

1 Overview of APIs

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1.1 Constraints and Precautions

Before using application programming interfaces (APIs) in this document, carefully read the following information:

- All APIs in this document can only be connected to the integrated network management system (NMS) of the power grid.
- To invoke APIs in this document, you need to use the HTTPS 1.1 protocol and the UTF-8 character set.
- The data returned by the APIs in this document is in JSON format.
- Token authentication is required to invoke APIs.
 - Token request requirements: Tokens are generated by device vendors. Before the configuration, the NMS obtains the token values through the account and password request. The token parameters are contained in the HTTPS request headers.
 - Token verification requirements: Each service interface (except the token obtaining interface) verifies the token validity before processing services. If a token expires or is invalid, the unified JSON structure of the NMS is returned.

```
Data: {  
  "code": 333,  
  "msg": "Token is invalid!"  
}
```
- Encryption algorithm: This document uses the electronic codebook (ECB) mode of the SM4 encryption algorithm. The following lists information required to implement the algorithm:
 - Algorithm name: SM4

- Mode: ECB
- Key length: 128 bits
- Padding mode: PKCS7 padding
- Encryption result encoding mode: Base64
- Key configuration: The key is generated by the NMS and delivered to the AC through SNMP. The corresponding MIB object is csgDot11SecretKey with the OID of 1.2.156.11235.6001.60.7.2.75.1.1.2.33.

1.2 Service Usage Method

Representational State Transfer (REST) determines resources distributed over the entire network by Uniform Resource Identifier (URI). Applications on clients obtain resources through uniform resource locator (URL).

The HTTP protocol defines various request methods, such as GET, PUT, POST, and DELETE, to specify an action to be performed on a specified resource.

Table 1-1 List of request methods

Method	Description
GET	Requests a server to return specified resources.
PUT	Requests a server to update specified resources.
POST	Requests a server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, such as objects.