Northbound Interface

TL1

User Manual

Version: 04

FiberHome Telecommunication Technologies Co., Ltd.

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FiberHome Telecommunication Technologies Co., Ltd.

Address: No.6, Gaoxinsilu, High-Tech Development Zone, Wuhan, Hubei Province, P. R. China

Postcode: 430205

Website: http://www.fiberhome.com

Tel: +86 800-8800787; +86 400-8890787

Preface

Version

Version	Description
01	Initial version for the UNM2000 V2R11
02	Update some command descriptions.
03	Add commands such as MODIFY-ONUVOIPSERVICE.
04	Modify some descriptions for CFG-WIFISERVICE and MODIFY-WIFISERVICE.

Symbol Conventions

Symbol	Convention	Description
	Note	Important features or operation guide.
	Caution	Possible injury to persons or systems, or cause traffic interruption or loss.
	Warning	May cause severe bodily injuries.

Contents

1 TL1 Northbound Interface Overview

The following introduces the position of the TL1 northbound interface in the network, its used protocols, supported functions, adopted security mechanism as well as performance specifications.

1.1 TL1 Interface Introduction

The TL1 northbound interface is used for connecting the Element Management System (EMS) and the Operation Support System (OSS) / Network Management System (NMS).

The TL1 northbound interface enables the OSS or NMS to implement the provisioning and maintenance of the EPON/GEPON FTTX broadband, IPTV and VoIP services.

1.2 Network Diagram

The position of the TL1 northbound interface in the network is as shown in Figure 1-1.

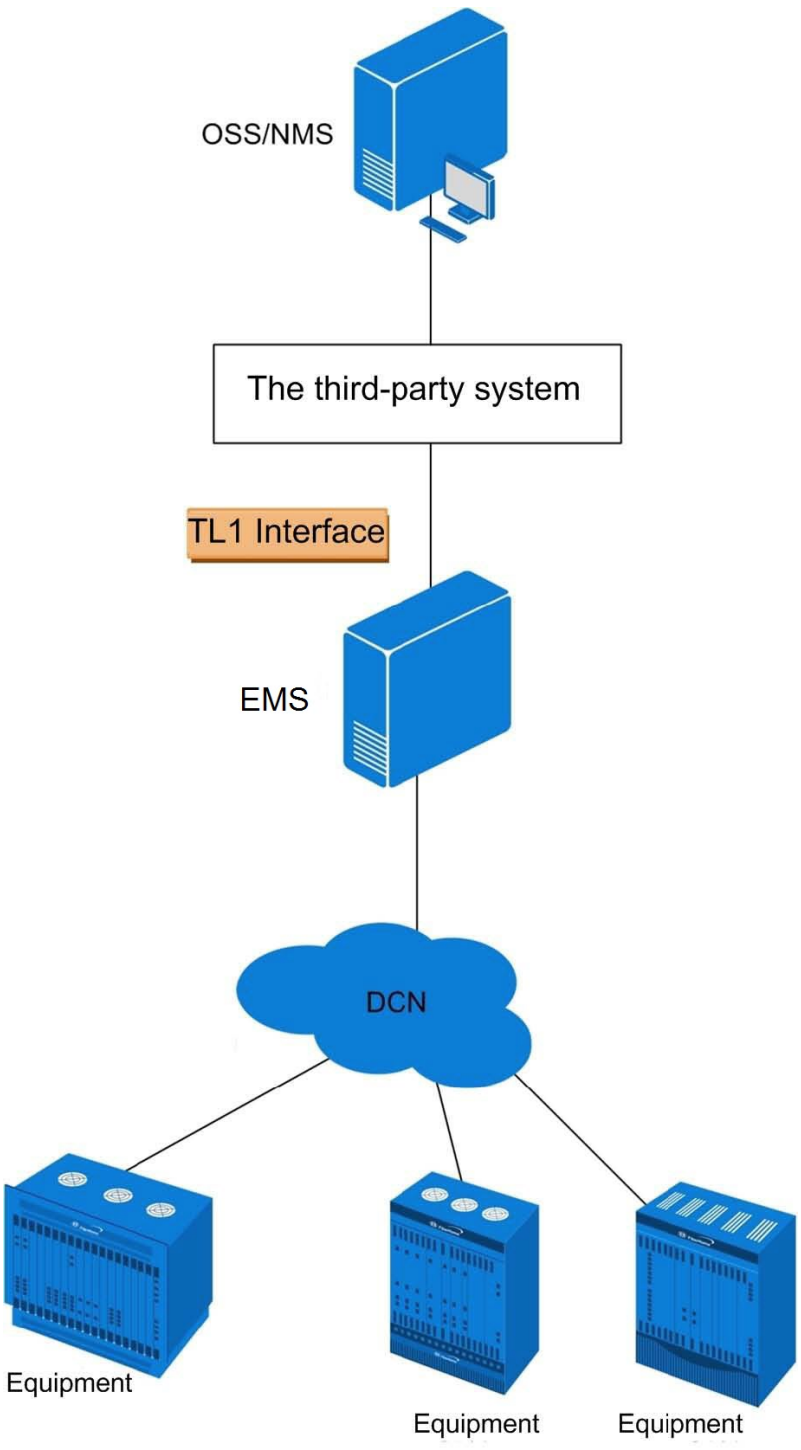

Figure 1-1 Network Diagram

In the network diagram, each node functions as follows:

- OSS / NMS: Indicates the Operation Support System / Network Management System. It sends TL1 commands to the EMS to perform service provisioning and failure query operations.
- Third-party system: It is deployed between the OSS / NMS and the EMS, parsing the OSS / NMS system command into the standard TL1 format and sending it to the EMS; meanwhile, it parses the result returned from the EMS and presents it to OSS / NMS.
- TL1 northbound interface: It processes the TL commands already parsed by the third-party system, and performs operations on the EMS and returns the result.
- EMS: Indicates the FiberHome Element Management System, providing the TL1 interface to be used by the upper-level system.
- Equipment: Indicates other sets of equipment in the network, managed by the EMS.

1.3 Protocols Used

The FiberHome EMS can establish the TCP connection with the upper-level system to achieve connection and communication.

It offers the following default ports for the upper-level system to use: 3333 (alarm management), 3334(service provisioning), 3335 (integrated testing), 3336 (resource query) and 3337 (service provisioning / integrated testing / resource query).

After the login to OSS / NMS using the configured username and password, the operations relevant to the TL1 northbound interface can be performed.

The protocols used by the TL1 northbound interface is as shown in Figure 1-2.

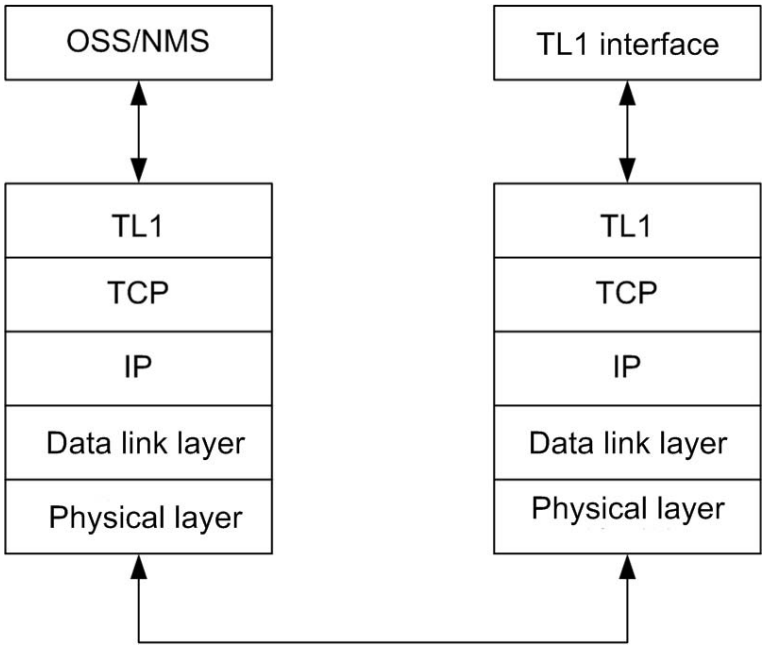

Figure 1-2 Protocols Used

- OSS / NMS: Operation Support System / Network Management System.
- TCP/IP: Transmission Control Protocol / Internet Protocol.

1.4 Management Function

The TL1 northbound interface supports the following functions:

- Service provisioning: Supports the provisioning of the broadband, voice and multicast services in the FTTB / FTTH scenario.
- Integrated testing: Supports querying the running status of the equipment, and the status of the PON, XDSL and POTS ports as well as troubleshooting.
- Alarm management: Supports subscribing to, querying and filtering alarms so as to monitor the running status of the EMS.
- Resource query: Supports querying the equipment physical resource and service configurations as well as the resource change notification report.

1.5 Security Mechanism

The TL1 northbound interface adopts the security mechanism of the FiberHome EMS. To implement this security mechanism, it is required to configure an account for the TL1 northbound interface on the EMS and then log in using this account. The FiberHome EMS accepts a maximum of 32 concurrent TCP connections.

The security mechanism adopted by the TL1 northbound interface includes the following functions:

- Login authentication: When connecting to the TL1 northbound interface, the TCP client needs to send the LOGIN command to login. Only after the successful login can the subsequent commands of the TCP connection be accepted by the system. The LOGIN username and password are exclusively allocated by the FiberHome EMS to the TL1 northbound interface.
- Automatic disconnection: If the TCP connection has no communication within 10 minutes, the system will initiatively disconnect it.

1.6 Performance Specifications

Table 1-1 describes the performance specifications of the TL1 northbound interface.

Table 1-1 Performance Specifications of the TL1 Northbound Interface

Performance Item	Specification
Maximum quantity of concurrent TCP connections	32
Service provisioning interface	◆ Each connection supports more than two service provisioning / deletion work orders per minute. ◆ Each connection supports more than four service suspension / recovery / modification work orders per minute.
Integrated testing interface	◆ The result is returned within one minute for the internal line test, external line test, SELT, DELT and incoming / outgoing call emulation tests. ◆ The result for a query command is returned within five seconds.

Table 1-1 Performance Specifications of the TL1 Northbound Interface (Continued)

Performance Item	Specification
Integrated alarm interface	◆ The alarm delay is less than 10 seconds in normal running status and is less than 30 seconds in case of alarm storm. ◆ The maximum delay for synchronizing 1000 alarm data entries is 10 minutes. ◆ The alarm throughput is more than 20 entries per second.
Integrated query interface	◆ The query time is less than 5 seconds when the number of queried records is smaller than 500, and less than 10 seconds when the number of queried records is greater than 500. ◆ Full export of configuration data is up to 10000 ports per minute.

2 TL1 Northbound Interface Installation

The following introduces how to install and run the TL1 northbound interface on Windows operating system.

2.1 Installing the TL1 Northbound Interface

Run the FiberHome EMS installation file on Windows operating system and select the required TL1 service when proceeding to the step for selecting the installation components. For more information, refer to the *Installation Guide* of the corresponding EMS.

2.2 Starting / Stopping the TL1 Northbound Interface Service

The following introduces how to start / stop the TL1 northbound interface service.

1. In the **Running** window, enter **Services.msc** to open the service list.
2. Start / stop the TL1 northbound interface service.
   - The ANM2000 TL1 interface services are AEMS-TL1Server(alarm), AEMS-UDIServer, AEMS-TL1Server(resource), AEMS-TL1Server(services) and AEMS-TL1Server(test).
   - The UNM2000 TL1 interface services are unmextendeventservice, unmextendmoduleserver, unmnbi_tl1_ctc_alarm_main, unmnbi_tl1_ctc_main and unmnbi_tl1_fh_main.

3 Command Format

The following introduces the command format and response message format of the TL1 northbound interface.

3.1 Format Overview

The following introduces the command format, response format and annotation symbols.

Command Format

The command format indicates the format of the command entered. When executing commands, the matching patterns are as follows:

- Executing an operation command: Adopts exact matching for all character strings.
- Executing a query command: Adopts fuzzy query for optional parameters with data type being character string and adopts exact matching for required parameters with data type being character string.

Note:

If the filter condition entered matches multiple records instead of one record, the TL1 northbound interface returns all the matching records as a list.

Response Format

Response format indicates the format of the message returned after a command is executed.

Annotation Symbols

For the description of annotation symbols, see Table 3-1.

Table 3-1 Annotation Symbols

Annotation Symbol	Description
< >	Encapsulates an identifier. For example, <int-num> indicates any integer.
[ ]	Encapsulates an optional symbol or message body.

Table 3-1 Annotation Symbols (Continued)

Annotation Symbol	Description
" "	Encapsulates an English letter. For example, **a** indicates the English letter "a" instead of a variable identifier.
( )	Encapsulates a group of required symbols or message body.
*	A suffix, indicating the current symbol or symbol group occurs 0 times or several times.
+	A suffix, indicating the current symbol or symbol group occurs 1 times or several times.
^	A blank space
cr	A carriage return
lf	A line feed
|	Separates multiple options, among which only one option can be selected. For example, a|b|c indicates selecting a, b or c.
::=	Separates two parts in a syntax rule. For example, <TESTit> ::= (0|1|~|9) indicates the value of <TESTit> is a number among 0-9 (including 0 and 9).

3.2 Command Format

The following introduces the command format and parameters of the TL1 northbound interface.

Command Format

```
<command_code>:<staging_blocks>:<payload_blocks>;
<command code>::=<verb>[-<modifier>[-<modifier>]]
Staging Parameter Block::=[<target identifier>]:<access identifier(s)>:
<ctag>:
```

Parameters

Parameter	Description
command_code	Command code, indicating the operation to be performed. The format is as follows: <verb>[-<modifier>[-<modifier>]] ◆ verb: required parameter, identifying the name of the command. Normally, it is a simple verb or an abbreviation describing an action. ◆ modifier: command modifier. "verb" can be followed by two optional modifiers, separated from each other by -.
staging_blocks	Task identifier block. The format is as follows: [<target identifier>]:<access identifier(s)>:<ctag>: ◆ target identifier: not used at present. ◆ access identifier: location information, indicating the specific object on which the command is executed. ◆ ctag (correlation tag): command tag, used for matching the input command and output command; its value in the response message should be the same as that in the input message.
payload_blocks	Pass parameter block, which can be null. The format is as follows: datablock1,datablock2 The format of each parameter block (datablock) is Parameter Name=Parameter Value, and a comma is used to separate two parameter blocks.

3.3 Acknowledgment Message Format

The acknowledgment message format is shown as follows:

```
acknowledgment_code ctag<
acknowledgment_code:
IP:In Progress
NA:No acknowledgment
RL:Repeat Later system busy
```

The acknowledgment message response time generally cannot be longer than 2 seconds; otherwise, a transmission error or equipment failure is suspected. Besides, not all commands require acknowledgment messages. The command that can be quickly responded will be returned the response message, such as the set command and stop command.

3.4 Response Message Format

There are two types of response messages:

- Operation command response messages
- Query command response messages

Operation Command Response Message Format

```
<header><response_id>[<response_block>]<terminator>
header::=<cr><lf><lf>^^^<sid>^<year>-<month>-<day>^<hour>:<minute>:
<second>
response_id::=<cr><lf>M^^<ctag>^<completion code>
response_block::=((<cr><lf>^^^<EN=error-code>^^^<ENDESC=error-
description>)
terminator::=<cr><lf>(;|>)
```

Query Command Response Message Format

```
<header><response_id>[<response_block>]<terminator>
header::=<cr><lf><lf>^^^<sid>^<year>-<month>-<day>^<hour>:<minute>:
<second>
response_id::=<cr><lf>M^^<ctag>^<completion code>
response_block::=((<cr><lf>^^^<EN=error-code>^^^<ENDESC=error-
description>)|(<cr><lf>^^^<quoted line>))
quoted line::=<total_blocks=total-count><cr><lf>^^^<block_number=block-
num><cr><lf>^^^<block_records=current-record-count><cr><lf><result>
result::=<cr><lf><title><cr><lf>(<->*)<cr><lf>(<attribs>((<values>)*))
(<->*)<cr><lf><cr><lf>
attribs::=<attrib>((<tab><attrib>)*)<cr><lf>
values::=<value>((<tab><value>)*)<cr><lf>
terminator::=<cr><lf>(;|>)
```

Response Parameters

The following table describes the parameters in the command response result.

Parameter	Description
header	Message header, the public part of all response messages and automatic reported messages, including equipment ID (sid), date and time. The format is as follows: <cr><lf><lf>^^^<sid>^<year>-<month>-<day>^<hour>:<minute>:<second> sid: manufacturer name abbreviation_network management server IP. The value is FH_IP.
response_id	Response ID. The format is as follows: <cr><lf>M^^<ctag>^<completion code> ◆ ctag (correlation tag): command tag, used for matching the input command and output command; its value in the response message should be the same as that in the input message. ◆ completion code: response completion identifier. The value is as follows: ▶ COMPLD: Indicates that the command is executed correctly. ▶ DELAY: Indicates that the command execution is delayed. ▶ DENY: Indicates that the command execution fails. ▶ PRTL: Indicates that the command is partially executed. ▶ RTRV: Indicates that the results of the tested items are returned and other items are being tested.
response_block	Response message body. ◆ EN: error code. ◆ ENDESC: error description. ◆ quoted line: returned parameter. When the amount of queried data is very large, the TL1 northbound interface will send the queried data to the client through several small packets. total_blocks indicates the total number of data packets; block_number indicates the numbering of the current packet; block_records indicates the number of data entries contained in the current packet. ◆ title: character string, indicating the title information of the result. ◆ attrib: character string, indicating the attribute name. ◆ value: character string, indicating the attribute value. If it is not supported, **–** will be returned.
terminator	Indicated by **>** or **;** ◆ >: Indicates that not all packets are sent and the next packet is waiting to be received. ◆ ;: Indicates that all packets are sent. There should be only one **;** in the returned data.

3.5 Resource Change Notification Format

The following introduces the resource change notification format and parameters of the TL1 northbound interface.

Resource Change Notification Format

```
<header><auto id><alarm_body><terminator>
header::=<cr><lf><lf><sid>^<year>-<month>-<day><hour>:<minute>:<second>
auto id ::= <cr><lf> <almcde><atag><verb><modifier1><modifier2>
body::= <cr><lf><attrib>=<value>((<tab><attrib>=<value>)*)<cr><lf>
terminator::=<cr><lf>(;|>)
```

Resource Change Notification Parameters

Parameter	Description
header	Message header, the public part of all response messages and automatic reported messages, including equipment ID (sid), date and time. sid: manufacturer name abbreviation_network management server IP. The value is as follows: ◆ HW_IP ◆ ZTE_IP ◆ FH_IP
Auto id	Level and status of the automatic reported message, where: ◆ almcde: alarm level. According to the severity of the reported message, the value will be one of the following levels: ▶ *C: critical alarm ▶ **: major alarm ▶ *: minor alarm ▶ A: warning alarm ◆ atag: association tag generated by automatic reporting. It is assigned by the EMS and must be continuous and contained by all automatic reported messages. It enables the upper-layer network management system to associate the automatic reported message with the common cause that triggers the automatic reporting. It can also be used to check whether an error occurs upon receipt of the message by the upper-layer network management system. For resource change notification messages, almcde is A. ◆ verb: REPT ◆ Modifier1: RES ◆ Modifier2: resource change type. The value is as follows: ▶ ADD/DEL/MOD_OLT: Indicates adding / deleting / modifying an OLT network element (NE). ▶ ADD/DEL/MOD_ONU: Indicates adding / deleting / modifying an ONU NE. ▶ ADD/DEL_SHELF: Indicates adding / deleting a shelf. ▶ ADD/DEL_BOARD: Indicates adding / deleting a card.

3.6 Definition of Returned Error Codes

The error codes returned by the TL1 northbound interface are as shown in Table 3-2.

Table 3-2 Definition of Returned Error Codes

EN (error- code)	Error Type	ENDESC (error-description)
IRNE	INPUT	resource does not exist
IANE	INPUT	the alarm does not exist
IMP	INPUT	missing parameter
IIPF	INPUT	invalid parameter format
IIPE	INPUT	input parameter error
DDNS	DEVICE	device may not support this operation
DDOF	DEVICE	device operation failed
DDB	DEVICE	device is busy
SENS	SYSTEM	EMS may not support this operation
SEOF	SYSTEM	EMS operation failed
EEEH	EXCEPTION	EMS exception happens
TUB	TEST	user is busy
TUT	TEST	user is testing
TTMB	TEST	test module is busy

4 Session Control

The session control is used for managing the SOCKET connection between the access adaptation module and the FiberHome EMS, providing a secure layer to prevent against access by unauthorized users. It is recommended to modify the user ID and password periodically during running and maintaining of the EMS.

4.1 Logging into the FiberHome EMS (LOGIN)

Function Description

- To use the service provisioning interface of the TL1 northbound interface, establish the TCP connection with the FiberHome EMS through the port 3334.
- To use the integrated query interface, establish the TCP connection with the FiberHome EMS through the port 3336.
- To use the integrated testing interface, establish the TCP connection with the FiberHome EMS through the port 3335.
- To use the integrated alarm interface, establish the TCP connection with the FiberHome EMS through the port 3333.

When successfully establishing the TCP connection, log into the FiberHome EMS through the command. After login, send commands of the TL1 northbound interface to perform operations over the equipment.

Command Format

```
LOGIN:::CTAG::UN=user-name,PWD=password;
```

Input Parameter

Parameter Name	Data Type	Value Range	Description	Default Value
UN	OCTET STRING	Size (20)	User Name	-
PWD	OCTET STRING	Size (16)	Password	-

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, after establishing the TCP connection with the server, enter the username **EMSUSER** and password **EMSPWD** to log into the FiberHome EMS.

- Command

```
LOGIN:::CATG::UN=EMSUSER,PWD=EMSPWD;
```

- Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

None

4.2 Logging Out of the FiberHome EMS (LOGOUT)

Function Description

Log out of the FiberHome EMS and disconnect the TCP connection with the TL1 northbound interface.

Command Format

```
LOGOUT:::CTAG::;
```

Input Parameter

None

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, the current user logs out of the FiberHome EMS.

- Command

```
LOGOUT:::CTAG::;
```

- Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

None

4.3 Handshake Command (SHAKEHAND)

Function Description

If the TCP connection has no communication within 10 minutes, the system will initiatively disconnect the TCP connection. However, sending the handshake command can keep it connected with no operations performed.

Command Format

```
SHAKEHAND:::CTAG::;
```

Input Parameter

None

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, send the handshake command to the system.

- Command

```
SHAKEHAND:::CTAG::;
```

- Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

None

5 Service Commissioning Interface

The following introduces the commands for the provisioning of the IPTV, broadband and VOIP services in the FTTx scenario.

5.1 ONU Configuration (FTTH)

The following introduces how to add, delete and configure an optical network unit (ONU) of the FTTH type.

5.1.1 Adding an ONU (ADD-ONU)

Function Description

This command is used for adding an ONU on the optical line terminal (OLT). Upon initial service installation, you can send this command to the PON port that has not been fully configured after configuring the OLT.

Command Format

```
ADD-ONU::OLTID=olt-name,PONID=ponport_location:CTAG::[AUTHTYPE=auth-
type],ONUID=onu-index[,PWD=onu password][,ONUNO=onu-no][,NAME=name][,
DESC=onu description],ONUTYPE=onu type;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.
AUTHTYPE	OCTET STRING	MAC LOID LOIDONCEON	Authentication mode. Default value is LOID. In LOIDONCEON authentication mode, LOID and MAC will be bound.
ONUID	OCTET STRING	Size (64)	Authentication information. If AUTHTYPE is set to MAC, ONUID is MAC address. If AUTHTYPE is set to LOID, ONUID is LOID.
PWD	OCTET STRING	Size (128)	LOID PASSWORD
ONUNO	INTEGER	1 - 512	ONU authorization code
NAME	OCTET STRING	Size (128)	ONU name
DESC	OCTET STRING	Size (64)	ONU description. When the FiberHome EMS description and equipment description are required to be consistent, this parameter cannot be Chinese.
ONUTYPE	OCTET STRING	Size (32)	ONU type

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, add an ONU for the slot 1 - PON 2 port of the OLT whose IP address is 10.78.11.102. The information of the ONU is as follows: ONUID is Test00002; PWD is Password2; ONU authorization code is 10; description is Test_ONU2; ONU authentication mode is LOID.

- Command

```
ADD-ONU::OLTID=10.78.11.102,PONID=NA-NA-1-2:CTAG::AUTHTYPE=LOID,
ONUID=Test00002,PWD=Password2,ONUNO=10,NAME=Test2,DESC=Test_ONU2,
ONUTYPE=AN5006-04;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Example 2, add an ONU for the slot 15 - PON 2 port of the OLT whose IP address is 10.78.11.102. The information of the ONU is as follows: MAC address is 54-4B-40-04-2C-1F; ONU authentication mode is MAC.

- Command

```
ADD-ONU::OLTID=10.78.11.102,PONID=NA-NA-15-2:CTAG::AUTHTYPE=MAC,
ONUID=54-4B-40-04-2C-1F,ONUNO=11,NAME=Test3,DESC=Test_ONU3,
ONUTYPE=AN5006-04;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

```
DEL-ONU
```

5.1.2 Configuring an ONU (CFG-ONU)

Function Description

This command is used for modifying the ONU authentication mode and authentication ID information when replacing the ONU.

Command Format

```
CFG-ONU::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuid-type,
ONUID=onu-index:CTAG::AUTHTYPE=auth-type[,AUTHINFO=onu-index];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.
ONUIDTYPE	OCTET STRING	Size (128)	ONU ID type (NAME, MAC, LOID, ONU_Number).
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.
AUTHTYPE	OCTET STRING	MAC LOID LOIDONCEON	Authentication mode
AUTHINFO	OCTET STRING	Size (128)	LOID or MAC of the ONU. ◆ If **AUTHTYPE** is set to **MAC**, this parameter indicates MAC address of the ONU. MAC address format is XX-XXXX-XX-XX-XX. ◆ If **AUTHTYPE** is set to **LOID** or **LOIDONCEON**, this parameter indicates LOID of the ONU.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, configure the ONU connected to the slot 3 - PON 1 port of the OLT whose OLTID is 10.250.18.100. The information of the ONU is as follows: ONUID is Test0001; authentication mode is LOID; LOID is test0002.

- Command

```
CFG-ONU::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=Test0001:CTAG::AUTHTYPE=LOID,AUTHINFO= test0002;
```

- Response Message

```
   FH_10.78.20.120 2011-02-21 13:51:24
M CATG COMPLD
   EN=0 ENDESC=No error
;
```

Related Command

```
ADD-ONU
DEL-ONU
```

5.1.3 Configuring the Bandwidth of an ONU (CFG-ONUBW)

Function Description

This command is used for configuring the uplink and downlink bandwidths of an ONU.

Prerequisite

Make sure the uplink and downlink bandwidth templates are configured in the EMS before using this command to configure the ONU uplink and downlink bandwidths.

Command Format

```
CFG-ONUBW::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index]:CTAG::UPBW=onu-up-bandwidth[,
DOWNBW=onu-down-bandwidth];
```

Input Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID and ONU_NUMBER)
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.
UPBW	OCTET STRING	Size (32)	Uplink DBA bandwidth template name
DOWNBW	OCTET STRING	Size (32)	Downlink bandwidth template name

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Configure the uplink bandwidth template BW_UP and the downlink bandwidth template BW_DOWN for the ONU (ONUID being Test0001) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
CFG-ONUBW::OLTID=10.71.227.56,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=Test0001:CTAG::UPBW=BW_UP,DOWNBW=BW_DOWN;
```

- Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

```
ADD-ONU
DEL-ONU
```

5.1.4 Deleting an ONU (DEL-ONU)

Note:

Deleting an ONU will simultaneously delete the services that the ONU bears. To re-activate the services on the ONU, add and configure the services again.

Function Description

This command is used for deleting the ONU authorized by the OLT.

Command Format

```
DEL-ONU::OLTID=olt-name,PONID=ponport_location:CTAG::ONUIDTYPE=onuid-
type,ONUID=onu-index;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.
ONUIDTYPE	OCTET STRING	MAC LOID ONU_Number ONU_NAME	ONU identifier type (NAME, MAC, LOID, ONU_Number).
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, delete an ONU from the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is Test0001; authentication mode is LOID.

- Command

```
DEL-ONU::OLTID=10.250.18.100,PONID=NA-NA-3-1:CTAG::ONUIDTYPE=LOID,
ONUID=Test0001;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
```

```
EN=0 ENDESC=No error
;
```

For example, delete the ONU from the slot 15 - PON 2 port of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: MAC address is 54-4B-40-04-2C-1F; authentication mode is MAC.

- Command

```
DEL-ONU::OLTID=10.250.18.100,PONID=NA-NA-15-2:CTAG::ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1F
```

- Response Message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

```
ADD-ONU
```

5.1.5 Configuring the MAC Address Limit of an LAN Port (CFG-LANPORTMACLIMIT)

Function Description

This command is used for configuring the limit of MAC addresses for a LAN port of the ONU.

Command Format

```
CFG-LANPORTMACLIMIT::OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index,ONUPORT=onu-port:CTAG::
COUNT=count_num;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	OLT IP address or name.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUID-TYPE	OCTET STRING	MAC LOID ONU_ Number ONU_ NAME	ONU identifier type (NAME, MAC, LOID, ONU_Number).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128)	Locates card port through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	Required.
COUNT	INTEGER	Size (0 - 254)	Limits the number of MAC addresses.	Required.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Related Command

None

5.1.6 Configuring the Wi-Fi Service (CFG-WIFISERVICE)

Function Description

This command is used for configuring the Wi-Fi service for the ONU authorized by OLT. It is allowed to add SSID and configure it with different keys.

Command Format

```
CFG-WIFISERVICE::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index]:CTAG::ENABLE=enable,WILESS-
AREA=area,WILESS-CHANNEL=channel,WILESS-STANDARD=standard,WORKING-
FREQUENCY=frequency,T-POWER=tpower,SSID=ssid,SSID-ENABLE=ssid-enable,
SSID-NAME=name,SSID-VISIBALE=visible,AUTH-MODE=mode,ENCRYP-TYPE=type[,
PRESHARED-KEY=key,UPDATEKEY-INTERVAL=interval,FREQUENCY-
BANDWIDTH=bandwidth][,RADIUS-SERVER=server,RADIUS-PORT=port,RADIUS-
KEY=key][,WEP-ENCRYPTIONLEVEL=level,WEP-KEYINDEX=index,WEPKEY1=key1,
WEPKEY2=key2,WEPKEY3=key3,WEPKEY4=key4];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5506-04-F1.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU ID type (NAME, MAC, LOID, ONU_ Number).	The ONU that has no management IP address. Required.

Parameter	Data Type	Value Range	Parameter Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ENABLE	OCTET STRING	enable disable	Enable	Required
WILESS-AREA	INTEGER	0 to 13	Wireless area. The corresponding code for displaying a certain area in the EMS GUI.	Optional
WILESS-CHANNEL	INTEGER	0 to 13	Wireless channel number	Optional
WILESS-STANDARD	OCTET STRING	802.11b 802.11g 802.11b/g 802.11n 802.11bgn 802.11a 802.11an 802.11ac	Wireless standard	Required
WORKING-FREQUENCY	OCTET STRING	2.4GHZ 5.8GHZ	Working frequency band ◆ If the user has input the working frequency band parameter, TL1 can find the service of the same working frequency band from the obtained one or two Wi-Fi service configurations, then modify this service, and then deliver the command to the device. If TL1 does not find the service of the same working frequency band, it will not deliver the command to the device. An error message will be displayed. ◆ If the user does not input the working frequency band parameter, the northbound interface will return an error.	Required
T-POWER	INTEGER	[20, 40, 60, 80, 100, 120, 140, 160, 180, 200]	Wi-Fi power control	Optional

Parameter	Data Type	Value Range	Parameter Description	Remark
SSID	INTEGER	1 to 4	SSID index. A key word in the subordinate table; used for locating a specific SSID item.	Optional. When other SSID parameters are provided, this parameter must be provided as an index to look for the SSID configuration items to be modified.
SSID-ENABLE	INTEGER	0, 1	Enable or disable ◆ 0: disable ◆ 1: enable	Optional
SSID-NAME	OCTET STRING	Size (32)	SSID name	Optional
SSID-VISIBALE	INTEGER	0 and 1	Indicates whether to hide SSID. ◆ 0: unhide (Available) ◆ 1: hide (Not Available)	Optional
AUTH-MODE	OCTET STRING	OPEN SHARED WEPAUTO WPAPSK WPA WPA2PSK WPA2 WPA/WPA2 WPAPSK WPA2PSK	WLAN authentication mode	Optional
ENCRYP-TYPE	OCTET STRING	NONE, WEP, TKIP, AES, TKIPAES	WLAN encryption type	Optional
PRESHARED-KEY	OCTET STRING	STRING (64)	WPA pre-shared key	Optional
UPDATEKEY-INTERVAL	INTEGER	[0, 4194303]	WPA key update interval Unit: s	Optional
FREQUENCY-BANDWIDTH	OCTET STRING	20/40MHZ 20MHZ 40MHZ 80MHZ	Frequency band bandwidth	Required
RADIUS-SERVER	OCTET STRING	Size (128)	RADIUS server	Optional
RADIUS-PORT	OCTET STRING	STRING (2)	RADIUS server port	Optional

Parameter	Data Type	Value Range	Parameter Description	Remark
RADIUS-KEY	OCTET STRING	STRING (32)	RADIUS-KEY	Optional
WEP-ENCRYP-TIONLEVEL	INTEGER	1: 40 bit 2: 104 bit	WEP key length	Optional
WEP-KEYINDEX	INTEGER	[1, 4]	Key index	Optional
WEPKEY1	OCTET STRING	STRING (64)	WEP key 1	Optional
WEPKEY2	OCTET STRING	STRING (64)	WEP key 2	Optional
WEPKEY3	OCTET STRING	STRING (64)	WEP key 3	Optional
WEPKEY4	OCTET STRING	STRING (64)	WEP key 4	Optional

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, for the ONU whose ONU ID is FHTT01E84310 and ONU authentication mode is physical ID. Set encryption mode to TKIP. This ONU is connected to PON port 1 slot 7 on the OLT equipment whose IP address is 10.171.0.22.

- Command

```
CFG-WIFISERVICE::OLTID=10.171.0.22,PONID=NA-NA-7-1,ONUIDTYPE=MAC,
ONUID=FHTT01E84310:865815::ENABLE=enable,WILESS-AREA=5,WILESS-
CHANNEL=5,WILESS-STANDARD=802.11n,WORKING-FREQUENCY=2.4GHZ,T-POWER=140,
SSID=2,SSID-ENABLE=0,SSID-NAME=brisa-81805,SSID-VISIBALE=1,AUTH-
MODE=WPAPSK,ENCRYP-TYPE=TKIP,PRESHARED-KEY=naotemsenha12,UPDATEKEY-
INTERVAL=3600,FREQUENCY-BANDWIDTH=20/40MHZ
```

- Response Message

```
FH_10.78.20.120 2017-03-16 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
```

;

Related Command

None

5.1.7 修改Wi-Fi业务（CFG-WIFISERVICE）

[A60110] 文档 "x-wc://file=pubm-0000739664-en.xml" 中第 46 行的引用 (topicref) 错误: 找不到引用 ID "x-wc://file=t-0000739583-en.xml#fhconcept-修改Wi-Fi业务（CFG-WIFISERVICE）_X14878411827488"。

5.1.8 Configuring a WAN Connection (SET-WANSERVICE)

Function Description

This command is used for configuring WAN connections for the ONU authorized by OLT.

Command Format

```
SET-WANSERVICE::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index]:CTAG::STATUS=status,MODE=mode,
CONNTYPE=connecttype[,VLAN=vlan][,COS=cos][,QOS=qos][,NAT=nat[,
IPMODE=ipmode][,WANIP=wanip,WANMASK=mask,WANGATEWAY=gateway,
MASTERDNS=maskdns,SLAVEDNS=slavedns][[,PPPOEPROXY=proxy],
PPPOEUSER=pppoeusername,PPPOEPASSWD=pppoepassword,PPPOENAME=pppoename[,
PPPOEMODE=pppoemode]]],[UPORT=uport,SSID=ssidno,WANSVC=1];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5506-04-F1, AN5506-04-B2.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.
ONUIDTYPE	OCTET STRING	MAC LOID ONU_Number ONU_NAME	ONU identifier type (NAME, MAC, LOID, ONU_ Number).
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.
STATUS	INTEGER	1 - add 2 - delete	1: adding; 2: deleting.
MODE	INTEGER	1 to 4	WAN connection mode: 1-TR069, 2-INTERNET, 3-TR069 INTERNET, 4-Other. In bridge connection type, the WAN connection mode can only be set to 2-INTERNET or 4-Other.
CONNTYPE	INTEGER	1 to 2	WAN connection type: 1 - bridge; 2 - route
VLAN	INTEGER	0 to 4085	VLAN ID of the WAN connection.
COS	INTEGER	1 to 7	VLAN COS of the WAN connection.
QOS	INTEGER	1: enable 2: disable	Indicates whether to enable the QoS function. 1: enable; 2: disable.
NAT	INTEGER	1: enable 2: disable	Indicates whether to enable NAT. 1: enable; 2: disable.
IPMODE	INTEGER	1 to 3	IP obtaining mode of the WAN connection. 1: DHCP; 2: STATIC; 3: PPPOE.
WANIP	OCTET STRING	Size (16)	Static IP of the WAN connection. It must be a valid IP address, in format of dotted decimal notation. This parameter is valid only when IPMODE is set to STATIC.
WANMASK	OCTET STRING	Size (16)	Subnet mask of the WAN connection. It must be a valid IP address, in format of dotted decimal notation. This parameter is valid only when IPMODE is set to STATIC.
WANGATE-WAY	OCTET STRING	Size (16)	Default gateway of the WAN connection. It must be a valid IP address, in format of dotted decimal notation. This parameter is valid only when IPMODE is set to STATIC.

Parameter	Data Type	Value Range	Parameter Description
MASTERDNS	OCTET STRING	Size (16)	Primary DNS of the WAN connection. It must be a valid IP address, in format of dotted decimal notation. This parameter is valid only when IPMODE is set to STATIC.
SLAVEDNS	OCTET STRING	Size (16)	Secondary DNS of the WAN connection. It must be a valid IP address, in format of dotted decimal notation. This parameter is valid only when IPMODE is set to STATIC.
PPPOEPROXY	INTEGER	1 to 2	1: enable; 2: disable.
PPPOEUSER	OCTET STRING	STRING (32)	Username of the PPPoE connection.
PPPOE-PASSWD	OCTET STRING	STRING (32)	Password of the PPPoE connection.
PPPOENAME	OCTET STRING	STRING (32)	PPPoE service name.
PPPOEMODE	INTEGER	1 to 2	PPPoE dial-up mode. 1: Auto connect; 2: Connect when traffic is detected
UPORT	INTEGER	1 to 4, 0	FE port. Value range is 1 to 4. 0 indicates all LAN ports. Only one of the three parameters UPORT, SSID and WANSVC can be configured.
SSID	INTEGER	1 to 4	SSID number. Value range is 1 to 4. Only one of the three parameters UPORT, SSID and WANSVC can be configured.
WANSVC	INTEGER	1	It is configured when WAN connection mode is set to TR069. The value is 1. Only one of the three parameters UPORT, SSID and WANSVC can be configured.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, configure the TR069 WAN connection for the ONU connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 999999999997; authentication mode is physical ID.

Command

```
SET-WANSERVICE::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=999999999997:CTAG::STATUS=1,MODE=1,CONNTYPE=2,VLAN=88,NAT=2,
IPMODE=2,WANIP=43.43.43.43,WANMASK=255.255.255.0,
WANGATEWAY=43.43.43.43,MASTERDNS=3.3.3.3,SLAVEDNS=4.4.4.4,WANSVC=1;
```

Response Message

```
FH_10.78.20.120 2012-10-15 14:36:03
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Example 2, configure a WAN connection with the INTERNET connection mode and Route connection type for all the LAN ports of the ONU connected to the slot 7 - PON 4 port of the OLT whose IP address is 10.78.200.200. The information of the ONU is as follows: ONUID is FHTT01e821a; authentication mode is physical ID.

Command

```
SET-WANSERVICE::OLTID=10.78.200.200,PONID=NA-NA-7-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::STATUS=1,MODE=2,CONNTYPE=2,VLAN=88,COS=1,
NAT=2,IPMODE=1,UPORT=0;
```

Response Message

```
FH_10.78.12.155 2014-07-15 18:47:53
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

```
ADD-ONU
```

5.1.9 Deleting a WAN Connection (SET-WANSERVICE)

Function Description

This command is used for deleting WAN connections.

Command Format

```
SET-WANSERVICE::OLTID=olt_name,PONID=ponport_location,ONUIDTYPE=id-
type,ONUID=onu_index:CTAG::STATUS=status,MODE=mode,CONNTYPE=conntype,
VLAN=vlan_id,COS=cos_value,UPORT=port_id;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5506-04-F1.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	The ONU that has a management IP address. Required.
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	ONU_NAME, MAC, LOID, ONU_ NUMBER	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
STATUS	INTEGER	1 - 2	◆ 1: configure ◆ 2: delete	Required. Here it is used for deleting and therefore STATUS can only be set to 2.

Parameter Name	Data Type	Value Range	Description	Remark
MODE	INTEGER	◆ 1: TR069 ◆ 2: INTEGER ◆ 3: TR069 INTEGER ◆ 4: Other	WAN connection mode.	Required.
CONNTYPE	INTEGER	◆ 1: bridge ◆ 2: route	WAN connection type.	Required.
VLAN	INTEGER	1 - 4085	VLAN ID of the WAN connection	Required.
COS	INTEGER	0 - 7	Priority level of 802.1p of the WAN connection.	Required.
UPORT	INTEGER	1 - 4, 101 - 104	Binding LAN port ◆ When UPORT is set to 1- 4, it indicates LAN1 - LAN4. ◆ When UPORT is set to 101 - 104, it indicates SSID1 - SSID4.	Required.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, delete the WAN connection of the ONU (MAC address being FHTT01e821a0) connected to the slot 18 - PON 4 port of the OLT whose IP address is 10.78.191.100.

◆ Command

```
SET-WANSERVICE::OLTID=10.78.191.100,PONID=NA-NA-18-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::STATUS=2,MODE=2,CONNTYPE=2,VLAN=88,COS=3,
UPORT=1;
```

◆ Response Message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
```

;

Related Command

None

5.1.10 配置ONU的带宽模板（CFG-ONUBWPROFILE）

[A60110] 文档 "x-wc://file=pubm-0000739664-en.xml" 中第 49 行的引用 (topicref) 错误: 找不到引用 ID "x-wc://file=t-0000739584-en.xml#fhconcept-配置ONU的带宽模板（CFG-ONUBWPROFILE）_01487841182836m"。

5.1.11 去绑定ONU的带宽模板（UNBIND-ONUBWPROFILE）

[A60110] 文档 "x-wc://file=pubm-0000739664-en.xml" 中第 50 行的引用 (topicref) 错误: 找不到引用 ID "x-wc://file=t-0000739585-en.xml#fhconcept-去绑定ONU的带宽模板（UNBIND-ONUBWPROFILE）_r1487841182840E"。

5.1.12 Configuring the Rate-control Bandwidth of a L3 Service (CFG-LT-BWPROFILE)

Function Description

This command is used to configure the rate-control bandwidth of a L3 service.

Command Format

```
CFG-LT-BWPROFILE::OLTID=olt_name,PONID=ponport_location,ONUIDTYPE=id-
type,ONUID=onu_index:CTAG::WANNAME=wan_name, WANINDEX=wan_index,
UPBWPROFILE=up_bwprofile,DOWNBWPROFILE=down_bwprofile;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter **NA** for the corresponding unspecified information.	Required
ONUIDTYPE	OCTET STRING	MAC LOID ONU_Number ONU_NAME	ONU identifier type (NAME, MAC, LOID, ONU_Number).	Required
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required
WANNAME	OCTET STRING	Size (64)	WAN connection name	Optional
WANINDEX	INTEGER	-	WAN connection index	Optional
UPBWPROFILE	OCTET STRING	Size (64)	Uplink bandwidth template	Required
DOWNBWPRO-FILE	OCTET STRING	Size (64)	Downlink bandwidth template	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Limit the L3 bandwidth rate.

- Command issued

```
CFG-LT-BWPROFILE::OLTID=172.30.18.84,PONID=NA-NA-13-2,ONUIDTYPE=MAC,
ONUID=FHTT10d62468:CTAG::WANNAME=1_INTERNET_R_VID_37,WANINDEX=1,
UPBWPROFILE=GPON_DN_60_UP_30M,DOWNBWPROFILE=GPON_DN_60_UP_30M;
```

- Response message

```
FH_10.170.162.232019-06-1115:34:18
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Example 2: Limit the L3 multicast rate.

- Command issued

```
CFG-LT-BWPROFILE::OLTID=172.30.18.84,PONID=NA-NA-13-2,ONUIDTYPE=MAC,
ONUID=FHTT10d62468:CTAG::WANNAME=2_MULTICAST_R_VID_3,WANINDEX=2,
UPBWPROFILE=IPTV_DN_100_UP_2M,DOWNBWPROFILE=IPTV_DN_100_UP_2M;
```

- Response message

```
FH_10.170.162.232019-06-1010:18:34
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

None

5.1.13 Binding a Traffic Policy to an ONU Port (CFG-PORTBINDFLOWPOLICY)

Function Description

This command is used to bind a traffic policy to an ONU port.

Command Format

```
CFG-PORTBINDFLOWPOLICY::ONUIP=onu-name|OLTID=olt_name,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index, ONUPORT=onu-
port:CTAG::IngressPolicy=Ingress_Policy, EgressPolicy=Egress_Policy,
IngressRule=Ingress_Rule,EgressRule=Egress_Rule;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter **NA** for the corresponding unspecified information.	Required
ONUIDTYPE	OCTET STRING	MAC LOID ONU_Number ONU_NAME	ONU identifier type (NAME, MAC, LOID, ONU_Number).	Required
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a port through rack - shelf - slot - port number. Enter **NA** for the corresponding unspecified information.	Required
IngressPolicy	OCTET STRING	Size (20)	Uplink traffic policy	Required
EgressPolicy	OCTET STRING	Size (20)	Downlink traffic policy	Required
IngressRule	OCTET STRING	Size (20)	Uplink rule	OLTv4.x version. Required.
EgressRule	OCTET STRING	Size (20)	Downlink rule	OLTv4.x version. Required.

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Configure a traffic policy on PON port 1 in slot 16 on the OLT with the IP address 10.171.0.16.

- Command issued

```
CFG-PORTBINDFLOWPOLICY::OLTID=10.171.0.16,PONID=NA-NA-16-1,
ONUIDTYPE=MAC,ONUID=1111aaaa3333,ONUPORT=NA-NA-NA-1:CTAG::
IngressPolicy=test,EgressPolicy=default1,IngressRule=de_rule_4,
EgressRule=de_rule_5;
```

- Response message

```
FH_10.170.163.1122017-02-1515:55:52
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

None

5.1.14 Configuring Sub-port of Aggregation Port (SET-UPLINKTRUNK)

Function Description

This command is used to configure the TRUNK port link aggregation.

Prerequisite

You have configured the aggregation group in **Local Service Configuration→PON Service→Aggregation Mode Setting** in the EMS.

Command Format

```
SET-UPLINKTRUNK::OLTID=olt_name:ctag::TRUNKNO=trunk_no,MASTERPORT=NA-
NA-2,MEMBERPORT=NA-NA-NA-NA;
```

Supported Equipment

OLT: AN5516 series.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	Required.
TRUNKNO	INTEGER	1 to 16	Set the TRUNK group serial number in **Aggregation Mode Setting**	Required.
MASTER-PORT	OCTET STRING	1 to 12	Main port number of the TRUNK group	Required.
MEMBER-PORT	OCTET STRING	1 to 12	Member port number of the TRUNK group	Required.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example: Configure the TRUNK port link aggregation on the OLT equipment with the IP 10.171.0.22.

- Command

```
SET-UPLINKTRUNK::OLTID=10.171.0.22:ctag::TRUNKNO=2,MASTERPORT=NA-NA-19-2,MEMBERPORT=NA-NA-20-5;
```

- Response Message

```
FH_10.170.163.112 2017-02-15 16:55:52
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

None

5.1.15 Query Port of the TRUNK Port Link Aggregation

Function Description

This command is used to query the port of the TRUNK port link aggregation.

Command Format

```
LST-UPLINKTRUNK::OLTID=olt_name:ctag::;
```

Supported Equipment

OLT: AN5116-06B, AN5516-04, AN5516-06.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	Required.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Parameter Description
TRUNKNO	INTEGER	1 to 16	TRUNK group serial number, created in the aggregation mode setting.
MASTERPORT	OCTET STRING	1 to 12	Main port number of the TRUNK group
MEMBERPORT	OCTET STRING	1 to 12	Member port number of the TRUNK group

Example

Example: query the TRUNK port link aggregation of the OLT equipment with the IP 10.171.0.22.

- Command

```
LST-TRUNKINFO::OLTID=10.171.0.22:ctag::;
```

- Response Message

```
FH_127.0.0.1 2016-05-09 10:50:27
M  ctag COMPLD
total_blocks=1
block_number=1
block_records=2
Lst Of Trunk Info
------------------------------------
TRUNKNO MASTERPORT      MEMBERPORT
1       1-1-19-2        1-1-19-3
2       1-1-20-1        1-1-20-2|1-1-20-3
------------------------------------
```

Related Command

SET-UPLINKTRUNK

5.2 Broadband / IPTV Services of a LAN Port

The following introduces how to configure the broadband and IPTV services of a LAN port.

5.2.1 Activating a LAN Port (ACT-LANPORT)

Function Description

This command is used for activating a LAN port of the ONU to enable it.

Command Format

```
ACT-LANPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Activate the LAN port 1 of the ONU (having no management IP address) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is Test0001; the authentication mode is LOID.

- Command issued

```
ACT-LANPORT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=Test0001,ONUPORT=NA-NA-NA-1:CTAG::;
```

- Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Example 2: Activate the LAN port 1 in slot 4 of the ONU (having a management IP address) whose IP address is 10.250.18.20.

- Command issued

```
ACT-LANPORT::ONUIP=10.250.18.20,ONUPORT=NA-NA-4-1:CTAG::;
```

- Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

```
DACT-LANPORT
```

5.2.2 Deactivating a LAN Port (DACT-LANPORT)

Function Description

This command is used for deactivating a LAN port of the ONU to disable it.

Command Format

```
DACT-LANPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Deactivate LAN port 1 of the ONU (having no management IP address) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is Test0001; the authentication mode is LOID.

◆ Command issued

```
DACT-LANPORT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=Test0001,ONUPORT=NA-NA-NA-1:CTAG::
```

◆ Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Example 2: Deactivate the LAN port 1 in slot 4 of the ONU (having a management IP address) whose IP address is 10.250.18.20.

◆ Command issued

```
DACT-LANPORT::ONUIP=10.250.18.20,ONUPORT=NA-NA-4-1:CTAG::;
```

◆ Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

```
ACT-LANPORT
```

5.2.3 Configuring a LAN Port (CFG-LANPORT)

Function Description

This command is used for configuring the bandwidth, default VLAN and default priority of a LAN port.

Prerequisite

Before using the command, ensure the bandwidth template is configured on the OLT.

Command Format

```
CFG-LANPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[BW=band
width][,VLANMOD=mode][,PVID=vlan id][,PCOS=port qos];
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID or ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required. It can be a list of multiple ports, separated by vertical bars, for example, NA-NA-NA-0| NA-NA-NA-1. Entering multiple ports means that these ONU ports will be configured simultaneously.
BW	OCTET STRING	Size (128)	Port rate limiting template configured for the ONU data port	Optional

Parameter	Data Type	Value Range	Description	Remark
VLAN-MOD	OCTET STRING	◆ Tag ◆ Trunk ◆ Transparent ◆ Translation	VLAN mode settings of the port: ◆ TAG (SFU or HGU scenario): used with the VLAN configuration command for the OLT PON port. ◆ TRUNK (SFU+HGU scenario): used with the VLAN configuration command for the OLT PON port. ◆ Transparent (SFU+HGU scenario): used with the VLAN configuration command for the OLT PON port. ◆ Translate (SFU+HGU scenario): used with the VLAN configuration command for the ONU LAN port.	Optional
PVID	INTEGER	-	Default VLAN of the port	Optional
PCOS	INTEGER	-	Default priority of the port	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Configure the bandwidth template BW_UP, default VLAN102 and priority 1 for LAN port 2 of the ONU (having no management IP address) connected to PON port 2 in slot 15 of the OLT whose IP address is 10.78.11.102. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; the authentication mode is MAC.

◆ Command issued

```
CFG-LANPORT::OLTID=10.78.11.102,PONID=NA-NA-15-2,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-2:CTAG::BW=BW_UP,VLANMOD=Tag,
PVID=102,PCOS=1;
```

◆ Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Example 2: Configure the bandwidth template BW_2M for LAN port 1 in slot 1 of the ONU (having a management IP address) whose IP address is 10.250.18.20.

- Command issued

```
CFG-LANPORTBW::ONUIP=10.250.18.121,ONUPORT=NA-NA-1-1:CTAG::BW=BW_2M
```

- Response message

```
FH_10.78.20.120 2011-02-21 13:41:37
M CATG COMPLD
EN=0 ENDESC=No error
;
```

Related Command

None

5.2.4 Configuring the VLAN of a PON Port (ADD-PONVLAN)

Function Description

This command is used for configuring the VLAN information of the OLT PON port.

Note:

To implement switching between VLAN and CVLAN on the OLT and VLAN transparent transmission on the SFU, it is required to configure the VLAN configuration interface of the OLT PON port (ADD-PONVLAN) and the attribute configuration interface of the ONU LAN port (CFG-LANPORTVLAN).

Command Format

```
ADD-PONVLAN::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuid-
type,ONUID=onu-index:CTAG::[SVLAN=outer vlan,]CVLAN=Inner vlan[,UV=user-
vlan][,SCOS=outer qos][,CCOS=inner qos];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
SVLAN	INTEGER	0 - 4095	SVLAN	Optional. It is required for stacked VLAN service.
CVLAN	INTEGER	0 - 4095	CVLAN	Required.
UV	INTEGER	0 - 4095	VLAN at user side	Optional.
SCOS	INTEGER	0 - 7	Outer priority level	Optional.
CCOS	INTEGER	0 - 7	Inner priority level	Optional (in case the inner COS and outer COS are the same, only the inner COS is sent).

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, configure the VLAN information for the No. 1 port of the ONU connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; authentication mode is MAC.

◆ Command

```
ADD-PONVLAN::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E:CTAG::SVLAN=100,CVLAN=78,UV=98,SCOS=5,CCOS=4;
```

◆ Response Message

```
 FH_10.78.20.120 2011-02-21 14:55:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
DEL-PONVLAN
```

5.2.5 Deleting the VLAN of a PON Port (DEL-PONVLAN)

Function Description

This command is used for deleting the VLAN information of an OLT PON port.

Command Format

```
DEL-PONVLAN::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuid-
type,ONUID=onu-index:CTAG::[,UV=user-vlan];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID or ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
UV	INTEGER	-	User-side VLAN	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Delete the VLAN information of port 1 of the ONU connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; the authentication mode is MAC.

- Command issued

```
DEL-PONVLAN::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E:CTAG::[,UV=98];
```

- Response message

```
FH_10.78.20.120 2011-02-21 15:57:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
ADD-PONVLAN
```

5.2.6 Configuring the VLAN of a LAN Port (CFG-LANPORTVLAN)

Function Description

This command is used for configuring the VLAN information of a LAN port.

Command Format

```
CFG-LANPORTVLAN::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::
[SVLAN=outer vlan],CVLAN=Inner vlan[,UV=user-vlan][,SCOS=outer qos][,
CCOS=inner qos];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required. It can be a list of multiple ports, separated by vertical bars, for example, NA-NA-NA-0| NA-NA-NA-1. Entering multiple ports means these ONU ports will be configured simultaneously.
SVLAN	INTEGER	0 - 4095	SVLAN	Optional.
CVLAN	INTEGER	0 - 4095	CVLAN	Required.
UV	INTEGER	0 - 4095	VLAN at user side	Optional.
SCOS	INTEGER	0 - 7	Outer priority level	Optional.
CCOS	INTEGER	0 - 7	Inner priority level	Optional (in case the inner COS and outer COS are the same, only the inner COS is sent).

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, configure the CVLAN 21 and priority level 3 for the LAN 1 port of the ONU (having no management IP address) connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; authentication mode is MAC.

- Command

```
CFG-LANPORTVLAN::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::CVLAN=21,CCOS=3;
```

- Response Message

```
 FH_10.78.20.120 2011-02-21 14:55:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
```

```
;
```

Example 2, configure the CVLAN 21 for the LAN 2 port located in the No. 2 slot of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command

```
CFG-LANPORTVLAN::ONUIP=10.250.18.121,ONUPORT=NA-NA-1-2:CTAG::CVLAN=21,
CCOS=3;
```

◆ Response Message

```
FH_10.78.20.120 2011-02-21 13:51:33
M  CATG COMPLD
EN=0   ENDESC=No error
 ;
```

Related Command

```
DEL-LANPORTVLAN
```

5.2.7 Deleting the VLAN of a LAN Port (DEL-LANPORTVLAN)

Function Description

This command is used for deleting the VLAN information of an ONU LAN port.

Command Format

```
DEL-LANPORTVLAN::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuid-
type,ONUID=onu-index,ONUPORT=onu-port:CTAG::[,UV=user-vlan];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID or ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter **NA** instead.	Required. It can be a list of multiple ports, separated by vertical bars, for example, NA-NA-NA-0| NA-NA-NA-1. Entering multiple ports means that these ONU ports will be configured simultaneously.
UV	INTEGER	-	User-side VLAN	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Delete the VLAN configuration of LAN port 1 of the ONU (that has no management IP) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; the authentication mode is MAC.

- Command issued

```
DEL-LANPORTVLAN::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::;
```

- Response message

```
FH_10.78.20.120 2011-02-22 15:55:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2: Delete the VLAN configuration of PON port 10 in slot 4 of the ONU (having a management IP address) whose IP address is 10.78.11.115.

- Command issued

```
DEL-LANPORTVLAN::ONUIP=10.78.11.115,ONUPORT=NA-NA-4-10:CTAG::CVLAN=21,
CCOS=3;
```

- Response message

```
 FH_10.78.20.120 2011-02-22 17:05:49
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
ADD-LANPORTVLAN
```

5.2.8 LAN端口配置IPTV 业务（CFG-LANIPTVPORT）

[A60110] 文档 "x-wc://file=pubm-0000739664-en.xml" 中第 63 行的引用 (topicref) 错误: 找不到引用 ID "x-wc://file=t-0000739590-en.xml#fhconcept-LAN端口配置IPTV业务（CFG-LANIPTVPORT）_I1487841183073e"。

5.2.9 Adding a LAN Port into a Multicast VLAN (ADD-LANIPTVPORT)

Function Description

This command is used for adding a LAN port into a multicast VLAN.

Command Format

```
ADD-LANIPTVPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[UV=user
vlan][,MVLAN=mvlan] [,CCOS=ccos] [,SVCMODPROFILE=svc mod profile];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.

- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required. It can be a list of multiple ports, separated by vertical bars, for example, NA-NA-NA-0| NA-NA-NA-1. Entering multiple ports means these ONU ports will be configured simultaneously.
UV	INTEGER	0 to 4095	Customer VLAN.	Optional
MVLAN	INTEGER	0 to 4095	Associated multicast VLAN	Optional. Specified multicast VLAN for service provisioning.
CCOS	INTEGER	0 to 7	Multicast priority	Optional
SVCMOD-PROFILE	OCTET STRING	Size (20)	Service model template name	Optional

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, add the LAN 1 port of the ONU (having no management IP address) into the MVLAN. The ONU is connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; authentication mode is MAC.

- Command

```
ADD-LANIPTVPORT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::UV=109,MVLAN=88;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 14:56:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2, bind the No. 1 LAN port located in the No. 4 slot of the ONU (having an independent management IP address) whose IP address is 10.250.18.20 to the MVLAN88 (multicast VLAN).

- Command

```
ADD-LANIPTVPORT::ONUIP=10.250.18.20,ONUPORT=NA-NA-4-1:CTAG::UV=100,
MVLAN=88;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 13:59:14
M  CATG COMPLD
EN=0   ENDESC=No error
 ;
```

Related Command

```
DEL-LANIPTVPORT
```

5.2.10 Configuring the IPTV Service of a LAN Port (CFG-LANIPTVPORT)

Function Description

This command is used for configuring the IPTV service of a LAN port.

Command Format

```
CFG-LANIPTVPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::
[FLMODE=iptv-fastleave-mode][,MAXGRP=Max-group-number];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
FLMODE	OCTET STRING	Size (32)	Fast leave mode: Enabled Disabled	Optional.
MAXGRP	INTEGER	0 - 255	Maximum number of multicast programs that a port can join simultaneously.	Optional.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, delete the multicast service with the fast leave mode being enabled and MAXGRP being 23 of the LAN 1 port of the ONU (having no management IP address) with ONUID being 54-4B-40-04-2C-1E and ONU authentication mode being MAC. The ONU is connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100.

- Command

```
CFG-LANIPTVPORT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::FLMODE=Enabled,
MAXGRP=23;
```

- Response Message

```
 FH_10.78.20.120 2/22/2011 9:17:13
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2, configure the multicast service for the LAN 1 port located in the No. 4 slot of the ONU (having a management IP address) whose IP address is 10.250.18.20.

- Command

```
CFG-LANIPTVPORT::ONUIP=10.250.18.20,ONUPORT=NA-NA-4-1:CTAG::
FLMODE=Enabled,MAXGRP=32;
```

- Response Message

```
FH_10.78.20.120 2/22/2011 9:18:14
M  CATG COMPLD
EN=0   ENDESC=No error
 ;
```

Related Command

```
ADD-LANIPTVPORT
DEL-LANIPTVPORT
```

5.2.11 Deleting a LAN Port from a Multicast VLAN (DEL-LANIPTVPORT)

Function Description

This command is used for deleting a LAN port from a multicast VLAN.

Command Format

```
DEL-LANIPTVPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[UV=user
vlan][,MVLAN=mvlan];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
UV	INTEGER	0 - 4095	VLAN at user side	Optional. It is required when the multicast service is accessed through a home gateway.
MVLAN	INTEGER	0 - 4095	Associated multicast VLAN	Optional.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, delete the multicast service with the fast leave mode being enabled and MAXGRP being 23 of the LAN 1 port of the ONU (having no management IP address) with ONUID being 54-4B-40-04-2C-1E and ONU authentication mode being MAC. The ONU is connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100.

◆ Command

```
DEL-LANIPTVPORT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::UV=109,MVLAN=88;
```

◆ Response Message

```
FH_10.78.20.120 2011-02-21 15:18:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2, delete the LAN 1 port from the MVLAN88 (multicast VLAN). The LAN 1 port locates in the No. 4 slot of the ONU (having a management IP address) whose IP address is 10.250.18.20.

◆ Command

```
DEL-LANIPTVPORT::ONUIP=10.250.18.20,ONUPORT=NA-NA-4-1:CTAG::UV=100,
MVLAN=88;
```

◆ Response Message

```
FH_10.78.20.120 2011-02-21 08:59:14
 M  CATG COMPLD
EN=0   ENDESC=No error
 ;
```

Related Command

```
ADD-LANIPTVPORT
```

5.2.12 新增HG管理通道配置(CFG-NONOMCIMPATHCONFIG)

[A60110] 文档 "x-wc://file=pubm-0000739664-en.xml" 中第 67 行的引用 (topicref) 错误: 找不到引用 ID "x-wc://file=t-0000739591-en.xml#fhconcept-新增HG管理通道配置(CFG-NONOMCIMPATHCONFIG)_X1487841183157M"。

5.2.13 Adding VEIP Data Service (CFG-VEIPSERVICE)

Function Description

This command is used to configure the VEIP data service of the LAN port.

Command Format

```
CFG-VEIPSERVICE::ONUIP=onu-ip|OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index,ONUPORT=onu-port:CTAG::
ServiceId=service-id,CVLANID=cvlanid,CCOS=ccos,TVLANID=T-vlan,TCOS=T-
cos,UpAssuredRateLimit=up-bandwidth profile,DownAssuredRateLimit=down-
bandwidth-profile,ServiceModelProfile=service-model-profile,
ServiceType=service-type;
```

Supported Equipment

- OLT: AN5116 series, AN5516 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
ServiceId	INTEGER	1 to 16	Service serial number under the port	Optional
CVLANID	INTEGER	1 to 4085	CVLAN ID	Optional
CCOS	INTEGER	0 to 7	CVLAN PON priority or COS	Optional
TVLANID	INTEGER	1 to 4085	TVLAN ID	Optional
TCOS	INTEGER	0 to 7	TCOS	Optional
UpAssuredRa-teLimit	OCTET STRING	Size (20)	Uplink bandwidth profile name.	Optional
DownAssure-dRateLimit	OCTET STRING	Size (20)	Downlink bandwidth profile name.	Optional

Parameter	Data Type	Value Range	Parameter Description	Remark
ServiceModel-Profile	OCTET STRING	Size (20)	Service model template name	Required.
ServiceType	OCTET STRING	NONE DATA IPTV MANAGEMENT VOIP	Service Type	Optional

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, configure the VEIP data service of the LAN port 1 on the ONU with ID 1, which is in the PON port 5 in slot 4 on the OLT device with IP 10.171.0.16.

- Command

```
CFG-VEIPSERVICE::OLTID=10.171.0.16,PONID=1-1-4-5,ONUIDTYPE=ONU_NUMBER,
ONUID=1,ONUPORT=NA-NA-NA-1:CTAG::ServiceId=1,CVLANID=500,CCOS=0,
UpAssuredRateLimit=1,DownAssuredRateLimit=2,ServiceModelProfile=1,
ServiceType=VOIP;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 14:55:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

5.2.14 Modifying VEIP Data Service (MODIFY-VEIPSERVICE)

Function Description

This command is used to modify the bandwidth configuration in the VEIP settings of the LAN port.

Command Format

```
MODIFY-VEIPSERVICE::ONUIP=onu-ip|OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index,ONUPORT=onu-port:CTAG::
CVLANID=cvlanid,UpAssuredRateLimit=up-bandwidth-profile,
DownAssuredRateLimit=down-bandwidth-profile,ServiceId=service-id;
```

Supported Equipment

- OLT: AN5116-02, AN5116-06B.
- ONU: AN5006 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	It is compulsory for the ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	It is required for the ONU or OLT that has no management IP address.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
CVLANID	INTEGER	1 to 4085	CVLAN ID	Optional
UpAssure-dRateLimit	OCTET STRING	Size (20)	Uplink bandwidth profile name.	Optional

Parameter	Data Type	Value Range	Parameter Description	Remark
DownAssure-dRateLimit	OCTET STRING	Size (20)	Downlink bandwidth profile name.	Optional
ServiceId	INTEGER	1 to 16	Service serial number under the port	Optional

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, modify the bandwidth configuration in the VEIP settings of the LAN port 1 on the ONU with ID 1, which is in the PON port 5 in slot 4 on the OLT device with IP 10.171.0.16.

- Command

```
MODIFY-VEIPSERVICE::OLTID=10.171.0.16,PONID=1-1-4-5,
ONUIDTYPE=ONU_NUMBER,ONUID=1,ONUPORT=NA-NA-NA-1:CTAG::CVLANID=500,
UpAssuredRateLimit=2,DownAssuredRateLimit=1,ServiceId=1;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 14:55:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

5.2.15 去绑定VEIP数据业务(UNBIND-VEIPSERVICE)

[A60110] 文档 "x-wc://file=pubm-0000739664-en.xml" 中第 70 行的引用 (topicref) 错误: 找不到引用 ID "x-wc://file=t-0000739594-en.xml#fhconcept-去绑定VEIP数据业务(UNBIND-VEIPSERVICE)_Z1487841183172t"。

5.2.16 Deleting VEIP Data Service (DEL-VEIPSERVICE)

Function Description

This command is used to delete the VEIP data service configuration of the LAN port.

Command Format

```
DEL-VEIPSERVICE::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuid-type,ONUID=onu-index,ONUPORT=onu-port:CTAG::ServiceId=service-id;
```

Supported Equipment

- OLT: AN5116 series, AN5516 series.
- ONU: AN5006 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
ServiceId	INTEGER	1 to 16	Service serial number under the port	Required.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, delete the VEIP data service of the LAN port 1 on the ONU with ID 1, which is in the PON port 5 in slot 4 on the OLT device with IP 10.171.0.16.

- Command

```
DEL-VEIPSERVICE::OLTID=10.171.0.16,PONID=1-1-4-5,ONUIDTYPE=ONU_NUMBER,
ONUID=1,ONUPORT=NA-NA-NA-1:CTAG::ServiceId=1;
```

- Response Message

```
FH_10.78.20.120 2011-02-21 14:55:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

5.3 Broadband / IPTV Services of an xDSL Port

The following introduces how to configure the broadband / IPTV services of an xDSL port.

5.3.1 Activating a DSL Port (ACT-DSLPORT)

Function Description

This command is used for activating a DSL port.

Command Format

```
ACT-DSLPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Activate DSL port 1 in slot 3 of the ONU whose IP address is 10.250.18.121.

- Command issued

```
ACT-DSLPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::;
```

- Response message

```
 FH_10.78.20.120 2011-02-22 17:13:17
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
DACT-DSLPORT
```

5.3.2 Deactivating a DSL Port (DACT-DSLPORT)

Function Description

This command is used for deactivating a DSL port.

Command Format

```
DACT-DSLPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Deactivate DSL port 1 in slot 3 of the ONU whose IP address is 10.250.18.121.

- Command issued

```
DACT-DSLPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::;
```

- Response message

```
FH_10.78.20.120 2011-02-22 17:14:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
ACT-DSLPORT
```

5.3.3 Configuring the Bandwidth of a DSL Port (CFG-DSLPORTBW)

Function Description

This command is used for configuring the bandwidth of a DSL port. Before using the command, ensure the ONU is bound with the DSL line template and the bandwidth template is correctly configured.

Command Format

```
CFG-DSLPORTBW::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::BW=band
width;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
BW	OCTET STRING	Size (32)	Bandwidth template name: setting uplink / downlink bandwidth.	Optional.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example: configure the bandwidth template for the No. 1 DSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

- Command

```
CFG-DSLPORTBW::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::BW=BW_2M
```

- Response Message

```
   FH_10.78.20.120 2/22/2011 17:17:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

None

5.3.4 Configuring the VLAN of a DSL Port (CFG-DSLPORTVLAN)

Function Description

This command is used for configuring the VLAN information of a DSL port.

Command Format

```
CFG-DSLPORTVLAN::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[VPI=vpi]
[,VCI=vci][,SVLAN=outer vlan],CVLAN=Inner vlan[,UV=user-vlan];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required
VPI	INTEGER	0 to 4095	VPI	Optional
VCI	INTEGER	32 to 65535	VCI	Optional
SVLAN	INTEGER	0 to 4095	SVLAN	Optional
CVLAN	INTEGER	0 to 4095	CVLAN	Required
UV	INTEGER	0 to 4095	Customer VLAN.	Optional

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, configure the VLAN information for the No. 1 DSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

- Command

```
CFG-DSLPORTVLAN::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::VPI=0,
VCI=35,CVLAN=261;
```

- Response Message

```
 FH_10.78.20.120 2011-02-22 17:19:01
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
DEL-DSLPORTVLAN
```

5.3.5 Deleting the VLAN of a DSL Port (DEL-DSLPORTVLAN)

Function Description

This command is used for deleting the VLAN information of a DSL port.

Command Format

```
DEL-DSLPORTVLAN::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[VPI=vpi]
[,VCI=vci][,SVLAN=outer vlan],CVLAN=Inner vlan[,UV=user-vlan];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.

- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
VPI	INTEGER	0 - 4095	Vpi	Optional.
VCI	INTEGER	32 - 65535	Vci	Optional.
SVLAN	INTEGER	0 - 4095	SVLAN	Optional.
CVLAN	INTEGER	0 - 4095	CVLAN	Required.
UV	INTEGER	0 - 4095	VLAN at user side	Optional.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, delete the VLAN information of the No. 1 DSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

- Command

```
DEL-DSLPORTVLAN::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::VPI=0,
VCI=35,CVLAN=261;
```

- Response Message

```
  FH_10.78.20.120 2/22/2011 18:13:38
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
CFG-DSLPORTVLAN
```

5.3.6 Adding a Multicast User for a DSL Port (ADD-DSLIPTVPORT)

Function Description

This command is used for adding a multicast user for a DSL port.

Command Format

```
ADD-DSLIPTVPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[UV=user
vlan][VPI=vpi][,VCI=vci][,MVLAN=mvlan];
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
VPI	INTEGER	0 - 4095	Vpi	Optional.
VCI	INTEGER	32 - 65535	Vci	Optional.
UV	INTEGER	0 - 4095	VLAN at user side	Optional. It is required when VDSL works in VDSL mode.
MVLAN	INTEGER	Size (32)	Associated multicast VLAN	Optional. Specified multicast VLAN for service provisioning.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, add a multicast user for the DSL 1 port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

◆ Command

```
ADD-DSLIPTVPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::UV=100,
VPI=0,VCI=35,MVLAN=88;
```

◆ Response Message

```
FH_10.78.20.120 2/22/2011 18:15:38
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
DEL-DSLIPTVPORT
```

5.3.7 Deleting a Multicast User of a DSL Port (DEL-DSLIPTVPORT)

Function Description

This command is used for deleting the multicast service of a DSL port.

Command Format

```
DEL-DSLIPTVPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[VPI=vpi]
[,VCI=vci][UV=user vlan][,MVLAN=mvlan];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required
VPI	INTEGER	-	Vpi	Optional. It is required for ADSL or VDSL working in ADSL mode.
VCI	INTEGER	-	Vci	Optional. It is required for the ADSL or the VDSL working in ADSL mode.
UV	INTEGER	0 to 4085	User-side VLAN	Optional. It is required for the VDSL working in VDSL mode.
MVLAN	INTEGER	Size (32)	Associated multicast VLAN	Optional (specified multicast VLAN for service provisioning)

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Delete the multicast service of DSL port 1 in slot 3 of the ONU whose IP address is 10.250.18.121.

◆ Command issued

```
DEL-DSLIPTVPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::VPI=0,
VCI=35,UV=100,MVLAN=88;
```

◆ Response message

```
FH_10.78.20.120 2011-02-22 18:17:31
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
ADD-DSLIPTVPORT
```

5.3.8 Configuring the DSL Port Parameters (CFG-DSLIPTVPORT)

Function Description

This command is used for configuring the IPTV service of a DSL port.

Command Format

```
CFG-DSLIPTVPORT::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::[,UV=uv][,
FLMODE][,MAXGRP=Max-group-number];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required
UV	INTEGER	-	Port signaling VLAN	Optional. Applicable to the MSAN card port parameter protocol. The default value is 0.
FLMODE	OCTET STRING	Size (32)	Fast leave mode: Enabled Disabled	Optional
MAXGRP	INTEGER	-	Maximum number of multicast programs that a port can join simultaneously.	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Configure the IPTV service of DSL port 1 in slot 3 of the ONU whose IP address is 10.250.18.121.

◆ Command issued

```
CFG-DSLIPTVPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::
FLMODE=Enabled,MAXGRP=20;
```

◆ Response message

```
FH_10.78.20.120 2011-02-22 18:17:31
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
DEL-DSLIPTVPORT
ADD-DSLIPTVPORT
```

5.4 VoIP Service

The following introduces how to activate / deactivate a VoIP port, and configure / delete the voice service of the VoIP port.

5.4.1 Activating a VoIP Port (ACT-VOIPPORT)

Function Description

The command is used for activating a VoIP port.

Command Format

```
ACT-VOIPPORT::ONUIP=onu-name|[OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Activate voice port 1 of the ONU (that has no management IP address) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; the authentication mode is MAC.

◆ Command issued

```
ACT-VOIPPORT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
 FH_10.78.20.120 2011-02-21 18:09:11
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2: Activate POTS port 1 in slot 2 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
ACT-VOIPPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

- Response message

```
 FH_10.78.20.120 2011-02-21 19:01:47
 M  CATG COMPLD
 EN=0   ENDESC=No error
 ;
```

Related Command

```
DACT-VOIPPORT
```

5.4.2 Deactivating a VoIP Port (DACT-VOIPPORT)

Function Description

The command is used for deactivating a VoIP port.

Command Format

```
DACT-VOIPPORT::ONUIP=onu-name|[OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Deactivate voice port 1 of the ONU (having no management IP address) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; the authentication mode is MAC.

- Command issued

```
DACT-VOIPPORT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::;
```

- Response message

```
 FH_10.78.20.120 2011-02-21 18:11:12
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2: Deactivate POTS port 1 in slot 2 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
DACT-VOIPPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

- Response message

```
FH_10.78.20.120 2011-02-21 19:01:57
M  CATG COMPLD
EN=0   ENDESC=No error
;
```

Related Command

```
ACT-VOIPPORT
```

5.4.3 Configuring the Voice Service of a VoIP Port (CFG-VOIPSERVICE)

Function Description

The command is used for configuring the voice service of a VoIP port.

Command Format

```
CFG-VOIPSERVICE::ONUIP=onu-name|[OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index],ONUPORT=onu-port:CTAG::
[PHONENUMBER=phonenumber][,PT=protocoltype][,SLVAN=voipoutervlan][,
VOIPVLAN=voipinnervlan][,SCOS=outerqos][,CCOS=innerqos][,
EID=equipmentid][TID=Terminal-ID][SIPREGDM=sipregisterdomain][,
SIPUSERNAME=sipusername][,SIPUSERPWD=sipuserpassword]
[MGCIP1=activebacip][,MGCIP2=standbybacip][,IPMODE=ipmode][,
IP=ipaddress,IPMASK=ipmask,IPGATEWAY=ipgateway][,PPPOEUSER=pppoeuser,
PPPOEPWD=pppoepassword], VOICECODEC=voice;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Parameter Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required
PHONENUM-BER	OCTET STRING	Size (1 to 32)	Telephone number	Optional. It is required for the SIP protocol.
PT	OCTET STRING	Size (1 to 32)	Voice protocol type (H.248, SIP)	Optional
EID	OCTET STRING	Size (1 to 64)	MG gateway domain name in the H248 configuration.	Optional. It is required for the H248 protocol.
TID	OCTET STRING	Size (1 to 64)	H248 user terminal identifier	Optional. It is required for the H248 protocol.
SIPREGDM	OCTET STRING	Size (1 to 32)	SIP register server	Optional
SIPUSER-NAME	OCTET STRING	Size (1 to 32)	Username corresponding to the SIP user port	Optional. It is required for the SIP protocol.

Parameter	Data Type	Value Range	Parameter Description	Remark
SIPU-SERPWD	OCTET STRING	Size (1 to 32)	Password corresponding to the SIP user port	Optional. It is required for the SIP protocol.
SVLAN	INTEGER	0 to 4095	Outer VLAN of the voice service	Optional. Indicates the outer VLAN of the stacked VLAN in the FTTH scenario.
VOIPVLAN	INTEGER	0 to 4095	Inner VLAN of the voice service.	Optional. It is required for the FTTH scenario.
IPMODE	OCTET STRING	Size (1 to 32)	IP obtaining mode: DHCP, PPPOE, STATIC.	Optional
IP	OCTET STRING	Size (1 to 32)	IP address	Optional. It is required for static IP allocation.
IPMASK	OCTET STRING	Size (1 to 32)	IP address mask	Optional. It is required for static IP allocation.
IPGATEWAY	OCTET STRING	Size (1 to 32)	Gateway address	Optional. It is required for static IP allocation.
PPPOEUSER	OCTET STRING	Size (1 to 32)	PPPOE username	Optional. It is required for the PPPOE mode.
PPPOEPWD	OCTET STRING	Size (1 to 32)	PPPOE password.	Optional. It is required for the PPPOE mode.
SCOS	INTEGER	0 to 7	Outer service priority level	Optional
CCOS	INTEGER	0 to 7	Inner service priority level	Optional
MGCIP1	OCTET STRING	Size (32)	IP address of the active softswitch	Optional
MGCIP2	OCTET STRING	Size (32)	IP address of the standby softswitch.	Optional
VOICECO-DEC	OCTET STRING	Size (128) G.711U, G.711A, G. 723, G.729 and G.722	Speech encoding protocol	Optional

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

Example 1, configure the voice service for No. 1 voice port of the ONU (having no management IP address) connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; authentication mode is MAC.

- Command

```
CFG-VOIPSERVICE::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::PHONENUMBER=77777777,
PT=H.248,VOIPVLAN=1645,CCOS=0,EID=eid,TID=tid,IPMODE=STATIC,
IP=14.14.14.7,IPMASK=255.255.0.0,IPGATEWAY=14.14.14.1;
```

- Response Message

```
 FH_10.78.20.120 2011-02-21 18:56:13
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2, configure the voice service for the POTS 4 port located in the No. 1 slot of the ONU (having a management IP address) whose IP address is 10.78.11.115.

- Command

```
CFG-VOIPSERVICE::ONUIP=10.78.11.115,ONUPORT=NA-NA-1-4:CTAG::PT=H.248,
VOIPVLAN=3111,CCOS=0,EID=AAA,TID=12365478;
```

- Response Message

```
 FH_10.78.20.120 2011-02-21 13:41:37
 M  CATG COMPLD
 EN=0   ENDESC=No error
 ;
```

Related Command

```
ACT-VOIPPORT
DEL-VOIPSERVICE
```

5.4.4 Deleting the Voice Service of a VoIP Port (DEL-VOIPSERVICE)

Function Description

The command is used for deleting the voice service of a VoIP port.

Command Format

```
DEL-VOIPSERVICE::OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuidtype,ONUID=onu-index,ONUPORT=onu-port:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	Required
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER)	Required
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Required
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through the information **rack - shelf - slot - port number**. If any part of the information is unavailable, enter NA instead.	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Delete the voice service of voice port 1 of the ONU (having no management IP address) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is 54-4B-40-04-2C-1E; the authentication mode is MAC.

- Command issued

```
DEL-VOIPSERVICE::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=MAC,
ONUID=54-4B-40-04-2C-1E,ONUPORT=NA-NA-NA-1:CTAG::;
```

- Response message

```
 FH_10.78.20.120 2011-02-21 19:06:14
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2: Delete the voice service of POTS port 4 in slot 1 of the ONU (having a management IP address) whose IP address is 10.78.11.115.

- Command issued

```
DEL-VOIPSERVICE::ONUIP=10.78.11.115,ONUPORT=NA-NA-1-4:CTAG::PT=H.248,
VOIPVLAN=3111,CCOS=0,EID=AAA,TID=12365478;
```

- Response message

```
 FH_10.78.20.120 2011-02-22 19:08:09
 M  CATG COMPLD
 EN=0   ENDESC=No error
 ;
```

Related Command

```
ACT-VOIPPORT
CFG-VOIPSERVICE
```

5.4.5 Configuring the NGN Uplink Interface (SET-NGN-UPLINK)

Function Description

This command is used for configuring the NGN uplink interface parameters, including the uplink MGC and SIP server information.

Command Format

The command format for the ANM2000 is as follows:

```
SET-NGN-UPLINK::OLTID=device-ID:CTAG::SVCNAME=servicename|
SVCVLAN=servicevlan,NGNPROTOCOL=ngn_protocol[,
MASTERDNS=master_dns_ipaddress][,SLAVEDNS=slave_dns_ipaddress][,
DHCP=dhcp],SIPREGSERVER=sip_registerar_server_ipaddress,
SIPREGPORT=sip_registerar_server_port,SIPPROSERVER=sip_proxy_server-
ipaddress,SIPPROPORT=sip_proxy_server_port,SIPEXP=sip_expires,
STATUS=enable;
```

The command format for the UNM2000 is as follows:

```
SET-NGN-UPLINK::OLTID=device-ID:CTAG::SVCNAME=servicename,
NGNPROTOCOL=ngn_protocol ,[MGCIP1=mgcip1,MGCIP1PORT=mgcip1port][,
MGCIP2=mgcip2,MGCIP2PORT=mgcip2port][,MASTERDNS=master_dns_ipaddress][,
SLAVEDNS=slave_dns_ipaddress] [,DHCP=dhcp][,
SIPREGSERVER=sip_registerar_server_ipaddress,
SIPREGPORT=sip_registerar_server_port,SIPPROSERVER=sip_proxy_server-
ipaddress,SIPPROPORT=sip_proxy_server_port,SIPEXP=sip_expires],
STATUS=status;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required
SVCNAME	STRING	Size (0 to 30)	Signaling service name	Required
SVCVLAN	INTEGER	0 to 4085	When it is used, the EMS matches it from the existing local VLANs.	-
NGNPROTO-COL	INTEGER	0: MGCP 1: H.248 2: SIP	NGN uplink protocol	-
MASTERDNS	OCTET STRING	1 to 65535 (sample:lefefefe)	Active DNS server	-
SLAVEDNS	OCTET STRING	1 to 65535 (sample:lefefefe)	Standby DNS server	-
DHCP	INTEGER	0 or 1	A switch to enable DHCP	-
SIPREGSER-VER	STRING	Size (0 to 64)	SIP register server address	-
SIPREGPORT	INTEGER	1 to 65535	SIP register server port	-
SIPPROSER-VER	STRING	Size (0 to 64)	SIP proxy server address	-

Parameter	Data Type	Value Range	Description	Remark
SIPPROPORT	INTEGER	1 to 65535	SIP proxy server port	-
SIPEXP	INTEGER	1 to 4294967294	SIP protocol timeout	-
STATUS	INTEGER	1: create 2: delete	1: create 2: delete	-
MGCIP1	OCTET STRING	Size (64)	MGC1 IP address / standby SIP registrar server address	-
MGCIP1PORT	INTEGER	1024 to 65535	MGC1 port No. / standby SIP registrar server port No.	-
MGCIP2	OCTET STRING	Size (64)	MGC2 IP address / standby SIP proxy server address	-
MGCIP2PORT	INTEGER	1024 to 65535	MGC2 port No. / standby SIP proxy server port No.	-

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

For example, configure the NGN uplink interface parameters of the OLT whose IP address is 10.78.200.200 (The ONU has no management IP address).

- Command issued

```
SET-NGN-UPLINK::OLTID=10.78.200.200:CTAG::SVCNAME=xx,NGNPROTOCOL=2,
MGCIP1=1.1.1.5,MGCIP1PORT=5060,MGCIP2=5.3.6.2,MGCIP2PORT=5060,
MASTERDNS=1.1.1.1,SLAVEDNS=2.6.6.2,DHCP=1,SIPREGSERVER=2.2.2.2,
SIPREGPORT=2222,SIPPROSERVER=3.3.3.3,SIPPROPORT=5060,SIPEXP=3600,
STATUS=2;
```

- Response message

```
   FH_10.78.12.155 2014-07-16 14:00:31
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

None

5.4.6 修改VOIP端口语音编码（MODIFY-ONUVOIPSERVICE）

[A60110] 文档 "x-wc://file=pubm-0000739664-en.xml" 中第 87 行的引用 (topicref) 错误: 找不到引用 ID "x-wc://file=t-0000739596-en.xml#fhconcept-修改VOIP端口语音编码（MODIFY-ONUVOIPSERVICE）_X14878411836045"。

5.5 VLAN Service

The following introduces how to create and delete the VLAN service.

5.5.1 Creating a VLAN (ADD-VLAN)

Function Description

This command is used for creating a VLAN.

Command Format

```
ADD-VLAN::ONUIP=onu-name|OLTID=olt-name:CTAG::VLAN=vlanid[,DESC=vlan-alias],VLANMODE=vlan-type[,PORTLIST=port-list][,MVLANFLAG=mvlan-flag][,MVLANPRI=mvlan-priority][,SERVICE=service];
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-20, AN5006-15.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	In FTTB / FTTN scenario, it is required to create a VLAN on the ONU.
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	It is required to create a VLAN on the OLT.
VLAN	INTEGER	0 to 4094	VLANID	Required
DESC	OCTET STRING	Size (128)	VLAN alias	Optional
VLAN-MODE	OCTET STRING	SINGLE QINQ STACKING	VLAN attribute. SINGLE: Switches the outer VLAN tag or adds a VLAN tag to the untagged message in the uplink direction. STACKING: Switches the inner VLAN tag and adds the outer VLAN tag, or adds the outer and inner VLAN tags to the untagged message in the uplink direction. QINQ: Adds a VLAN tag to the message uplinked, mainly for the private line application.	Required
PORTLIST	OCTET STRING	NA-NA-NA-NA	A list of uplink ports that allow the packets with the specified VLAN ID to pass through	Optional. It can be a list of uplink ports, separated by vertical bars, for example, NA-0-19-0|NA-0-19-1|NA-0-20-0.
MVLAN-FLAG	INTEGER	-	Indicates whether it is a multicast VLAN or non-multicast VLAN.	Optional. The default value is 0. 0: Non-multicast VLAN 1: Multicast VLAN
MVLAN-PRI	INTEGER	-	Priority of the IGMP message	Optional Default value: 6
SERVICE	OCTET STRING	-	Service type of the VLAN	Optional HSI (Internet access) IPTV (unicast) VOIP (voice) Default value: HSI This parameter can contain the meaning of MVLANFLAG by adding a parameter value to indicate multicast or non-multicast.

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Create a VLAN with VLAN ID being 101 and VLANMODE being STACKING for the OLT (the ONU has no management IP address) whose IP address is 10.78.200.200.

- Command issued

```
ADD-VLAN::OLTID=10.78.200.200:CTAG::VLAN=101,VLANMODE=STACKING,
PORTLIST=NA-NA-19-1;
```

- Response message

```
  FH_10.98.100.16 2014-06-12 15:45:15
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
DEL-VLAN
```

5.5.2 Deleting a VLAN (DEL-VLAN)

Function Description

This command is used for deleting a VLAN.

Command Format

```
DEL-VLAN:: ONUIP=onu-name|OLTID=olt-name:CTAG::VLAN=vlanid;
```

Input Parameter

Parame-ter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
VLAN	INTEGER	-	VLANID	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Delete the VLAN with VLAN ID being 101 of the OLT (the ONU has no management IP address) whose IP address is 10.78.200.200.

- Command issued

```
DEL-VLAN::OLTID=10.78.200.200:CTAG::VLAN=101;
```

- Response message

```
 FH_10.98.100.16 2014-06-12 16:03:26
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
ADD-VLAN
```

5.6 Configuring a Port Speed Rate Template

The following introduces the PORTSPEEDLIMITPROFILE command and example for adding / deleting the port speed limit template.

5.6.1 Adding a Port Rate Limiting Template (ADD-PORTSPEEDLIMITPROFILE)

Function Description

This command is used for adding a port rate limiting template.

Command Format

```
ADD-PORTSPEEDLIMITPROFILE::ONUIP=onu-name|OLTID=olt-name:CTAG::
PROFILENAME=profile name, [USPOLICINGSTATUS=status,UMABW=uplink maximum
allowed bandwidth,UPCIR=UsPolicingCIR,USCBS=us cbs,USEBS=us ebs,
DSPOLICINGSTATUS=status,SDBW=servicedownlinkbandwidth,
DPCIR=DsPolicingCIR,DSPIR=ds pir];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PROFILENAME	OCTET STRING	Size (128)	Name of the port rate limiting template	Required
USPOLICING-STATUS	INTEGER	0 or 1	Uplink policing status 0: disable 1: enable	Optional
UMABW	INTEGER	0 to 1000000	Maximum service uplink bandwidth	Optional
UPCIR	INTEGER	0 to 1000000 The AN5006-20 / 30: 64 to 1000000	Assured uplink port rate	Optional
USCBS	INTEGER	0 to 4294967294	Uplink committed burst size	Optional
USEBS	INTEGER	0 to 4294967294	Uplink excess burst size	Optional
DSPOLICING-STATUS	INTEGER	0 or 1	Downlink policing status 0: disable 1: enable	Optional
SDBW	INTEGER	0 to 1000000	Service downlink bandwidth	Optional

Parameter	Data Type	Value Range	Description	Remark
DPCIR	INTEGER	0 to 1000000 The AN5006-20 / 30: 64 to1000000	Assured downlink port rate	Optional
DSPIR	INTEGER	0 to 16777215	Downlink peak cell rate	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Add a rate limiting template named as hello for the ONU whose IP address is 10.171.0.38, and set the rate limiting parameters.

- Command issued

```
ADD-PORTSPEEDLIMITPROFILE::ONUIP=10.171.0.38:CTAG::PROFILENAME=hello,
USPOLICINGSTATUS=1,UPCIR=200,USCBS=111,USEBS=222,DSPOLICINGSTATUS=1,
DPCIR=400,DSPIR=444;
```

- Response message

```
 FH_0.0.0.0 2010-11-04 11:45:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
```

Related Command

```
DEL-PORTSPEEDLIMITPROFILE
```

5.6.2 Deleting a Port Rate Limiting Template (DEL-PORTSPEEDLIMITPROFILE)

Function Description

This command is used for deleting a port rate limiting template.

Command Format

```
DEL-PORTSPEEDLIMITPROFILE::ONUIP=onu-name|OLTID=olt-name:CTAG::
PROFILENAME=profile name;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PROFILE-NAME	OCTET STRING	Size (128)	Name of the port rate limiting template	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Delete the rate limiting template hello on the ONU whose IP address is 10.171.0.38.

- Command issued

```
DEL-PORTSPEEDLIMITPROFILE::ONUIP=10.171.0.38:CTAG::PROFILENAME=hello;
```

- Response message

```
 FH_0.0.0.0 2010-11-04 11:45:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
```

Related Command

```
ADD-PORTSPEEDLIMITPROFILE
```

5.7 Configuring a Bandwidth Template

The following introduces the BWPROFILE command and example for adding / deleting a bandwidth template.

5.7.1 Adding a Bandwidth Template (ADD-BWPROFILE)

Function Description

This command is used for adding a bandwidth template.

Command Format

```
ADD-BWPROFILE::ONUIP=onu-name|OLTID=olt-name:CTAG::PROFILENAME=profile name [,UPMGBW=Up MIN Guaranteed Bandwidth,UMABW=uplink maximum allowed bandwidth, DMGBW=Down MIN Guaranteed Bandwidth,DMABW=Down MAX Allowed Bandwidth, UFBW=Upstream Fixed Bandwidth];
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PROFILE-NAME	OCTET STRING	Size (128)	Name of the bandwidth template	Required

Parameter	Data Type	Value Range	Description	Remark
UPMGBW	INTEGER	-	Minimum service uplink bandwidth	Optional
UMABW	INTEGER	-	Maximum service uplink bandwidth	Optional
DMGBW	INTEGER	-	Minimum service downlink bandwidth	Optional
DMABW	INTEGER	-	Maximum service downlink bandwidth	Optional
UFBW	INTEGER	-	Fixed service uplink bandwidth	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Add the bandwidth template for the OLT whose IP address is 10.171.0.33.

- Command issued

```
ADD-BWPROFILE::OLTID=10.171.0.33:CTAG::PROFILENAME=hello,UPMGBW=100,
UMABW=11111,DMGBW=2222,DMABW=3333,UFBW=4444;
```

- Response message

```
 FH_0.0.0.0 2010-11-04 11:45:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
DEL-BWPROFILE
```

5.7.2 Deleting a Bandwidth Template (DEL-BWPROFILE)

Function Description

This command is used for deleting a bandwidth template.

Command Format

```
DEL-BWPROFILE::ONUIP=onu-name|OLTID=olt-name:CTAG:: PROFILENAME=profile
name;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PROFILE-NAME	OCTET STRING	Size (128)	Name of the bandwidth template	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Delete the bandwidth template on the OLT whose IP address is 10.171.0.33.

- Command issued

```
DEL-BWPROFILE::OLTID=10.171.0.33:CTAG::PROFILENAME=hello;
```

◆ Response message

```
 FH_0.0.0.0 2015-11-04 11:45:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
ADD-BWPROFILE
```

5.8 Configuring a Flow Policy

The following introduces the FLOWPOLICY command and example for adding / deleting a flow policy.

5.8.1 Adding a Traffic Policy (ADD-FLOWPOLICY)

Function Description

This command is used for adding a traffic policy.

Command Format

```
ADD-FLOWPOLICY::ONUIP=onu-name|OLTID=olt-name:CTAG::PROFILENAME=profile
name ,RULENAME=rule name,PRECEDENCE=Precedence[,ACL=acl enable,RATELIMIT=
rate limit, CIR=cir,CBS=cbs,QUEUEENABLE=QueueEnable,QUEUEMAP=Queue
Mapped, COSREMARK=cos remark,COS=cos, DSCPREMARK=dscp remark,DSCP=dscp,
RTC= Remark traffic class,TC= Traffic class,REPORTENABLE=RePortEnable,
REPORTNO=port no,PMENABLE=PortMirrorEnable,MPORTNO=port no];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
PROFILE-NAME	OCTET STRING	Size (20)	Name of the traffic policy	Required
RULENAME	OCTET STRING	Size (128)	Name of the traffic classification rule	Required
PRECE-DENCE	INTEGER	1 to 12	Policy priority	Required
ACL	INTEGER	0 or 1	Indicates whether to enable the ACL. 0: disable 1: enable	Optional
RATELIMIT	INTEGER	0 or 1	Indicates whether to enable rate control. 0: disable 1: enable	Optional
CIR	INTEGER	0 to 1000000	Assured rate	Optional
CBS	INTEGER	0 to 262144	Burst length	Optional
QUEUEEN-ABLE	INTEGER	0 or 1	Indicates whether to enable the queue mapping function. 0: disable 1: enable	Optional
QUEUEMAP	INTEGER	0 to 7	Mapping queue	Optional
COSRE-MARK	INTEGER	0 or 1	Indicates whether to enable the re-marking function. 0: disable 1: enable	Optional
COS	INTEGER	0 to 7	Priority label	Optional
DSCPRE-MARK	INTEGER	0 or 1	Indicates whether to enable the re-marking function. 0: disable 1: enable	Optional
DSCP	INTEGER	0 to 63	DSCP	Optional
RTC	INTEGER	0 or 1	Re-marking traffic class 0: disable 1: enable	Optional
TC	INTEGER	0 to 255	Communication classification	Optional
REPORTEN-ABLE	INTEGER	0 or 1	Port re-direction 0: disable 1: enable	Optional

Parameter	Data Type	Value Range	Description	Remark
REPORTNO	INTEGER	1 to 101	Port number	Optional
PMENABLE	INTEGER	0 or 1	Port mirroring 0: disable 1: enable	Optional
MPORTNO	INTEGER	1 to 100	Port number	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Add a traffic policy named hello for the ONU whose IP address is 10.171.0.39.

- Command issued

```
ADD-FLOWPOLICY::ONUIP=10.171.0.39:CTAG::PROFILENAME=hello,
RULENAME=nimei,PRECEDENCE=2,ACL=1,RATELIMIT=1,CIR=1111,CBS=2222,
QUEUEENABLE=1,QUEUEMAP=1,COSREMARK=1,COS=2,DSCPREMARK=1,DSCP=3,RTC=1,
TC=4,REPORTENABLE=1,REPORTNO=5,PMENABLE=1,MPORTNO=6;
```

- Response message

```
 FH_0.0.0.0 2015-11-04 11:45:19
M  CTAG COMPLD
   EN=0    ENDESC=No error
;
```

Related Command

```
DEL-FLOWPOLICY
ADD-PORTPVCFLOWPOLICY
```

5.8.2 Deleting a Traffic Policy (DEL-FLOWPOLICY)

Function Description

This command is used for deleting a traffic policy.

Command Format

```
DEL-FLOWPOLICY::ONUIP=onu-name|OLTID=olt-name:CTAG:: PROFILENAME=profile
name;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PROFILE-NAME	OCTET STRING	Size (128)	Name of the traffic policy	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Delete the traffic policy hello on the ONU whose IP address is 10.171.0.39.

- Command issued

```
DEL-FLOWPOLICY::ONUIP=10.171.0.39:CTAG::PROFILENAME=hello;
```

- Response message

```
 FH_0.0.0.0 2015-11-04 11:45:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

```
ADD-FLOWPOLICY
ADD-PORTPVCFLOWPOLICY
```

5.8.3 Adding a Port Flow Policy (ADD-PORTPVCFLOWPOLICY)

Function Description

This command is used for adding a port flow policy.

Command Format

```
ADD-PORTPVCFLOWPOLICY::ONUIP=|(OLTID=oltname,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index)[,ONUPORT=onuport]:CTAG::PVCNO=0,
UPPOLICYID=ubrPcr_1024K,DOWNPOLICYID=ubrPcr_1024K;
```

Supported Equipment

ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.

Parameter Name	Data Type	Value Range	Description
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
PORTID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified. To only specify the shelf number, enter it in format of NA-0-NA-NA. To specify the card, enter it in format of NA-0-6-NA. To specify the port number, enter it in format of NA-0-6-5.

Response Format

It complies with the query-command response format in Response Message Format.

Example

Issue the command

```
ADD-PORTPVCFLOWPOLICY::ONUIP=172.28.148.57,ONUPORT=1-1-1-1:CTAG::
PVCNO=1,UPPOLICYID=ubrPcr_1024K,DOWNPOLICYID=ubrPcr_1024K;
```

Response Message

```
None
```

Related Command

```
ADD-FLOWPOLICY
DEL-FLOWPOLICY
```

6 Integrated Testing Interface

The following introduces the testing commands for related resources of the PON line, voice service, xDSL port and LAN port.

6.1 The Ping Command

The following introduces the PING command and the related example to use it.

6.1.1 Using PING on an ONU (PING)

Function Description

Pinging an IP address on an ONU can test the connectivity at IP layer between the ONU and the device corresponding to the IP address.

Command Format

```
PING::ONUIP=onu name|OLTID=OLT_name[,PONID=ponport_location,ONUIDTYPE
=id-type,ONUID=onu_index]:CTAG::IP=ip-address;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	If input parameters exclude the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type: ONU_NAME, MAC, LOID, ONU_NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
IP	OCTET STRING	Size (20)	Destination IP address of the PING command	Required

Response Format

It complies with the query command response format in Response Message Format.

```
Title = List of PING Info
TxPkts RxPkts LostPkts LostPktRatio MinDelay MaxDelay AvgDelay
```

Output Parameter

Parameter	Data Type	Value Range	Description	Remark
TxPkts	INTEGER	0 to 10	Number of sent packets	-
RxPkts	INTEGER	0 to 10	Number of received packets	-
LostPkts	INTEGER	0 to 10	Number of lost packets	-
LostPktRatio	INTEGER	0 to 100	Packet loss rate Unit: %	Number of lost packets / number of sent packets
MinDelay	INTEGER	0 to 2000	Minimum delay time Unit: ms	-
MaxDelay	INTEGER	0 to 2000	Maximum delay time Unit: ms	-
AvgDelay	INTEGER	0 to 2000	Mean delay Unit: ms	-

Example

Example 1: Ping the IP address 10.250.18.100 on the ONU (having no management IP address) connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100. The information of the ONU is as follows: ONUID is Test0001; the authentication mode is LOID.

◆ Command issued

```
PING::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=Test0001:CTAG::IP=10.250.18.100;
```

◆ Response message

```
FH_10.250.18.133 2010-10-27 10:56:34
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
Ping from ONU
------------------------------------------------------------
TxPkts RxPkts LostPkts LostPktRatio MinDelay MaxDelay AvgDelay
4      4         0      0       1      1      1
------------------------------------------------------------
;
```

Example 2: Ping the IP address 10.250.18.100 on the ONU (having a management IP address) whose IP address is 10.250.18.20.

◆ Command issued

```
PING::ONUIP=10.250.18.121:CTAG::IP=10.250.18.100;
```

◆ Response message

```
   FH_10.250.18.133 2010-11-02 09:42:08
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
Ping from ONU
------------------------------------------------------------
TxPkts RxPkts LostPkts LostPktRatio MinDelay MaxDelay  AvgDelay
2   2     0   0   0     0    0
------------------------------------------------------------
;
```

Related Command

None

6.2 Querying the Equipment Information

The following introduces the commands and examples for querying the equipment information.

6.2.1 Querying the NE Information (LST-DEVINFO)

Function Description

This command is used to query the equipment model, software version, memory, CPU and temperature of the NE (OLT and ONU).

Command Format

```
LST-DEVINFO::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport-location,
ONUIDTYPE=id-type,ONUID=onu-index]:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	-
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER ER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	-
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.

Response Format

It complies with the query-command response format in Response Message Format.

```
Title= List of Device Info
name of attributes: DEVNAME DEVIP DT DEVER MEM CPU TEMPERATURE
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
DEVNAME	OCTET STRING	Size (128)	Equipment name
DEVIP	OCTET STRING	Size (128)	Equipment IP address
DT	OCTET STRING	Size (255)	Equipment model
DEVER	OCTET STRING	Size (255)	Software version
MEM	INTEGER	0 - 100	Memory usage Unit: %
CPU	INTEGER	0 - 100	CPU usage Unit: %
TEMPERATURE	INTEGER	-50 - 100	Temperature Unit: ℃

Example

For example, query the information of the NE whose IP address is 10.250.18.100.

- Command

```
LST-DEVINFO::OLTID=10.250.18.100:CTAG::;
```

- Response Message

```
FH_10.250.18.133 2010-11-01 10:09:57
```

```
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
List of Device Info
------------------------------------------------------------
DEVNAME DEVIP    DT       DEVER    MEM      CPU      TEMPERATURE
1    10.250.18.100    AN5516_01   RP0121   68.98    5.57 30
------------------------------------------------------------
```

Related Command

None

6.2.2 Querying the Card Information (LST-BRDINFO)

Function Description

This command is sued for querying the type, status and version of the card.

Command Format

```
LST-BRDINFO::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index][,BOARDID=board-name]:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	-

Parameter Name	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	It is required when querying the ONU that has no management IP address.
ONUIDTYPE	OCTET STRING	ONU_NAME, MAC LOID ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	-
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	It is required when querying the ONU that has no management IP address.
BOARDID	OCTET STRING	Size (128) Cabinet rack - shelf - slot	Card information location. Locating through the approach of cabinet rack - shelf - slot number. Enter NA if the corresponding information is not specified.	Optional. If it is not specified, it indicates querying all cards.

Response Format

It complies with the query-command response format in Response Message Format.

```
Title= List of Device Info
BOARDID BSTAT BOARDTYPE BSERVICE PNUM SWVER HWVER MEM CPU
```

Output Parameter

Parameter Name	Data Type	Value Range	Description	Remark
BOARDID	OCTET STRING	Size (128) Cabinet rack - shelf - slot	Locates the information of the card connected with the ONU through the approach of cabinet rack - shelf - slot number. Enter NA if the corresponding information is not specified.	-
BSTAT	OCTET STRING	Normal Fault Offline	Card status	-
BOARDTYPE	OCTET STRING	Size (128)	Card Type	-

Parameter Name	Data Type	Value Range	Description	Remark
BSERVICE	OCTET STRING	Power ETH ADSL VDSL POTS E1 GPON EPON SCU Other	Card service type (such as ADSL2P and SHDSL)	SCU: main control unit
PNUM	INTEGER	0 - 64	Number of ports	-
SWVER	OCTET STRING	Size (255)	Software version	-
HWVER	OCTET STRING	Size (255)	Hardware Version	-
MEM	INTEGER	0 - 100	Memory usage Unit: %	-
CPU	INTEGER	0 - 100	CPU usage Unit: %	-

Example

For example, query the card information of the NE whose IP address is 10.250.18.100.

◆ Command

```
LST-BRDINFO::OLTID=10.250.18.100,BOARDID=NA-NA-3:CTAG::;
```

◆ Response Message

```
  FH_10.250.18.133 2010-10-27 10:59:09
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
List of Board Info
------------------------------------------------------------
BOARDID  BSTAT  BOARDTYPE  BSERVICE  PNUM  SWVER  HWVER  MEM CPU
NA-1-3 Normal  EC4B  EPON  4 RP0121  WKE2.119.318R2A 38.88   2.73
------------------------------------------------------------
;
```

Related Command

None

6.3 Querying the PON Information

The following introduces the commands and examples for querying the PON information.

6.3.1 Querying the PON Port Information (LST-PONINFO)

Function Description

This command is used for querying the status and configuration information of an OLT PON port.

Command Format

```
LST-PONINFO::OLTID=olt-name,PONID=pon_name:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	-
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	-

Response Format

It complies with the query command response format in Response Message Format.

```
Title = List of olt pon port information
AdminState OperState
```

Output Parameter

Parameter	Data Type	Value Range	Description
AdminState	OCTET STRING	UP DOWN	Management status
OperState	OCTET STRING	UP DOWN	Operating status

Example

Query the status of PON port 1 in slot 3 of the NE whose IP address is 10.250.18.100.

- Command issued

```
LST-PONINFO::OLTID=10.250.18.100,PONID=NA-NA-3-1:CTAG::;
```

- Response message

```
   FH_10.250.18.133 2010-10-27 11:02:13
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
List of olt pon port information
---------------------------------------------------------
AdminState      OperState
UP      UP
---------------------------------------------------------
```

Related Command

None

6.3.2 Querying the PON Link Statistics Information (LST-PONPERF)

Function Description

This command is used for querying the statistics information of the OLT PON port or ONU PON port, such as the number of sent / received packets, sent / received bytes as well as error frames.

Command Format

```
LST-PONPERF::ONUIP=onu-name|(OLTID=olt-name,PONID=ponport_location[,
ONUIDTYPE=id-type,ONUID=onu-index]):CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	It is required when querying the OLT PON port or the ONU that has no management IP address.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	It is required when querying the OLT PON port or the ONU that has no management IP address.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME MAC LOID ONU_NUMBER	It is required when querying the ONU that has no management IP address.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	It is required when querying the ONU that has no management IP address.

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of pon port performance
OutPkts InPkts OutOctets InOctets CRC UnderSizePkts OverSizePkts InErrors
OutErrors InDiscards OutDiscards InUnicastPkts InMulticastPkts
InBroadcastPkts OutUnicastPkts OutMulticastPkts OutBroadcastPkts
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
OutPkts	DOUBLE	0 - 1.85E19	Number of sent packets.
InPkts	DOUBLE	0 - 1.85E19	Number of received packets.
OutOctets	DOUBLE	0 - 1.85E19	Number of sent bytes
InOctets	DOUBLE	0 - 1.85E19	Number of received bytes
CRC	DOUBLE	0 - 1.85E19	Number of received CRC error packets
UnderSizePkts	DOUBLE	0 - 1.85E19	Number of received undersized packets
OverSizePkts	DOUBLE	0 - 1.85E19	Number of received oversized packets
InErrors	DOUBLE	0 - 1.85E19	Number of received error packets
OutErrors	DOUBLE	0 - 1.85E19	Number of unsent error packets
InDiscards	DOUBLE	0 - 1.85E19	Number of discarded received packets
OutDiscards	DOUBLE	0 - 1.85E19	Number of discarded sent packets
InUnicastPkts	DOUBLE	0 - 1.85E19	Number of received unicast packets
InMulticastPkts	DOUBLE	0 - 1.85E19	Number of received multicast packets
InBroadcastPkts	DOUBLE	0 - 1.85E19	Number of received broadcast packets
OutUnicastPkts	DOUBLE	0 - 1.85E19	Number of sent unicast packets
OutMulticastPkts	DOUBLE	0 - 1.85E19	Number of sent multicast packets
OutBroadcastPkts	DOUBLE	0 - 1.85E19	Number of sent broadcast packets

Example

Example 1, query the PON link status of the ONU (having no management IP address) with ONUID being aa_bbb_ccc_111_222. The ONU is connected to the slot 3 - PON 1 port of the NE whose IP address is 10.250.18.100.

- Command

```
LST-PONPERF::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222:CTAG::;
```

- Response Message

```
 FH_10.250.18.133 2010-10-27 11:05:41
M  CTAG COMPLD
   total_blocks=1
```

```
   block_number=1
   block_records=1
list of pon port performance
---------------------------------------------------------
OutPkts InPkts  OutOctets   InOctets   CRC    UnderSizePkts
OverSizePkts    InErrors    OutErrors   InDiscards
OutDiscards InUnicastPkts InMulticastPkts InBroadcastPkts OutUnicastPkts
OutMulticastPkts   OutBroadcastPkts
2832   411    240431  29259   --    --    --    --    0
0    0     47    8     364   542  885   1405
---------------------------------------------------------
```

Example 2, query the PON link status of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command

```
LST-PONPERF::ONUIP=10.250.18.121:CTAG::;
```

- Response Message

```
   FH_10.250.18.133 2010-11-02 09:48:20
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of pon port performance
---------------------------------------------------------
OutPkts InPkts OutOctets  InOctets  CRC  UnderSizePkts  OverSizePkts
InErrors   OutErrors   InDiscards
OutDiscards   InUnicastPkts    InMulticastPkts InBroadcastPkts
OutUnicastPkts  OutMulticastPkts    OutBroadcastPkts
4409    1385    450601  202533  --      --    --    --
0  0  0    1295    8    90    667   926   2816
---------------------------------------------------------
```

Related Command

None

6.3.3 Querying the ONU Configuration (LST-ONUCFG)

Function Description

This command is used for querying the configuration information of an ONU on the OLT, including ONU status, optical fiber length and authentication information.

Command Format

```
LST-ONUCFG::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=id-type,
ONUID=onu-index:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID, ONU_ NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of ONU info
```

AdminState OperState AUTH AUTHINFO Length UsFixedBw UsAssuredBw UsMaxBw DsMaxBw

Output Parameter

Parameter Name	Data Type	Value Range	Description
AdminState	OCTET STRING	UP DOWN	Administration status
OperState	OCTET STRING	UP Power-Off LOS	Running status
AUTHTYPE	OCTET STRING	MAC LOID LOIDONCEON	Authentication mode
AUTHINFO	OCTET STRING	Size (64)	Authentication information. If AUTHTYPE is set to MAC, AUTHINFO is MAC address. If AUTHTYPE is set to LOID, AUTHINFO is LOID.
Length	DOUBLE	0 - 100	Optical fiber length Unit: km
UsFixedBw	INTEGER	0 - 40000	Fixed uplink bandwidth Unit: Mbit/s
UsAssuredBw	INTEGER	0 - 40000	Guaranteed uplink bandwidth Unit: Mbit/s
UsMaxBw	INTEGER	0 - 40000	Maximum uplink bandwidth Unit: Mbit/s
DsMaxBw	INTEGER	0 - 40000	Maximum downlink bandwidth Unit: Mbit/s

Example

For example, query the configuration information of the ONU with ONUID being aa_bbb_ccc_111_222. The ONU is connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100.

- Command

```
LST-ONUCFG::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222:CTAG::;
```

- Response Message

```
   FH_10.250.18.133 2010-10-27 11:03:08
M  CTAG COMPLD
```

```
   total_blocks=1
   block_number=1
   block_records=1
list of ONU info
-------------------------------------------------------------
AdminState    OperState     AUTH     AUTHINFO  Length
UsFixedBw     UsAssuredBw  UsMaxBw DsMaxBw
UP    UP    LOID     aaa_bbb_ccc_111_222      0      0       0
1000     1000
-------------------------------------------------------------
```

Related Command

None

6.3.4 Querying the ONU Status (LST-ONUSTATE)

Function Description

This command is used for querying the status or authentication information of a single ONU or all ONUs on the OLT PON port.

Command Format

```
LST-ONUSTATE::OLTID=olt-name,PONID=ponport_location[,ONUIDTYPE=id-type,
ONUID=onu-index]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	-
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	-

Parameter	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	Size (128)	ONU identifier type: ONU_NAME, MAC, LOID, ONU_NUMBER	Optional. If it is not specified, the status of all ONUs on the OLT PON port will be queried.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional. If it is not specified, the status of all ONUs on the OLT PON port will be queried.

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of ONU state
ONUID AdminState OperState AUTH AUTHINFO ONUIP
```

Output Parameter

Parameter	Data Type	Value Range	Description
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_Number.
AdminState	OCTET STRING	UP DOWN	Management status
OperState	OCTET STRING	UP Power-Off LOS	Operating status
AUTH	OCTET STRING	MAC LOID	Authentication mode
AUTHINFO	OCTET STRING	Size (64)	Authentication information. If AUTH is set to MAC, AUTHINFO is MAC address. If AUTH is set to LOID, AUTHINFO is LOID.
ONUIP	OCTET STRING	-	ONU management IP
LASTOFF-TIME	OCTET STRING	-	ONU offline time
ACTIVES-TATE	OCTET STRING	Active Deactive	ONU activation status. Whether the field will be returned depends on the switch.

Parameter	Data Type	Value Range	Description
LASTDOWN-CAUSE	OCTET STRING	-	Offline cause. This parameter and LASTOFFTIME are alternative, depending on the switch.
LASTONTIME	OCTET STRING	Size (128)	The last online time of the ONU. The time format (Beijing time) is **YYYY-MM-DD HH-MM-SS**.

Example

Query the status of the ONU with ONUID being aaa_bbb. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
LST-ONUSTATE::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb:CTAG::;
```

- Response message

```
FH_10.250.18.133 2010-10-27 11:03:48
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of ONU state
------------------------------------------------------------------
ONUID AdminState OperStat AUTH AUTHINFO ONUIP LASTOFFTIME
5     UP         UP       LOID aaa_bbb  --    0000-00-00 00:00:00
------------------------------------------------------------------
```

Related Command

None

6.3.5 Querying the MAC Address Table of an ONU UNI Port (LST-PORTMACADDRESS)

Function Description

This command is used for querying the MAC address table learned by an ONU UNI port. The MAC address format is XX-XX-XX-XX-XX-XX.

Command Format

```
LST-PORTMACADDRESS::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location][,ONUIDTYPE=id-type,ONUID=onu_index][,
PORTID=uniport_index][,VLAN=vlan_value]:CTAG::;
```

- The ONU that has a management IP address.

```
LST-PORTMACADDRESS::ONUIP=onu_name,PORTID=uniport_index[,
VLAN=vlan_value]:CTAG::;
```

- The ONU that has no management IP address.

```
LST-PORTMACADDRESS::OLTID=olt_name,PONID=ponport_location,ONUID TYPE=id-
type,ONUID=onu_index,PORTID=uniport_index[,VLAN=vlan_value]:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	It is required for the ONU that has no management IP address.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	It is required for the ONU that has no management IP address.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME MAC LOID ONU_NUMBER	It is required for the ONU that has no management IP address.

Parameter Name	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	It is required for the ONU that has no management IP address.
PORTID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Required.
VLAN	INTEGER	0 - 4096	VLAN number	VLAN number

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of MAC Address
VLAN MAC
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
VLAN	INTEGER	0 - 4095	VLAN
MAC	OCTET STRING	Size (128)	MAC address format is XX-XXXX-XX-XX-XX.

Example

Example 1, query the MAC address table of the UNI port of the ONU (having no management IP address) with ONUID being aa_bbb_ccc_111_222. The ONU is connected to the slot 3 - PON1 port of the OLT whose IP address is 10.250.18.100.

- Command

```
LST-PORTMACADDRESS::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,PORTID=NA-NA-NA-1,VLAN=2114:CTAG::;
```

- Response Message

```
FH_10.250.18.133 2010-10-27 11:06:25
M  CTAG COMPLD
   total_blocks=1
   block_number=1
```

```
   block_records=1
list of MAC Address
------------------------------------------------------------
VLAN    MAC
2114
------------------------------------------------------------
```

Example 2, query the MAC address table of the No. 1 port located in the No. 4 slot of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command

```
LST-PORTMACADDRESS::ONUIP=10.250.18.121,PORTID=NA-NA-4-1,VLAN=2114:
CTAG::;
```

◆ Response Message

```
FH_10.250.18.133 11/2/2010 9:45:19
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of MAC Address
------------------------------------------------------------
VLAN    MAC
2114
------------------------------------------------------------
```

Related Command

None

6.3.6 Querying the DDM Information of Optical Modules (LST-OMDDM)

Function Description

This command is used for querying the DDM information of optical modules, including the ETH optical module, OLT PON optical module and ONU PON optical module.

Command Format

```
LST-OMDDM::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location][,
ONUIDTYPE=id-type,ONUID=onu-index][,PORTID=lanport_index][,
PEERFLAG=flag]:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	It is required when querying the OLT PON optical module or the ONU that has no management IP address.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	It is required when querying the OLT PON optical module or the ONU that has no management IP address.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	It is required when querying the ONU that has no management IP address.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	It is required when querying the ONU that has no management IP address.
PORTID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Optional. It is used for querying the OLT uplink port.
PEERFLAG	OCTET STRING	Size (128)	True, False.	Optional. It is used for returning the far-end optical power information upon the query. The default value is False.

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of MAC Address
ONUID RxPower RxPowerR TxPower TxPowerR CurrTxBias CurrTxBiasR Temperature
TemperatureR Voltage VoltageR PTxPower PRxPower
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
ONUID	OCTET STRING	Size (128)	When querying the OLT optical module, a dash (–) will be returned. When querying the ONU optical module, the ONU identifier will be returned. The value is ONU_Number.
RxPower	OCTET STRING	-40 to 10	Received optical power. Unit: dBm.
RxPowerR	OCTET STRING	Normal High Low	Indicates whether the received optical power is normal.
TxPower	OCTET STRING	-40 to 10	Sent optical power. Unit: dBm.
TxPowerR	OCTET STRING	Normal High Low	Indicates whether the sent optical power is normal.
CurrTxBias	OCTET STRING	0 to 131	Bias current. Unit: mA.
CurrTxBiasR	OCTET STRING	Normal High Low	indicates whether the bias current is normal.
Temperature	OCTET STRING	-45 to 90	Temperature. Unit: ℃.
TemperatureR	OCTET STRING	Normal High Low	Indicates whether the temperature is normal.
Voltage	OCTET STRING	0 to 6.55	Supply voltage. Unit: V.
VoltageR	OCTET STRING	Normal High Low	Indicates whether the supply voltage is normal.

Parameter Name	Data Type	Value Range	Description
PTxPower	OCTET STRING	-40 to 10	Far-end sent optical power. Unit: dBm. A dash (–) will be returned if no optical power is sent.
PRxPower	OCTET STRING	-40 to 10	Far-end received optical power. Unit: dBm. A dash (–) will be returned if no optical power is received.

Example

Example 1, query the optical module information of the ONU (having no management IP address) with ONUID being aa_bbb_ccc_111_222. The ONU is connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100.

◆ Command

```
LST-OMDDM::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222:CTAG::;
```

◆ Response Message

```
FH_10.250.18.133 2010-10-27 11:05:05
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
List of Optical Power Info
------------------------------------------------------------
ONUID   RxPower  RxPowerR  TxPower TxPowerR  CurrTxBias
CurrTxBiasR  Temperature  TemperatureR Voltage VoltageR
PTxPower PRxPower
5    -9.76   Normal  1.76    Normal  15.80   Normal  62.37
Normal  3.40    Normal  --      --
------------------------------------------------------------
```

Example 2, query the optical module information of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command

```
LST-OMDDM::ONUIP=10.250.18.121:CTAG::;
```

◆ Response Message

```
  FH_10.250.18.133 2010-11-02 09:47:44
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
```

```
List of Optical Power Info
------------------------------------------------------------
ONUID   RxPower RxPowerR    TxPower TxPowerR     CurrTxBias
CurrTxBiasR     Temperature     TemperatureR  Voltage VoltageR
PTxPower    PRxPower
2       -13.44  Normal  2.64    Normal  20.00   Normal  41.41
Normal  3.26    Normal  --      --
------------------------------------------------------------
```

Related Command

None

6.3.7 Querying the Unregistered ONU of a PON Port (LST-UNREGONU)

Function Description

This command is used for querying the status of the unregistered ONU of a OLT PON port.

Command Format

```
LST-UNREGONU::OLTID=olt-name,PONID=pon_name:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = List of unreg onu information
MAC LOID PWD ERROR AUTHTIME DT
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
MAC	OCTET STRING	Size (128)	MAC address of the EPON ONU or SN of the GPON ONU.
LOID	OCTET STRING	Size (64)	When the MAC authentication is adopted, a dash (–) will be returned.
PWD	OCTET STRING	Size (128)	LOID/GPON password. A dash (–) will be returned if there is no password.
ERROR	OCTET STRING	Size (128) Conflict	Conflict indicates an authentication information conflict.
AUTHTIME	OCTET STRING	Size (128)	ONU authentication time. The time format (Beijing time) is YYYY-MM-DD HH-MM-SS. Optional.
DT	OCTET STRING	Size (255)	ONU equipment model. Optional.

Example

For example, query the status information of the unregistered ONU (having no management IP address). The ONU is connected to the slot 7 - PON 1 port of the OLT whose IP address is 10.78.200.200.

- Command

```
LST-UNREGONU::OLTID=10.78.200.200,PONID=NA-NA-7-1:CTAG::;
```

- Response Message

```
  FH_10.98.100.16 2014-06-12 16:29:21
M  CTAG COMPLD
   total_blocks=0
   block_number=0
   block_records=0

List of Unreg Onu information
---------------------------------------------------------------
MAC   LOID  PWD  ERROR  AUTHTIME
```

```
------------------------------------------------------------

;
```

Related Command

None

6.3.8 Querying the Wi-Fi Service Information of an ONU (LST-WIFISERVICE)

Function Description

This command is used for querying the Wi-Fi service information of an ONU.

Command Format

```
LST-WIFISERVICE::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location]
[,ONUIDTYPE=id-type,ONUID=onu-index]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	If input parameters exclude the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = result of wifiservice
SSIDNO WIFIENABLE WILESSAREA WILESSCHANNEL WILESSSTANDARD TPOWER SSIDNAME
SSIDENABLE SSIDVISIBALE AUTHMODE ENCRYPTYPE PRESHAREDKEY UPDATEKEYINTERVAL
RADIUSSERVER RADIUSPORT RADIUSKEY WEPENCRYPTIONLEVEL WEPKEYINDEX WEPKEY1
WEPKEY2 WEPKEY3 WEPKEY4
```

Output Parameter

Parameter	Data Type	Value Range	Description
SSIDNO	INTEGER	1 to 4	SSID index
WIFIENABLE	OCTET STRING	Enable, Disable	Indicates whether to enable the Wi-Fi.
FREQBAND-WIDTH	OCTET STRING	20/40MHz, 20MHz, 40MHz, 80MHz	Frequency bandwidth
WILESSAREA	OCTET STRING	USA, EURO	Wi-Fi wireless area
WILESSCHAN-NEL	INTEGER	[0, 13] for WILESSAREA = 0 [1, 11] for WILESSAREA = 1	Wireless channel number
WILESSSTAN-DARD	OCTET STRING	802.11b, 802.11g, 802.11b/g, 802.11n, 802.11bgn	Wireless standard
TPOWER	INTEGER	[0, 20]	Launched power
SSIDNAME	OCTET STRING	Size (32)	SSID name

Parameter	Data Type	Value Range	Description
SSIDENABLE	OCTET STRING	Enable, Disable	Indicates whether to enable SSID. Enable indicates enabling SSID and Disable indicates disabling SSID.
SSIDVISIBALE	OCTET STRING	Available, Not-Available	Indicates whether to hide SSID.
AUTHMODE	OCTET STRING	OPEN, SHARED, WEPAUTO, WPAPSK, WPA, WPA2PSK, WPA2, WPA/WPA2 WPAPSK, WPA2PSK	WLAN authentication mode
ENCRYPTYPE	OCTET STRING	NONE, WEP, TKIP, AES, TKIPAES	WLAN encryption type
PRESHAREDKEY	OCTET STRING	STRING (64)	WPA pre-shared key
UPDATEKEYIN-TERVAL	INTEGER	[0, 4194303]	WPA key update interval Unit: s
RADIUSSERVER	OCTET STRING	Size (128)	RADIUS server
RADIUSPORT	OCTET STRING	STRING (2)	RADIUS server port
RADIUSKEY	OCTET STRING	STRING (32)	RADIUS-KEY
WEPENCRYP-TIONLEVEL	INTEGER	1: 40 bits 2: 104 bits	WEP key length
WEPKEYINDEX	INTEGER	[1, 4]	Key index
WEPKEY1	OCTET STRING	STRING (64)	WEP key 1
WEPKEY2	OCTET STRING	STRING (64)	WEP key 2
WEPKEY3	OCTET STRING	STRING (64)	WEP key 3
WEPKEY4	OCTET STRING	STRING (64)	WEP key 4

Example

Query the Wi-Fi service information of the ONU (having no management IP address) with MAC being FHTT01e821a0. The ONU is connected to PON port 4 in slot 18 of the OLT whose IP address is 10.78.191.100.

- Command issued

```
LST-WIFISERVICE::OLTID=10.78.191.100,PONID=NA-NA-18-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::;
```

- Response message

```
FH_10.82.25.73 2017-02-24 16:20:25
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=4

result of wifiservice
------------------------------------------------------------------
SSIDNO WIFIENABLEFREQBANDWIDTH WILESSAREA WILESSCHANNEL
WILESSSTANDARD TPOWER SSIDNAME SSIDENABLE SSIDVISIBALE
AUTHMODE     ENCRYPTYPE
PRESHAREDKEY     UPDATEKEYINTERVAL
RADIUSSERVER RADIUSPORT RADIUSKEY WEPENCRYPTIONLEVEL
WEPKEYINDEX      WEPKEY1      WEPKEY2
WEPKEY3   WEPKEY4
1 Enable 20MHz/40MHz USA 5 802.11g 15 Bgolas Disable
  Not-Available WPA2PSK AES 1111111111 3600  -- --  --
  40 bit  1  --  --  -- --
2 Enable 20MHz/40MHz USA  5 802.11g 15 eeeeea Disable
  Available WPA2PSK AES ru83n55c  3600  --  --  --  40  bit
  1  --  -- -- --
3 Enable 20MHz/40MHz USA  5 802.11g 15 ghhhhhh Disable Available
  OPEN AES --  86400  --  --  --  40 bit  1  --  --  --  --
4 Enable 20MHz/40MHz USA  5 802.11g 15 wwwwww Disable Available
  WPA2PSK AES ru83n55c  3600  --  --  --  40  bit  1  --  -- -- --
------------------------------------------------------------------
;
```

Related Command

None

6.3.9 Querying the WAN Service Information of an ONU (LST-ONUWANSERVICECFG)

Function Description

This command is used for querying the WAN connection service information of an ONU.

Command Format

```
LST-ONUWANSERVICECFG::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index][,
ONUPORT=port-id]:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5506-04-F1.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	The ONU that has a management IP address. Required.
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	ONU_NAME, MAC, LOID, ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128)	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Optional. The LAN port range is NA-NA-NA-1 to NA-NA-NA-4; the Wi-Fi port range is NA-NA-NA-101 to NA-NA-NA-104.

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = List of Onu Wan service cfg
SVCNAME CONNMODE CONNTYPE VLANID VLANCOS NATFLAG IPOBTAINTYPE
STATICIPADDRESS STATICIPSUBNET STATICGATEWAY MASTERDNS SLAVEDNS
PPPOEPROXYFLAG PPPOEUSERNAME PPPOEPASSWD PPPOESVCNAME PPPOEMODE QOSFLAG
BINDPORTNO
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
SVCNAME	OCTET STRING	Size (128)	Name of the WAN connection
CONNMODE	INTEGER	1: TR069 2: INTERNET 3: TR069INTERNE 4: Other	WAN connection mode
CONNTYPE	INTEGER	1: bridge 2: route	WAN connection type
VLANID	INTEGER	1 - 4085. It can be null.	VLAN ID of the WAN connection
VLANCOS	INTEGER	0 - 7. It can be null.	VLAN ID of the WAN connection
NATFLAG	INTEGER	1: Enable 2: Disable	Indicates whether to enable NAT for the WAN connection
IPOBTAINTYPE	INTEGER	1: DHCP 2: Static 3: PPPOE	IP obtaining mode of the WAN connection
STATICIPAD-DRESS	OCTET STRING	It is valid only when IPOBTAINTYPE is set to Static. Otherwise, it is disabled.	Static IP address of the WAN connection
STATICIPSUB-NET	OCTET STRING	It is valid only when IPOBTAINTYPE is set to Static. Otherwise, it is disabled.	Subnet mask of the WAN connection
STATICGATE-WAY	OCTET STRING	It is valid only when IPOBTAINTYPE is set to Static. Otherwise, it is disabled.	Default gateway of the WAN connection

Parameter Name	Data Type	Value Range	Description
MASTERDNS	OCTET STRING	It is valid only when IPOBTAINTYPE is set to Static. Otherwise, it is disabled.	Primary DNS of the WAN connection
SLAVEDNS	OCTET STRING	It is valid only when IPOBTAINTYPE is set to Static. Otherwise, it is disabled.	Secondary DNS of the WAN connection
PPPOEPROXY-FLAG	INTEGER	1: Enable 2: Disable	Indicates whether to enable PPPoE Proxy for the WAN connection.
PPPOEUSER-NAME	OCTET STRING	It is valid only when IPOBTAINTYPE is set to PPPoE. Otherwise, it is disabled.	Username of the PPPoE connection.
PPPOEPASSWD	OCTET STRING	It is valid only when IPOBTAINTYPE is set to PPPoE. Otherwise, it is disabled.	Password of the PPPoE connection.
PPPOESVC-NAME	OCTET STRING	It is valid only when IPOBTAINTYPE is set to PPPoE. Otherwise, it is disabled.	PPPoE service name
PPPOEMODE	INTEGER	It is valid only when IPOBTAINTYPE is set to PPPoE. Otherwise, it is disabled. 1: Auto connect 2. Connect when traffic is deleted	PPPoE dial-up mode
QOSFLAG	INTEGER	1: Enable 2: Disable	Indicates whether to enable the QoS function for the WAN connection.
BINDPORTNO	INTEGER	1 - 4 indicates LAN1 to LAN4; 101 - 104 indicates SSID1 to SSID4.	Binding LAN port

Example

For example, query the WAN connection service information of the ONU (having no management IP address) with MAC address being FHTT01e821a0. The ONU is connected to the slot 18 - PON 4 port of the OLT whose IP address is 10.78.191.100.

- Command

```
LST-ONUWANSERVICECFG::OLTID=10.78.191.100,PONID=NA-NA-18-4,
ONUIDTYPE=MAC,ONUID=FHTT01e821a0:CTAG::;
```

- Response Message

```
   FH_10.82.25.73 2013-02-05 16:52:02
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1

List of Onu Wan service cfg:
------------------------------------------------------------
SVCNAME CONNMODE CONNTYPE VLANID VLANCOS NATFLAG
IPOBTAINTYPE STATICIPADDRESS STATICIPSUBNET STATICGATEWAY
MASTERDNS SLAVEDNS PPPOEPROXYFLAG PPPOEUSERNAME
PPPOEPASSWD PPPOESVCNAME PPPOEMODE QOSFLAG BINDPORTNO
route_tr069_internet_vid_2 3 2 2 5 1 2 192.168.1.5
255.255.0.0 192.168.1.1 3.3.3.3 4.4.4.4 2
12345678901234567890123456789012345678901
12345678901234567890123456789012345678901 -- 1 1 1
------------------------------------------------------------
;
```

Related Command

None

6.3.10 Restarting an ONU (RESET-ONU)

Function Description

This command is used for restarting an ONU.

Command Format

```
RESET-ONU::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index][,portid=port-id]:CTAG::
[RESETTYPE=resettype];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	ONU_NAME, MAC, LOID and ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID or ONU_NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
PORTID	OCTET STRING	Size (128)	Locate a card through **rack - shelf - slot - port number**. Enter **NA** for the corresponding unspecified information. For example, with **NA-NA-X-0** entered, the card to be restarted is located.	Optional. It is required for restarting a line card or the main control unit of the ONU that has a management IP address.
RESETTYPE	INTEGER	0 or 1	The value is 0 or 1. 0 indicates restarting the entire system; 1 indicates restarting a line card or the main control unit.	Optional. If it is not specified, the entire system will be restarted.

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Restart the ONU (having no management IP address) with MAC address being FHTT01e821a0. The ONU is connected to PON port 4 in slot 18 of the OLT whose IP address is 10.78.191.100.

- Command issued

```
RESET-ONU::OLTID=10.78.191.100,PONID=NA-NA-18-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::;
```

- Response message

```
   FH_10.82.25.73 2013-02-21 14:52:34
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Example 2: Restart the ONU (having a management IP address) whose IP address is 10.78.191.119.

- Command issued

```
RESET-ONU::OLTID=10.78.191.100,PONID=NA-NA-18-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::;
```

- Response message

```
   FH_10.82.25.73 2013-02-21 14:52:34
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

None

6.3.11 Querying the IP Address / Range Allocated to a User by Wi-Fi (LST-USERDHCPSERVER)

Function Description

This command is used for querying the IP address or range allocated to a user by Wi-Fi.

Command Format

```
LST-USERDHCPSERVER::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME, MAC, LOID and ONU_ NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_NUMBER.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = List of user DHCP server cfg:
LANIP ENABLE DHCPSTART DHCPEND DHCPPRIDNS DHCPSECDNS DHCPGATEWAY
```

Output Parameter

Parameter	Data Type	Value Range	Description
LANIP	OCTET STRING	Size (128)	The value (IP address) should be in the same network segment as the DHCPSTART and DHCPEND.
ENABLE	OCTET STRING	Size (128) Enable; Disable	Indicates whether to enable the configured IP address.
DHCPSTAR-T	OCTET STRING	Size (128)	Start IP address of DHCP, which should be smaller than the end IP address of DHCP.
DHCPEND	OCTET STRING	Size (128)	End IP address of DHCP
DHCPPRID-NS	OCTET STRING	Size (128)	Active DNS server of DHCP
DHCPSECD-NS	OCTET STRING	Size (128)	Standby DNS server of DHCP
DHCPGATE-WAY	OCTET STRING	Size (128)	DHCP default gateway

Example

Query the IP address or range allocated to a user by Wi-Fi of the ONU (having no management IP address) with MAC being FHTT01e821a0. The ONU is connected to PON port 4 in slot 18 of the OLT whose IP address is 10.78.191.100.

- Command issued

```
LST-USERDHCPSERVER::OLTID=10.78.191.100,PONID=NA-NA-18-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::;
```

- Response message

```
 FH_10.82.25.73 2013-02-22 17:03:25
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1

List of user DHCP server cfg:
------------------------------------------------------------------
LANIP ENABLE DHCPSTART DHCPEND DHCPPRIDNS DHCPSECDNS DHCPGATEWAY
192.168.1.1Enable192.168.1.2 192.168.1.2530.0.0.0 0.0.0.0
192.168.1.1
------------------------------------------------------------------
;
```

Related Command

None

6.3.12 Modifying the IP Address / Range Allocated to a User by Wi-Fi (CFG-USERDHCPSERVER)

Function Description

This command is used for modifying the IP address or range allocated to the user by Wi-Fi.

Command Format

```
CFG-USERDHCPSERVER::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index]:CTAG::
LANIP=lan_ip,ENABLE=enable_value,DHCPPOOLSTART=dhcp_start_value,
DHCPPOOLEND=dhcp_end_value,DHCPPRIDNS=pri_dns,DHCPSECDNS=sec_dns,
DHCPGATEWAY=gateway_value,DHCPMASK=mask_value;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME, MAC, LOID and ONU_ NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_ NUMBER	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_NUMBER.	Optional
LANIP	OCTET STRING	Size (128)	The value (IP address) should be in the same network segment as the DHCPPOOLSTART and DHCPPOOLEND.	Required
ENABLE	OCTET STRING	Size (128) true / false	Indicates whether to enable the configured IP address.	Required
DHCPPOOL-START	OCTET STRING	Size (128)	Start IP address of DHCP, which should be smaller than the end IP address of DHCP.	Required
DHCPPOO-LEND	OCTET STRING	Size (128)	End IP address of DHCP	Required
DHCPPRIDNS	OCTET STRING	Size (128)	Active DNS server of DHCP	Required
DHCPSECDNS	OCTET STRING	Size (128)	Standby DNS server of DHCP	Required
DHCPGATE-WAY	OCTET STRING	Size (128)	DHCP default gateway	Required
DHCPMASK	OCTET STRING	Size (128)	DHCP mask	Required

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Modify the IP address or range allocated to a user by Wi-Fi of the ONU (having no management IP address) with MAC being FHTT01e821a0. The ONU is connected to PON port 4 in slot 18 of the OLT whose IP address is 10.78.191.100.

◆ Command issued

```
CFG-USERDHCPSERVER::OLTID=10.78.191.100,PONID=NA-NA-18-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::LANIP=10.78.11.6,ENABLE=true,
DHCPPOOLSTART=10.78.11.3,DHCPPOOLEND=10.78.11.9,DHCPPRIDNS=6.6.6.6,
DHCPSECDNS=5.5.5.5,DHCPGATEWAY=10.78.11.1,DHCPMASK=255.255.0.0;
```

◆ Response message

```
  FH_10.82.25.73 2013-02-22 17:05:44
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

None

6.3.13 Querying the Web Interface Username and Password (LST-WEBADMINISTRATOR)

Function Description

This command is used for querying the username and password of the web interface.

Command Format

```
LST-WEBADMINISTRATOR::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port location information. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	If the parameter entered does not include the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	ONU_NAME, MAC, LOID, ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = List of web administrator cfg:
WEBUSERNAME WEBPASSWORD GROUP
```

Output Parameter

Parameter	Data Type	Value Range	Description
WEBUSERNAME	OCTET STRING	Size (128)	Web username
WEBPASSWORD	OCTET STRING	Size (128)	Web password
GROUP	OCTET STRING	Size (128) Admin	Admin indicates the administrator.

Example

For example, query the Web interface username and password of the ONU (having no management IP address) with MAC being FHTT01e821a0.The ONU is connected to PON port 4 in slot 18 of the OLT whose IP address is 10.78.191.100.

- Command issued

```
LST-WEBADMINISTRATOR::OLTID=10.78.191.100,PONID=NA-NA-18-4,
ONUIDTYPE=MAC,ONUID=FHTT01e821a0:CTAG::;
```

- Response message

```
  FH_10.82.25.73 2013-02-22 17:07:31
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
```

```
List of web administrator cfg:
-----------------------------------------
WEBUSERNAME  WEBUSERNAME  GROUP
admin  admin  Admin
-----------------------------------------
;
```

Related Command

None

6.3.14 Modifying the Web Interface Username and Password (CFG-WEBADMINISTRATOR)

Function Description

This command is used for modifying the username and password of the web interface.

Command Format

```
CFG-WEBADMINISTRATOR::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index]:CTAG::
[WEBUSERNAME=user_name][,WEBPASSWORD=web_password];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	If input parameters exclude the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	ONU_NAME, MAC, LOID and ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
WEBUSER-NAME	OCTET STRING	Size (128)	Web username, containing the alphanumeric characters and the symbols ., /, - or _.	(Optional) Default value: admin
WEBPASS-WORD	OCTET STRING	Size (128)	Web password, containing the alphanumeric characters and the symbols ., /, - or _.	(Optional) Default value: admin

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Modify the Web interface username and password of the ONU (having no management IP address) with MAC being FHTT01e821a0. The ONU is connected to PON port 4 in slot 18 of the OLT whose IP address is 10.78.191.100.

- Command issued

```
CFG-WEBADMINISTRATOR::OLTID=10.78.191.100,PONID=NA-NA-18-4,
ONUIDTYPE=ONU_NUMBER,ONUID=1:CTAG::WEBUSERNAME=user_name,
WEBPASSWORD=web_password;
```

- Response message

```
 FH_10.82.25.73 2013-02-22 17:07:42
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

None

6.3.15 Restoring an ONU to Factory Default Settings (RESTORE-DEFAULTCFG)

Function Description

This command is used for restoring an ONU to factory default settings.

Command Format

```
RESTORE-DEFAULTCFG::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index]:CTAG::;
```

Supported Device

- OLT: AN5516 series, AN5116 series.
- ONU: AN5506-04-F1.

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through the information **rack - shelf - slot - PON port number**. If any part of the information is unavailable, enter **NA** instead.	If input parameters exclude the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUID-TYPE	OCTET STRING	ONU_NAME, MAC, LOID and ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

None

Example

Example 1: Restore the ONU (having no management IP address) with MAC address being FHTT01e821a0 to factory default settings. The ONU is connected to PON port 4 in slot 18 of the OLT whose IP address is 10.78.191.100.

- Command issued

```
RESTORE-DEFAULTCFG::OLTID=10.78.191.100,PONID=NA-NA-18-4,ONUIDTYPE=MAC,
ONUID=FHTT01e821a0:CTAG::;
```

- Response message

```
   FH_10.82.25.73 2013-02-22 17:16:32
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
```

Related Command

None

6.4 Querying the LAN Information

The following introduces the command and example for querying the LAN information.

6.4.1 Querying the LAN Port Information (LST-ONULANINFO)

Function Description

This command is used for querying the LAN port status and configuration of an ONU.

Command Format

```
LST-ONULANINFO::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=lanport_index:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_NUMBER	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of lan port info
AdminStatus OperStatus DUPLEX PVID VLANPRIORITY SPEED
```

Output Parameter

Parameter	Data Type	Value Range	Description
AdminStatus	OCTET STRING	UP DOWN	Management status
OperStatus	-	UP DOWN	Operating status
DUPLEX	OCTET STRING	Full Half Auto Auto-Full Auto-Half	Working mode
PVID	OCTET STRING	Integer (1-4094)	VLAN ID. The default VLAN ID is adopted.

Parameter	Data Type	Value Range	Description
VLAN-PRIORITY	OCTET STRING	Integer (0-7)	VLAN priority. The default priority is adopted.
SPEED	INTEGER	Auto-negotiation 10M 100M 1000M Auto-10M Auto-100M Auto-1000M	Port rate

Example

Example 1: Query the information of LAN port 1 of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

◆ Command issued

```
LST-ONULANINFO::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
FH_10.250.18.133 2010-11-01 10:37:58
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of lan port info
------------------------------------------------------------
AdminStatus   OperStatus   DUPLEX  PVID  VLANPRIORITY  SPEED
 UP    DOWN     --    4088    0     --
------------------------------------------------------------
```

Example 2: Query the information of LAN port 1 in slot 4 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-ONULANINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-4-1:CTAG::;
```

◆ Response message

```
F FH_10.250.18.133 2010-11-02 10:33:09
M  CTAG COMPLD
   total_blocks=1
   block_number=1
```

```
   block_records=1
list of lan port info
-------------------------------------------------------------
AdminStatus  OperStatus  DUPLEX  PVID VLANPRIORITY  SPEED
UP  DOWN    Auto-Half  4088  0  Auto-10M
-------------------------------------------------------------
```

Related Command

None

6.4.2 Querying the LAN Port Rate Control (LST-LANCAR)

Function Description

This command is used for querying the uplink and downlink rate control of an ONU LAN port.

Command Format

```
LST-LANCAR::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=lanport_index:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of LAN port rate-limit info
RateLimitUs RateLimitDs
```

Output Parameter

Parameter	Data Type	Value Range	Description
RateLimitUs	INTEGER	0 to 1000000	Uplink rate limit (unit: kbps)
RateLimitDs	INTEGER	0 to 1000000	Downlink rate limit (unit: kbps)

Example

Example 1: Query the rate control information of LAN port 1 of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
LST-LANCAR::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-01 10:40:21
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of LAN port rate-limit info
-----------------------------------------------
RateLimitUs     RateLimitDs
1024    2048
-----------------------------------------------
```

Example 2: Query the rate control information of LAN port 1 in slot 4 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
LST-LANCAR::ONUIP=10.250.18.121,ONUPORT=NA-NA-4-1:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-02 10:33:28
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of LAN port rate-limit info
---------------------------------------
RateLimitUs     RateLimitDs
64      1024
---------------------------------------
```

Related Command

None

6.4.3 Querying the ETH Performance (LST-LANPERF)

Function Description

This command is used for querying the ETH performance information of an OLT uplink port or ONU LAN port.

Command Format

```
LST-LANPERF::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],PORTID=lanport_index:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Parameters	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	-
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_ NUMBER	Optional

Parameter	Data Type	Value Range	Parameters	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
PORTID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	OLT uplink port or ONU LAN port

Response Format

It complies with the query command response format in Response Message Format.

```
Title = List of Ethenet performance
OutPkts InPkts OutOctets InOctets CRC UnderSizePkts OverSizePkts InErrors
OutErrors InDiscards OutDiscards InUnicastPkts InMulticastPkts
InBroadcastPkts OutUnicastPkts OutMulticastPkts OutBroadcastPkts
StateChangeCounters
```

Output Parameter

Parameter	Data Type	Value Range	Parameters
OutPkts	DOUBLE	0-1.85E19	Number of sent packets
InPkts	DOUBLE	0-1.85E19	Number of received packets
OutOctets	DOUBLE	0-1.85E19	Number of sent bytes
InOctets	DOUBLE	0-1.85E19	Number of received bytes
CRC	DOUBLE	0-1.85E19	Number of received CRC error packets
UnderSizePkts	DOUBLE	0-1.85E19	Number of received undersized packets
OverSizePkts	DOUBLE	0-1.85E19	Number of received oversized packets

Parameter	Data Type	Value Range	Parameters
InErrors	DOUBLE	0-1.85E19	Number of received error packets
OutErrors	DOUBLE	0-1.85E19	Number of unsent error packets
InDiscards	DOUBLE	0-1.85E19	Number of discarded received packets
OutDiscards	DOUBLE	0-1.85E19	Number of discarded sent packets
InUnicastPkts	DOUBLE	0-1.85E19	Number of received unicast packets
InMulticastPkts	DOUBLE	0-1.85E19	Number of received multicast packets
InBroadcastPkts	DOUBLE	0-1.85E19	Number of received broadcast packets
OutUnicastPkts	DOUBLE	0-1.85E19	Number of sent unicast packets
OutMulticastPkts	DOUBLE	0-1.85E19	Number of sent multicast packets
OutBroadcastPkts	DOUBLE	0-1.85E19	Number of sent broadcast packets
StateChangeCounters	INTEGER	0-4294967295	Number of port status changes

Example

Example 1: Query the performance information of uplink port 1 in slot 29 of the OLT whose IP address is 10.250.18.102.

- Command issued

```
LST-LANPERF::OLTID=10.250.18.102,PORTID=NA-NA-29-1:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-10-27 11:01:43
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
List of Ethenet performance
------------------------------------------------------------
OutPkts InPkts  OutOctets InOctets CRC UnderSizePkts
```

```
OverSizePkts InErrors OutErrors InDiscards
OutDiscards  InUnicastPkts  InMulticastPkts InBroadcastPkts
OutUnicastPkts  OutMulticastPkts        OutBroadcastPkts
StateChangeCounters
0   0   0   0   0   0   0   0   0   0
0   0   0   0   --  0   0   0
---------------------------------------------------------
```

Example 2: Query the performance information of port 1 in slot 4 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-LANPERF::ONUIP=10.250.18.121,PORTID=NA-NA-4-1:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-02 09:44:54
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
List of Ethenet performance
---------------------------------------------------------
OutPkts InPkts  OutOctets  InOctets   CRC  UnderSizePkts
OverSizePkts  InErrors   OutErrors  InDiscards
OutDiscards InUnicastPkts  InMulticastPkts InBroadcastPkts
 OutUnicastPkts  OutMulticastPkts  OutBroadcastPkts
StateChangeCounters
0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0
---------------------------------------------------------
```

Related Command

None

6.4.4 Conducting the Broadband Dial-up Emulation Test (TEST-PPPOESIMULATION)

Function Description

The broadband dial-up emulation test is conducted on a LAN port or DSL port of the MDU, SFU or HGU (bridge) to simulates a user initiating the PPPoE dial-up so as to verify whether the user dial-up service connection can be normally established.

Command Format

```
TEST-PPPOESIMULATION::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index],
ONUPORT=post_index:CTAG::ACTION=action-type,USERNAME=username,
PASSWORD=password[,VPI=vpi,VCI=vci][,UV=user vlan][,AUTHMODE=authmode]
[timeout=timeout];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	-
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOI ONU_NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	Required for an ONU that has no management IP address
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	-
ACTION	OCTET STRING	Start: Starts the test. Stop: Ends the test. Query: Queries the test.	Test Type	-
USERNAME	OCTET STRING	Size (1 to 64)	Username of the broadband dial-up account	-
PASSWORD	OCTET STRING	Size (1 to 16)	Password of the broadband dial-up account	-

Parameter	Data Type	Value Range	Description	Remark
VPI	INTEGER	0 to 255	VPI corresponding to the broadband access service of the DSL port	Optional
VCI	INTEGER	0 to 65535	VCI corresponding to the broadband access service of the DSL port	Optional
UV	INTEGER	1 to 4094	User-side VLAN	Optional. By default, it is not specified (simulating the UNTAG application).
AUTHMODE	OCTET STRING	AUTO CHAP PAP	Dial-up authentication mode	Optional. Default value: AUTO
TIMEOUT	INTEGER	0 to 300	Testing time duration. Unit: s.	Optional

Response Format

The format of the response for starting the test is the same as the operation command response format in Response Message Format. The format of the response for querying and ending the test is the same as the query command response format in Response Message Format.

```
Title = result of pppoe simulation
State Conclusion FailReason
```

Output Parameter

Parameter	Data Type	Value Range	Description	Remark
State	OCTET STRING	In Progress: The test is ongoing. Testend: The test is ended.	Current status	This parameter is returned when the input parameter "Action" is "Stop" or "Query".
Conclusion	INTEGER	1 Success	Indicates the test succeeds.	These two parameters are returned when the input parameter "Action" is "Stop" or "Query". If testing status is "In Progress", the testing result returns –; if the test result is successful, the failure reason returns –.
		2 Failed	Indicates the test fails.	
FailReason	INTEGER	1 PADITimeout	PADI request timeout.	
		2 PADRTimeout	PADR request timeout.	
		3 LCPNegotiationFail	PPP establishing link failed.	

Parameter	Data Type	Value Range	Description	Remark
		4 WrongUsernameOrPass-word	Username or password error.	
		5 CanNotGetIPAddress	Unable to obtain the IP address.	
		10 TestTimeout	Testing timeout.	
		12: Other	Other causes.	

Example

Conduct an outgoing call emulation test on POTS port 1 of the ONU (has no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

◆ Command issued

```
TEST-PPPOESIMULATION::OLTID=10.171.0.16,PONID=NA-NA-1-1,ONUIDTYPE=MAC,
ONUID=FHTT03317368,ONUPORT=NA-NA-NA-1:CTAG::ACTION=Start,USERNAME=t,
PASSWORD=y;(Start testing)
TEST-PPPOESIMULATION::OLTID=10.171.0.16,PONID=NA-NA-1-1,ONUIDTYPE=MAC,
ONUID=FHTT03317368,ONUPORT=NA-NA-NA-1:CTAG::ACTION=Query,USERNAME=t,
PASSWORD=y;(query status)
```

◆ Response message

```
FH_10.170.4.2372015-12-2509:52:06
M  CTAG COMPLD
   EN=0   ENDESC=No error
;
FH_10.98.100.16 2014-06-12 17:07:20
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1

result of PPPoESimulation
---------------------------------------------------
State  Conclusion FailReason
Test end  --
---------------------------------------------------
 ;
```

Related Command

None

6.5 Querying the DSL Information

The following introduces the command and example for querying the DSL information.

6.5.1 Querying the ADSL2+ Port Information (LST-ADSLINFO)

Function Description

This command is used for querying the status and configuration information of the ADSL port.

Command Format

```
LST-ADSLINFO::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=adslport_num:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	-

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of adsl port info
OPERSTATUS ADMINSTATUS TM LineType AturRateMode AtucRateMode TGTSNRMGNDS
MAXSNRMGNDS MINSNRMGNDS TGTSNRMGNUS MAXSNRMGNUS MINSNRMGNUS FASTMINRATEDS
FASTMAXRATEDS FASTMINRATEUS FASTMAXRATEUS INTVMINRATEDS INTVMAXRATEDS
INTVMINRATEUS INTVMAXRATEUS INTVDELAYDS INTVDELAYUS
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
OPERSTATUS	String	UP DOWN	Running status
ADMINSTATUS	String	UP DOWN	Administration status
TM	OCTET STRING	See the The List of Parameters.	Actual transfer mode.
LineType	OCTET STRING	Fast Interleaved	Line type.
AturRateMode	OCTET STRING	Fixed: Indicates fixed rate. AutoAdaptAtStartup: Indicates automatically adapting on startup. AutoAdaptAtRunning: Indicates automatically adapting during running.	Atur rate adaptation mode.

Parameter Name	Data Type	Value Range	Description
AtucRateMode	OCTET STRING	Fixed: Indicates fixed rate. AutoAdaptAtStartup: Indicates automatically adapting on startup. AutoAdaptAtRunning: Indicates automatically adapting during running.	Atuc rate adaptation mode.
TGTSNRMGNDS	INTEGER	0 - 310	Downlink target noise tolerance Unit: 0.1dB.
MAXSNRMGNDS	INTEGER	0 - 310	Maximum downlink noise tolerance Unit: 0.1dB.
MINSNRMGNDS	INTEGER	0 - 310	Minimum downlink noise tolerance Unit: 0.1dB.
TGTSNRMGNUS	INTEGER	0 - 310	Uplink target noise tolerance Unit: 0.1dB.
MAXSNRMGNUS	INTEGER	0 - 310	Maximum uplink noise tolerance Unit: 0.1dB.
MINSNRMGNUS	INTEGER	0 - 310	Minimum uplink noise tolerance Unit: 0.1dB.
FASTMINRATEDS	INTEGER	32 - 32000	Minimum rate of the fast downlink channel. Unit: kbit/s.
FASTMAXRATEDS	INTEGER	32 - 32000	Maximum rate of the fast downlink channel. Unit: kbit/s.
FASTMINRATEUS	INTEGER	32 - 32000	Minimum rate of the fast uplink channel. Unit: kbit/s.
FASTMAXRATEUS	INTEGER	32 - 32000	Maximum rate of the fast uplink channel. Unit: kbit/s.
INTVMINRATEDS	INTEGER	32 - 32000	Minimum rate of the interleaved downlink channel. Unit: kbit/s.
INTVMAXRATEDS	INTEGER	32 - 32000	Maximum rate of the interleaved downlink channel. Unit: kbit/s.
INTVMINRATEUS	INTEGER	32 - 32000	Minimum rate of the interleaved uplink channel. Unit: kbit/s.
INTVMAXRATEUS	INTEGER	32 - 32000	Maximum rate of the interleaved uplink channel. Unit: kbit/s.

Parameter Name	Data Type	Value Range	Description
INTVDELAYDS	INTEGER	0 - 255	Interleaved downlink delay. Unit: ms
INTVDELAYUS	INTEGER	0 - 255	Interleaved uplink delay. Unit: ms

Example

For example, query the information of the No. 1 ADSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

◆ Command

```
LST-ADSLINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::;
```

◆ Response Message

```
 FH_10.250.18.133 2010-11-02 13:54:42
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of adsl port info
------------------------------------------------------------
OPERSTATUS ADMINSTATUS  TM LineType AturRateMode
AtucRateMode TGTSNRMGNDS  MAXSNRMGNDS MINSNRMGNDS
TGTSNRMGNUS  MAXSNRMGNUS  MINSNRMGNUS  FASTMINRATEDS
FASTMAXRATEDS  FASTMINRATEUS  FASTMAXRATEUS  INTVMINRATEDS
INTVMAXRATEDS  INTVMINRATEUS  INTVMAXRATEUS  INTVDELAYDS
INTVDELAYUS
DOWN DOWN 3 Interleaved AutoAdaptAtStartup
AutoAdaptAtStartup  6.00  31  0  6.00 31  0  0
100000  0 100000 0  100000  0  100000  16 16
------------------------------------------------------------
```

Related Command

None

6.5.2 Querying the ADSL2+ Port Performance (LST-ADSLPERF)

Function Description

This command is used for querying the ADSL link traffic and line real-time information. Before using the command, ensure the ONU is online and the ADSL port is enabled.

Command Format

```
LST-ADSLPERF::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=adslport_num:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	-

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of adsl port performance
InOctets OutOctets SnrMgnDs SnrMgnUs AtnDs AtnUs OutputPwrDs OutputPwrUs
ChanTxRateDs ChanTxRateUs AttainableRateDs AttainableRateUs
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
InOctets	INTEGER	0 - 2147483647	Number of received bytes
OutOctets	INTEGER	0 - 2147483647	Number of sent bytes
SnrMgnDs	INTEGER	-640 - 640	Downlink noise tolerance Unit: 0.1dB.
SnrMgnUs	INTEGER	-640 - 640	Uplink noise tolerance Unit: 0.1dB.
AtnDs	INTEGER	0 - 630	Downlink power attenuation Unit: 0.1dB.
AtnUs	INTEGER	0 - 630	Uplink power attenuation Unit: 0.1dB.
OutputPwrDs	FLOAT	-310 - 310	Downlink output power Unit: 0.1dBm.
OutputPwrUs	FLOAT	-310 - 310	Uplink output power Unit: 0.1dBm.
ChanTxRateDs	INTEGER	32 - 32000	Sent Rate of the downlink channel. Unit: kbit/s.
ChanTxRateUs	INTEGER	32 - 32000	Sent Rate of the uplink channel. Unit: kbit/s.

Parameter Name	Data Type	Value Range	Description
AttainableRateDs	INTEGER	32 - 32000	Maximum attainable downlink rate. Unit: kbit/s.
AttainableRateUs	INTEGER	32 - 32000	Maximum attainable uplink rate. Unit: kbit/s.

Example

For example, query the information of the No. 1 ADSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

- Command

```
LST-ADSLPERF::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::;
```

- Response Message

```
 FH_10.250.18.133 2010-11-02 13:54:51
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of adsl port performance
------------------------------------------------------------
InOctets  OutOctets  SnrMgnDs  SnrMgnUs   AtnDs
AtnUs OutputPwrDs  OutputPwrUs  ChanTxRateDs  ChanTxRateUs
AttainableRateDs  AttainableRateUs
0  1736  0  0  0  0  0  0  0  0  0 0
------------------------------------------------------------
```

Related Command

None

6.5.3 Querying the ADSL2+ Port Statistics Information (LST-ADSLSTAT)

Function Description

This command is used for querying the ADSL link quality information, including the initialization information, statistics information and channel statistics information over the current 15 minutes, the current day as well as the past day. Before using the command, ensure the ONU is online and the performance statistics switch is on.

Command Format

```
LST-ADSLSTAT:: NUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=adslport_num:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	-

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of adsl statistics
AtucPerfCurr15MinTimeElapsed Curr15MinInits Curr15MinAtucEss
Curr15MinAtucLoss Curr15MinAtucSes AtucPerfCurr1DayTimeElapsed
Curr1DayInits Curr1DayAtucEss Curr1DayAtucLoss Curr1DayAtucSes
AtucPerfPrev1DayTimeElapsed Prev1DayInits Prev1DayAtucEss
Prev1DayAtucLoss Prev1DayAtucSes
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
AtucPerfCurr15MinTimeElapsed	INTEGER	0 - 900	Elapsed time of the current 15 minutes.
Curr15MinInits	INTEGER	0 - 2147483647	Initialization times over the current 15 minutes.
Curr15MinAtucEss	INTEGER	0 - 900	ATUC side errored seconds over the current 15 minutes.
Curr15MinAtucLoss	INTEGER	0 - 900	ATUC side signal-loss seconds over the current 15 minutes.
Curr15MinAtucSes	INTEGER	0 - 900	ATUC side severely errored seconds over the current 15 minutes.
AtucPerfCurr1DayTimeElapsed	INTEGER	0 - 86400	Elapsed time of the current day.
Curr1Day Inits	INTEGER	0 - 2147483647	Initialization times over the current day.
Curr1Day AtucEss	INTEGER	0 - 86400	ATUC side errored seconds over the current day.
Curr1Day AtucLoss	INTEGER	0 - 86400	ATUC side signal-loss seconds over the current day.
Curr1Day AtucSes	INTEGER	0 - 86400	ATUC side severely errored seconds over the current day.
AtucPerfPrev1DayTimeElapsed	INTEGER	0 - 86400	Elapsed time of the past day
Prev1Day Inits	INTEGER	0 - 2147483647	Initialization times over the past day.
Prev1Day AtucEss	INTEGER	0 - 86400	ATUC side errored seconds over the past day.
Prev1Day AtucLoss	INTEGER	0 - 86400	ATUC side signal-loss seconds over the past day.
Prev1Day AtucSes	INTEGER	0 - 86400	ATUC side severely errored seconds over the past day.

Example

For example, query the performance statistics information over the current 15 minutes, the current day and the past day of the No. 1 ADSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

◆ Command

```
LST-ADSLSTAT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::;
```

◆ Response Message

```
 FH_10.250.18.133 2010-11-02 13:55:02
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of adsl statistics
------------------------------------------------------------
AtucPerfCurr15MinTimeElapsed    Curr15MinInits  Curr15MinAtucEss
Curr15MinAtucLoss  Curr15MinAtucSes
AtucPerfCurr1DayTimeElapsed   Curr1DayInits  Curr1DayAtucEss
 Curr1DayAtucLoss   Curr1DayAtucSes AtucPerfPrev1DayTimeElapsed
Prev1DayInits   Prev1DayAtucEss Prev1DayAtucLoss    Prev1DayAtucSes
444  0    0    0    0    10746   --    4.29497e+09
4.29497e+09  0    0    0    0    0    0
------------------------------------------------------------
```

Related Command

None

6.5.4 Querying the VDSL2 Port Information (LST-VDSLINFO)

Function Description

This command is used for querying the status and configuration information of the VDSL2 port.

Command Format

```
LST-VDSLINFO::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=adslport_num:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of vdsl port info
ADMINSTATUS OPERSTATUS INPDS INPUS RateModeDs RateModeUs ChannelTMode
MAXRATEUS MINRATEUS MAXRATEDS MINRATEDS INTVDELAYUS INTVDELAYDS TGTSNRMGNDS
MAXSNRMGNDS MINSNRMGNDS TGTSNRMGNUS MAXSNRMGNUS MINSNRMGNUS
```

Output Parameter

Parameter	Data Type	Value Range	Description
ADMINSTATUS	OCTET STRING	UP DOWN	Management status
OPERSTATUS	String	UP DOWN	Operating status
INPDS	OCTET STRING	0-16, 0.5	Downlink pulse noise protection; unit: symbol
INPUS	OCTET STRING	0-16, 0.5	Uplink pulse noise protection; unit: symbol
RateModeDs	OCTET STRING	Fixed: Indicates fixed rate. AutoAdaptAtStartup: Indicates automatic adaptation upon startup. AutoAdaptAtRunning: Indicates automatic adaptation during operation.	Downlink rate adaptation mode
RateModeUs	OCTET STRING	Fixed: Indicates fixed rate. AutoAdaptAtStartup: Indicates automatic adaptation upon startup. AutoAdaptAtRunning: Indicates automatic adaptation during operation.	Uplink rate adaptation mode
ChannelTMode	OCTET STRING	ATM PTM BOTH	Data channel mode of channel 1
MAXRATEUS	INTEGER	-	Maximum uplink rate of channel 1 (unit: kbps)
MINRATEUS	INTEGER	-	Minimum uplink rate of channel 1 (unit: kbps)

Parameter	Data Type	Value Range	Description
MAXRATEDS	INTEGER	-	Maximum downlink rate of channel 1 (unit: kbps)
MINRATEDS	INTEGER	-	Maximum downlink rate of channel 1 (unit: kbps)
INTVDELAYUS	INTEGER	0 to 63	Maximum uplink interleaved delay (unit: ms)
INTVDELAYDS	INTEGER	0 to 63	Maximum downlink interleaved delay (unit: ms)
TGTSNRMGNDS	INTEGER	0 to 310	Downlink target noise tolerance (unit: 0.1dB)
MAXSNRMGNDS	INTEGER	0 to 310	Maximum downlink noise tolerance (unit: 0. 1dB)
MINSNRMGNDS	INTEGER	0 to 310	Minimum downlink noise tolerance (unit: 0. 1dB)
TGTSNRMGNUS	INTEGER	0 to 310	Uplink target noise tolerance (unit: 0.1dB)
MAXSNRMGNUS	INTEGER	0 to 310	Maximum uplink noise tolerance (unit: 0.1dB)
MINSNRMGNUS	INTEGER	0 to 310	Minimum uplink noise tolerance (unit: 0.1dB)

Example

Query the information of VDSL port 1 in slot 1 of the ONU whose IP address is 10.250.18.121.

- Command issued

```
LST-VDSLINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-1-1:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-02 13:55:14
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of vdsl port info
```

```
---------------------------------------------------------
ADMINSTATUS   OPERSTATUS    INPDS   INPUS   RateModeDs
RateModeUs    ChannelTMode MAXRATEUS    MINRATEUS
MAXRATEDS     MINRATEDS    INTVDELAYUS   INTVDELAYDS
TGTSNRMGNDS   MAXSNRMGNDS   MINSNRMGNDS TGTSNRMGNUS
MAXSNRMGNUS   MINSNRMGNUS
DOWN   DOWN   0.00   0.00   AutoAdaptAtStartup
AutoAdaptAtStartup   PTM   28000   64   128000   64   16
16    6.00   31.00    0.006.00    31.00   0.00
---------------------------------------------------------
```

Related Command

None

6.5.5 Querying the VDSL2 Port Performance (LST-VDSLPERF)

Function Description

This command is used for querying VDSL link traffic and line real-time information.

Command Format

```
LST-VDSLPERF::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=vdslport_num:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	-

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of vdsl port performance
InOctets OutOctets SnrMgnDs SnrMgnUs AtnDs AtnUs OutputPwrDs OutputPwrUs
CH1ACTDATARATEDS CH1ACTDELAYDS CH1ACTDATARATEUS CH1ACTDELAYUS
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
InOctets	INTEGER	0 - 2147483647	Number of received bytes
OutOctets	INTEGER	0 - 2147483647	Number of sent bytes
SnrMgnDs	INTEGER	-640 - 630	Downlink noise tolerance Unit: 0.1dB.
SnrMgnUs	INTEGER	-640 - 630	Uplink noise tolerance Unit: 0.1dB.
AtnDs	INTEGER	0 - 1270	Downlink power attenuation Unit: 0.1dB.
AtnUs	INTEGER	0 - 1270	Uplink power attenuation Unit: 0.1dB.

Parameter Name	Data Type	Value Range	Description
OutputPwrDs	FLOAT	-310 - 310	Downlink output power Unit: 0.1dBm.
OutputPwrUs	FLOAT	-310 - 310	Uplink output power Unit: 0.1dBm.
CH1ACTDATARA-TEDS	INTEGER	0 - 200000	Channel - downlink rate. Unit: kbps.
CH1ACTDE-LAYDS	INTEGER	0 - 200	Channel - downlink delay. Unit: ms
CH1ACTDE-LAYDS	INTEGER	0 - 200000	Channel - uplink rate. Unit: kbps.
CH1ACTDE-LAYUS	INTEGER	0 - 200	Channel - uplink delay. Unit: ms

Example

For example, query the information of the No. 1 VDSL port located in the No. 1 slot of the ONU whose IP address is 10.250.18.121.

◆ Command

```
LST-VDSLPERF::ONUIP=10.250.18.121,ONUPORT=NA-NA-1-1:CTAG::;
```

◆ Response Message

```
 FH_10.250.18.133 2010-11-02 13:55:22
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of vdsl port performance
------------------------------------------------------
InOctets   OutOctets   SnrMgnDs   SnrMgnUs  AtnDs
AtnUs   OutputPwrDs   OutputPwrUs  CH1ACTDATARATEDS
CH1ACTDELAYDS   CH1ACTDATARATEUS  CH1ACTDELAYUS
0  1860  0.00  0.00  0   0   0   0   0   0
0  0
------------------------------------------------------
```

Related Command

None

6.5.6 Querying the VDSL2 Port Statistics Information (LST-VDSLSTAT)

Function Description

This command is used for querying the VDSL link quality information, including the initialization information, statistics information and channel statistics information over the current 15 minutes, the current day and the past day.

Command Format

```
LST-VDSLSTAT::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUID=onu_index],ONUPORT=vdslport_num:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name, or ID of the ONU having a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID and ONU_ NUMBER	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of vdsl statistics
xdsl2PMLCurr15MTimeElapsed xdsl2PMLCurr15MLoss
xdsl2PMLCurrInit15MFullInits Curr15MinAtucEss xdsl2PMLCurr15MSes
xdsl2PMLCurrInit15MFailedFullInits xdsl2PMLCurr1DayTimeElapsed
xdsl2PMLCurrInit1DayFullInits xdsl2PMLCurr1DayEs xdsl2PMLCurr1DayLoss
xdsl2PMLCurr1DaySes xdsl2PMLCurrInit1DayFailedFullInits
xdsl2PMLHist1DMonitoredTime xdsl2PMLHistinit1DFullInits
xdsl2PMLHistinit1DFailedFullInits xdsl2PMLHist1DEs xdsl2PMLHist1DLoss
xdsl2PMLHist1DSes
```

Output Parameter

Parameter	Data Type	Value Range	Description
xdsl2PMLCurr15MTi-meElapsed	INTEGER	0 to 900	Elapsed time of the current 15 minutes
xdsl2PMLCurr15MLoss	INTEGER	0 to 900	Signal-loss seconds over the current 15 minutes
xdsl2PMLCurrInit15M-FullInits	INTEGER	0 to 2147483647	Initialization times over the current 15 minutes

Parameter	Data Type	Value Range	Description
Curr15MinAtucEss	INTEGER	0 to 900	Errored seconds over the current 15 minutes
xdsl2PMLCurr15MSes	INTEGER	0 to 900	Severely errored seconds over the current 15 minutes
xdsl2PMLCurrInit15M-FailedFullInits	INTEGER	0 to 2147483647	Initialization failures over the current 15 minutes
xdsl2PMLCurr1DayTi-meElapsed	INTEGER	0 to 86400	Elapsed time of the current day
xdsl2PMLCurrInit1Day-FullInits	INTEGER	0 to 2147483647	Initialization times over the current day
xdsl2PMLCurr1DayEs	INTEGER	0 to 86400	Errored seconds over the current day
xdsl2PMLCurr1DayLoss	INTEGER	0 to 86400	Signal-loss seconds over the current day
xdsl2PMLCurr1DaySes	INTEGER	0 to 86400	Severely errored seconds over the current day
xdsl2PMLCurrInit1Day-FailedFullInits	INTEGER	0 to 2147483647	Initialization failures over the current day
xdsl2PMLHist1DMoni-toredTime	INTEGER	0 to 86400	Elapsed time of the past day
xdsl2PMLHistinit1DFul-lInits	INTEGER	0 to 2147483647	Initialization times over the past day
xdsl2PMLHistinit1DFai-ledFullInits	INTEGER	0 to 2147483647	Initialization failures over the past day
xdsl2PMLHist1DEs	INTEGER	0 to 86400	Errored seconds over the past day
xdsl2PMLHist1DLoss	INTEGER	0 to 86400	Signal-loss seconds over the past day
xdsl2PMLHist1DSes	INTEGER	0 to 86400	Severely errored seconds over the past day

Example

Query the performance statistics information over the current 15 minutes, the current day and the past day of VDSL port 1 in slot 1 of the ONU whose IP address is 10.250.18.121.

- Command issued

```
LST-VDSLSTAT::ONUIP=10.250.18.121,ONUPORT=NA-NA-1-1:CTAG::;
```

- Response message

```
  FH_10.250.18.133 2010-11-02 13:55:30
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of vdsl statistics
------------------------------------------------------------
xdsl2PMLCurr15MTimeElapsed      xdsl2PMLCurr15MLoss
xdsl2PMLCurrInit15MFullInits    Curr15MinAtucEss
xdsl2PMLCurr15MSes      xdsl2PMLCurrInit15MFailedFullInits
xdsl2PMLCurr1DayTimeElapsed     xdsl2PMLCurrInit1DayFullInits
xdsl2PMLCurr1DayEs      xdsl2PMLCurr1DayLoss    xdsl2PMLCurr1DaySes
xdsl2PMLCurrInit1DayFailedFullInits  xdsl2PMLHist1DMonitoredTime
xdsl2PMLHistinit1DFullInits     xdsl2PMLHistinit1DFailedFullInits
xdsl2PMLHist1DEs    xdsl2PMLHist1DLoss       xdsl2PMLHist1DSes
463  0   0   0   0   0   10714   0    --   0
0    0   0   --  0   0   0       0
------------------------------------------------------------
```

Related Command

None

6.5.7 Conducting the Single-ended Loop Test (SELT)

Function Description

The command is used for conducting the single-ended loop test on the ADSL2+ / VDSL2 port.

Command Format

```
SELT::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=dslport_num:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port location information. Locate through cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	If the parameter entered does not include the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port	Locate the card through cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Optional

Response Format

It complies with the operation-command response format in Response Message Format.

```
Title = result of selt test
LINE_LENGTH LINE_STATUS ATTAINABLE_XTUC_RATE ATTAINABLE_XTUR_RATE
```

Output Parameter

Parameter	Data Type	Value Range	Description
LINE_LENGTH	OCTET STRING	-	Line length. Unit: m.
LINE_STATUS	String	Open Short	Status
ATTAINABLE_ XTUC_RATE	Integer	-	Attainable downlink rate (kbps).
ATTAINABLE_ XTUR_RATE	Integer	-	Attainable uplink rate (kbps).

Example

For example, conduct the single-ended loop test on the No. 1 ADSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

◆ Command issued

```
SELT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::;
```

◆ Response message

```
FH_10.250.18.133 2010-11-02 13:57:37
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
result of selt test
------------------------------------------------------------
LINE_LENGTH  LINE_STATUS  ATTAINABLE_XTUC_RATE  ATTAINABLE_XTUR_RATE
3910  Short  8260  1264
------------------------------------------------------------
```

Related Command

None

6.5.8 Conducting the Double-ended Loop Test (DELT)

Function Description

The command is used for conducting the double-ended loop test on an ADSL2+ or a VDSL2 port.

Command Format

```
DELT::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=dslport_num:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the operation command response format in Response Message Format.

```
Title = result of delt test
XTUC_DELT_SATN XTUR_DELT_SATN XTUC_DELT_SNRM XTUR_DELT_SNRM
```

Output Parameter

Parameter	Data Type	Value Range	Description
XTUC_DELT_SATN	OCTET STRING	Size (128)	Uplink signal attenuation (dB)
XTUR_DELT_SATN	OCTET STRING	Size (128)	Downlink signal attenuation (dB)

Parameter	Data Type	Value Range	Description
XTUC_DELT_SNRM	OCTET STRING	Size (128)	Uplink signal-to-noise ratio margin (dB)
XTUR_DELT_SNRM	OCTET STRING	Size (128)	Downlink signal-to-noise ratio margin (dB)

Example

Conduct a double-ended loop test on ADSL port 2 in slot 3 of the ONU whose IP address is 10.250.18.121.

- Command issued

```
DELT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-2:CTAG::;
```

- Response message

```
    FH_10.250.18.133 2010-11-02 14:03:01
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
result of delt test
------------------------------------------------------------
XTUC_DELT_SATN  XTUR_DELT_SATN  XTUC_DELT_SNRM  XTUR_DELT_SNRM
0.00    0.00    0.00    0.00
------------------------------------------------------------
```

Related Command

None

6.5.9 Querying the xDSL Port PVC Information (LST-PVCINFO)

Function Description

This command is used for querying the PVC information of an ADSL port.

Command Format

```
LST-PVCINFO::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=adslport_num:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID and ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of vdsl statistics
PVCOPERSTATUS PVCADMINSTATUS VPI VCI PVID VLANPRIORITY
```

Output Parameter

Parameter	Data Type	Value Range	Description
PVCOPERSTATUS	OCTET STRING	UP DOWN	PVC running status.
PVCADMINSTATUS	OCTET STRING	UP DOWN	PVC management status.
VPI	INTEGER	-	VPI
VCI	INTEGER	-	VCI
PVID	INTEGER	-	VLAN ID
VLANPRIORITY	OCTET STRING	Integer (0-7)	VLAN default priority

Example

Query the PVC information of ADSL port 1 in slot 3 of the ONU whose IP address is 10.250.18.121.

- Command issued

```
LST-PVCINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-1:CTAG::;
```

- Response message

```
FH_10.250.18.133 2010-11-02 14:03:21
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=8
list of PVC info
------------------------------------------------------------
PVCOPERSTATUS PVCADMINSTATUS VPI  VCI  PVID  VLANPRIORITY
UP       UP       8        35       4088     0
DOWN     DOWN     0        0        4088     0
DOWN     DOWN     0        0        4088     0
DOWN     DOWN     0        0        4088     0
DOWN     DOWN     0        0        4088     0
DOWN     DOWN     0        0        4088     0
DOWN     DOWN     0        0        4088     0
```

```
DOWN     DOWN     0        0        4088     0
------------------------------------------------------------
```

Related Command

None

6.6 Querying the VLAN Information

The following introduces the command and example for querying the VLAN information.

6.6.1 Querying the VLAN Forwarding (LST-VLANFWDINFO)

Function Description

This command is used for querying the information of VLAN-based forwarded messages, including messages forwarded based on C VLAN and S+C VLAN.

Command Format

```
LST-VLANFWDINFO::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport-location]
[,ONUIDTYPE=id-type,ONUID=onu-id],VLANID=svlan-id:CTAG::;
```

- Gather statistics of OLT VLAN forwarding information:

```
LST-VLANFWDINFO::OLTID=olt-name,VLANID=vlan-id:CTAG::;
```

- Gather statistics of ONU VLAN forwarding information (the ONU has a management IP address):

```
LST-VLANFWDINFO::ONUIP=onu-name,VLANID=vlan-id:CTAG::;
```

- Gather statistics of the ONU uplink VLAN tag forwarding on OLT (the ONU has no management IP address):

```
LST-VLANFWDINFO::OLTID=olt-name,PONID=ponport-location,
ONUIDTYPE=idtype,ONUID=onu-id,VLANID=svlan-id:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT

Parameter	Data Type	Value Range	Description
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_NUMBER
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.
VLANID	INTEGER	0 to 4095	-

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of VLAN forward info
FramesUs FramesDs OctetsUs OctetsDs DiscardsUs DiscardsDs
```

Output Parameter

Parameter	Data Type	Value Range	Description
FramesUs	DOUBLE	0 to 2147483647	Number of uplink messages
FramesDs	DOUBLE	0 to 2147483647	Number of downlink messages
OctetsUs	DOUBLE	0 to 2147483647	Number of uplink bytes
OctetsDs	DOUBLE	0 to 2147483647	Number of downlink bytes
DiscardsUs	DOUBLE	0-1.85E19	(Optional) Number of discarded uplink message
DiscardsDs	DOUBLE	0-1.85E19	(Optional) Number of discarded downlink message

Example

Example 1: Query the VLAN 321 forwarding information of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
LST-VLANFWDINFO::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1,VLANID=321:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-10-28 12:01:50
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of VLAN forward info
------------------------------------------------------------
FramesUs  FramesDs  OctetsUs OctetsDs DiscardsUs  DiscardsDs
0       0       0       0       0       0
------------------------------------------------------------
```

Example 2: Query the VLAN 1 forwarding information of PON port 1 in slot 4 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
LST-VLANFWDINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-4-1,VLANID=1:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-02 10:37:30
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of VLAN forward info
------------------------------------------------------------
FramesUs   FramesDs   OctetsUs   OctetsDs    DiscardsUs  DiscardsDs
--      --      --      --      --      --
------------------------------------------------------------
```

Related Command

None

6.7 Querying the IPTV Information

The following introduces the command and example for querying the IPTV information.

6.7.1 Querying the Multicast Configuration (LST-IPTVCFG)

Function Description

This command is used for querying the multicast configuration information.

Command Format

```
LST-IPTVCFG::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index][,ONUPORT=port_index][,UV=user-vlan]:
CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_ NAME, MAC, LOID and ONU_ NUMBER)	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of IPTV configuration
MVLAN VLANID VPI VCI
```

Output Parameter

Parameter	Data Type	Value Range	Description
MVLAN	INTEGER	-	Multicast VLAN
VLANID	INTEGER	-	VLAN at user side. Optional (multicast service VLAN accessed through a home gateway).
VPI	INTEGER	-	VPI. Optional (DSL multicast service).
VCI	INTEGER	-	VCI. Optional (DSL multicast service).

Example

Example 1: Query the multicast user information of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

◆ Command issued

```
LST-IPTVCFG::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
  FH_10.250.18.133 2010-10-28 11:58:45
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of IPTV configuration
------------------------------------------------------------
MVLAN   VLANID  VPI     VCI
321     123     --      --
------------------------------------------------------------
```

Example 2: Query the multicast user information of port 1 in slot 4 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-IPTVCFG::ONUIP=10.250.18.121,ONUPORT=NA-NA-4-1:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-02 10:33:57
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of IPTV configuration
------------------------------------------------------------
MVLAN   VLANID  VPI     VCI
2525    --      --      --
------------------------------------------------------------
```

Related Command

None

6.8 Querying the VoIP Information

The following introduces the command and example for querying the VoIP information.

6.8.1 Querying the Voice Quality Statistical Information (LST-VoIPINFO)

Function Description

This command is used for querying the voice quality statistics information of the voice user.

Command Format

```
LST-VOIPINFO::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT= pots_num:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	-
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	The ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.

Parameter Name	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	-

Response Format

It complies with the query-command response format in Response Message Format.

```
Title = list of voip info
tatTime TxPackets RxPackets MeanDelay MeanJitter FractionLoss
```

Output Parameter

Parameter Name	Data Type	Value Range	Description
StatTime	OCTET STRING	Size (20)	Record generation time, yyyy-mm-dd hh:mm:ss
TxPackets	INTEGER	0 - 4294967295	Number of sent packets
RxPackets	INTEGER	0 - 4294967295	Number of received packets
MeanDelay	INTEGER	0 - 65535	Mean delay
MeanJitter	INTEGER	0 - 65535	Mean jitter
FractionLoss	INTEGER	0 - 100	Packet loss rate. Unit: %.

Example

Example 1, query the quality statistics information of the No. 1 voice port of the ONU (having no management IP address) with ONUID being aa_bbb_ccc_111_222. The ONU is connected to the slot 3 - PON 1 port of the OLT whose IP address is 10.250.18.100.

- Command

```
LST-VOIPINFO::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

- Response Message

```
FH_10.250.18.133 2010-10-27 14:45:28
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of voip info
------------------------------------------------------------
StatTime TxPackets RxPackets  MeanDelay
MeanJitter FractionLoss
-1008762211  0   0  1630209 0
------------------------------------------------------------
```

Example 2, query the quality statistics information of the POTS 1 port located in the No. 2 slot of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command

```
LST-VOIPINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

- Response Message

```
 FH_10.250.18.133 2010-11-02 09:51:49
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of voip info
------------------------------------------------------------
StatTime  TxPackets  RxPackets  MeanDelay
MeanJitter  FractionLoss
1970-01-01 00:00:00   0  0  0  0  0
------------------------------------------------------------
```

Related Command

None

6.8.2 Querying the MG Configuration (LST-MGCFG)

Function Description

This command is used for querying the configuration information of an access gateway interface.

Command Format

```
LST-MGCFG::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu-index][,MGID=mg-id]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_ NUMBER	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
MGID	INTEGER	0 to 16	(Optional) MG identifier, used for uniquely identifying the MG module on the ONU	If it is not specified, the configurations of all MG modules in use will be returned.

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of MG port configuration
GID PT EID SIPREGDM SVLAN VOIPVLAN IPMODE IPADDRESS IPMASK IPGATEWAY
PPPOEUSER PPPOEPWD SCOS CCOS MGCIP1 MGCIP2 HEARTBEATMODE HEARTBEATCYCLE
HEARTBEATNUM
```

Output Parameter

Parameter	Data Type	Value Range	Description
MGID	INTEGER	0 to 16	MG identifier, used for uniquely identifying the MG module on the ONU.
PT	OCTET STRING	Size (1 to 32)	Voice protocol type (H. 248, SIP)
EID	OCTET STRING	Size (1 to 64)	MG gateway domain name in the H248 configuration
SIPREGDM	OCTET STRING	Size (1 to 64)	SIP register server
SVLAN	INTEGER	0 to 4095	Outer VLAN of the voice service

Parameter	Data Type	Value Range	Description
VOIPVLAN	INTEGER	0 to 4095	Inner VLAN of the voice service
IPMODE	OCTET STRING	Size (1 to 64)	IP obtaining mode: DHCP, PPPOE, STATIC
IPADDRESS	OCTET STRING	Size (1 to 64)	IP address
IPMASK	OCTET STRING	Size (1 to 64)	IP address mask
IPGATEWAY	OCTET STRING	Size (1 to 64)	Gateway address
PPPOEUSER	OCTET STRING	Size (1 to 64)	PPPOE username
PPPOEPWD	OCTET STRING	Size (1 to 64)	PPPOE password
SCOS	INTEGER	0 to 7	Outer service priority
CCOS	INTEGER	0 to 7	Inner service priority
MGCIP1	OCTET STRING	Size (32)	IP address of the active softswitch
MGCIP2	OCTET STRING	Size (32)	IP address of the standby softswitch
HEARTBEATMODE	OCTET STRING	Enabled Disable	Heartbeat mode
HEARTBEATCYCLE	Integer	0 to 65535	Heartbeat cycle Unit: s
HEARTBEATNUM	Integer	1 to 3	Number of detected heartbeats

Example

Example 1: Query the MG configuration of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
LST-MGCFG::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-10-27 14:45:56
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of MG port configuration
```

```
------------------------------------------------------------
MGID PT  EID  SIPREGDM  SVLAN  VOIPVLAN  IPMODE
IPADDRESS  IPMASK  IPGATEWAY  PPPOEUSER  PPPOEPWD
SCOS  CCOSMGCIP1  MGCIP2  HEARTBEATMODE  HEARTBEATCYCLE
HEARTBEATNUM
0   H.248  10.37.0.1  65535  1515  STATIC  10.37.0.1
255.255.255.0   10.37.0.254          65535   7
10.37.0.103 Enable   30   3
------------------------------------------------------------
```

Example 2: Query the MG configuration of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
LST-MGCFG::ONUIP=10.250.18.121:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-02 09:52:03
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of MG port configuration
------------------------------------------------------------
MGID  PT  EID  SIPREGDM   SVLAN   VOIPVLAN  IPMODE
IPADDRESS  IPMASK  IPGATEWAY   PPPOEUSER  PPPOEPWD
SCOS CCOSMGCIP1  MGCIP2  HEARTBEATMODE  HEARTBEATCYCLE
HEARTBEATNUM
0   H.248   12345678     1515    STATIC  0.0.0.0
0.0.0.0 0.0.0.0      7    0    Enable  30   3
------------------------------------------------------------
```

Related Command

None

6.8.3 Querying the MG Interface Information (LST-MGINFO)

Function Description

This command is used for querying the running status of an access gateway interface.

Command Format

```
LST-MGINFO::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu-index][,MGID=mg-id]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_ NAME, MAC, LOID and ONU_ NUMBER)	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
MGID	INTEGER	0 to 16	(Optional) MG identifier, used for uniquely identifying the MG module on the ONU	If it is not specified, the configurations of all MG modules in use will be returned.

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of MG port info
MGID OperState
```

Output Parameter

Parameter	Data Type	Value Range	Description
MGID	INTEGER	0 to 16	-
OperState	OCTET STRING	Registering UP Fault Deregistered Restarting Other	Registering. Registered successfully. IAD failure. Logout IAD restarting. Others

Example

Example 1: Query the status of the MG module with MGID being 0 on the ONU (having no management IP address) whose ONUID is aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
LST-MGINFO::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,MGID=0:CTAG::;
```

◆ Response message

```
  FH_10.250.18.133 2010-10-27 14:46:12
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of MG port info
------------------------------------------------------------
MGID    OperState
0       UP
------------------------------------------------------------
```

Example 2: Query the running status of the MG on the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-MGINFO::ONUIP=10.250.18.121:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-02 09:52:14
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of MG port info
------------------------------------------------------------
MGID    OperState
0       Fault
------------------------------------------------------------
```

Related Command

None

6.8.4 Querying the Port Fax Parameter (LST-FAXINFO)

Function Description

This command is used for querying the fax parameter of a POTS port.

Command Format

```
LST-FAXINFO::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=pots_num:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_ NUMBER	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
list of ONU pots info
FAXMODE CONTROLMODE
```

Output Parameter

Parameter	Data Type	Value Range	Description
FAXMODE	String	T30 T38	Fax mode
CONTROLMODE	String	NONE SS AUTOVBD	Voice channel of the control mode Full control Auto-negotiation

Example

Example 1: Query the fax parameter of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

◆ Command issued

```
LST-FAXINFO::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
  FH_10.250.18.133 2010-10-27 14:46:39
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of ONU pots info
------------------------------------------------------------
FAXMODE CONTROLMODE
T30     NONE
------------------------------------------------------------
```

Example 2: Query the fax parameter of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-FAXINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

◆ Response message

```
FH_10.250.18.133 2010-11-02 09:52:25
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of ONU pots info
------------------------------------------------------------
FAXMODE CONTROLMODE
T30     AUTOVBD
------------------------------------------------------------
```

Related Command

None

6.8.5 Querying the POTS Port Information (LST-POTSINFO)

Function Description

This command is used for querying the POTS port information, including the line status, service status, impedance and gain.

Command Format

```
LST-POTSINFO::onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=pots_num:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_ NUMBER	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of VOIP pots info
LineState ServiceState EchoCancel ReversedPolarity RxGain TxGain PN TID
SIPUSERNAME SIPUSERPWD MGID
```

Output Parameter

Parameter	Data Type	Value Range	Description
LineState	OCTET STRING	Registering Idle Off-hook Dialing Ringing Ringing-back Connecting Connected Releasing Register-failed Deactived Other	Line status: Registering port. Port is idle. Off-hook. Dialing. Ringing. Ringing back. Connecting. Connected. Releasing the connection. Registering port failed. The port is not activated. Others.
ServiceState	OCTET STRING	EndLocal EndRemote EndAuto Normal	Service status: endLocal: The service is terminated by the local end due to the port disabled by the user. endRemote: The service is terminated by the far end due to the command sent by MGC. endAuto: The service is terminated automatically due to the MGC failure. normal: The service is normal.
EchoCancel	OCTET STRING	Enabled Disable	Echo suppression
ReversedPolarity	OCTET STRING	Enabled Disable	Polarity reversal signal
RxGain	Float	-20 to 20	Receive gain Unit: dB
TxGain	Float	-20 to 20	Send gain Unit: dB
PN	OCTET STRING	Size (1 to 32)	SIP telephone number
TID	OCTET STRING	Size (1 to 64)	H248 user terminal identifier
SIPUSERNAME	OCTET STRING	Size (1 to 32)	Username corresponding to the SIP user port

Parameter	Data Type	Value Range	Description
SIPUSERPWD	OCTET STRING	Size (1 to 32)	Password corresponding to the SIP user port
MGID	INTEGER	0 to 16	MG identifier, identifying the MG module being used by the user.

Example

Example 1: Query the information of POTS port 1 of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

◆ Command issued

```
LST-POTSINFO::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
FH_10.250.18.133 2010-10-27 14:47:14
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of pots info
------------------------------------------------------------
LineState  ServiceState  EchoCancel   ReversedPolarity
RxGain  TxGain  PN   TID   SIPUSERNAME  SIPUSERPWD
Idle  Normal  Enable  Enable  0    0    a1
------------------------------------------------------------
```

Example 2: Query the information of POTS port 1 in slot 2 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-POTSINFO::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-02 09:52:36
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of pots info
------------------------------------------------------------
```

```
LineState  ServiceState   EchoCancel   ReversedPolarity
RxGain  TxGain  PN   TID  SIPUSERNAME   SIPUSERPWD
Register-failed EndAuto Enable  Disable 0    0    --
------------------------------------------------------------
```

Related Command

None

6.8.6 Conducting the External Line Test (MELT)

Function Description

This command is used for testing the external line of a voice or DSL user to detect whether line errors occur.

Command Format

```
MELT::ONUIP=onu_name|OLTID=olt_name[,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu_index],ONUPORT=fttbpost_index:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	(Optional) Port of the voice service corresponding to the broadband

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of outside line test
onclusion ACAG ACBG ACAB DCAG DCBG DCAB RAG RBG RAB CapAG CapBG CapAB
```

Output Parameter

Parameter	Data Type	Value Range	Description
Conclusion	INTEGER	0 to 100	Test result
ACAG	INTEGER	-	T568A-to-ground AC voltage Unit: mV
ACBG	INTEGER	-	T568B-to-ground AC voltage Unit: mV
ACAB	INTEGER	-	T568A / T568B AC voltage Unit: mV
DCAG	INTEGER	-	T568A-to-ground DC voltage Unit: mV
DCBG	INTEGER	-	T568B-to-ground DC voltage Unit: mV
DCAB	INTEGER	-	T568A/T568B DC voltage Unit: mV
RAG	INTEGER	-	T568A-to-ground resistance Unit: ohm
RBG	INTEGER	-	T568B-to-ground resistance Unit: ohm
RAB	INTEGER	-	T568A/T568B resistance Unit: ohm
CapAG	INTEGER	-	T568A-to-ground capacitance Unit: nF
CapBG	INTEGER	-	T568B-to-ground capacitance Unit: nF
CapAB	INTEGER	-	T568A/T568B capacitance Unit: nF

Example

Example 1: Test the external line of POTS port 1 of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

◆ Command issued

```
MELT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-10-27 14:52:26
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of outside line test
------------------------------------------------------------
Conclusion  ACAG  ACBG  ACAB  DCAG  DCBG  DCAB  RAG
RBG  RAB  CapAG  CapBG  CapAB
22   15   15    21   477    485   14    >10M
>10M    >10M  1365005500   1365204625   2031075
------------------------------------------------------------
```

Example 2: Test the external line of POTS port 1 in slot 2 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
MELT::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

◆ Response message

```
FH_10.250.18.133 2010-11-02 09:53:59
M CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of outside line test
------------------------------------------------------------
Conclusion ACAG ACBG ACAB DCAG DCBG DCAB RAG
RBG RAB CapAG CapBG CapAB
22 124 219 190 410 410
 58 >10M >10M >10M 1365300000 1365400000 2000000
------------------------------------------------------------
```

Related Command

None

6.8.7 Conducting the Internal Line Test (TEST-POTSCIRCUIT)

Function Description

This command is used for testing the internal line of a voice or DSL user to detect whether line errors occur.

Command Format

```
TEST-POTSCIRCUIT::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index],
ONUPORT=fttbpost_index:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_ NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	(Optional) Port of the voice service corresponding to the broadband

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of pots inside line test
LoopCurrent FeedV RingV FeedVValue RingVValue LoopCurrentValue
```

Output Parameter

Parameter	Data Type	Value Range	Description
LoopCurrent	OCTET STRING	Normal Abnormal	Indicates whether the loop current is normal.
FeedV	OCTET STRING	Normal Abnormal	Indicates whether the feed voltage is normal.
RingV	OCTET STRING	Normal Abnormal	Indicates whether the ring voltage is normal.
FeedVValue	INTEGER	-	Feed voltage Unit: mV

Parameter	Data Type	Value Range	Description
RingVValue	INTEGER	-	Ring voltage Unit: mV
LoopCurrentValue	INTEGER	-	Loop current Unit: mA

Example

Example 1: Test the internal line of POTS port 1 of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

◆ Command issued

```
TEST-POTSCIRCUIT::OLTID=10.250.18.100,PONID=NA-NA-3-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-10-27 14:52:52
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of pots inside line test
------------------------------------------------------------
LoopCurrent FeedV RingV FeedVValue RingVValue LoopCurrentValue
Normal Normal Normal 48444 58557  18
------------------------------------------------------------
```

Example 2: Test the internal line of POTS port 1 in slot 2 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
TEST-POTSCIRCUIT::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-02 09:55:02
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
list of pots inside line test
------------------------------------------------------------
LoopCurrent FeedV RingV  FeedVValue  RingVValue LoopCurrentValue
Normal  Normal  Abnormal  39278   64314   22
```

```
------------------------------------------------------
```

Related Command

None

6.8.8 Conducting the Incoming Call Emulation Test (TEST-CALLEESIMULATION)

Function Description

This command is used for conducting the incoming call emulation test.

The incoming call emulation test simulates an incoming call during which a program acts as the called party and automatically completes all the operations that should be responded by the called party to the caller. The testing personnel will check whether the ringing of the called party can be heard so as to verify whether the called port is ringing and being called normally.

Note: If the system does not send the ending test command after a certain period of time since the sending of the starting test command, the test will be automatically ended.

Command Format

```
TEST-CALLEESIMULATION::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index],
ONUPORT=pots_num:CTAG:: ACTION=action-type[,TIMEOUT=timeout];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	Required for an ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID and ONU_ NUMBER)	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional
ACTION	OCTET STRING	Start: Starts the test. Stop: Ends the test. Query: Queries the test.	Test type	Returned status of the call upon query: 1. The port is idle. 2. Off-hook. 3. Ringing. 4. Call connected. 5. Busy tone. 6. On-hook. 7. Testing is ended.
TIMEOUT	INTEGER	60 to 300	Test time Unit: s	-

Response Format

The format of the response for starting the test is the same as the operation command response format in Response Message Format. The format of the response for querying and stopping the test is the same as the query command response format in Response Message Format.

```
Title = result of callin simulation
STATE Conclusion FailReason
```

Output Parameter

Parameter	Data Type	Value Range	Description	Remark
STATE	OCTET STRING	1: The port is idle. 2: Off-hook. 3: Ringing. 4: Connected. 5: On-hook. 6: Testing is ended.	Current status of the call	This parameter is returned when the input parameter "Action" is "Stop" or "Query".
Conclusion	INTEGER	1	Succeeded	These two parameters are returned when the input parameter "Action" is "Stop".
		2	Failed	
		3	The call connection is established, but the tester has not confirmed the call connection status.	
FailReason	INTEGER	1	No signaling interaction.	
		2	The called party hooks off, but SS does not respond to the off-hook signaling.	
		3	MG internal reason.	
		4	Others	

Example

Example 1: Conduct an incoming call emulation test on POTS port 1 of the ONU (has no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
TEST-CALLEESIMULATION::OLTID=10.250.18.100,PONID=NA-NA-3-1,
ONUIDTYPE=LOID,ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::
ACTION=Start,TIMEOUT=60;
TEST-CALLEESIMULATION::OLTID=10.250.18.100,PONID=NA-NA-3-1,
ONUIDTYPE=LOID,ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::
ACTION=Stop,TIMEOUT=60;
```

◆ Response message

```
FH_10.250.18.133 2010-10-27 14:54:09
M  CTAG COMPLD
   EN=0   ENDESC=No error
   FH_10.250.18.133 2010-10-27 14:55:42
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
result of callin simulation
------------------------------------------------------------
STATE   Conclusion      FailReason
6       2       1
------------------------------------------------------------
```

Example 2: Conduct an incoming call emulation test on POTS port 1 in slot 2 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
TEST-CALLEESIMULATION::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::
ACTION=Start,TIMEOUT=60;
TEST-CALLEESIMULATION::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::
ACTION=Stop,TIMEOUT=60;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-02 15:11:04
M  CTAG COMPLD
   EN=0   ENDESC=No error
   FH_10.250.18.133 2010-11-02 15:11:22
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
result of callin simulation
------------------------------------------------------------
STATE   Conclusion      FailReason
6       2       1
------------------------------------------------------------
```

Related Command

None

6.8.9 Conducting the Outgoing Call Emulation Test (TEST-CALLERSIMULATION)

Function Description

This command is used for conducting the outgoing call emulation test.

The outgoing call emulation test simulates an outgoing call during which a program acts as the caller and automatically completes all the operations that should be performed by the caller. After the call is connected, the tester will check whether the ringing of the caller can be heard so as to verify whether the calling emulation port is ringing and calling normally.

Note:

If the system does not send the test ending command after a certain period of time since the sending of the test starting command, the test will be automatically ended.

Command Format

```
TEST-CALLERSIMULATION::ONUIP=onu_name|OLTID=olt_name[,
PONID=ponport_location,ONUIDTYPE=id-type,ONUID=onu_index],
ONUPORT=post_index:CTAG::ACTION=action-type,TEL=tel-number[,
TIMEOUT=timeout];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	-
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	-

Parameter	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional
ACTION	OCTET STRING	Start: Starts the test. Stop: Ends the test. Query: Queries the test.	Test Type	-
TEL	OCTET STRING	Size (20)	The telephone number dialed for testing. It is entered when starting the test.	-
TIMEOUT	INTEGER	60 to 300	Test time Unit: s	-

Response Format

The format of the response for starting the test is the same as the operation command response format in Response Message Format. The format of the response for querying and stopping the test is the same as the query command response format in Response Message Format.

```
Title = result of call out simulation
STATE DIALNUMBER TARGETNUMBER FAILEDSIG Conclusion FailReason
```

Output Parameter

Parameter	Data Type	Value Range	Description	Remark
STATE	OCTET STRING	1: The port is idle. 2: Off-hook. 3: Dial tone. 4: Receiving (digit collection). 5: ReceiveEnd (digit collection completed). 6: Ringing back. 7: Connected. 8: Busy tone. 9: On-hook. 10: Testing is ended.	Current status of the call	This parameter is returned when the input parameter "Action" is "Stop" or "Query".
DIALNUMBER	OCTET STRING	Size (32)	Telephone number dialed for testing.	-
TARGETNUM-BER	OCTET STRING	Size (32)	Telephone number reported to softswitch.	-
FAILEDSIG	OCTET STRING	Size (128)	Specific error signaling returned when establishing the channel failed	-
Conclusion	INTEGER	1	Succeeded	These two parameters are returned when the input parameter "Action" is "Stop".
		2	Failed	
		3	The call connection is established, but the tester has not confirmed the call connection status.	
FailReason	INTEGER	1	The SS off-hook response signaling is not received.	

Parameter	Data Type	Value Range	Description	Remark
		2	The SS dial tone sending signaling is not received.	
		3	The dialed telephone number is not consistent with that reported to SS.	
		4	The ring back tone is not received.	
		5	The opposite end has not hooked off.	
		6	Establishing the channel failed.	
		7	SS does not respond to the on-hook signaling.	
		8	Others	

Example

Example 1: Conduct an outgoing call emulation test on POTS port 1 of the ONU (has no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.250.18.100.

- Command issued

```
TEST-CALLERSIMULATION::OLTID=10.250.18.100,PONID=NA-NA-3-1,
ONUIDTYPE=LOID,ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::
ACTION=Start,TEL=1110,TIMEOUT=60;
TEST-CALLERSIMULATION::OLTID=10.250.18.100,PONID=NA-NA-3-1,
ONUIDTYPE=LOID,ONUID=aaa_bbb_ccc_111_222,ONUPORT=NA-NA-NA-1:CTAG::
ACTION=Stop,TEL=1110,TIMEOUT=60;
```

- Response message

```
FH_10.250.18.133 2010-10-27 14:56:53
M  CTAG COMPLD
   EN=0   ENDESC=No error
   FH_10.250.18.133 2010-10-27 14:57:02
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
result of call out simulation
------------------------------------------------------------
STATE DIALNUMBER  TARGETNUMBER FAILEDSIG
```

```
Conclusion FailReason
10  1110  port_register_failed    2   8
------------------------------------------------------------
```

Example 2: Conduct an outgoing call emulation test on POTS port 1 in slot 2 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
TEST-CALLERSIMULATION::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::
ACTION=Start,TEL=1110,TIMEOUT=60;
TEST-CALLERSIMULATION::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::
ACTION=Stop,TEL=1110,TIMEOUT=60;
```

- Response message

```
  FH_10.250.18.133 2010-11-02 15:11:27
M  CTAG COMPLD
   EN=0   ENDESC=No error
   FH_10.250.18.133 2010-11-02 15:11:40
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
result of call out simulation
------------------------------------------------------------
STATE DIALNUMBER  TARGETNUMBER  FAILEDSIG
Conclusion FailReason
10   1110   no response from ss   2    1
------------------------------------------------------------
```

Related Command

None

6.9 Querying the Alarm Information

The following introduces the command and example for querying the alarm information.

6.9.1 Querying Alarms (QUERY-ALARM)

Function Description

The command is used for querying the recovered / unrecovered alarms of a specified NE.

Command Format

```
QUERY-ALARM::ONUIP=onu-name|OLTID=olt-name[,PONID=ponport_location][,
ONUIDTYPE=id-type,ONUID=onu-index]:CTAG::[BEGINTIME=begin-time][,
ENDTIME=end-time][,FAULTFLAG=flag];
```

- Query an ONU that has a management IP address:

```
QUERY-ALARM::ONUIP=onu-name:CTAG::[BEGINTIME=begin-time][,ENDTIME=end-
time][,FAULTFLAG=flag];
```

- Query an ONU that has no management IP address:

```
QUERY-ALARM::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=id-type,
ONUID=onu-index:CTAG::[BEGINTIME=begin-time][,ENDTIME=end-time][,
FAULTFLAG=flag];
```

- Query an OLT PON port:

```
QUERY-ALARM::OLTID=olt-name,PONID=ponport_location:CTAG::
[BEGINTIME=begin-time][,ENDTIME=end-time][,FAULTFLAG=flag];
```

- Query an OLT:

```
QUERY-ALARM::OLTID=olt-name:CTAG::[BEGINTIME=begin-time][,ENDTIME=end-
time][,FAULTFLAG=flag];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address	It is required for querying an ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	IP address, name or ID of the OLT	It is required for querying an OLT or an ONU that has no management IP address.
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.

Parameter	Data Type	Value Range	Description	Remark
ONUID-TYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type: ONU_NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
BEGIN-TIME	String	Size (32)	Format of start time (Beijing time) YYYY-MM-DD HH-MM-SS	Optional
ENDTIME	String	Size (32)	Format of end time (Beijing time) YYYY-MM-DD HH-MM-SS	Optional
FAULT-FLAG	STRING	Fault-Only ALL	Alarm status. Default value: Fault-Only. Fault-Only includes events and excludes recovered alarms.	Optional

Response Format

It complies with the query command response format in Response Message Format.

```
Title = list of alarm info
SERIALID ALARMNAME DIP DNAME DTYPE POSITION SEVERITY FaultFlag HAPPENTIME
RECOVERTIME ALARMTYPE AditionalInfo EVENT_CODE PROBABLE_CAUSE_DESC
PROBABEL_CAUSE_CODE PROPOSED_ADVISE
```

Output Parameter

Parameter	Data Type	Value Range	Description
SERIALID	String	Size (0 to 100)	Alarm ID
ALARMNAME	String	Size (0 to 256)	Alarm name, corresponding to the alarm code parameter (EVENT_CODE)

Parameter	Data Type	Value Range	Description
DIP	String	IP address	NE IP address
DNAME	String	Size (0 to 100)	NE name
DTYPE	String	Size (0 to 100)	NE type
POSITION	String	RACK: rackid SHELF: shelfid SLOT: slotid PORT: portid ONUNUM: onunumber ONUNAME: onuname ONUPORTTYPE: onuporttype ONUPORT: onuportid EMUNUM: emunum	Position where the alarm occurs. RACK: rack SHELF: shelf SLOT: slot PORT: port number ONUNUM: ONU number ONUNAME: ONU name ONUPORTTYPE: ONU port type (LAN, E1, DSL, POTS and PON) ONUPORT: ONU port number EMUNUM: environment monitoring unit
SEVERITY	String	Critical Major Minor Warning	Alarm level
FaultFlag	String	Fault Recovery Event	Alarm status
HAPPENTIME	String	Size (0 to 32)	Alarm generation time. Format: YYYY-MM-DD HH:MM:SS.
RECOVERTIME	String	Size (0 to 32)	Alarm recovery time. Format: YYYY-MM-DD HH:MM:SS.
ALARMTYPE	String	communicationsAlarm qualityOfServiceAlarm processingErrorAlarm equipmentAlarm environmentalAlarm	Alarm type
AditionalInfo	String	Size (0 to 256)	Additional information, describing additional information related to the alarm.
PROBABLE_CAUSE_DESC	String	Size (0 to 256)	Alarm cause

Parameter	Data Type	Value Range	Description
PROBABEL_CAUSE_CODE	Integer	-	Alarm cause code
PROPOSED_ADVISE	String	Size (0 to 512)	Handling advice

Example

Example 1: Query alarm information of the ONU (having no management IP address) with ONUID being aaa_bbb_ccc_111_222. The ONU is connected to PON port 1 in slot 3 of the OLT whose IP address is 10.78.200.200.

- Command issued

```
QUERY-ALARM::OLTID=10.78.200.200,PONID=NA-NA-15-1,ONUIDTYPE=LOID,
ONUID=aaa_bbb_ccc_111_222:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-01 15:31:06
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=14
Alarm
-
SERIALID  ALARMNAME  DIP  DNAME  DTYPE   POSITION
SEVERITY   FaultFlag  HAPPENTIME  RECOVERTIME
ALARMTYPE  ADITIONALINFO        EVENT_CODE
PROBABLE_CAUSE_DESC
135     ONU_H248_BREAKOUT   10.250.18.100
AN5006-04    AN5006-04
RACK:NA,SHELF:NA,SLOT:3,PORT:1,ONUNUM:5,ONUNAME:AN5006-04
Critical  Faul2010-11-01 14:51:51   --   CommunicationAlarm
 -- 320001  ONU_H248_BREAKOUT99  ONU_H248_BREAKOUT   10.250.18.100
AN5006-04  AN5006-04
```

Example 2: Query the alarm information of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
QUERY-ALARM::ONUIP=10.250.18.121:CTAG::;
```

- Response message

```
  FH_10.250.18.133 2010-11-02 10:34:38
M  CTAG COMPLD
   total_blocks=2
```

```
   block_number=2
   block_records=3
Alarm
-
SERIALID ALARMNAME DIP  DNAME   DTYPE   POSITION
SEVERITY   FaultFlag   HAPPENTIME      RECOVERTIME
ALARMTYPE  ADITIONALINFO  EVENT_CODE   PROBABLE_CAUSE_DESC
2  ONU_H248_BREAKOUT   10.250.18.121   system 2   AN5006-20
RACK:NA,SHELF:NA,SLOT:5,PORT:0  Critical  Recovery
2010-10-28 09:13:14  2010-11-01 09:48:13  CommunicationAlarm  --
320001  ONU_H248_BREAKOUT3   OLT card status anomaly 10.250.18.121
system 2   AN5006-20  RACK:NA,SHELF:NA,SLOT:4 Critical   Recovery
2010-11-01 11:06:42     2010-11-01 11:15:34  EquipmentAlarm  --
110003  OLT card status anomaly, including (running anomaly,
not activated, inconsistent of the card and configuration type)4
OLT card status anomaly 10.250.18.121   system 2   AN5006-20
RACK:NA,SHELF:NA,SLOT:4 Critical        Recovery        2010-11-01
15:11:06     2010-11-01 15:19:14  EquipmentAlarm  --  110003
OLT card status anomaly, including (running anomaly, not activated,
inconsistent of the card and configuration type)-
```

Related Command

None

7 Integrated Query Interface

The following introduces the commands for physical resource query, service resource query, resource change notification and resource file export.

7.1 Querying the Equipment Information

The following introduces the commands and examples for querying the equipment information.

7.1.1 Querying the OLT Equipment Information (LST-DEVICE)

Function Description

This command is used for querying the information of a specified set or all sets of OTL equipment.

Command Format

```
LST-DEVICE::[OLTID=olt-name]:CTAG::;
```

Supported Equipment

OLT: AN5516 series, AN5116 series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address or name.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
DEVNAME	OCTET STRING	Size (128)	Equipment name
DEVIP	OCTET STRING	Size (128)	Equipment IP address
DT	OCTET STRING	Size (255)	Equipment model
DEVER	OCTET STRING	Size (255)	Software version

Example

For example, query the information of the OLT whose IP address is 10.250.18.100.

- Command

```
LST-DEVICE::OLTID=10.250.18.100:CTAG::;
```

- Response Message

```
 FH_10.250.18.133 2010-11-04 10:37:35
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
DEVNAME DEVIP    DT       DEVER
system1    10.250.18.100    AN5516_01       RP0121
------------------------------------------------------------
```

Related Command

```
LST-DEVINFO
```

7.1.2 Querying the ONU Equipment Information (LST-ONU)

Function Description

This command is used for querying the information of a specified ONU or all ONUs connected to the OLT.

Command Format

```
LST-ONU::ONUIP=onu-name|(OLTID=olt-name[,PONID=ponport_location[,
ONUIDTYPE=onuidtype,ONUID=onu-index]]):CTAG::;
```

- Query all ONUs connected to the OLT:

```
LST-ONU::OLTID=olt-name:CTAG::;
```

- Query all ONUs connected to a specified PON port of the OLT:

```
LST-ONU::OLTID=olt-name,PONID=ponport_location:CTAG::;
```

- Query the information of the ONU that has a management IP address:

```
LST-ONU::ONUIP=onu-name:CTAG::;
```

- Query the information of the ONU that has no management IP address:

```
LST-ONU::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuid-type,
ONUID=onuindex:CTAG::;
```

Supported Equipment

ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.	The ONU that has a management IP address. Required.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.	OLT or the ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Optional.

Parameter Name	Data Type	Value Range	Description	Remark
ONUIDTYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID, ONU_ NUMBER.	The ONU that has no management IP address. Optional.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Optional.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address or name.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
ONUNO	INTEGER	0 - 512	ONU authorization code
NAME	OCTET STRING	Size (128)	ONU name
DESC	OCTET STRING	Size (128)	ONU description information.
ONUTYPE	OCTET STRING	Size (128)	ONU type
IP	OCTET STRING	Size (128)	The management IP address of the ONU.
AUTHTYPE	OCTET STRING	MAC LOID LOIDONCEON	Authentication mode. When no authentication mode is specified, a dash (–) will be returned.
MAC	OCTET STRING	Size (128)	The registered MAC information of the ONU.

Parameter Name	Data Type	Value Range	Description
LOID	OCTET STRING	Size (64)	When the MAC authentication is adopted, a dash (–) will be returned.
PWD	OCTET STRING	Size (128)	LOID password. If no password is specified, a dash (–) will be returned.
SWVER	OCTET STRING	Size (128)	Software version

Example

Example 1, query the information of the ONU (having no management IP address) with ONUID being aa_whdx04. The ONU is connected to the shelf 0 - slot 4 - PON 1 port of the OLT whose IP address is 10.250.18.102.

◆ Command

```
LST-ONU::OLTID=10.250.18.102,PONID=NA-NA-4-1,ONUIDTYPE=LOID,
ONUID=whdx04:CTAG::;
```

◆ Response Message

```
 FH_10.250.18.133 2010-11-04 11:06:08
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
OLTID  PONID  ONUNO  NAME   DESC   ONUTYPE IP   AUTH   MAC
 LOID  PWD   SWVER
10.250.18.102  NA-1-4-1    2    AN5006-04       --
AN5006-04   --  LOID  54-4b-40-0c-79-a8  whdx04  --
R4.05.60.25
------------------------------------------------------------
```

Example 2, query the information of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command

```
LST-ONU::ONUIP=10.250.18.121:CTAG::;
```

◆ Response Message

```
FH_10.250.18.133 2010-11-04 10:53:54
M  CTAG COMPLD
   total_blocks=1
```

```
   block_number=1
   block_records=1
--------------------------------------------------
OLTID PONID  ONUNO  NAME   DESC   ONUTYPE IP  AUTH  MAC
LOID  PWD   SWVER
10.250.18.100   NA-1-1-1   2   AN5006-20   --
AN5006-20   10.250.18.121   MAC   54-4b-17-00-00-80
whdx2020     --   b230
------------------------------------------------------------
```

Related Command

```
LST-ONUCFG
```

7.1.3 Querying the ONU Hardware / Software Version (LST-ONUVERSION)

Function Description

This command is used for querying the ONU hardware / software version information.

Command Format

```
LST-ONUVERSION::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=id-
type,ONUID=onu-index:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required for the OLT or the ONU that has no management IP address

Parameter	Data Type	Value Range	Description	Remark
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	Optional for an ONU that has no management IP address
ONUID-TYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID and ONU_NUMBER	Optional for an ONU that has no management IP address
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional for an ONU that has no management IP address

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU on the PON port. The value is ONU_Number.
SWVER	OCTET STRING	Size (128)	Software version
HWVER	OCTET STRING	Size (128)	Hardware version

Example

Query the version information of the ONU (having no management IP address) with ONUID being 54-4B-70-03-FB-98. The ONU is connected to PON port 4 in slot 11 on shelf 0 of the OLT whose IP address is 10.78.200.200.

- Command issued

```
LST-ONUVERSION::OLTID=10.78.200.200,PONID=NA-NA-11-4,ONUIDTYPE=MAC,
ONUID=54-4B-70-03-FB-98:CTAG::;
```

- Response message

```
  FH_10.98.30.151 2014-07-07 14:32:20
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1

list of ONU version:
------------------------------------------------------------------
OLTID   PONID   ONUID   SWVER   HWVER
10.78.200.200 1-1-11-4 3 R3.07.05.64 WKE2.119.195R1B
------------------------------------------------------------------


;
```

Related Command

None

7.1.4 Querying the Shelf Information (LST-SHELF)

Function Description

This command is used for querying the shelf information of a specified OLT, a specified ONU or all devices in the entire network.

Command Format

```
LST-SHELF::[ONUIP=onu-name]|[OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index]]:CTAG::;
```

- Query the shelf information of all devices in the entire network:

```
LST-SHELF:::CTAG::;
```

◆ Query the shelf information of a specified OLT:

```
LST-SHELF::OLTID=olt-name:CTAG::;
```

◆ Query the shelf information of an ONU that has a management IP address:

```
LST-SHELF::ONUIP=onu-name:CTAG::;
```

◆ Query the shelf information of an ONU that has no management IP address:

```
LST-SHELF::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuidtype,
ONUID=onu-index:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required for the OLT or the ONU that has no management IP address.
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude **ONUID**, **PONID** is optional.
ONUID-TYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID and ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	When a single ONU is queried, the input parameter will be returned (when all ONUs in the entire network are queried, the ONUIPs will be returned if they exist; otherwise, the OLTIDs, PONIDs or ONUIDs will be returned).
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT. When all devices in the entire network are queried, the IP addresses will be returned.
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.
ONUID	OCTET STRING	Size (128)	When a single ONU is queried, the input parameter will be returned; when all ONUs in the entire network are queried, the ONUNOs will be returned.
SHELFID	OCTET STRING	Size (128) Rack - shelf number	Locate a shelf through rack - shelf number. Enter NA for the corresponding unspecified information.
SHELFTYPE	OCTET STRING	Size (128)	Shelf type

Example

Example 1: Query the information of all shelves of the OLT whose IP address is 10.250.18.100.

- Command issued

```
LST-SHELF::OLTID=10.250.18.100:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-04 10:37:54
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
```

```
------------------------------------------------------------
ONUIP    OLTID    PONID    ONUID    SHELFID SHELFTYPE
--       10.250.18.100    --       --       NA-1     AN5516-01
------------------------------------------------------------
```

Example 2: Query the information of all shelves of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
LST-SHELF::ONUIP=10.250.18.121:CTAG::;
```

- Response message

```
FH_10.250.18.133 2010-11-04 10:54:02
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP    OLTID    PONID    ONUID    SHELFID SHELFTYPE
10.250.18.121  10.250.18.100    NA-1-1-1      NA-1     AN5006-20
------------------------------------------------------------
```

Related Command

None

7.1.5 Querying the Card Information (LST-BOARD)

Function Description

This command is used for querying the shelf information of a specified OLT or a specified ONU or all sets of equipment in the entire network.

Command Format

```
LST-BOARD::[ONUIP=onu-name]|[[OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index]][,BOARDID=BOARD_location]]:
CTAG::;
```

- Query the card information of all sets of equipment in the entire network:

```
LST-BOARD:::CTAG::;
```

- Query the card information of a specified OTL:

```
LST-BOARD::OLTID=olt-name[,BOARDID=BOARD_location]:CTAG::;
```

- Query the card information of the ONU that has a management IP address:

```
LST-BOARD::ONUIP=onu-name[,BOARDID=BOARD_location]:CTAG::;
```

- Query the card information of the ONU that has no management IP address:

```
LST-BOARD::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuidtype,
ONUID=onu-index[,BOARDID=BOARD_location]:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.	The ONU that has a management IP address. Required.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.	OLT or the ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUID-TYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID, ONU_NUMBER.	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	The ONU that has no management IP address. Required.
BOAR-DID	OCTET STRING	Size (128) Cabinet rack - shelf - slot	Locates the card through the approach of cabinet rack - shelf - slot. Enter NA if the corresponding information is not specified. To only specify the shelf number, enter it in format of NA-0-NA.	Optional.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parame-ter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	When querying a single ONU, the input parameter will be returned (when querying all ONUs in the entire network, the ONUIP will be returned if the ONUIP exists; otherwise, the OLTID, PONID or ONUID will be returned).
OLTID	OCTET STRING	Size (128)	OLT IP address or name. When querying the equipment in the entire network, the IP address will be returned.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
ONUID	OCTET STRING	Size (128)	When querying a single ONU, the input parameter will be returned; when querying all ONUs in the entire network, the ONUNO will be returned.
BOAR-DID	OCTET STRING	Size (128) Cabinet rack - shelf - slot	Locates the card through the approach of cabinet rack - shelf - slot. Enter NA if the corresponding information is not specified. To only specify the shelf number, enter it in format of NA-0-NA.
BOARD-TYPE	OCTET STRING	Size (128)	Card Type
BSER-VICE	OCTET STRING	1. Power 2. ETH 3. ADSL 4. VDSL 5. POTS 6. E1 7. GPON 8. EPON 9. Control (main control unit) 10. Other	Card service type.
PNUM	INTEGER	0 - 64	Number of ports

Parame-ter Name	Data Type	Value Range	Description
SWVER	OCTET STRING	Size (255)	Software version
HWVER	OCTET STRING	Size (255)	Hardware Version

Example

Example 1, query the information of a card on the OLT whose IP address is 10.250.18.100.

- Command

```
LST-BOARD::ONUIP=10.250.18.100:CTAG::;
```

- Response Message

```
 FH_10.250.18.133 2010-11-04 10:38:05
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=10
------------------------------------------------------------
ONUIP OLTID PONID ONUID BOARDID BOARDTYPE  BSERVICE
PNUM  SWVER HWVER
--    10.250.18.100   -- --  NA-1-1  EC4B  EPON  4
 RP0121  WKE2.119.318R1A
--  10.250.18.100   -- --  NA-1-2  EC4B  EPON  4
RP0121  WKE2.119.318R2A
--  10.250.18.100   --   --NA-1-3  EC4B  EPON  4
RP0121  WKE2.119.318R2A
--  10.250.18.100   --  -- NA-1-9  HSWA  SCU   3
RP0121  WKE2.115.334R1A
--  10.250.18.100   --  -- NA-1-18 PUBA  Other 2
RP0107  WKE2.167.177R1A
--  10.250.18.100   --  -- NA-1-19 HU1A  Other 5
RP0103  WKE2.170.846R3A
--  10.250.18.100   -- --NA-1-20 HU1A  Other 5
RP0103  WKE2.170.846R3A
--  10.250.18.100   -- --  NA-1-21 FAN   Other 2
--   --
--  10.250.18.100   --  -- NA-1-22 FAN   Other   2
--   --
--  10.250.18.100   --  -- NA-1-23 FAN   Other   2
 --   --
```

```
------------------------------------------------------------
```

Example 2, query the information of a card connected with the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command

```
LST-BOARD::ONUIP=10.250.18.121:CTAG::;
```

◆ Response Message

```
FH_10.250.18.133 2010-11-04 10:54:12
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=7
------------------------------------------------------------
ONUIP OLTID  PONID  ONUID  BOARDID BOARDTYPE   BSERVICE
PNUM  SWVER   HWVER
10.250.18.121   --   --   --   NA-1-1  VD24    VDSL    24
RP0105  WKE2.170.853R2A
10.250.18.121   --   --   --   NA-1-2  POTS64-20       POTS
64      RP0104  WKE2.170.815R2A
10.250.18.121   --   --   --   NA-1-3  AD32-20 ADSL    32
 RP0106  WKE2.170.814R2C
10.250.18.121   --   --   --   NA-1-4  ETH     ETH     16
RP0100  WKE2.170.813R2A
10.250.18.121   --   --   --   NA-1-5  MCU     SCU     3
RP0106  WKE2.119.372R2A
10.250.18.121   --   --   --   NA-1-6  PWR     Power   1
 --      --
10.250.18.121   --   --   --   NA-1-7  FAN-1   Other   2
 --      --
------------------------------------------------------------
```

Related Command

```
LST-BRDINFO
```

7.1.6 Querying ONU Distance Values in a Batch Manner (LST-ONUDISTANCE)

Function Description

This command is used to query the ONU distance values in a batch manner.

Prerequisite

The PON traffic statistics is enabled in the EMS.

Command Format

```
LST-ONUDISTANCE::OLTID=olt-name:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required for the OLT or the ONU that has no management IP address

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT. When devices in the entire network are queried, the IP addresses will be returned.
ONUNO	INTEGER	0 to 512	ONU authorization number
NAME	OCTET STRING	Size (128)	ONU name
MAC	OCTET STRING	Size (128)	Registered MAC information of the ONU
LOID	OCTET STRING	Size (128)	When the MAC authentication is adopted, a dash – will be returned.
PWD	OCTET STRING	Size (128)	LOID password. If no password is specified, a dash – will be returned.
Length	DOUBLE	0 to 100	Optical fiber length (i.e. the ONU distance value) Unit: km

Example

Example 1: Query the distance values of all ONUs connected to the OLT with the IP address 10.250.18.100.

◆ Command issued

```
LST-ONUDISTANCE::OLTID=10.190.42.3:CTAG::;
```

◆ Response message

```
FH_10.170.162.232017-02-1710:35:34
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=2
listofonudistance
---------------------------------------------------------------
OLTIDPONIDONUNONAMEMACLOIDPWDLength
10.190.42.31-1-4-11--------0.000
10.190.42.31-1-14-13PON[1]-AN5506-07-A1[3]FHTT0002010f----0.000
---------------------------------------------------------------
```

Related Command

None

7.2 Querying Service Resources

The following introduces the command and example for querying service resources.

7.2.1 Querying the Media Gateway Information (LST-MG)

Function Description

This command is used for querying the media gateway information of a specified device.

Command Format

```
LST-MG::ONUIP=onu-name|(OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=idtype,ONUID=onu-index):CTAG::[GETSVLAN=TRUE];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID and ONU_NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
GETSVLAN	OCTET STRING	TRUE FALSE	-	(Optional) When this parameter is set to **TRUE**, the output parameter is **SVLAN** and **SCOS**.

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	The input parameter will be returned.
ONUID	OCTET STRING	Size (128)	The input parameter will be returned.
MGID	INTEGER	0 to 16	MG identifier, used for uniquely identifying the MG module on the ONU.
PT	OCTET STRING	Size (32)	Voice protocol type (H.248, SIP)
EID	OCTET STRING	Size (64)	MG gateway domain name in the H248 configuration
SIPREGDM	OCTET STRING	Size (64)	SIP register server
VLAN	INTEGER	0 to 4095	Voice VLAN
PRI	INTEGER	0 to 7	Voice priority
IPMODE	OCTET STRING	Size (64)	IP obtaining mode: DHCP, PPPOE and STATIC
IPADDRESS	OCTET STRING	Size (64)	IP address
IPMASK	OCTET STRING	Size (64)	IP address mask
IPGATEWAY	OCTET STRING	Size (64)	Gateway address
MGCIP1	OCTET STRING	Size (64)	IP address of the active softswitch
MGCIP2	OCTET STRING	Size (64)	IP address of the standby softswitch
SVLAN	INTEGER	0 to 4095	(Optional) Outer VLAN of the voice service
SCOS	INTEGER	0 to 7	(Optional) Outer service priority

Example

Example 1: Query the MG interface information of the ONU (having no management IP address) with ONUID being whdx04. The ONU is connected to PON port 1 in slot 4 on shelf 0 of the OLT whose IP address is 10.250.18.102.

- Command issued

```
LST-MG::OLTID=10.250.18.102,PONID=NA-NA-4-1,ONUIDTYPE=LOID,
ONUID=whdx04:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-04 11:06:36
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP OLTID  PONID ONUID  MGID PT  EID SIPREGDM
VLAN  PRI   IPMODE  IPADDRESS  IPMASK  IPGATEWAY MGCIP1
MGCIP2
-- 10.250.18.102  NA-1-4-1  whdx04  0   H.248  a1
1515  255   --   222.222.222.4  255.255.255.0  0.0.0.0
222.222.222.222
------------------------------------------------------------
```

Example 2: Query the MG interface information of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-MG::ONUIP=10.250.18.121:CTAG::;
```

◆ Response message

```
FH_10.250.18.133 2010-11-04 10:54:21
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP OLTID  PONID   ONUID   MGID  PT  EID  SIPREGDM
VLAN  PRI   IPMODE  IPADDRESS   IPMASK  IPGATEWAY MGCIP1
MGCIP2
10.250.18.121  --  --  --  0  H.248  222.222.222.3
 -- 1515  7  STATIC  222.222.222.3 255.255.255.0  0.0.0.0
222.222.222.222
------------------------------------------------------------
```

Related Command

```
LST-MGCFG
LST-MGINFO
```

7.2.2 Querying the Voice Port Information (LST-POTS)

Function Description

This command is used for querying the voice port information of a specified device.

Command Format

```
LST-POTS::ONUIP=onu-name|(OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuidtype,ONUID=onu-index)[,ONUPORT=onu-port]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUIDTYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID and ONU_NUMBER	Optional

Parameter	Data Type	Value Range	Description	Remark
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	The input parameter will be returned.
ONUID	OCTET STRING	Size (128)	The input parameter will be returned.
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a port through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.

Parameter	Data Type	Value Range	Description
MGID	INTEGER	0 to 16	MG identifier, used for uniquely identifying the MG module on the ONU.
TID	OCTET STRING	Size (1 to 64)	H248 user terminal identifier
PN	OCTET STRING	Size (1 to 32)	SIP telephone number
SIPUSERNAME	OCTET STRING	Size (1 to 32)	Username corresponding to the SIP user port
SIPUSERPWD	OCTET STRING	Size (1 to 32)	Password corresponding to the SIP user port
FAXMODE	String	T30 T38	Fax mode
CONTROLMODE	String	NONE SS AUTOVBD	Control mode

Example

Example 1: Query the information of POTS port 1 of the ONU (having no management IP address) with ONUID being whdx04. The ONU is connected to PON port 1 in slot 4 on shelf 0 of the OLT whose IP address is 10.250.18.102.

◆ Command issued

```
LST-POTS::OLTID=10.250.18.102,PONID=NA-NA-4-1,ONUIDTYPE=LOID,
ONUID=whdx04,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
FH_10.250.18.133 2010-11-04 11:06:46
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------
ONUIP OLTID PONID ONUID  ONUPORT MGID  TID   PN
SIPUSERNAME  SIPUSERPWD  FAXMODE CONTROLMODE
-- 10.250.18.102  NA-1-4-1  whdx04  NA-NA-NA-1
0   a1   a1       T30     AUTOVBD
------------------------------------------------------
```

Example 2: Query the information of POTS port 1 in slot 2 on shelf 0 of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
LST-POTS::ONUIP=10.250.18.121,ONUPORT=NA-NA-2-1:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-04 10:54:32
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP  OLTID PONID ONUID ONUPORT MGID  TID  PN
SIPUSERNAME  SIPUSERPWD  FAXMODE CONTROLMODE
10.250.18.121  --   --   --    NA-NA-2-1    0
  --      --
------------------------------------------------------------
```

Related Command

```
LST-POTSINF
LST-POTSINFO
```

7.2.3 Querying the Multicast Service Information (LST-IPTV)

Function Description

This command is used for querying the multicast service information of a specified device. If the query result is empty, an empty list will be returned.

Command Format

```
LST-IPTV::ONUIP=onu-name|(OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuidtype,ONUID=onu-index)[,ONUPORT=onu-port]:CTAG::;
```

- Query the multicast service information of the ONU that has a management IP address:

```
LST-IPTV::ONUIP=onu-name[,ONUPORT=onu-port]:CTAG::;
```

- Query the multicast service information of the ONU that has no management IP address:

```
LST-IPTV::(OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuidtype,
ONUID=onu-index)[,ONUPORT=onu-port]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required for an ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude **ONUID**, **PONID** is optional.
ONUID-TYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID and ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card port through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.

Parameter	Data Type	Value Range	Description
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	The input parameter will be returned.
ONUID	OCTET STRING	Size (128)	The input parameter will be returned.
ONUPORT	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a port through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.
MVLAN	INTEGER	0 to 4095	Multicast VLAN
VPI	INTEGER	0 to 65535	VPI. Optional (DSL multicast service)
VCI	INTEGER	0 to 65535	VCI. Optional (DSL multicast service)
UV	INTEGER	0 to 4095	VLAN at user side. Optional (multicast service VLAN accessed through a home gateway)
FLMODE	OCTET STRING	Size (32)	Fast leave mode: Enabled Disabled
MAXGRP	INTEGER	0 to 255	Maximum number of multicast programs that a port can join simultaneously.

Example

Example 1: Query the multicast service information of the ONU (having no management IP address) with ONUID being whdx04. The ONU is connected to PON port 1 in slot 4 on shelf 0 of the OLT whose IP address is 10.250.18.102.

- Command issued

```
LST-IPTV::OLTID=10.250.18.102,PONID=NA-NA-4-1,ONUIDTYPE=LOID,
ONUID=whdx04,ONUPORT=NA-NA-NA-1:CTAG::;
```

- Response message

```
  FH_10.250.18.133 2010-11-04 11:06:56
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
---------------------------------------------------------
ONUIP OLTID PONID ONUID ONUPORT MVLAN   VPI  VCI   UV
FLMODE  MAXGRP
-- 10.250.18.102  NA-1-4-1  whdx04  NA-NA-NA-1  432
 --  --   123  --  --
```

```
------------------------------------------------------------
```

Example 2: Query the multicast service information of the ONU (having a management IP address) whose IP address is 10.250.18.121.

- Command issued

```
LST-IPTV::ONUIP=10.250.18.121,ONUPORT=NA-NA-4-1:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-04 10:54:41
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP OLTID PONID ONUID ONUPORT MVLAN  VPI  VCI  UV
 FLMODE  MAXGRP
10.250.18.121  --  --   -- NA-NA-4-1  569  --   --
--      --      --
------------------------------------------------------------
```

Related Command

```
LST-IPTVCFG
```

7.2.4 Querying the LAN Port Information (LST-LANPORT)

Function Description

This command is used for querying the LAN port information of a specified OLT or ONU.

Command Format

```
LST-LANPORT::ONUIP=onu-name|(OLTID=olt-name[,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index])[,PORTID=port_index]:CTAG::;
```

- Query the uplink port information of an OLT:

```
LST-LANPORT::OLTID=olt-name[,PORTID=port_index]:CTAG::;
```

- Query the LAN port information of an ONU that has a management IP address:

```
LST-LANPORT::ONUIP=onu-name[,PORTID=port_index]:CTAG::;
```

- Query the LAN port information of an ONU that has no management IP address:

```
LST-LANPORT::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=onuidtype,
ONUID=onu-index[,PORTID=port_index]:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address	Required for an ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required for the OLT or the ONU that has no management IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.	If input parameters exclude the ONUID, the PONID is optional.
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type: ONU_NAME, MAC, LOID, ONU_ NUMBER	Optional
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_ NUMBER.	Optional
PORTID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a port through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.	Optional

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	The input parameter will be returned.
ONUID	OCTET STRING	Size (128)	The input parameter will be returned.
PORTID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a port through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.
ADMINSTATUS	OCTET STRING	1. UP 2. DOWN	Management status
DUPLEX	OCTET STRING	1. Full 2. Half 3. Auto 4. Auto-Full 5. Auto-Half	Working mode
SPEED	INTEGER	Auto 10M 100M 1000M Auto-10M Auto-100M Auto-1000M	Port rate
RateLimitUs	INTEGER	0 to 1000000	Uplink rate limit Unit: Kbps
RateLimitDs	INTEGER	0 to 1000000	Downlink rate limit Unit: Kbps

Example

Example 1: Query the Ethernet port information of the ONU (having no management IP address) with ONUID being whdx04. The ONU is connected to PON port 1 in slot 4 on shelf 0 of the OLT whose IP address is 10.250.18.102.

- Command issued

```
LST-LANPORT::OLTID=10.250.18.102,PONID=NA-NA-4-1,ONUIDTYPE=LOID,
ONUID=whdx04,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-04 11:07:05
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP  OLTID  PONID  ONUID  PORTID ADMINSTATUS  DUPLEX  SPEED
RateLimitUs   RateLimitDs
--  10.250.18.102  NA-1-4-1   whdx04  NA-NA-NA-1  DOWN
Full 100M   --   --
------------------------------------------------------------
```

Example 2: Query the Ethernet port information of the ONU (having a management IP address) whose IP address is 10.250.18.121.

◆ Command issued

```
LST-LANPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-4-1:CTAG::;
```

◆ Response message

```
  FH_10.250.18.133 2010-11-04 10:55:00
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP OLTID PONID  ONUID   PORTID ADMINSTATUS  DUPLEX  SPEED
RateLimitUs  RateLimitDs
10.250.18.121  --    --  --   NA-NA-4-1  --   --   --
--      --
------------------------------------------------------------
```

Related Command

None

7.2.5 Querying the DSL Port Information (LST-DSLPORT)

Function Description

This command is used for querying the DSL port information of a specified set of equipment.

Command Format

```
LST-DSLPORT::ONUIP=onu-name|(OLTID=oltname,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index)[,ONUPORT=onuport]:CTAG::;
```

At present, the FiberHome equipment only supports the command of the following format:

```
LST-DSLPORT::ONUIP=onu-name[,ONUPORT=onu-port]:CTAG::;
```

Supported Equipment

AN5006-15, AN5006-16, AN5006-20.

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.	The ONU that has a management IP address. Required.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.	OLT or the ONU that has no management IP address. Required.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.	The ONU that has no management IP address. Required.
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_ NAME, MAC, LOID, ONU_ NUMBER).	The ONU that has no management IP address. Required.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_ NAME, MAC, LOID or ONU_ NUMBER.	The ONU that has no management IP address. Required.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.	Optional.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	The input parameter will be returned.
ONUID	OCTET STRING	Size (128)	The input parameter will be returned.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. NA is displayed if no information is located.
ADMINSTA-TUS	STRING	UP DOWN	Management status.

Example

For example, query the information of the No. 2 DSL port located in the No. 3 slot of the ONU whose IP address is 10.250.18.121.

- Command

```
LST-DSLPORT::ONUIP=10.250.18.121,ONUPORT=NA-NA-3-2:CTAG:::;
```

- Response Message

```
 FH_10.250.18.133 2010-11-04 10:54:50
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
ONUIP    OLTID    PONID    ONUID    ONUPORT ADMINSTATUS
10.250.18.121    --       --       --       NA-NA-3-2       --
------------------------------------------------------------
```

Related Command

None

7.2.6 Querying the Port VLAN Information (LST-PORTVLAN)

Function Description

This command is used for querying the port VLAN information of a specified ONU.

Command Format

```
LST-PORTVLAN::ONUIP=onu-name|(OLTID=oltname,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index)[,ONUPORT=onuport]:CTAG::;
```

- Query the port VLAN information of the ONU that has a management IP address:

```
LST-PORTVLAN::ONUIP=onu-name[,ONUPORT=onu-port]:CTAG::;
```

- Query the port VLAN information of the ONU that has no management IP address:

```
LST-PORTVLAN::(OLTID=olt-name,PONID=ponport_location,
ONUIDTYPE=onuidtype,ONUID=onu-index)[,ONUPORT=onu-port]:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).

Parameter Name	Data Type	Value Range	Description
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
PORTID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified. To only specify the shelf number, enter it in format of NA-0-NA-NA. To specify the card, enter it in format of NA-0-6-NA. To specify the port number, enter it in format of NA-0-6-5.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	The input parameter will be returned.
ONUID	OCTET STRING	Size (128)	The input parameter will be returned.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates card port through the approach of cabinet rack - shelf - slot - port number. NA is displayed if no information is located.
SVLAN	INTEGER	0 - 4095	SVLAN
CVLAN	INTEGER	0 - 4095	CVLAN
VPI	INTEGER	0 - 65535	VPI

Parameter Name	Data Type	Value Range	Description
VCI	INTEGER	0 - 65535	VCI
UV	INTEGER	0 - 4095	VLAN at user side

Example

Example 1, query the VLAN information of the No. 1 port on the ONU (having no management IP address) with ONUID being whdx04. The ONU is connected to the shelf 0 - slot 4- PON 1 port of the OLT whose IP address is 10.250.18.102.

◆ Command

```
LST-PORTVLAN::OLTID=10.250.18.102,PONID=NA-NA-4-1,ONUIDTYPE=LOID,
ONUID=whdx04,ONUPORT=NA-NA-NA-1:CTAG::;
```

◆ Response Message

```
FH_10.250.18.133 2010-11-04 11:07:15
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=2
------------------------------------------------------------
ONUIP OLTID  PONID  ONUID  ONUPORT SVLAN  CVLAN  VPI   VCI
UV
--  10.250.18.102  NA-1-4-1  whdx04  NA-NA-NA-1   --
123  --   --   123
--  10.250.18.102   NA-1-4-1 whdx04  NA-NA-NA-1      --
--   --    --   --
------------------------------------------------------------
```

Example 2, query the service port information of the LAN 1 port on the ONU (having a management IP address) whose IP address is 10.250.18.121. The ONU is connected to the shelf 0 - slot 4 - port 1 of the OLT.

◆ Command

```
LST-PORTVLAN::ONUIP=10.250.18.121,ONUPORT=NA-NA-4-1:CTAG::;
```

◆ Response Message

```
FH_10.250.18.133 2010-11-04 10:55:10
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
------------------------------------------------------------
```

```
ONUIP OLTID PONID ONUID ONUPORT SVLAN  CVLAN  VPI  VCI
UV
10.250.18.121   --  --  --  NA-NA-4-1  569  --   --
--  --
------------------------------------------------------------
```

Related Command

None

7.2.7 Querying the VLAN Information (LST-VLAN)

Function Description

This command is used for querying the VLAN information.

Command Format

```
LST-VLAN::ONUIP=onu-name|OLTID=olt-name:CTAG::[VLAN=vlanid];
```

Input Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT
VLAN	INTEGER	0 to 4094	VLANID

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
VLAN	INTEGER	0 to 4094	VLAN ID

Parameter	Data Type	Value Range	Description
DESC	OCTET STRING	Size (128)	VLAN alias
VLANMODE	OCTET STRING	COMMON STACKING QINQ	VLAN attribute
PORTLIST	OCTET STRING	Rack - shelf - slot - port number	Port list
MVLAN-FLAG	INTEGER	-	Indicates whether it is a multicast VLAN or non-multicast VLAN.
MVLANPRI	INTEGER	0 to 7	Priority of the IGMP message
SERVICE	OCTET STRING	HSI (Internet access) IPTV (unicast) VOIP (voice)	Service type of the VLAN

Example

Query the VLAN information of the OLT whose IP address is 10.78.200.200 (the ONU has no management IP address).

◆ Command issued

```
LST-VLAN::OLTID=10.78.200.200:CTAG::;
```

◆ Response message

```
 FH_10.98.12.1 2014-06-13 14:33:36
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=38


------------------------------------------------------
ONUIP OLTIP VLAN DESC VLANMODE PORTLIST MULANFLAG MVLANPRI SERVICE
--   10.78.200.200  2    --  -- 1-1-19-1  0   0   HSI
--   10.78.200.200  3    --  --  --       0   0   HSI
--   10.78.200.200  50   --  -- 1-1-19-1  0   0   HSI
--   10.78.200.200  122    --  -- 1-1-19-1  0   0   HSI
--   10.78.200.200  224    --  -- 1-1-19-1  0   0   IPTV
--   10.78.200.200  225   --  --  --      0   0   IPTV
--   10.78.200.200  226   --  --  --      0   0   IPTV
--   10.78.200.200  333    --  -- 1-1-19-1  0   0   HSI
--   10.78.200.200  1111    --  -- 1-1-19-1  0   0   VOIP
--   10.78.200.200  2006    --  -- 1-1-19-1  0   0   VOIP
```

```
--   10.78.200.200  2008    --  -- 1-1-19-1  0   0   VOIP
--   10.78.200.200  2222   --  -- 1-1-19-1  0   0   HSI
--   10.78.200.200  2223   --  --  --      0   0   HSI
--   10.78.200.200  3333    --  -- 1-1-19-1  0   0   VOIP
--   10.78.200.200  3334    --  -- 1-1-19-1  0   0   HSI
--   10.78.200.200  3997    --  -- 1-1-19-1  0   0   VOIP
--   10.78.200.200  3998    --  -- 1-1-19-1  0   0   --
--   10.78.200.200  3999    --  -- --     0   0   --
--   10.78.200.200  4001    --  -- 1-1-19-1  0   0   HSI
--   10.78.200.200  4002    --  -- --  0   0   HSI
--   10.78.200.200  4003    --  -- --  0   0   HSI
--   10.78.200.200  4004    --  -- --  0   0   HSI
--   10.78.200.200  4005    --  -- --  0   0   HSI
--   10.78.200.200  4006    --  -- --  0   0   HSI
--   10.78.200.200  4007    --  -- --  0   0   HSI
--   10.78.200.200  4008    --  -- --  0   0   HSI
--   10.78.200.200  4009    --  -- --  0   0   HSI
--   10.78.200.200  4010    --  -- --  0   0   HSI
--   10.78.200.200  4011    --  -- 1-1-19-1  0   0   IPTV
--   10.78.200.200  4012    --  -- --  0   0   IPTV
--   10.78.200.200  4013    --  -- --  0   0   IPTV
--   10.78.200.200  4014    --  -- --  0   0   IPTV
--   10.78.200.200  4015    --  -- --  0   0   IPTV
--   10.78.200.200  4016    --  -- --  0   0   IPTV
--   10.78.200.200  4017    --  -- --  0   0   IPTV
--   10.78.200.200  4018    --  -- --  0   0   IPTV
--   10.78.200.200  4019    --  -- --  0   0   IPTV
--   10.78.200.200  4020    --  -- --  0   0   IPTV
-----------------------------------------------

;
---------
```

Related Command

None

7.2.8 Querying the ONU Port Service Information (LST-ONUSERVICESTATUS)

Function Description

This command is used for querying the broadband and voice services configured on a specified ONU.

Command Format

```
LST-ONUSERVICESTATUS::ONUIP=onu-name|OLTID=oltname,
PONID=ponport_location,ONUIDTYPE=onuid-type,ONUID=onu-index:CTAG::;
```

Supported Equipment

- OLT: AN5516 series, AN5116 series.
- ONU: AN5006 series, AN5506 series, HG series.

Input Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - PON port number. Enter NA if the corresponding information is not specified.
ONUID-TYPE	OCTET STRING	Size (128)	ONU_NAME, MAC, LOID, ONU_NUMBER
ONUID	OCTET STRING	Size (128)	ONU identifier. The value is ONU_NAME, MAC, LOID or ONU_NUMBER. It is used for uniquely identifying the ONU connected to the PON port.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	The input parameter will be returned.
ONUID	OCTET STRING	Size (128)	The input parameter will be returned.
DATASER-VICE	INTEGER	0 - 24	Number of broadband services
VOICESER-VICE	INTEGER	0 - 24	Number of voice services

Example

For example, query the port service information of the ONU (having no management IP address) with ONUID being FHTT01e821a0. The ONU is connected to the shelf 0 - slot 7 - PON 4 port of the OLT whose IP address is 10.78.200.200.

- Command

```
LST-ONUSERVICESTATUS::OLTID=10.78.200.200,PONID=NA-NA-7-4,
ONUIDTYPE=MAC,ONUID=FHTT01e821a0:CTAG::;
```

- Response Message

```
   FH_10.78.12.155 2014-07-15 18:54:10
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1


list of ONU service status:
-----------------------------------------------------

ONUIP OLTIP PONID ONUID DATASERVICE VOICESERVICE

--   10.78.200.200  1-1-7-4   FHTT01e821a0  0   0
```

```
---------------------------------------------------

;
```

Related Command

None

7.2.9 Querying the VLAN Service Port (LST-SERVICEPORT)

Function Description

This command is used for querying the VLAN service port.

Command Format

```
LST-SERVICEPORT::OLTID=olt-name:CTAG::[VLAN=cvlan,][SVLAN=svlan,]
[PORTTYPE=porttype];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT	Required
CVLAN	INTEGER	0 to 4095	Inner VLAN	Optional
SVLAN	INTEGER	0 to 4095	Outer VLAN	Optional
PORTTYPE	OCTET STRING	Size (128)	Port type FXS: voice user port LAN: data user port ALL: all user ports	(Optional) The default value is FXS.

Response Format

It complies with the query command response format in Response Message Format.

Output Parameter

Parameter	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	IP address or name of the OLT
PONID	OCTET STRING	Size (128) Rack - shelf - slot - PON port number	PON port location information. Locate a port through rack - shelf - slot - PON port number. Enter NA for the corresponding unspecified information.
ONUID	INTEGER	0 to 512	ONU authorization number
ONUPORT	INTEGER	0 to 512	ONU port number
CVLAN	INTEGER	0 to 4095	Inner VLAN
SVLAN	INTEGER	0 to 4095	Outer VLAN. "–" is displayed for single-tagged VLAN configuration scenario.
PORTTYPE	OCTET STRING	Size (128)	Port type FXS: voice port LAN: data port

Example

Query the information of the VLAN service port of the OLT with the IP address 172.29.215.4.

- Command issued

```
LST-SERVICEPORT::OLTID=172.29.215.4:CTAG::VLAN=3333;
```

- Response message

```
   FH_172.29.215.4 2015-03-06 15:42:18
M CTAG COMPLD
 total_blocks=1
  block_number=1
  block_records=3

OLTID PONID ONUIDTYPE ONUNO PORTID VLANID PORTTYPE
172.29.215.4 1-1-1-7 MAC 1 1-1-1-1 3333 FXS
172.29.215.4 1-1-1-7 MAC 2 1-1-1-1 3333 FXS
172.29.215.4 1-1-1-7 MAC 3 1-1-1-2 3333 FXS
```

Related Command

None

7.2.10 Querying the Flow Policy (LST-PORTPVCFLOWPOLICY)

Function Description

This command is used for querying the PORTPVCFLOWPOLICY information.

Command Format

```
LST-PORTPVCFLOWPOLICY::ONUIP=|(OLTID=oltname,PONID=ponport_location,
ONUIDTYPE=onuid-type,ONUID=onu-index)[,ONUPORT=onuport]:CTAG::;
```

Supported Equipment

ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
PORTID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified. To only specify the shelf number, enter it in format of NA-0-NA-NA. To specify the card, enter it in format of NA-0-6-NA. To specify the port number, enter it in format of NA-0-6-5.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
VLAN	INTEGER	0 - 4094	VLANID
DESC	OCTET STRING	Size (128)	VLAN alias
VLAN-MODE	OCTET STRING	COMMON STACKING QINQ	VLAN attribute.
PORTLIST	OCTET STRING	Cabinet rack - shelf - slot - port number	Port list.
MVLAN-FLAG	INTEGER	0: Non-multicast VLAN 1: Multicast VLAN	Indicates whether it is a multicast VLAN or non-multicast VLAN.
MVLANPRI	INTEGER	0 - 7	Priority level of the IGMP message.
SERVICE	OCTET STRING	HSI (Internet access) IPTV (unicast) VOIP (voice)	Service type of the VLAN

Example

For example,

- Command

```
LST-PORTPVCFLOWPOLICY::ONUIP=172.28.148.58,ONUPORT=1-1-2-63:CTAG::;
```

- Response Message

```
 FH_10.62.165.42 2015-03-19 01:55:32
M CTAG COMPLD
total_blocks=1
block_number=1
block_records=8
```

```
list of port pvc flow policy
------------------------------------------------------------------------------
PVCNO UPFLOWPOLICYID DOWNFLOWPOLICYID CIRUP CIRDOWN
0 ubrPcr_1024K ubrPcr_1024K 1024 1024
1 ubrPcr_1024K ubrPcr_1024K 1024 1024
2 -- -- -- --
3 -- -- -- --
4 -- -- -- --
5 -- -- -- --
6 -- -- -- --
7 -- -- -- --
------------------------------------------------------------------------------
```

Related Command

None

7.2.11 Querying the Template Information (RTRV-TEMPLATE-ALL)

Function Description

This command is used for querying the PORTPVCFLOWPOLICY information.

Command Format

```
RTRV-TEMPLATE-ALL::ONUIP=onu-name|OLTID=olt-name:CTAG::;
```

Supported Equipment

ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.

Example

For example,

- Command

```
RTRV-TEMPLATE-ALL::ONUIP=172.28.148.58:CTAG::;
```

- Response Message

```
 FH_10.62.165.42 2015-03-19 01:58:44
M CTAG COMPLD
total_blocks=1
block_number=1
block_records=48


------------------------------------------------------------------------------
TEMPLATENAME DOWNMAXBW UPMAXBW CHANNELMODE
NULL 0 0 0
P_03584_1024 3584 1024 0
P_05120_1280 5120 1280 0
P_05632_1024 5632 1024 0
P_07168_1280 7168 1280 0
P_07680_1536 7680 1536 0
P_100M_50M 102400 51200 0
P_1024_256 1024 256 0
P_1024_512 1024 512 0
P_10M_2M 10240 2048 0
.....
```

Related Command

None

7.2.12 Querying the Port Template Information (RTRV-TEMPLATE-PORT)

Function Description

This command is used for querying the port template information of a specified device.

Command Format

```
RTRV-TEMPLATE-PORT::ONUIP=onu-name|(OLTID=oltname,
PONID=ponport_location,ONUIDTYPE=onuid-type,ONUID=onu-index)[,
ONUPORT=onuport]:CTAG::;
```

Supported Equipment

ONU: AN5006-20, AN5006-30.

Input Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address or name of the ONU that has a management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address or name.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locate through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
ONUID-TYPE	OCTET STRING	Size (128)	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.

Parameter Name	Data Type	Value Range	Description
ONUPORT	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified.
PORTID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - port number	Locates the card through the approach of cabinet rack - shelf - slot - port number. Enter NA if the corresponding information is not specified. To only specify the shelf number, enter it in format of NA-0-NA-NA. To specify the card, enter it in format of NA-0-6-NA. To specify the port number, enter it in format of NA-0-6-5.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	The input parameter will be returned.
OLTID	OCTET STRING	Size (128)	The input parameter will be returned.
VLAN	INTEGER	0 - 4094	VLANID
DESC	OCTET STRING	Size (128)	VLAN alias
VLANMODE	OCTET STRING	COMMON STACKING QINQ	VLAN attribute.
PORTLIST	OCTET STRING	Cabinet rack - shelf - slot - port number	Port list.
MVLAN-FLAG	INTEGER	0: Non-multicast VLAN 1: Multicast VLAN	Indicates whether it is a multicast VLAN or non-multicast VLAN.
MVLANPRI	INTEGER	0 - 7	Priority level of the IGMP message.
SERVICE	OCTET STRING	HSI (Internet access) IPTV (unicast) VOIP (voice)	Service type of the VLAN

Example

Command

```
RTRV-TEMPLATE-PORT::ONUIP=172.28.148.55,ONUPORT=1-1-2-4:CTAG::;
```

Response Message

```
FH_10.62.165.42 2015-03-19 02:00:52
M CTAG COMPLD
total_blocks=1
block_number=1
block_records=1


------------------------------------------------------------------------------
TEMPLATENAME DOWNMAXBW UPMAXBW CHANNELMODE
P_03584_1024 3584 1024 0
------------------------------------------------------------------------------
```

Related Command

```
ADD-FLOWPOLICY
LST-POTSINFO
```

7.3 Resource Change Notification

The following introduces the command and example for resource change notification.

7.3.1 Registering the Resource Change Notification (SUBSCRIBE)

Function Description

This command is used for registering the resource change notification after the TCP connection is successfully established. After the register successes, the FiberHome EMS will report the change notification of the physical resources (device, subracks, cards, etc.) to the OSS automatically.

Command Format

```
SUBSCRIBE:::CTAG::FLAG=flag;
```

Input Parameter

Parameter	Data Type	Value Range	Description
FLAG	OCTET STRING	RES	RES indicates registering the reporting of resource change notification.

Response Format

It complies with the response format in Resource Change Notification Format.

Output Parameter

None

Example

For example, register the resource change notification for the current user.

- Command issued

```
SUBSCRIBE:::CTAG::FLAG=RES;
```

- Response message

```
 FH_10.250.18.133 2010-11-04 11:45:19
M  CTAG COMPLD
   EN=0   ENDESC=No error
```

Related Command

```
UNSUBSCRIBE
```

7.3.2 Deregistering the Resource Change Notification (UNSUBSCRIBE)

Function Description

After deregistering the resource change notification successfully, the FiberHome EMS will not report the change notification of the physical resources (device, subracks, cards, etc.) to the OSS automatically.

Command Format

```
UNSUBSCRIBE:::CTAG::FLAG=flag;
```

Input Parameter

Parameter	Data Type	Value Range	Description
FLAG	OCTET STRING	RES	RES indicates registering the reporting of resource change notification.

Response Format

It complies with the response format in Resource Change Notification Format.

Output Parameter

None

Example

For example, deregister the resource change notification.

- Command issued

```
UNSUBSCRIBE:::CTAG::FLAG=RES;
```

- Response message

```
  FH_10.250.18.133 2010-11-04 11:44:11
M  CTAG COMPLD
   EN=0   ENDESC=No error
```

Related Command

```
SUBSCRIBE
```

7.3.3 Querying the Resource Change Notification (LST-RESNOTIFY)

Function Description

This command is used for querying the resource change notification reported.

Command Format

```
LST-RESNOTIFY:::CTAG::BEGINTIME=initial-time[,ENDTIME=last-time];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
BEGINTIME	String	Size (32)	Start time in the format of YYYY-MM-DD HH-MM-SS (Beijing time).	Required
ENDTIME	String	Size (32)	End time in the format of YYYY-MM-DD HH-MM-SS (Beijing time).	Optional

Response Format

It complies with the response format in Resource Change Notification Format.

Output Parameter

Parameter	Data Type	Value Range	Description
HAPPENTIME	OCTET STRING	Size (128)	Resource change time in the format of YYYY-MM-DD HH:MM:SS.
MARK	OCTET STRING	ADD DEL MOD	Resource change cause

Parameter	Data Type	Value Range	Description
OBJECT	OCTET STRING	OLT ONU SHELF BOARD	Resource object type
INFO	OCTET STRING	Size (512)	Resource change information. See the Resource Change Notification for the format of returned information.

Example

Query the resource change notification information in a specified period of time.

◆ Command issued

```
LST-RESNOTIFY:::2::BEGINTIME=2010-12-30 07-34-00,ENDTIME=2010-12-30 10-00-00;
```

◆ Response message

```
 FH_10.250.18.133 2010-11-04 11:44:22
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=12
list resource notify
------------------------------------------------------------
HAPPENTIME MARK OBJECT  INFO
2010-11-01 11:15:18  ADD BOARD ONUIP=10.250.18.121
OLTID=0.0.0.0   PONID=-- ONUID=0 BOARDID=2-1-4
BOARDTYPE=ETH  BSERVICE=ETH  PNUM=16  SWVER=--  HWVER=--
2010-11-01 11:15:34  ADD BOARD ONUIP=10.250.18.121
OLTID=0.0.0.0  PONID=-- ONUID=0 BOARDID=2-1-801
BOARDTYPE=HCU-20  BSERVICE=-- PNUM=0 SWVER=--  HWVER=--
2010-11-01 11:22:36  ADD  ONU  OLTID=10.250.18.102
PONID=3-1-4-1  ONUNO=1 NAME=AN5006-10B DESC=-- ONUTYPE=AN5006-10B
IP=0.0.0.0  AUTH=LOID MAC=544b10406b60  LOID=whdx10b
PWD=--  SWVER=--
2010-11-01 11:22:36 ADD  ONU  OLTID=10.250.18.102
PONID=3-1-4-1  ONUNO=2 NAME=AN5006-04  DESC=-- ONUTYPE=AN5006-04
IP=0.0.0.0     AUTH=LOID  MAC=544b400c79a8 LOID=whdx04
PWD=--  SWVER=--

------------------------------------------------------------
```

Related Command

SUBSCRIBE

7.3.4 Resource Change Notification Interface

Function Description

The resource change notification interface reports the notification messages upon adding / modifying / deleting a device, adding / deleting a shelf as well as adding / deleting a card.

Command Format

None

Input Parameter

None

Response Format

It complies with the response format in Resource Change Notification Format.

Output Parameter

- OLT adding / modifying / deleting notification: The resource change notification will be reported only when the name of the OLT is changed.

Parameter	Data Type	Value Range	Description
DEVNAME	OCTET STRING	Size (128)	Device name
DEVIP	OCTET STRING	Size (128)	Device IP address
DT	OCTET STRING	Size (128)	Device model
DEVER	OCTET STRING	Size (128)	Software version

- ONU adding / modifying / deleting notification: The resource change notification will be reported only when the ONU name, description, authentication mode or authentication information is changed.

Parameter	Data Type	Value Range	Description
OLTID	OCTET STRING	Size (128)	OLT IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.
ONUNO	INTEGER	Size (128)	ONU authorization number
NAME	OCTET STRING	Size (128)	ONU name
DESC	OCTET STRING	Size (128)	ONU description information
ONUTYPE	SWVER	OCTET STRING	ONU type
IP	OCTET STRING	Size (128)	Management IP address of the ONU
AUTH	OCTET STRING	MAC LOID HYBRID	Authentication mode. When no authentication mode is specified, a dash (–) will be returned.
MAC	OCTET STRING	Size (128)	The registered MAC information of the ONU.
LOID	OCTET STRING	Size (64)	When the MAC authentication is adopted, a dash (–) will be returned.
PWD	OCTET STRING	Size (128)	LOID password. If no password is specified, a dash (–) will be returned.
SWVER	OCTET STRING	Size (128)	Software version

- Shelf adding / deleting notification: The resource change notification will be reported only when a shelf is added or deleted.

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address of the ONU. When the ONU has no IP address, the OLTID, PONID and ONUID will be reported.
OLTID	OCTET STRING	Size (128)	OLT IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.
ONUID	OCTET STRING	Size (128)	ONU authorization number

Parameter	Data Type	Value Range	Description
SHELFID	OCTET STRING	Size (128) Rack - shelf number	Locate a shelf through rack - shelf number. Enter NA for the corresponding unspecified information.
SHELFTYPE	OCTET STRING	Size (128)	Shelf type

- Card adding / deleting notification: The resource change notification will be reported only when a card is added or deleted.

Parameter	Data Type	Value Range	Description
ONUIP	OCTET STRING	Size (128)	IP address of the ONU. When the ONU has no IP address, the OLTID, PONID and ONUID will be reported.
OLTID	OCTET STRING	Size (128)	OLT IP address
PONID	OCTET STRING	Size (128) Rack - shelf - slot - port number	Locate a card through rack - shelf - slot - port number. Enter NA for the corresponding unspecified information.
ONUID	OCTET STRING	Size (128)	ONU authorization number
BOARDID	OCTET STRING	Size (128) Rack - shelf - slot	Locate a card through rack - shelf - slot. Enter NA for the corresponding unspecified information. To only specify the shelf number, enter NA-0-NA.
BOARDTYPE	OCTET STRING	Size (128)	Card type
BSERVICE	OCTET STRING	Power ETH ADSL VDSL POTS E1 GPON EPON Control (main control unit) Other	Card service type
PNUM	INTEGER	0 to 64	Number of ports

Parameter	Data Type	Value Range	Description
SWVER	OCTET STRING	Size (255)	Software version
HWVER	OCTET STRING	Size (255)	Hardware version

Example

Example 1: When the device with the IP address being 10.78.11.102 is added, the corresponding resource change notification will be received.

- Command issued

  None

- Response message

```
   FH_10.98.11.77 2011-02-21 10:32:07
A  2 REPT RES ADD_OLT
DEVNAME=system 9   DEVIP=10.78.11.102  DT=AN5116-06B   DEVER=--
```

Example 2: When the ONU with ONUID being 123 is added, the corresponding resource change notification will be received.

- Command issued

  None

- Response message

```
  FH_10.98.11.77 2011-02-21 10:35:42
A  9 REPT RES ADD_ONU
OLTID=10.78.11.118  PONID=4-1-14-1  ONUNO=6 NAME=PON[1]-AN5506-04B[6]
DESC=-- ONUTYPE=AN5506-04-B  IP=0.0.0.0 AUTH=HYBRID MAC=-- LOID=123
PWD=--  SWVER=--
```

Example 3: When a shelf is added for the OLT with the IP address being 10.78.11.102, the corresponding resource change notification will be received.

- Command issued

  None

- Response message

```
   FH_10.98.11.77 2011-02-21 10:32:07
A  3 REPT RES ADD_SHELF
ONUIP=0.0.0.0   OLTID=10.78.11.102  PONID=-  ONUID=0 SHELFID=9-1
SHELFTYPE=AN5116-06B_NODE
```

Example 4: When a card is added in slot 9 of the OLT whose IP address is 10.78.11.102, the corresponding resource change notification will be received.

- Command issued

  None

- Response message

```
 FH_10.98.11.77 2011-02-21 10:27:17
A  1 REPT RES ADD_BOARD
ONUIP=0.0.0.0   OLTID=10.78.11.102 PONID=--  ONUID=--  BOARDID=
7-1-9 BOARDTYPE=HSWA  BSERVICE=SCU PNUM=0  SWVER=--    HWVER=--
```

Related Command

```
SUBSCRIBE
```

7.4 Resource Data Full Export

The following introduces the command and example for full export of resource data.

7.4.1 Resource Full Export Interface (DUMP-RESOURCEINFO)

Function Description

This command is used for exporting the device information and service configuration information in the entire network The exported file is named in format of DUMP_RES_YYYY-MM-DD-HH-MM-SS.xml.

Command Format

```
DUMP-RESOURCEINFO:::CTAG::[RESTYPE=resource-type];
```

Input Parameter

Parameter	Data Type	Value Range	Description	Remark
RESTYPE	OCTET STRING	PHY SRV ALL	Resource type PHY: device information SRV: service configurations ALL: all device and service configurations	Optional Default value: ALL

Response Format

It complies with the response format in Resource Change Notification.

Output Parameter

Parameter	Data Type	Value Range	Description
FILENAME	OCTET STRING	Size (128)	File name
RESULT	OCTET STRING	Success Failure	Export result

Example

When the physical resources in the entire network are exported, the corresponding notification will be received, indicating the resource file is exported successfully.

- Command issued

```
DUMP-RESOURCEINFO:::CTAG::;
```

- Response message

```
  FH_10.98.11.77 2010-11-21 09:48:21
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
dump resource info
---------------------------------------------------------
FILENAME
DUMP_RES_2010-11-21-09-48-21.xml
---------------------------------------------------------
```

Related Command

```
SUBSCRIBE
DUMP-RESOURCEINFO
```

7.4.2 Resource Full Export Notification

Function Description

It indicates the message notifying the export result of the reported data files.

Command Format

None

Input Parameter

None

Response Format

It complies with the response format in Resource Change Notification.

Output Parameter

Parameter	Data Type	Value Range	Description
FILENAME	OCTET STRING	Size (128)	File name.
RESULT	OCTET STRING	Success Failure	Export result.

Example

For example, report the export result.

- Command issued

  None

- Response message

```
   FH_10.98.11.77 2010-11-21 09:48:58
A  -- REPT RES DUMP_FILE
FILENAME=DUMP_RES_2010-11-21-09-48-21.xml  RESULT=Success
```

Related Command

DUMPRE-RESNOTIFY

8 Integrated Alarm Interface

The following introduces the commands for subscribing to the alarm, setting alarm filter conditions, obtaining alarms, confirming alarms and clearing alarms.

8.1 Subscribing to Alarms (SUBSCRIBE)

Function Description

This command is used for subscribing to alarms after the TCP connection is successfully established. After the subscription successes, the FiberHome EMS will receive alarms automatically and report them to the OSS in real time.

For supported alarms, see The List of Alarms.

Command Format

```
SUBSCRIBE:::CTAG::;
```

Input Parameter

None

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, subscribe to the alarm.

- Command issued

```
SUBSCRIBE:::CTAG::;
```

- Response message

```
FH_10.250.18.133 2010-11-04 09:50:30
```

```
M  CTAG COMPLD
EN=0   ENDESC=No error
```

Related Command

None

8.2 Enabling the Alarm Filter (ACT-ALARM-FILTER)

Function Description

This command is used for enabling the alarm filter function.

Note:

To enable the alarm filter function, first execute the "CHG-ALARM-FILTER" command to configure the alarm filter conditions and then execute the "ACT-ALARM-FILTER" command to make the alarm filter conditions take effect.

Command Format

```
ACT-ALARM-FILTER:::CTAG::;
```

Input Parameter

None

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

Success or failure.

Example

For example, enable the alarm filter conditions.

- Command issued

```
ACT-ALARM-FILTER:::CTAG::;
```

- Response message

```
   FH_10.250.18.133 2010-11-04 10:31:47
M  CTAG COMPLD
   EN=0    ENDESC=No error
```

Related Command

```
DACT-ALARM-FILTER
```

8.3 Disabling the Alarm Filter (DACT-ALARM-FILTER)

Function Description

This command is used for disabling the alarm filter function.

Command Format

```
DACT-ALARM-FILTER:::CTAG::;
```

Input Parameter

None

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

None

Example

For example, disable the alarm filter conditions.

- Command issued

```
DACT-ALARM-FILTER:::CTAG::;
```

- Response message

```
   FH_10.250.18.133 2010-11-04 09:50:38
M  CTAG COMPLD
   EN=0    ENDESC=No error
```

Related Command

```
ACT-ALARM-FILTER
```

8.4 Modifying the Alarm Filter Configuration (CHG-ALARM-FILTER)

Function Description

This command is used for modifying the alarm filter conditions and configure the alarms to be reported.

Note:

After executing this command, it is required to execute the "ACT-ALARM-FILTER" command to make the alarm filter conditions take effect.

Command Format

```
CHG-ALARM-FILTER:::CTAG::[ALARMID=alarmcode][,SEVERITY=alarm-severity];
```

Supported Equipment

- Equipment type: all
- Equipment version: all

Input Parameter

Parameter Name	Data Type	Value Range	Parameter Description
SEVERITY	String	Critical Major Minor Warning	Alarm level. Multiple alarm levels can be configured and should be separated by vertical bars.
ALARMID	String	Size (0 to 1000)	Alarm ID. Multiple alarm IDs can be configured and should be separated by vertical bars.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

Success or failure.

Example

For example, modify the alarm filter conditions to only query and subscribe to the alarm whose ID is 310009.

- Command

```
CHG-ALARM-FILTER:::CTAG:: ALARMID=310009;
```

- Response Message

```
   FH_10.250.18.133 2010-11-04 09:50:47
M  CTAG COMPLD
   EN=0   ENDESC=No error
```

Related Command

```
ACT-ALARM-FILTER
```

8.5 Viewing the Alarm Filter Configuration (LST-ALARM-FILTER)

Function Description

This command is used for viewing the current alarm filter conditions.

Command Format

```
LST-ALARM-FILTER:::CTAG::;
```

Supported Equipment

- Equipment type: all
- Equipment version: all

Input Parameter

None

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Description
ENABLE	String	True false	Enable / Disable.
SEVERITY	String	Critical Major Minor Warning	Alarm level. Multiple alarm levels can be configured and should be separated by vertical bars.
ALARM-CODE	String	Size (0 - 1000)	Alarm ID. Multiple alarm IDs can be configured and should be separated by vertical bars.

Example

For example, view the current alarm filter conditions.

- Command

```
LST-ALARM-FILTER:::CTAG::;
```

- Response Message

```
  FH_10.250.18.133 2010-11-04 09:51:00
M  CTAG COMPLD
   total_blocks=1
   block_number=1
   block_records=1
Alarm Filter
ENABLE  SEVERITY        ALARMCODE
false           -           310009
```

Related Command

```
CHG-ALARM-FILTER
```

8.6 Querying Alarms (LST-ALARM)

Function Description

This command is used for querying the alarm information in the specified time of period (including the recovered or unrecovered alarms).

For supported alarms, see The List of Alarms.

Command Format

```
LST-ALARM::[ONUIP=onu-name]|([OLTID=olt-name][,PONID=ponport_location,
ONUIDTYPE=id-type,ONUID=onu-index]):CTAG::BEGINTIME=begin-time[,
ENDTIME=end-time][,FAULTFLAG=flag];
```

- Query the ONU
  - The ONU that has a management IP address:

```
LST-ALARM::ONUIP=onu-name:CTAG::BEGINTIME=begin-time[,ENDTIME=end-time]
[,FAULTFLAG=flag];
```

  - The ONU that has no management IP address:

```
LST-ALARM::OLTID=olt-name,PONID=ponport_location,ONUIDTYPE=id-type,
ONUID=onu-index:CTAG::BEGINTIME=begin-time[,ENDTIME=end-time][,
FAULTFLAG=flag] ;
```

  - The OLT PON port:

```
LST-ALARM::OLTID=olt-name,PONID=ponport_location:CTAG::BEGINTIME=begin-
time[,ENDTIME=end-time][,FAULTFLAG=flag];
```

- Query the OLT:

```
LST-ALARM::OLTID=olt-name:CTAG::BEGINTIME=begin-time[,ENDTIME=end-time]
[,FAULTFLAG=flag];
```

- Query all:

```
LST-ALARM:::CTAG::BEGINTIME=begin-time[,ENDTIME=end-time][,
FAULTFLAG=flag];
```

Supported Equipment

- Equipment type: all
- Equipment version: all

Input Parameter

Parameter Name	Data Type	Value Range	Description	Remark
ONUIP	OCTET STRING	Size (128)	IP address, name or ID of the ONU that has a management IP address.	It is required when querying the ONU that has no management IP address.
OLTID	OCTET STRING	Size (128)	OLT IP address, name or ID.	It is required when querying the OLT or the ONU that has no management IP address.
PONID	OCTET STRING	Size (128) Cabinet rack - shelf - slot - PON port number	PON port information location. Locating through the approach of cabinet rack - shelf - slot - PON port number. NA is displayed if no information is located.	It is required when querying the ONU that has no management IP address.
ONUIDTYPE	OCTET STRING	ONU_NAME MAC LOID ONU_NUMBER	ONU identifier type (ONU_NAME, MAC, LOID, ONU_NUMBER).	It is required when querying the ONU that has no management IP address.
ONUID	OCTET STRING	Size (128)	ONU identifier, used for uniquely identifying the ONU connected to the PON port. The value is ONU_NAME, MAC, LOID or ONU_NUMBER.	It is required when querying the ONU that has no management IP address.
BEGINTIME	String	Size (32)	The format of start time (Beijing time): YYYY-MM-DD HH-MM-SS.	Required.
ENDTIME	String	Size (32)	The format of end time (Beijing time): YYYY-MM-DD HH-MM-SS.	Optional.
FAULTFLAG	STRING	Fault-Only ALL	Alarm status. Default value is Fault-Only. Fault-Only contains events and does not contain recovered alarms.	Optional.

Response Format

It complies with the query-command response format in Response Message Format.

Output Parameter

Parameter Name	Data Type	Value Range	Required / Optional	Description
SERIALID	String	Size (0 - 100)	Required.	Alarm ID.
ALARMNAME	String	Size (0 - 256)	Required.	Alarm name, corresponding to the alarm code parameter (ALARMID).
DIP	String	IP address	Required.	NE IP address.
DNAME	String	Size (0 - 100)	Required.	NE name.
DTYPE	String	Size (0 - 100)	Required.	NE type.
POSITION	String	RACK: rackid SHELF: shelfid SLOT: slotid PORT: portid ONUNUM: onunumber ONUNAME: onuname ONUPORTTYPE: onuporttype ONUPORT: onuportid EMUNUM: emunum	Required.	The position that triggers the alarm. RACK: rack SHELF: shelf SLOT: slot PORT: port number ONUNUM: ONU number ONUNAME: ONU name ONUPORTTYPE: ONU port type (LAN, E1, DSL, POTS and PON) ONUPORT: ONU port number EMUNUM: environment monitoring unit AUTHINFO: ONU authentication information (MAC or LOID)
SEVERITY	String	Critical Major Minor Warning	Required.	Alarm Level
FaultFlag	String	Fault Recovery Event	Required.	Alarm status
HAPPENTIME	String	Size (0 - 32)	Required.	Alarm generation time. Format: YYYY-MM-DD HH:MM:SS.
RECOVER-TIME	String	Size (0 - 32)	Optional.	Alarm recovery time. Format: YYYY-MM-DD HH:MM:SS.

Parameter Name	Data Type	Value Range	Required / Optional	Description
ALARMTYPE	String	communicationsA-larm, qualityOfServiceA-larm, processingErrorA-larm, equipmentAlarm and environmentalA-larm.	Required.	Alarm type.
AditionalInfo	String	Size (0 - 256)	Optional.	Additional information, describing additional information related to the alarm.
ALARMID	Integer	-	Optional.	Alarm code, corresponding to the alarm name parameter (ALARMDESC).
PROBABLE_ CAUSE _DESC	String	Size (0 - 256)	Optional.	Alarm reason.
PROBABEL_ CAUSE_CODE	Integer	-	Optional.	Alarm reason code.
PROPOSED_ ADVISE	String	Size (0 - 512)	Optional.	Handling suggestion.

Example

For example, query all the alarms and events occurred after 2014-09-09 00:00:00 (for the response messages, only some of them are listed as as example).

- Command

```
LST-ALARM:::CTAG::BEGINTIME=2010-12-28 01-00-00,FAULTFLAG=ALL;
```

- Response Message

```
 FH_10.250.18.133 2010-11-04 09:51:13
M  CTAG COMPLD
   total_blocks=2
   block_number=1
   block_records=3
Alarm
-
SERIALID  ALARMNAME  DIP  DNAME  DTYPE  POSITION
SEVERITY  FaultFlag  HAPPENTIME  RECOVERTIME
```

```
ALARMTYPE  ADITIONALINFO   EVENT_CODE
PROBABLE_CAUSE_DESC
135 ONU H.248 broken link  10.250.18.100  system1  AN5516_01
RACK:NA,SHELF:NA,SLOT:3,PORT:1,ONUNUM:5,ONUNAME:AN5006-04
Critical  Faul2010-11-01 14:51:51  --
CommunicationAlarm  --  320001  ONU H.248 broken link
6 OLT PON pot has no optical signal 10.250.18.100  AN5006-04[1] system1
RACK:NA,SHELF:NA,SLOT:3,PORT:1,ONUNUM:1,ONUNAME:AN5006-04[1]
Critical  Recovery  2010-10-28 15:02:17 2010-11-03
00:15:39  CommunicationAlarm  --  310004  (1)Backbone fiber breaks
```

Related Command

```
CHG-ALARM-FILTER
ACT-ALARM-FILTER
```

8.7 Confirming an Alarm (ACK-ALARM)

Function Description

Confirming an alarm means the alarm is already processed or is to be processed. When an alarm is confirmed, it changes from the unconfirmed status into the confirmed status.

Command Format

```
ACK-ALARM::ALARMID=alarm-ID:CTAG::;
```

Supported Equipment

- Equipment type: all
- Equipment version: all

Input Parameter

Parameter Name	Data Type	Value Range	Description
ALARMID	String	Size (0 - 32)	Alarm ID, corresponding to the returned field **ALARMID** of the **LST-ALARM** command.

Response Format

It complies with the operation-command response format in Response Message Format.

Output Parameter

Success or failure.

Example

For example, confirm the alarm whose ID is 95.

- Command

```
ACK-ALARM::ALARMID=95:CTAG::;
```

- Response Message

```
FH_10.250.18.133 2010-11-04 09:50:30
M  CTAG COMPLD
EN=0   ENDESC=No error
```

Related Command

```
UNACK-ALARM
```

8.8 Canceling the Confirmation for an Alarm (UNACK-ALARM)

Function Description

This command is used for canceling the confirmation operation performed on an alarm so as to re-focus on the alarm. After the cancellation, the alarm changes from the confirmed status to the unconfirmed status.

Command Format

```
UNACK-ALARM::SERIALID=SERIAL-ID:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description
SERIALID	String	Size (0 to 32)	Alarm ID, corresponding to the returned field SERIALID of the "LST-ALARM" command.

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

Success or failure.

Example

Cancel the confirmation performed on the alarm whose ID is 12429.

- Command issued

```
UNACK-ALARM::SERIALID=12429:CTAG::;
```

- Response message

```
FH_10.250.18.133 2010-11-04 09:50:30
M  CTAG COMPLD
EN=0   ENDESC=No error
```

Related Command

```
ACK-ALARM
```

8.9 Clearing an Alarm (CLR-ALARM)

Function Description

This command is used to delete alarms manually when the alarms cannot be automatically cleared or they no longer exist on the NE.

Prerequisite

Make sure the failure resulting in the alarm is eliminated before executing the command.

Command Format

```
CLR-ALARM:: SERIALID =SERIAL-ID:CTAG::;
```

Input Parameter

Parameter	Data Type	Value Range	Description
SERIALID	String	Size (0 to 32)	Alarm ID, corresponding to the returned field SERIALID of the "LST-ALARM" command.

Response Format

It complies with the operation command response format in Response Message Format.

Output Parameter

Success or failure.

Example

Clear the alarm whose ID is 107.

- Command issued

```
CLR-ALARM::SERIALID=107:CTAG::;
```

- Response message

```
 FH_10.250.18.133 2010-11-04 09:53:29
M  CTAG COMPLD
   EN=0   ENDESC=No error
```

Related Command

None

9 Common Error Codes

Error Code	Error Type	Meaning
IRNE	INPUT	The resource does not exist.
IRAE	INPUT	The resource already exists.
IRC (ONUID/ONUNO/NA-ME/PWD/SVLAN/CVLAN)	INPUT	Resource conflict. The specific conflicting items are shown in parenthesis.
IANE	INPUT	The alarm does not exist.
IMP	INPUT	The parameter is missing.
IIPF	INPUT	A parameter is in wrong format or not entered.
IIPE	INPUT	Parameter value error
DDNS	DEVICE	The operation is not supported by the device.
DDOF	DEVICE	Device operation failure
DDB	DEVICE	The device is busy.
SENS	SYSTEM	The operation is not supported by the EMS.
SEOF	SYSTEM	EMS operation failure, possibly because the user has not logged in.
EEEH	EXCEPTION	EMS exception
TUB	TEST	The user is busy.
TUT	TEST	The user is testing.
TTMB	TEST	The testing module is busy.

10 The List of Parameters

- Impedance parameter

Parameter Name	Data Type	Value	Description
Impedance	INTEGER	1	200+680|| 100nf: Bureau machine in China ()
		2	200+560|| 100nf: User machine in China
		3	600-ohm

- Outer line test conclusion parameter

Parameter Name	Data Type	Value	Description
Conclusion	INTEGER	0	Normal
		11	Abnormal AC voltage.
		12	Abnormal DC voltage.
		13	Abnormal loop current.
		14	Abnormal loop resistance.
		15	Abnormal insulation resistance.
		16	Abnormal capacitance.
		17	Abnormal impedance.
		21	Bad line insulation.
		22	Line breakage (including intra-office and extra-office line breakage).
		23	Mixed line (including intra-office and extra-office mixed line).
		24	Bad line ground.
		25	Line interfere.
		26	Electricity leakage.
		27	Not hooked on.

- Incoming / outgoing call emulation test conclusion parameter

Parameter Name	Data Type	Value	Description
Conclusion	INTEGER	1	Successful
		2	Failed.

Parameter Name	Data Type	Value	Description
		3	The call connection is established, but the testing personnel has not confirmed the call connection status.

◆ Incoming call emulation failure reason parameter

Parameter Name	Data Type	Value	Description
FailReason	INTEGER	1	No signaling interaction.
		2	The called party hooks off, but SS does not respond the off-hook signaling.
		3	MG internal reason.
		4	Others.

◆ Outgoing call emulation failure reason parameter

Parameter Name	Data Type	Value	Description
FailReason	INTEGER	1	The SS off-hook response signaling is not received.
		2	The SS dial tone sending signaling is not received.
		3	The dialed telephone number is not consistent with that reported to SS.
		4	The ring back tone is not received.
		5	The other party has not hooked off.
		6	Establishing the channel failed.
		7	SS has not responded the on-hook signaling.
		8	Others.

◆ DSL transfer mode parameter

Parameter Name	Data Type	Value	Description
FailReason	INTEGER	1	Regional Std. (ANSI T1.413)
		2	Regional Std. (ETSI DTS/TM06006)
		3	G.992.1 POTS non-overlapped
		4	G.992.1 POTS overlapped
		5	G.992.1 ISDN non-overlapped
		6	G.992.1 ISDN overlapped
		7	G.992.1 TCM-ISDN non-overlapped

Parameter Name	Data Type	Value	Description
		8	G.992.1 TCM-ISDN overlapped
		9	G.992.1 TCM-ISDN symmetric
		10	G.992.2 POTS non-overlapped
		11	G.992.2 POTS overlapped
		12	G.992.2 with TCM-ISDN non-overlapped
		13	G.992.2 with TCM-ISDN overlapped
		14	G.992.3 POTS non-overlapped
		15	G.992.3 POTS overlapped
		16	G.992.3 ISDN non-overlapped
		17	G.992.3 ISDN overlapped
		18	G.992.3 Annex I All-Digital non-overlapped
		19	G.992.3 Annex I All-Digital overlapped
		20	G.992.3 Annex J All-Digital non-overlapped
		21	G.992.3 Annex J All-Digital overlapped
		22	G.992.3 Annex L POTS non-overlapped, mode 1, wide U/S
		23	G.992.3 Annex L POTS non-overlapped, mode 2, narrow U/S
		24	G.992.3 Annex L POTS overlapped, mode 3, wide U/S
		25	G.992.3 Annex L POTS overlapped, mode 4, narrow U/S
		26	G.992.3 Annex M POTS non-overlapped
		27	G.992.3 Annex M POTS overlapped
		28	G.992.4 POTS non-overlapped
		29	G.992.4 POTS overlapped
		30	G.992.4 Annex I All-Digital non-overlapped
		31	G.992.4 Annex I All-Digital overlapped
		32	G.992.5 POTS non-overlapped
		33	G.992.5 POTS overlapped
		34	G.992.5 ISDN non-overlapped
		35	G.992.5 ISDN overlapped
		36	G.992.5 Annex I All-Digital non-overlapped
		37	G.992.5 Annex I All-Digital overlapped
		38	G.992.5 Annex J All-Digital non-overlapped
		39	G.992.5 Annex J All-Digital overlapped
		40	G.992.5 Annex M POTS non-overlapped

Parameter Name	Data Type	Value	Description
		41	G.992.5 Annex M POTS overlapped
		42	G.993.1
		43	G.993.2 Annex A POTS
		44	G.993.2 Annex A ISDN
		45	G.993.2 Annex B POTS
		46	G.993.2 Annex B ISDN
		47	G.993.2 Annex C POTS
		48	G.993.2 Annex C ISDN

11 The List of Alarms

The list of alarms reported by the integrated alarm system is as follows:

- Alarm definition list (OLT)

Alarm Type	Alarm Level	Alarm ID	Alarm Name	Alarm Reason
Equipment event	Critical alarm	110001	OLT-START	The OLT is cold-started / hot-started.
Equipment alarm	Critical alarm	110002	OLT-BOARD-OFF-LINE	The OLT card is off-line.
Equipment alarm	Critical alarm	110003	OLT-BOARD-STATE-ABNORMAL	The OLT card status is abnormal, including abnormal running, the card not being activated, and card type being inconsistent with the configured type.
Equipment alarm	Major alarm	110004	ILEGAL_ONU_ REGISTE	An invalid ONU tries to register.
Equipment alarm	Major alarm	110005	OLT-REMOTE-ONU-CONFIG-FAILURE	The OLT failed to send the configuration to the ONU.
Equipment alarm	Minor alarm	110006	CPU_USAGE_OVER_ THRESHOLD	The CPU usage exceeds the preset threshold.
Equipment alarm	Critical alarm	110007	LASER_ALWAYS_ON	A certain ONU connected to the OLT constantly emits light.
Equipment alarm	Critical alarm	110008	ONU_Power_Fail	The OLT detects a certain connected ONU is powered off.
Equipment event	Major alarm	110009	BOARD_INVERSION_ SUCCESSFUL	The active / standby switching occurs on the SCU and PON cards of the OLT.
Equipment event	Major alarm	110010	PORT_INVERSION_ SUCCESSFUL	The active / standby switching occurs on the uplink and PON ports of the OLT.
Communication alarm	Critical alarm	310001	OLT_PON_Optical_ Module_Fail	The optical module of the EPON OLT PON port fails.
Communication alarm	Critical alarm	310002	OLT_Uplink_Optical_ Module_Fail	The optical module of the EPON OLT uplink port fails.
Communication alarm	Critical alarm	310003	NO_OPTICS_SIGNAL (uplink port)	The optical path between the Tx part of the EPON uplink OLT and the Rx part of the OLT uplink port fails.
Communication alarm	Critical alarm	310004	NO_OPTICS_SIGNAL (optical port)	(1) The trunk optical fiber is cut. (2) The splitter fails.

Alarm Type	Alarm Level	Alarm ID	Alarm Name	Alarm Reason
Communication alarm	Critical alarm	310005	ONU_OFF_LINE	The probable reasons include: (1) The optical path between the splitter and the ONU is abnormal. (2) The ONU works abnormally.
Communication alarm	Critical alarm	310006	OLT_OFF_Adminis	The EMS cannot communicate with the OLT.
Communication alarm	Major alarm	310007	RX_POWER_ALARM (for the optical module of the OLT uplink port)	The Rx optical power of the OLT uplink port exceeds the threshold. The probable reasons include: (1) The Ethernet optical module of the equipment uplinked with the OLT is abnormal. (2) The optical path between the equipment uplinked with the OLT and the OLT Rx end fails.
Communication alarm	Major alarm	310008	TX_POWER_ALARM (for the optical module of the OLT uplink port)	The Tx optical power of the OLT uplink port exceeds the threshold. The probable reasons include: (1) The optical module of the OLT uplink port works abnormally. (2) The OLT uplink card or port is abnormal.
Communication alarm	Major alarm	310009	RX_POWER_ALARM (for the OLT PON port)	The Rx optical power of the OLT PON port is abnormal. The probable reasons include: (1) The optical power exceeds the threshold.(2) The ONU PON optical module is abnormal.
Communication alarm	Major alarm	310010	TX_POWER_ALARM (for the OLT PON port)	The Tx optical power of the OLT PON port is abnormal. The probable reasons include: (1) The optical power exceeds the threshold. (2) The ONU PON optical module is abnormal.
Communication alarm	Major alarm	310011	ONU_Uplink_Error-Frame_Too_Many	The optical path between the OLT and the ONU is abnormal. The probable reasons include: (1) The optical path between the OLT and the splitter is abnormal. (2) The optical path between the splitter and a certain ONU is abnormal. (3) The ONU PON module is abnormal.
Communication alarm	Warning alarm	310012	LACP_LINK_Failure	The LACP link fails.

Alarm Type	Alarm Level	Alarm ID	Alarm Name	Alarm Reason
Environment alarm	Critical alarm	210001	OLT_POWER_FAILURE	The OLT power supply card is abnormal.
Environment alarm	Critical alarm	210002	OLT_ POWER_OFF_ LINE	The OLT power supply card is off-line.
Environment alarm	Major alarm	210003	LOCAL_INPUT_ POWER_FAILURE	The local subrack power input fails.
Environment alarm	Critical alarm	210004	TEMP_HIGH_ALARM (the core switch card)	The temperature of the core switch card is too high.
Environment alarm	Critical alarm	210005	TEMP_HIGH_ALARM (the OLT card)	The temperature of an OLT card is too high.
Environment alarm	Critical alarm	210006	TEMP_LOW_ALARM (the OLT card)	The temperature of an OLT card is too low.
Environment alarm	Major alarm	210007	AC Failure	The AC power supply fails.
Environment alarm	Major alarm	210008	Battery Failure	The circuit of the battery group fails.
Environment alarm	Major alarm	210009	LOADFUSE	The load fuse is blown.
Environment alarm	Major alarm	210010	Rectifier Module Failure	The rectifier module fails.
Environment alarm	Major alarm	210011	FANFAIL	The ONU fan is abnormal.
Environment alarm	Major alarm	210012	FAN_OFF_LINE	The OLT fan is off-line.
Environment alarm	Critical alarm	210013	TEMP_ ALARM (the OLT optical module)	The OLT optical module works abnormally.
Environment alarm	Major alarm	210014	MEMORY_USAGE_ OVER_THRESHOLD	The working load of the system is excessive.
Environment alarm	Critical alarm	210015	Dry_CONTACT_Alarm	The external environment alarms, including the abnormality of the access control system, the power supply, the temperature, the humidity, etc.
QoS alarm	Major alarm	410001	ETH_STATISTICS_ TRAFFIC_OVER_LIMIT	The number of traffic cross-threshold times of the statistics gathered based on the Ethernet.
QoS alarm	Major alarm	410002	ETH_STATISTICS_ CONFLICT_OVER_ LIMIT	The number of conflict cross-threshold times of the statistics gathered based on the Ethernet.

Alarm Type	Alarm Level	Alarm ID	Alarm Name	Alarm Reason
QoS alarm	Warning alarm	410003	ONU-OPTICAL-SIGNALDEGRADA-TION	The ONU optical channel generates errors.
QoS alarm	Major alarm	410004	ETH_CRC_ERROR_ OVER_LIMIT	The number of CRC errors occurred on the OLT Ethernet port exceeds the threshold.

◆ Alarm definition list (FTTB ONU)

Alarm Type	Alarm Level	Alarm ID	Alarm Name	Alarm Reason
Equipment alarm	Critical alarm	120000	ONU-BOARD-OFF-LINE	The card connected with the ONU is off-line.
Equipment alarm	Critical alarm	120001	ONU-BOARD-STATE-ABNORMAL	The status of the card connected with the ONU is abnormal, including abnormal running, the card not being activated, and card type being inconsistent with the configured type.
Equipment alarm	Major alarm	120002	ETH_PORT_LOOP	A loop is detected on the user port.
Equipment alarm	Major alarm	120003	DoS_ATTACK	A DoS attack is detected on the user port.
Equipment alarm	Minor alarm	120004	CPU_USAGE_OVER_ THRESHOLD	The CPU usage exceeds the preset threshold.
Communication alarm	Critical alarm	320001	ONU_H248_ BREAKOUT	The ONU H.248 link fails.
Communication alarm	Critical alarm	320002	ONU_MGCP_ BREAKOUT	The ONU MGCP link fails.
Communication alarm	Critical alarm	320003	ONU_SIP_BREAKOUT	The SIP link fails.
Communication alarm	Major alarm	320004	ENVIRONMENT_ MONITOR_UNIT_ COMMUNICATION_ FAILURE	The connection between the external environment monitoring unit and the ONU is abnormal.
Communication alarm	Major alarm	320005	RX_POWER_ALARM (for the ONU PON port)	The Rx optical power of the ONU PON port is abnormal.
Communication alarm	Major alarm	320006	TX_POWER_ALARM (for the ONU PON port)	The Tx optical power of the ONU PON port is abnormal.
Communication alarm	Major alarm	320007	ONU_OFF_Adminis	The EMS cannot communicate with the ONU.
Environment alarm	Critical alarm	220001	AC Failure (ONU)	The AC power supply of the ONU fails.

Alarm Type	Alarm Level	Alarm ID	Alarm Name	Alarm Reason
Environment alarm	Critical alarm	220002	BATTERY_VOLTAGE_LOW (ONU)	The ONU backup battery runs out.
Environment alarm	Critical alarm	220003	TEMP_ALARM (ONU)	The ONU temperature is abnormal.
Environment alarm	Critical alarm	220004	FANFAIL (ONU)	The ONU fan is abnormal.
Environment alarm	Critical alarm	220005	TEMP_ALARM (ONU optical module)	The optical module temperature is abnormal.
Environment alarm	Critical alarm	220006	Dry_CONTACT_Alarm	The external environment alarms, including the abnormality of the access control system, the power supply, the temperature, the humidity, etc.

- Alarm definition list (EMS)

Alarm Type	Alarm Level	Alarm ID	Alarm Name	Alarm Reason
Equipment alarm	Major alarm	130001	SERVER_EXCEPTION	The EMS internal process is abnormal.
Equipment alarm	Major alarm	130002	CPU_OVER_THRESHOLD	The CPU usage of the EMS network management server is too high.
Equipment alarm	Major alarm	130003	MEM_OVER_THRESHOLD	The memory usage of the EMS network management server is too high.
Equipment alarm	Major alarm	130004	HD_OVER_THRESHOLD	The hard disk usage of the EMS network management server is too high.
Equipment alarm	Major alarm	130005	DBSPACE_OVER_THRESHOLD	The database usage of the EMS server is too high.
Equipment alarm	Major alarm	130006	LIC_OVER_THRESHOLD	The EMS license agreement usage is too high.

12 Abbreviations

BOSS	Business Operation Supporting System
CPE	Customer-premises Equipment
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
EMS	Element Management System
EPON	Ethernet Passive Optical Network
FTTB	Fiber to the Building
FTTC	Fiber to the Curb
FTTH	Fiber to the Home
FTTO	Fiber to the Office
FTTX	Fiber to the X
HGU	Home Gateway Unit
LAN	Local Area Network
MDU	Multi-Dwelling Unit
MTU	Multi-Tenant Unit
MSAN	Multiple Service Access Network
ITMS	Integrated Terminal Management System
IPTV	IP Television
OAM	Operation, Administration & Maintenance
OLT	Optical Line Terminal
ONT	Optical Network Terminal
ONU	Optical Network Unit
SBU	Single Business Unit
SFU	Single Family Unit
SNI	Service Network Interface
STB	Set Top Box
UNI	User Network Interface
VoIP	Voice over IP