

5. Upgrading the Storage System

5.1 Arranged Parts Required for Upgrade

NOTICE: The model change between the VSP Gx00 model and the VSP Fx00 model is not supported.

The required arranged part model names at the time of upgrade are shown here.

Purchase the options also as needed.

Table 5-1 List of Upgrades from CBLM2 to CBLM3 (when NAS Modules are not installed)

No.	Model Name	Quantity	Components	Remarks
1	—	1	Hitachi Virtual Storage Platform G600 logo VSP G600 license (*1) Hitachi Virtual Storage Platform F600 logo VSP F600 license (*1)	Indispensable
2	DKC-F810I-CM8G	1	Cache Memory (8 G bytes)	Option
3	DKC-F810I-CM16G	1	Cache Memory (16 G bytes)	Option
4	DW-F800-DBL	1	Drive Box (DBL) (*2)	Option
5	DW-F800-DBS	1	Drive Box (DBS) (*2)	Option
6	DW-F800-DB60	1	Drive Box (DB60) (*2)	Option
7	DW-F800-DBF	1	Drive Box (DBF) (*2)	Option
8	DW-F800-BAT	1	Battery	Option

*1: Upgrade model names are attached to respective P.P. licenses. The upgrade model names from CBLM2 to CBLM3 are shown below.

*2: DBF is the only Drive Box that can be mounted on VSP Fx00 model.

No	Upgrade Model Name	Quantity	P.P. License Name
1	P-002H-J2B1KUP6	1	Hitachi Storage Virtualization Operating System (SVOS)
2	P-002H-J2B2KUP6	1	Hitachi Remote Replication
3	P-002H-J2B3KUP6	1	Hitachi Local Replication
4	P-002H-J2B4KUP6	1	Hitachi Data Mobility
5	P-002H-J2B5KUP6	1	Hitachi Encryption Key
6	P-002H-J2B8KUP6	1	Hitachi Performance Analytics

Table 5-2 List of Upgrades from CBLM2 to CBLM3 (when NAS Modules are installed)

No.	Model Name	Quantity	Components	Remarks
1	—	1	Hitachi Virtual Storage Platform G600 logo VSP G600 license (*1)	Indispensable
2	DKC-F810I-CM16G	1	Cache Memory (16 G bytes) (*2)	Indispensable
3	DW-F800-DBL	1	Drive Box (DBL)	Option
4	DW-F800-DBS	1	Drive Box (DBS)	Option
5	DW-F800-DB60	1	Drive Box (DB60)	Option
6	DW-F800-DBF	1	Drive Box (DBF)	Option
7	DW-F800-BAT	1	Battery	Indispensable

*1: Upgrade model names are attached to respective P.P. licenses. The upgrade model names from CBLM2 to CBLM3 are shown below.

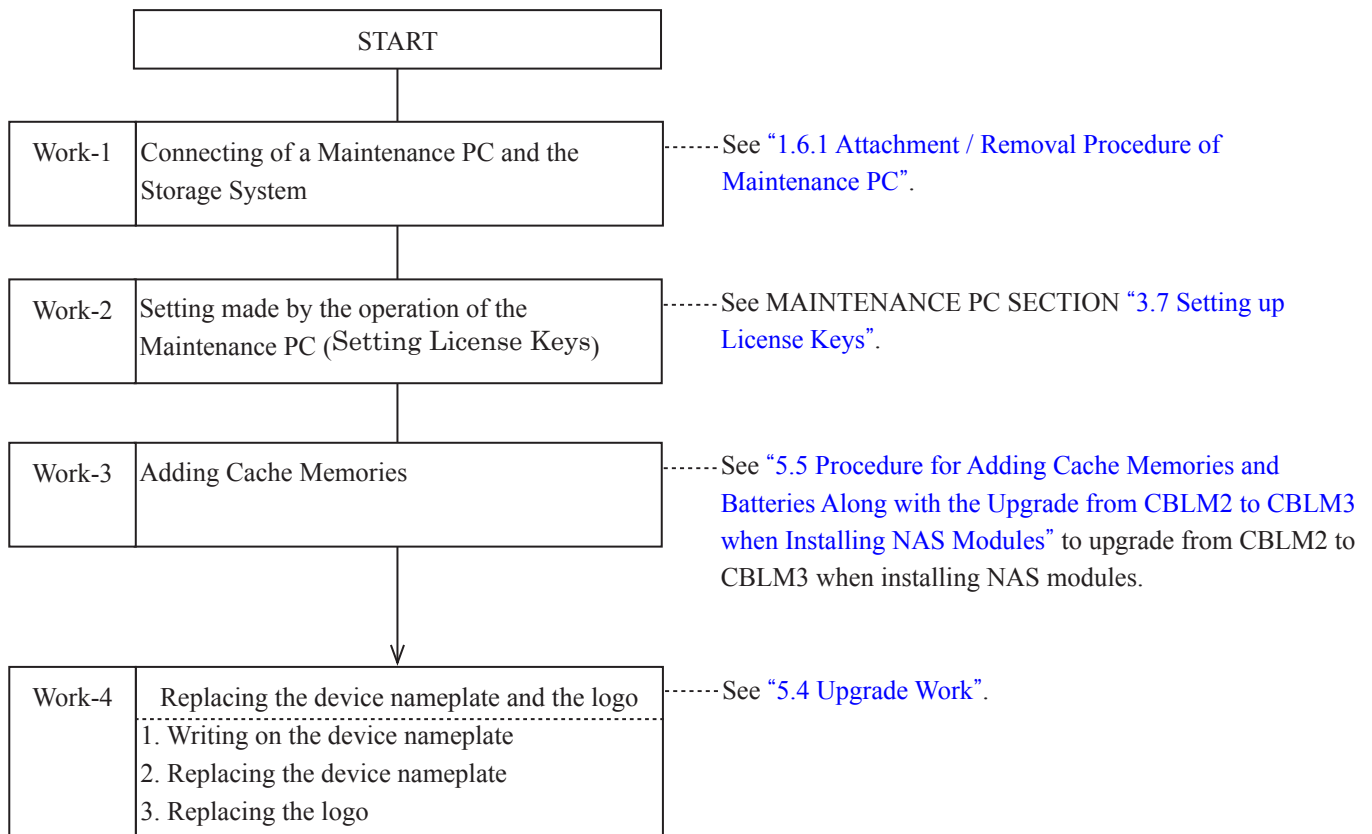
*2: When NAS Modules are installed, adding DKC-F800I-CM16G × 4 for each controller is indispensable.

No	Upgrade Model Name	Quantity	P.P. License Name
1	P-002H-J2B1KUP6	1	Hitachi Storage Virtualization Operating System (SVOS)
2	P-002H-J2B2KUP6	1	Hitachi Remote Replication
3	P-002H-J2B3KUP6	1	Hitachi Local Replication
4	P-002H-J2B4KUP6	1	Hitachi Data Mobility
5	P-002H-J2B5KUP6	1	Hitachi Encryption Key
6	P-002H-J2B8KUP6	1	Hitachi Performance Analytics

5.2 Before Starting Upgrade Work

1. In the upgrade work, it is necessary to change the Storage System setting by the Maintenance PC connected via LAN. Prepare the following before starting the upgrade work.
 - Prepare a PC in which Web Console is installed. This PC needs to use the LAN environment.
 - LAN cross cable.
2. When adding Cache Memories is necessary, prepare the Cache Memories to be added by the day of the upgrade work. Add the Cache Memories after completing the upgrade work. (When upgrading from CBLM2 to CBLM3 at the time of NAS Module installation, adding cache memories and batteries is required.)
3. When adding Drive Boxes is necessary, prepare the Drive Boxes to be added by the day of the upgrade work. Add the Drive Boxes after completing the upgrade work.

5.3 Upgrade Operation Procedure



5.4 Upgrade Work

1. Connecting a Maintenance PC

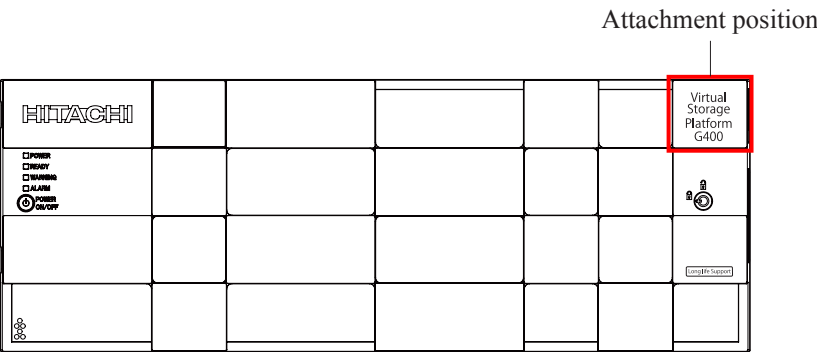
Connect the Maintenance PC and the Controller Board via LAN cable referring to “1.6.1 Attachment / Removal Procedure of Maintenance PC”.
-
2. Starting Web Console

Start the Web Console referring to “1.6.2 Connecting to the Storage System”.
-
3. Setting License Keys

Refer to MAINTENANCE PC SECTION “3.7 Setting up License Keys” to set the license keys.
-
4. Replacing the logo

Remove the logo attached on the VSP G400 and attach the new one on the same place.

Figure 5-1 Attachment of Logo



5.5 Procedure for Adding Cache Memories and Batteries Along with the Upgrade from CBLM2 to CBLM3 when Installing NAS Modules

The following shows the procedure for adding cache memories and batteries along with the upgrade from CBLM2 to CBLM3 when installing NAS Modules.

1. EVS migration before adding cache memories and batteries on the Controller 1 side
Before adding cache memories and batteries on Controller 1, perform EVS migration to the Controller 2 side. See MAINTENANCE PC SECTION [“6.4.1 Migration before the Maintenance Operations”](#) for the detailed procedure.

2. Adding cache memories and batteries on the Controller 1 side
See [Table 3-3](#) and [Table 3-5](#) in [“3.1.1 Cache Capacity and the Number of Required Options”](#) to add cache memories and batteries on the Controller 1 side so that they have the appropriate value.
See [“3.8.2 Adding Cache Memory/Cache Flash Memory/Battery for CBLM/CBLH”](#) for the concrete addition procedure.

3. EVS migration before adding cache memories and batteries on the Controller 2 side
Before adding cache memories and batteries on Controller 2, perform EVS migration to the Controller 1 side.
See MAINTENANCE PC SECTION [“6.4.1 Migration before the Maintenance Operations”](#) for the detailed procedure.

4. Adding cache memories and batteries on the Controller 2 side
See [Table 3-3](#) and [Table 3-5](#) in [“3.1.1 Cache Capacity and the Number of Required Options”](#) to add cache memories and batteries on the Controller 2 side so that they have the appropriate value.
See [“3.8.2 Adding Cache Memory/Cache Flash Memory/Battery for CBLM/CBLH”](#) for the concrete addition procedure.

5. EVS migration after adding cache memories and batteries
When adding cache memories and batteries on Controller 1 and 2 is completed, perform the EVS migration so that the status becomes the same as that before the addition.
See MAINTENANCE PC SECTION [“6.4.2 Migration after the Maintenance Operations”](#) for the detailed procedure.

6. New Installation (Auto Define Configuration, All Firmwares)

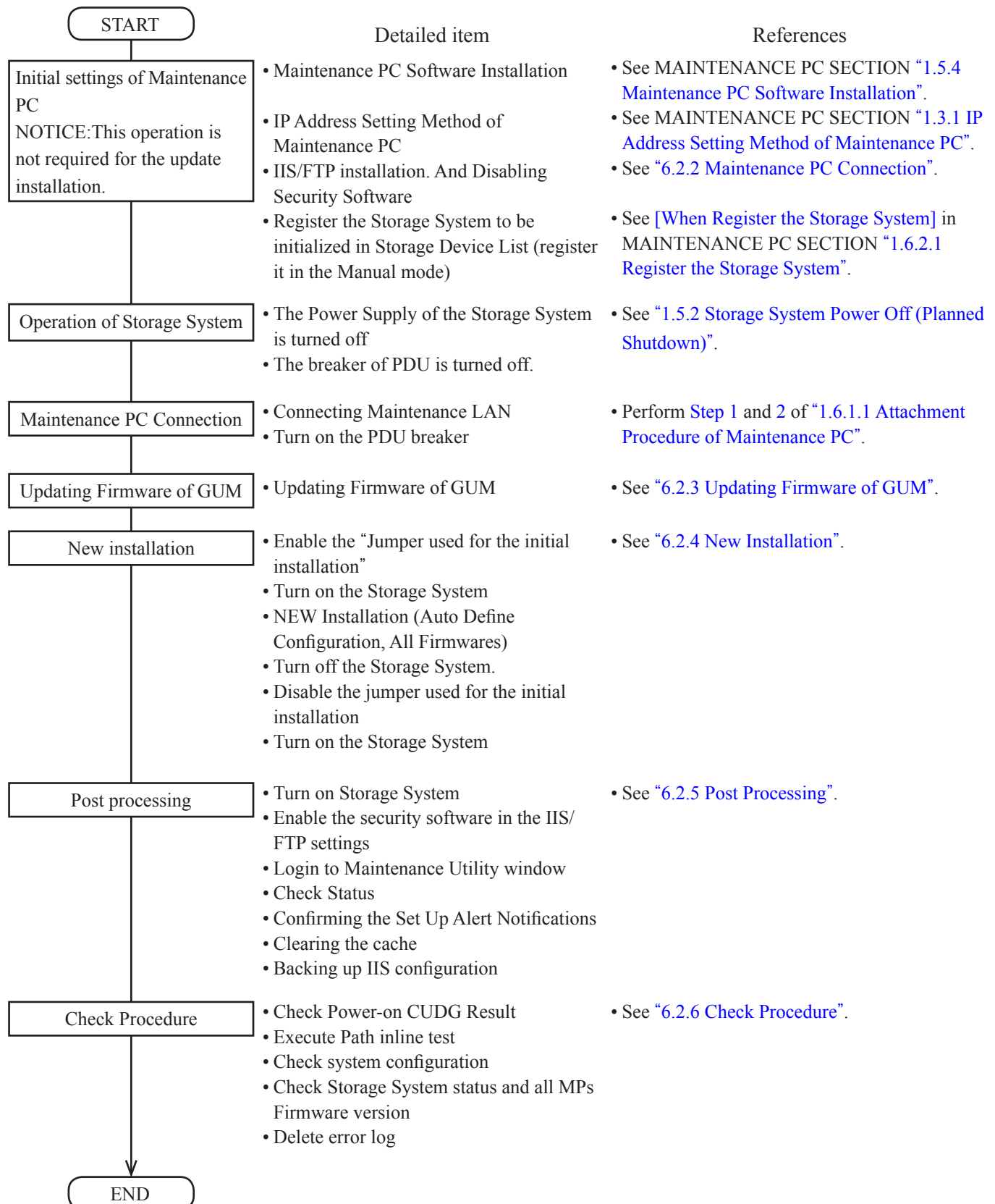
CAUTION

This operation is necessary only when a Storage System is newly installed. It is not performed afterward. If it is performed by mistake, a system down or a data loss may be caused.

Initializes the Storage System using the firmware and the configuration information in the firmware media. However, firmware of HDD, ENC (Expander) and CNF are not initialized. Perform the online firmware update after the Storage System is initialized completely.

When NAS Modules are installed, new installation of NAS Unified Firmware is required after completing all procedures. See [“7.1 New Installation of the NAS Unified Firmware”](#), and then perform new installation of NAS Unified Firmware.

6.1 Flow of New Installation



6.2 Procedure of New Installation of the Firmware

6.2.1 Prerequisites

⚠ CAUTION

Check whether [Internal Network] of the network setting is changed from the initial value (126.255.0.15/4.15). If it is changed, see MAINTENANCE PC SECTION [“3.6 Network Setting”](#) and return [Internal Network] to the initial value (126.255.0.15/4.15) before starting this work.

- The software of the Maintenance PC is installed and the Storage System to be initialized is registered.
(See MAINTENANCE PC SECTION [“1.5.4 Maintenance PC Software Installation”](#) and [“1.6.2.1 Register the Storage System”](#))
- The Power Supply of the Storage System is turned off.
- The breaker of PDU is turned off.

6.2.2 Maintenance PC Connection

1. IIS/FTP installation

Set IIS and FTP of the Maintenance PC.

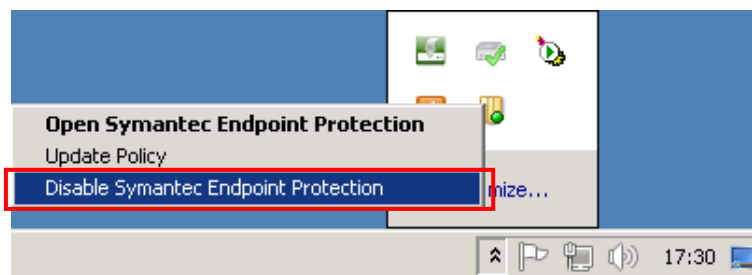
See MAINTENANCE PC SECTION [“1.7 Setting the IIS/FTP Server”](#). (It is described to Windows 7.)

2. Disabling Security Software

When using the FTP (IIS), disable the security software because it may have an effect on the communication.

- Security software: Example of Symantec Endpoint Protection

For Symantec Endpoint Protection, right-click the [Symantec Endpoint Protection] icon on the desktop and select [Disable Symantec Endpoint Protection].



3. Connecting Maintenance LAN

Connect the Maintenance PC and the Controller Board 1 with the LAN cable.

See [“1.6.1.1 Attachment Procedure of Maintenance PC”](#) to connect the LAN cable.

4. Turn on the PDU breaker

Turn on the breaker of the PDU installed in the rack frame.

Wait for two or three minutes after turning on the breaker.

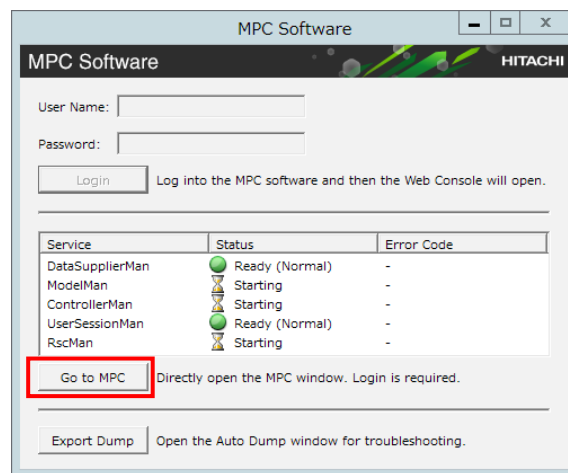
NOTE: Do not turn on the Power Supply of the Storage System here.

6.2.3 Updating Firmware of GUM

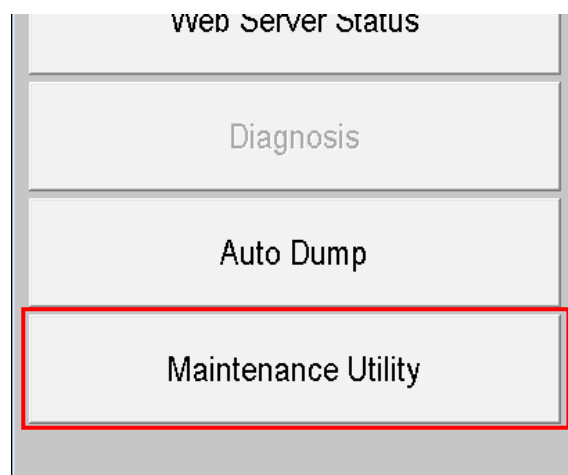
Update the Firmware for the GUMs of both Controller Board 1 and Controller Board 2.

1. Update the Firmware of Controller Board 1.

- (1) Check that a LAN cable connects the Maintenance PC and Controller Board 1.
 - (2) Right-click the connection icon “Storage Device List” on the desktop of the Maintenance PC and select [Run as administrator].
 - (3) Click the Storage System icon to be operated in the “Storage Device List” window. Then, the “MPC Software” window opens. Enter the user name and the password.
 - (4) Click the [Go to MPC] button in the “MPC Software” window.
- Then, the “MPC” window opens.

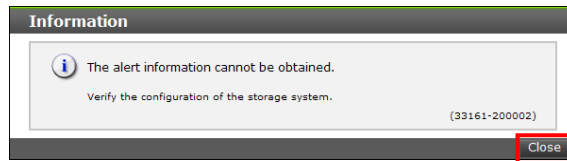


- (5) Click the [Maintenance Utility] button in the “MPC” window.
- Then, the “Maintenance Utility” window opens.



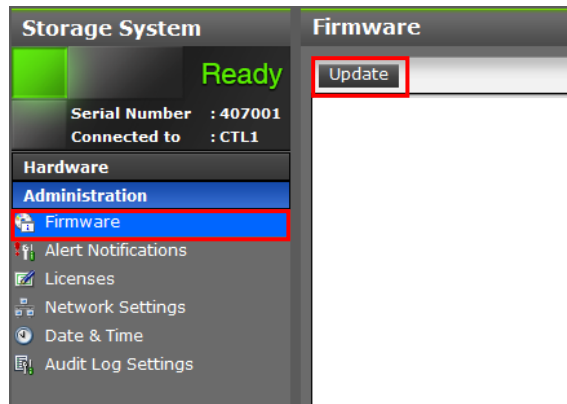
- (6) The alert information cannot be acquired by the Storage System because the Storage System is turned off.

Then, click the [Close] button.



- (7) Display of the Firmware update window

Select [Firmware] from [Administration] and click the [Update] button.



(8) Display of the confirmation window

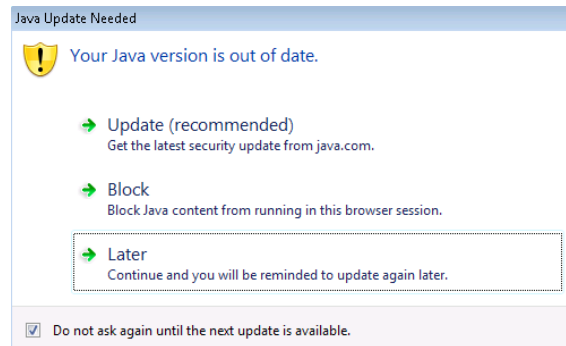
The displayed windows differ according to the JRE (Java Runtime Environment) versions.

In the case of JRE7 or JRE8, go to [Step \(a\)](#).

In the case of JRE6, go to [Step \(b\)](#).

(a) In the case of JRE7 or JRE8

- The update of the Java application may be promoted.



When using Maintenance Utility with the Java you are using, click [Later].

If you check the checkbox of [Do not ask again until the next update is available.] once and click [Later], this window is not displayed from now on.

NOTE: Do not click [Update(recommended)] and [Block].

When clicking [Update(recommended)] and [Block], close the window of the Web browser and restart Maintenance Utility.

When checking the checkbox of [Do not ask again until the next update is available.] and selecting [Update(recommended)] or [Block], Maintenance Utility cannot update the firmware.

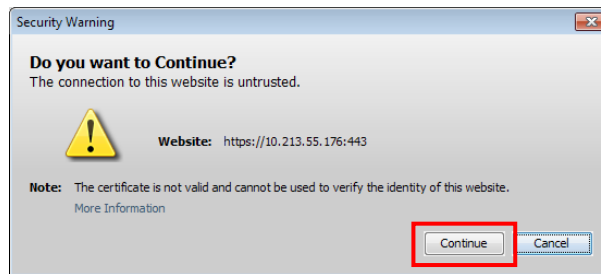
To allow Maintenance Utility to update the firmware, execute the following procedures.

- Click [All Programs ([All apps] for Windows 10)]-[Java]-[Configure Java] from the [Start] menu of Windows and start [Java Control Panel].
- Click the [Security] tab of [Java Control Panel].
- If the checkbox of [Enable Java content in the browser] in the [Security] tab is checked, uncheck it once and click the [Apply] button.
- Check the checkbox of [Enable Java content in the browser] and click the [Apply] button.
- Click the [OK] button of [Java Control Panel] to close the window.
- Restart Maintenance Utility.

NOTE: When changing the Java setting in [Java Control Panel], a message like "Java Plug-in settings changed" may be displayed. If such message is displayed, click the [OK] button.

- When the message “Do you want to Continue?” is displayed, click the [Continue] button.

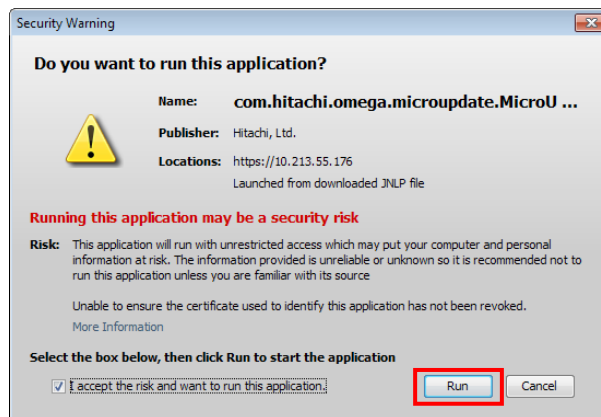
NOTE: This window may not be displayed.



- When the message “Do you want to run this application?” is displayed, check [I accept the risk and want to run this application.] and click the [Run] button.

Go to [Step \(9\)](#).

NOTE: This window may not be displayed.



NOTE: When the “Application Blocked by Java Security” or “Application Blocked by Security Settings” window is displayed, refer to TROUBLESHOOTING SECTION [“3.28.1.1 Troubleshooting Related to Installation and Upgrade”](#) and register the storage system in the exception site. After the registration, perform the procedure of [“6.2 Procedure of New Installation of the Firmware”](#) again.

(b) In the case of JRE6

- When the message “The web site’s certificate cannot be verified. Do you want to continue?” is displayed, click the [Yes] button.

NOTE : This window may not be displayed.



- When the message “The application’s digital signature has been verified. Do you want to run the application?” is displayed, check [Always trust content from this publisher.] and click the [Run] button.

Go to [Step \(9\)](#).

NOTE : This window may not be displayed.

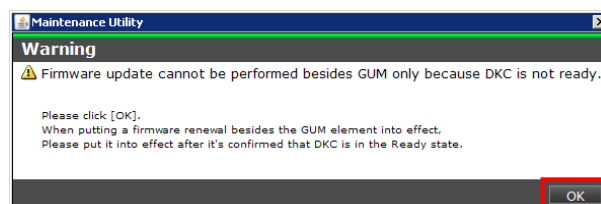


(9) Displaying the Warning Window

If the existing firmware version is 83-01-21-x0/xx or later, a message to indicate that other than the single GUM firmware cannot be updated.

Click the [OK] button.

If the existing firmware version is 83-01-21-x0/xx or less, this message is not displayed. In this case, go to [Step \(10\)](#).



(10) Inserting the media

Insert the firmware media into the DVD drive.

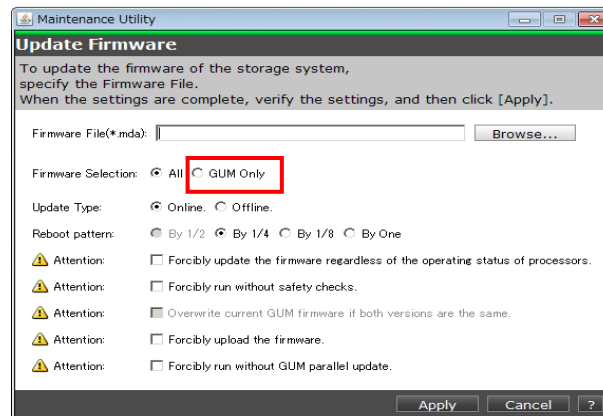
(11) Specifying the firmware update of single GUM

When the existing firmware version is 83-01-21-x0/xx or less:

Select “GUM Only” in the “Firmware Selection” of the “Firmware Update” window.

When the existing firmware version is 83-01-21-x0/xx or later:

Go to [Step \(12\)](#).



(12) Selecting the firmware file

 CAUTION

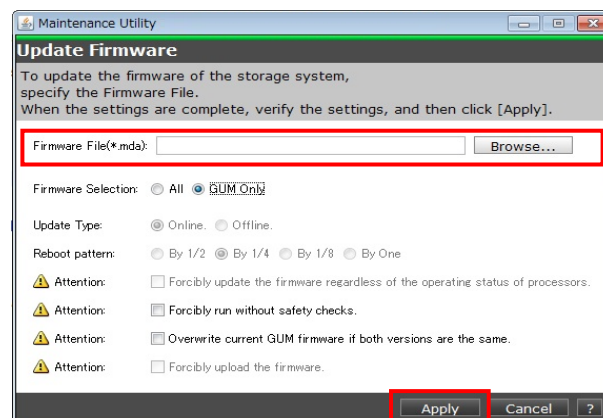
About “Forcibly run without safety checks”.

If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual.

In the “Firmware file (*.mda)” of the “Update Firmware” window, select the “AllFirmware.mda” file from the “firmware” folder in the media.

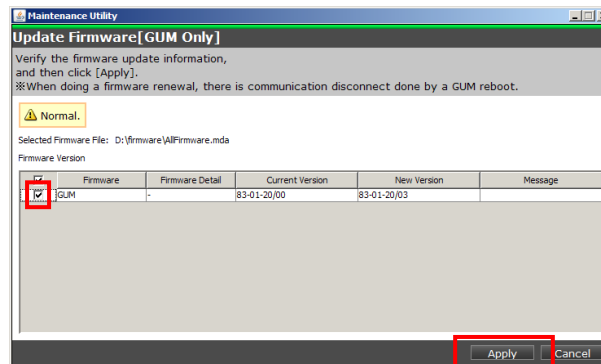
After selecting the file, click the [Apply] button.

NOTE: If the existing firmware version is 83-01-21-x0/xx or later, the Storage System type, serial number, and the controller number to be operated are displayed in the window title.



(13) Performing the firmware update

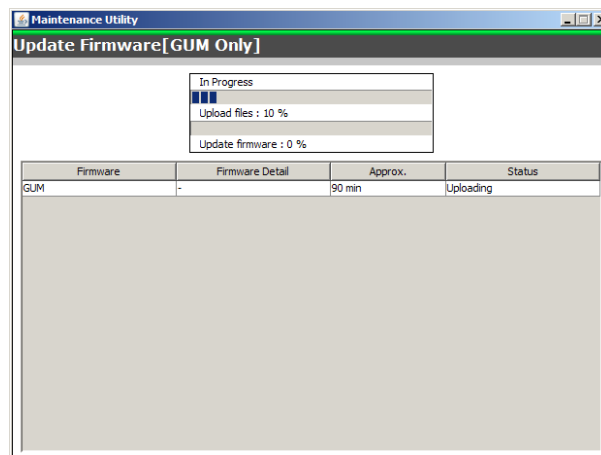
Check “GUM” in the firmware column of the “Update Firmware” window, and click the [Apply] button.



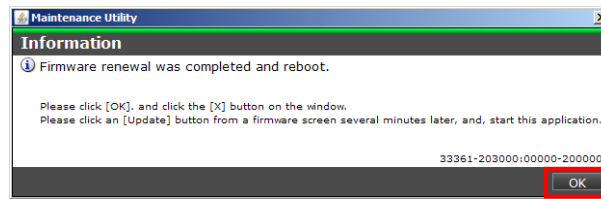
(14) Display the progress

NOTE : While displaying the progress window, do not close the window by the [×] button or log out of “Maintenance Utility” window. If the window is closed, perform the procedures from [Step \(2\)](#) to [Step \(8\)](#) and restart the work.

- When the window of [Step \(14\)](#) is displayed after [Step \(8\)](#):
The firmware update is in progress.
Keep the window open and wait to terminate it.
- When the window of [Step \(11\)](#) is displayed after [Step \(8\)](#):
The firmware update is suspended or completed. Select [Firmware] from the [Management] menu in the “Maintenance Utility” window and check the firmware version.
When the version is not changed, update the firmware again.

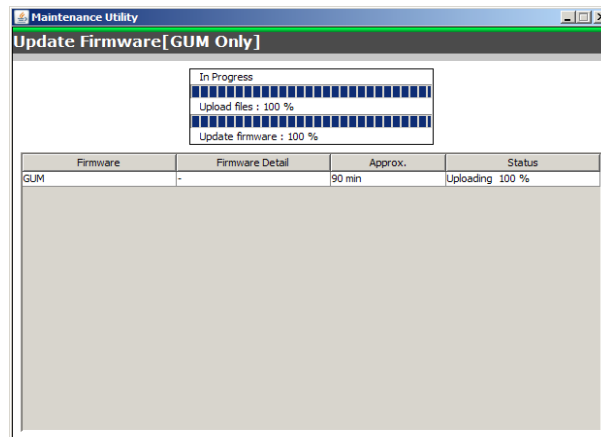


(15) Completion message



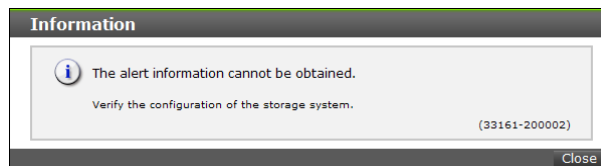
(16) Close the window.

Click the the [×] button in the window to close the window.



(17) Restarting the "Maintenance Utility" window

- Connection between the Maintenance PC and the Storage System is disconnected by rebooting. Close the window of Maintenance Utility.
- Start the "Maintenance Utility" window in the "MPC" window.
- When restarting the "Maintenance Utility" window, the "Information" window is displayed. Then, click the [Close] button.



(18) Confirming the firmware version

Select [Firmware] from the [Management] menu of the "Maintenance Utility" window, and confirm the firmware version. If the firmware is not changed, update the firmware again.

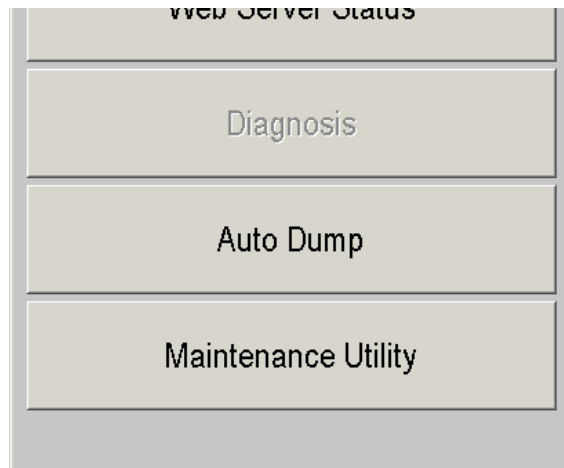
(19) Update the Firmware of the GUM of Controller Board 2.

- Connect the Maintenance PC and the Controller Board 2 with the LAN cable. (See ["1.6.1.1 Attachment Procedure of Maintenance PC"](#).)
- Execute [Step \(5\)](#) to [Step \(18\)](#).

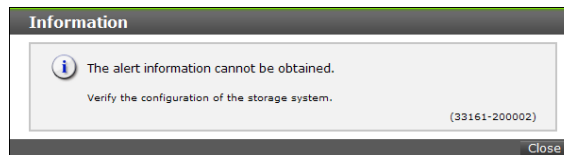
6.2.4 New Installation

1. Enable a jumper used for initial installation

- (1) Connect the Maintenance PC and the Controller Board 1 with the LAN cable.
See [“1.6.1 Attachment / Removal Procedure of Maintenance PC”](#) to connect the LAN cable.
- (2) Click the [Maintenance Utility] button in the “MPC” window.



- (3) When the “Information” window is displayed, click the [Close] button.



- (4) Enable the “Jumper used for the initial installation (CEMD)” using the system parameter edit function. For the details, see [“3.16 Edit System Parameters”](#) in the MAINTENANCE PC SECTION.
- (5) Click the [Log Out] button in the “Maintenance Utility” window. The Log Out window is displayed. Close the “Maintenance Utility” window.

2. Turn on the Storage System

- (1) Press the Main Switch on the front of the Controller Chassis for about three seconds to turn on the Storage System.
- (2) Check that the POWER LED (green) on the front of the Controller Chassis lights up. Wait for about five minutes after the POWER LED lit to perform the following operation.

3. NEW Installation (Auto Define Configuration, All Firmwares)

The procedure below is that used when a operation terminates abnormally, refer to “[6.3 Troubleshooting of New Installation of the Firmware](#)”.

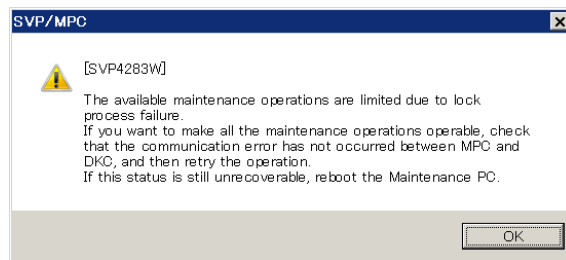
(1) <Mode Change>

- (a) Change the mode to [Initial Setting] on the “MPC” window. Select [Shift] + [Ctrl] + [I].
Enter the password and click the [OK] button.

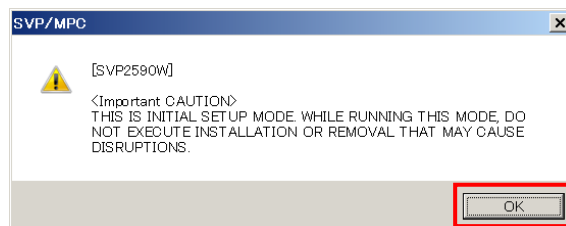
NOTE: For the password, contact the technical support division.

- (b) The mode is shown as [Initial Setting(Unlocked)].

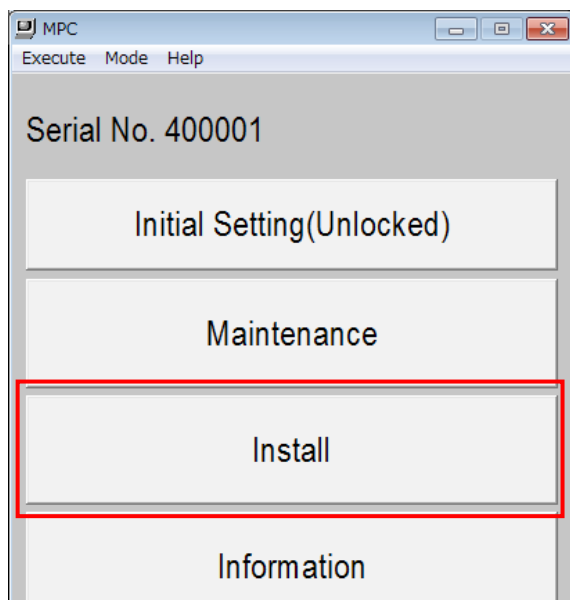
NOTE: If the Storage System was started with the state that the jumper used for the initial installation is enabled, the confirmation message “[4283] The available maintenance operations are limited due to lock process failure. If you want to make all the maintenance operations operable, check that the communication error has not occurred between MPC and DKC, and then retry the operation. If this status is still unrecoverable, reboot the Maintenance PC.” is displayed. Then, click the [OK] button.



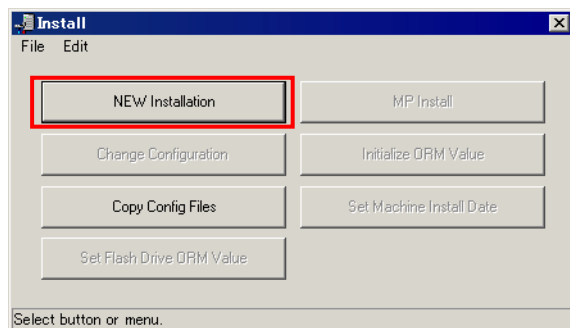
- (c) Click the [OK] button in response to the confirmation message, “[2590] <Important CAUTION> THIS IS INITIAL SETUP MODE. WHILE RUNNING THIS MODE, DO NOT EXECUTE INSTALLATION OR REMOVAL THAT MAY CAUSE DISRUPTIONS.”



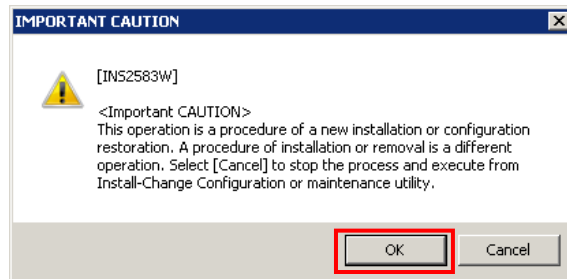
- (2) Click the [Install] button. The “Install” window opens.



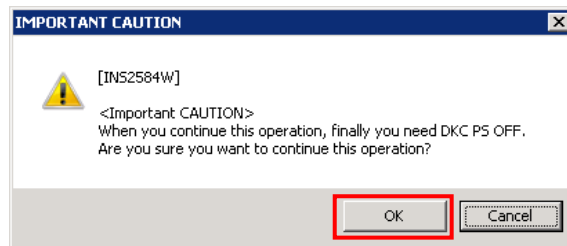
- (3) Click the [NEW Installation] in the “Install” window.



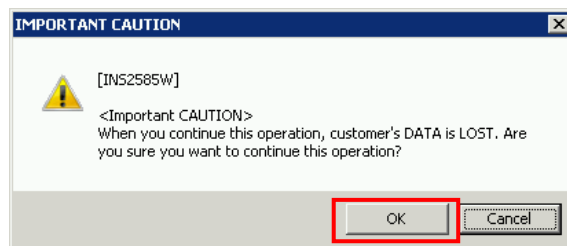
- (4) Click the [OK] button in response to the confirmation message, “[2583] <Important CAUTION> This operation is a procedure of a new installation or configuration restoration. A procedure of installation or removal is a different operation. Select [Cancel] to stop the process and execute from Install-Change Configuration or maintenance utility.”.



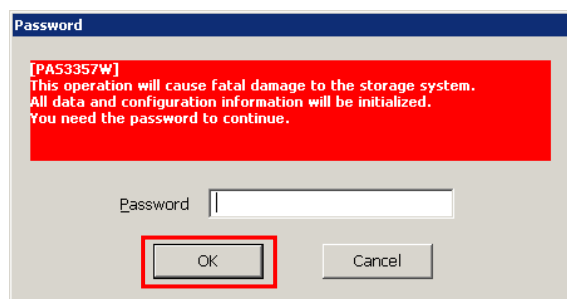
- (5) Click the [OK] button in response to the confirmation message, “[2584] <Important CAUTION> When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?”.



- (6) Click the [OK] button in response to the confirmation message, “[2585] <Important CAUTION> When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?”.

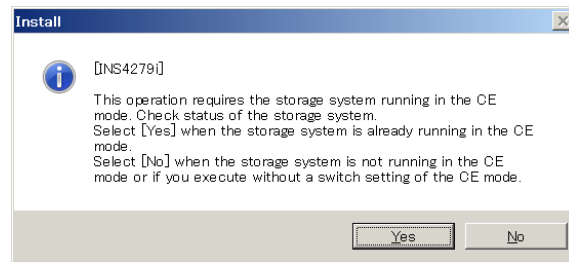


- (7) “Password”[3357] window is displayed.
The enter a password and click the [OK] button.
For the password, contact the Technical Support Division.



- (8) Response to the message “[4279] This operation requires the storage system running in the CE mode. Check status of the storage system. Select [Yes] when the storage system is already running in the CE mode. Select [No] when the storage system is not running in the CE mode or if you execute without a switch setting of the CE mode.”.

Click the [Yes] button.



- (9) Response to the message “[4466] The displayed CTLs are the ones in the CE mode. Confirm that all CTLs are displayed. [CTLs in the CE mode] CTL1 CTL2

NOTE: CTL1 and CTL2 are displayed when they are normal.

When all CTLs are displayed, select [Yes] to continue the processing.

When all CTLs are not displayed, select [No] to terminate the processing, and retry the NEW Installation after waiting for 20 minute.

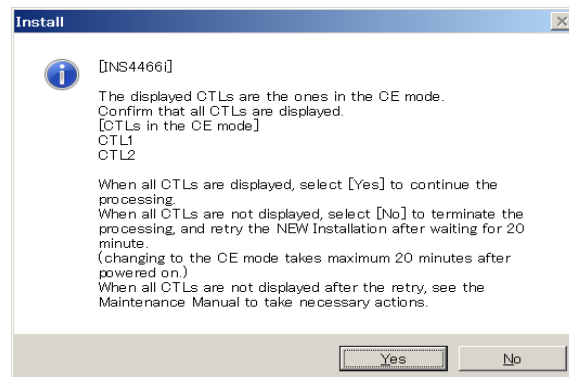
(changing to the CE mode takes maximum 20 minutes after powered on.)

When all CTLs are not displayed after the retry, see the Maintenance Manual to take necessary actions.”.

Click the [Yes] button to go to [Step \(10\)](#).

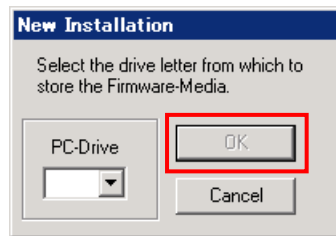
Click the [No] button to return to [Step \(3\)](#).

NOTE: The CTL displayed in the message is a CTL whose jumper used for initial installation is enabled at the time of displaying the message. When none of the installed CTLs is displayed, click the [No] button and retry it from [Step \(3\)](#).

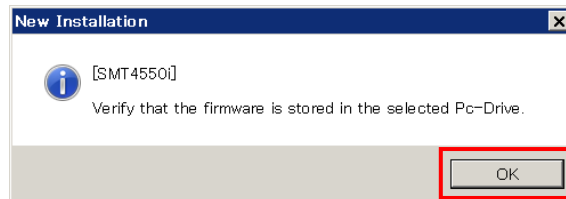


- (10) Select a drive to store the Firmware Media and click the [OK] button.

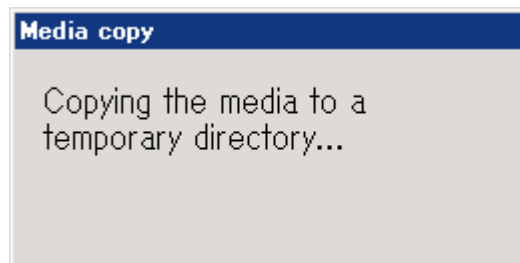
NOTICE: Do not use the configuration information media.



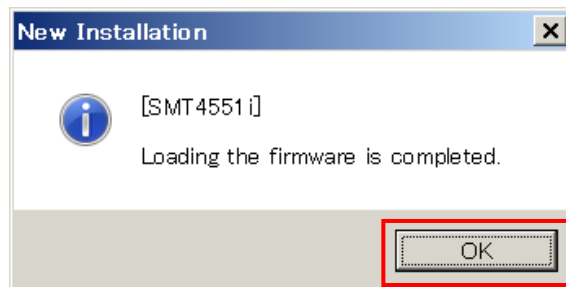
- (11) Store the media in the drive and click the [OK] button in response to the message "[4550] Verify that the firmware is stored in the selected Pc-Drive.".



- (12) A message of copying from the Media is displayed.

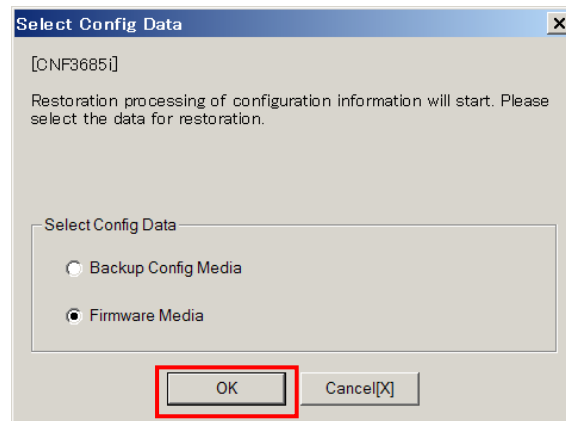


- (13) Click the [OK] button in response to the message "[4551] Loading the firmware is completed.".

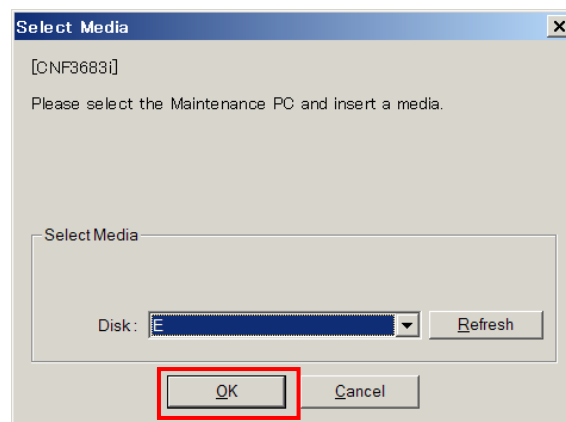


NOTICE: After that, the configuration information that is stored in the firmware is used.
Keep inserting the media into the drive.

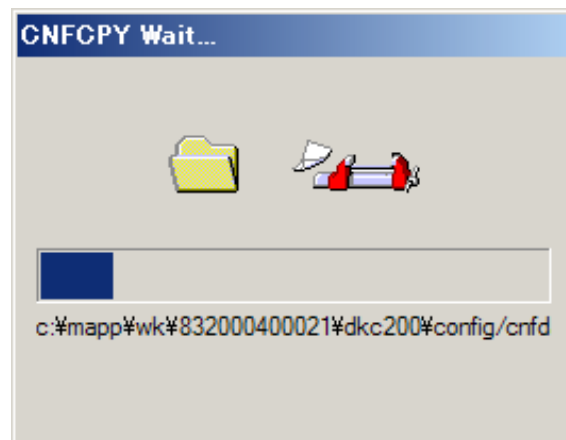
- (14) The “Select Config Data”[3685] window is displayed.
Select [Firmware Media], and click the [OK] button. Go to [Step \(15\)](#).



- (15) The “Select Media”[3683] window is displayed.
Select a drive storing the configuration information and click the [OK] button.

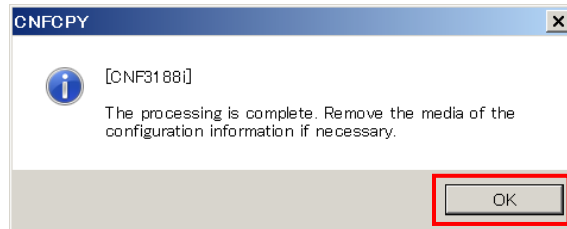


- (16) Make a copy of the configuration information.
During the copying, the “CNFCPY Wait...” window is displayed.



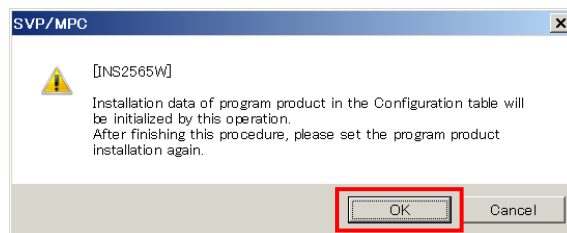
- (17) After removing the firmware media (*1) by responding to the message “[3188] The processing is complete. Remove the media of the configuration information if necessary.”, click the [OK] button.

*1: A firmware is initialized using the configuration information in the firmware media in this procedure.



- (18) Click the [OK] button in response to the confirmation message “[2565] Installation data of program product in the Configuration table will be initialized by this operation. After finishing this procedure, please set the program product installation again.”.

NOTE: When information of DP-VOL implementation or progressing status of quick format is not included, go to [Step \(20\)](#).



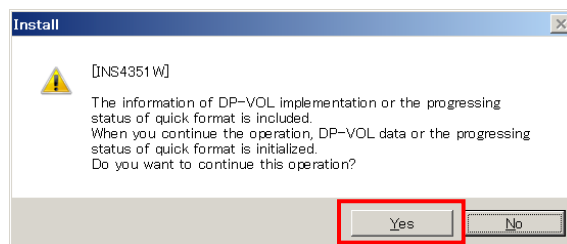
- (19) Response to the message “[4351]The information of DP-VOL implementation or the progressing status of quick format is included.

When you continue the operation, DP-VOL data or the progressing status of quick format is initialized.

Do you want to continue this operation?”.

When you continue this operation, click the [Yes] button.

When the [No] button is selected, this processing will be stopped. Return to [Step \(3\)](#).



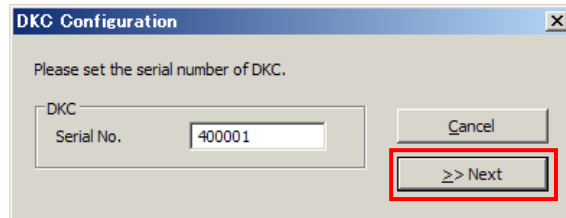
(20) <DKC Configuration window>

NOTE: Check the nameplate of the Storage System, and then enter the serial number.

When the “DKC Configuration” window is displayed, enter the serial number.

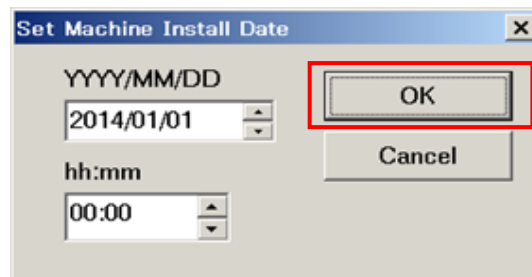
Click the [>>Next] button.

This procedure is completed when the [Cancel] button is clicked.

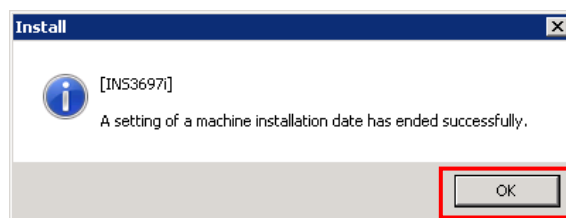


NOTICE: When the serial number is changed and it is different from the serial number registered in the Storage Device List, register the Storage System in the Storage Device List with the changed serial number after completing the maintenance operation.

(21) Set the current date and time on which New Installation is performed in the “Set Machine Install Date” window, and then click the [OK] button.

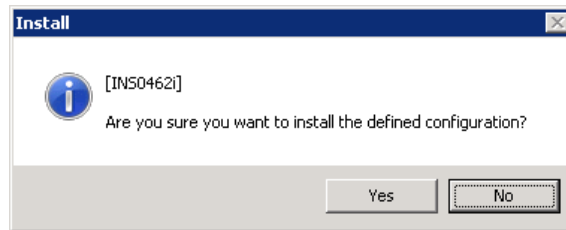


(22) Click the [OK] button in response to the message “[3697] A setting of a machine installation date has ended successfully.”.

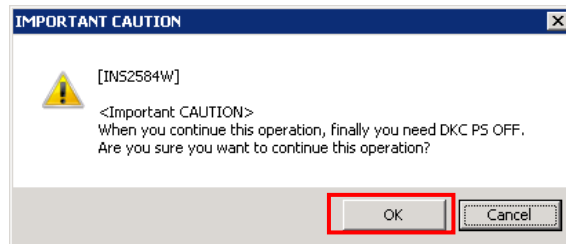


- (23) Click the [Yes] button in response to the confirmation message, “[0462] Are you sure you want to install the defined configuration?”.

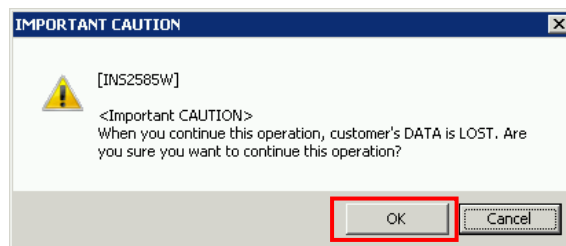
Clicking the [No] button cancels the configuration change processing and terminates the installation procedure.



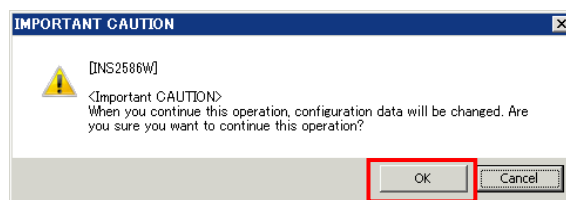
- (24) Click the [OK] button in response to the confirmation message, “[2584] <Important CAUTION> When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?”.



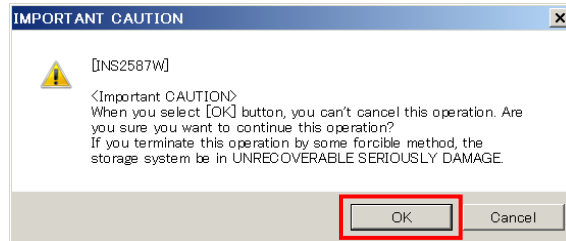
- (25) Click the [OK] button in response to the confirmation message, “[2585] <Important CAUTION> When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?”.



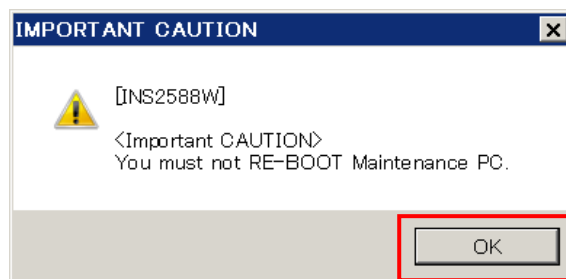
- (26) Click the [OK] button in response to the confirmation message, “[2586] <Important CAUTION> When you continue this operation, configuration data will be changed. Are you sure you want to continue this operation?”.



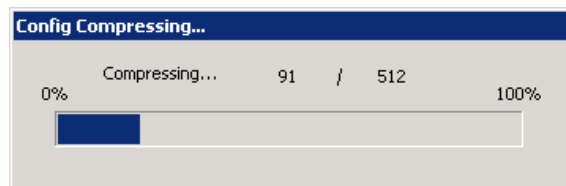
- (27) Click the [OK] button in response to the confirmation message, “[2587] <Important CAUTION> When you select [OK] button, you can't cancel this operation. Are you sure you want to continue this operation? If you terminate this operation by some forcible method, the storage system be in UNRECOVERABLE SERIOUSLY DAMAGE.”.



- (28) Click the [OK] button in response to the cautionary message, “[2588] <Important CAUTION> You must not RE-BOOT Maintenance PC.”.

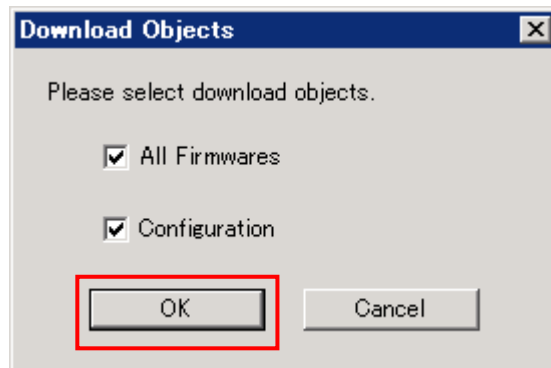


- (29) <Compressing of the configuration information>
The configuration information is compressed.
The dialog of “Config Compressing...” is displayed. After the compressing is completed, go to [Step \(30\)](#).



(30) <Download Objects window>

Select the [All Firmwares] and the [Configuration] buttons, and click the [OK] button.

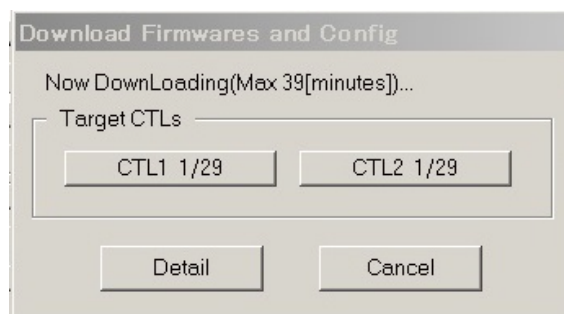


(31) <Configuration information transfer>

The configuration information is forwarded.

After the forward is completed, go to [Step \(32\)](#).

If you want to confirm the transfer status, click the [Detail] button. Go to [Step \(a\)](#).

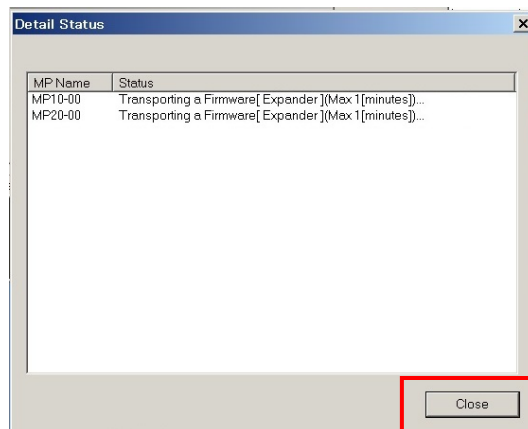


(a) Details of transfer situation are confirmed on the "Detail Status" window.

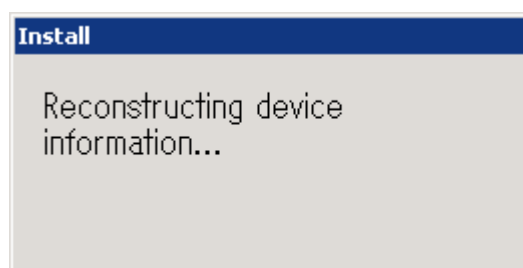
When you close the "Detail Status" window, click the [Close] button.

NOTE: Be sure to close the "Details Status" window after the confirmation.

If the window is left open, the transfer of the configuration information does not complete.



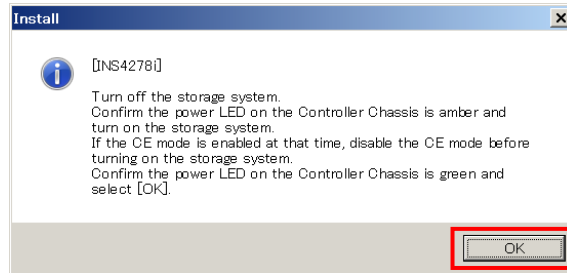
(32) "Reconstructing device information..." is displayed.



4. Disable the jumper used for the initial installation

- (1) When the following message is displayed, perform the following works from (a) to (d).

When the message "[4278]Turn off the storage system. Confirm the power LED on the Controller Chassis is amber and turn on the storage system. If the CE mode is enabled at that time, disable the CE mode before turning on the storage system. Confirm the power LED on the Controller Chassis is green and select [OK]." is displayed, perform the followings.



- (a) Press the main switch on the front of the Controller Chassis for about three seconds to turn off the Storage System.
 - (b) Open the "Maintenance Utility" window from the "MPC" window and disable the jumper used for the initial installation (CEMD).
 - How to set the jumper for initial installation: Refer to MAINTENANCE PC SECTION ["3.16 Edit System Parameters"](#).
 - (c) Confirm that the POWER LED of the Controller Chassis is amber, and then turn on the Storage System.
 - (d) Confirm that the POWER LED of the Controller Chassis is green, and then select the [OK] button.
- (2) Close the "Install" window.
- (3) Change the mode from [Initial Setting(Unlocked)] to [View Mode].

6.2.5 Post Processing

Checking the completion of the Storage System setup.

1. <Turn on Storage System>

Check that the READY LED (green) on the front of the Controller Chassis lights up.

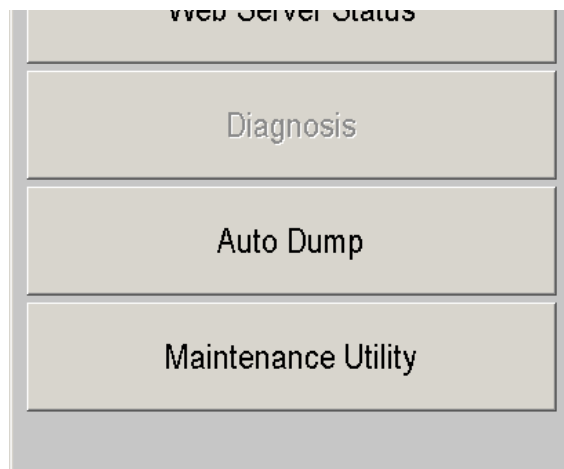
NOTE : It takes about 30 minutes until the READY LED changes to green.

2. <Enable Security Software>

Return the security software disabled in setting IIS/FTP to the “Enabled” status. (Refer to [Step 2.](#) on “[6.2.2 Maintenance PC Connection](#)”.)

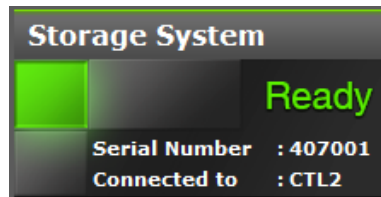
3. <Login to Maintenance Utility window>

- (1) Click the [Maintenance Utility] button in the “MPC” window.



4. <Check Status>

Please make sure that it is displayed as the “Ready” status of the Storage System in the “Maintenance Utility” window.



Status	Procedure
Ready	The processing is not required.
Information	Some SIMs are not checked. Check the SIM contents. (After checking the SIMs, refreshing the window changes the status to “Ready”.) (*1)
Warning	There is a failed part. Check the “MAIN” window and the SIM, and then take a necessary action. (*1) (*2)
Power-on in progress	The Storage System power-on is in progress. Log out of it once, and log in to the “Maintenance Utility” window after a while.

*1: Refer to MAINTENANCE PC SECTION [“3.21 Alert Display”](#) for how to check SIMs.

*2: Refer to SIM RC SECTION ([SIMRC00-00](#)) for the contents of SIMs.

5. <Check the Set Up Alert Notifications>

See MAINTENANCE PC SECTION [“3.4.1.2 Procedure”](#) and check that the information different from the contents to be configured is not set by the [Email], [Syslog] and [SNMP] tabs in the “Set Up Alert Notifications” window. If it is set, delete or reset it as needed.

6. <Clear Cache>

When the firmware version is less than 83-03-01-x0/xx, clearing the cache of Internet Explorer and Java is required.

Clear the cache in the following procedure. If the cache is not cleared, some failures such as the function newly added by the version upgrade cannot be used and the firmware update window cannot start up.

- Clearing the cache of Internet Explorer (In case of Internet Explorer11)

- (1) Click [Internet Options] from the [Start] menu.
- (2) Click the [Delete] button in [Browsing history] in the [General] tab.
- (3) Check only the following items in the “Delete Browsing History” window.
 - Temporary Internet files and website files
 - Cookies and website data
 - History
- (4) Click the [Delete] button.

- Clearing the cache of Java (In case of JRE7, JRE8)

- (1) Click the [Start] button of the Windows to open [Control Panel].
- (2) Click the [Java] icon.
- (3) Open [General] in the “Java Control Panel” window and click the [Settings] button of [Temporary Internet Files].
- (4) Click [Delete Files] in the “Temporary Files Settings” window.
- (5) Confirm that the checkboxes of “Trace and Log Files”, “Cached Applications and Applets” and “Installed Applications and Applets” are checked in “Delete Files and Applications”, and then click the [OK] button.

7. <Back up IIS configuration>

NOTE: When the IIS configuration is already backed up, skip this procedure. The procedure can be performed in the Windows command prompt only as an administrator.

- Backing up/restoring MPC IIS configuration

%systemroot%\system32\inetsrv\appcmd restore BACKUP “NAME_OF_BACKUP_B”

For “NAME_OF_BACKUP_B”, specify the name obtained in MAINTENANCE PC SECTION [“1.7.2 Setting IIS/FTP”](#), [“7. Backing up MPC IIS configuration”](#).

6.2.6 Check Procedure

1. <Check Power-on CUDG Result>

Perform the power-on procedure (See [“1.5.1 Storage System Power On”](#)).

Power-on CUDG is automatically executed on the DKC logic circuitry.

If an error occurs, SIM Log, SSB Log has logging (See MAINTENANCE PC SECTION [“5.3 Log”](#)).

2. <Execute Path inline test>

Perform Path inline tests on all Disk Boards installed during the new installation procedure to check the validity of the Drives.

Please carry out A3 routine after carrying out A0 routine.

See DIAGNOSIS SECTION [“4.2 PATH INLINE Test Procedures”](#) for the test procedure.

3. <Check System Configuration>

Check that the system configuration is initialized.

4. <Confirm Status and Firmware Version of All MPs>

See the firmware window to confirm the health of all parts and the firmware version of all MPs (See FIRMWARE SECTION [“3.4 Procedure for Checking Firmware Version”](#)).

5. <Delete error log>

Power ON/OFF the Storage System to make sure that the Storage System starts normally (Confirm that neither ALARM nor MESSAGE indicator of the Controller Chassis is lightened).

Delete all error log information from the Maintenance PC and transfer the Storage System to the user (See MAINTENANCE PC SECTION [“5.3.2 Log Delete”](#)).

6.3 Troubleshooting of New Installation of the Firmware

No.	Failure	Recovery action
1	When it displayed the “Media copy” dialog, The error occurred the “INS3005E”	It is not setting correct Maintenance PC. (1) Confirm to match “Storage Device List” of “MPC IP Address” and MAINTENANCE PC SECTION “1.3.1 IP Address Setting Method of Maintenance PC”. (a) If it is not match IP Address, it changes IP Address. Click the text of [MPC IP Address] on the top right of the screen of Storage Device List, and set the IP Address of Maintenance PC on the [Change MPC IP Address] dialog. (b) Reboot Maintenance PC. (2) Confirm a firmware media name of the drive that you specified in PC-Drive. D:\firmware\AllFirmware.mda D changes by the drive name that I appointed in PC-Drive.
2	When it displayed the “Download Firmwares and Config” dialog, The “FTP Commnuication error” occurred	It is not setting correct ftp server. (1) Open [User Accounts] from [Start] - [Control Panel]. Click the [Manage another account]. If “Manage Accounts” window is not display [bakeduser], perform MAINTENANCE PC SECTION “1.5.4 Maintenance PC Software Installation” after starting the MAINTENANCE PC SECTION of “8.2 Maintenance PC Software Uninstallation”. (2) Confirm MAINTENANCE PC SECTION “1.7.2 Setting IIS/FTP”. (3) Confirm the GUM IP address. Confirm whether the Storage System icon is the maintenance LAN address in “Table 1-28 Icon Display Item”. If it is not match IP Address, it changes IP Address. (4) Failed to connect to the Storage System. (a) Execute “1.5.2 Storage System Power Off (Planned Shutdown)” and “1.5.1 Storage System Power On”. (b) Reboot the Maintenance PC. (c) Execute “6. New Installation (Auto Define Configuration, All Firmwares)” again.
3	When it displayed the “Download Firmwares and Config” dialog, The “Communication error has occurred.” occurred	The Maintenance PC and the Storage system cannot communicate. (1) Execute “1.5.2 Storage System Power Off (Planned Shutdown)” and “1.5.1 Storage System Power On”. (2) Reboot the Maintenance PC. (3) Execute “6. New Installation (Auto Define Configuration, All Firmwares)” again.

(To be continued)

(Continued from the preceding page)

No.	Failure	Recovery action
4	The error other than the above has occurred in the “Download Firmwares and Config” dialog.	(1) Execute “ 1.5.2 Storage System Power Off (Planned Shutdown) ” and “ 1.5.1 Storage System Power On ”. (2) Reboot the Maintenance PC. (3) Execute “ 6. New Installation (Auto Define Configuration, All Firmwares) ” again.
5	It displayed [SMT4555E] occurred	The Maintenance PC and the Storage System unmatched “System type”. (1) Confirm whether the Storage System model name matches “Type” (Storage System type) of the Storage System icon in “ Table 1-28 Icon Display Item ”. (2) If it matched “System type”, it executes REPLACEMENT SECTION “ 2.4 Replacing a Controller Board ”.

7. Installing / Removing the NAS Unified Firmware

7.1 New Installation of the NAS Unified Firmware

NOTICE: To install NAS Unified Firmware, all I/O need to stop because the Storage System restarts. Stop all I/O, and then install NAS Unified Firmware.

7.1.1 New Installation Procedure

1. Connecting the Maintenance PC

Connect the Maintenance PC and the Storage System.

To install the NAS Unified Firmware, connect the Maintenance PC and Controller Board 1

- See [“1.6.1 Attachment / Removal Procedure of Maintenance PC”](#) and connect the Maintenance PC and Controller Board 1 via LAN cables.

2. Preparations and Prerequisites

To install NAS Unified Firmware, the following preparations and prerequisites are required.

(1) Firmware

To install NAS Unified Firmware, the firmware needs to meet the following conditions.

- The firmware version supports NAS Modules (version 83-03-21-x0/xx or later)
- The required prerequisite firmware (Unified Hypervisor, NASFWINST) is installed.

If the firmware does not support the NAS Module or the prerequisite firmware is not installed, update the firmware.

- See FIRMWARE SECTION [“3.3.2 Updating Firmware of the Storage System”](#) for checking and updating the firmware.

(2) Network Setting

Before installing NAS Unified Firmware, change the internal network from the global IP address (126.255.... or 192.169....) to the private IP address (other than the above global IP address. The recommended default is 10.251....).

- See MAINTENANCE PC SECTION [“3.6 Network Setting”](#) for the internal network setting.

(3) Licenses

The following licenses are required for installing the NAS Unified Firmware. Check that the following licenses are installed. If they are not installed, ask the administrator to install the licenses.

- Open Volume Management
- Resource Partition Manager

The above licenses are all included in the program product “Hitachi Storage Virtualization Operating System (SVOS)”.

See MAINTENANCE PC SECTION [“3.7.5 Installing Software Using a License Key Code”](#) for installing the licenses.

See MAINTENANCE PC SECTION [“3.7.9 Verifying License”](#) for checking the licenses.

(4) Free Space

Check whether the parity groups or DP pools meet the following conditions.

- These parity groups or DP pools to install the NAS Unified Firmware have a free space of 500 GB or more

If the above-mentioned conditions are not met, check with the administrator and create parity groups or DP pools as needed.

- To create parity groups, see MAINTENANCE PC SECTION [“4.2.2 Managing Parity Group”](#).
- To create DP pools, see Provisioning Guide.

(5) Logical Devices

Logical devices for NAS Unified Firmware installation are required to have two or more free spaces and the LDEV ID of the free logical device is required to be within the range from the maximum number of volumes - 1024 to the maximum number of volumes.

For the maximum number of volumes, see THEORY SECTION [“1.4.1 Managing Parity Group”](#).

(6) Resource Groups

Check whether the resource groups meet the following conditions.

- NAS_Platform_System_RSG does exist for the resource group name
- The resource group ID “1023” is vacant

When resource groups exist, see [Step 3](#) in [“7.2 Removing the NAS Unified Firmware”](#) to delete the resource groups.

3. Inserting media

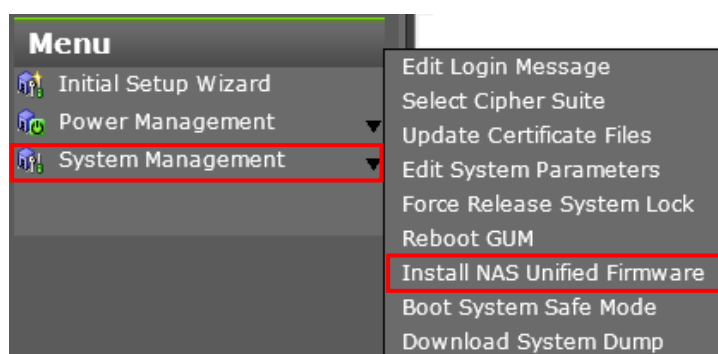
Insert the firmware media including the NAS Unified Firmware to be installed into the DVD drives of the Maintenance PC.

4. Starting Maintenance Utility

- (1) See [“1.6.2 Connecting to the Storage System”](#) to start Web Console.
 - (2) Selecting the toolbar [Maintenance Utility] – [Hardware] – [Other Hardware Maintenance...] in the “Web Console” window displays the “Maintenance Utility” window.
-

5. Installing the NAS Unified Firmware

- (1) Select [Menu] – [System Management] – [Install NAS Unified Firmware] in the “Maintenance Utility” window.



(2) Java start

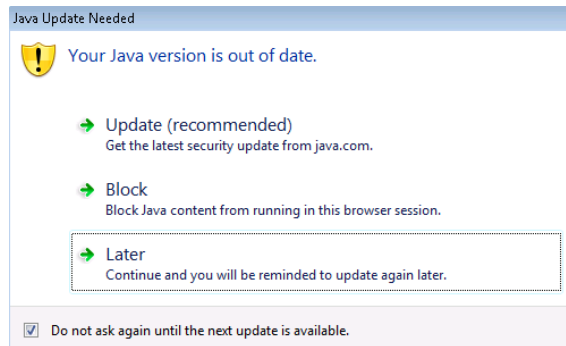
The displayed windows differ according to the JRE (Java Runtime Environment) versions.

In the case of JRE7 or JRE8, go to [Step \(a\)](#).

In the case of JRE6, go to [Step \(b\)](#).

(a) In the case of JRE7 or JRE8

- In the case of JRE7 or JRE8(a-1) The update of the Java application may be promoted.



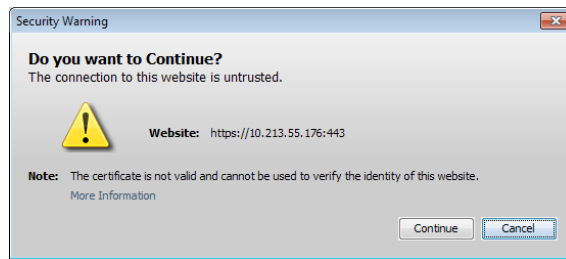
When using Maintenance Utility with the Java you are using, click [Later]. If you check the checkbox of [Do not ask again until the next update is available.] once and click [Later], this window is not displayed from now on. When clicking [Update(recommended)] and [Block], close the window of the Web browser and restart Maintenance Utility. When checking the checkbox of [Do not ask again until the next update is available.] and selecting [Update(recommended)] or [Block], Maintenance Utility cannot update the firmware. To allow Maintenance Utility to update the firmware, execute the following procedures.

- Click [All Programs ([All apps] for Windows 10)]-[Java]-[Configure Java] from the [Start] menu of Windows and start [Java Control Panel].
- Click the [Security] tab of [Java Control Panel].
- If the checkbox of [Enable Java content in the browser] in the [Security] tab is checked, uncheck it once and click the [Apply] button.
- Check the checkbox of [Enable Java content in the browser] and click the [Apply] button.
- Click the [OK] button of [Java Control Panel] to close the window.
- Restart Maintenance Utility.

NOTE: When changing the Java setting in [Java Control Panel], a message like “Java Plugin settings changed” may be displayed. If such message is displayed, click the [OK] button.

- When the message “Do you want to Continue?” is displayed, click the [Continue] button.

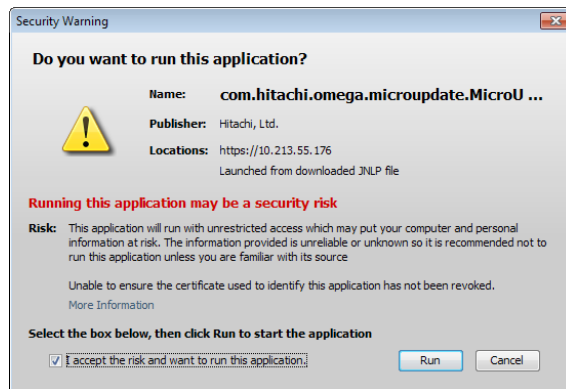
NOTE: This window may not be displayed.



- When the message “Do you want to run this application?” is displayed, check [I accept the risk and want to run this application.] and click the [Run] button.

Go to [Step \(3\)](#).

NOTE: This window may not be displayed.



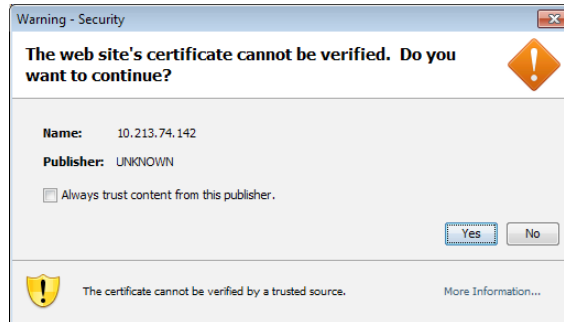
NOTE: When the “Application Blocked by Java Security” or “Application Blocked by Security Settings” window is displayed, refer to TROUBLESHOOTING SECTION [“3.28.1.1 Troubleshooting Related to Installation and Upgrade”](#) and register the storage system in the exception site.

After the registration, perform the procedure of FIRMWARE SECTION [“3.3.2 Updating Firmware of the Storage System”](#) again.

(b) In the case of JRE6

- When the message “The web site’s certificate cannot be verified. Do you want to continue?” is displayed, click the [Yes] button.

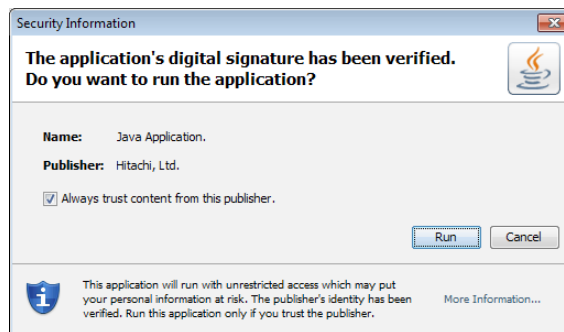
NOTE: This window may not be displayed.



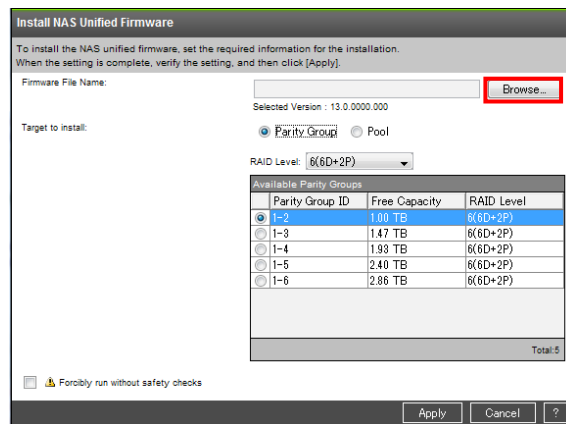
- When the message “The application’s digital signature has been verified. Do you want to run the application?” is displayed, check [Always trust content from this publisher.] and click the [Run] button.

Go to [Step \(3\)](#).

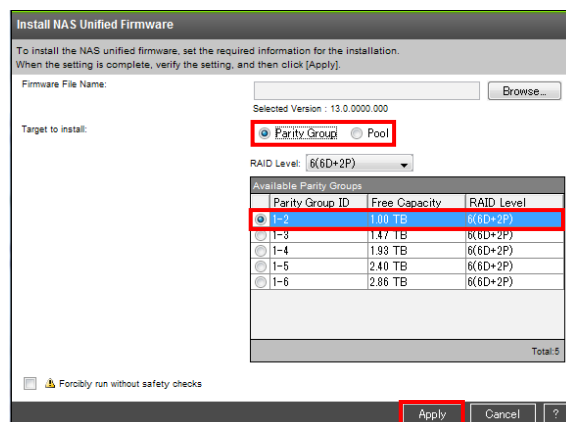
NOTE: This window may not be displayed.



- (3) The “Install NAS Unified Firmware” window is displayed. Click the [Browse...] button and select the NAS Unified Firmware file (“nas_firmware\nas-factory-<version>.load” in the media) to be installed.



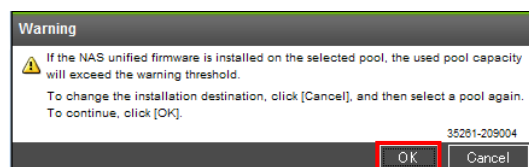
- (4) Select a parity group or DP pool to install and click the [Apply] button.



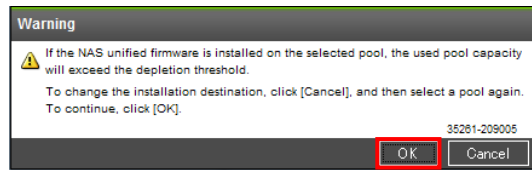
NOTE: Parity groups or DP pools that are not available for installation due to some reasons such as a lack of free capacity are not displayed in the table.

NOTE: If the warning threshold or depletion threshold is exceeded at installing the NAS Unified Firmware on a DP pool, the following message is displayed. Check the message content, and then click the [OK] button if continuing the installation.

- When the Warning Threshold is exceeded



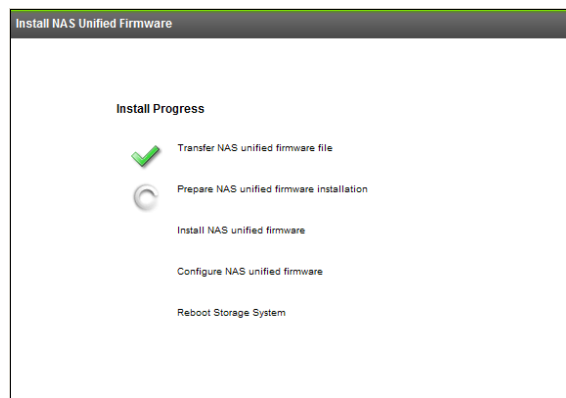
- When the Warning Threshold is exceeded



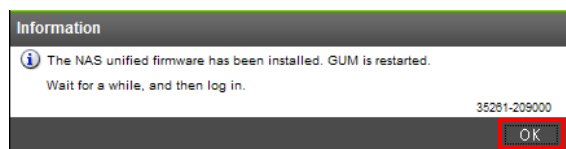
- (5) The NAS Unified Firmware installation starts. The NAS Unified Firmware is installed in both CTL1 and CTL2 at the same time.

NOTE: The NAS Unified Firmware installation time is about 60 minutes as a standard (about 420 minutes in maximum).

NOTICE: Do not open the "Maintenance Utility" window in a different operation during the installation. If the "Maintenance Utility" window opens, the installation processing might terminate abnormally. In case that the "Maintenance Utility" window needs to be opened in a different operation due to error occurrence and others, contact the Technical Support Division.



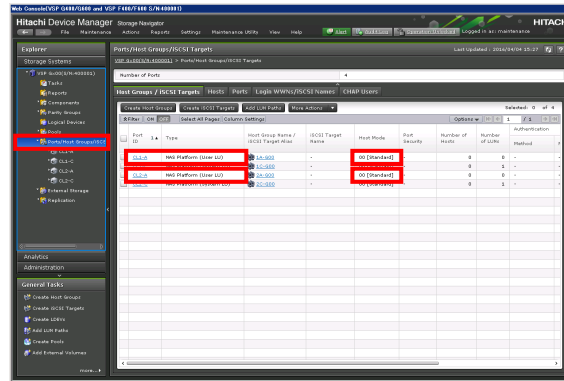
- (6) When the installation completion message is displayed, click the [OK] button to terminate.



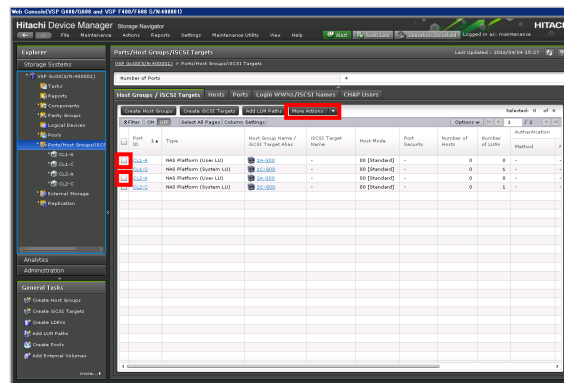
- (7) GUMs on both CTLs reboot automatically.

- (8) Set Host Mode Option 7 and Host Mode Option 68 for the ports of CL1-A and CL2-A in accordance with the following procedure.

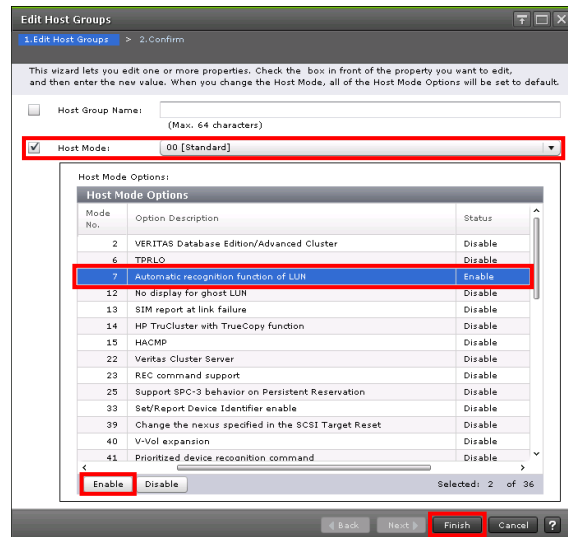
- (a) Start Web Console and select [Storage Systems] – [Port/Host Groups/iSCSI Targets]. Check that [Host Mode] of ports whose [Type] is “NAS Platform (User LU)” is “00 [Standard]”.



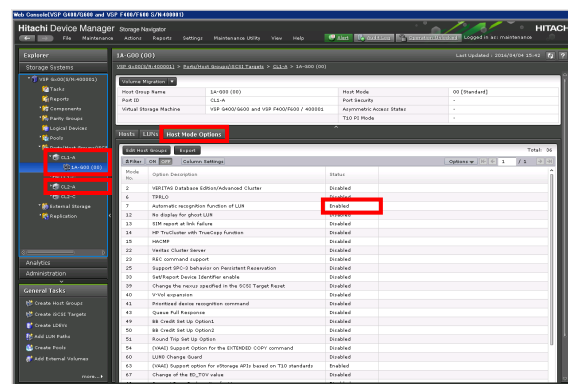
- (b) Check the checkboxes of ports whose [Type] is “NAS Platform (User LU)” and select [Edit Host Groups] from [More Actions].



- (c) Check the checkboxes of [Host Mode]: “00 [Standard]” and No. 7 and No. 68 of [Mode No.] in the “Edit Host Groups” window. Clicking the [Enable] button changes [Status] to “Enable”. When the change of [Status] is confirmed, click [Finish].



- (d) Check that No. 7 and No. 68 in [Mode No.] are [Enabled] from the [Host Mode Options] tab of the host group (1A-G00 and 2A-G00) belonging to CL1-A and CL2-A.



- (9) If the exported path information exists, see MAINTENANCE PC SECTION “4.1.3 Allocating the Local Devices of a Storage System to a Host” and set the path information manually. In the “Logical Devices” window, “External Storage” window, and “Journal” window of the Storage Navigator, check the MP Unit ID assigned to each resource, and then assign MP Unit IDs if necessary referring to the Provisioning Guide “Assigning an MP unit to a resource”.

7.1.2 Restoration Procedure When a Failure Occurs During New Installation

If a failure occurs while installing the NAS Unified Firmware, restore it in accordance with the following procedure.

1. Checking and responding to error messages

If error messages are output, take appropriate action in accordance with the messages.

When the error code “35261-202051” is output, go on to [Step 2](#).

When the error code “35261-204361” is output, go on to [Step 3](#).

If no error message is output or the failures in the error messages are solved, go to [Step 4](#).

2. Clear the Java cache file

Clear the Java cache file in accordance with the following steps, and then go on to [Step 4](#).

- (1) Select [Start] – [Control Panel] – [Java] to open the Java control panel.
- (2) On the [General] tab, click [Setting...] button under the [Temporary Internet Files] section.
- (3) Click [Delete Files...] button.
- (4) Check [Cached Application and Applets] , and then click [OK] button.

3. Checking the connection between the maintenance PC and storage system

Check the following procedure. Then, go on to [Step 4](#).when the problem is recovered.

- (1) See TROUBLESHOOTING SECTION “[3.29.1 When I cannot be connected from MPC to the GUM or Storage System](#)” to recover the connection failure.

If you need to consult the Technical Support Division after performing the recovery procedure, collect Auto Dump, and then contact the Technical Support Division.

4. Checking and responding to SIM

When SIM is output, check SIM (See MAINTENANCE PC SECTION “[3.21 Alert Display](#)”) and respond to it (See MAINTENANCE PC SECTION “[5.13.8 Error or Failure Status Action](#)”).

See SIM REFERENCE CODE SECTION for the details of the SIMs.

If no SIM is output or SIMs are solved, collect Auto Dump, and then contact the Technical Support Division.

7.2 Removing the NAS Unified Firmware

NOTICE: To remove NAS Unified Firmware, all I/O need to stop because the Storage System restarts. Stop all I/O, and then remove NAS Unified Firmware.

7.2.1 Removal procedure

1. Connecting the Maintenance PC

Connect the Maintenance PC and the Storage System.

To remove the NAS Unified Firmware, connect the Maintenance PC and Controller Board 1

- See “1.6.1 Attachment / Removal Procedure of Maintenance PC” and connect the Maintenance PC and Controller Board 1 via LAN cables.

2. Preparations and Prerequisites

To remove NAS Unified Firmware, the administrator needs the following preparations and prerequisites. If the conditions are not met, request the administrator for the operation.

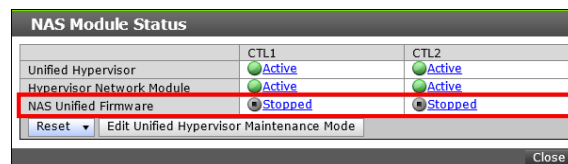
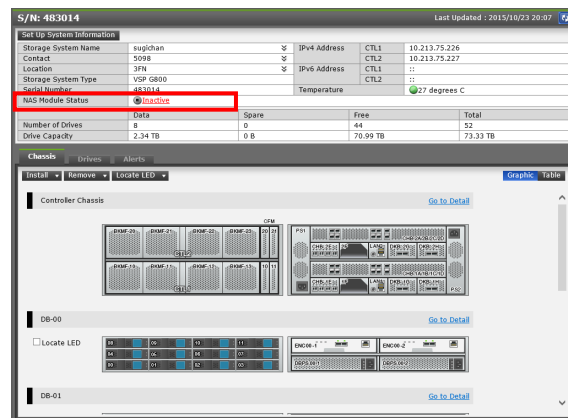
(1) Stopping I/O processing

The NAS Unified Firmware removal processing is only available offline (not operating with the upper client).

(2) Stopping the NAS Modules

Before removing the NAS Unified Firmware, the NAS Modules on both Controllers need to be stopped. Check the NAS Module status in the following window.

- “NAS Unified Firmware” in “NAS Module Status” should be “Stopped”



When the NAS Modules are running, perform the stop processing of the NAS Modules in accordance with the next procedure.

- Stop processing of the NAS Module
- (a) Log into the Node on the Controller 1 side
 - Connect the Maintenance PC to maintenance LAN on the Controller 1 side, and log into the Node on the Controller 1 side.
 - See MAINTENANCE PC SECTION [“7.2 Logging into Node”](#) for the detailed procedure.
- (b) To remove NAS Modules, all I/O need to stop because the Storage System restarts. Stop all I/O, and then remove NAS Modules. Stop processing of the NAS Module on the Controller 1 side by the maintenance CLI
 - After logging into the Node, stop the NAS Module using the “shutdown -f” command of the maintenance CLI.
 - See MAINTENANCE PC SECTION [“7.6 Shutting down NAS Modules”](#) for the detailed procedure.
- (c) Checking stop of the NAS Module on the Controller 1 side
 - Check that the “CTL1” side of “NAS Unified Firmware” in “NAS Module Status” in the “Maintenance Utility” window is “Stopped”.
- (d) Log into the Node on the Controller 2 side
 - Connect the Maintenance PC to maintenance LAN on the Controller 2 side, and log into the Node on the Controller 2 side.
 - See MAINTENANCE PC SECTION [“7.2 Logging into Node”](#) for the detailed procedure.
- (e) Stop processing of the NAS Module on the Controller 2 side by the maintenance CLI
 - After logging into the Node, stop the NAS Module using the “shutdown -f” command of the maintenance CLI.
 - See MAINTENANCE PC SECTION [“7.6 Shutting down NAS Modules”](#) for the detailed procedure.
- (f) Checking stop of the NAS Module on the Controller 2 side
 - Check that the “CTL2” side of “NAS Unified Firmware” in “NAS Module Status” in the “Maintenance Utility” window is “Stopped”.

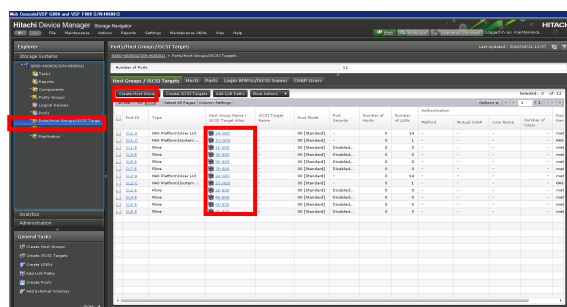
(3) Export LU path

- For removing the NAS Unified Firmware based on the restoration, export the LU path in accordance with the following procedure.
- For removing the NAS Unified Firmware based on the NAS Module removal, go to [Step \(4\)](#).

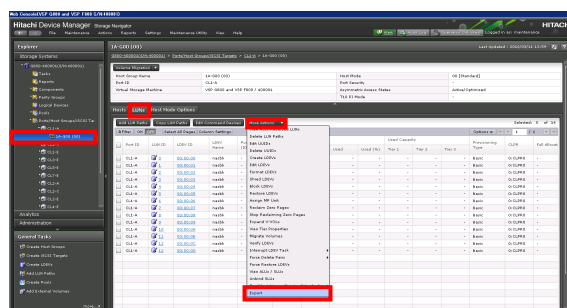
(a) Select [Ports/Host Groups/iSCSI Targets] from the [Storage Systems] tree in the “Web Console” window.

(b) The “Ports/Host Groups/iSCSI Targets” window is displayed. Select the [Host Groups/iSCSI Targets] tab.

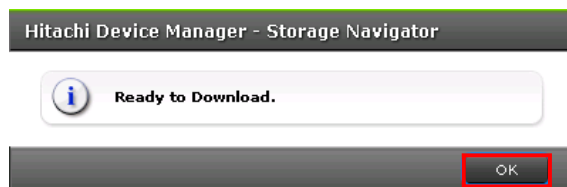
(c) Select the link of [Host Group Name/iSCSI Target Alias] of the port whose [Type] is [NAS Platform (User LU)].



(d) The “Host Groups” window is displayed. Select the [LUNs] tab, and then select [More Action] – [Export]



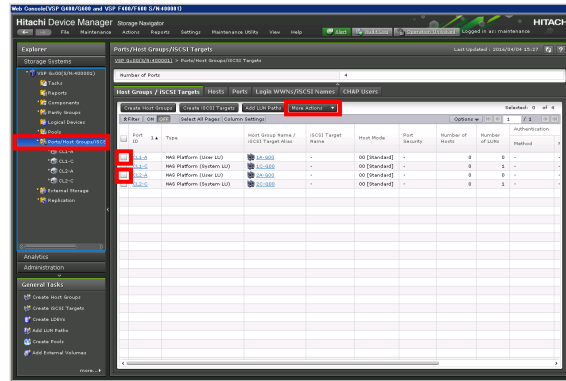
(e) The preparation completion message is displayed. Click the [OK] button.



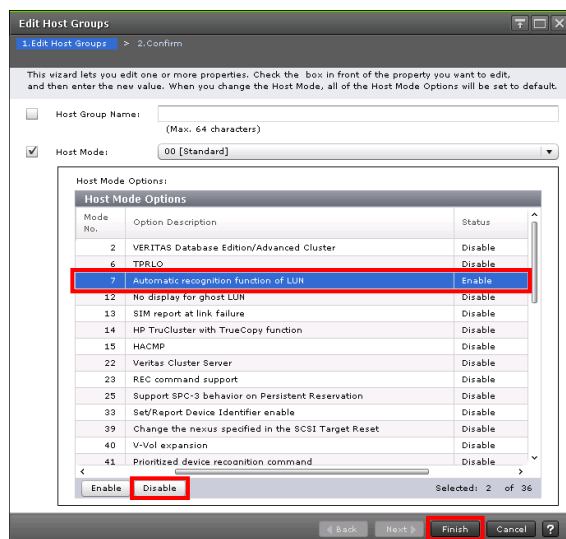
(f) The explorer window is displayed. Specify an arbitrary storage destination.

- (4) Release the settings of Host Mode Option 7 and Host Mode Option 68 for the ports of CL1-A and CL2-A in accordance with the following procedure.

- (a) Start Web Console and select [Storage Systems] – [Ports/Host Groups/iSCSI Targets]. Check the checkboxes of ports whose [Type] is “NAS Platform (User LU)” and select [Edit Host Groups] from [More Actions].

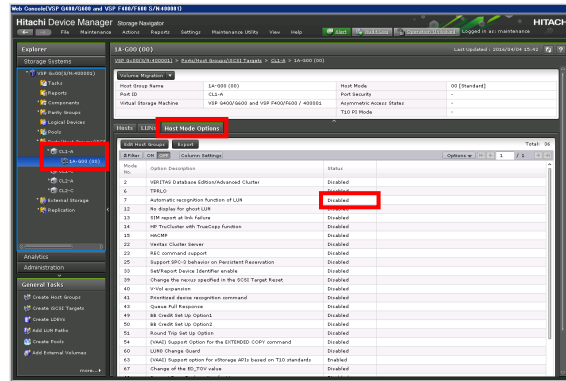


- (b) Check the checkboxes of [Host Mode]: “00 [Standard]” and No. 7 and No. 68 of [Mode No.] in the “Edit Host Groups” window. Clicking the [Disable] button changes the status to “Disable”. When the change of [Status] is confirmed, click [Finish] button.



- (c) Select 1A-G00 belonging to CL1-A of [Ports/Host Groups/iSCSI Targets] in the “Web Console” window.

After that, select the [Host Mode Options] tab and check that No. 7 and No. 68 of [Mode No.] are [Disabled].



- (d) Select 2A-G00 belonging to CL2-A of [Ports/Host Groups/iSCSI Targets] in the “Web Console” window. After that, check that No. 7 and No. 68 of [Mode No.] are [Disabled] as well as [Step \(c\)](#).
- (5) Path release of LDEVs belong to NAS Platform (User LU) Blocking LDEVs
If the paths are defined for the ports of the LDEVs whose [Attribute] of both controllers is [NAS Platform (User LU)].

Check the path definition of LDEVs whose [Attribute] are [NAS Platform (User LU)].

- If the path is not released, see MAINTENANCE PC SECTION [“4.2.3.8 Releasing Logical Device Assignments”](#) to release the path assignment.
- Also, the path release might fail depending on the LDEV status. In that case, block the target LDEVs, and then release the path assignment again. To block the target LDEVs, see MAINTENANCE PC SECTION [“4.4.1 Blocking LDEVs”](#).

3. Deleting the resource group for NAS Module (NAS_Platform_System_RSG)

If the resource group for NAS Module does not exist, go to [“4. Deleting LDEVs and releasing paths of LDEVs belonging to NAS Platform \(System LU\)”](#).

Before removing the NAS Unified Firmware, delete the following resource groups and various resources in accordance with [“\(1\) Procedure for deletion”](#).

- LDEVs in the resource group for NAS
- Ports in the resource group for NAS
- Host groups in the resource group for NAS
- Resource groups for NAS

The procedure for deleting the resource groups and respective resources is as follows. The password input window is displayed when deleting respective resources. Enter the password to continue the work.

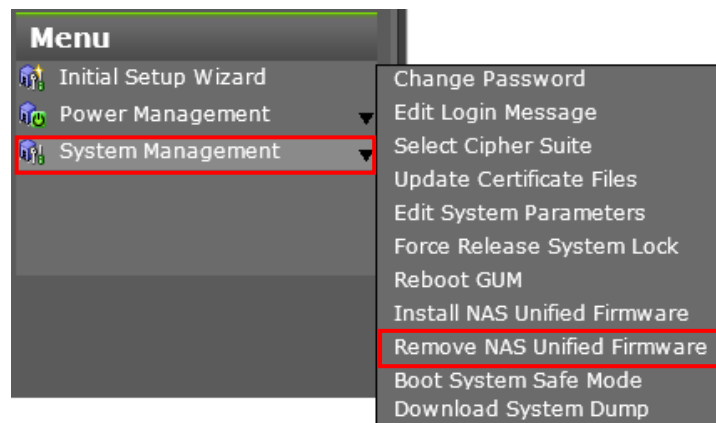
(1) Procedure for deletion

- (a) See [“1.6.2 Connecting to the Storage System”](#) to start Web Console.
- (b) Select [Resource Groups] from the [Administration] in the “Web Console” window.
- (c) Click the resource group name (NAS_Platform_System_RSG) link of the resource to be deleted by the [Resource Groups] tab.
Individual resource group window is displayed.
- (d) Select the resources (LDEVs, ports and host groups) to be deleted.
- (e) Display the “Remove Resources” window in either of the following procedures.
 - Click [Remove Resources].
 - Select [Resource Management] – [Remove Resources] from the [Settings] menu.
- (f) Enter a task name and click [Apply] to apply the setting to the Storage System.
The set information is queued as a task and run sequentially.
- (g) Check the operation results in the “Tasks” window.
If before running the operation, you can temporarily suspend or cancel the task in the “Tasks” window.
- (h) After completing the removal of the resources (LDEVs, ports, and host groups) under NAS_Platform_System_RSG, select NAS_Platform_System_RSG in the “Resource Groups” window and click [Delete Resource Groups] to delete from the resource groups.

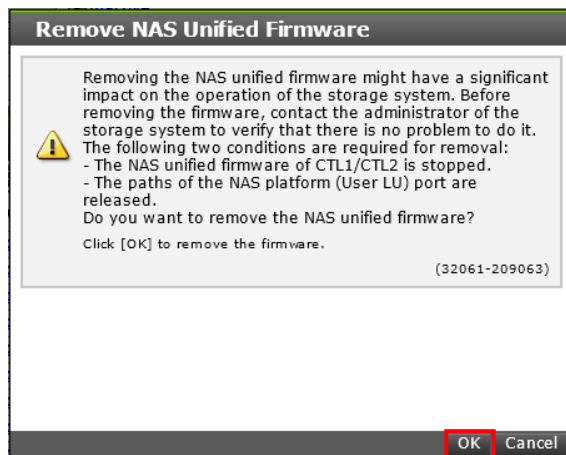
4. Deleting LDEVs and releasing paths of LDEVs belonging to NAS Platform (System LU)

Delete the LDEVs and host groups that exist in the resource group deleted by “[3. Deleting the resource group for NAS Module \(NAS_Platform_System_RSG\)](#)”. If the paths are defined for the ports of the target LDEVs, the defined paths of all the ports need to be released.

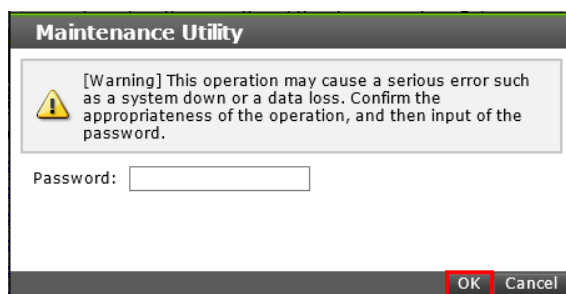
 - Check the path definition of LDEVs whose [Attribute] is [NAS Platform (System LU)]. If the path is not released, make a note of the target LDEV ID and see MAINTENANCE PC SECTION “[4.2.3.8 Releasing Logical Device Assignments](#)” to release the path assignment
 - Also, the path release might fail depending on the LDEV status. In that case, block the target LDEVs, and then release the path assignment again. To block the target LDEVs, See MAINTENANCE PC SECTION “[4.4.1 Blocking LDEVs](#)”
 - Delete LDEVs whose [Attribute] recorded at the time of the path release is [NAS Platform (System LU)]. See MAINTENANCE PC SECTION “[4.2.3.7 Deleting Logical Device](#)” for the detailed procedure.
 - Delete host groups for the ports whose [type] is [NAS Platform (System LU)]. See MAINTENANCE PC SECTION “[4.3.3 Deleting Host Group Information](#)” for the detailed procedure.
-
5. Removing the NAS Unified Firmware
 - (1) See “[1.6.2 Connecting to the Storage System](#)” to start Web Console.
 - (2) Selecting the toolbar [Maintenance Utility] – [Hardware] – [Other Hardware Maintenance...] in the “Web Console” window displays the “Maintenance Utility” window.
 - (3) Click [Menu] – [System management] – [Remove NAS Unified Firmware] in the “Maintenance Utility” window.



- (4) When the “Remove NAS Unified Firmware” window is displayed, check the details and click the [OK] button.



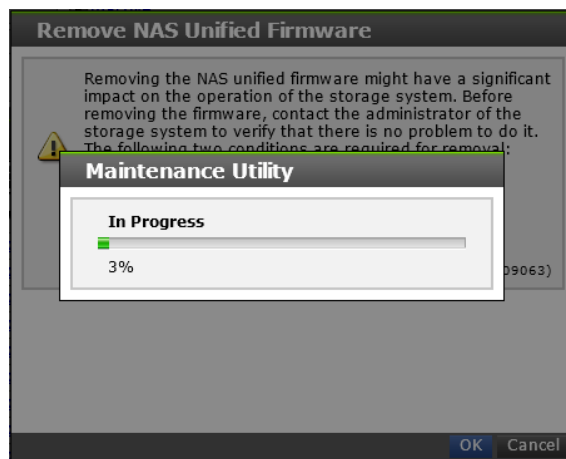
- (5) When the password input window is displayed, enter the password and click the [OK] button.



- (6) The NAS Unified Firmware is removed. The firmware is removed from both Controller 1 and Controller 2 at the same time.

NOTE: The NAS Unified Firmware Removing time it about 30 minutes as a standard (about 380 minutes in maximum).

NOTICE: Do not open the "Maintenance Utility" window in a different operation during the removal. If the "Maintenance Utility" window opens, the removal processing might terminate abnormally. In case that the "Maintenance Utility" window needs to be opened in a different operation due to error occurrence and others, contact the Technical Support Division.



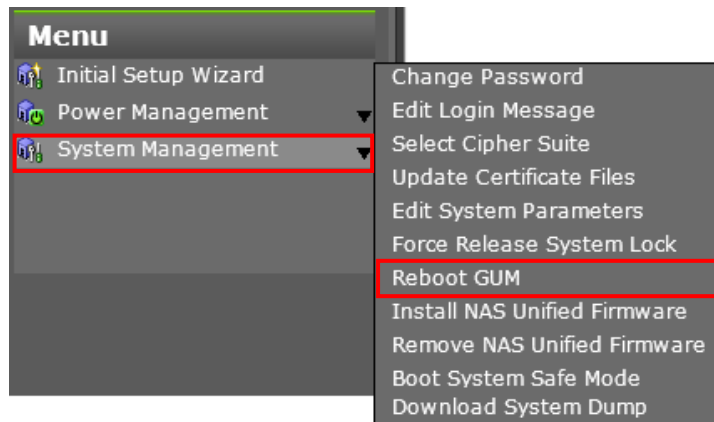
- (7) The installation removal completion window is displayed. Click the [Close] button.



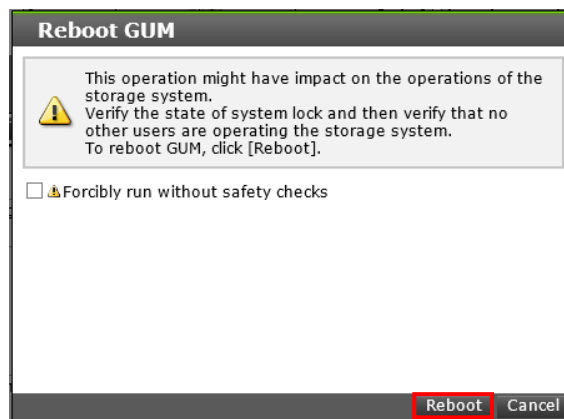
6. Rebooting GUM

NOTE: Reboot Gum for both Controller 1 and Controller 2.

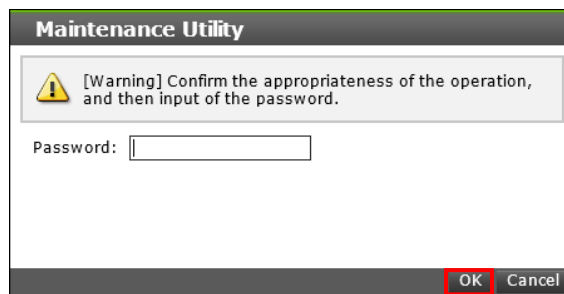
- (1) Click [Menu] – [System Management] – [Reboot GUM] in the “Maintenance Utility” window.



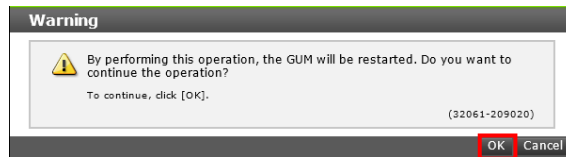
- (2) When the “Reboot GUM” window is displayed, click the [Reboot] button.



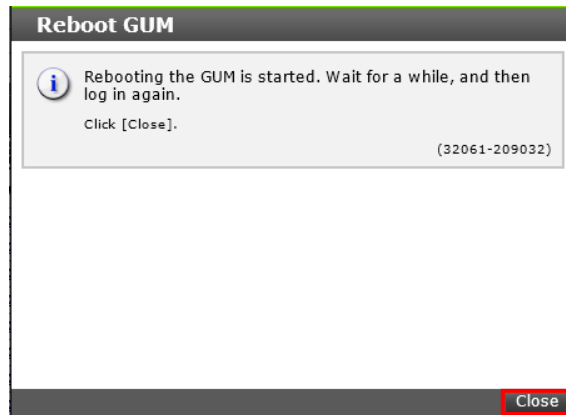
- (3) The password input window is displayed. Enter the password and click [OK] button.



- (4) Checking window of the GUM reboot is displayed. Click [OK] button.



- (5) GUM reboot starts. Click the [Close] button to terminate Maintenance Utility.



- (6) After completing GUM reboot on Controller 1, connect the Maintenance PC to Controller 2 and reboot GUM on Controller 2 as well.
- (7) In the "Logical Devices" window, "External Storage" window, and "Journal" window of the Storage Navigator, check the MP Unit ID assigned to each resource, and then assign MP Unit IDs if necessary referring to the Provisioning Guide "Assigning an MP unit to a resource".

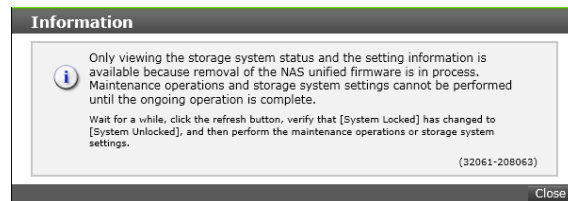
7.2.2 Restoration Procedure When Failure Occurs during Removal

If failures occur during the NAS Unified Firmware removal, restore them in accordance with the following procedure.

1. Checking and responding to error messages

If error messages are output, take appropriate action in accordance with the messages.

Also, when the message “Only viewing the storage system status and the setting information is available because removal of the NAS unified firmware is in process. Maintenance operations and storage system settings cannot be performed until the ongoing operation is complete.” is displayed at the time of starting Maintenance Utility, click the [Close] button, and then close Maintenance Utility started after the message display.



Wait for 30 minutes, and then start Maintenance Utility again. If the same message is displayed when starting Maintenance Utility, close Maintenance Utility again, and then repeat the Maintenance Utility start confirmation regularly (for every 30 minutes or more waiting time as a rough standard).

If the same message is displayed when starting Maintenance Utility even after the total waiting time exceeds 320 minutes, close Maintenance Utility, turn off the power of the Storage System, and then restart it.

See [“1.5.2 Storage System Power Off \(Planned Shutdown\)”](#) for turning off the power of the Storage System.

See [“1.5.1 Storage System Power On”](#) for restarting the Storage System.

If no error message is output or the failures in the error messages are solved, go to [Step 2](#).

2. Checking and responding to SIM

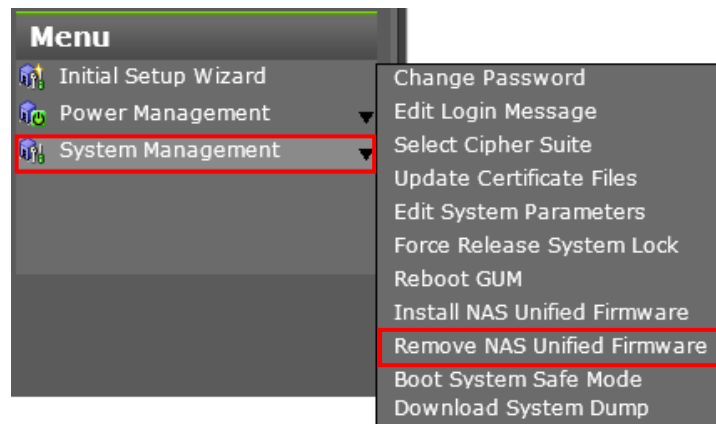
When SIM is output, check SIM (See MAINTENANCE PC SECTION [“3.21 Alert Display”](#)) and respond to it (See MAINTENANCE PC SECTION [“5.13.8 Error or Failure Status Action”](#)).

See SIM REFERENCE CODE SECTION for the details of the SIMs.

If no SIM is output or SIMs are solved, go to [Step 3](#).

3. Removing the NAS Unified Firmware

If [Remove NAS Unified Firmware] exists in the items of [Menu] – [System Management] in Maintenance Utility, remove the NAS Unified Firmware.



See [“7.2 Removing the NAS Unified Firmware”](#) for the procedure for removing the NAS Unified Firmware.

When the NAS Unified Firmware is removed completely or confirmed the item [Remove NAS Unified Firmware] does not exist, see MAINTENANCE PC SECTION [“1.8.2.4 Close the Window”](#) to close the window.

7.3 Re-installing the NAS Unified Firmware

7.3.1 Re-installation Procedure

CAUTION

Perform this operation only when instructed.

If it is operated incorrectly, significant failures such as data loss might occur.

CAUTION

To re-install the NAS Unified Firmware, the Cache write pending rate needs to meet the following condition.

- The Cache write pending rate is less than or equal to 30%.

If the above condition is not met, see TROUBLESHOOTING SECTION [“20.13 Common Troubleshooting when NAS Modules are Installed”](#).

To check the Cache write pending rate, see MAINTENANCE PC SECTION [“8. Monitoring”](#).

CAUTION

Before re-installing the NAS Unified Firmware, check whether the EVS migration is completed from the Controller to be re-installed. If it is not completed, perform the EVS migration to the Controller that is not a re-installation target before the re-installation. If re-installation is performed before completing the EVS migration, a significant failure of data loss occurs.

- When re-installing the NAS Unified Firmware in both Controllers, EVS migration is not required.
- To check the EVS status, see MAINTENANCE PC SECTION [“6.3 Confirming the Node Status”](#).
- To perform the EVS migration, see MAINTENANCE PC SECTION [“6.4.1 Migration before the Maintenance Operations”](#).

1. Preparing for re-installation (deleting nodes from a cluster)

Delete the nodes from the target cluster before re-installation.

- (1) Connect the Maintenance PC to the Controller on the other side of the one to be re-installed. For the Maintenance PC connection, see [“1.6.1 Attachment / Removal Procedure of Maintenance PC”](#).
- (2) Log into the node on the connected Controller. For how to log into the node, see MAINTENANCE PC SECTION [“7.2 Logging into Node”](#).

- (3) Run “cluster-show -y” in the maintenance CLI and confirm the node to be deleted. The node to be deleted is not the logged-in node. Make a note of ID and Node Name of the node to be deleted. Running example of “cluster-show -y” and deletion targets are as shown below.

```

① G400-482002-1 $ cluster-show -y
ID   Node Name      Status  FS Access  Ethernet Aggs  Mgmt  Netwrk  FC  EVS  IDs
--   -
1    G400-482002-1  ONLINE  OK         OK       OK    NA     NA     [ ]
② 2    G400-482002-2  ONLINE  OK         OK       OK    NA     NA     [0,1,2,3,4]

Cluster Communications Status:

Cluster Interconnect
From To=> Node 1  Node 2
Node 1    --    OK
Node 2    OK    --

Management Network
From To=> Node 1  Node 2
Node 1    --    OK
Node 2    OK    --

```

- ① : Logged-in node
 ② : ID and Node Name of the node to be deleted (make a note of Node Name and its ID different from Node Name of the logged-in node.)

For the details of the cluster-show command, see MAINTENANCE PC SECTION “[7.12 Displaying the NAS Module Status \(cluster-show\)](#)”.

- (4) Run “cluster-node-delete <node name> <node id>” in the maintenance CLI to delete the target nodes. In <node name> <node id>, enter the values that you noted in [Step \(3\)](#). For the details of the cluster-node-delete command, see MAINTENANCE PC SECTION “[7.28 Deleting Clusters \(cluster-node-delete\)](#)”.
- (5) Log out of the node. For how to log out of the node, see MAINTENANCE PC SECTION “[7.1.4 Logging out of the Node](#)”.
- (6) Remove the Maintenance PC. For how to remove the Maintenance PC, see “[1.6.1.2 Removal Procedure of Maintenance PC](#)”.

2. Connecting a Maintenance PC

Connect the Maintenance PC and the Storage System.

Connect the NAS Unified Firmware to the Controller on the reinstallation side.

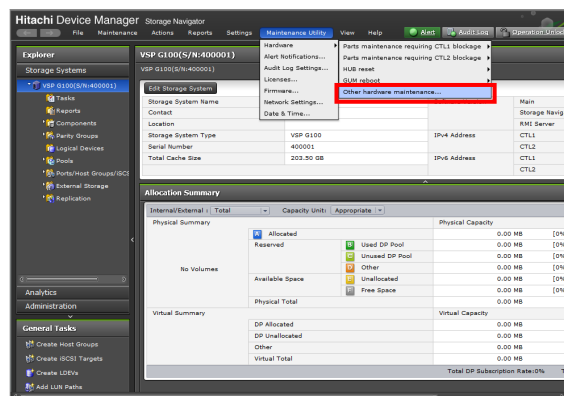
- See “[1.6.1 Attachment / Removal Procedure of Maintenance PC](#)” to connect the Maintenance PC and the Controller Board via LAN cables.

3. Inserting media

Insert the firmware media including the NAS Unified Firmware to be installed into the DVD drives of the Maintenance PC.

4. Starting Maintenance Utility

- (1) Start the Web Console referring to “[1.6.2 Connecting to the Storage System](#)”.
- (2) Selecting the toolbar [Maintenance Utility] – [Hardware] – [Other Hardware Maintenance ...] in the “Web Console” window displays the “Maintenance Utility” window.

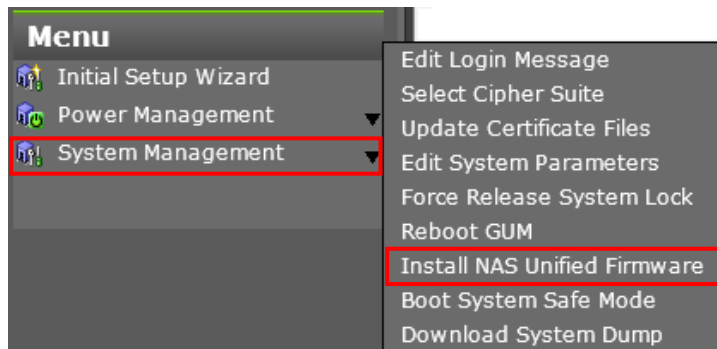


5. Re-installing NAS Unified Firmware

- (1) Select [Menu]-[System Management]-[Install NAS Unified Firmware] in the “Maintenance Utility” window.

NOTE: When NAS Unified Firmware is already installed, the NAS Unified Firmware is re-installed.

If the NAS Unified Firmware is not installed, new installation of the NAS Unified Firmware is performed. In that case, see [Step 5.](#) and the following in “[7.1.1 New Installation Procedure](#)”.



(2) Java start

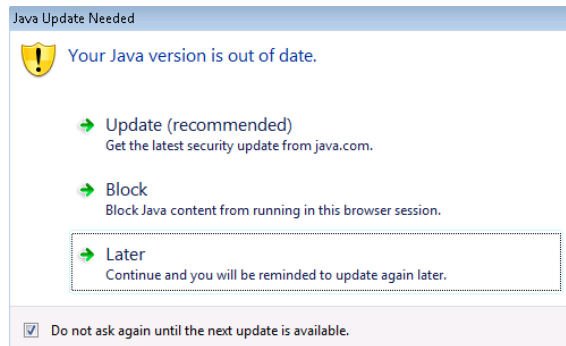
The displayed windows differ according to the JRE (Java Runtime Environment) versions.

In the case of JRE7 or JRE8, go to [Step \(a\)](#).

In the case of JRE6, go to [Step \(b\)](#).

(a) In the case of JRE7 or JRE8

- In the case of JRE7 or JRE8(a-1) The update of the Java application may be promoted.



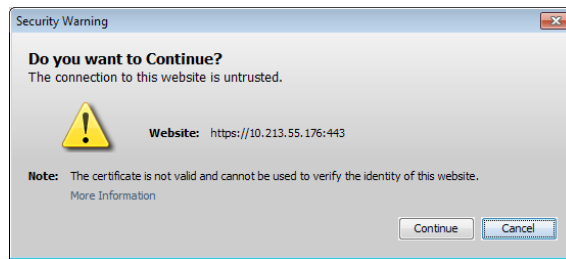
When using Maintenance Utility with the Java you are using, click [Later]. If you check the checkbox of [Do not ask again until the next update is available.] once and click [Later], this window is not displayed from now on. When clicking [Update(recommended)] and [Block], close the window of the Web browser and restart Maintenance Utility. When checking the checkbox of [Do not ask again until the next update is available.] and selecting [Update(recommended)] or [Block], Maintenance Utility cannot update the firmware. To allow Maintenance Utility to update the firmware, execute the following procedures.

- Click [All Programs ([All apps] for Windows 10)]-[Java]-[Configure Java] from the [Start] menu of Windows and start [Java Control Panel].
- Click the [Security] tab of [Java Control Panel].
- If the checkbox of [Enable Java content in the browser] in the [Security] tab is checked, uncheck it once and click the [Apply] button.
- Check the checkbox of [Enable Java content in the browser] and click the [Apply] button.
- Click the [OK] button of [Java Control Panel] to close the window.
- Restart Maintenance Utility.

NOTE: When changing the Java setting in [Java Control Panel], a message like “Java Plugin settings changed” may be displayed. If such message is displayed, click the [OK] button.

- When the message “Do you want to Continue?” is displayed, click the [Continue] button.

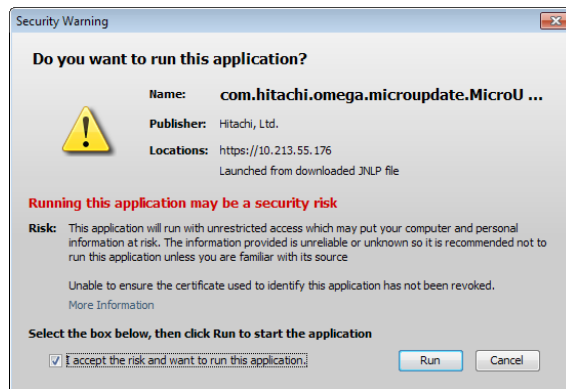
NOTE: This window may not be displayed.



- When the message “Do you want to run this application?” is displayed, check [I accept the risk and want to run this application.] and click the [Run] button.

Go to [Step \(4\)](#).

NOTE: This window may not be displayed.



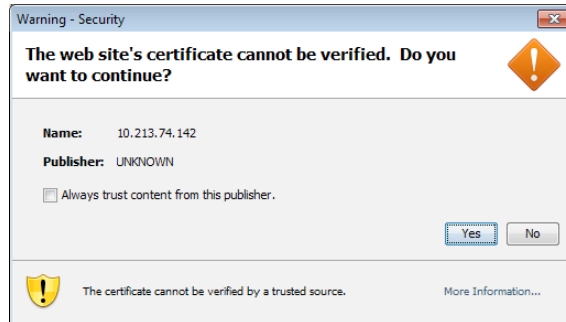
NOTE: When the “Application Blocked by Java Security” or “Application Blocked by Security Settings” window is displayed, refer to TROUBLESHOOTING SECTION [“3.28.1.1 Troubleshooting Related to Installation and Upgrade”](#) and register the storage system in the exception site.

After the registration, perform the procedure of FIRMWARE SECTION [“3.3.2 Updating Firmware of the Storage System”](#) again.

(b) In the case of JRE6

- When the message “The web site’s certificate cannot be verified. Do you want to continue?” is displayed, click the [Yes] button.

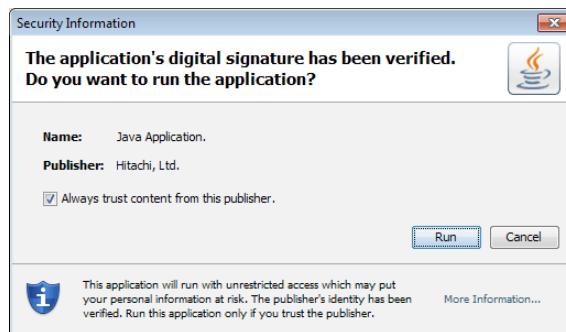
NOTE: This window may not be displayed.



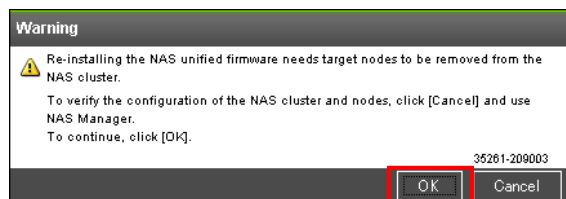
- When the message “The application’s digital signature has been verified. Do you want to run the application?” is displayed, check [Always trust content from this publisher.] and click the [Run] button.

Go to [Step \(4\)](#).

NOTE: This window may not be displayed.



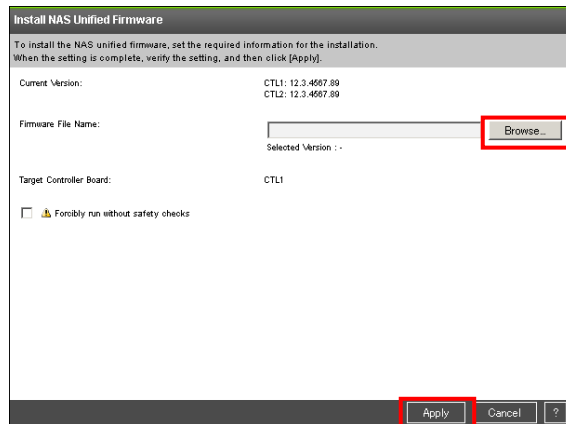
- (3) When selecting Install NAS Unified Firmware, the performance confirmation message is displayed for re-installation. To re-install only one controller, confirm that the node is deleted in [Step 1](#), and then click [OK] button.



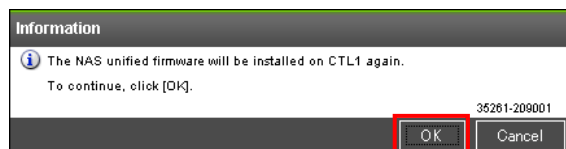
- (4) “Re-install NAS Unified Firmware” window is displayed. Click the [Browse...] button, and select the NAS Unified Firmware file (“nas_firmware\nas-factory-<version>.load” in the media) to be installed, and then click the [Apply] button.

NOTE:

- The installation location cannot be selected.
- Check that the displayed current firmware version and the NAS Unified Firmware file version to be installed (<version> part of the file name) are matched.

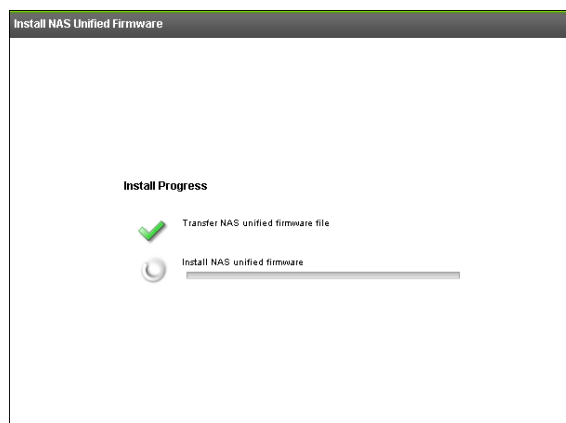


- (5) The confirmation message of the NAS Unified Firmware re-installation is displayed. Check the Controller to re-install the firmware and click the [OK] button.

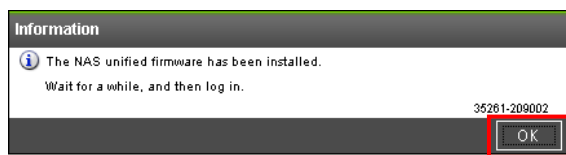


- (6) Re-installation of the NAS Unified Firmware starts. The re-installation of the NAS Unified Firmware is performed only for the target Controller.

NOTE: The NAS Unified Firmware re-installation time is about 30 minutes as a standard (about 200 minutes in maximum).



- (7) When the installation completion message is displayed, click the [OK] button to terminate.



6. EVS Migration after Completing Re-installation

After completing the reinstallation, perform the EVS migration so that the migrated EVS gets back to the original status.

For how to migrate EVS, see MAINTENANCE PC SECTION [“6.4.2 Migration after the Maintenance Operations”](#).

7.3.2 Restoration Procedure When a Failure Occurs During Re-Installation

If a failure occurs while re-installing the NAS Unified Firmware, see [“7.1.2 Restoration Procedure When a Failure Occurs During New Installation”](#) to restore the failure.