemail Pro, the Play Configuration Menu action can be used to let callers set their current forwarding destination and switch Forwarding Unconditional on/off.</td></tr>
</table>

10.20.4 Forward on Busy

Summary: Have your calls redirected when you are busy to another number including any external number that you can dial.

The method by which the system determines if a user is 'busy' to calls depends on factors such as whether they have multiple calls appearance buttons or Call Waiting and or Busy on Held set. See Busy 700.

- **Priority**
  This function is overridden by DND and or Forward Unconditional if applied. It can be applied after a Follow Me attempt. It overrides Forward on No Answer.
- **Destination**
  The destination can be any number that the user can dial. The Forward Unconditional destination number is used unless a separate number Forward on Busy Number is set. If Inhibit Off-Switch Transfers is applied, the caller is directed to voicemail if available, otherwise they receive busy tone.
- **Duration**
  The destination is rung using the forwarding user's No Answer Time. If this expires, the call goes to voicemail is available. Calls to an external destination sent on trunks that do not signal their state, for example analog loop start trunks, are assumed to have been answered.
- **Phone**
  Forward on Busy is not indicated and normal dial tone is used.
- **Calls Forwarded**
  Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

Call Types Forwarded		
Internal	✓	Optional.
External	✓	Forwarded.
Hunt Group	✗	Not presented
Page	✗	Not presented.
Follow Me	✗	Rings.
Forwarded	✓	Forwarded.
VM Ringback	✗	Rings.
Automatic Callback	✗	Rings.
Transfer Return	✗	Rings.
Hold Return	✗	Ring/hold cycle.
Park Return	✗	Rings.

Forward on Busy Controls

Forward on Busy	
Software Level	A user's forwarding settings can be viewed and changed through the User | Forwarding 269 tab within the IP Office configuration settings.
Controls	The following short code features/button programming actions can be used:

Feature/Action	Short Code	Default	Button
Forward Number 434	✓	*07*N#	✓
Forward on Busy Number 434	✓	*57*N#	✓
Forward on Busy On 435	✓	*03	✓ - Toggles.
Forward on Busy Off 435	✓	*04	✓
Disable Internal Forwards 424	✓	✗	✗
Enable Internal Forwards 428	✓	✗	✗
Disable Internal Forward Busy or No Answer 425	✓	✗	✗
Enable Internal Forward Busy or No Answer 428	✓	✗	✗
Set No Answer Time 457	✓	✗	✓
Cancel All Forwarding 411	✓	*00	✓

Phone Manager	Users can set a forward destination number and enable Forward on Busy through the Forwarding tab. Click and select the Forwarding tab. When a user has Forward on Busy enabled, it is indicated by Fwd on Busy and the destination in the title bar. It is not indicated by Speed Dial icons set to that user.
SoftConsole	A SoftConsole user can view and edit a user's forwarding settings. Through the directory, select the required user. Their current forwarding status is shown. Double-click on the details and select Forwarding to alter their forwarding settings.
Voicemail	For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination. For Voicemail Pro, the Play Configuration Menu action can be used to let callers set the forward destination. It cannot however be used to enable Forward on Busy or set a separate Forward on Busy number.

10.20.5 Forward on No Answer

Summary: Have your calls redirected another number if it rings without being answered.

- **Priority**
  This function is overridden by DND and Forward on Busy if applied. It can be applied after a Follow Me attempt. Forward Unconditional overrides Forward on Busy and Forward on No Answer.
- **Destination**
  The destination can be any number that the user can dial. The Forward Unconditional destination number is used unless a separate number Forward on Busy Number is set. If Inhibit Off-Switch Transfers is applied, the caller is directed to voicemail if available, otherwise they receive busy tone.
- **Duration**
  The destination is rung using the forwarding user's No Answer Time. If this expires, the call goes to voicemail is available. Otherwise the call continues to ring at the destination. Calls to an external destination sent on trunks that do not signal their state, for example analog loop start trunks, are assumed to have been answered.
- **Phone**
  Forward on No Answer is not indicated and normal dial tone is used.
- **Calls Forwarded**
  Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

Call Types Forwarded		
Internal	✓	Optional.
External	✓	Forwarded.
Hunt Group	✗	Not presented.
Page	✗	Not presented.
Follow Me	✗	Rings..
Forwarded	✓	Forwarded.
VM Ringback	✗	Rings.
Automatic Callback	✗	Rings.
Transfer Return	✗	Rings.
Hold Return	✗	Ring/hold cycle.
Park Return	✗	Rings.

Forward on No Answer Controls

<table>
<tr><th colspan="2">Forward on No Answer</th></tr>
<tr><td>Manager</td><td>A user's forwarding settings can be viewed and changed through the User | Forwarding 269 tab within the IP Office configuration settings.</td></tr>
<tr><td>Controls</td><td>The following short code features/button programming actions can be used:
<table>
<tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr>
<tr><td>Forward Number 434</td><td>✓</td><td>*07*N#</td><td>✓</td></tr>
<tr><td>Forward on Busy Number 434</td><td>✓</td><td>*57*N#</td><td>✓</td></tr>
<tr><td>Forward on No Answer On 436</td><td>✓</td><td>*05</td><td>✓ - Toggles.</td></tr>
<tr><td>Forward on No Answer Off 436</td><td>✓</td><td>*06</td><td>✓</td></tr>
<tr><td>Enable Internal Forwards 428</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Disable Internal Forwards 424</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Enable Internal Forward Busy or No Answer 426</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Disable Internal Forward Busy or No Answer 425</td><td>✓</td><td>✗</td><td>✗</td></tr>
<tr><td>Set No Answer Time 457</td><td>✓</td><td>✗</td><td>✓</td></tr>
<tr><td>Cancel All Forwarding 411</td><td>✓</td><td>*00</td><td>✓</td></tr>
</table></td></tr>
<tr><td>Phone Manager</td><td>Users can set a forward destination number and enable Forward on No Answer through the Forwarding tab. Click and select the Forwarding tab.

When a user has Forward on No Answer enabled, it is indicated by Fwd on No Answer and the destination in the title bar. It is not indicated by Speed Dial icons set to that user.</td></tr>
<tr><td>SoftConsole</td><td>A SoftConsole user can view and edit a user's forwarding settings. Through the directory, select the required user. Their current forwarding status is shown. Double-click on the details and select Forwarding to alter their forwarding settings.</td></tr>
<tr><td>Voicemail</td><td>For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination.

For Voicemail Pro, the Play Configuration Menu action can be used to let callers set the forward destination. It cannot however be used to enable Forward on Busy or set a separate Forward on Busy number.</td></tr>
</table>

10.20.6 Determining a User's Busy Status

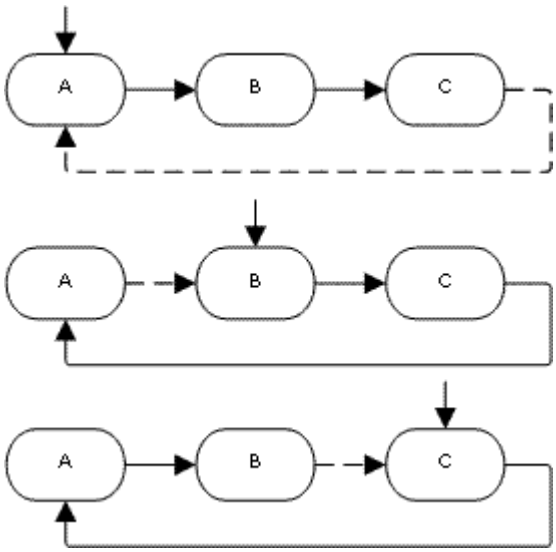
Various IP Office features allow users to handle more than one call at a time. Therefore the term "busy" has different meanings. To other users it means whether the user is indicated as being busy. To the system it means whether the user is not able to receive any further calls. The latter is used to trigger 'busy treatment', either using a user's **Forward on Busy** settings or redirecting calls to voicemail or just returning busy tone.

- **Busy Indication - In Use**
  The user busy indication provided to programmable buttons, and to the Phone Manager and SoftConsole applications, is based on the monitored user's hook switch status. Whenever the user is off-hook, they will be indicated as being busy regardless of call waiting or call appearance settings.
- **Busy to Further Calls**
  Whether a user can receive further calls is based on a number of factors as described below.
  - **Logged In and Present**
    Is the user logged into an extension and is that extension physically connected to the IP Office system.
  - **Busy on Held**
    If a user enables their Busy on Held setting, whenever they have a call on hold, they are no longer available to any further incoming calls.
  - **Appearance Buttons**
    A user's call appearance button are used to receive incoming calls. Normally, whilst the user has any free call appearance buttons, they are available to receive further calls. Exceptions are:
    - **Reserve Last Appearance**
      Users with appearance buttons require a free call appearance button to initiate transfers or conferences. Therefore it is possible through the user's configuration settings to reserve their last call appearance button for outgoing calls only.
    - **Other Appearance Buttons**
      Calls may also be indicated on line, call coverage and bridged appearance buttons.
- **Call Waiting**
  Users of phones without appearance buttons can use call waiting. This adds an audio tone, based on the system locale, when an additional call is waiting to be answered. Only one waiting call is supported, any further calls receive busy treatment.
- **Hunt Group Calls**
  A user's availability to receive hunt group calls is subject to a range of other factors. See Member Availability 304.

10.20.7 Chaining and Loops

Chaining is the process where a call forward to an internal user destination is further forwarded by that user's own forwarding settings.

- **Follow Me Calls**
  Follow Me calls are not chained. They ignore the forwarding, Follow Me and Do Not Disturb settings of the Follow Me destination.
- **Voicemail**
  If the call goes to voicemail, the mailbox of the initial call destination before forwarding is used.
- **Looping**
  When a loop would be created by a forwarding chain, the last forward is not applied. For example the following are scenarios where A forwards to B, B forwards to C and C forwards to A. In each case the final forward is not used as the destination is already in the forwarding chain.



- **Maximum Number of Forwards**
  A maximum of 10 forwarding hops are supported for any call.
  - Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

10.20.8 Transferring Calls

The following are some of the methods usable to transfer calls.

- **Supervised Transfer**
  This is a transfer where the user waits for the transfer destination to answer and talks to that party before completing the transfer, this is referred to as a consultation call. They then either complete the transfer or drop the call and return to the held for transfer call.
  - **Pre-IP Office 4.0**
    The initial consultation stage is presented as an internal call with internal call details and ringing.
  - **IP Office 4.0+**
    The call details, display, ringing and forwarding applied are appropriate to the type of call being transferred.
- **Unsupervised Transfer**
  This is a transfer completed whilst the destination is still ringing.
- **Automatic Transfer - Forwarding**
  The IP Office allows users to automatically transfer calls using forwarding options such as Forward on Busy, Forward on No Answer and Forward Unconditional. For full details see DND, Follow Me and Forwarding 689.
- **Transfers to a Forwarded Extension**
  For IP Office 4.0 and higher, when transferring a call to another extension that has forwarding enabled, the type of call being transferred is used. For example, if transferring an external call, if the transfer target has forwarding of external calls enabled then the forward is used.

Manual Transfer Methods			
Tool	**Unsupervised Transfer**	**Supervised Transfer**	**Reclaim**
Analog Phone	1. Press R. Note that broken dial tone is heard while a call is on hold. 2. Dial the transfer destination number. 3. Hang-up.	1. Press R. 2. Dial the transfer destination number. 3. If the destination answers and accepts the call, hang-up. 4. If the called party does not answer or does not want to accept the call, press R again. 5. To return to the original caller press R.	*46
Avaya DS Phone	1. Press Transfer. 2. Dial the transfer destination number. 3. Press Transfer again to complete the transfer.	1. Press Transfer. 2. Dial the transfer destination number. 3. If the destination answers and accepts the call, press Transfer again to complete the transfer. 4. If the called party does not answer or does not want to accept the call, press Drop. 5. To return to the original caller press it's call appearance button.	*46
Phone Manager	1. Click . 2. Enter the transfer destination in the Number box. 3. Select Blind Transfer button or click .	1. Click . 2. Enter the transfer destination in the Number box. 3. Select Transfer. The original call will be put on Hold. 4. Once the call has been answered you can talk with the transfer target. 5. To transfer the call, click . 6. To cancel the transfer and reconnect the held call press End.	Function | Reclaim

10.20.9 Off-Switch Transfer Restrictions

Users cannot transfer calls to a destination that they cannot normally dial. This applies to manual transfers and also to automatic transfers (forwarding). In addition to call barring applied through short codes, the following IP Office settings may restrict a users ability to transfer calls.

- **Outgoing Call Bar:** *Default = Off (User | Telephony | Supervisor Settings 266)*
  When enabled, this setting stops a user from making any external calls. It therefore stops them making any external transfers or forwards.
- **Inhibit Off-Switch Forward/Transfer:** *Default = Off (System | Telephony | Telephony 177)*
  When enabled, this setting stops any user from transferring or forwarding calls externally.
- **Inhibit Off-Switch Forward/Transfer:** *Default = Off (User | Telephony | Supervisor Settings 266), Software level = 3.2+.*
  When enabled, this setting stops the specific user from transferring or forwarding calls externally. This does not stop another user transferring the restricted users calls off-switch on their behalf.
  - When either system or user **Inhibit Off-Switch Forward/Transfer** is enabled, it affects the operation of the user's Phone Manager application and phone. In Phone Manager, the destination fields on the **Forwarding** tab are changed to drop-down lists containing only internal destinations. User attempts to set an external forward destination via a short code will receive error tone. User attempt to set an external forward destination via a programmable button on their phone will not have a Next option allowing the number to be saved.
- **Analog Trunk to Trunk Connection:** *Default = Off (Line | Analog Options 196)*
  When not enabled, users cannot transfer or forward calls on one analog trunk back off-switch using another analog trunk.
- **Allow Outgoing Transfer:** *Default = Off (System | Telephony | Telephony 177)*
  When not enabled, users are only able to transfer or forward back off-switch incoming external calls. For IP Office 4.0 and higher this option is not present, instead outgoing transfers are allowed by default.
- **Restrict Network Interconnect:** *Default = Off (System | Telephony | Telephony 177), Software level = 4.2+.*
  When this option is enabled, each trunk is provided with a **Network Type** option that can be configured as either ***Public*** or ***Private***. The IP Office will not allow calls on a Public trunk to be connected to a Private trunk and vice versa, returning busy indication instead.
  - Where multiple IP Office switches are connected in a Small Community Network, the use of Restrict Network Interconnect may lead to users seeing directory numbers which they cannot dial. In this case calls will go to centralized voicemail if present.

Conferencing

Calls can be transferred using a conference from which the conference originator then drops. The user will normally be allowed to setup conference calls that can include two external parties. However, if the user then drops from the conference, if any transfer restriction applies then the whole conference will be dropped.

10.20.10 Centrex Transfer

Centrex Transfer is a feature provided by some line providers on external analog lines. It allows the recipient of a calls on such a line to transferred that call to another external number. The transfer is then performed by the line provider and the line is freed. Without Centrex Transfer, transferring an external call to another external number would occupy both a incoming and outgoing line for the duration of the call.

IP Office 4.0 and higher supports Centrex Transfer using the existing Flash Hook features.

The following are the supported controls and usages for Centrex Transfer on IP Office:

- **Centrex Transfer Button Operation**
  The action **Flash Hook** (**Advanced | Miscellaneous | Flash Hook**) can be assigned to programmable buttons on DS and IP phones. This button can be configured with or without a telephone number for an automatic or manual transfer respectively.
  - **Manual Transfer**
    If the programmable button is setup as a Flash Hook button without a target telephone number, pressing the button returns dial tone to the user. They can then dial the required transfer number and when they hear ringing or an answer, hang up to complete the Centrex Transfer.
  - **Automatic Transfer**
    If the programmable button is setup as a Flash Hook button with a target telephone number, pressing the button performs the Centrex Transfer to the numbers as a single action.
- **Centrex Transfer Short Code Operation**
  The short code feature Flash Hook can be used with IP Office short codes. It can be setup with or without a telephone number in the same way as a Flash Hook programmable button detailed above. The line group must be the group of analog lines from the Centrex service line provider.
  - **Centrex Transfer Operation for Analog Extensions**
    Most analog phones have a button that performs the action of sending a hook flash signal. The marking of the button will vary and for example may be any of R, H, Recall or Hold. For IP Office analog extensions, pressing this button sends a hook flash to the IP Office to hold any current call and return dial tone.
    - To perform a Centrex Transfer, pressing the analog extension's hook flash button should be followed by the dialing of a Flash Hook short code.
    - For analog extension users with Call Waiting enabled, pressing the hook flash button during a call will hold the current call and connect any call waiting. Therefore it is recommend that analog extension users wanting to use Centrex Transfer should not also have Call Waiting enabled.
  - **Transfer from Voicemail/Auto-Attendant**
    This operation is only supported through Voicemail Pro using an Assisted Transfer action with the destination set to a Flash Hook short code.

Additional Notes

- **Addition Prefix Dialing**
  In some cases the Centrex service provider may require a prefix for the transfer number. If that is the case, that prefix must be inserted in the button programming or the short code used for the Centrex Transfer.
- **Phone Manager and SoftConsole**
  Centrex Transfer is not supported for calls being held and transferred through IP Office applications such as Phone Manager and SoftConsole.
- **Conference Calls**
  Centrex Transfer is not supported with conference calls.

10.21 Conferencing

IP Office systems support the following conference capabilities:

Control Unit	DSP	Conference Capability
Small Office Edition	✓	Supports up to 24 conference parties with a maximum of 6 parties in any particular conference.
IP403	✗	Support multiple conferences totaling up to 64 parties. For example: • 20 x 3-way conferences plus 1 x 4-way conference. • 1 x 10-way conference (10 parties) plus 11 x 3-way conferences (33 parties) and free capacity for 20 more conference parties to join new or existing conferences.
IP406 V1	✗	
IP406 V2	✓	
IP500	✓	
IP412	✗	The IP412 supports two 64 party conference banks. When a new conference is started, the bank with the most free capacity is used for that conference. However once a conference is started on one conference bank, that conference cannot use any free capacity from the other conference bank.

Notes:

- **DSP**
  The column DSP in the table above indicates systems that automatically apply silence suppression to quiet parties in conferences involving 10 or more parties.
- **Other Use of Conference Resources**
  System features such as call intrusion, call recording and silent monitoring all use conference resources for their operation.
- **Ending Conferences**
  The behaviour for the IP Office ending a conference varies as follows:
  - For pre-4.0 IP Office systems, if a conference has two parties, and one party leaves, the conference call is ended. This may affect conferences that are just beginning but currently only contain the first two parties to join.
  - For IP Office 4.0, a conference remains active until the last extension or trunk with reliable disconnect leaves. Connections to voicemail or a trunk without reliable disconnect (for example an analog loop-start trunk) will not hold a conference open.
- **Analog Trunk Restriction**
  In conferences that include external calls, only a maximum of two analog trunk calls are supported. This limit is not enforced by the IP Office software.
- **Recording Conferences**
  If call recording is supported, conference calls can be recorded just like normal calls. Note however that recording is automatically stopped when a new party joins the conference and must be restarted manually. This is to stop parties being added to a conference after any "advice of recording" message has been played.
- **IP Office Conferencing Center**
  If IP Office Conferencing Center is installed, 5 resources are reserved for use by the system. The maximum number of callers in any one conference and the total number of people on conference calls is reduced by 5. The maximum number of conferences on the system for IP406 V2, IP412 and IP Office 500 is reduced by 2.
- **IP Trunks and Extensions**
  Conferencing is performed by services on the IP Office's non-IP interface. Therefore a voice compression channel is required for each IP trunk or extension involved in the conference.
- **Call Routing**
  A short code routing calls into a conference can be used as an Incoming Call Route destination.
- **Conference Tones**
  The IP Office provides conference tones. These will be either played when a party enters/leaves the conference or as a regularly repeated tone. This is controlled by the **Conferencing Tone** 179 (System | Telephony | Tones & Music) 179 option.

10.21.1 Default Conference Handling

The methods below use the IP Office's default system short codes.

To start/add to a conference:

1. Place your first call or the existing conference on hold. Existing conference parties will still be able to talk to each other.
2. Call the new party.
   - If not answered, or diverted to voicemail, or answered but the party does not want to join the conference; put them on hold and dial *52 to clear the call.
3. If answered and the other party wants to join the conference, put them on hold and dial *47.
4. All held calls are now in conference.
   - Digital display extensions will see CONF followed by the conference number.

To exit a conference:

1. Parties wanting to leave a conference can simply hang-up.

10.21.2 Using Conference Meet Me

Each conference on the IP Office is assigned a conference number. This number is displayed on suitable display phones.

Conference Meet Me allows users to join or start a specific numbered conference. This method of operation allows you to advertise a conference number and then let the individual parties join the conference themselves.

Through the Button Programming tab within IP Office Manager, the Conference Meet Me function can be assigned to a DSS key (select Advanced | Call | Conference Meet Me). This allows simple one key access by internal users to specific conferences.

- For IP Office 4.1+ the following enhancements apply to use buttons programmed to Conference Meet Me:
  - When the conference is active, any buttons associated with the conference ID indicate that active state.
  - Calls can be transferred to the conference by pressing Transfer and then pressing the Conference Meet Me button.

Note:

- Conference Meet Me can create conferences that include only one or two parties. These are still conferences using slots from the IP Office's conference capacity.
- Conference Meet Me is not supported on IP Office IP500 systems running in IP Office Standard Edition mode.

Example 1: Meet Me to a user specified conference
The following example system short code allows any extension to dial *67* and then the number of the conference which they want to join followed by #. For example dialing *67*600# will put the user into conference 600.

- Short Code: *67*N#
- Telephone Number: N
- Feature: Conference Meet Me

Example 2: Meet Me to a system specified conference number
The following example system short code allows the dialing extension to join a specific conference, in this case 500.

- Short Code: *500
- Telephone Number: 500
- Feature: Conference Meet Me

If you are asked to add a party to a conference, having a conference meet me short code is very useful. With the conference in progress, call the new party. When they answer, hold the call, dial the conference meet me short code and then hang-up.

10.22 Hot Desking

Hot desking allows users to log in at another phone. Their incoming calls are rerouted to that phone and their user settings are applied to that phone. There are a number of setting and features which affect logging in and out of IP Office phones.

- In order to hot desk, a user must be assigned a **Login Code** 266 ***(User | Telephony | Supervisor Settings)*** 266 in the IP Office configuration.
- By default, each IP Office extension has an **Base Extension** setting. This associates the extension with the user who has the matching **Extension** settings as being that extension's default associated user.
  - By leaving the **Base Extension** setting for an extension blank, it is possible to have an extension with no default associated user. All extensions in this state use the settings of a special user named ***NoUser*** . On suitable phones the display will show ***NoUser***.
  - You can create users whose Extension directory number is not associated with any physical extension. These users must have a log in code in order to log in at a phone when they need to make or receive calls. In this way the IP Office system can support more users than it has physical extensions.
- When another user logs in at an extension, they take control of that phone. Any existing user, including the default associated user, is logged out that phone.
  - Any user settings not applicable to the type of phone on which the user has logged in become inaccessible. For example some programmable button features will become inaccessible if the phone at which a user logs in does not have a sufficient number of programmable buttons.
  - Note that settings that are stored by the phone rather than by the IP Office remain with the phone and do not move when a user hot desks.
- When a user logs off or is logged out by someone else logging in, they are automatically logged back in at the extension for which they are the default associated user if no one else is logged in at that extension. However this does not happen for users set to **Forced Login (User | Telephony | Supervisor Settings)** 266.
- For each user, you can configure how long the extension at which they are logged in can remain idle before they are automatically logged out. This is done using the Login Idle Period option. This option should only be used in conjunction with Force Login.
- Logged in users who are members of a hunt group can be automatically logged out if they do not answer hunt group calls presented to them. This is done by selecting ***Logged Off*** as the user's **Status on No Answer** 265 ***(User | Telephony | Supervisor Settings)*** 265 setting.
- Calls to a logged out user are treated as if the user is busy until the user logs in.
- Logging in and out at a phone can be done either using IP Office short codes or programmable buttons.
  - The default system short code for logging in, is ****35*N#*** where the user replaces N with their extension number and then log in code separated by a ******. This uses the short code feature **ExtnLogin** 429. If the user dials just a log in code as N, it is checked against the user with the same extension number as the extension's base extension number.
  - The default system short code for logging out is ****36***. This uses the short code feature **ExtLogout** 429. For IP Office 4.0 and higher this feature cannot be used by a user who does not have a log in code or by the default associated user of an extension unless they are set to forced log in.
  - The **ExtnLogin** 561 and **ExtnLogout** 561 features can be assigned to programmable buttons on suitable Avaya phones. The **ExtnLogin** button will then prompt the user to enter their details.

10.22.1 Remote Hot Desking

IP Office 4.0+ supports hot desking between IP Office systems within a Small Community Network.

The system on which the user is configured is termed their 'home' IP Office, all other systems are 'remote' IP Offices. To log in at a remote IP Office requires that IP Office to have a Advanced Small Community Networking license. A license is not necessary on the user's home IP Office.

- **User Settings**
  When a user logs in to a remote IP Office system;
  - The user's incoming calls are rerouted across the SCN.
  - The user's outgoing calls uses the settings of the remote IP Office.
  - The user's own settings are transferred. However some settings may become unusable or may operate differently.
    - The user's settings are transferred but user rights are not.
      - If user rights with the same name exist on the remote system then they will be used. The same applies for user rights applied by time profiles, if a time profile with the same name also exists on the remote system .
    - Appearance buttons configured for users on the home system will no longer operate.
    - Various other settings may either no longer work or may work differently depending on the configuration of the remote system at which the user has logged in. For example T3 phones the personal directory is not transferred with the user.
- **Break Out Dialing**
  In some scenarios a hot desking user logged in at a remote system will want to dial a number using the system short codes of another system. This can be done using either short codes with the Break Out feature or a programmable button set to Break Out. This feature can be used by any user within the Advanced Small Community Network but is of significant use to remote hot deskers.

10.22.2 Call Center Agents

On IP Office systems with a call center application such as Compact Contact Center (CCC) or Compact Business Center (CBC), logging in and logging out is a key part of tracking and reporting on call center agents. It also controls call distribution as, until the agent logs in, their hunt group membership is seen as disabled.

For IP Office, CCC, CBC and Delta Server, an agent is defined as being a user with a Login Code and set to Forced Login. Those users consume a CCC agent license.

10.22.3 Hot Desking Examples

The following are example of different ways that the hot desking settings can be used.

Scenario 1: Occasional Hot Desking

In this scenario, a particular user, for this example extension 204, needs to occasionally work at other locations within the building.

1. A Login Code is added to the user's configuration settings, for this example 1234.
2. The user can now log in when needed at any other phone by dialing *35*204*1234#. The phone's default associated user is logged out by this and their calls get busy treatment. User 204 is also logged out their normal phone and their calls now rerouted to the phone at which they have logged in.
3. When finished, the user can dial *36 to log out.
4. This logs the phone's normal default user back on. Its also logs the hot desking user back on at their normal extension.

Scenario 2: Regular Hot Desking

This scenario is very similar to the one above. However the user doesn't want to be automatically logged back in on their normal phone until they return to its location.

1. A Login Code is added to the user's configuration settings, for this example 1234.
2. The Forced Login option is selected.
3. When the user logs out of the phone that they are currently using, they are no longer automatically logged in on their normal extension. When they return to it they must dial *35*204*1234# to log in.
4. Whilst not logged in anywhere, calls to the user receive busy treatment.

Scenario 3: Full Hot Desking

Similar to the scenarios above but this time the user doesn't have a regular phone extension that they use. In order to make and receive calls they must find a phone at which they can log in.

1. The user is given an Extension directory number that is not matched by the extension directory number setting of any existing extension.
2. They are also given a Login Code and a Login Idle Period is set, for this example 3600 seconds (an hour). Forced Login isn't required as the user has no default extension at which they might be automatically logged in by the IP Office system.
3. The user can now log in at any available phone when needed.
4. If at the end of the business day they forget to log out, the Login Idle Period will eventually log them off automatically.

Scenario 4: Call Center Hot Desking

In this scenario, the phone extensions have no default extension number. Several phones set like this might be used in a call center where the agents use whichever desk is available at the start of their shift. Alternatively a set of desks with such phones might be provided for staff that are normally on the road but occasionally return to the office and need a temporary desk area to complete paper work.

1. For the extensions, the Extension setting is left blank. This means that those phones will be associated with the NoUser user's settings and display NOT LOGGED ON.
2. The call center agents or road-warrior users are configured with Extension directory numbers that also don't match any existing physical extensions. They are all given Login Code numbers.
3. The users can log in at any of the extensions when required. When they log out or log in elsewhere, the extensions return to the NoUser setting.

10.22.4 Automatic Log Off

Normally a user can either log themselves out or be logged out by another user logging in. The follow methods can be used by the IP Office system to automatically log out a user.

- A remote hot desking user whose home system can no longer be seen by the remote system at which they are logged in is automatically logged out after 24 hours.

The following methods only apply to users with a **Login Code** and set to **Forced Login**.

Idle Timeout

The user **Login Idle Period** (User | Telephony | Supervisor Settings) can be used to automatically log out the user after a set period of phone inactivity. The period can be set between 1 to 99999 seconds and is based on call inactivity other than ringing calls.

Unanswered Calls

Users who are members of hunt groups are presented with hunt group calls when they are logged in and not already on a call. If the user is logged in but not actually present they will continue to be presented with hunt group calls. In this scenario it can be useful to log the user off.

1. **For the hunt group**
   On the Hunt Group | Hunt Group tab, use the Agent's Status on No Answer Applies to setting to select which types of unanswered hunt group calls should change the user's status. The options are:
   - None.
   - Any Calls.
   - External Inbound Calls Only.
2. **For the user**
   The **Status on No Answer** (User | Telephony | Supervisor Settings) can be used. This sets what the user's status should be changed to if they do not answer a hunt group call. The options are:
   - **Logged On**
     If this option is selected, the user's status is not changed.
   - **Busy Wrap-Up**
     If this option is selected the user's membership status of the hunt group triggering the action is changed to disabled. The user can still make and receive calls and will still continue to receive calls from other hunt groups to which they belong.
   - **Busy Not Available**
     If this option is selected the user's status is changed to do not disturb. This is the equivalent of DND and will affect all calls to the user.
   - **Logged Off**
     If this option is selected the users status is changed to logged out. In that state the cannot make calls and cannot receive calls. Hunt group calls go to the next available agent and personal calls treat the user as being busy.

Chapter 11.
Data Routing

11. Data Routing

The IP Office system is a network router. In this role it can connect users on its LAN to remote services by using WAN links and telephone trunk connections. It can also allow users to dial-in and then act as if they were using a PC on the LAN.

As well as being a network router, the IP Office is a telephone system. These dual roles allow it to support a range of functions that involve traffic between the network and telephony interfaces. These functions use internal data channels. The number of internal data channels that can be connected from the system's LAN interface to its telephony interface at any time is restricted.

- An internal data channel is a connection between the system's telephony and LAN interfaces. For example a Voicemail connection, an internet connection or a RAS user.
- Calls using a VCM channel (for example VoIP calls and Avaya 4600 and 5600 Series phones) do not use a data channel.
- The number of data channels in use does not necessarily match the number of users:
  - Several LAN network users, browsing the internet using the same service to an ISP would be a single data channel.
  - Several dial-in network users would each have a separate data channel.
- The maximum number of data channels that can be simultaneously in use for voicemail is restricted. These channels also require entry of an appropriate license.

The restriction depends on the type of Control Unit being used.

IP Office Control Unit	Internal Data Channels	Maximum Data Channels for Voicemail
Small Office Edition	18	10
IP403	18	10
IP406 V1	24	20
IP406 V2	40	20
IP412	100	30

11.1 Network Address Translation (NAT)

NAT allows the addresses used within your LAN to be replaced by a different address when connecting to an external service.

Typically a service provider will allocate you a single IP address to be used when connecting to their service. NAT allows all your user's traffic to appears to be coming from that single address without having to change any of your user's real addresses. This is useful as internally most networks use addresses that have been reserved for public use within networks but are not valid for routing across the internet (since the same addresses may be being used on other networks). Also as stated it allows multiple users to use the same service simultaneously.

The use of NAT is automatically enabled if the IP Office Service being used includes an IP address that is not in the same domain as the its LAN1 IP address.

An exception to the above applies for the Small Office Edition and IP412 control units. These units have two LAN's, LAN1 and LAN2. For these units, on each LAN, Enable NAT can be selected and then applied to traffic between the two LAN's.

11.2 DHCP

The IP Office can act as a simple DHCP server. When switched on with a defaulted configuration, the Control Unit request IP address information from a DHCP server. If it gets no response it assumes the role of DHCP server for the LAN.

In DHCP Server mode, by default the Control Unit issues itself the address 192.168.42.1. It allocates 200 addresses for DHCP clients, 192.168.42.1 to 19.168.42.200. This leaves 192.168.42.201 to 192.168.42.254 available for any computers that need to be allocated a fixed or static IP address. 192.168.42.255 is not used as this is a broadcast address for the LAN.

11.3 Examples

11.3.1 Simple ISDN Internet Connection

In this example, we want all non-local data traffic to be routed to the Internet. The Internet Service Provider (ISP) has provided the account details required. Using the IP Office's Network Address Translation 712 (NAT), a single account can be used for all users.

1. Select **Service** and add a normal service. Change the following settings and click **OK**.
   - **Name:** Internet
   - **Account Name:** As provided by the ISP.
   - **Password:** As provided by the ISP.
   - **Telephone Number:** As provided by the ISP.
   - Check **Request DNS**.
2. Select **IP Route** and add a new route. Change the following settings and click **OK**.
   1. Leave the **IP Address** and **IP Mask** blank. This will then match any data traffic that isn't matched by any other IP Route entry.
   2. Select the service created above as the **Destination**.

Alternate
In the example above, a default IP Route was created which then routed all traffic to the required Service. An alternate method to do this with IP Office is to select Default Route within the Service settings.

11.3.2 ISDN Link Between IP Offices

To create a data link between two sites via ISDN configure the Control Unit as per the following example:

At Site A on IP address 192.168.43.1

1. Create a Normal Service:
The Service name can be any text and is used to identify this particular Service. The Account Name and password are presented to the remote end, therefore must match the User name and password configured at Site B. The Telephone Number is the number of the remote end.

2. Create an IP Route:
In the IP Address field enter the network address of the remote end, not the IP address of the Control Unit. Under Destination select the Service created above.

3. Create a User:
Under the Dial In tab tick Dial In On. This User account is used to authenticate the connection from the Site B. Note that as the Service and User have the same names, these two configuration forms are automatically linked and become an Intranet Service. The User password is displayed at the bottom of the Service tab as the Incoming Password.

4. Setup RAS:
Check the default RAS settings "DialIn" are available, otherwise create a new one. If the RAS settings are given the same name as the Service and User they are automatically linked and become a WAN Service. Ensure that the Encrypted Password option is not checked when using a WAN Service.

5. Setup an Incoming Call Route:
Check the default Incoming Call Route is available, otherwise create a new one. If the Incoming Number is left blank, the Incoming Call Route accepts data calls on any number. Under Destination select the RAS service created above. The Bearer Capability should be AnyData.

At Site B on IP address 192.168.45.1

1. Repeat the above process but altering the details to create an route from Site B to Site A.

11.3.3 Using a Dedicated T1/PRI ISP Link

This section shows an example of a dedicated WAN PPP link to an Internet Service Provider (ISP) over a set of T1 or T1 PRI line channels. The ISP must support this mode of connection and will need to provide details of the required settings. If multiple channels are to be used, then the ISP must support Multilink PPP.

1. **Create a New WAN Service**
   A service is used to define connection settings such as name, password, bandwidth, etc.
   1. Select  **Service** to display the existing services.
   2. Click on  and select **WAN Service**.
   3. Select the **Service** tab.
      1. In the **Name** field enter an appropriate name, such as ***"Internet"***. Note that the IP Office will also automatically create User entry and a RAS entry with the same name.
      2. Enter the **Account Name**, **Password** and **Telephone Number** details provided by the ISP.
      3. For the **Firewall Profile** select the firewall created previously.
   4. Click the **Bandwidth** tab.
      1. Set the **Maximum No. of Channels** to the maximum number of channels that the service should use. In this example, 12 channels were used.
      2. Leave all the other entries at their default values.
      3. If the ISP has allocated IP address details these are entered through the IP tab. If the IP Address and IP Mask define a different domain from the IP Office LAN, then NAT is automatically applied.
   5. Click the **IP** tab.
      1. In the **IP Address** field enter the IP address specified by the ISP.
      2. In the **IP Mask** field enter the IP Mask specified by the ISP.
      3. The settings shown are typical. The actual settings must match those required by the ISP. For example, if Cisco routers are being used then IPHC needs to be ticked.
   6. Click the **PPP** tab.
      1. Ensure that the following options are selected. Leave all other options at their default settings.
         - **Multilink.**
         - **Compression Mode:** Disable.
         - **Callback Mode:** Disable.
         - **Access Mode:** Digital64
   7. Click **OK**.
2. **Create the Virtual WAN Port**
   In this stage, a WAN port is defined that actually uses T1 or T1 ISDN trunk channels.
   1. Select  **WAN Port** to display existing ports.
   2. Click on  and select **WAN Port**.
   3. In the Name field, enter either ***LINEx.y*** where:
      - ***LINE*** must be in uppercase.
      - ***x*** is the line number. For a trunk card in Slot A, this will be 1. For a trunk card in Slot B, this will be 5.
      - ***y*** is the lowest numbered channel number to be used by the WAN link minus 1. For example, if the lowest channel to be used is channel 1 then y = 1 - 1 = 0.
   4. In the **Speed** field, enter the total combined speed of the maximum number of channels sets in the Service. In this example, 12 channels x 64000 bits = 76800.
   5. Set the **Mode** to ***SyncPPP***.
   6. In the **RAS Name** field, select the name used for the Service.
   7. Click **OK**.
3. **Create an IP Route**
   By creating an IP route with blank IP address details, it becomes the default route for outgoing IP traffic.

1. Select  **IP Route** to display existing routes.
2. Click on  and select **IP Route**.
3. Leave the **IP Address** and **IP Mask** fields blank.
4. In the **Destination** field, select the WAN service.
5. Leave the **Metric** at default value of ***1***.
6. Click **OK**.

4. **Configure the Line Channels**
   This stage of the process differs according to the type of trunk being used.

5. **T1 Trunk**
   Use the following for a T1 trunk.

   1. Click  **Line** to display the existing lines.
   2. Double-click on the line previously entered in the WAN Port settings.
   3. Check that the **Channel Allocation** order matches that required by the ISP. Cisco routers typically use 1->24.
   4. Select the channels to be used in the WAN PPP link and change their Channel Type to "Clear Channel 64k".
   5. Click **OK**.
   6. Click **OK** again.
   7. Send the configuration to the IP Office and reboot.

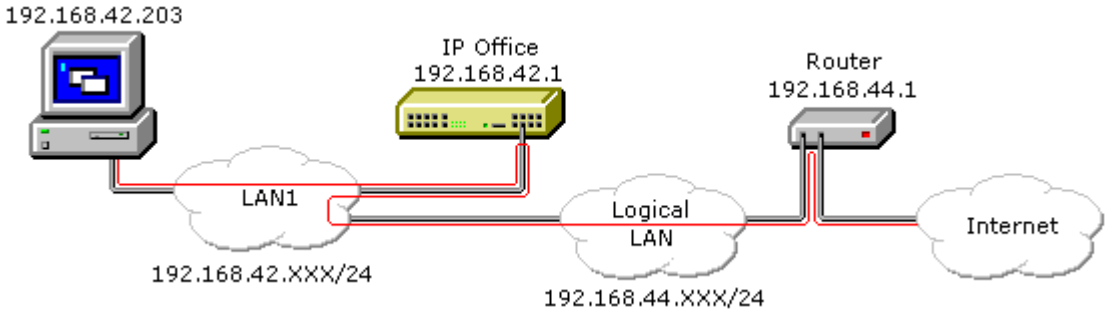
6. **T1 PRI Trunk**
   Use the following for a T1 PRI trunk.

   1. Click on  **Line** to display the list of existing lines.
   2. Double-click on the line previously entered in the WAN Port settings.
   3. Check that the **Channel Allocation** order matches that required by the ISP. Cisco routers typically use 1->23.
   4. Select the channels to be used in the WAN PPP link and change their Admin to "Out of Service".
   5. Click **OK**.
   6. Click **OK** again.
   7. Send the configuration to the IP Office and reboot.

11.3.4 Logical LAN Connection

IP Office Small Office Edition and IP412 control units support two separate LAN interfaces (LAN1 and LAN2). These are separately addressed and the IP Office's IP route table and firewalls can be used to control traffic between device attached to the two LAN's.

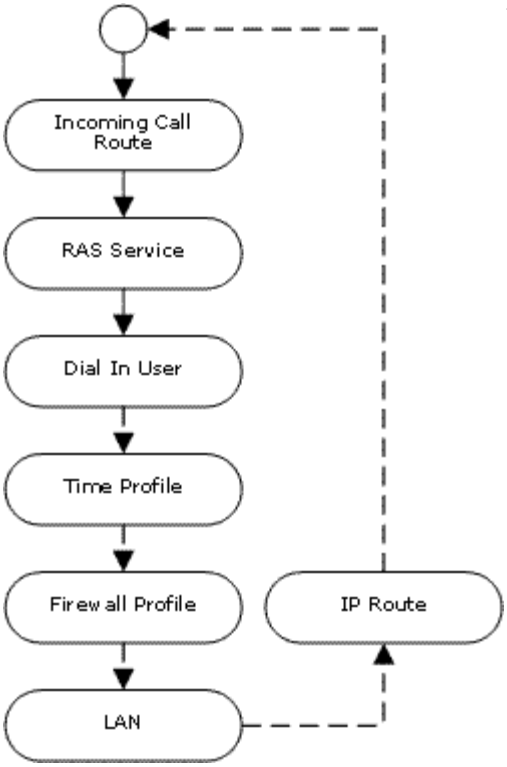
On other IP Office control units only a single LAN (LAN1) is available. A logical LAN allows these systems to support a second separately addressed LAN on the same interface. Traffic between the IP Office LAN1 and the logical LAN can then be controlled by the IP Office's IP route table and firewalls.



11.3.5 Remote Access

The IP Office support remote access for incoming data calls on trunks.





To do remote access, an incoming call is passed through the following elements of the IP Office configuration.

- **Incoming Call Route**
  A Incoming Call Route is used to match incoming remote access calls and pass them to a RAS service as the destination.
- **RAS Service**
  The RAS service defines settings relating to the data traffic methods useable with the call.
- **User**
  The user defines the name and password required for the RAS service. The user must have Dial In On enabled.
  - An **R** setting on the user's Source Numbers 263 tab can be used to define the ICLID from which RAS calls are accepted.
- **Time Profile**
  The user settings can specify a time profile. The time profile then controls when remote access is allowed.
- **Firewall Profile**
  The user settings can specify a firewall profile. The firewall profile then controls what traffic is allowed through the remote access connection.
  - **Static NAT**
    IP Office 4.2+ supports the use of Static NAT 342 entries in firewall profiles. These are used to translate external IP addresses to internal IP addresses.
- **System | LAN**
  The IP Office can provide DHCP support for remote access connections when it is set to Server or Dial in modes. Alternatively the remote access client can use a static IP address on the IP Office's subnet.
- **IP Route**
  If the remote access client uses a IP address that is from a different subnet from the IP Office, then a IP route entry is required for returning data. The RAS service is set as the destination.

ISDN Remote Access Example



1. **Create a User**
   The required details are:
   - **In the User tab:**
     Enter a Name and Password. IP Office is case sensitive. Remember to take care with passwords as this is a remote access link into your network.
   - **In the Dial In tab:**
     Ensure that Dial In On is ticked. The Firewall Profile and Time Profile are optional.

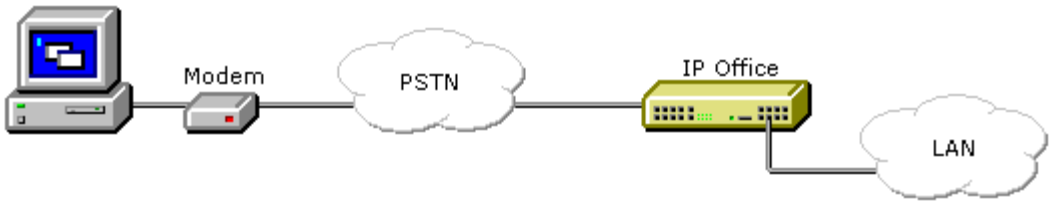
2. **Create a RAS Entry**
   - **In the RAS tab:**
     Enter the same name as the user that you created earlier. Again, remember this is case sensitive.

3. **Create an Incoming Call Route**
   - Set the **Bearer Capability** to ***Any Data***.
   - In the **Destination** drop-down list, select the RAS entry created above.
   - The values that you enter for any of the other fields will depend on whether the remote user will be calling in on a particular line, number or from a set ICLID.

4. **Is a Return IP Route Needed ?**
   Go to Step 5.

5. **Create a IP Route (Optional)**
   If the remote user has an IP address that is not in the same domain as the IP Office, then an IP Route is needed for return data. This is not necessary if the remote user's dial-up connection method is set to 'Obtain an IP Address Automatically' and the IP Office's **DHCP mode** is set to ***Server*** or ***DialIn***.
   - Enter the **IP Address** and **IP Mask** of the remote system.
   - In the **Destination** drop-down list select the RAS entry created above.

Analog Remote Access Example



Configuration for a connection from an analog modem call is very similar to the ISDN example. However the IP Office must be able to answer modem calls. This can be done in the following ways;

- **Modem Cards**
  For all IP Office control units except the Small Office Edition, a modem card can be installed. This module allows the IP Office system to answer V.90 analog modem calls. The Internal Modem Card allows the IP Office system to support 12 simultaneous modem calls (4 only on the IP403). The Modem 2 card allows the IP Office system to support 2 simultaneous modem calls.
- **Analog Trunk Modem Mode**
  On systems with an ATM4 trunk card and on the Small Office edition, the first analog trunk can be set to answer V.32 modem calls. This is done by checking the Modem Enabled option on the analog line settings or using the default short code *9000* to toggle this service on or off.
- When using an analog modem, the Bearer Capability of the incoming call route used should be Any Voice.

11.3.6 WAN PPP

A VoIP link across a leased line requires the Control Unit at both ends to have a Voice Compression Module installed. These provide for a fixed number of channels to use VoIP at any time. They are used to compress voice down to either 6k3 (G723) or 8k (G729) and provide echo cancellation.

Both ends must using the same version of software and configured to use the same speed and compression.

At Site A on IP address 192.168.42.1.

1. **Create a Normal Service:**
   The Account Name and password is presented to the remote end, therefore must match the User name and password configured at Site B. The Encrypted Password option can only be used if the remote end also supports CHAP.
2. **Create a User:**
   Under the Dial In tab tick Dial In On. This User account is used to authenticate the connection from the Site B. As the Service and User have the same name these two configuration forms are automatically linked and become an Intranet Service. The User password is displayed at the bottom of the Service tab as the Incoming Password.
   - **Name:** SiteB
   - **Dial In | Dial In On:** Enabled.
3. **Create a RAS service:**
   If CHAP is to be used on this link, then the Encrypted Password option must be checked in the Service and in the RAS service. The name of the RAS service must match the name of the Service at Site B. If the RAS service is given the same name as the Service and User, they are automatically linked and become a WAN Service. Ensure that the Encrypted Password option is not checked when using a WAN Service.
4. **Edit the WANPort:**
   Note - do not create a new WANPort, this is automatically detected. If a WANPort is not displayed, connect the WAN cable, reboot the Control Unit and receive the configuration. The WANPort configuration form should now be added.
   · **RAS Name:** SiteA
5. **Create an IP Route:**
   The IP Address is the network address of the remote end. Under Destination select the Service created above.
6. **Create a new Line:**
   The Line Number and Line Group ID must be unique, in other words, not used by any other line. The Gateway IP Address is the IP Address of the Control Unit at the remote end. The Compression Mode used is dependent on the Voice Compression Card the Control Unit is running and the speed of the link.
7. **Create a Short Code:**
   To route all calls where the number dialed starts with 8 via Line Group ID 1, therefore via the VPN Line created above.
   - **Short Code:** 8N
   - **Telephone Number:** N
   - **Line Group ID:** 1
   - **Feature:** Dial

At Site B on IP address 192.168.45.1

1. Repeat the above steps for VoIP traffic from Site B to Site A.

- Note: For the IP Office Small Office Edition Control Unit, enabling **Local Tones** under the Line and Extension VoIP tabs is recommended.

11.3.7 WAN Frame Relay

To create a VoIP link via the WAN port using frame relay, the first step is to attach a WAN cable and reboot the Control Unit. After this, receive a copy of the configuration.

Both ends must using the same version of software and configured to use the same speed and compression.

At Site A

1. Create a WAN Service:

- **On the Service Tab:**
  The Name is "FR_link". The Account Name should be "FR_Link" and all password fields (both Password and Incoming Password) should be left blank.
- **On the PPP Tab:**
  Check the MultiLink/QoS box. Set the Header Compression Mode to IPHC.
- **On the Dial In Tab:**
  If you are using a WAN 3 module, you must add "WAN" as the Dial In Service number.

2. On the Wan Port Form:

- **In the WanPort Tab**
  Set the speed to match the link. Set the RAS Name to DialIn. Set the Mode as SyncFrameRelay.
- **In the FrameRelay Tab**
  Set the appropriate Frame Relay Management Type. The other default settings are appropriate for a basic Frame Relay Connection.
- **In the DCLI tab**
  Set the RAS Name to "FR_link". Frame Link Type = PPP. DLCI set to the network setting

3. Create a RAS service:
Encrypted Password option is not checked when using a WAN Service. Have the Name = "FR_Link"

4. Create an IP Route:
The IP Address is the network address of the remote end. Under Destination select the "FR_link" that was created above.

5. Create a new Line:
The Line Number and Line Group ID must be unique, in other words, not used by any other line. The Gateway IP Address is the IP Address of the Control Unit at the remote end.

6. Create a Short Code:
To route all calls where the number dialed starts with 8 via Line Group ID 1, therefore via the VPN Line created above.

- **Short Code:** 8N
- **Telephone Number:** N
- **Line Group ID:** 1
- **Feature:** Dial

At Site B

1. Repeat the above steps for VoIP traffic from Site B to Site A.
   - Note: For the IP Office Small Office Edition Control Unit, enabling Local Tones under the Line and Extension VoIP tabs is recommended.

Chapter 12.
Voice over IP

12. Voice over IP

Depending on the model of control unit the IP Office control unit supports up to 128 voice compression channels. Either 3 or 16 of these channels are pre-installed in Small Office Edition controls units. On other units they are added by installing Voice Compression Modules (VCM's). The type and number of VCM modules supported by each control unit type varies.

The voice compression channel improves call quality and can be used to compress voice down to either 6k3 (G723) or 8k (G729/Netcoder) and provides echo cancellation (required for high latency circuits).

The bandwidth required for a VoIP call is made up of two parts, one of which is due to the actual digitization of the analog voice the other is required by the protocol which is used to wrap the digitized voice up and transport it to the remote site. VoIP calls require an overhead of 40 bytes per packet (RTP/UDP/IP Header overhead). This overhead is increased on a LAN by a further 12 bytes Ethernet or by 7 bytes over a PPP WAN link.

When transporting voice over low speed links (WANs) it is possible that normal data packets (typically 1500 byte IP packets) can prevent or delay the voice data from getting across the link. This can cause a very unacceptable speech quality. Thus it is vital that the routers in the network that carry voice have some form of Quality of service mechanism (QoS).

The Control Unit supports the DiffServ (RFC 2474) Quality of Service mechanisms (QoS) which is based upon a Type of Service (ToS) field in the IP header. The software will prioritize voice, fragment large packets and provide VoIP header compression to minimize the WAN overhead.

Typically the VoIP WAN overhead is 47 bytes on 20 byte payload this is 235% overhead. On the WAN protocol this is reduced to 11 bytes (8 bytes data, 2 bytes CRC and 1 byte HDLC flag) on the same 20-byte packet this is only 55%, and 180% saving. This overhead must be included when calculating the actual link speeds required to support voice traffic. For example an 8Kbps compression voice path actually required 12.4Kbps of WAN bandwidth when using QoS or 26.8Kbps if using standard non QoS routers.

QoS routers are also required to ensure low speech latency and to maintain sufficient audible quality. At present our header compression is based upon the latest standards (RFC 2507/2508/2509). For efficiency we operate below PPP (non-standard) - reducing the overheads further and allow data fragmentation to be performed more effectively (keeping latency low). It is therefore required to place our equipment at both ends to operate at full efficiency.

12.1 VoIP Protocols

The H.323 Stack within the core software supports the following protocols:-

- H.323 (V2)(1998), Packet-based multimedia communications systems
- Q.931, ISDN user-network interface layer 3 specification for basic call control
- H.225.0 (1998), Call signaling protocols and media stream packetization for packet-based multimedia communication systems
- RTP/RTCP
- H.245 (1998), Control protocol for multimedia communication
- Audio CODECs:
  - G.711 A-law/U-law
  - G.723.1 MP-MLQ
  - G.729 Annex A - CS-ACELP (Not supported by NetMeeting)
- Silence Suppression
- Fax Relay
- Local End Echo Cancellation 25ms (except transparent - no cancellation)
- Out of band DTMF
- Internet Standards/Specification (in addition to TCP/UDP/IP)
  - RFC 1889 - RTP/RTCP
  - RFC 2507,2508,2509 - Header Compression
  - RFC 2474 - DiffServ

12.2 Performance

The following table is the maximum ratings tested in the lab. For deployment we recommend that more bandwidth be made available for normal data.

	56K	64K	128K	256K	2M	LAN
G729.1 (8k)	4	5*	6	18	20!	20
NetCoder (8k)	4	5*	9*	18!	20	20
G.723 (6.4k)	5	5*	9	18	20	20
ADPCM (32k)	1	1	6	5	20!	20
G.711 (64k)	X	X	1	3	16!	20
Transparent (64k)	X	X	1	3	14!	20

- * - data transfer is affected at higher channel connectivity.
- ! - channel connectivity at higher levels is affected by data transfer.

12.3 Implementation

A Control Unit plays the part of a Gateway between H.323 terminals and phones connected to the Control Unit (and also external lines). H.323 is configured on a Control Unit as a VPN line, specifying the IP address of a remote gateway and the audio compression to be used.

IP phones can be configured as extensions. An example is NetMeeting, which is configured to use the Control Unit as a Gatekeeper, with an account name that should match the name of a user configured on the Control Unit.

IP extensions are automatically created when an IP phone registers with the Gatekeeper (depending on a configuration option). If the user is not found a new user and extension are created, allowing the phone to be used immediately.

Basic call setup (without a Gatekeeper)

- Call setup using H.225.0 encapsulated in Q.931 messages
- Capability exchange using H.245
- Establishment of audio communication using H.245 OpenLogicalChannel
- Audio using RTP/RTCP

Fast connect procedure

- Call setup using H.225.0 in Q.931 messages, with H.245 OpenLogicalChannel messages embedded in the H.225.0 messages
- Audio using RTP/RTCP

Overlap sending

- Support for overlap sending, where a SetupAck is sent in response to the Setup message

Gatekeeper

- Gatekeeper support allows IP extensions to be automatically configured when they register with the gatekeeper.

Jitter buffer

- 5 frames of jitter buffer

Quality of Service

- Layer3 - DiffServ TOS Field set to DSCP 6 on generated packets. WAN links optimize for this traffic when set to "PPPSyncVoice". At present normal LAN and normal ISDN traffic is not prioritized.
- Layer4 - UDP Port Marking - all RTP/UDP traffic is sent within a configurable UDP port range. The default range is C000-CFFF (hex) (49152-53247)

Voice Packet Payload Sizing/Latency (Default)

Codec	Payload	Latency
G.711 ALAW	160bytes	20ms
G.729A	20bytes	20ms
G.723 (6K3)	24bytes	30ms

Chapter 13.

Small Community Networking

13. Small Community Networking

IP Office systems linked by IP trunks can enable voice networking to form a Small Community Network (SCN). Within an SCN the separate IP Office systems 'learn' each other's extension numbers and user names. This allows extension calls between systems and support for a range of internal call features, see Supported SCN Features 730.

IP Office Small Community Networking is supported for a maximum of 500 users across up to 16 IP Office systems.

To set up a small community network, the following are required:

- A working IP trunk between the IP Office systems that has been tested for correct voice and data traffic routing.
  - On IP Office 500 systems, IP trunks require the entry of IP500 Voice Networking licenses. For IP Office 4.0, IP Trunks are not supported on systems running in Standard Edition mode. For IP Office 4.1+ IP trunks are supported in Standard Edition mode
- VCM modules are required in all systems.
- The extension, user and group numbering on each system must be unique.
- The user and group names on each system must be unique.
- We also recommend that all names and numbers (groups, line, services, etc) on the separate IP Office systems are kept unique. This will reduce potential maintenance confusion.
- All systems should use the same set of Telephony timers, especially the Default No Answer Time.

Software Level Interoperation

SCN is supported between IP Office systems with the same major software level or one level of difference in major software level. For example between 3.2 and 3.1 (same major level) and between 4.0 and 3.2 (one level of difference).

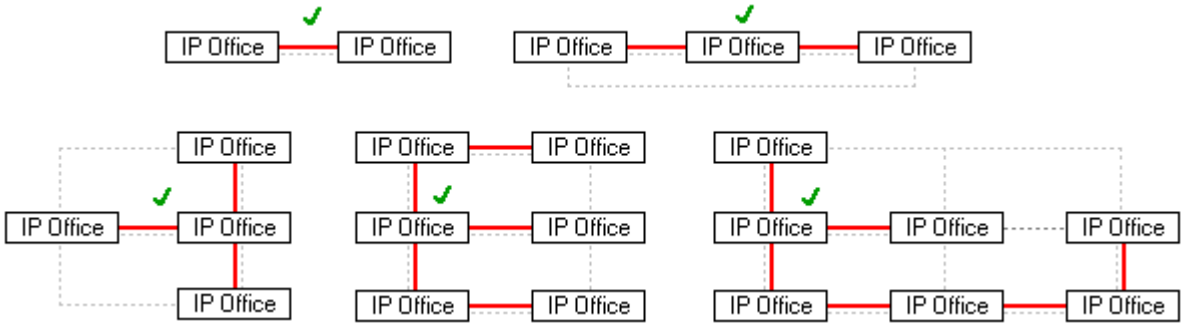
This option is intended mainly to allow the phased upgrading of sites within a Small Community Network. It is still recommended that all systems within a network are upgraded to the same level where possible. Within a SCN using differing levels of software, network features will be based on the lowest level of software within the network.

13.1 Supported SCN Network Layouts

The IP Office systems within a Small Community network should only be connected using IP lines configured in a star and or serial layout. For each IP Office there should only be one possible IP Line route to any other IP Office even if that route is via intermediate IP Offices.

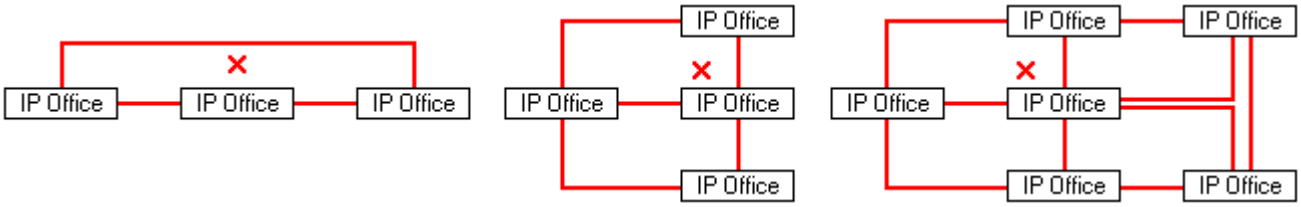
- Note that we are referring to IP Line configured in the IP Office configurations. The actual IP network configuration, including IP routes in the IP Office configurations, can differ as per the customer network requirements.

The following are examples of supported star and serial layouts. Note that the maximum number of hops for user information transfers is 5.



---- = IP network, | = IP Office IP Line.

The use of 'mesh' layouts connections is not supported. A mesh layout is one where there is more than one possible IP Line route between any two IP Offices. The following are examples of mesh layouts.



SCN Signalling

IP Office SCN uses a signalling similar to RIP is order to update each other of there presence. This traffic can be seen in the IP Office Monitor application as AVRIP packets. This traffic is is sent to port 50795 on which each IP Office system listens. Each IP Office in the SCN transmits an update every 30 seconds. Additionally BLF updates are transmitted when applicable up to a maximum of every 0.5 seconds. Typically the volume is less than 1Kbps per IP Office system.

13.2 Supported SCN Features

Standard SCN Features

The following features are supported across all Small Community Networks:

- **User to user dialing**
- **Absence Text/Call Tagging**
- **Anti-tromboning**
- **Hold**
- **Transfer**
- **Forwarding**
- **Paging**
- **Call Pick-Up Extension** 405
- **Callback When Free**
- **Conference**
- **Ring Back**
- **Directory**
  Inclusion of SCN users and groups in the DIR directory of each system. IP Office system directory entries are not shared.
- **User DSS/BLF**
  Monitoring of user status only. The ability to use additional features such as call pickup via a USER button will differ depending on whether the monitored user is local or remote.
- **Voicemail Support - Centralized Voicemail using Voicemail Pro**
  Within a Small Community Network, a single Voicemail Pro can be used to provide voicemail services for all the IP Office systems. For full details of installation and setup refer to the Voicemail Pro documentation. The Voicemail Pro is licensed and hosted by a chosen central IP Office system and provides full operation for that system. The voicemail features supported for the other remote IP Offices are listed below:
  - For IP500 system, centralized voicemail does not require the remote systems to be running in IP500 Professional mode. Only the IP500 hosting the Voicemail Pro server is required to be IP500 Professional.
  - **User mailboxes**.
  - **Call recording.**
    Recording of incoming call routes is only supported for destinations on the same IP Office system, not for remote SCN destinations.
  - **Dial by Name.**
  - **Auto Attendants.**
  - **Breakout**
    Requires that the numbers used are routable by the system hosting the voicemail server.
  - **Announcements**
    Using IP Office 4.0 announcements. Pre-4.0 announcements are only supported for queues on the system hosting the voicemail server.
  - **ContactStore**
    This application is supported but requires each individual IP Office to have a **VMPro Recordings Administrator** license.
  - **UMS Web Services**
    Users for UMS Web Services (IMAP and or web voicemail) are licensed through the ***UMS Web Services*** license on their host IP Office system. This applies even if the user remote hot desks to another system in the Small Community Network.

IP Office 4.0: Advanced SCN Networking Features

IP Office 4.0+ allows a number of additional feature to be enabled by addition of a Advanced Small Community Networking license. The presence of this license allows the IP Office system to host hunt groups containing members from other systems ("Distributed Hunt Groups") and to host users from other IP Office 4.0+ systems in the SCN logging in ("Remote Hot Desking").

- **Advertised Hunt Groups**
  A hunt group can be set to be 'advertised'. This requires an Advanced Small Community Networking license. Hunt groups that are advertised can be dialed by users on other systems within the Small Community Network (SCN) without the need for short codes.
- **Distributed Hunt Groups**
  Hunt groups on a system can include users located on remote IP Office systems within the SCN network. A distributed hunt group can only be edited on the system on which they were created. This feature requires entry of a Advanced Small Community Networking license on each system.
- **Remote Hot Desking**
  Users can hot desk between IP Office systems within the network. The system on which the user configured is termed their 'home' IP Office, all other systems are 'remote' IP Offices. To log in at a remote IP Office requires the remote IP Office to have a license. A license is not necessary on the user's home IP Office.
  - When a user logs in to a remote IP Office system;
    - The users incoming calls are rerouted across the SCN.
    - The users outgoing calls uses the settings of the remote IP Office.
    - The users own settings are transferred. However some settings may become unusable or may operate differently.
      - Users settings are transferred but user rights are not.
        - If user rights with the same name exist on the remote system then they will be used. The same applies for user rights applied by time profiles, if a time profile with the same name also exists on the remote system .
      - Appearance buttons configured for users on the home system will no longer operate.
      - Various other settings may either no longer work or may work differently depending on the configuration of the remote system at which the user has logged in. For example T3 phones the personal directory is not transferred with the user.
  - If a remote user's home system is no longer visible within the SCN they are automatically logged out after 24 hours.
- **Breakout Dialing**
  This feature allows the user to select an IP Office system in the network from a displayed list and then dial a subsequent number as if dialing locally on the select system. This feature is triggered either by a programmable button or short code.

Note that both Distributed Hunt Groups and Remote Hot Desking are not supported for use with CBC and CCC.

IP Office 4.2

- **Music on Hold Source Selection**
  The 4 possible music on hold sources are numbered 1 to 4, with 1 being the IP Office System Source. Where the source number to associate with a call is changed by an Incoming Call Route or Hunt Group, that number is retained when the call is rerouted across the SCN. If the receiving switch has a matching numbered alternate source that source is used.
- **Mobile Call Control**
  Licensed mobile call control users who remote hot desk to another IP Office within the SCN take their licensed status with them rather than consuming (if available) a license on the system to which they hot desk.

13.3 Enabling Small Community Networking

- **WARNING**
  If connecting more than 2 IP Office systems, take care to ensure that you avoid creating a 'mesh' configuration. That is one where there is more than one route via IP Office IP Lines to get to from any particular IP Office system to another. For example in a three switch configuration with switches A, B and C; using IP lines it should be possible to get from A to C either directly or via B but not by both options. Where the network IP configuration allows the safest IP Line configuration option is to use one IP Office as the central hub for all IP Lines in a 'star' configuration. Each branch IP Office is configured with an IP Line to the central hub while the central hub has multiple IP Lines, one for each branch IP Office. For full details see Supported SCN Network Layouts 729.

Setup the VoIP Line from System A to System B

1. On System A, receive the system configuration.
2. Click the **Line** configuration form to display a list of existing lines.
3. Right-click on the displayed list and select New.
4. In the **Line** tab for the VoIP line set the following:
   - Set a unique **Line Number**.
   - In the **Telephone Number** field, enter a description of the link.
   - Set the **Outgoing Group ID** to a unique value.
5. In the **VoIP** tab for the VoIP line, set the following:
   - Ensure that **Voice Networking** is ticked. This enables the exchange of directory and user information between the IP Office systems and is the key enabler of Small Community Networking.
   - For the **Gateway IP Address** enter the IP address of System B.
   - Select the preferred **Compression Mode**. The same mode must be used by all VoIP lines and extensions within the network.
   - Check that the **H450 Support** option is set to ***H450***. This enables various Supplementary Signaling Services across the VoIP connection.
   - Do not change any other options from their default settings without testing. For Small Community Networking **Enable Fast Start** and **Local Tones** should not be used.
6. Load the configuration and reboot System A. Note: Configuration changes and additions to VoIP line settings cannot be merged.

Setup the VoIP Line from System B to System A

7. On the remote system, repeat the previous steps to create a VoIP VPN link to System A.
   - Ensure that the Compression Mode selected in the VoIP tab of the VoIP line is the same at both the central and remote system.
   - Load the configuration and reboot the remote IP Office.

Test Small Community Networking

8. Test by making calls between extensions on the different systems.

13.4 SCN Short Code Programming

With Small Community Networking enabled, the IP Offices 'learn' each others extension numbers and route extension calls appropriately.

However the same does not apply to dialing group and other numbers meant for the remote IP Office. To allow these to be routed correctly across the VoIP VPN links, short codes can be used.

Scenario
We want a short code on System A which will correctly route any 3000 range number to System B. This will allow System B group numbers to be dialed from System A.

To achieve the above scenario, we will add a new system short code. By using a system short code it becomes available to all users.

1. Receive the configuration from System A.
2. Click the Short code configuration form to display a list of existing system short codes.
3. Right-click on the displayed list and select New.
4. Enter the short code settings as follows:
   - **Short Code:** 3XXX
     This will match any four-digit number beginning with 3.
   - **Telephone Number:** .
     The . indicates that the short code should output the digits as dialed.
   - **Line Group ID:** 3000
     This should match the Outgoing Group ID given to the VoIP VPN line connected to System B.
   - **Feature:** Dial
5. Click **OK**.
6. If the only change made to the configuration was this short code, load the new configuration using merge, otherwise load the configuration and reboot.
7. A similar system short code can be added to System B's configuration to route 2XXX dialing to System A.

Chapter 14.

Appendix: Configuration Examples

14. Appendix: Configuration Examples

14.1 Paging from IP Office

Paging to and from IP Office phones is covered by the appropriate telephone user guides. This section covers paging to 3rd-party paging equipment (centrally amplified paging systems or self-amplified speakers).

Typically, 3rd-party paging equipment uses analog connections. The IP Office can provide analog connections via either analog trunks or analog extensions. In terms of flexibility of operation once installed, the use of an analog extension port for paging is the preferred solution.

Paging Limits
The table below lists the maximum recommended size for paging groups.

IP Office	Software Level	
	3.2	4.0+
IP500	–	64
IP412	24	48
IP406 V2	16	32
Small Office Edition	16	16
IP406	16	–
IP403	16	–

WARNINGS:

- The Paging Equipment must provide isolation to the IP Office analog port or an additional interface device must be fitted.
- The Paging Equipment (and separate interface device if used) must conform to the local and national telecommunications device regulation:
  - USA: FCC approval.
  - European Union: CE marked indicating compliance with the EMC (EN41003) and Low Voltage (EN60950) directives.
  - All other countries: use equipment that complies with locals and national telecommunication device regulation.
- Failure to observe the notes above could result in damage to the IP Office or the 3rd-party equipment.

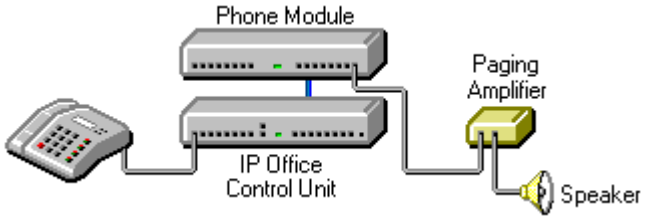
Universal Paging Access Module
For the US, the Universal Paging Access Module (UPAM) is recommended as the interface device between the IP Office and the Paging Equipment.

The UPAM:

- Supports analog extension or trunk (loop or ground start) connection.
- Requires a 24V or 48V power supply if used with trunk connections.
- Provides a pre-announce tone heard at the paging extension and over the paging speakers. On/Off selectable.
- Provides a confirmation tone heard by the pager only (not supported for ground start trunks). On/Off selectable.
- Has Paging Time control which sets the maximum page time (6 to 35 seconds) if its other disconnect controls are disabled.
- Supports background music input via an RCA-type jack.
- For IP Office 4.0+, when using a UPAM connected to an analog extension port, the extension's **Equipment Classification** (Extension | Analog) should be set to ***IVR*** and not ***Paging Speaker***.

14.1.1 Paging via an Analog Extension Port

IP Office analog extension ports are marked as POT. These can be used for the connection of third-party paging equipment.

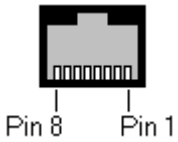


- The Paging Amplifier must provide isolation or an additional isolation device should be fitted.
- The Paging Amplifier (and separate isolation device if used) must conform to the local and national telecommunications device regulation.
- If not done automatically, it may be necessary to set the Paging Amplifier to give priority to the VOX input.

Do the following to set up a page via an analog extension port:

1. IP Office POT Port Wiring Connection

   · Connections to POT ports should use a twin-pair cable wired as follows:

PHONE RJ45 Socket	Pin Number	Description
	1 to 3	Do not use.
	4	A: Ring
	5	B: Tip
	6 to 8	Do not use.

The POT ports are rated as follows:

- Off-Hook Current = 25mA.
- Ring Voltage = 40V rms.
- REN = 2

2. **Configure the Analog Extension**

   1.2. Start IP Office Manager and receive the configuration from the IP Office.

   1.3. Click the  **Extension** icon to display the list of extensions.

   1.4. Double-click on the extension that will be used for the paging equipment connection.

   1.5. In the Extn tab, set the following:

   - Set the **Equipment Classification** to ***Paging Speaker***. In this mode the extension connects the speech path immediately without any ringing.
     - For IP Office 4.0+, when using a UPAM connected to an analog extension port, the extension's **Equipment Classification** (Extension | Analog) should be set to ***IVR*** and not ***Paging Speaker***.
   - Set **Caller Display Type** to ***Off***.

   1.6. Click on OK.

3. **Configure the Analog Extension User**

   3.1. Click the  **User** icon to display the list of users.

   3.2. Double-click the user currently associated with the extension above.

   3.3. In the **User** tab, set the following set the **Name** to ***Paging*** or similar to indicate the function.

   3.4. In the **Voicemail** tab untick ***Voicemail On***.

   3.5. Click **OK**.

4. **Create a Short Code for Paging the Extension**
   This stage is optional. Since the connection is via a extension with an associated user, page calls can be made using the appropriate user name or number (see "Making Page Calls"). If you skip short code creation, send the new configuration to the IP Office and reboot.

Do the following to create a short code:

   1.2. Click on the  **ShortCode** icon to display the list of short codes.

   1.3. Right-click on the list and select New.

   1.4. Enter the settings for the short code that users should dial when to make a paging call:

   - **Short Code:** *78
     The numbers users should dial to do a page. *78 is just an example.
   - **Telephone Number:** 201
     The analog extension connected to the paging equipment.

- **Feature:** DialPaging
  Note that ***DialPaging*** is used for an analog extension connection. **Dial** is used for an analog trunk connection. .

- Click on **OK**.
- Send the new configuration to the IP Office and reboot.

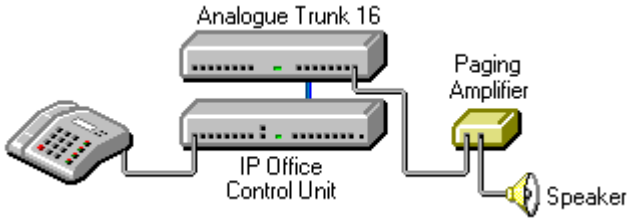
14.1.2 Paging via an Analog Trunk Port

You can use the analog trunk ports provided by the ATM4 or ATM16 modules.

The ATM4 is an internal module installed into the IP Office Control Unit. Note that the ATM4 only provides Loop Start analog trunk ports.



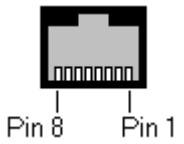
The ATM16 is an external expansion module. It supports both Loop Start and Ground Start analog trunks.



- The Paging Amplifier must provide isolation or an additional isolation device should be fitted.
- The Paging Amplifier (and separate isolation device if used) must conform to the local and national telecommunications device regulation.
- The paging connection must provide power in order to be seen as a real trunk by the IP Office.

Do the following to set up a page via an analog trunk port:

1. Connection
   The analog trunk ports on IP Office modules are RJ45 sockets. Connections to these should use a single-pair cable wired as follows:

RJ45 Socket	Pin Number	Description
	1 to 3	Do not use.
	4	A: Ring
	5	B: Tip
	6 to 8	Do not use.

2. Configure the line via the Line configuration form in Manager:
   1. Receive the configuration from the IP Office.
   2. Click on the  **Line** icon to display the list of installed lines.
   3. In the Line tab for the analog line, set the following:
   4. In the Telephone Number field enter a note indicating that this is the line to the paging equipment.
   5. Set the Outgoing Group ID to a unique value, that is one not used by any other line. This number will be used in a short code that routes page calls to this line.
   6. In the Analog tab, set the following:
      - Set the **Trunk Type** to ***Loop Start***. This is the only option with ATM4 trunks. With ATM16 trunks **Ground Start** can be used if required by the paging equipment.
      - Leave the remaining values at their defaults unless the instructions of the paging equipment manufacturer indicate that other values are required.
   7. Click **OK**.
3. Create a Short Code for the Paging Trunk
   1. Click the **ShortCode** icon to display the list of system short codes.
   2. Right-click on the list and select **New**.
   3. Enter the settings for the short code that users should dial when to make a paging call:
      - **Short Code:** *88
        This is the numbers users should dial to do a page. *88 is just an example.
      - **Telephone Number:** .
      - **Line Group ID:** 20
        This must match the Outgoing Group ID set for the analog trunk.
      - **Feature:** Dial
        Note that Dial is used for an analog trunk connection. DialPaging is used for an analog extension connection.
   4. Click **OK**.
1. Send the new configuration to the IP Office and reboot.

14.1.3 Making Page Calls

14.1.3.1 Making Page Calls

Having setup and tested the paging equipment, users can begin to use it.

If the paging device has been connected via an analog extension port, then the page call features provided for different phones can also be used to page the extension number. Refer to the appropriate phone user guide. Otherwise users can dial the short code setup for paging.

The following methods can be used to make page calls.

14.1.3.2 Paging via a DSS Key

For extensions with DSS keys, paging can be assigned to one of those keys. The following method programs the key via the Manager application.

1. Start Manager and load the IP Office configuration.
2. Click **Users** to display the list of users. In the list, double-click the user whose DSS keys you want to edit.
3. Select the **Button Programming** tab (**Digital Telephony** tab on UK English systems).
4. For the required DSS button, select Dial as the Action. For the Telephone number enter the paging short code or the extension number or the extension name in quotes.
5. Click **OK**.
6. Save the new configuration.

14.1.3.3 Paging from Phone Manager

You can add a speed dial to Phone Manager in order to make paging calls.

1. Within the users Phone Manager, select the Speed Dials tab.
2. Right-click on the tab area.
   - If paging via a analog extension port, select Add User and select the appropriate user.
   - If paging via an analog trunk port, select New. Enter a name and enter the paging short code as the number.

14.1.3.4 Group Paging

If the paging connection is via an extension port, that extension can be included in a group with other pageable extensions. This allows page calls to be heard via the speaker and over pageable telephones.

To set up group paging:

1. Create a Hunt Group with all the users required as members.
2. Create a short code to call the Hunt Group using the DialPaging feature:
   - Short Code: *81
   - Telephone Number: 305
   - Line Group ID: 0
   - Feature: DialPaging

- Note TransTalk 9040 MDW sets do not receive page calls, but may make them.

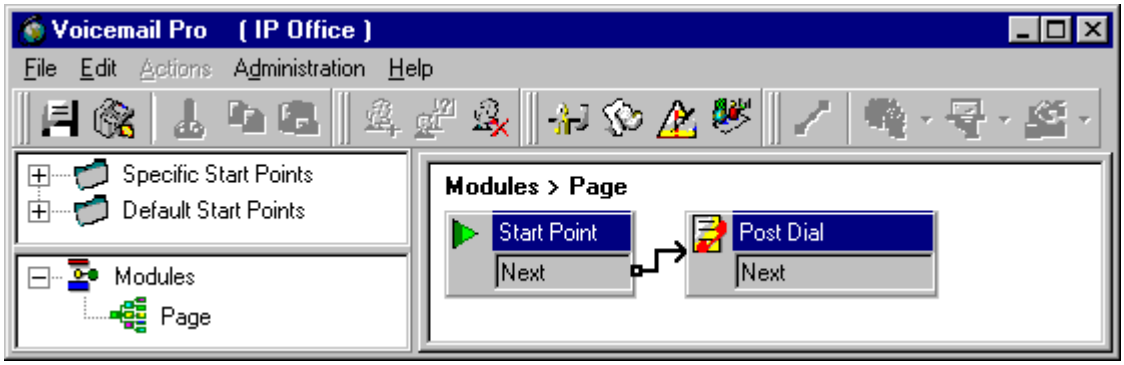
14.1.3.5 Paging Via Voicemail Pro

Voicemail Pro can be used to deliver pre-recorded announcements. This can be useful when the same announcement is repeated frequently. This method requires the paging port to be an analog extension.

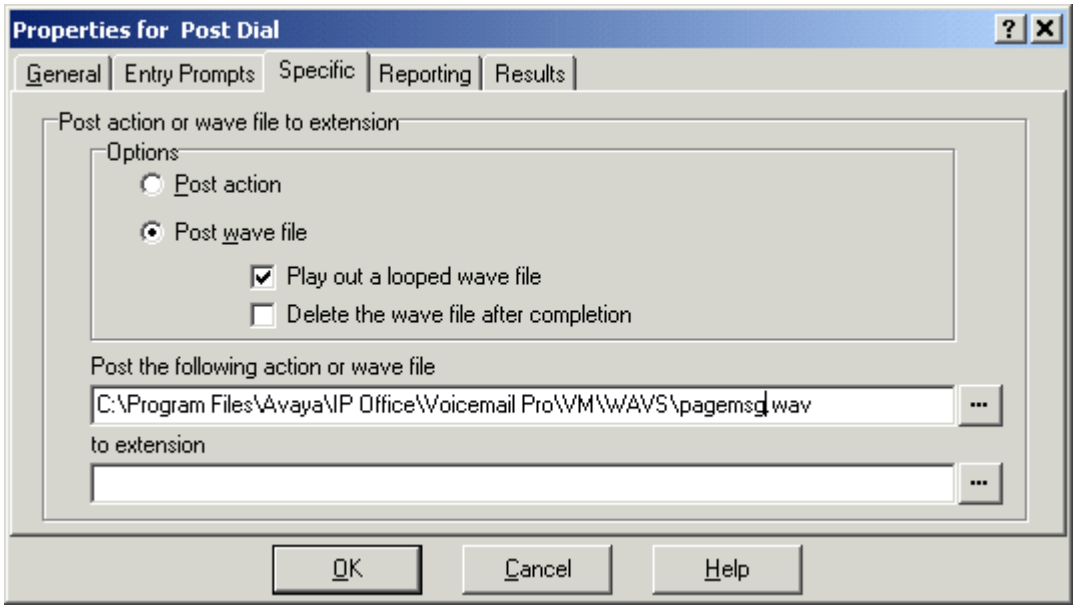
This method also removes the feedback loop that can occur on some sites as the page is first recorded and then played.

Example 1

1. In Voicemail Pro, a new Module was added and named Page.



1.2. A Post Dial action was added to the module. The properties of the Specific tab were set as shown:



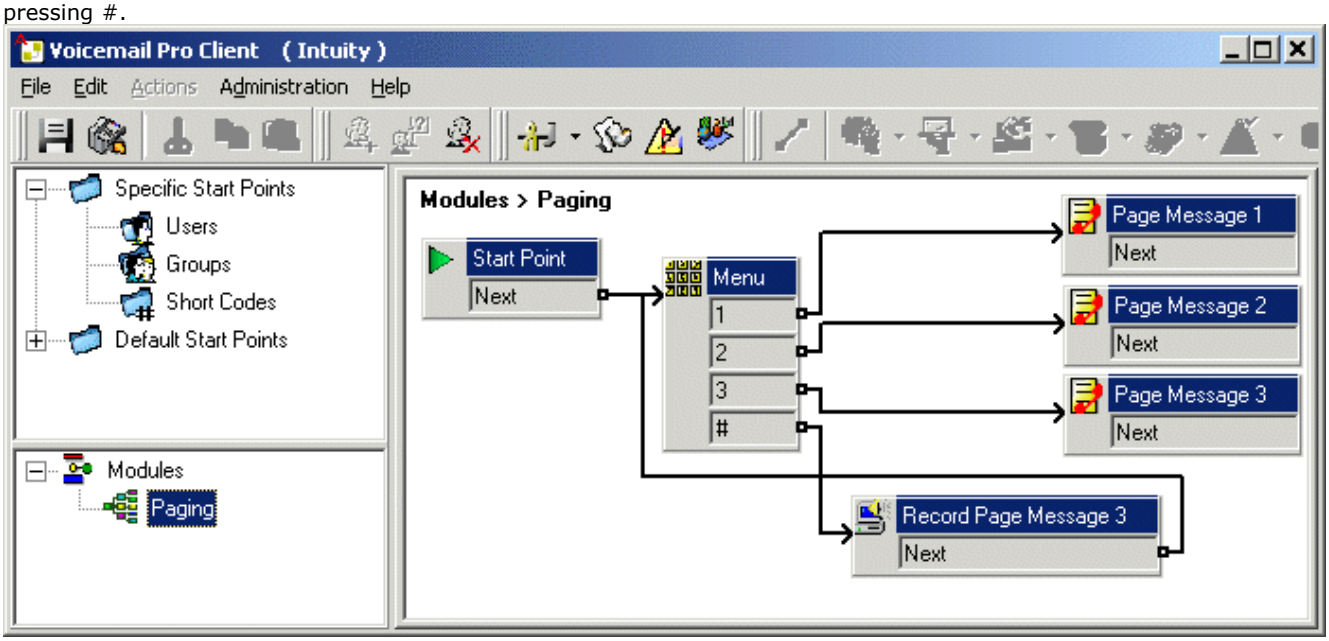
3.4. We then saved and made live the new Voicemail Pro call flow.

3.5. In Manager we received the IP Office configuration and created a new short code.

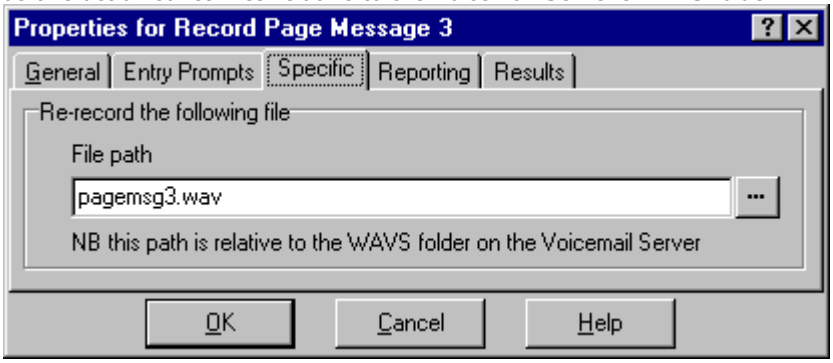
- Short Code: *80
- Telephone Number : "Page"
- Feature: VoicemailCollect.

3.6. The new IP Office configuration was then merged.

Example 2
This example builds on example 1 by allowing the user to select which message is played from a menu. In this example the user can press 1, 2 or 3 for different messages. They can also re-record the message associated with option 3 by pressing #.



A Play List action was added and in this example set to record pagemsg3.wav. Note that just the file name was specified as this action saves files relative to the Voicemail Server's WAVS folder.



In the Post Dial action that plays back pagemsg3.wav note that the full file path needs to be used.

In IP Office Manager, we then added a short code that triggers the module "Paging" using the VoicemailCollect feature.

14.2 Dial By Name

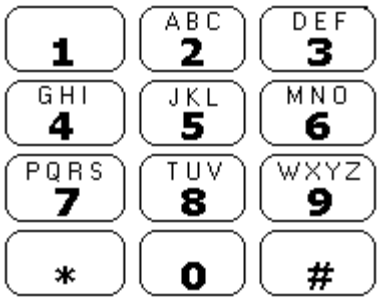
IP Office includes a Dial Name feature for making internal and external calls. It allows users to make calls by dialing the name on their telephone keypad and making a selection from the displayed matches or dialing further characters to improve the match.

When used to make internal calls, the name matches are based on the User Names and Full Names programmed into the system. If a user has a Full Name programmed then that takes precedence over their User Name.

When used to make external calls, the name matches are based on entries in the IP Office Directory.

Within a Small Community Network, remote User Names, Full Names and Group Names are shared and thus are available for the Dial By Name feature. Directories are not shared within a the Small Community Network, so only the Directory of the user's local IP Office is available.

The Dial Name feature uses the ITU key character layout:



Selecting Dial Name Mode:

1. Double-click  System.
2. Select the **Telephony** tab.
3. The **Dial By Name** checkbox operates as follows.
   - When checked, matching is based on the series of characters dialed by the user.
   - When unchecked, matching is based just on the first character selected.

Setting User Full Names:
The process below details doing this through Manager.

1. In Manager, receive the IP Office's configuration.
2. Click  User to display the list of users.
3. Double-click the required user to display their User form.
4. In the Full Name field enter the name required. Do not use characters other than Aa to Zz and 0 to 9.
5. Click **OK**.
6. Repeat for all users required.

Adding Directory Entries:
Note that Directory entries are also used for other functions such as name matching against received ICLID on incoming calls.

1. Click  **Directory** to display a list of current entries.
2. Either double-click on an entry to change and right-click on the list and select **New**.
3. Enter the **Name** and **Number** and click **OK**.
4. Repeat for all entries required.

14.2.1 Using Dial Name

The Directory function 557 can be assigned to a programmable key on most non-analog extensions. It is also available through the phone menu on phones with a Menu key. It is also displayed automatically for manual programmable button functions when entry of a target number is required (see Interactive Button Menus 475).

Note

- Spaces in names are ignored.
- Accented characters in names are matched to their unaccented character version on the telephone dialing pad.

1. Press the programmable button that has been set to the directory function (by default it is labeled as **Dir**).
   - On phones with a Menu key, press Menu and select **Dir**. Alternatively, press **Menu** twice, then press ▶ and then select **Dir**.
2. Select from **INDeX** (internal extensions), **Group** (Hunt Groups) or **Extrn** (numbers in the IP Office Directory).
3. The next steps depend on which mode of working your system is using:
   - **Dial Name Mode *(System | Telephony | Telephony | Dial by Name checked)***
     1. Using the letter keys, start dialing the name that you want. For example, for names starting with John dial 5646. Ignore any spaces in the name.
     2. The display will show the first match to the letters entered so far. Either enter further letters or use the ◀ and ▶ keys to scroll through the other matches found.
     3. If **NO MATCH** is displayed press ◀ to go back to the previous step.
     4. When the name you want is shown, select **Call**.
     5. If you cannot find the name you want press Exit .
   - **Classic Mode *(System | Telephony | Telephony | Dial By Name not checked)***
     1. Press the dial pad button that matches the first letter of the name you want. For example, to select L press the 5 key three times.
     2. Use the ◀ and ▶ keys to scroll through the matching entries. You can press another key on the dialing pad to select a different first letter.
     3. When the name you want is shown, select **Call**.
     4. If you cannot find the name you want press **Exit** .

Chapter 15.
Appendix: Locale Settings

15. Appendix: Locale Settings

The IP Office system Locale sets factors such as the default ringing tones and caller display settings. The locale also controls the default language that the IP Office voicemail server will use for prompts.

Users and incoming call routes can be set to a locale. That locale will then override the system settings for calls to voicemail.

This following table indicates locale settings used within 3.2 and higher for different functions. Note that reference to a locale does not necessarily indicate support, availability or approval for IP Office within that country.
deu

Locale	TLA		Locale	TLA
Argentina 754	ess		Netherlands 776	nld
Australia 755	ena		New Zealand 777	enz
Belgium 756	nlb		Norway 778	nor
Belgium 757	frb		Peru 779	esr
Brazil 758	ptb		Poland 780	plk
Canada 759	frc		Portugal 781	ptg
Chile 760	esl		Russia 782	rus
China 761	chs		Saudi Arabia 783	ara
Colombia 762	eso		South Africa 784	ens
Denmark 764	dan		Spain 785	esp
Finland 765	fin		Sweden 786	sve
France 766	fra		Switzerland 787 (French)	frs
Germany 768	deu		Switzerland 787 (German)	des
Greece 767	ell		Switzerland 787 (Italian)	its
Hong Kong 769	zhh		Taiwan 788	cht
Hungary 770	hun		Turkey 789	trk
Iceland 771	isl		UK 790	eng
India 772	ind		USA 791	enu
Italy 773	ita		Venezuela 792	esv
Korea 774	kor			
Mexico 775	esm			

* Locale defaults to best match. For example New Zealand (enz) falls back to UK English (eng). Embedded voicemail supports simple fallback based on the first two letters of the locale TLA. Voicemail Lite and Voicemail Pro employ multiple fallback always ending in UK or US English.

- **TLA (Three-Letter Abbreviation):**
  These are the three character codes used by pre-6.0 Manager to set locales. In IP Office 3.2 they were replaced by selection of the required country or language by name.
- **Locale:**
  The country represented by the locale. Teletype (Textphone) is used with Voicemail Pro, refer to the Voicemail Pro documentation.
- **Language:**
  The voicemail prompt language used for that locale.
- **Manager:**
  Indicates that the IP Office Manager application can run in the specific locale language. Manager uses the best match it has (French, German, Brazilian, Dutch, Italian, Mexican Spanish or US English) for the regional location settings setting of the PC on which it is running, otherwise it defaults to UK English. If required the language used within the Manager screens can be overridden, see Changing the Manager Language 44.
- **Telephony:**
  The IP Office provides default telephony settings matching the normal expected defaults for the locale.
- **Phone Display:**
  Indicates that display messages from the IP Office to Avaya DS and IP phones can be sent using the appropriate language for that locale. Note that the user locale can be used to override the system locale for these messages. Note also that some phones support their own language selection options for menus displayed by the phone's software.
- **T3 Phones:**
  Menus for T3 Series phones available in the specific language.

- **Voicemail:**
  These columns indicate for which locales the different Avaya IP Office voicemail servers can provide the appropriate language prompts. In all cases, the system locale can be overridden by setting a different user locale.

  - **EVM:**
    Indicates that the locale is recognized by Embedded Voicemail and appropriate language prompts are then used. If an unsupported locale is used, Embedded Voicemail will attempt the best match using the first two characters of the locale.

  - **VM Lite:**
    Indicates that the locale is recognized by Voicemail Lite and appropriate language prompts are then used. For an unsupported locale is used, or one for which the necessary prompts are not available, Voicemail Lite will attempt the best match using a sequence of alternate locales.

  - **VM Pro:**
    Indicates that the locale is recognized by Voicemail Pro and appropriate language prompts are then used. For an unsupported locale is used, or one for which the necessary prompts are not available, Voicemail Lite will attempt the best match using a sequence of alternate locales. For example French Canadian (frc) fallback to French (fra), then US English (enu) and finally UK English (eng). Note that the languages available are selectable during Voicemail Pro installation. For further details refer to the Voicemail Pro manual.

15.1 Locale Defaults

A Locale being covered in this document does not imply approvals or availability.

- **Tones**
  The table below describes the different IP Office tones. The tones used are determined by the system locale setting. Note that in some locales, the same tone sound may be used for several purposes, for example for Busy and Fast Busy may be the same.

Tone	Description
Dial Tone	Normal dial tone.
Alternate Dial Tone	This tone is also known as 'interrupted', 'broken' or 'stutter' dial tone. It is used on extensions when the user has DND, Follow-Me or Forward Unconditional set. It is also used on analog phones when the user has a call on hold, for example during a transfer.
Secondary Dial Tone	Used when accessing an external trunk using a short code or ARS that specifies secondary dial tone. If no specific tone is defined for the locale, normal dial tone is used.
Busy Tone	Used when the number called is busy.
Fast Busy Tone	No channel.
Intercept Busy Tone	Unallocated number.
Ring Tone	Other end is ringing. This tone is also known as 'ringback'.
Call Waiting Tone	Used when a user has a call waiting enable and a is call waiting.
NU Tone	Number Unobtainable.

- **Frequency**
  All tone frequencies are in Hertz (Hz). Where a tone uses a combination of frequencies, the frequencies are shown separated by a + symbol. Where a tone uses alternating frequencies, the frequencies are shown separated by a / symbol.
- **Cadence**
  The tone cadence is indicated as either a sequence of on/off times or as a sequence of alternating frequency 1/ frequency 2 times. Where a portion of the sequence is enclosed in ( ) symbols, it indicates a repeating sequence.
- **POT Port Settings**
  These settings are used for analog phone extensions. The settings used are determined by the system locale.

Analog Phone Settings	
Ring Current Frequency	The frequency of ring current.
Minimum Flash Hook Time	The minimum time that loop current has to be broken to detect a timed break recall (TBR). Anything shorter is regarded as a glitch.
Maximum Flash Hook Time	The maximum time the loop current can be broken for it to be detected as a time break recall (TBR). Anything longer is regarded as clearing.
Default Caller Display Type	The type of caller display used when **Extn | Caller Display Type** is set to ***On***.
Default MWI Type	The type of message waiting indication used when **Extn | Message Waiting Indication Type** is set to ***On***.

Locale Specific Behavior	
Companding	The typical companding method employed for telephone systems in that locale. Companding operation can be adjusted through the **System | Telephony | Telephony** 177 tab.
Dialing Timeout	The method used by the IP Office to determine when to disconnect an extension that does not complete dialing a valid routable number.
Disconnect Tone	The tone used when disconnect indication is provided to an extension.

Display Language	The default language used for messages sent to extensions.
Feature Phone Clearing	The locale specific action applied to digital and IP phones when the far end of a call disconnects. This action can be overridden by the Disconnect Tone option on the **System | Telephony | Telephony** 177 tab.
Voicemail Truncation Time	On analog trunks, call disconnection can occur though busy tone detection. When such calls go to voicemail to be recorded or leave a message, when the call ends the IP Office indicates to the voicemail system how much to remove from the end of the recording in order to remove the busy tone segment. For some systems it may be necessary to override the default if analog call recordings are being clipped or include busy tone. That can be done by adding a **VM_TRUNCATE_TIME=** setting with the required value in the range 0 to 7 seconds.
Default Currency	Used for Advice of Charge 673 operation where supported on ISDN lines.

15.2 Argentina

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.070s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Spanish
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	0 seconds.
Default Currency	ARS

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	SoftConsole	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.3 Australia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.010s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	5 seconds.
Default Currency	AUD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.4 Belgium - Flemish

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/3.0) on/off.
Call Waiting Tone	400	(0.08/0.175/0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Dutch.
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Dutch	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓

15.5 Belgium - French

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/3.0) on/off.
Call Waiting Tone	400	(0.08/0.175/0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	851V.

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	French.
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
French	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.6 Brazil

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.1/0.1/0.1/0.1) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.06/0.25/0.06/5) on/off.
NU (Number Unobtainable) Tone	425	IP Office 4.2+: (0.25/0.25/0.75/0.25) on/off. Pre-IP Office 4.2: Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.100s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	DTMFD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	A-Law/Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Brazilian Portuguese
Feature Phone Clearing	Go Idle
Voicemail Truncation Time	2 seconds.
Default Currency	BRL

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Brazilian Portuguese	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓
Portuguese	✓	✗	✗	✓	✓	✗	✗	✓	✓	✓

15.7 Canada - French

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.0/0.1/0.2/1200) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.300s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Canadian French
Feature Phone Clearing	Go Idle
Voicemail Truncation Time	0 seconds.
Default Currency	CAD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Canadian French	✓	✗	✗	✗	✗	✗	✗	✓	✓	✓
French	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.8 Chile

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	480+620	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Mexican Spanish.
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	2 seconds.
Default Currency	CLP

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.9 China

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(0.4/0.04) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	440	(0.35/0.35) on/off.
Fast Busy Tone	440	(0.7/0.7) on/off.
Intercept Busy Tone	440	(0.1/0.1/0.1/0.1/0.1/0.1/0.4/0.4) on/off.
Ring Tone	440	(1.0/4.0) on/off.
Call Waiting Tone	440	(0.4/4.0) on/off.
NU (Number Unobtainable) Tone	440	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	0.900s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	5 seconds.
Default Currency	CNY

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Mandarin	✗	✗	✗	✗	✓+	✓+	✗	✓	✓	✓
Putonghua	✗	✗	✗	✗	✓+	✓+	✗	✗	✗	✓

+ Chinese Simplified text.

15.10 Colombia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25 alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Mexican Spanish
Feature Phone Clearing	Disconnect tone.
Voicemail Truncation Time	2 seconds.
Default Currency	COP

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.11 Customize

The following options are supported for the IP Office 4.0 Q2 2007 maintenance release and higher.

On the **System | System** tab, the **Locale** can be set to ***Customize***. This option is intended for those locales which use a mix of telephony equipment from a range of other locales. Use of this locale option is entirely the responsibility of the IP Office installer.

The Customize locale matches the Saudi Arabia 783 locale but with the following additional controls:

- **Tone Plan:** *Default = Tone Plan 1*
  The tone plan control dial and ringing tone. The options are:
  - ***Tone Plan 1:*** United States.
  - ***Tone Plan 2:*** United Kingdom.
  - ***Tone Plan 3:*** France.
  - ***Tone Plan 4:*** Germany.
  - ***Tone Plan 5:*** Spain.
- **CLI Type:** *Default = FSK V23*
  This is the method used for CLI signalling on analog lines.
- **Busy Tone Detection:** *Default = Off.*
  Enables or disables the use of busy tone detection for call clearing. This is a system wide setting.

15.12 Denmark

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(0.75/7.5) on/off.
Call Waiting Tone	425	(0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	DTMFC
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Danish
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	DKK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Danish	✓	✗	✗	✗	✓	✓	✗	✓	✓	✓

15.13 Finland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(1.0/5.0) on/off.
Call Waiting Tone	425	(0.08/120.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	DTMFA
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Finnish
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Finnish	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓

15.14 France

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	330	Continuous.
Alternate Dial Tone	330	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	440	(0.5/0.5) on/off.
Fast Busy Tone	440	(0.5/0.5) on/off.
Intercept Busy Tone	440	(0.5/0.5) on/off.
Ring Tone	440	(1.5/3.5) on/off.
Call Waiting Tone	440	(0.1/8.0) on/off.
NU (Number Unobtainable) Tone	440	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	French
Feature Phone Clearing	Disconnect Tone
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
French	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓

15.15 Greece

The tones and cadences below are applicable for the IP Office 3.2 4Q7+ and 4.1 1Q8+ maintenance releases and for IP Office 4.2+. Releases prior to those used the United Kingdom 790 set of tones and cadences.

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous
Alternate Dial Tone	425	(0.5/1.0) on/off
Secondary Dial Tone	425	(0.2/0.3/0.7/0.8) on/off
Busy Tone	425	(0.3/0.3) on/off
Fast Busy Tone	425	(0.15/0.15) on/off
Intercept Busy Tone	425	(0.1/0.1/0.2/0.2) on/off
Ring Tone	425	(1.0/4.0) on/off
Call Waiting Tone	425	(0.3/8.0) on/off
NU (Number Unobtainable) Tone	425	(0.1/0.2) on/off

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Greek	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.16 Germany

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	(0.16/0.16/0.16/0.16/0.16/0.8) on/off.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	425	Continuous
Busy Tone	425	(0.48/0.48) on/off.
Fast Busy Tone	425	(0.48/0.48) on/off.
Intercept Busy Tone	425	(0.48/0.48) on/off.
Ring Tone	425	(0.945/4.05) on/off.
Call Waiting Tone	425	(0.08/0.2/0.08/10) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	Busy Tone.
Display Language	German.
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
German	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Secondary dial tone added in 3.1(5601) in March 2006. Previously used dial tone.

15.17 Hong Kong

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	480/620	(0.25/0.25) on/off.
Ring Tone	440/620	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.300s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	–
Default Message Waiting Indication Type	–

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Go Idle
Voicemail Truncation Time	7 seconds.
Default Currency	CNY

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Cantonese	✗	✗	✗	✗	✗	✗	✗	✓*	✗	✓
Putonghua	✗	✗	✗	✗	✓	✓	✗	✗	✗	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Added in IP Office 4.2.

15.18 Hungary

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.15/0.15/0.15/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone
Voicemail Truncation Time	7 seconds.
Default Currency	HUF

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Hungarian	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.19 Iceland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous.
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	UK20
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	ISK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.20 India

Support for this locale was added as part of IP Office 4.1.

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	400	Continuous.
Alternate Dial Tone	400	(0.25/0.25/0.25/3.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.25/0.25) on/off.
Intercept Busy Tone	400	(0.75/0.75) on/off.
Ring Tone	400	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.2/0.1/0.2/7.5) on/off.
NU (Number Unobtainable) Tone	400	(2.8/0.2) on/off.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	0.300s
Default Caller Display Type	DTMFA
Default Message Waiting Indication Type	–

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Go Idle
Voicemail Truncation Time	7 seconds.
Default Currency	INR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓

15.21 Italy

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+425	Continuous.
Alternate Dial Tone	350+425	(1.0/0.5) on/off.
Secondary Dial Tone	425	(0.2/0.2/0.6/1.0) on/off.
Busy Tone	400	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	400	(0.1/4.9) on/off.
NU (Number Unobtainable) Tone	400	(0.1/0.1) on/off.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	10 seconds with no digit dialed.
Disconnect Tone	NU
Display Language	Italian
Feature Phone Clearing	Go Idle
Voicemail Truncation Time	2 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Italian	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.22 Korea

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	(1.0/0.25) on/off.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.3/0.2) on/off.
Intercept Busy Tone	480+620	(0.125/0.025/0.125/1.5) on/off.
Ring Tone	440+480	(1.0/2.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone
Voicemail Truncation Time	3 seconds.
Default Currency	KRW

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Korean	✗	✗	✗	✗	✓	✓	✗	✓	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.23 Mexico

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Mexican Spanish
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	2 seconds.
Default Currency	MXN

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.24 Netherlands

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.48/0.48) on/off.
Fast Busy Tone	425	(0.48/0.48) on/off.
Intercept Busy Tone	425	(0.48/0.48) on/off.
Ring Tone	425	(0.945/4.05) on/off.
Call Waiting Tone	400	(0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	DTMFD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	Busy.
Display Language	Dutch.
Feature Phone Clearing	Go Idle.
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Dutch	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓

15.25 New Zealand

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+350	Continuous.
Alternate Dial Tone	350+350	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	(0.075/0.1/0.075/0.1/0.075/0.1/0.075/0.4) on/off.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	Busy Tone.
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	5 seconds.
Default Currency	NZD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.26 Norway

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	1.0/1.5/(1.0/4.0) on/off.
Call Waiting Tone	425	(0.08/0.6/0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	UK
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Norwegian
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	NOK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Norwegian	✓	✗	✗	✗	✓	✓	✗	✓	✓	✓

15.27 Peru

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Mexican Spanish
Feature Phone Clearing	Disconnect Tone
Voicemail Truncation Time	7 seconds.
Default Currency	PEN

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.28 Poland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.15/0.15/0.15/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect tone.
Voicemail Truncation Time	7 seconds.
Default Currency	PLN

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Polish	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.29 Portugal

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	Continuous

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	UK20
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Portuguese
Feature Phone Clearing	Disconnect Tone
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Brazilian Portuguese	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓
Portuguese	✓	✗	✗	✗	✓	✗	✗	✓	✓	✓

15.30 Russia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	Continuous.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.35/0.35) on/off.
Fast Busy Tone	425	(0.2/0.2) on/off.
Intercept Busy Tone	425	(0.35/0.35) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.2/5.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	None
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Russian
Feature Phone Clearing	Disconnect Tone
Voicemail Truncation Time	7 seconds.
Default Currency	RUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Russian	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Cyrillic display support for the Russian locale is limited on phones as follows:

- 6400 Series/4400 Series: Limited to phone menus and displayed names.
- 2400 Series/5400 Series: Limited to button labels and displayed name.
- 4600 Series/5600 Series: All display strings if using the double-byte build of phone firmware.
- EU24/EU24BL: No Cyrillic language support.

15.31 Saudi Arabia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(.25/.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(.5/.5) on/off.
Fast Busy Tone	480+620	(.25/.25) on/off.
Intercept Busy Tone	480/620	(.25/.25/.25/.25) on/off.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(.1/.2/1200.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.300s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Go Idle
Voicemail Truncation Time	5 seconds.
Default Currency	SAR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.32 South Africa

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous.
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	UK20
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	ZAR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.33 Spain

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(1.5/3.0) on/off.
Call Waiting Tone	425	(0.15/0.15/0.15/30.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	A-Law.
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Spanish.
Feature Phone Clearing	Disconnect tone.
Voicemail Truncation Time	7 seconds.
Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Spanish	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.34 Sweden

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(1.0/5.0) on/off.
Call Waiting Tone	425	(0.08/120) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	DTMFA
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Swedish
Feature Phone Clearing	Disconnect Tone
Voicemail Truncation Time	7 seconds.
Default Currency	SEK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Swedish	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓

15.35 Switzerland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.2/0.2) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.2/0.2/0.2/4.0) on/off.
NU (Number Unobtainable) Tone	425	(0.2/0.2) on/off.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	UK20
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	Busy
Display Language	French, Italian or German depending on specific selected locale.
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	CHF

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
French	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
German	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Italian	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.36 Taiwan

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.1/0.1) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	480/620	(0.25/0.25/0.25/0.25) on/off.
Ring Tone	440+480	1.2/2.0) on/off.
Call Waiting Tone	350+440	(0.25/0.25/0.25/5.25) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.150s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	DTMFA/FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	TWD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Mandarin	✗	✗	✗	✗	✓+	✓+	✗	✓	✓	✓
Putonghua	✗	✗	✗	✗	✓+	✓+	✗	✗	✗	✓

+ Chinese Simplified text.

15.37 Turkey

Support for this locale was added as part of IP Office 4.2.

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	350+440	Continuous.
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	480+620	Continuous.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.0/0.1/0.2/1200) on/off.
NU (Number Unobtainable) Tone	480+620	(0.1/0.2) on/off.

Analog Phone Settings	
Ring Current Frequency	25Hz.
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Go Idle.
Voicemail Truncation Time	0 seconds.
Default Currency	YTL

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓*

*Uses English (US) if available.

15.38 United Kingdom

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous.
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Ring Current Cadence	(0.4/0.2/0.4/2.0s) on/off.
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	UK
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Go Idle
Voicemail Truncation Time	7 seconds.
Default Currency	GBP

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

15.39 United States

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tone.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.0/0.1/0.2/1200) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings	
Ring Current Frequency	20Hz
Minimum Flash Hook Time	0.300s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	51V Stepped

Locale Specific Behavior	
Companding	Mu-Law.
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	Silence.
Display Language	English (US).
Feature Phone Clearing	Go Idle.
Voicemail Truncation Time	0 seconds.
Default Currency	USD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (US)	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓

15.40 Venezuela

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tone.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings	
Ring Current Frequency	25Hz
Minimum Flash Hook Time	0.050s
Maximum Flash Hook Time	1.000s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior	
Companding	Mu-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	Mexican Spanish.
Feature Phone Clearing	Disconnect Tone.
Voicemail Truncation Time	7 seconds.
Default Currency	VEB

Language	Phone Display	T3 Phones	Applications				Voicemail		
			Manager	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓

Chapter 16.
Appendix: CDR Records

16. Appendix: CDR Records

16.1 CDR Record Formats

There are a number of formats available for CDR output. Each format consist of two types of records; date records and call detail records.

- **Date Records**
  A date record is sent each time a CDR connection is started and then once a day (at midnight). The date can be in month/day or day/month format, as selected on the **System | CDR** 189 tab.
- **Call Detail Records**
  Call detail records are sent at the termination of a call. For some formats, additional fields can be selected using the Normal, Enhanced, or ISDN options on the **System | CDR** 189 tab.

CDR Record Formats			
Record Format	**Record Options**		
	Normal	**Enhanced**	**ISDN**
Printer 808	✓	✓	✓
59-Character 798	✓	✗	✗
Expanded 799	✓	✓	✗
LSU 804	✓	✓	✓
LSU Expanded 807	✓	✗	✗
INT Direct 801	✓	✗	✗
INT ISDN 802	✓	✗	✗
INT Process 803	✓	✗	✗
Teleseer 811	✓	✓	✓
Unformatted 814	✓	✓	✗

16.2 CDR Record Fields

The following list describes the fields which, depending on the selected report format and options, may be included in the CDR records.

Those fields shown in italics are not supported by IP Office CDR. Where the report format includes such a field, the data is replaced by a space or spaces. Similarly fields not appropriate to the call type are replaced by a space or spaces as appropriate.

- **Access Code Dialed**
  The access code the user dialed to place an outgoing call. On IP Office this will be the digit used to trigger secondary dial tone if used.
- **Access Code Used**
  The number of the line used for an outgoing call.
- **Account Code**
  This field may contain a number to associate call information with projects or account numbers. For some formats, a long account code overwrites spaces on the record that are assigned to other fields.
- **Attendant Console** - Not supported by IP Office CDR.
- **Authorization Code** - Not supported by IP Office CDR.
- **Bandwidth** - Not supported by IP Office CDR.
- **BCC (Bearer Capability Class)**
  This field identifies the type of ISDN call. Any one of the following may appear in this field.
  - 0 = Voice Grade Data and Voice.
  - 1 = Mode 1 (56 Kbps synchronous data).
  - 2 = Mode 2 (less than 19.2 Kbps synchronous or asynchronous data).
  - 3 = Mode 3 (64 Kbps data for LDAP protocol).
  - 4 = Mode 0 (64 Kbps data clear).
- **Calling Number**
  For outgoing or intra-switch calls, this field contains the extension number of the originating telephone user. For incoming and tandem calls, this field contains the trunk access code in standard formats. The fifth digit is the first digit of a 5-digit dialing plan. In formats where the field is less than 7 digits, this also shows the trunk access code of the incoming call.

  This field shows the calling party number in Unformatted or Expanded records. If the calling party number is not available, this field is blank for both formats.
- **Calling Number/Incoming Trunk Access Code**
  For incoming calls this field contains the incoming trunk access code. For outgoing calls, this field contains the calling extension.
- **Carriage Return**
  The ASCII carriage return character followed by a line feed indicates the end of a call record.
- **Condition Code**
  The condition code indicates what type of call the record describes. For example, condition code C indicates a conference call, 7 indicates an ARS call, etc. The table below shows condition codes for most record formats. The 59-character format uses different condition codes from those used for other record types.

Code	59	Description
0	-	Identifies an outgoing intra-switch call (a call that originates and terminates on the switch).
9	I	Identifies an incoming external call.
A	-	Identifies an outgoing external call.
C	L	Identifies a conference call.
E	N	An incomplete external call, due to all trunks being busy or out of service. Incoming trunk calls to a busy phone do not generate a CDR record.
G	-	Indicates a call terminating to a ringing station.
H	-	Indicates that a ringing call that was then abandoned.
I	-	Indicates a call attempt to a busy station.

CDR can also record the ring time to answer or abandon for incoming calls originated by the trunk group. In addition, CDR indicates if the incoming destination is busy. This record is separate from the normal call duration record printed for an answered call. This information is indicated by the condition code.

When an incoming call is terminated to an internal destination, the call is tracked from the time ringing feedback is given to the originator. If the call is answered, a CDR record is printed with the condition code G and the duration reflects the time between the start of ringing and the answer of the call. If the call is abandoned before being answered, the system prints a record with the condition code H and the duration reflects the time between the start of ringing and the time the call was abandoned. If the destination is busy, a CDR record is printed with the condition code I and a duration of 0.

- **Dialed Number**
  This field contains the number dialed. If it is an outgoing call, the field contains the number dialed by a system user. If it is an incoming call, the field contains the extension that was dialed. If more than 18 digits are dialed, the least significant digits (starting from the right) are truncated.
- **Duration**
  This is the duration of the call or call segment. It is recorded in hours, minutes and tenths of minutes. Calls are rounded down in 6-second increments. Therefore, a call of 5-second duration will be indicated as 0 duration. If 9999 appears in this field, this call was in progress when a time change was made in the switch.
- **Feature Flag**
  1 for a data call, 0 for voice calls.
- **Format Code** - Not supported by IP Office CDR.
- **FRL** - Not supported by IP Office CDR.
- **Incoming Circuit Id.**
  This field identifies the trunk used for an incoming call. For outgoing calls this field is blank.
- **Incoming Trunk Access Code**
  This field contains the access code of the incoming trunk group.
- **ISDN Network Service** - Not supported by IP Office CDR.
- **ISDN CC** - Not supported by IP Office CDR.
- **IXC (Interexchange Carrier Code)** - Not supported by IP Office CDR.
- **Line Feed**
  The ASCII line feed character follows a carriage return to terminate CDR records.
- **MA-UUI (Message Associated User-to-User Signaling)** - Not supported by IP Office CDR.
- **Node Number** - Not supported by IP Office CDR.
- **Null**
  Used to terminate and divide CDR Records (usually in triplets) when needed.
- **Outgoing Circuit Id.**
  For outgoing calls, this field identifies the trunk used.
- **Packet Count** - Not supported by IP Office CDR.
- **PPM (Periodic Pulse Metering)** - Not supported by IP Office CDR.
- **Resource Flag** - Not supported by IP Office CDR.
- **Space**
  The ASCII space character separates other CDR fields or fills unused record locations.
- **TSC Flag** - Not supported by IP Office CDR.
- **Time**
  This fields contains the time that the call ended, or the time that a user dropped from a multi-party call.

16.3 Call Splitting

Call splitting keeps track of calls where more than two parties are involved. These can be calls that are transferred or conferenced. When any of these situations arise, CDR produces a separate record for each new party involved in the call.

Conference
Caller A makes an incoming trunk call to switch party B (201). They talk for 2 minutes, then B conferences in C (202), and D (203). The entire group talks for another 8 minutes, at which point B drops off the call. This produces a record for segment A–B.

A, C and D continue to talk for another 5 minutes. All remaining parties drop, producing two more records; A–C and A–D. Note that each record shows the incoming trunk ID as the calling number.

Segment	Duration	Condition Code	Calling Number	Dialed Number
A-B	0:10:0	C	123	201
A-C	0:13:0	C	123	202
A-D	0:13:0	C	123	203

Transfer
A calls B (201). They talk for 1 minute, then B transfers the call to C (202). CDR generates a record for segment A–B. A and C talk for 5 minutes. CDR then generates a record for segment A–C.

Segment	Duration	Condition Code	Calling Number	Dialed Number
A-B	0:01:0	9	123	201
A-C	0:05:0	9	123	202

Trunk to Trunk Transfer
A calls switch party B (201), they talk for one minute. B transfers the call to public-network party E (5665555), they talk for 4 minutes. Note that the duration of the original incoming trunk call includes the time after the call was transferred to an outgoing trunk, until all trunk parties drop.

Segment	Duration	Condition Code	Access Code Used	Calling Number	Dialed Number
A-B	0:05:0	9		123	201
A-E	0:04:0	9	345	123	5665555

16.4 Record Formats

16.4.1 59 Character (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Time of day-hours
3-4	Day *	3-4	Time of day-minutes
5	Carriage return	5	Duration-hours
6	Line feed	6-7	Duration-minutes
7-9	Null	8	Duration-tenths of minutes
*Leading 0 added if needed.		9	Condition code
		10-12	Access code dialed
		13-15	Access code used
		16-30	Dialed number
		31-35	Calling number
		36-50	Account code
		51	FRL
		52	IXC
		53-55	Incoming circuit ID
		56-58	Outgoing circuit ID
		59	Carriage return
		60	Line feed
		61-63	Null

16.4.2 Expanded (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minute
*Leading 0 added if needed.		11	Condition code
		13-16	Access code dialed
		18-21	Access code used
		23-37	Dialed number
		39-48	Calling number
		50-64	Account code
		66-72	Authorization code
		77	FRL
		79-81	Incoming circuit ID
		83-85	Outgoing circuit ID
		87	Feature flag
		89-90	Attendant console
		92-95	Incoming trunk access code
		97-98	Node number
		100-102	ISDN NSV
		104-106	IXC
		108	Bearer Capability Class
		110	MA-UUI
		112	Resource flag
		114-117	Packet count
		119	TSC flag
		121-129	Reserved
		131	Carriage return
		132	Line feed
		133-135	Null

16.4.3 Expanded (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code
		13-16	Access code dialed
		18-21	Access code used
		23-37	Dialed number
		39-48	Calling number
		50-64	Account code
		66-72	Authorization code
		74-75	Time in queue
		77	FRL
		79-81	Incoming circuit ID
		83-85	Outgoing circuit ID
		87	Feature flag
		89-90	Attendant console
		92-95	Incoming TAC
		97-98	Node number
		100-102	ISDN NSV
		104-107	IXC
		109	Bearer Capability Class
		111	MA-UUI
		113	Resource flag
		115-118	Packet count
		120	TSC flag
		122-123	Bandwidth
		125-130	ISDN CC (digits 1–6)
		131-135	ISDN CC (digits 7–11) /PPM count (1–5)
		136-146	Reserved for future use
		147	Carriage return
		148	Line feed
		149-151	Null

16.4.4 INT-Direct (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Day of month
3-4	Day *	3-4	Month
5	Carriage return	5-6	Year
6	Line feed	8-9	Time of day-hours
7-9	Null	10-11	Time of day-minutes
*Leading 0 added if needed.		13	Duration-hours
		14-15	Duration-minutes
		16	Duration-tenths of minutes
		18	Condition code
		20-22	Access code dialed
		23-25	Access code used
		27-44	Dialed number used
		46-50	Calling number
		52-66	Account code
		68-72	PPM count
		74-75	Incoming circuit ID
		77-78	Outgoing circuit ID
		79	Carriage return
		80	Line feed

16.4.5 INT-ISDN (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Time of day-hours
3-4	Day *	3-4	Time of day-minutes
5	Carriage return	5	Space
6	Line feed	6	Duration-hours
7-9	Null	7-8	Duration-minutes
*Leading 0 added if needed.		9	Duration-tenths of minutes
		11	Condition code
		13-16	Access code dialed
		18-21	Access code used
		23-37	Dialed number
		39-48	Calling number
		50-64	Account code
		66-72	Authorization code
		74	Line feed
		76	FRL
		78	Incoming circuit ID (hundreds)
		79	Incoming circuit ID (tens)
		80	Incoming circuit ID (units)
		82-84	Outgoing circuit ID
		86	Feature flag
		88-89	Attendant console (1st digit)
		91-94	Incoming trunk access code
		96-97	Node number
		99-101	ISDN NSV
		103-106	IXC
		108	Bearer Capability Class
		110	MA-UUI
		112	Resource flag
		114-119	Reserved
		120-124	PPM
		132	Carriage return
		133	Line feed
		134-136	Null

16.4.6 INT-Process (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Format code
3-4	Day *	3-4	Time of day-hours
5	Carriage return	5-6	Time of day-minutes
6	Line feed	7	Duration-hours
7-9	Null	8-9	Duration-minutes
*Leading 0 added if needed.		10	Duration-tenths of minutes
		12	Condition code
		14-16	Access code dialed
		17-19	Access code used
		21-38	Dialed number (digits 1–18)
		39-43	Calling number (digits 1–5)
		45-59	Account code (digits 1–15)
		61	IXC
		62	FRL
		66-67	Incoming circuit ID (digits 1–2)
		71-72	Outgoing circuit ID (digits 1–2)
		74-78	PPM (digits 1–5)
		79	Carriage return
		80	Line feed
		81-83	Null

16.4.7 LSU (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Hour *	1	Duration-hours
3	Colon (:)	2-3	Duration-minutes
4-5	Minute *	4	Duration-tenths of minutes
6	Blank	5	Condition code
7-8	Month *	6-8	Access code dialed
9	Slash (/)	9-11	Access code used
10-11	Day *	12-26	Dialed number
12	Carriage return	27-30	Calling number (digits 2–5)
13	Line feed	31-35	Account code (first 5 digits)
14-16	Null	36-42	Authorization code or digits 6–12 of account code
*Leading 0 added if needed.		43-44	Space or digits 13–14 of account code
		45	FRL or digit 15 of account code
		46	Calling number (1st digit)
		47-48	Incoming circuit ID (tens, units)
		49	Feature flag
		50-52	Outgoing circuit ID (tens, units, hundreds)
		53	Incoming circuit ID (hundreds)
		54	IXC
		55	Carriage return
		56	Line feed
		57-59	Null

16.4.8 LSU (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Hour *	1	Duration-hours
3	Colon (:)	2-3	Duration-minutes
4-5	Minute *	4	Duration-tenths of minutes
6	Blank	5	Condition code
7-8	Month *	6-9	IXC
9	Slash (/)	10-12	Access code used
10-11	Day *	13-27	Dialed number
12	Carriage return	28-31	Calling number
13	Line feed	32-35	Account code (digits 1–4)
14-16	Null	36-42	Authorization code or digits 6–12 of account code
*Leading 0 added if needed.		43-45	ISDN NSV
		46	1st digit of a 5-digit calling number
		47-48	Incoming circuit ID (tens, units)
		49	Feature flag
		50-52	Outgoing circuit ID (tens, units, hundreds)
		53	Incoming circuit ID (hundreds)
		54	FRL
		55	Carriage return
		56	Line feed
		57-59	Null

16.4.9 LSU (ISDN)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Hour *	1	Duration-hours
3	Colon (:)	2-3	Duration-minutes
4-5	Minute *	4	Duration-tenths of minutes
6	Blank	5	Condition code
7-8	Month *	6-8	IXC
9	Slash (/)	9-11	Access code used
10-11	Day *	12-26	Dialed number
12	Carriage return	27-30	Calling number (digits 2–5)
13	Line feed	31-35	Account code (digits 1–5)
14-16	Null	36-42	Authorization code or digits 6–12 of account code
*Leading 0 added if needed.		43-44	ISDN NSV or digits 13–14 of account code
		45	ISDN NSV (3rd digit) or FRL, or digit 15 of account code
		46	Calling number (1st digit)
		47-48	Incoming circuit ID (tens, units)
		49	Feature flag
		50-52	Outgoing circuit ID (tens, units, hundreds)
		53	Incoming circuit ID (hundreds)
		54	FRL
		55	Carriage return
		56	Line feed
		57-59	Null

16.4.10 LSU-Expanded

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Hour *	1-2	Time of day-hours
3	Colon (:)	3-4	Time of day-minutes
4-5	Minute *	6	Duration-hours
6	Blank	7-8	Duration-minutes
7-8	Month *	9	Duration-tenths of minutes
9	Slash (/)	11	Condition code
10-11	Day *	13-15	Access code dialed
12	Carriage return	16-18	Access code used
13	Line feed	20-34	Dialed number
14-16	Null	36-39	Calling number
*Leading 0 added if needed.		41-45	Account code
		47-53	Authorization code
		58	FRL
		60	Calling number (1st digit)
		62-63	Incoming circuit ID (tens, units)
		65	Feature flag
		67-68	Outgoing circuit ID (tens, units)
		70	Outgoing circuit ID (hundreds)
		72	Incoming circuit ID (hundreds)
		73	IXC
		74	Carriage return
		75	Line feed
		76-78	Null

16.4.11 Printer (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code
		13-15	Access code dialed
		17-19	Access code used
		21-35	Dialed number
		37-41	Calling number
		43-57	Account code
		59-65	Authorization code
		70	FRL
		72	IXC
		74-76	Incoming circuit ID
		78-80	Outgoing circuit ID
		82	Feature flag
		83	Carriage return
		84	Line feed

16.4.12 Printer (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code
		13-16	IXC
		18-21	Access code used
		23-37	Dialed number
		39-43	Calling number
		45-59	Account code
		61-67	Authorization code
		69-71	ISDN NSV
		73	FRL
		75-77	Incoming circuit ID
		79-81	Outgoing circuit ID
		83	Feature flag
		84	Carriage return
		85	Line feed

16.4.13 Printer (ISDN)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code
		13-15	IXC
		17-19	Access code used
		21-35	Dialed number
		37-41	Calling number
		43-57	Account code
		59-65	Authorization code
		67-68	ISDN NSV (hundreds, tens)
		70	ISDN NSV (units)
		72	FRL
		74-76	Incoming circuit ID
		78-80	Outgoing circuit ID
		82	Feature flag
		83	Carriage return
		84	Line feed

16.4.14 Teleseer (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-3	Space
3-4	Day *	4-5	Time of day-hours
5	Carriage return	6-7	Time of day-minutes
6	Line feed	8	Duration-hours
7-9	Null	9-10	Duration-minutes
*Leading 0 added if needed.		11	Duration-tenths of minutes
		12	Condition code
		13-15	Access code dialed
		16-18	Access code used
		19-33	Dialed number
		34-38	Calling number
		39-53	Account code
		54	FRL
		55	IXC
		56-58	Incoming circuit ID
		59-61	Outgoing circuit ID
		62	Feature flag
		63-69	Authorization code
		70-76	Space
		77	Carriage return
		78	Line feed
		79-81	Null

16.4.15 Teleseer (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-3	Space
3-4	Day *	4-5	Time of day-hours
5	Carriage return	6-7	Time of day-minutes
6	Line feed	8	Duration-hours
7-9	Null	9-10	Duration-minutes
*Leading 0 added if needed.		11	Duration-tenths of minutes
		12	Condition code
		13-16	IXC
		17-19	Access code used
		20-34	Dialed number
		35-39	Calling number
		40-54	Account code
		55	ISDN NSV (units)
		56	FRL
		57-59	Incoming circuit ID
		60-62	Outgoing circuit ID
		63	Feature flag
		64-70	Authorization code
		71-72	ISDN NSV (hundreds, tens)
		77	Carriage return
		78	Line feed
		79-81	Null

16.4.16 Teleseer (ISDN)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Month *	1-3	Space
3-4	Day *	4-5	Time of day-hours
5	Carriage return	6-7	Time of day-minutes
6	Line feed	8	Duration-hours
7-9	Null	9-10	Duration-minutes
*Leading 0 added if needed.		11	Duration-tenths of minutes
		12	Condition code
		13-15	IXC
		16-18	Access code used
		19-33	Dialed number
		34-38	Calling number
		39-53	Account code
		54	ISDN NSV (units)
		55	FRL
		56-58	Incoming circuit ID
		59-61	Outgoing circuit ID
		62	Feature flag
		63-69	Authorization code
		70-71	ISDN NSV (hundreds, tens)
		77	Line feed
		78-80	Null

16.4.17 Unformatted (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Hour *	1-2	Time of day-hours
3	Colon (:)	3-4	Time of day-minutes
4-5	Minute *	5	Duration-hours
6	Blank	6-7	Duration-minutes
7-8	Month *	8	Duration-tenths of minutes
9	Slash (/)	9	Condition code
10-11	Day *	10-13	Access code dialed
12	Carriage return	14-17	Access code used
13	Line feed	18-32	Dialed number
14-16	Null	33-42	Calling number
*Leading 0 added if needed.		43-57	Account code
		58-64	Authorization code
		67	FRL
		68-70	Incoming circuit ID
		71-73	Outgoing circuit ID
		74	Feature flag
		75-76	Attendant console
		77-80	Incoming TAC
		81-82	Node number
		83-85	ISDN NSV
		86-88	IXC
		89	Bearer Capability Class
		90	MA-UUI
		91	Resource flag
		92-95	Packet count
		96	TSC flag
		97-100	Reserved
		101	Carriage return
		102	Line feed
		103-105	Null

16.4.18 Unformatted (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	**Field Description**	**Position**	**Field Description**
1-2	Hour *	1-2	Time of day-hours
3	Colon (:)	3-4	Time of day-minutes
4-5	Minute *	5	Duration-hours
6	Blank	6-7	Duration-minutes
7-8	Month *	8	Duration-tenths of minutes
9	Slash (/)	9	Condition code
10-11	Day *	10-13	Access code dialed
12	Carriage return	14-17	Access code used
13	Line feed	18-32	Dialed number
14-16	Null	33-42	Calling number
*Leading 0 added if needed.		43-57	Account code
		58-64	Authorization code
		65-66	Time in queue
		67	FRL
		68-70	Incoming circuit ID
		71-73	Outgoing circuit ID
		74	Feature flag
		75-76	Attendant console number
		77-80	Incoming TAC
		81-82	Node number
		83-87	ISDN NSV
		88-89	IXC
		90	Bearer Capability Class
		91	MA-UUI
		92	Resource flag
		93-96	Packet count
		97	TSC flag
		98-99	Bandwidth
		100-105	ISDN CC (digits 1–6)
		106-110	ISDN CC (digits 7–11)/PPM
		111-114	Reserved for future use
		115	Carriage return
		116	Line feed
		117-119	Null

Chapter 17.
Appendix: SMDR

17. Appendix: SMDR

For IP Office 4.2+, the IP Office control unit is able to send SMDR (Station Message Detail Reporting) records to a specified IP address and port.

Typically an SMDR record is output for each call between two parties (internal and or external) that is handled by the IP Office system. In some scenarios, for examples transfers, where a call involves multiple parties then multiple SMDR records may be output for each part of the call. See SMDR Examples 823.

Each SMDR record contains call information in a comma-separated format (CSV) format, that is variable-width fields with each field separated by commas. See SMDR Fields 820.

Unless otherwise stated, the SMDR referred to in this documentation is the SMDR output direct from the IP Office rather than that output via the IP Office Delta Server application. Delta Server SMDR output is still supported but not if using direct SMDR output from the IP Office. See **Delta Server SMDR Differences** below.

Enabling IP Office SMDR

1. Receive the configuration from the IP Office system.
2. Select **System** and then select the **CDR/SMDR** tab.
3. Use the **Output** drop down box to select ***SMDR only***.
4. In the **SMDR** settings, enter the required **IP Address** and **TCP Port**.

SMDR Records

An SMDR record is generated for each call between two devices on the IP Office system. Devices include extensions, trunk lines (or channels on a trunk), voicemail channels, conference channels and IP Office tones.

Calls which are not presented to another device do not generate an SMDR record. For example internal users dialing short code that simply changes a configuration setting.

The SMDR record is generated when the call ends, therefore the order of the SMDR records output does not match the call start times.

Each record contains a call ID which is increased by 1 for each subsequent call.

When a call moves from one device to another, an SMDR record is output for the first part of the call and an additional SMDR record will be generated for the subsequent part of the call.

Each of these records will have the same Call ID.

Each record for a call indicates in the Continuation field if there will be further records for the same call.

Call Times

Each SMDR record can include values for ringing time, connected time, held time and parked time. The total duration of an SMDR record is the sum of those values.

The time when a call is not in any one of the states above, for example when one party to the call has disconnected, is not measured and included in SMDR records.

Where announcements are being used, the connected time for a call begins either when the call is answered or the first announcement begins.

All times are rounded up to the nearest second.

Each SMDR record has a Call Start time taken from the system clock time. For calls being transferred or subject to call splitting, each of the multiple SMDR records will have the same Call Start time of the

Delta Server SMDR Differences

Previously SMDR records were obtained using the IP Office Delta Server application running on a PC connected to the IP Office system via the LAN. This method was used for pre-IP Office 4.2 systems. Delta Server SMDR output is still supported with IP Office 4.2+ systems. However it is not supported if also outputting direct SMDR records from the IP Office.

There are a number of differences between the IP Office SMDR output and that output by the IP Office Delta Server application. The key differences are:

- **Advice of Charge and Authorization Code Fields are Included as Standard**
  These fields are optional in the Delta Server SMDR output. They are included as standard in the IP Office SMDR output.
- **Additional Fields are Include for External Outgoing Call Routing**
  The IP Office SMDR output can include additional external targeting fields for calls routed out via external lines. These fields indicate what device targetted the call externally, how, and to what number.
- **Call ID Starting Number**
  The Call ID is always reset whenever the IP Office system is restarted and then incremented by 1 for each subsequent call that is not a continuation of a previous call.
  - The Call ID used by the Delta Server applications starts from 1.
  - The Call ID used for IP Office SMDR starts from 1,000,000.
- **Small Community Network**
  The following differences apply for calls to and from SCN destinations.
  - IP Office SMDR indicates calls across an SCN as internal.
  - IP Office SMDR inserts the hunt group or user name of the remote SCN party rather than the local line used.
- **Parked and Held Time**
  For parked calls, the Delta Server included the time a call was parked in both the **Park Time** and **Hold Time** fields. The IP Office SMDR uses just the **Park Time** field.
-

<<<additional records in some scenarios such as pickup, transfers and conference>>>

17.1 SMDR Fields

The SMDR Delta Server output contains the following fields. Note that time values are rounded up to the nearest second.

1.Call Start
Call start time in the format YYYY/MM/DD HH:MM:SS. For all transferred call segment this is the time the call was initiated, so each segment of the call has the same call start time.

2.Connected Time
Duration of the connected part of the call in HH:MM:SS format. This does not include ringing, held and parked time. A lost or failed call will have a duration of 00:00:00. The total duration of a record is calculated as *Connected Time + Ring Time + Hold Time + Park Time.*

3.Ring Time
Duration of the ring part of the call in seconds.

- For inbound calls this represents the interval between the call arriving at the switch and it being answered, not the time it rang at an individual extension.
- For outbound calls, this indicates the interval between the call being initiated and being answered at the remote end if supported by the trunk type. Analog trunks are not able to detect remote answer and therefore cannot provide a ring duration for outbound calls.

4.Caller
The callers' number. If the call was originated at an extension, this will be that extension number. If the call originated externally, this will be the CLI of the caller if available, otherwise blank.

5.Direction
Direction of the call – ***I*** for Inbound, ***O*** for outbound. Internal calls are represented as ***O*** for outbound. This field can be used in conjunction with **Is_Internal** below to determine if the call is internal, external outbound or external inbound.

6.Called Number
This is the number called. For a call that is transferred this field shows the original called number, not the number of the party who transferred the call.

- **Internal calls:** The extension or group called.
- **Inbound calls:** The DDI dialed by the caller if available.
- **Outbound calls:** The dialed digits.
- **Voice Mail:** Calls to a users own voicemail mailbox.

7.Dialled Number
For internal calls and outbound calls, this is identical to the **Called Number** above. For inbound calls, this is the DDI dialed by the caller.

8.Account
The last account code attached to the call. Note: IP Office account codes may contain alphanumeric characters.

9.Is Internal
0 or ***1***, denoting whether both parties on the call are internal or external (***1*** being an internal call). Calls to SCN destinations are indicated as internal.

Direction	Is Internal	Call Type
I	**0**	Incoming external call.
O	**1**	Internal call.
I	**1**	Internal call.
O	**0**	Outgoing external call.

10.Call ID
This is a number starting from 1,000,000 and incremented by 1 for each unique call. If the call has generates several SMDR records, each record will have the same Call ID. Note that the Call ID used is restarted from 1,000,000 is the IP Office is restarted.

11.Continuation
1 if there is a further record for this call id, ***0*** otherwise.

12.Party1Device
The device number. If an extension/hunt group is involved in the call its details will have priority over a trunk, this includes remote SCN destinations.

Type	Party Device	Party Name
Internal Number	**E***<extension number>*	<name>
Voicemail	**V***<9500 + channel number>*	**VM Channel** *<channel number>*
Conference	**V***<1><conference number>+<channel number>*	**CO Channel** *<conference number.channel number>*
Line	**T***<9000+line number>*	**Line** *<line number>.<channel if applicable>*
Other	**V***<8000+device number>*	**U***<device class> <device number>***.***<device channel>*
Unknown/Tone	**V8000**	**U1 0.0**

13.Party1Name
The name of the device – for an extension or agent, this is the user name.

14.Party2Device
The other party for the SMDR record of this call segment. See **Party1Device** above.

15.Party2Name
The other party for the SMDR record of this call segment. See **Party1Name** above.

16.Hold Time
The amount of time in seconds the call has been held during this call segment.

17.Park Time
The amount of time in seconds the call has been parked during this call segment.

18.AuthValid
This field is used for authorization codes 375. This field shows 1 for valid authorization or 0 for invalid authorization.

19.AuthCode
This field shows either the authorization code used or n/a if no authorization code was used.

20.User Charged
This and the following fields are used for ISDN Advice of Charge (AoC) 673. The user to which the call charge has been assigned. This is not necessarily the user involved in the call.

21.Call Charge
The total call charge calculated using the line cost per unit and user markup.

22.Currency
The currency. This is a system wide setting set in the IP Office configuration.

23.Amount at Last User Change

24.Call Units
The total call units.

25.Units at Last User Change

26.Cost per Unit
This value is set in the IP Office configuration against each line on which Advice of Charge signalling is set. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line.

27.Mark Up
Indicates the mark up value set in the IP Office configuration for the user to which the call is being charged. The field is in units of 1/100th, for example an entry of 100 is a markup factor of 1.

The following additional fields are used when **Call Splitting for Diverts** 189 is enabled. These fields indicate what device targeted the call externally, how, and to what number.

28.External Targeting Cause

This field indicates who or what caused the external call and may be followed by why. For example U FU indicates that the external call was caused by the Forward Unconditional setting of a User.

Targeted by		Reason	
HG	Hunt Group.	**fb**	Forward on Busy.
U	User.	**fu**	Forward unconditional.
LINE	Line.	**fnr**	Forward on No Response.
AA	Auto Attendant.	**fdnd**	Forward on DND.
ICR	Incoming Call Route.	**CfP**	Conference proposal (consultation) call.
RAS	Remote Access Service.	**Cfd**	Conferenced.
?	Other.	**MT**	Mobile Twinning.
		TW	Teleworker (Phone Manager Telecommuter mode).
		XfP	Transfer proposal (consultation) call.
		Xfd	Transferred call.

29.External Targeter Id

The associated name of the targeter indicated in the External Targeting Cause field. For hunt groups and users this will be their name in the IP Office configuration. For an Incoming Call Route this will be the Tag if set, otherwise ***ICR***.

30.External Targeted Number

This field is used on externally forwarded, Incoming Call Route targeted and mobile twin calls. It shows the external number called by the IP Office as a result of the off switch targeting where as other called fields give the original number dialled.

17.2 SMDR Examples

The following are examples of IP Office SMDR records for common call scenarios. Note that for the exampled field following park time have been removed except where necessary for the example.

Basic Examples

Lost incoming Call

In this record, the Call duration is zero and the Continuation field is 0, indicating that the call was never connected. The Ring Time shows that it rang for 9 seconds before ending.

```
2002/06/28 09:28:41,00:00:00,9,8004206,I,4324,4324,,0,1000014155,0,E4324,Joe Bloggs,T9161,LINE 5.1,0,0
```

Call Answered by Voicemail

In this example, 215 has made a call to 211. However the Party2Device and Party2Name show that the call was answered by voicemail.

```
2004/10/20 06:43:58,00:00:10,21,215,O,211,211,,I,28,0,E215,Extn215,V9051,VM Channel 1,0,0
```

Call Transferred to Voicemail

In this example, the Continuation field in the first record tells us that it wasn't the end of the call. The matching Call ID identifies the second record as part of the same call. The change in Party 1 details between the two records show that the call was transferred to voicemail.

```
2002/06/28 09:30:57,00:00:13,7,01707392200,I,299999,299999,,0,1000014160,1,E4750,John Smith,T9002,LINE 1.2,11,0
2002/06/28 09:30:57,00:00:21,0,01707392200,I,299999,299999,,0,1000014160,0,V9502,VM Channel 2,T9002,LINE 1.2,0,0
```

Internal call

The Is Internal field being 1 shows this to be a internal call. The Ring Time was 4 seconds and the total Connected Time was 44 seconds.

```
2002/06/26 10:27:44,00:00:44,4,4688,O,4207,4207,,1,1000013898,0,E4688,Joe Bloggs,E4207,John Smith,0,0
```

Outgoing Call

The combination of the Direction field being outbound and the Is Internal field be 0 show that this was a outgoing external call. The line (and in this case channel) used are indicated by the Party2 Name and being a digital channel the Ring Time before the call was answered is also shown.

```
2002/06/28 08:55:02,00:08:51,9,4797,O,08000123456,08000 123456,,0,1000014129,0,E4797,Joe Bloggs,T9001,LINE 1.1,0,0
```

Voicemail Call

The two records below show calls to voicemail. The first shows the Dialed Number as*17, the default short code for voicemail access. The second shows the Dialed Number as VoiceMail, indicating some other method such as the Message key on a phone was used to initiate the call.

```
2002/06/28 09:06:03,00:00:19,0,4966,O,*17,*17[1],,1,1000014131,0,E4966,John Smith,V9501,VM Channel 1,0,0
2002/06/28 09:06:03,00:00:19,0,4966,O,VoiceMail,VoiceMail,,1,1000014134,0,E4966,John Smith,V9501,VM Channel 1,0,0
```

Parked Call

In this example the first record has a Park Time showing that the call was parked. The Continuation field indicates that the call did not end this way and there are further records. The second record has the same Call ID and shows a change in the Party2Name [4], indicating that party unparked the call. Note also that both records share the same call start time.

```
2004/10/20 07:18:31,0:00:12,3,215,O,210,210,,1,38,1,E215,Extn215,E210,Extn210,0,7
2004/10/20 07:18:31,0:00:10,0,215,O,210,210,,1,38,0,E215,Extn215,E211,Extn211,0,0
```

Incoming call with Account Code

In this example, at some stage as the call was made or during the call, an Account Code has been entered. In this specific case it is a text account code which can be selected and entered by the user using IP Office Phone Manager.

```
2002/06/28 11:29:12,00:00:02,2,5002,I,1924,1924,Support,0,1000014169,0,E1924,Extn1924,T9620,LINE 8.20,0,0
```

Conference Using Conference Add Short Code

In this example 2101 has made a call and put put it on hold (record 2), then made another call and put it on hold (record 1) and then dialled the default short code *47 to conference all their held calls (record 3). The records for the first two calls have the Continuation field set as 1 indicating that the calls continued in further records.

Record 3 shows 2101 making a new call in which they dial *47, which place them and their held calls into a conference. This is shown by the Party Device and Party Name details as being a conference (100) and the conference channel used for each. Record 3 shows

For both the Continuation field shows that the calls do not end but rather have subsequent records. 2101 has then dialed *47 to

```
1.18/06/2008 17:55,00:00:03,3,2101,O,8262623#,8262623#,,0,1000024,1,E2101,Extn2101,T9002,Line 2.1,8,0
2.18/06/2008 17:54,00:00:29,7,2101,O,2121,2121,,1,1000023,1,E2101,Extn2101,E2121,Extn2121,23,0
3.18/06/2008 17:55,00:00:46,0,2101,O,*47,*47,,1,1000026,0,E2101,Extn2101,V11001,CO Channel 100.1,0,0
4.18/06/2008 17:54,00:00:49,0,,O,71234567890,71234567890,,1,1000023,0,E2121,Extn2121,V11003,CO Channel 100.3,0,0
5.18/06/2008 17:55,00:00:49,0,,O,8262623#,8262623#,,0,1000024,0,V11002,CO Channel 100.2,T9002,Line 2.1,0,0
```

Conference Using Conference Button

In this example, an extension user answers a call and then brings in another user by using the Conference button on their phone. Again we see records for the initial call, the conference proposal call and then for the 3 parties in the conference that is created.

```
2008/07/09 15:05:41,00:00:04,3,203,O,201,201,,1,1000009,1,E203,Extn203,E201,Extn201,0,0
2008/07/09 15:05:26,00:00:09,3,207,O,203,203,,1,1000008,1,E207,Extn207,E203,Extn203,10,0
2008/07/09 15:05:41,00:00:08,0,,O,,,,1,1000009,0,E201,Extn201,V11001,CO Channel 100.1,0,0
2008/07/09 15:05:50,00:00:10,0,203,O,201,201,,1,1000010,0,E203,Extn203,V11002,CO Channel 100.2,0,0
2008/07/09 15:05:26,00:00:10,0,207,O,203,203,,1,1000008,0,E207,Extn207,V11003,CO Channel 100.3,0,0
```

Adding a Party to a Conference

This example is a variant on that above. Having started a conference, extension 203 adds another party.

```
2008/07/09 15:08:31,00:00:03,3,203,O,201,201,,1,1000014,1,E203,Extn203,E201,Extn201,0,0
2008/07/09 15:08:02,00:00:22,6,207,O,203,203,,1,1000013,1,E207,Extn207,E203,Extn203,9,0
2008/07/09 15:08:45,00:00:02,4,203,O,403,403,,0,1000016,1,E203,Extn203,E403,Libby Franks,0,0
2008/07/09 15:08:02,00:00:24,0,207,O,203,203,,1,1000013,0,E207,Extn207,V11003,CO Channel 100.3,0,0
2008/07/09 15:08:39,00:00:17,0,203,O,201,201,,1,1000015,0,E203,Extn203,V11002,CO Channel 100.2,8,0
2008/07/09 15:08:31,00:00:26,0,,O,,,,1,1000014,0,E201,Extn201,V11001,CO Channel 100.1,0,0
2008/07/09 15:08:45,00:00:12,0,,O,403,403,,0,1000016,0,E403,Libby Franks,V11004,CO Channel 100.4,0,0
```

Transfer

In this example 2126 has called 2102. The record (1) for this has the Continuation set a 1 indicating that it has further records. the call as having a continuation record. In the following record (3) with the same Call ID it can be seen that the Party 2 Device and Party 2 Name fields have changed, indicating that the call is now connected to a different device, in this example 2121. We can infer the blind transfer from the intermediate record (2) which shows a call of zero Connected Time between the original call destination 2102 and the final destination 2121.

```
1.18/06/2008 17:51,00:00:38,18,2126,O,2102,2102,,1,1000019,1,E2126,Extn2126,E2102,Extn2102,19,0
2.18/06/2008 17:52,00:00:00,7,2102,O,2121,2121,,1,1000020,0,E2102,Extn2102,E2121,Extn2121,0,0
3.18/06/2008 17:51,00:00:39,16,2126,O,2102,2102,,1,1000019,0,E2126,Extn2126,E2121,Extn2121,0,0
```

Busy/Number Unavailable Tone

In this example 2122 calls 2123 who is set to DND without voicemail. This results in 2122 receiving busy tone.

The records shows a call with a Connected Time of 0. The Call Number field shows 2123 as the call target but the Party 2 Device and Party 2 Name fields show that the connection is to a virtual device.

```
18/06/2008 17:59,00:00:00,0,2122,O,2123,2123,,1,1000033,0,E2122,Extn2122,V8000,U1 0.0,0,0
```

Call Pickup

The first record shows a call from 2122 to 2124 with a Connected Time of zero but a Ring Time of 8. The Continuation field indicates that the call has further records.

The second record has the same Call ID but the Party 2 Device and Party 2 Name details show that the call has been answered by 2121.

```
18/06/2008 18:00,00:00:00,8,2122,O,2124,2124,,1,1000038,1,E2122,Extn2122,E2124,Extn2124,0,0
18/06/2008 18:00,00:00:38,1,2122,O,2124,2124,,1,1000038,0,E2122,Extn2122,E2121,Extn2121,0,0
```

Internal Twinning

The records for scenarios such as internal call forwarding or follow me indicate the rerouting in a single record by having Caller and Called Number details that differ from the final Party 1 and Party 2 details. Internal twinning differs is showing a call answered at the twin exactly the same as having been answered at the primary.

203 is internally twinned to 201. Call from 207 to 203 but answer at 201.

```
2008/07/09  16:25:26,00:00:03,7,207,O,203,203,,1,1000037,0,E207,Extn207,E203,Extn203,0,0
```

Park and Unpark

Parking and unparking of a call at the same extension is simply shown by the Park Time field of the eventual SMDR record. Similarly calls held and unheld at the same extension are shown by the Held Time field of the eventual SMDR record for the call. The records below however show a call parked at one extension and then unparked at another.

The records show a call from 207 to 203. 203 then parks the call shown by the Park Time. The call is unparked by 201, hence the first record is indicated as continued in its Continuation field. The matching Call ID indicates the subsequent record for the call.

```
2008/07/09  16:39:11,00:00:00,2,207,O,203,203,,1,1000052,1,E207,Extn207,E203,Extn203,0,4
2008/07/09  16:39:11,00:00:02,0,207,O,203,203,,1,1000052,0,E207,Extn207,E201,Extn201,0,0
```

Examples with Call Splitting for Diverts

The following examples show the additional records and fields generated for calls using external numbers when **Call Splitting for Diverts** [189] is enabled in the SMDR configuration settings.

Outgoing External Call

The External Targeting Cause indicates that the external call was caused by a user. The lack of specific reason implies that it was most likely dialed. The External Targeter ID is the user name in this example

```
…16:23:06,00:00:04,5,203,O,9416,9416,,0,1000035,0,E203,Extn203,T9005,Line  5.1,0,0,,,Extn203,,,,,,,U,Extn203,,
```

Rerouted External Call

In this example an incoming external call has been rerouted back off switch, shown by the Party 1 fields and the Party 2 fields being external line details. The External Targeter ID shows that rerouting of the incoming call was done by an incoming call route (ICR). The External Targeter ID in this case is the Tag set on the incoming call route. The External Targeted Number is the actual external number call.

```
…08:14:27,00:00:03,5,392200,I,9416,200,,0,1000073,0,T9005,Line 5.1,T9005,Line 5.2,0,0,,,,0000.00,,0000.00,0,0,618,0.01,ICR,Mai
```

External Forward Unconditional

In this example, user 203 has a forward unconditional number set for calls. This is indicated by the External Targeting Cause showing user and forward unconditional. The External Targeter ID shows the source of the call being forwarded, in this example user 207. The External Targeted Number shows the actual external number called by the IP Office.

```
…16:22:41,00:00:02,5,207,O,203,203,,0,1000034,0,E207,Extn207,T9005,Line  5.1,0,0,,,Extn203,0000.00,,0000.00,0,0,618,1.00,U fu,E
```

Transferred Manually

In this example the internal user transfers a call to an external number. The External Targeting Cause in the first record indicates that this external call is the result of a user (U) transfer proposal (XfP) call. The Continuation field indicates that another record with the same Call ID will be output.

The additional records are output after the transferred call is completed. The first relates to the initial call prior. The second is the transferred call with the External Targeting Cause now indicating user (U) transferred (Xfd).

```
…16:33:19,00:00:05,3,203,O,9416,9416,,0,1000044,1,E203,Extn203,T9005,Line  5.1,0,0,,,,,,,,,,,U XfP,Extn207,,
…16:33:09,00:00:02,2,207,O,203,203,,1,1000043,0,E207,Extn207,E203,Extn203,11,0,,,,,,,,,,,,,
…16:33:19,00:00:04,0,207,O,9416,9416,,0,1000044,0,E207,Extn207,T9005,Line  5.1,0,0,,,Extn207,,,,,,,,U Xfd,Extn203,,
```

Mobile Twinned Call Answered Internally

For this example user 203 has mobile twining enabled to the external number 9416 as twin. Their mobile dial delay is set to 2 seconds. The call is answered at the user's internal extension.

In this scenario the record for the external call part of twinning is output immediately the call is answered internally. The Call Start for this record differs dues to the user's **Mobile Dial Delay** setting. The External Targeting Cause indicates the external call was the result of user (U) mobile twinning (MT) settings. If the call had been answered before the mobile dial delay expired, no external call and therefore no record would be produced. When the call is completed the second record is output.

```
…16:17:59,00:00:00,7,,O,9416,9416,,0,1000028,0,E203,Extn203,T9005,Line  5.1,0,0,,,,,,,,,,U  MT,Extn203,9416,
…16:17:58,00:00:07,9,207,O,203,203,,1,1000027,0,E207,Extn207,E203,Extn203,0,0,,,,,,,,,,,,,
```

Mobile Twinned Call Answered at the Mobile Twin

This is the same scenario as the example above except that the call is answered at the external mobile twinning destination. Unlike the previous example the external call record has a non-zero Call Time showing that the call was also answered externally.

```
…16:17:04,00:00:06,9,,O,9416,9416,,0,1000026,0,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,,U MT,Extn203,9416,
…16:17:02,00:00:06,11,207,O,203,203,,1,1000025,0,E207,Extn207,E203,Extn203,0,0,,,,,,,,,,,,
```

Mobile Twinned Call Picked Up Using the Twinning Button

This is the same scenario as the example above, however after answering the call on the external twinned device, the user has picked it up internally by using a twinning button. The first two records are for the answered external call and are output when that call is picked up by the internal extension. The third record is output when the call is ended internally.

```
…16:19:18,00:00:05,11,207,O,203,203,,1,1000029,1,E207,Extn207,E203,Extn203,0,0,,,,,,,,,,,,
…16:19:20,00:00:05,9,,O,9416,9416,,0,1000030,0,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,,U MT,Extn203,9416,
…16:19:18,00:00:05,0,207,O,203,203,,1,1000029,0,E207,Extn207,E203,Extn203,0,0,,,,,,,,,,,,
```

External Conference Party

This is similar to internal conferencing (see examples above) but the conference setup and progress records include External Targeting Cause codes for user (U) conference proposal (CfP) and user (U) conferenced (Cfd).

```
…16:48:58,00:00:02,2,203,O,9416,9416,,0,1000066,1,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,,U CfP,Extn203,,
…16:48:37,00:00:04,3,203,O,207,207,,1,1000064,1,E203,Extn203,E207,Extn207,7,0,,,,,,,,,,,,
…16:49:04,00:00:08,0,203,O,9416,9416,,1,1000067,0,E203,Extn203,V11002,CO Channel 100.2,0,0,,,,,,,,,,,,
…16:48:37,00:00:13,0,,O,,,,1,1000064,0,E207,Extn207,V11003,CO Channel 100.3,0,0,,,,,,,,,,,,
…16:48:58,00:00:13,0,,O,9416,9416,,0,1000066,0,V11001,CO Channel 100.1,T9005,Line 5.1,0,0,,,Extn203,,,,,,,U Cfd,Extn203,,
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