

EchoLife HG8240/HG8245/HG8247 GPON Terminal V100R002C04&C05

Service Manual

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About This Document

Overview

GPON terminal EchoLife HG8240/HG8245/HG8247 (hereafter referred to as the HG8240/ HG8245/HG8247) is an indoor optical network terminal (ONT) designed for home users and small office and home office (SOHO) users. This document provides the appearance and specifications of the HG8240/HG8245/HG8247, and describes its configuration and usage, which helps you know the HG8240/HG8245/HG8247 quickly.

Product Version

The following table lists the product versions related to this document.

Product Name	Product Version
EchoLife HG8240/ HG8245/HG8247	V100R002C04&C05

Intended Audience

The intended audience of this document is as follows:

- Technical support engineers
- Maintenance engineers

Conventions

Symbol Conventions

The following symbols may be found in this document. They are defined as follows.

Symbol	Description
	Indicates a hazard with a high level of risk which, if not avoided, can result in death or serious injury.
	Indicates a hazard with a medium or low level of risk which, if not avoided, may result in minor or moderate injury.
	Indicates a potentially hazardous situation which, if not avoided, may cause equipment damage, data loss, performance degradation, or unexpected results.
©≓ TIP	Indicates a tip that may help you solve a problem or save your time.
	Provides additional information to emphasize or supplement important points of the main text.

General Conventions

Convention	Description	
Times New Roman	Main text is in Times New Roman.	
Boldface	The first-level, second-level and third-level section titles are in boldface .	
Courier New	Alarms and prompts are in Courier New, and the contents are separated from the main text by lines at the beginning and the end.	
Terminal Display	Information displayed on the screen is in Terminal Display. In addition, information that is input by users and displayed is in Terminal Display .	

Command Conventions

Convention	Description	
Boldface	The keywords of a command are in boldface .	
Italic	Command parameters are in <i>italics</i> .	
[]	Items (keywords or parameters) in square brackets [] are optional.	
{ x y }	Alternative items are grouped in braces and separated by vertical bars. One can be selected.	

Convention	Description	
[x y]	Alternative items are grouped in square brackets and separate by vertical bars. One or none can be selected.	
{ x y } *	Alternative items are grouped in braces and separated by vertical bars. A minimum of one or a maximum of all can be selected.	
[x y] *	Alternative items are grouped in square brackets and separated by vertical bars. Multiple or none can be selected.	

GUI Conventions

Convention	Description
Boldface	GUI elements such as buttons, menus, parameters, tabs, window, and dialog titles are in boldface . For example, click OK .
>	Multi-level menus are separated by the > sign. For example, choose File > Create > Folder .

Keyboard Conventions

Convention	Description
Кеу	Press the key. For example, press Enter , Tab , Backspace and a .
Key 1 + Key 2	Press the keys concurrently. For example, pressing Ctrl+Alt + A means that the three keys are pressed concurrently.
Key 1, Key 2	Press the keys in turn. For example, pressing Alt , F means that the two keys are pressed in turn.

Mouse Conventions

Convention	Description
Click	Select and release the primary mouse button without moving the pointer.
Double-click	Press the primary mouse button twice continuously and quickly without moving the pointer.
Drag	Press and hold the primary mouse button and move the pointer to a certain position.

Update History

Updates between document versions are cumulative. Therefore, the latest document version contains all updates made to previous versions.

Updates in Issue 02 (2011-01-26)

Parts of contents are optimized.

Updates in Issue 01 (2010-10-26)

This is the first release for the HG8240/HG8245/HG8247 V100R002C04&C05. It is the first archive.

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1 Safety Precautions

To ensure normal running of the device, read the safety precautions carefully before operating the device, and comply with the precautions when performing the operations.

Basic Requirements

- Keep the device dry during storage, transportation, and running of the device.
- Prevent the device from colliding with other objects during storage, transportation, and running of the device.
- Install the device in strict compliance with the vendor requirements.
- Do not uninstall the device without permission. Contact the specified service center when a fault occurs on the device.
- No enterprise or personnel should modify the structure, security design, or performance design of the device without authorization.
- Abide by local laws and regulations and respect the legal rights of others when using the device.

Environment Requirements

- Install the device in a well-ventilated place that is not directly exposed to sunlight.
- Keep the device clean.
- Keep the device away from water sources or wet places.
- Do not place any objects on the device. This is to protect the device from damages, such as overheat or distortion, which can be caused by such objects.
- Leave a space of at least 10 cm around the device for heat dissipation.
- Keep the device away from heat sources or fire sources, such as electrical heaters and candles.
- Keep the device away from the electrical appliances with strong magnetic fields or strong electric fields, such as microwave ovens, refrigerators, and mobile phones.

Instructions for Use

• Use the accessories delivered with the device, or use those recommended by the vendor, such as the power adapter and battery.

- The power supply voltage of the device must meet the requirements on the input voltage of the device.
- Keep power plugs clean and dry to avoid electric shocks or any other hazards.
- Dry your hands before removing or inserting cables.
- Stop the device and switch off the power before removing or inserting cables.
- Switch off the power and remove all the cables, including the power cable, optical fibers, and network cables, from the device during periods of lightning activity.
- Switch off the power and remove the power plug if the device needs to be shut down for a long time.
- Protect the device from ingress of water or other liquids. If such an accident occurs, switch off the power immediately and remove all the cables, including the power cable, optical fibers, and network cables, from the device. Contact the specified service center in the case of a device failure.
- Do not stamp, pull, drag, or excessively bend the cables because they may get damaged. Damaged cables can cause a device failure.
- Do not use the cables that are damaged or have deteriorated.
- Do not look directly into the optical port on the device without eye protection. The laser emitted from the optical port can injure your eyes.
- In case of any abnormalities, such as smoke, abnormal sound, or odor from the device, immediately stop the device, switch off the power, and remove all cables, including the power cable, optical fibers, and network cables, from the device. Contact the specified service center in the case of a device failure.
- Prevent foreign objects such as metal objects from dropping into the device through the heat dissipation mesh.
- Protect the outer case of the device from scratches, because the paint that peels off in the scratched areas can cause device abnormalities. If the paint falls into the device it may cause short circuits. In addition, peeled-off paint can cause an allergic reaction to the human body.
- Ensure that the device is kept out of the reach of children. Guard against risks such as children playing with the device or swallowing small parts of the device.

Instructions for Cleaning

- Before cleaning the device, stop the device from running, switch off the power, and remove all cables, including the power cable, optical fibers, and network cables, from the device. When inserting and removing optical fibers, keep the optical fiber connectors clean.
- Do not use cleaning fluid or spray-on detergent to clean the outer case of the device. Use a soft cloth instead.

Instructions for Environment Protection

- Put the retired device and batteries at the specified recycle place.
- Abide by local laws and regulations to handle packaging materials, run-out batteries and retired devices.

2 System Overview

About This Chapter

This topic provides the appearance and describes the typical network applications of the HG8240/HG8245/HG8247.

2.1 Product Introduction

This topic provides the appearance and describes the ports and LEDs of the HG8240/HG8245/ HG8247.

2.2 Typical Network Applications This topic describes the typical network applications of the HG8240/HG8245/HG8247.

2.1 Product Introduction

This topic provides the appearance and describes the ports and LEDs of the HG8240/HG8245/HG8247.

The HG8240/HG8245/HG8247 is an indoor optical network terminal (ONT) designed for home users and small office and home office (SOHO) users. Its upper shell adopts the natural heat dissipation material, and its optical port adopts the dust-proof design with a rubber plug. The HG8240/HG8245/HG8247 is eye-pleasing and energy-efficient. It can be deployed on a workbench or mounted on a wall, meeting users' deployment requirements in different scenarios.

By using the gigabit-capable passive optical network (GPON) technology, the HG8240/ HG8245/HG8247 provides a high-speed data channel through a single optical fiber with an upstream rate of 1.244 Gbit/s and a downstream rate of 2.488 Gbit/s. In this way, you can enjoy quality high-speed data service, voice service, and video service. In addition, the HG8245 and HG8247 provide reliable wireless access service, and convenient storage and file sharing services within a home network.

As an ONT, the HG8240/HG8245/HG8247 provides convenient and efficient remote management functions. The HG8240/HG8245/HG8247 supports the TR-069 and ONT Management and Control Interface (OMCI) protocols and manages all home terminals in a unified manner, thus implementing remote fault diagnosis, service provisioning, and performance statistics measurement.

2.1.1 Appearance

This topic provides the appearance of the HG8240/HG8245/HG8247.

2.1.2 Ports

This topic provides the appearance of the ports on the HG8240/HG8245/HG8247 and describes the functions of the ports.

2.1.3 LEDs

This topic provides the appearance of the LEDs on the HG8240/HG8245/HG8247 and describes the indications of these LEDs.

2.1.1 Appearance

This topic provides the appearance of the HG8240/HG8245/HG8247.

Figure 2-1, **Figure 2-2** and **Figure 2-3** show the appearance of the HG8240/HG8245/ HG8247.





Figure 2-2 Appearance of the HG8245





2.1.2 Ports

This topic provides the appearance of the ports on the HG8240/HG8245/HG8247 and describes the functions of the ports.

Ports on the HG8240

Figure 2-4 and **Figure 2-5** show the ports on the rear panel and side panel of the HG8240 respectively.

OPTICAL LANI LANZ LANI LANA TELI TELZ ON/OFF POWER

Figure 2-4 Ports on the rear panel of the HG8240

Port and Button	Function
OPTICAL	Indicates the optical port. The optical port is equipped with a rubber plug and is connected to an optical fiber for upstream transmission.
	The type of the optical connector connected to the OPTICAL port is SC/APC.
LAN1-LAN4	Indicate auto-sensing 10/100/1000M Base-T Ethernet ports (RJ-45), used for connecting to PCs or IP set-top boxes (STBs).
TEL1-TEL2	Indicate VoIP telephone ports (RJ-11), used for connecting to the ports on telephone sets.
ON/OFF	Indicates the power-on/power-off button, used for powering on or powering off the device.
POWER	Indicates the power port, used for connecting to the power adapter or backup battery.

Table 2-1 Descriptions of the ports on the rear panel of the HG8240

Figure 2-5 Ports on the side panel of the HG8240



Table 2-2 Descriptions of the ports on the side panel of the HG8240

Port and Button	Function
BBU	Indicates the external backup battery monitoring port, used for connecting to the backup battery for monitoring the battery.
RESET	Indicates the reset button. Press the button for a short time to reset the device; press the button for a long time (longer than 10s) to restore the device to the default settings and reset the device.

Ports on the HG8245

Figure 2-6 and **Figure 2-7** show the ports on the rear panel and side panel of the HG8245 respectively.



Figure 2-6 Ports on the rear panel of the HG8245

Table 2-3 Descriptions of the ports on the rear panel of the HG8245

Port and Button	Function
OPTICAL	Indicates the optical port. The optical port is equipped with a rubber plug and is connected to an optical fiber for upstream transmission. The type of the optical connector connected to the OPTICAL port is SC/APC.
LAN1-LAN4	Indicate auto-sensing 10/100/1000M Base-T Ethernet ports (RJ-45), used for connecting to PCs or IP STBs.
TEL1-TEL2	Indicate VoIP telephone ports (RJ-11), used for connecting to the ports on telephone sets.
ON/OFF	Indicates the power-on/power-off button, used for powering on or powering off the device.
POWER	Indicates the power port, used for connecting to the power adapter or backup battery.



Figure 2-7 Ports on the side panel of the HG8245

Table 2-4 Descriptions of the ports on the side panel of the HG8245

Port and Button	Function
BBU	Indicates the external backup battery monitoring port, used for connecting to the backup battery for monitoring the battery.
USB	Indicates the USB host port, used for connecting to a USB storage device.
WLAN	Indicates the WLAN button, used for enabling or disabling the WLAN function.
WPS	Indicates the WLAN data encryption switch.
RESET	Indicates the reset button. Press the button for a short time to reset the device; press the button for a long time (longer than 10s) to restore the device to the default settings and reset the device.

Ports on the HG8247

Figure 2-8 and **Figure 2-9** show the ports on the rear panel and side panel of the HG8247 respectively.



Figure 2-8 Ports on the rear panel of the HG8247

Table 2-5 Descriptions of the ports on the rear panel of the HG8247

Port and Button	Function
CATV	Indicates the radio frequency (RF) port, used for connecting to a TV set.
OPTICAL	Indicates the optical port. The optical port is equipped with a rubber plug and is connected to an optical fiber for upstream transmission.
	The type of the optical connector connected to the OPTICAL port is SC/APC.
LAN1-LAN4	Indicate auto-sensing 10/100/1000M Base-T Ethernet ports (RJ-45), used for connecting to PCs or IP STBs.
TEL1-TEL2	Indicate VoIP telephone ports (RJ-11), used for connecting to the ports on telephone sets.
ON/OFF	Indicates the power-on/power-off button, used for powering on or powering off the device.
POWER	Indicates the power port, used for connecting to the power adapter or backup battery.



Figure 2-9 Ports on the side panel of the HG8247

Table 2-6 Descriptions of the ports on the side panel of the HG8247

Port and Button	Function
BBU	Indicates the external backup battery monitoring port, used for connecting to the backup battery for monitoring the battery.
USB	Indicate the USB host port, used for connecting to a USB storage device.
WLAN	Indicates the WLAN button, used for enabling or disabling the WLAN function.
WPS	Indicates the WLAN data encryption switch.
RESET	Indicates the reset button. Press the button for a short time to reset the device; press the button for a long time (longer than 10s) to restore the device to the default settings and reset the device.

2.1.3 LEDs

This topic provides the appearance of the LEDs on the HG8240/HG8245/HG8247 and describes the indications of these LEDs.

Figure 2-10, **Figure 2-11** and **Figure 2-12** show the LEDs on the HG8240, HG8245 and HG8247 respectively.









Figure 2-12 LEDs on the HG8247



Silk Screen	Name	Status	Indication
POWER	Power supply LED	Green: always on	The device is powered on.
		Orange: always on	The device is powered by the backup battery.
		Off	The power supply is cut off.
PON	Authentication LED	See Table 2-8.	
LOS	Connection LED	See Table 2-8.	
LAN1-LAN4	Ethernet port LED	Always on	The Ethernet connection is in the normal state.
		Blinks	Data is being transmitted on the Ethernet port.
		Off	The Ethernet connection is not set up.
TEL1-TEL2	Voice telephone port LED	Always on	The connection to the voice server is set up.
		Blinks quickly (twice per second)	The connection to the voice server is set up and the telephone is in the off-hook or ringing state.
		Blinks slowly (once two seconds)	The ONT is registering with the voice server.
		Off	The connection to the voice server is not set up.
USB	USB port LED	Always on	The USB port is connected and is working in the host mode, but no data is being transmitted.
		Blinks quickly (twice per second)	Data is being transmitted on the USB port.
		Off	The system is not powered on or the USB port is not connected.
WLAN	WLAN port LED	Always on	The WLAN function is enabled.
		Blinks	Data is being transmitted on the WLAN port.

Table 2-7 Indications of the LEDs on the HG8240/HG8245/HG8247

Silk Screen	Name	Status	Indication
		Off	The WLAN function is disabled.
WPS	WPS port LED	Always on	The WPS function is enabled.
		Blinks	A Wi-Fi terminal is accessing the system.
		Off	The WPS function is disabled.
CATV	CATV port LED	Always on	The CATV function is enabled and CATV signals are received.
		Off	The CATV function is disabled or CATV signals are not received.

Table 2-8 Indications of PON and LOS LEDs

No.	LED Status		Indication
	PON	LOS	Indication
1	Off	Off	The ONT is disabled by the OLT.
2	Blinks quickly (twice per second)	Off	The ONT is attempting to set up a connection to the OLT.
3	Always on	Off	The connection between the ONT and the OLT is set up.
4	Off	Blinks slowly (once two seconds)	The Rx optical power of the ONT is lower than the optical receiver sensitivity.
5	Blinks quickly (twice per second)	Blinks quickly (twice per second)	The OLT detects that the ONT is a rogue ONT.

2.2 Typical Network Applications

This topic describes the typical network applications of the HG8240/HG8245/HG8247.

As a network terminal, the HG8240/HG8245/HG8247 is deployed at the GPON access layer and connects home users and SOHO users to the Internet through optical upstream ports. On the local area network (LAN) side, the HG8240/HG8245/HG8247 provides abundant hardware ports to meet various network requirements of home users and SOHO users.

Network Topology of the HG8240

Figure 2-13 shows the position of the HG8240 in a network.



Figure 2-13 Network topology of the HG8240

- In the upstream direction, the HG8240 is connected to the optical splitter and the networkside OLT through the passive optical network (PON) port, namely the OPTICAL port, to provide integrated access services.
- In the downstream direction, the HG8240 is connected to various terminals through the following LAN-side ports to implement the triple play service:
 - Four 10/100/1000M Base-T Ethernet ports, which can be connected to terminals such as PCs, STBs, and video phoned to provide the high-speed data and video services.
 - Two TEL ports, which can be connected to telephone sets or fax machines to provide superior and cost-effective voice over IP (VoIP), fax over IP (FoIP), and modem over IP (MoIP) services.

Network Topology of the HG8245

Figure 2-14 shows the position of the HG8245 in a network.



Figure 2-14 Network topology of the HG8245
- In the upstream direction, the HG8245 is connected to the optical splitter and the networkside OLT through the PON port, namely the OPTICAL port, to provide integrated access services.
- In the downstream direction, the HG8245 is connected to various terminals through the following LAN-side ports to implement the triple play service:
 - Four 10/100/1000M Base-T Ethernet ports, which can be connected to terminals such as PCs, STBs, and video phones to provide the high-speed data and video services.
 - Two TEL ports, which can be connected to telephone sets or fax machines to provide superior and cost-effective VoIP, FoIP, and MoIP services.
 - Two Wi-Fi antennas, which can connect to Wi-Fi terminals wirelessly to provide a secure and reliable high-speed wireless network.
 - One USB port, which can be connected to a USB storage device to provide convenient storage and file sharing services within a home network.

Network Topology of the HG8247

Figure 2-15 shows the position of the HG8247 in a network.

Figure 2-15 Network topology of the HG8247



- In the upstream direction, the HG8247 is connected to the optical splitter and the networkside OLT through the PON port, namely the OPTICAL port, to provide integrated access services.
- In the downstream direction, the HG8247 is connected to various terminals through the following LAN-side ports to implement the triple play service:
 - One CATV port, which can be connected to a TV set to provide high-quality CATV service transmission.
 - Four 10/100/1000M Base-T Ethernet ports, which can be connected to terminals such as PCs, STBs, and video phones to provide the high-speed data and video services.
 - Two TEL ports, which can be connected to telephone sets or fax machines to provide superior and cost-effective VoIP, FoIP, and MoIP services.

- Two Wi-Fi antennas, which can connect to Wi-Fi terminals wirelessly to provide a secure and reliable high-speed wireless network.
- One USB port, which can be connected to a USB storage device to provide convenient storage and file sharing services within a home network.

3 Configuration Guide

About This Chapter

This topic describes how to configure the services of the HG8240/HG8245/HG8247 through the Web page.

3.1 OMCI Protocol This topic describes the principles of the OMCI protocol and how to set up an OMCI channel.

3.2 Logging In Through the Web Page This topic describes the data plan for and procedure of logging in through the Web Page.

3.3 Overview of the Web Page This topic describes the Web page of the HG8240/HG8245/HG8247.

3.1 OMCI Protocol

This topic describes the principles of the OMCI protocol and how to set up an OMCI channel.

3.1.1 Principles of the OMCI Protocol This topic describes the principles of the OMCI protocol.

3.1.2 Setting Up an OMCI Channel This topic describes how to set up an OMCI channel.

3.1.1 Principles of the OMCI Protocol

This topic describes the principles of the OMCI protocol.

The optical network termination management and control interface (OMCI) protocol is defined in ITU-T Recommendation G.984.4. OMCI defines the format and the mechanism of the messages exchanged between the OLT and the ONT. OMCI also analyzes the service model of the ONT at a finer grain and defines a series of management entities used for service description.

OMCI specifies the format of the messages exchanged between the OLT and the ONT and the mechanisms of confirmation and retransmission. In this way, OMCI provides a logical channel for communication. Enabled with OMCI, the OLT supports the management and configuration of various types of ONTs, the offline configuration of ONTs, and the configuration recovery of online ONTs. Based on this mechanism, the ONT need not save the configuration information locally. This helps to provision services and maintain the terminal.

3.1.2 Setting Up an OMCI Channel

This topic describes how to set up an OMCI channel.

Context

The process of setting up an OMCI channel between the OLT and the ONT is performed automatically and requires no manual operation.

Procedure

- **Step 1** After being powered on, the ONT interacts with the OLT through Physical Layer OAM (PLOAM) messages to complete the registration.
- **Step 2** From the PLOAM messages, the OLT learns whether the ONT supports the OMCI protocol. If the ONT supports the OMCI protocol, an OMCI channel is set up between the OLT and the ONT.
- **Step 3** After the OMCI channel is set up, the OLT issues the configuration and management information about the ONT to the ONT through the OMCI channel, and the ONT uploads its status and alarm information to the OLT through the OMCI channel.

- The PLOAM protocol is defined in ITU-T Recommendation G.984.3 and is used for the operation, maintenance, and management at the physical layer.
- OMCI is a master-slave management protocol. The OLT functions as the master device and the ONT as the slave device. The OLT controls multiple ONTs through the OMCI channel.

----End

3.2 Logging In Through the Web Page

This topic describes the data plan for and procedure of logging in through the Web Page.

3.2.1 Data Plan

This topic describes the data plan for logging in through the Web Page.

3.2.2 Procedure

This topic describes how to log in through the Web Page.

3.2.1 Data Plan

This topic describes the data plan for logging in through the Web Page.

Before setting up the configuration environment, set parameters as listed in Table 3-1.

Table 3-1 Parameters required for setting up the configuration environment

Parameter	Description
User name and password	Default settings:
	• Administrator:
	- User name: telecomadmin
	- Password: admintelecom
	• Common user:
	- User name: root
	- Password: admin
LAN IP address and subnet mask	Default settings:
	• IP address: 192.168.100.1
	• Subnet mask: 255.255.255.0
IP address and subnet mask of the PC	Set the IP address of the PC to be in the same subnet as the LAN IP address of the HG8240/ HG8245/HG8247.
	For example:
	• IP address: 192.168.100.100
	• Subnet mask: 255.255.255.0

The differences between the configuration rights of an administrator and a common user are as follows:

- An administrator has the right to configure all the parameters on the Web Page.
- The parameters of certain nodes are unavailable to a common user. Such parameters are:
 - LAN > LAN Port Work Mode
 - Voice

- Network Application > Portal Configuration and Network Application > Terminal Limit Configuration
- System Tools > Time Setting, System Tools > TR-069, and System Tools > ONT Mode
- Download Configuration File and Upload Configuration File on the System Tools > Configuration File page
- A common user has no right to configure the parameters of certain nodes, such as WAN > WAN Configuration.

3.2.2 Procedure

This topic describes how to log in through the Web Page.

Procedure

- Step 1 Use a network cable to connect a LAN port of the HG8240/HG8245/HG8247 to a PC.
- **Step 2** Ensure that the Internet Explorer of the PC does not use the proxy server. The following considers Internet Explorer 6.0 as an example to describe how to check whether the Internet Explorer uses the proxy server.
 - 1. Start the Internet Explorer, and choose **Tools** > **Internet Options** from the main menu of the Internet Explorer window. Then, the **Internet Options** window is displayed.
 - 2. Click Connections to display the Connections tab page, and then click LAN settings.
 - 3. In the Local Area Network (LAN) Settings window, deselect Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections). under Proxy server. If this option is selected, deselect it to cancel the settings, and then click OK.
- Step 3 Log in through the Web Page.
 - 1. Input http://192.168.100.1 in the address bar of the Internet Explorer (192.168.100.1 is the default IP address of the HG8240/HG8245/HG8247), and then press Enter to display the login window.
 - 2. In the login window, input the user name and password. (For default settings of the user name and password, see **3.2.1 Data Plan**.) After the password authentication is successful, the Web Page is displayed.
 - ----End

3.3 Overview of the Web Page

This topic describes the Web page of the HG8240/HG8245/HG8247.

The Web page of the HG8240/HG8245/HG8247 consists of the following parts:

- Navigation tree on the left: Click a link and then perform the configuration on the displayed page.
- Configuration management pane on the right: The contents displayed on the right depend on the function selected in the navigation tree on the left. For details, see the corresponding configuration page.

- The Web page may vary with the software version. The Web page for an administrator and that for a common user are different. This section considers the Web page for an administrator as an example.
- The HG8240/HG8245/HG8247 has similar Web pages. This section considers the HG8247 as an example to describe its Web page. The HG8240 does not provide the Wi-Fi function and therefore its Web page does not have a Wi-Fi node.

3.3.1 Status

This topic describes how to query the information about the WAN interface, VoIP interface, and Wi-Fi port through the Web page.

3.3.2 WAN

This topic describes how to configure the WAN interface through the Web page.

3.3.3 LAN

This topic describes how to set the working mode of the LAN port, the LAN host, and the DHCP server through the Web page.

3.3.4 WLAN

This topic describes how to perform basic and advanced configurations of the WLAN through the Web page.

3.3.5 Security

This topic describes how to configure the IP address filter, MAC address filter, DoS, and ONT access control through the Web page.

3.3.6 Route

This topic describes how to configure the default route and static route through the Web page.

3.3.7 Forward Rules

This topic describes how to configure the DMZ, port mapping, and port trigger through the Web page.

3.3.8 Network Applications

This topic describes how to configure the USB, ALG, UPnP, and ARP through the Web page.

3.3.9 Voice

This topic describes how to configure the voice service through the Web page.

3.3.10 System Tools

This topic describes how to use the system tools on the Web page, including using the tools to restart the device, restore the default configuration, and conduct the test.

3.3.1 Status

This topic describes how to query the information about the WAN interface, VoIP interface, and Wi-Fi port through the Web page.

WAN Information

Click the **Status** tab and then choose **WAN Information** from the navigation tree. In the pane on the right, you can view the status of the WAN interface, mode of obtaining an IP address, IP address, and subnet mask, as shown in **Figure 3-1**.

F	IG8247									Logout
HUAWEI	Status WAN	LAN	WLAN	Security	Route Forw	ard Rules I	Network App	lication Vo	ice System To	ols
WAN Information	St	atus > WAN	Information							
VolP Information										
WLAN Information		On this pa	ige, you can	query the conr	nection status ar	id line status of	the WAN inte	erface.		
Eth Port Information		WANT	Name	Status	IP Acquisition	IP	Subnet	VLAN/Priority	MAC Address	Connect
DHCP Information					Mode	Address	Mask			
Optical Information	1.	INTERNET	_R_VID_150) Connected	PPPoE	192.168.11.52	!	150/1	00:00:00:00:00:03	l AlwaysO
Battery Information										
Device Information										
Remote Manage										

Figure 3-1 WAN Information

VoIP Information

Click the **Status** tab and then choose **VoIP Information** from the navigation tree. Then, in the pane on the right, you can query the information such as user status and call status. The SIP configuration page is slightly different from the H.248 configuration page, as shown in **Figure 3-2** and **Figure 3-3**.

Figure 3-2 VoIP Information - SIP

HG824	47			Logout
HUAWEI Status	WAN LAN	WLAN Security Route Forward Rules	Network Application	Voice System Tools
WAN Information	Status > VoIP Ir	formation		
VolP Information				
WLAN Information	On this pag	e, you can query the voice user list and status.		
Eth Port Information				
DHCP Information	Sequence	Register User Name(Telephone Number)	User Status	Call Status
Optical Information	1	77770085	Up	Idle
Battery Information	2	77770086	Up	Idle
Device Information	To restart the	VoIP service, click "Restart VoIP"		
Remote Manage	Restart Vo	IP		_

Figure 3-3 VoIP Information - H.248

	HG82	47					Logout
HUAWEI	Status	WAN LAN	WLAN Se	curity Route F	orward Rules Ne	etwork Application	Voice System Tools
WAN Information		Status > Vo	IP Information				
VolP Information							
WLAN Information		On this	page, you can que	ry the voice user list ar	d status.		
Eth Port Information							
DHCP Information		Sequenc	e Line Name	Telephone Number	User Status	Call Status	Interface Status
Optical Information		1	AO		Up	Idle	Inservice
Battery Information		2	A3		Up	Idle	
Device Information							
Remote Manage		To restar	t the VoIP service, i	click "Restart VolP".			
The manage	_	Resta	art VoIP				

If the VoIP service needs to be restarted, click **Reset VoIP** in the pane on the right.

WLAN Information

Click the **Status** tab and then choose **WLAN Information** from the navigation tree. Then, in the pane on the right, you can query the information such as WLAN status, WLAN packet statistics, and SSID, as shown in **Figure 3-4**.

Figure 3-4 WLAN Information

HG82	247											Logout		
HUAWEI Status	WAN	LAN	WLAN	Security	Route	Forward R	ules	Network App	lication	Voice	Syste	em Tools		
WAN Information	Status ≻	WLAN	Information											
VoIP Information														
WLAN Information	Or	On this page, you can query the WLAN status, WLAN statistics of packets and SSID Information.												
Eth Port Information														
DHCP Information	WLAN	WLAN Status												
Optical Information	WLAI	N Enab	le:		Enable	9								
Battery Information	WLAN	N Chan	nel:		0									
Device Information	WLAN	Statist	tics of Pack	ets										
Remote Manage	sein	Indox	551	D Namo		Rece	ive (Rx)			Trans	mit (Tx			
	5510	nuex	551	Dividine	Bytes	Packets	Error	Discarded	Bytes	Packets	Error	Discarded		
	1		WirelessN	et	0	0	0	0	0	0	0	0		
	SSID II	nfomat	ion											
	SSID	Index	SSI	D Name	Se	curity Config	uration	Authe	nticatior	Mode	Encry	ption Mode		
	1		WirelessNe	et	Uncon	figured		Open			None			

- In the pane on the right, click **Enable** or **Disable** to enable or disable the Wi-Fi function.
- Click the link in blue to go to the corresponding configuration page.

Eth Port Information

Click the **Status** tab and then choose **Eth Port Information** from the navigation tree. In the pane on the right, you can view the duplex mode, speed, and status of the ETH port, as shown in **Figure 3-5**.

Figure 3-5 Eth Port Information

но	68247							Logout					
HUAWEI Sta	itus WAN LA	N WLAN	Security	Route	Forward Rules	Network Applic	ation Voice	System Tools					
WAN Information	Status > F	Eth Port Inforr	nation										
VolP Information													
WLAN Information	On th	On this page, you can query the information of user ports.											
Eth Port Information	Ethernet	Port State											
DHCP Information	Port		State		Re	ceive (Rx)	Trar	nsmit (Tx)					
		Mode	Speed	Link	Bytes	Packets	Bytes	Packets					
Optical Information	1	Full	100M	Up	73834	449	100135	368					
Battery Information	2	Half	10M	Down	0	0	0	0					
Device Information	3	Half	10M	Down	0	0	0	0					
Remote Manage	4	Half	10M	Down	0	0	0	0					

DHCP Information

Click the **Status** tab and then choose **DHCP Information** from the navigation tree. In the pane on the right, you can view the basic information about the DHCP server, including the IP address assigned to the connected PC through DHCP, MAC address, and remaining lease time, as shown in **Figure 3-6**.

Figure 3-6 DHCP Information

	HG8247													
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools				
WAN Information		Statu	is > DHCP	Informatio	n									
VolP Information														
WLAN Information		r (on this page emaining le	e, you can eased tim	query the bas e and device t	sic informa ype.	ition about the DHCP	, including host name, IP	address, N	AAC address,				
Eth Port Information														
DHCP Information		H	ost Name	•	Address		MAC Address	Remaining Lease	ed Lime	Device Type				
Optical Information		z58	440b	192.16	8.100.50	00:e0	:4c:86:15:1d	259187(s)		Computer				
Battery Information														
Device Information														
Remote Manage														

Optical Information

Click the **Status** tab and then choose **Optical Information** from the navigation tree. In the pane on the right, you can view the optical status, transmit optical power, receive optical power of the optical module, as shown in **Figure 3-7**.

Figure 3-7 Optical Information

	HG824	8247													
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools					
WAN Information		Statu	us ≻ Optic	al Informati	on										
VolP Information															
WLAN Information			On this page, you can query the status of the optical transceiver.												
Eth Port Information		Opt	ical Statu	s:		auto									
DHCP Information		Tx C	Optical Po	wer:		2.67d	Bm								
Optical Information		Rx (Optical Po	wer:		-24.9	1dBm								
Battery Information		Wo	rking Volt	age:		3291	mV								
Device Information		Bia	s Current			24m/									
Remote Manage		Wo	rking Terr	perature:		35°C									

Battery Information

Click the **Status** tab and then choose **Battery Information** from the navigation tree. In the pane on the right, you can view the connection status and available capacity of the external standby battery, as shown in **Figure 3-8**.

Figure 3-8 Battery Information

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
WAN Information		Stat	us ≻ Batte	ery Informat	ion					
VolP Information										
WLAN Information			On this pa	age, you ca	n look over th	e informa	tion of the battery.			
Eth Port Information		Ba	ttery Conr	nection Stat	us:	di	sconnect			
DHCP Information		Ba	ttery Avail:	able Capac	ity:	0	%			
Optical Information										
Battery Information										
Device Information										
Remote Manage										

Device Information

Click the **Status** tab and then choose **Device Information** from the navigation tree. In the pane on the right, you can view the product name, hardware version, and software version, as shown in **Figure 3-9**.

Figure 3-9 Device Information

	HG82	47	7												
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools					
WAN Information		Stat	us ≻ Devi	ce Informat	tion										
VolP Information															
WLAN Information			On this pa	age, you ca	in query the ba	asic info	mation about the term	inal.							
Eth Port Information		Pro	oduct Nan	ne:			HG8247								
DHCP Information		De	scription:				EchoLife HG8247 GP	ON Terminal (CLASS B)							
Optical Information		Se	rial Numb	er:			6877687700000001								
Battery Information		На	rdware Ve	ersion:			120D0010								
Device Information		So	ftware Vei	rsion:			V1R002C04								
Remote Manage		Re	lease Tirr	ne:			2010-08-04_00:39:56								
		ON	IT Registr	ation Statu	s:		O5 (Operation state)								
		0N	IT ID:				1								

Remote Management

Click the **Status** tab and then choose **Remote Manage** from the navigation tree. In the right pane, view the remote management status and service application status, as shown in **Figure 3-10**.

HUAWE	HG824	47 wan	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	Logo System Tools	out	
WAN Information		Sta	atus > Rem	note Manag	e					-		
VolP Information												
WLAN Information		On this page, you can query the remote management status.										
Eth Port Information		In	form Statu	s:	no	inform conn	ect					
DHCP Information		A	CS Conne	ct Status:	no	ACS connec	t					
Optical Information		С	onfig Statu	IS:	no	config inforr	nation					
Battery Information		1										
Device Information												
Remote Manage		_										

Figure 3-10 Remote management

3.3.2 WAN

This topic describes how to configure the WAN interface through the Web page.

WAN Configuration

- WAN Configuration route
 - 1. Click the WAN tab and then choose WAN Configuration from the navigation tree. In the pane on the right, click New. In the dialog box that is displayed, set Mode to Route, as shown in Figure 3-11.

Figure 3-11 WAN Configuration - Route

	HG82	47									Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward R	ules Network	Application	Voice	System Tools
WAN Configuration		WAI	V > WAN (Configuratio	in						
			On this pa equipmer consister	age,you can nt through th it with those	configure WA ne WAN interfa of the upper-	N parame ice. Durin layer netw	eters.The ONT g the commun ork equipmen	home gateway c ication, the paran t.	ommunicates neter settings	with the up of the WAN	per-layer network interface must be
											New Delete
				Conn	ection Name		VLA	N/Priority		IP Acquisi	tion Mode
		En	able WAN	I Connectio	n: 💌						
		Se	rvice List		INTE	RNET	~				
		Mo	de:		Rou	te	~				
		VL	AN ID:		150		4	(1-4094)			
		80	2.1p:		1		*				
		Mu	ultiCast VL	AN ID:				(1-4094)			
		IP	Acquisitio	n Mode:	0 0	нср 🔘	Static 💿 P	PPoE			
		Er	able NAT	:							
		Us	ser Name:		iadte	st@pppo	• •	(1-63)Characters	3		
		Pa	ssword:		••••	••		(1-63)Characters	3		
		Di	al Method		Auto		*				
		Bir	nding opti	ons:		AN1 ISID1	LAN2	LAN3	LAN4		
					Ар	ply C	ancel				

2. Click Apply.

Table 3-2 describes the parameters related to the WAN in route mode.

Parameter	Description
Enable	Indicates whether to enable the WAN connection.
Service List	Indicates the service type of the WAN interface. It can be set to TR069, INTERNET, TR069_INTERNET, VOIP, TR069_VOIP, VOIP_INTERNET, TR069_VOIP_INTERNET, IPTV or OTHER.
VLAN ID	Indicates the VLAN ID. It ranges from 1 to 4094.
	The VLAN ID must be the same as the CVLAN ID on the OLT.
802.1p	Indicates the 802.1p value. It ranges from 0 to 7.
IP Acquisition Mode	Indicates the mode of obtaining an IP address on the ONT. It can be set to DHCP, static, or PPPoE.
	• In DHCP mode, the IP address is dynamically obtained.
	• In static mode, the IP address is set statically. You need to enter the IP address, subnet mask, IP addresses of the active and standby DNS servers, and default gateway.
	• In PPPoE mode, you need to enter the user name and password.
NAT	Indicates whether to enable the NAT function.
Vendor ID	Set the option 60 field on the DHCP client. The IP address can be obtained from the DHCP server only when the option 60 field is the same as the setting on the upper-layer DHCP server. When IP Acquisition Mode is set to DHCP , this parameter is configurable.
Binding options	Used to bind the WAN interface to the LAN port or to the wireless SSID.
	NOTE Before setting the binding options, set the work mode of the LAN port or the wireless SSID. The binding options can be set only after the work mode or wireless SSID is successfully set. For details, see LAN Port Work Mode and WLAN Configuration.

Table 3-2 Parameters related to the WAN in route mode

- WAN Configuration bridge
 - 1. Click the WAN tab and then choose WAN Configuration from the navigation tree. In the pane on the right, click New. In the dialog box that is displayed, set Mode to Bridge, as shown in Figure 3-12.

Figure 3-12 WAN Configuration - Bridge

	HG82	47									Logout
HUAWEI	Status	WAN	LAN	Wi-Fi	Security	Route	Forward Ru	les Network	Application	Voice	System Tools
WAN Configuration		WAN	I> WAN (Configurati	on						
			On this pa equipmer consisten	age,you ca ht through 1 t with thos	n configure W the WAN inter e of the upper	'AN param face. Durir '-layer netv	eters.The ONT ig the commur vork equipmer	home gateway c lication, the paran lt.	ommunicates neter settings	with the up of the WAN	oper-layer network I interface must be
											New Delete
				Con	nection Name		VLA	N/Priority		IP Acquis	ition Mode
		En	able WAN	l Connecti	on: 🗹						
		Se	rvice List:		INT	ERNET	~				
		Мо	de:		Brid	ige	~				
		VL	AN ID:		100			(1-4094)			
		803	2.1p:		1		*				
		Mu	ltiCast VL	AN ID:			1	(1-4094)			
		Bri	dge Type:		IP_	Bridged	~				
		En	able NAT:								
		Bin	iding opti	ons:		LAN1 SSID1	LAN2 SSID2	LAN3	LAN4		
					A	oply	Cancel				

2. Click Apply.

Table 3-3 describes the parameters related to the WAN in bridge mode.

Table 3-3 Parameters related to the WAN in I	bridge mode
--	-------------

Parameter	Description
Enable	Indicates whether to enable the WAN connection.
Service List	Indicates the service type of the WAN interface. It can be set to TR069, IPTV or OTHER.
VLAN ID	Indicates the VLAN ID. It ranges from 1 to 4094.
	The VLAN ID must be the same as the CVLAN ID on the OLT.
MultiCast VLAN ID	The multicast VLAN ID ranges from 1 to 4094.
	The multicast VLAN ID must be the same as the multicast VLAN ID on the OLT.

Parameter	Description
Bridge Type	It can be set to IP or PPPoE.
Binding options	Used to bind the WAN interface to the LAN port or to the wireless SSID.
	NOTE Before setting the binding options, set the work mode of the LAN port or the wireless SSID. The binding options can be set only after the work mode or wireless SSID is successfully set. For details, see LAN Port Work Mode and WLAN Configuration.

- WAN in route mode: The ONT functions as a gateway. The IP address of the ONT can be obtained through DHCP, Static, or PPPoE. The IP address of the PC connected to the ONT can be obtained from the DHCP address pool of the ONT or can be set manually.
- WAN in bridge mode: The ONT functions as a relay and does not process data. The ONT does not obtain the IP address allocated by the upper-layer device and it does not allow manual configuration of a static IP address. The IP address of the device connected to the ONT can be obtained through DHCP, PPPoE, or static.
 - In the case of the DHCP mode, you need to set the DHCP relay. After configuration is complete, the user-side IP address is obtained from the upper-layer device. For the detailed procedure, see **DHCP Server Configuration**.
 - In the case of the PPPoE mode, the user-side IP address is obtained through PPPoE authentication of the upper-layer device.

3.3.3 LAN

This topic describes how to set the working mode of the LAN port, the LAN host, and the DHCP server through the Web page.

LAN Port Work Mode

 Click the LAN tab and then choose LAN Port Work Mode from the navigation tree. In the pane on the right, determine whether the LAN port works in layer 3 mode, as shown in Figure 3-13.

Figure 3-13 LAN Port Work Mode

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
LAN Port Work Mode		LAN	⊨> LAN P	ort Work Mi	ode					
LAN Host Configuration	on						ta ta constria la serio d			ale a la la sur The
LAN Port Work Mode LAN > LAN Port Work Mode LAN Host Configuration On this page, you can configure the LAN ports to work in layer3 mode by selecting the corresponding check box. The layer3 ports will be assigned working as HG ports. V LAN1 LAN2										
			LAN1	🗹 LAN2	LAN3	LAN4				
										Apply Cancel

If the check box corresponding to the LAN port is selected, it indicates that the LAN port works in layer 3 mode, that is, the gateway mode; if the check box corresponding to the LAN port is deselected, it indicates that the LAN port works in layer 2 mode, that is, the bridge mode.

By default, the check boxes corresponding to all LAN ports are deselected, that is, all LAN ports work in layer 2 mode.

2. Click Apply.

LAN Host Configuration

1. Click the LAN tab and then choose LAN Host Configuration from the navigation tree. In the pane on the right, set the management IP address and subnet mask of the LAN host, as shown in Figure 3-14.

Figure 3-14 LAN Host Configuration

	HG82	47							Logou	ut
HUAWEI	Status	WAN LAN	WLAN	Security	Route	Forward Rules	Network Applic	ation Voice	System Tools	
LAN Port Work Mode		LAN ≻ LAN H	ost Configu	ration						
LAN Host Configurati	ion Iration	On this pa that the a Otherwise	age, you car ddress poo e, the DHCF	n configure th I configured ir ? server may r	e LAN mana h the DHCP hot work nor	gement IP addri server must be i nally.	ess. After changing th n the same subnet w	ne LAN host IP add ith the new LAN IP	iress, make sure ? address.	
		IP Address:		192.	168.100.1	*				
		Subnet Mas	k	255.	255.255.0	*				
				Ap	ply Ca	ncel				

The IP address of the device connected to the LAN port must be in the same subnet as the management IP address. In this way, you can access an ONT through the Web page and perform query and management. You can manually set the IP address of the device connected to the LAN port to be on the same network segment as the management IP address, or start the DHCP server to set the IP address in the DHCP address pool to be on the same network segment as the management IP address. For details, see **DHCP Server Configuration**.

2. Click Apply.

DHCP Server Configuration

1. Click the LAN tab and then choose DHCP Server Configuration from the navigation tree. In the pane on the right, you can configure the LAN side DHCP address pool for the ONT that functions as a gateway. After the configuration, the PC connected to the LAN port can automatically obtain an IP address from the address pool, as shown in Figure 3-15.

	HG824	47											Logou
HUAWEI	Status	WAN	LAN	WLAN	Secu	rity	Route	Forw	rard Rules	Networl	Application	Voice	System Tools
LAN Port Work Mode		LAI	N > DHCP	Server Con	figuratio	n							
LAN Host Configuration													
DHCP Server Configurat	ion		On this pa Compute	age,you car r and Phon	n configu e to obta	ire the D in IP ad	HCP Ser dress.	verpa	rameters for	the LAN si	de device inclu	Jding HGW,	STB, Camera,
		Pri	mary Addi	ess Pool									
		Er	nable prim	ary DHCP s	erver:	V							
		E	nable DHC	P L2Relay:									
		U	AN Host IP	Address:		192.168	8.100.1						
		S	ubnet Masi	с		255.256	5.255.0						
		St	tart IP Addr	ess:		192.16	8.100.2		* (IP addres	ss must be	in the same s	subnet with I	_an Host)
		E	nd IP Addre	SS:		192.16	8.100.25	4	*				
		Le	eased Tim	э:		3	day	*	٢				
		Pri	mary Addi	ess Pool S	ubsecti	on							
		D	evice Type		Sta	irt IP Add	dress	E	End IP Addre:	3S			
		н	GW:		19	2.168.1	00.10		192.168.100	29			
		S	TB:		19	2.168.1	00.80		192.168.100	.89			
		C	amera:		19	2.168.1	00.90		192.168.100	.99			
		C	omputer:		19	2.168.1	00.100		192.168.100	200			
		PI	hone:		19	2.168.1	00.201		192.168.100	220			
		Se	condary A	ddress Poo	я								
		Er	nable seco	ndary Serv	er:	V							
		IP	Address:			192.16	8.2.1		*				
		S	ubnet Masi	c		255.25	5.255.0		*				
		St	tart IP Addr	ess:		192.16	8.2.2		*				
		Er	nd IP Addre	ss:		192.16	8.2.254		*				
		Le	eased Tim	е:		3	day	~	*				
		0	ption60:			MSFT 6	5.0						
						Apply	Car	ncel					

Figure 3-15 DHCP Server Configuration

2. Click Apply.

Table 3-4 describes the parameters related to the DHCP server.

Table 3-4 Parameters related to the DHCP server

Parameter	Description
Enable primary DHCP server	Indicates whether to enable the primary DHCP server. If the check box is selected, you can set the primary DHCP server.

Parameter	Description
Enable DHCP L2 Relay	Indicates whether to enable the DHCP L2 Relay.
	The DHCP relay is a process in which cross- subnet forwarding of DHCP broadcast packets is implemented between the DHCP client and the DHCP server. In this manner, the DHCP clients in different physical subnets can obtain IP addresses which are dynamically allocated from the same DHCP server.
	• If Mode of the WAN port is Route , the IP address of the ONT is obtained from upper-layer DHCP servers in different subnets and the user-side IP addresses are obtained from the DHCP address pool of the ONT.
	• If Mode of the WAN port is Bridge , the ONT functions as a bridge. Thus, the ONT does not have an IP address. The user-side IP addresses are obtained from upper-layer DHCP servers in different subnets.
Start IP Address	Indicates the start IP address in the IP address pool on the primary DHCP server. It must be in the same subnet as that of the IP address set in "LAN Host Configuration". Otherwise, the DHCP server fails to work normally.
End IP Address	Indicates the end IP address in the IP address pool on the active DHCP server. It must be in the same subnet as that of the IP address set in "LAN Host Configuration". Otherwise, the DHCP server fails to work.
Leased Time	Indicates the lease time of the IP address pool on the active DHCP server. Options: minute, hour, day, and week.
Enable secondary DHCP server	Indicates whether to enable the secondary DHCP server. If the check box is selected, you can set the secondary DHCP server.
IP Address	Indicates the IP address of the secondary DHCP server.
Subnet Mask	Indicates the subnet mask of the secondary DHCP server.
Start IP Address	Indicates the start IP address in the IP address pool on the secondary DHCP server.

Parameter	Description
End IP Address	Indicates the end IP address in the IP address pool on the secondary DHCP server.
Leased Time	Indicates the lease time of the IP address pool on the secondary DHCP server. Options: minute, hour, day, and week.
Option60	Indicates the option 60 field of the secondary DHCP server. A user-side DHCP client can obtain an IP address from the IP address pool on the secondary DHCP server only when the option 60 field carried by the user-side DHCP client is the same as this setting.

3.3.4 WLAN

This topic describes how to perform basic and advanced configurations of the WLAN through the Web page.

WLAN Configuration

1. Click the **WLAN** tab and then choose **WLAN Configuration** from the navigation tree. In the pane on the right, select the **Enable WLAN** option box. In the dialog box that is displayed, set the basic WLAN parameters, including the SSID, authentication mode, and encryption mode, as shown in **Figure 3-16**.

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	HG82	4/							Log
AWEI	Status	WAN		AN Secur	ity Route	Forward R	ules Network	Application Vo	ice System Tools
Configuration		WLAN	N > WLAN Confi	iguration					
			On this page, y	ou can set the	WLAN param	eters, includin;) the WLAN switch	, SSID configuration	, and channel selection.
			Enable WLAN						
		Bas	sic Configration						New Delete
			SSID Index	SSID Name	SSID State	Associated	Device Number	Broadcast SSID	Security Configuratio
		ssi	D Configuration	n in Detail	Lindois	52		Linabio	oncomigarea
		SS	BID Name:		WirelessNet	*			
		En	able SSID:		~				
		As	sociated Device	e Number:	32	*			
		Bro	oadcast SSID:		V				
		W	MM Enable:		~				
		Au	thentication Mo	de:	Open	*			
		En	cryption Mode:		None	*			
					Apply	Cancel			
		Adv	ance Configrat	tion					
		Tra	ansmitting Pow	er:	100%	*			
		Re	egulatory Doma	in:	CHINA	*			
		Ch	nannel:		Auto	*			
		Ch	nannel Width:		20MHz	*			
		Мо	ode:		802.11b/g/n	*			
		DT	FIM Period:		1		(1-255, default: 1)		
		Be	acon Period:		100		ms (20-1000ms,	default: 100)	
		RT	rS Threshold:		2346		Byte(s) (1-2346 b	yte, default: 2346)	
		Era	an Threehold:		2346		Byto(e) (256-2348	byte default: 2346)	

Figure 3-16 WI-FI Configuration

2. Click Apply.

Table 3-5 describes the basic Wi-Fi parameters.

 Table 3-5 Basic Wi-Fi parameters

Parameter	Description
Enable WLAN	Indicates whether to enable the wireless network. The following parameters can be set only when the wireless network is enabled.
SSID	Indicates the name of the wireless network. It is used to differentiate different wireless networks. It consists of a maximum of 32 characters, without space or Tab character.
Associated Device Number	Specifies the number of STAs. It ranges from 1 to 32.

Parameter	Description
Hide Broadcast	 Indicates whether to enable or hide broadcast. If the option box is not selected, it indicates that the SSID broadcast function is enabled. The ONT periodically broadcasts the SSID, that is, the name of the wireless network. In this way, any STA can search for the wireless network. If the option box is selected, it indicates that the SSID broadcast function is disabled. The SSID is hidden, and the STA cannot search for the wireless network. The SSID can be obtained only through a request.
WMM Enable	Indicates whether to enable the QoS of the wireless network. After the function is enabled, the video and voice QoS can be improved.
Authentication Mode	Indicates the authentication mode for the STA to request access to the wireless network. The mode can be Open, Shared, WPA Pre-Shared Key, WPA2 Pre-Shared Key, WPA Enterprise, WPA2 Enterprise, or Wi-Fi Protected Setup. It is set to open by default, that is, the STA can access the network without authentication.
Encryption Mode	 Indicates the encryption mode for the STA to request access to the wireless network. The encryption mode and encryption parameters vary with the authentication mode. If the authentication mode is set to Open, the encryption mode can be set to None or WEP. If the authentication mode is set to Shared, the encryption is WEP. If the authentication mode is set to WPA Pre-Shared Key, WPA2 Enterprise, or WPA2 Enterprise, the encryption mode can be set to AES, TKIP, or TKIP&AES. If the authentication mode is set to Wi-Fi Protected Setup, WPS Mode must be set to Pin or Push-button. NOTE Pin indicates the pin-based encryption. Push-button indicates the push-button-based encryption. When WPS Mode is set to Push-button, press the WPS button on the ONT and press the WPS icon included with the STA within two minutes, or run the WPS setup program in the STA to install the WPS software

3.3.5 Security

This topic describes how to configure the IP address filter, MAC address filter, DoS, and ONT access control through the Web page.

IP Filter Configuration

1. Click the **Security** tab and then choose **IP Filter Configuration** from the navigation tree. In the pane on the right, enable the IP address filter function. After selecting the filter mode, click **New**. Then, in the dialog box that is displayed, configure the rule for filtering IP addresses from the WAN interface to the LAN port, as shown in **Figure 3-17**.

Figure 3-17 IP Filter Configuration

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
IP Filter Configuration		Se	curity > IP I	Filter Conf	iguration					
MAC Filter Configuration	ı									
URL Filter Configuration			Un this p: LAN.	age, you c:	an configure ti	ne vvAN-to-	LAN filtering to prohi	bit certain IP addresses i	n the WAN	from accessing the
Dos Configuration										_
ONT Access Control Co	nfiguration	Er	hable IP Fi	iter:						
		Fi	lter Mode:		BlackList	*				
										New Delete
			Protoc	ol	LAN-side IP A	ddress	LAN-side Port	WAN-side IP Ad	dress	WAN-side Port
		Col	nfigure							
		Pr	rotocol:		TCP/UDF	· •				
		LA	N-side IP	Address:	192.168.1	00.0	192.168.100.9	39		
		LA	AN-side Po	ort:	💿 ALL					
					OUser-c	lefined				
	W	AN-side IF	Address:	💿 ALL						
				OUser-c	lefined					
		W	AN-side P	ort:	💿 ALL					
					O User-c	lefined				
					Apply	Cancel				

2. Click Apply.

The IP address filter function is a security mechanism configured on the residential gateway. It enables or disables all or partial ports in an Intranet IP address segment to communicate with all or partial ports in an Extranet IP address segment. The IP address filter configuration is used to limit communication between an Intranet device and an Extranet device.

Table 3-6 describes the parameters related to the IP address filter.

Parameter	Description
IP address filter function	Indicates whether to enable the IP address filter function by clicking OPEN or CLOSE .
Filter Mode	 Indicates the IP address filter rule of the blacklist or whitelist. Blacklist: indicates that the data meeting the rule in the filter rule list is not allowed to pass.
	• Whitelist: indicates that the data meeting the rule in the filter rule list is allowed to pass.
	The filter mode is global config mode. Thus, the blacklist and whitelist mode cannot be used at the same time.

Table 3-6	Parameters	related	to the	IP	address filt	ter
		1010000				

Parameter	Description				
Protocol	Indicates the type of the protocol, which may be TCP/UDP, TCP, UDP, ICMP, or ALL.				
LAN-side IP Address	Indicates the IP address on the LAN side.				
LAN-side Port	Indicates the port ID on the LAN side. This parameter can be configured when Protocol is set to TCP/UDP , TCP or UDP .				
WAN-side IP Address	Indicates the IP address on the WAN side.				
WAN-side Port	Indicates the ID of the WAN side port. This parameter can be configured when Protocol is set to TCP/UDP , TCP or UDP .				

MAC Filter Configuration

1. Click the **Security** tab and then choose **MAC Filter Configuration** from the navigation tree. In the pane on the right, after enabling MAC filter and selecting the filter mode, click **New**. On the dialog box that is displayed, configure the MAC filter rule for the PC to access the Internet, as shown in **Figure 3-18**.

Figure 3-18 MAC Filter Configuration

	HG82	247								Logout		
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools		
IP Filter Configuration	ı	Se	curity ≻ MA	AC Filter Co	nfiguration							
MAC Filter Configurat	ion											
URL Filter Configurati	on		On this p	age, you ca	in configure t	ne MAC tilti	ering to prohibit cert	ain PCs from accessing tr	ne internet.			
Dos Configuration		Er	nable MAC) filter:	V							
ONT Access Control Configuration Filte			ter Mode:		Blacklist	*						
										New Delete		
							Source	e MAC Address				
		ource MAC	Address:	00:15:17:	2C:EF:97	*(AA:BB:CC:DD	:EE:FF)					
					Apply	Cancel						

2. Click Apply.

The MAC address lists of PCs in the network are saved on the ONT. Configuring MAC filter rules enables the PCs that conform to the rules to access the Internet service or disables the PCs that do not conform to the rules to access the Internet service. A PC may have more than one IP addresses but a unique MAC address. Therefore, configuring MAC filter rules effectively controls the Internet service access rights of PCs in a LAN.

Table 3-7 describes the parameters related to the MAC filter.

Parameter	Description
MAC address filter function	Indicates whether to enable the MAC address filter function by clicking OPEN or CLOSE .
Filter Mode	Indicates the MAC address filter rule of the blacklist or whitelist.
	• Blacklist: indicates that the data meeting the rule in the filter rule list is not allowed to pass.
	• Whitelist: indicates that the data meeting the rule in the filter rule list is allowed to pass.
	The filter mode is global config mode. Thus, the blacklist and whitelist mode cannot be used at the same time.
Source MAC Address	Indicates the source MAC address in the MAC address filter rule.

 Table 3-7 Parameters related to the MAC address filter

URL Filter Configuration

1. Click the **Security** tab and then choose **URL Filter Configuration** from the navigation tree. In the pane on the right, after enabling URL filter and selecting the filter mode, click **New**. On the dialog box that is displayed, configure the URL filter rule for the PC to access the Internet, as shown in **Figure 3-19**.

HG824	47								Logout			
HUAWEI Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools			
IP Filter Configuration	Sec	urity > UR	L Filter Co	nfiguration								
MAC Filter Configuration												
URL Filter Configuration	On this page, you can configure the parameters of URL filter. If enable smart URL filter, the data packets complying with											
Dos Configuration		the follow otherwise	ring URL ri e only the c	ule are forbi lata packets	den(or allo of vour acce	wed) to pass the dev essing site are forbio	vice when you access any Iden(or allowed) to pass.	site of the v	web server.			
ONT Access Control Configuration			,			2	,,,					
	En	able URL	Filter:]							
	Ena	able Sma	rt URL Filt	er: 🔽]							
	Filt	er Mode:		В	lacklist 🔽							
									New Delete			
						URL #	Address					
							-					
	UF	*										
				Apply	Cance	I						

Figure 3-19 URL Filter Configuration

2. Click Apply.

DoS Configuration

1. Click the **Security** tab and then choose **DoS Configuration** from the navigation tree. In the pane on the right, determine whether to enable the DoS attack-preventive configuration, as shown in **Figure 3-20**.

Figure 3-20 DoS Configuration

HG824	47 Logout											
HUAWEI Status	WAN LAN WLAN Security Route Forward Rules Network Application Voice System Tools											
IP Filter Configuration	Security > Dos Configuration											
MAC Filter Configuration												
URL Filter Configuration	On this page, you can configure the DoS parameters,Denial of Service(DoS) is an attack action that decreases the availability of systems by preventing authorized users from accessing some special services.											
Dos Configuration												
ONT Access Control Configuration	EnablePrevent SYN Flooding Attack:											
	Enable Prevent ICMP Echo Attack:											
	Enable Prevent ICMP Redirect Attack:											
	Enable Prevent Land Attack:											
	Enable Prevent Smurf Attack:											
	Enable Prevent Winnuke Attack:											
	Apply Cancel											

2. Click Apply.

Denial of service (DoS) attack is a network-based attack that denies users from accessing the Internet. The DoS attack initiates a large number of network connections, making the server or the program running on the server break down or server resources exhaust or denying users to access the Internet service. As a result, the network service fails.

ONT Access Control Configuration

1. Click the **Security** tab and then choose **ONT Access Control Configuration** from the navigation tree. In the pane on the right, configure the rule of ONT access control, as shown in **Figure 3-21**.

H	IG824	47								Logout	
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
IP Filter Configuration		Sec	urity ≻ ON	T Access (Control Confi	guration					
MAC Filter Configuration URL Filter Configuration			On this pa	ige, you ca	an enable and	l disable th	e access right a:	signed to the ONT.			
Dos Configuration		LA	N Service								
ONT Access Control Confi	guration	En	able LAN-	side PC to	access the (ONT throug	h FTP:				
		Enable LAN-side PC to access the ONT through HTTP:									
		En	Enable LAN-side PC to access the ONT through TELNET:								
		WA	N Service	•							
		Enable WAN-side PC to access the ONT through FTP:									
		En	able WAN	-side PC t	o access the	ONT throug					
	En	able WAN	-side PC t	o access the	ONT throug	IN TELNET:					
								Apply Cancel			

Figure 3-21 ONT Access Control Configuration

2. Click Apply.

3.3.6 Route

This topic describes how to configure the default route and static route through the Web page.

Default Route Configuration

1. Click the **Route** tab and then choose **Default Route** Configuration from the navigation tree. In the pane on the right, select or deselect the **Default Route** option button to enable or disable the default route of the system, as shown in Figure 3-22.

Figure 3-22 Default Route Configuration

	HG82	.47								Loj	gout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
Default Route Config	uration	Rou	ute ≻ Defa	ault Route C	configuration						
Static Route Configu	Ľ	On this p	age, you ca	an configure t	ne default	route.					
	Er	able Defa	ault Route:								
	W	WAN Name: 1_INTERNET_R_VID_150									
				Aj	oply	Cancel					

If an ONT fails to find a matching routing entry after receiving a packet, the WAN interface specified by the default route configuration sends the packet to a network device. Before the default route of the system is enabled, the WAN interface must obtain the IP address. Therefore, the parameters of the WAN interface must be correctly set. For details, see **WAN Configuration**.

2. Click Apply.

Static Route Configuration

1. Click the **Route** tab and then choose **Static Route Configuration** from the navigation tree. In the pane on the right, click **New**. In the dialog box that is displayed, set the parameters related to the static route, as shown in **Figure 3-23**.

Figure 3-23 Static Route Configuration

	HG82	247										Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network	Application	Voice	System	Tools
Default Route Configu	ation	Ro	ute ≻ Stat	ic Route Co	nfiguration							
Static Route Configura	tion		On this p interface address	iage, you ca name. Whe	in configure 1 en you config	he static ro ure the stat	ute, including the IP : iic route, if the specifi	address, s ied WAN in	ubnet mask, g terface is offlin	ateway IP a e, please c	iddress an lear the ga	d WAN teway IP
											New	Delete
				WAN Nam	ne	De	stination Address		Gateway		Subnet N	lask
		De	estination	Network Ad	idress:	20.20.2	0.20	*				
		Su	ibnet Mas	skc		255.255	5.255.255	*				
		Ga	ateway IP	Address:		10.10.1	0.1					
		VV.	AN Name	e:		1_INTE	RNET_R_VID_150	*				
						Apply	Cancel					

2. Click Apply.

Table 3-8 describes the parameters related to the static route.

Table 3-8 Parameters related to the static route

Parameter	Description
Destination Network Address	Indicates the destination IP address of the static route.
Subnet Mask	Indicates the subnet mask of the static route.
Gateway IP Address	Indicates the gateway IP address of the static route.
Interface	Indicates the WAN interface that the route travels through.

3.3.7 Forward Rules

This topic describes how to configure the DMZ, port mapping, and port trigger through the Web page.

DMZ Configuration

1. Click the **Forward Rules** tab and then choose **DMZ Configuration** from the navigation tree. In the pane on the right, click **New**. In the dialog box that is displayed, set the parameters related to the DMZ, as shown in **Figure 3-24**.

Figure 3-24 DMZ Configuration

	HG82	247										Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Applic	ation	Voice	System	Tools
DMZ Configuration		For	ward Ru	les≻DMZ	Configuration							
Port Mapping Configu	iration											
Port Trigger Configur	ation		On this external mappin	page, you c accesses. g table, the	an configure th It is a buffer be application rec	ie parame stween a s quests fro	eters of the DMZ devid secure system and a m the WAN connectio	ce. The DMZ devic n insecure system on are forwarded f	e provide n. If the W to the DM	es services (AN port is Z device.	s for unrel not listed	lable I in the port
											New	Delete
				١	WAN Name		Enable D	MZ		Host /	Address	
								-				
		Er	nable DN	IZ:	✓							
		W	AN Nam	e:	2_1	NTERNET	[_B_VID_1 <mark>→</mark>					
		н	ost Addre	ess:	192	.168.100.	100 *					
					Ap	ply (Cancel					

2. Click Apply.

The demilitarized zone (DMZ) is a technology that enables the ONT to forward all received packets through a specified internal server. The technology enables a computer in the LAN to be completely exposed to all users on the Internet or enables the mutual communication without restrictions between a host with a specified IP address and other users or other servers on the Internet. In this way, many applications can run on the host with the specified IP address. The host with the specified IP address receives all connections and files that can be identified.

If the LAN-side device does not provide website service or other network services, do not set the device to a DMZ host because all ports of a DMZ host are opened to the Internet.

Table 3-9 describes the parameters related to the DMZ.

Table 3-9 Parameters related to the DMZ

Parameter	Description
Interface Name	Indicates the name of the WAN interface. If the WAN interface is not in the port mapping table, the application requests from the WAN connection are directly forwarded to the host in the DMZ.
Host Address	Indicates the IP address of the DMZ host.
Enable DMZ	Indicates whether to enable the DMZ.

Port Mapping Configuration

1. Click the **Forward Rules** tab and then choose **Port Mapping Configuration** from the navigation tree. In the pane on the right, click **New**. In the dialog box that is displayed, set the parameters related to port mapping, as shown in **Figure 3-25**.

Figure 3-25 Port Mapping Configuration

	HG82	47											Logout
HUAWEI	Status	WAN	LAN	WLAN	Secu	rity Rout	e Forwar	d Rule	s Networ	k Application	Voice	System	Tools
DMZ Configuration		Foi	ward Rule	es≻PortM	lapping C	configuration							
Port Mapping Config Port Trigger Configu	guration uration	I.	On this p by setting	age, you c I port map	an set up ping para	virtual serve meters.	rs on the LAN	v netw	ork and allow	these servers to	be acces:	sed from th	e Internet
												New	Delete
			WAN	Name	Маррі	ng Name	Protocol	Ex	ternal Port	Internal Port	Inte	rnal Host	Enable
				-									
		T)	/pe:			💿 Custom			🔿 Applicatio	on	选择		~
		W	AN Name	:		1_INTERN	ET_R_VI 🔽		Protocol:		TCP		~
		E	dernal Sta	rt Port:		123		٨	External End	Port:	124		*
		In	ternal Star	t Port:		200		A	Internal End	Port:	201		*
		Ð	dernal Sou	urce Start F	Port:	145			External Sou	rce End Port:	146		
		In	ternal Hos	st		192.168.10	10.100	*	External Sou	rce IP Address:	50.20.3	6.16	
		M	apping Na	me:		FTP Server		×	Enable Port	Mapping:	V		
												Apply	Cancel

2. Click Apply.

Port mapping indicates that the Intranet server is allowed to be open to the Extranet (for example, the Intranet provides the Extranet with a WWW server or FTP server). Port mapping is to map the Intranet host IP address and port ID to Extranet IP address and corresponding port ID so that

users from Extranets can access the Intranet server. With port mapping, the users cannot see the Intranet IP address and they see the Extranet IP address.

 Table 3-10 describes the parameters related to port mapping.

Parameter	Description
Interface	Indicates the name of the WAN interface where port mapping is enabled.
Protocol	Indicates the protocol type of port mapping packet, which may be TCP, UDP, or TCP/UDP.
External Start Port	Indicates the destination start port of the external data packet.
External End Port	Indicates the destination end port of the external data packet.
Internal Start Port	Indicates the internal destination start port of the port mapping packet.
Internal End Port	Indicates the internal destination end port of the port mapping packet.
External Source Start Port	Indicates the source start port of the external data packet.
External Source End Port	Indicates the source end port of the external data packet.
Internal Host	Indicates the IP address of the host to which the port is mapped.
External Source IP Address	Indicates the source IP address of the external data packet.
Mapping Name	Indicates the name of the port mapping rule.
Enable PortMapping	Indicates whether to enable port mapping.

 Table 3-10 Parameters related to port mapping

Port Trigger Configuration

1. Click the **Forward Rules** tab and then choose **Port Trigger Configuration** from the navigation tree. In the pane on the right, click **New**. In the dialog box that is displayed, set the parameters related to the port trigger, as shown in **Figure 3-26**.

	HG82	47											Logout
HUAWEI	Status	WAN	LAN	WLAN	Secur	ity R	oute Forward	d Rules	Network Applica	ation	Voice	System To	ols
DMZ Configuration		Fo	ward Rul	es > Port Tri	gger Co	nfiguratio	on						
Port Mapping Configura	ation												
Port Trigger Configurat	ion		on this p enable th	age, you car ie port autor	n contig natically	ure the ra /.	inge of the port tr	iat is used	tor the LAN-side a	applicati	ions to acce:	ss the Inter	net and
												New	Delete
				WAN Nar	ne	Status	Trigger Por	t	Open Port	Trigg	er Protocol	Open P	rotocol
						-							
		E	nable Port	Trigger:		V							
		V	VAN Name	:		1_INTE	RNET_R_VID_1	50 💊	*				
		т	rigger Prof	ocol:		UDP		1	*				
		C)pen Proto	col:		UDP		1	/				
		Т	rigger Star	t Port:		200			*				
		Т	rigger End	Port:		201			*				
		C) pen Start I	Port:		145			*				
		C	pen End F	ort:		146			*				
						Apply	Cancel						

Figure 3-26 Port Trigger Configuration

2. Click Apply.

The port trigger indicates that a specific Extranet port is automatically enabled when a corresponding Intranet port sends a packet and the packet is mapped to the Intranet port on the host. A specific mapping packet is sent from the ONT through the Intranet so that specific packets of the Extranet can be mapped to the corresponding host. A specified port on the gateway firewall is open to some applications for remote access. The port trigger can dynamically enable the open port of the firewall.

Table 3-11 describes the parameters related to the port trigger.

Parameter	Description
Interface	Indicates the name of the WAN interface where the port trigger is enabled.
Trigger Protocol	Indicates the protocol type of the port trigger packet, which may be TCP, UDP, or TCP/UDP.
Open Protocol	Indicates the protocol type of the open data packet.
Trigger Start Port	Indicates the destination start port of the port trigger packet.
Trigger End Port	Indicates the destination end port of the port trigger packet.
Open Start Port	Indicates the destination start port of the open packet.
Open End Port	Indicates the destination end port of the open packet.
Enable	Indicates whether to enable the port trigger.

Table 3-11	Parameters	related to	the p	port trigger
------------	------------	------------	-------	--------------

3.3.8 Network Applications

This topic describes how to configure the USB, ALG, UPnP, and ARP through the Web page.

USB Application

1. Click the **Network Applications** tab and then choose **USB Application** from the navigation tree. In the pane on the right, set the parameters related to FTP downloading to share the FTP file of the ONT, as shown in **Figure 3-27**.

7						Logout			
WAN LAN W	/LAN Secu	rity Route	Forward Rules	Network Application	Voice	System Tools			
Network Applicati	on > USB Appl	ication							
FTP Client Config	uration								
		om FTP server to the USB mass storage device by config FTP client.							
You can down	noad the me m								
FTP URL:		ftp://192.168.10	0.3/*.*						
Port Number:		21							
User Name:		123							
QoS Configuration Password:		•••							
Device:		No USB Device	• •						
Local Path:									
		Download							
User Name	Password	Port Number	Downloa	nd URL	Local Path	State			
FTP Server Confi	guration								
You can shar	e data of USB r	mass storage de	vice in LAN by confi	g FTP Server.					
Enable FTP Sen	/er:								
User Name:		root							
Password:		•••••							
Device:		No USB Device							
Root Directory P	ath:								
		Apply C:	ancel						
	VAN LAN V Network Applicati FTP Client Config You can down FTP URL: Port Number: User Name: Password: Device: Local Path: Vou can shart FTP Server Config You can shart Enable FTP Sen Password: Device: Koot Directory P	Total Value Secure Network Application > USB Application VSB Application FTP Client Configuration You can download the file fire You can download the file fire Port Number: Image: Configuration User Name: Image: Configuration Password: Image: Configuration Device: Image: Configuration User Name: Password Device: Image: Configuration To can share data of USB results Image: Configuration You can share data of USB results Image: Configuration Image: Configuration Image: Configuration You can share data of USB results Image: Configuration Image: Configuration Image: Configuration You can share data of USB results Image: Configuration Image: Configuration Image: Configuration Image: Configuration Image: Configuration You can share data of USB results Image: Configuration Image: Configuration Image: Co	ANN LAN WLAN Security Route Network Application > USB Application FTP Client Configuration You can download the file from FTP server to Password: 123 Password: Local Path: User Name Password: Local Path: TP Server Configuration Vou can share data of USB mass storage de Enable FTP Server: Vou can share data of USB mass storage de Enable FTP Server: Vou can share data of USB mass storage de Root Directory Path: Apply Canton Configuration	VAN LAN VULAN Security Route Forward Rules Network Application > USB Application FTP Client Configuration You can download the file from FTP server to the USB mass store FTP URL: ftp://192.168.100.3/*.* Port Number: 21 User Name: 123 Password: ••• Device: No USB Device v Local Path: Download User Name Password Port Number Download User Name Password Download Download User Name Password Port Number 0 User Name Password Download Download User Name root Password: · Vou can share data of USB mass storage device in LAN by configuration You can share data of USB mass storage device in LAN by configuration Cancel No USB Device v Root Directory Path: · Apply Cancel	7 NAN LAN VMLAN Security Route Forward Rules Network Application Network Application > USB Application FTP Client Configuration You can download the file from FTP server to the USB mass storage device by config FTF PTP URL: ftp://192.168.100.3/*.* Port Number: 21 User Name: 123 Device: No USB Device ♥ Local Path:	VAN LAN VLAN Security Route Forward Rules Network Application Voice Network Application > USB Application FTP Client Configuration You can download the file from FTP server to the USB mass storage device by config FTP client. FTP URL: fp://192.168.100.3/*.* Port Number: 21 User Name: 123 Password: •••• Device: No USB Device • Local Path: •••• Download URL Local Path: ••• Download URL Local Path: ••• Download USE Name Password: ••• Download URL Local Path: ••• Device: No USB Device • You can share data of USB mass storage device in LAN by config FTP Server. User Name: root Password: ••••• Device: No USB Device • Root Directory Path: • Apply Cancel			

Figure 3-27 USB Application

2. Click **Download** to download files from the FTP server to the USB storage device.

Table 3-12 describes the parameters related to the USB.

Parameter	Description
Download URL	Indicates the path of the file downloaded through FTP.
Port Number	Indicates the FTP port number. It is set to 21 by default. Generally, the setting is not required.
User Name	Indicates the user name for connecting to the FTP server. If the FTP server supports anonymous login, the setting is not required.
Password	Indicates the password for connecting to the FTP server. If the FTP server supports anonymous login, the setting is not required.

Table 3-12 Parameters related to the USB

Parameter	Description
Device	Indicates the drive of the external USB device for saving the file downloaded through FTP. When the USB storage device is connected to the USB port, the drop-down list is available.
Local Path	Indicates the path for saving the FTP-downloaded file to the external USB device. If the path is not entered, the path specified in Download URL is used by default.

ALG Configuration

1. Click the **Network Applications** tab and then choose **ALG Configuration** from the navigation tree. In the pane on the right, determine whether to enable the FTP or TFTP, as shown in **Figure 3-28**.

Figure 3-28 ALG Configuration

	HG8247										
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
USB Application		Ne	twork App	lication > A	LG Configura	tion					
ALG Configuration											
UPnP Configuration		On this page, you can enable the ALG of a service by selecting the corresponding check box. Then, the applications a hardware can be used.								ie applications and	
ARP Configuration		- 1									
Portal Configuration		E	nable FTP	ALG:							
DDNS Configuration		E	nable TFT	P ALG:							
IGMP Configuration		E	nable H32	3 ALG:							
QoS Configuration		E	nable SIP	ALG:							
Terminal Limit Configu	ration	E	nable RTS	P ALG:							
					A	pply	Cancel				

2. Click Apply.

When the NAT function is enabled, the application level gateway (ALG) function needs to be enabled to ensure that some application software and hardware can be normally used.

UPnP Configuration

1. Click the **Network Applications** tab and then choose **UPnP Configuration** from the navigation tree. In the pane on the right, determine whether to enable the UPnP, as shown in **Figure 3-29**.

Figure 3-29 UPnP Configuration

	HG82	.47								Logout	
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
USB Application		Network Application > UPnP Configuration									
ALG Configuration											
UPnP Configuration On this page, you can enable or disable the universal plug and play (UPnP) function(The UPnP function supports plug- and-play and automatic discovery of multiple types of network equipment. If the UPnP function is enabled, a device that										lon supports plug- bled, a device that	
ARP Configuration			supports and lear	s the UPnP n the perfoi	function can : mance data (access net of the other	works, obtain an IP a 'devices).	address, transmit perform	iance data,	detect other devices,	
Portal Configuration		ы.					· ·			_	
DDNS Configuration		E	nable UP	nP:	V						
IGMP Configuration					A	oply	Cancel				
QoS Configuration											
Terminal Limit Configu	uration										

2. Click Apply.

Universal Plug and Play (UPnP) is the name of a group of protocols. The UPnP supports zero configuration networking and automatic discovery of different network devices. If the UPnP is enabled, the UPnP-enabled device can be dynamically connected to the network to obtain the IP address, obtain the transfer performance, discover other devices, and learn the performance of the other devices. The UPnP-enabled device can be automatically disconnected from the network, without affecting the device or other devices.

When the UPnP is enabled, the LAN-side PC automatically finds the ONT, which is considered as a peripheral device of the PC and is plug-and-play. After running application software on the PC, port mapping entries are automatically generated on the ONT through the UPnP protocol, thus improving the running speed.

ARP Configuration

1. Click the **Network Applications** tab and then choose **ARP Configuration** from the navigation tree. In the pane on the right, click **New**. In the dialog box that is displayed, set the resolution rule between a MAC address and an IP address, as shown in **Figure 3-30**.

Figure 3-30 ARP Configuration

	HG8247										
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rule	es Netwo	rk Application	Voice	System Tools
USB Application		Ne	twork App	lication ≻ AF	RP Configura	tion					
ALG Configuration											
UPnP Configuration		On this page, you can configure the static ARP, including the IP address and MAC address.									
ARP Configuration											
Portal Configuration											New Delete
DDNS Configuration					IP A	ddress			MAC	Address	
IGMP Configuration		IF	Address:		19:	2.168.100.10) *				
QoS Configuration		М	AC Addres	ss:	00:	15:17:20:EF:	97 *				
Terminal Limit Configu	iration				A	pply Ca	ncel				

2. Click Apply.

Static ARP means to manually add an ARP entry on an ONT. A static ARP never ages and can only be deleted manually. If the mapping between the IP address and MAC address of the peer device is available, configuring a static ARP entry benefits a lot. For example, the dynamic ARP entry learning is omitted during device communication and the static ARP entry prevents a device from learning an incorrect ARP entry in the case of malicious attacks.

Portal Configuration

1. Click the **Network Application** tab and then choose **Portal Configuration** from the navigation tree. In the right pane, enable/disable the portal function and set the redirection URL addresses for different types of devices, as shown in **Figure 3-31**.

	HG82	.47								Logout		
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Applicatio	n Voice	System Tools		
USB Application		Net	work App	lication ≻ P	ortal Configu	iration						
ALG Configuration												
UPnP Configuration			On this p	oage, you ca on you acce	an configure ss the intern	the portal in et first time	formation. The brow	/ser will display a spe	cified page acc	ording to your device		
ARP Configuration			tipo inic	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
Portal Configuration		Er	nable Por	tal:								
DDNS Configuration		De	efault Rec	lirection UF	RL: WV	www.300.com						
IGMP Configuration										New Delete		
QoS Configuration				C	evice type			Redirection UF	L address			
Terminal Limit Configu	uration			-								
	Device Type:				C	omputer 🔽						
					ss: w	www.soox.com *						
					1	Apply C	ancel					

Figure 3-31 Portal configuration

2. Click Apply.

If the type of the device that you use is not configured with a URL address or the device type cannot be identified, the system redirects to the default URL address upon the first access to the Internet.

DDNS Configuration

 Click the Network Application tab and then choose DDNS Configuration from the navigation tree. In the right pane, configure DDNS parameters, including Service Provider, Host Name, Service Port, Domain Name, Username, and Password, as shown in Figure 3-32.

Figure 3-32 DDNS configuration

	HG82	247								Logout		
HUAWEI	Status	WAN	LAN	WLAN	Security	Route Fo	rward Rules	Network Application	Voice	System Tools		
USB Application		N	etwork App	lication > DI	DNS Configur:	ation						
ALG Configuration												
UPnP Configuration			Un this page, you can configure the DDNS parameters, including the service provider, the username and password, als the domain name you want to update.									
ARP Configuration												
Portal Configuration						a 1				New Delete		
DDNS Configuration				WA	N Name	Status	s	ervice Provider		Domain Name		
IGMP Configuration		F	nable DD	NS [.]								
QoS Configuration		v	VAN Nom		1.15							
Terminal Limit Config	uration	, v	MAN Name.			inentiaen_nc_x						
		5	Service Pro	vider:	ayna	ins-static	*					
		H	lost Name	¢	men	members.dyndns.org *(1-255)Character						
		9	Service Po	t	80		*(1-65	5535)				
		0)omain Na	ime:	www	abc123.com/	*(1-25	5)Characters				
		U	Jsername		user		*(1-25	55)Character				
		F	assword:		••••	•	*(1-25	55)Character				
					Ap	ply Cance	el					

2. Click Apply.

Dynamic domain name service (DDNS) associates a static domain name with the dynamic IP address of its host.

Assume that server A provides HTTP or FTP service and it is connected to the Internet using routers. If server A obtains an IP address through DHCP, or server A is connected to the Internet through PPPoE, PPTP, or L2TP, the IP address is an dynamic IP address. That is, its IP address may change each time when server A initializes its connection to the Internet.

The mapping between the domain name and IP address provided by the domain name service (DNS) server is static, and the mapping does not update when the IP address changes. Therefore, when the IP address of server A changes, users on the Internet cannot access server A with domain names.

With DDNS, which associates a static domain name with the dynamic IP address of its host, users on the Internet can access the server only with domain names.

IGMP Configuration

 Click the Network Application tab and then choose IGMP Configuration from the navigation tree. In the right pane, configure the IGMP parameters, as shown in Figure 3-33.

MG8247											
HUAWEI Status	WAN LAN WLAN S	Security Route	Forward Rules	Network Application	Voice System Tools						
USB Application	3 Application Network Application > IGMP Configuration										
ALG Configuration	guration										
UPnP Configuration	Tguration On this page, you can set the IGMP parameters; You can enable the IGMP for the WAN interface by choosing HomeGateway as the IGMP work mode. You can configure the parameters such as robustness, general query interval,										
ARP Configuration	general response time, special query number, special query interval and special response time only when IGMP work										
Portal Configuration	mude is Humeoateway and iome proxy are enabled.										
DDNS Configuration	IGMP Enable:	Enable	~								
IGMP Configuration	IGMP Work Mode:	Proxy	~								
QoS Configuration	Robustness:	2	*(1~10 det	*(1~10 default value: 2)							
Terminal Limit Configuration	General query interval:	125	*(30~5000	is default value: 125s)							
	General query response t	ime: 100	*(1~255 u	nit: 0.1 s default value: 100))						
	Specific query number:	2	*(1~10 det	fault value: 2)							
	Specific query interval:	10	*(1~5000	*(1~5000 unit: 0.1s default value: 10)							
	Specific query response ti	ime: 10	*(1~255 u	nit: 0.1 s default value: 10)							
		Apply C	Cancel								

Figure 3-33 IGMP configuration

2. Click Apply.

The IGMP function of WAN ports can be enabled only when IGMP works in the gateway mode. Only when IGMP proxy is enabled in the gateway mode, parameters such as **Robustness**, **General query interval**, **General query response time**, **Specific query number**, **Specific query interval**, and **Specific query response time**.

QoS Configuration

1. Click the **Network Application** tab and then choose **QoS Configuration** from the navigation tree. In the right pane, enable/disable QoS and select a QoS mode, as shown in **Figure 3-34**.

Figure 3-34 QoS configuration

	HG8247		Logout								
HUAWEI	Status WAN LAN WLAN Sec	urity Route Forward Rules Network App	plication Voice System Tools								
USB Application	Network Application > QoS Co	nfiguration									
ALG Configuration		On this page, you can set the QoS parameters. You can enable or disable QoS service and select a mode for QoS.									
UPnP Configuration	On this page, you can set										
ARP Configuration	Enable QoS:										
Portal Configuration	QoS Mode:	INTERNET,TR069									
DDNS Configuration		Apply Cancel									
IGMP Configuration											
QoS Configuration											
Terminal Limit Configurat	lion										

2. Click Apply.

Terminal Limit Configuration

 Click the Network Application tab and then choose Terminal Limit Configuration from the navigation tree. In the right pane, configure relative parameters, as shown in Figure 3-35.

Figure 3-35 Terminal Limit Configuration

	HG82	247							Logout			
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools		
USB Application		Net	work Appl	lication > Te	rminal Limit	Configurat	on					
ALG Configuration												
UPnP Configuration			On this page, you can set the maximum number of terminal; The terminal whose index exceeding the number limit will be forbidden to access the internet.									
ARP Configuration												
Portal Configuration		Lir	Limit Mode: Type Limit 🗸									
DDNS Configuration					Apply	Cancel						
IGMP Configuration												
QoS Configuration										New Delete		
Terminal Limit Configu	ration			Enable		Dev	ісе Туре	Туре	Limit Numb	er		
		En	able Type	e Limit:	V							
	Device Type:				Computer							
	Type Limit Number: 4 *(0-253)											
					Apply	Cancel						

2. Click Apply.

3.3.9 Voice

This topic describes how to configure the voice service through the Web page.

The Web page for configuring the voice service varies with the loaded voice protocols. The following topics describe the Web pages after the H.248 protocol and the SIP protocol are loaded.

- Device software version V100R002C00 supports the SIP protocol.
- Device software version V100R002C01 supports the H.248 protocol.
VoIP Interface Configuration

- Configuring VoIP Interface SIP Protocol
 - 1. Click the **Voice** tab and then choose **VoIP Basic Configuration** from the navigation tree. In the pane on the right, parameters of a VoIP interface can be configured, including the IP addresses of the primary server and secondary server, and digitmap, as shown in **Figure 3-36**.

Figure 3-36 VoIP Interface Configuration - SIP protocol

	HG8247									Logout	
HUAWEI	Status WAN	LAN	WLAN	Security	Route	Forward Ru	es	Network Application	Voice	System Tools	
VolP Basic Configuration	on	Voice > VoIP	Basic Con	figuration							
VolP Advanced Configu	ration	interface Ba You can	isic Param set the voic	eters :e interface ba	asic param	eters.					
		Primary Pro	xy Address	: 172	2.23.111.11		to PI)*	r Domain)			
		Primary Pro	xy Port:	506	30						
		Standby Pr	oxy Address	s:							
		Standby Pr	oxy Port:	506	5060 (1-65535)						
		Home Dom	sof	soft3000.huawei.com (IP or Domain)							
		Local Port:			5060 *(1-65535)						
		Digitmap:		777	77773000						
		Digitmap M	latch Mode:	Mir	Min 💌						
		Registratio	n Period:	600	600 (Uint:s)(1~65534)						
		Signaling F	Port:	2_1 me:	2_VOIP_R_VID_200 (Select the name of the WAN that will carry the voice signaling messages.)						
		Media Port:		sigr	(Select Media for voice signaling. The media port is same with signaling port when it is empty.)						
		Region:		CN	I - China	-]				
				A	pply C	Cancel					

2. Click Apply.

Table 3-13 describes the parameters used for configuring a VoIP interface based on the SIP protocol.

Parameter	Description
Primary Server	
Proxy Server Address	Indicates the IP address (provided by the ISP) of the primary SIP proxy server.
Proxy Server Port	Indicates the ID (provided by the ISP) of the port used for communication between the primary SIP proxy server and the VoIP terminal. The ID ranges from 1 to 65535 and the default ID is 5060.
Secondary Server	
Proxy Server Address	Indicates the IP address (provided by the ISP) of the secondary SIP proxy server.

|--|

Parameter	Description					
Proxy Server Port	Indicates the ID (provided by the ISP) of the port used for communication between the secondary SIP proxy server and the VoIP terminal. The ID ranges from 1 to 65535 and the default ID is 5060.					
General						
Home Domain	Indicates the domain of the registration server of the VoIP terminal in network communications, such as softx3000.huawei.com.					
Local Port	Indicates the ID of the local port on the ONT. The ID ranges from 1 to 65535 and the default ID is 5060.					
Digitmap	Indicates the voice digitmap.					
Digitmap Match Mode	 Indicates the digitmap matching mode, including Min and Max. Min: If a short digitmap is matched, the system 					
	 Max: If a short digitmap is matched, the system does not immediately report the number to the call proxy but starts the short timer. If a user does not continue dialing digits, the system reports the number to the call proxy after the short timer times out; if the user continues dialing digits and the number matches the long digitmap, the system reports the number that matches the digitmap to the call proxy. 					
Region	Indicates the country code.					
Signaling Port Name	Indicates the signaling WAN interface used for connecting the VoIP terminal to the SIP server.					

• VoIP Interface Configuration - H.248 Protocol

 In the navigation tree on the left, choose Voice > VoIP Interface Configuration. In the pane on the right, parameters of a VoIP interface can be configured, including the primary MGC server, secondary MGC server, and digitmap, as shown in Figure 3-37.

	HG82	47										
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Ru	les I	Network Application	Voice	System Tools	
VolP Basic Configuration	on	Voi	ce > VolP	Basic Confi	iguration							
VolP Advanced Configu	ration	Inte	erface Ba You can s	sic Parame set the voice	ters e interface b	pasic parame	eters.					
		Pr	imary MG	CAddress:	17	72.23.1.2		*(IP or [Domain)			
		Primary MGC Port:				344		*(1-655	35)			
		St	andby MG	C Address:								
		St	andby MG	C Port:	29	944		(1-6553	35)			
		MG Domain:			so	soft3000.huawei.com						
		Local Port:		29	2944 *(1-65535)							
		Device Name:										
		MID Format:			IP							
		Digitmap Match Mode:			M	Min						
		R	TP TID Pre	fix:	A1	100						
		St	art Numbe	er of RTP TI	D: 0							
		W	idth of RTI	P TID Numb	ber: 6							
	Signaling Port:			2. me	2_VOIP_R_VID_200 [] (Select the name of the WAN that will carry the voice signaling messages.)							
		Me	edia Port:		sig	analing port r	(Sele) 💽 name when it i	ct WAN r s empty.)	name for media. The r)	media port n	ame is same with	
		R	egion:		С	N - China	-	·				
					1	Apply C	ancel					

Figure 3-37 VoIP Interface Configuration - H.248 protocol

2. Click Apply.

 Table 3-14 describes parameters used for configuring a VoIP interface based on the H.248 protocol.

Table 3-14 Parameters used for configuring a V	VoIP interface based on the H.248 protocol
--	--

Parameter	Description
Primary Server	
MGC Address	Indicates the IP address (provided by the ISP) of the primary MGC server.
MGC Port	Indicates the ID (provided by the ISP) of the port used for communication between the primary MGC server and the VoIP terminal. The ID ranges from 1 to 65535 and the default ID is 2944.
Secondary Server	
MGC Address	Indicates the IP address (provided by the ISP) of the secondary MGC server.
MGC Port	Indicates the ID (provided by the ISP) of the port used for communication between the secondary MGC server and the VoIP terminal. The ID ranges from 1 to 65535 and the default ID is 2944.
General	

Parameter	Description
MG Domain	Fill the domain name when Register Format is set to DomainName , such as user.huawei.com.
Local Port	Indicates the ID of the local port on the ONT. The ID ranges from 1 to 65535 and the default ID is 2944.
Device Name	Fill the device name when Register Format is set to DeviceName .
Register Format	Indicates the MG registration format. It can be the MG domain name, IP address, or device name. The MG register format must be the same as the register format provided by the ISP.
Digitmap Match Mode	Indicates the digitmap matching mode, including Min and Max.
	• Min: If a short digitmap is matched, the system immediately reports the number to the call proxy.
	• Max: If a short digitmap is matched, the system does not immediately report the number to the call proxy but starts the short timer. If a user does not continue dialing digits, the system reports the number to the call proxy after the short timer times out; if the user continues dialing digits and the number matches the long digitmap, the system reports the number that matches the digitmap to the call proxy.
Signaling Port Name	Indicates the signaling WAN interface used for connecting the VoIP terminal to the MGC server.
Region Settings	Indicates the country code.

VoIP Advanced Configuration

• VoIP Advanced Configuration - SIP protocol

1. Click the **Voice** tab and then choose **VoIP** Advanced Configuration from the navigation tree. In the pane on the right, you can configure the parameters, as shown in Figure 3-38.

HG8	3247			Logout								
HUAWEI Status	WAN LAN WLAN Sec	urity Route Forward I	Rules Network Application	Voice System Tools								
VolP Basic Configuration	Voice > VoIP Advanced Config	juration										
VoIP Advanced Configuration	On this page, you can set in	iterface advanced parameters										
	Interface Advanced Parame	nterface Advanced Parameters										
	Enable Echo Cancellation:											
	Fax Transmode:	pass-through 💌										
	Fax Switchmode:	negotiation 💌										
	Profile Body:	1=4294967295;2=1;3=1;4=1;5=0;6=0;7=1;8=600;9=1;10=0;1 Profile Body: 1=0;12=0;13=1;14=1;15=0;16=0;17=0;18=0;19=0;20=1;21=1; 22=1;23=64;24=15;25=180;26=32;27=120;28=120;29=30;0										
	Software Parameters:	Default										
		Apply Cancel										
	User Advanced Parameters											
	Sequence	Register User Name	Auth User Name	Associated POTS								
	1	77770254	77770254@ont.huawei.com	1								
	2	77770255	77770255@ont.huawei.com	2								
	Codec	Period(ms)	Priority	Enable								
	G.711MuLaw	20 💌	2 (1-100)									
	G.711ALaw	20 🔹	1 (1-100)									
	G.729	20 -	3 (1-100)									
	G.722	20 -	4 (1-100)									
		Apply Cancel										

Figure 3-38 VoIP Advanced Configuration - SIP protocol

- 2. Click Apply.
- VoIP Advanced Configuration H.248 Protocol
 - 1. Click the **Voice** tab and then choose **VoIP** Advanced Configuration from the navigation tree. In the pane on the right, you can configure the parameters, as shown in Figure 3-39.

Figure 3-39 VoIP Advanced Configuration - H.248 Protocol

	HG82	47									
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
VoIP Basic Configurat	tion	Voi	ce > VolP	Advanced (Configuration						
VolP Advanced Config	juration		You can s	set the voic	e interface ad	vanced para	meters.				
		Er	able Ech	o Cancellat	ion: 🔽						
		Fa	x Transm	ode:	pass	-through	·				
		Fa	x Switchn	node:	nego	tiation	-				
		Pr	ofile Inde)	с	Defa	ult	•				
		Se	ftware Pa	rameters:	Defa	ult 🚽					
		St	art Negoti	ate Version	: 2 paran	neters.)	("0" indicate	s negotiating H.248 versi	on accordin	g to profile	
					Ap	ply C	ancel				

2. Click Apply.

3.3.10 System Tools

This topic describes how to use the system tools on the Web page, including using the tools to restart the device, restore the default configuration, and conduct the test.

Reboot

Click the **System Tools** tab and then choose **Reboot** from the navigation tree. In the pane on the right, click **Reboot** to restart the device, as shown in **Figure 3-40**.

Figure 3-40 Reboot

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syste	m Tools >	Reboot						
Configuration File										
USB Backup Restore	e CFG		On this p	age, you ca	in reboot the h	iome gatev	vay by clicking "Rebo	oot".		
Firmware Upgrade										
Restore Default Conf	iguration	F	Reboot							
Maintenance										
Log										
ONT Authentication										
Time Setting										
TR-069										
Advanced Power Ma	nagement									
Modify Login Passwo	ord									

CAUTION Save the configuration data before restarting the device. For details, see **Configuration File**.

Configuration File

Click the **System Tools** tab and then choose **Configuration File** from the navigation tree. In the pane on the right, click the button as required, as shown in **Figure 3-41**.

Figure 3-41 Configuration File

	HG82	247								Logout		
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools		
Reboot		Syste	m Tools :	Configura	tion File							
Configuration File												
USB Backup Restore	e CFG		You can (click "Save (Configuration'	' to save th	e current configurati	on to the flash memory.				
Firmware Upgrade												
Restore Default Com	figuration		ave Confi	iguration								
Maintenance												
Log		You can click "Download Configuration File" to back up the current configuration.										
ONT Authentication		D	ownload	Configurati	on File							
Time Setting			omnoud	conngaraa	0111110							
TR-069			lf vou ent	er the path	of the configu	ration file a	nd then click "Uploa	d Configuration File", your	home dat	eway will be updated		
Advanced Power Ma	inagement		with the s	saved config	guration file.			5 17	-	· ·		
Modify Login Passw	ord	Co	nfiguratio	n File:			Browse	Upload Configuratio	on File			

- Click **Save Configuration** to save the configuration file to the flash memory. This prevents data loss due to the restart of the device.
- Click **Download Configuration File**. In the dialog box that is displayed, click **Save**, specify the path of saving the configuration file, and then back up the file to the local disk.
- Click **Browse** following the **Configuration File** text box. In the dialog box that is displayed, select the configuration file to be uploaded. Click **Upload Configuration File** to upload the configuration file that is saved in the local disk. After the configuration file is successfully uploaded, the device automatically restarts and then the new configuration takes effect.



Before uploading the configuration file, choose the configuration file with the correct type and the name of the selected configuration file must not be the same as that of any file saved in the device. Otherwise, the configuration file fails to be uploaded.

USB Backup Restore CFG

Click the **System Tools** tab and then choose **USB Backup Restore CFG** from the navigation tree. In the pane on the right, the button as required, as shown in **Figure 3-42**.

Figure 3-42 USB Backup Restore CFG

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syster	n Tools >	USB Back	up Restore C	FG				
Configuration File										
USB Backup Restore	CFG	(On this pa	age, you ca	n backup con	figuration fi	les to the USB devic	e or restore configuration 1	ñles from t	he USB device.
Firmware Upgrade										
Restore Default Confi	guration	Rest	tore enab	le						
Maintenance		Ena	able resto	re from US	B:					
Log						Apply	Cancel			
ONT Authentication		Devi								
Time Setting		Baci	kup confi	guration						
TR-069		Dev	ice: NO	D USB DEV	ICE 🔽 🛛 Ba	ckup config	juration			
Advanced Power Man	agement									
Modify Login Passwo	rd									

- Select **Enable restore from USB** to configure whether the system supports fast recovery of the backed up configured file from the USB storage device.
- Click **Backup configuration** to back up the configuration file to the specified USB storage device.

After the configuration file in the USB storage device is successfully uploaded, the device is restarted and then the new configuration data takes effect.

Firmware Upgrade

1. Click the **System Tools** tab and then choose **Firmware Upgrade** from the navigation tree. In the pane on the right, click **Browse**. In the dialog box that is displayed, select the target software version of the device. Click **Update Firmware** to upgrade the software of the device, as shown in **Figure 3-43**.

Figure 3-43 Firmware Upgrade

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syster	m Tools >	USB Back	up Restore C	FG				
Configuration File										
USB Backup Restore	CFG		On this pa	ge, you cai	n backup cont	figuration fi	les to the USB devic	e or restore configuration	files from f	the USB device.
Firmware Upgrade										
Restore Default Confi	guration	Res	tore enab	le						
Maintenance		En	able resto	re from US	B:					
Log						Apply	Cancel			
ONT Authentication										
Time Setting		Вас	kup confi	guration						
TR-069		Dev	rice: NO) USB DEV	ICE 🔽 🛛 Ba	ckup config	juration			
Advanced Power Mar	agement									
Modify Login Passwo	rd									

2. After the upgrade is successful, a message is displayed indicating that the device needs to be reset. Click **Reset**. The configuration data takes effect after the device is reset.

Restore Default Configuration

Click the **System Tools** tab and then choose **Restore Default Configuration** from the navigation tree. In the pane on the right, click **Restore Default Configuration** to restore the factory defaults, as shown in **Figure 3-44**.

Figure 3-44 Restore Default Configuration

	HG82	.47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syster	m Tools >	Restore D)efault Config	uration				
Configuration File										
USB Backup Restore	CFG		On this p	age, you ca	n restore the	default con	figuration by clicking	"Restore Default Configu	ration".	
Firmware Upgrade										
Restore Default Conf	iguration	Re	estore De	fault Config	uration					
Maintenance										
Log										
ONT Authentication										
Time Setting										
TR-069										
Advanced Power Ma	nagement									
Modify Login Passwo	ord									



Exercise caution when you perform this operation because it restores factory defaults.

Maintenance

Click the **System Tools** tab and then choose **Maintenance** from the navigation tree. In the pane on the right, enter the destination IP address or host name for the ping test in the **Target** text box, and then click **Start**, as shown in **Figure 3-45**.

Figure 3-45 Ping test

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syster	n Tools ×	• Maintenar	ice					
Configuration File		Ping	Test							
USB Backup Restore	e CFG									
Firmware Upgrade		(On this pa	age, you ca	n check the co	onnectivity f	o the LAN or the Inte	rnet by performing a Ping	Test.	
Restore Default Cont	figuration									
Maintenance		Targ The	Target Start							
Log										
ONT Authentication		Main	tenance							
Time Setting			Fo and m	aintananca	nlogeo click	the "Mainte	anance End" button			
TR-069			lo end in	annenance	, piease click	une manne				
Advanced Power Ma	nagement	Ma	aintenand	e End						
Modify Login Passw	ord									

- If the ping test is successful, **The result** is displayed as **PASS**, that is, the ONT can interwork with the device with the destination IP address.
- If the ping test fails, **The result** is displayed as **FAIL**, that is, the ONT cannot interwork with the device with the destination IP address.

Log

Click the **System Tools** tab and then choose **Log** from the navigation tree. In the right pane, perform the required operations, as shown in **Figure 3-46**.

Figure 3-46 Log

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syster	n Tools >	Log						
Configuration File		Enat	ble and s	et the filter	Level					
USB Backup Restor	e CFG									
Firmware Upgrade			On this pa	age, you car	n set whether	to save the	log, set the filter lev	el and backup the log.		
Restore Default Cor	figuration									
Maintenance		Sav	/e Log:							
Log		Filt	er Level:		Error	*				
ONT Authentication					Apply	Cancel				
Time Setting		Dow	pland or	look mer le						
TR-069		Dow	nioau or	look over id	'ng					
Advanced Power Ma	anagement		rou can li Downloo	ook over the	running log v	vhich you h	ave backed up or do	which ad the log file to a lo	ical compu	iter. By clicking
Modify Login Passw	ord		Downioa	iu Log File ,	you can uowi	noau oper	adon log mes of the t	enninar to a locar compo	lei.	
		Do	wnload L	.og File						
		Mar Pro- Seri IP:1 HW SW	iufacturer ductClas: ialNumbe 92.168.1 Ver:120D Ver:V1R0	:Huawei Te s:HG8247; er:68776877 00.1; 0011; 02C04S902	chnologies C 700000001; 2T;	o., Ltd;				

- Select **Save Log** to enable the log saving function in the system.
- Select **Filter Level** to save system logs accordingly.
- Click **Download Log File**. In the dialog box that is displayed, click **Save**, specify the path for saving the log file, and save the log file to the local disk.

ONT Authentication

1. Click the **System Tools** tab and then choose **ONT Authentication** from the navigation tree. In the pane on the right, you can view or change the password and LOID for the registration of the ONT on the OLT, as shown in **Figure 3-47**.

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syster	n Tools >	ONT Auth	entication					
Configuration File										
USB Backup Restore	CFG		On this p: paramete	age, you ca rs.	n change the	paramete	rs for authentication of	on the OLT.Reset the ONT	after char	iging the
Firmware Upgrade							7			
Restore Default Conf	iguration	LO	ID:		huawei-ont		*(The loid must be l	between 1-24 characters i	n length)	
Maintenance		Pa	ssword:		123456		(The password mu	st be between 1-12 charac	ters in ler:	igth)
Log					Apply	Cancel				
ONT Authentication										
Time Setting										
TR-069										
Advanced Power Ma	nagement									
Modify Login Passwo	ord									

Figure 3-47 ONT Authentication

2. Click Apply.

Time Setting

1. Click the **System Tools** tab and then choose **Time Setting** from the navigation tree. In the pane on the right, set the parameters related to the system time, including the SNTP server, time zone, and daylight saving time (DST), as shown in **Figure 3-48**.

Figure 3-48 Time Setting

	HG82	47							Logout
HUAWEI	Status	WAN LAM	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		System Too	s > Time Sett	ing					
Configuration File									
USB Backup Restor	e CFG	On this	page, you ca	n configure th	e SNTP pro	tocol, time zone, and	I daylight saving time to a	ocurately s	set the time. Some of
Firmware Upgrade		the op	eration logs o	f the terminal r	nust have a	a time stamp.			
Restore Default Con	figuration	🗹 Auto S	ynchronizatio	n Network Tim	e Server				
Maintenance									
Log		Primary S	NTP Server:		clo	ck.fmt.he.net	~		
ONT Authentication		Seconda	y SNTP Serve	er:	clo	ck.nyc.he.net	~		
Time Setting		Time Zor	e:		(G	MT) Greenwich Mear	n Time: Dublin, Edinburgh	n, Lisbon, I	London 🔽
TR-069		Time Syn	chronization (>ycle:	36)	(s)		
Advanced Power Ma	anagement	i			A	pply Cancel			
Modify Login Passw	ord	🗹 Enabl	e Daylight Sav	ring Time					
		DOT Stor	Time/outh:	7/4/1/0/0/0			Veeles menth uuus stud.	daub bau	m minute e economi
		DOT Star	Time(ext):	9/4/1/0/0/0		mmww/dd/nh/mm	vss(m-month,w-week,d-)	day,n-hour	(m-minute,s-second)
		DOLEUR	mine(ext).	3/4/1/0/0/0			vss(m-month,w-week,d-)	uay,n-riour	,m-minute,s-second)
					A	pply Cancel			

2. Click Apply.

 Table 3-15 describes the parameters related to the system time.

Parameter	Description
Auto Synchronization Network Time Server	Indicates whether to enable the auto synchronization network time server, that is, SNTP server.
Primary SNTP Server	Indicates the primary SNTP server.
Secondary SNTP Server	Indicates the secondary SNTP server.
Time Zone	Indicates the time zone.
Time Synchronization Cycle	Indicates whether to enable the DST.
DST Start Time	Indicates the DST start time.
DST End Time	Indicates the DST end time.

Table 3-15 Parameters related to the system time

TR-069

1. Click the **System Tools** tab and then choose **TR-069** from the navigation tree. In the pane on the right, set the parameters related to the interconnection between the ONT and the TR-069 server, as shown in **Figure 3-49**.

Figure 3-49 TR-069

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Ru	les Network Application	Voice	System Tools
Reboot		Systen	n Tools >	TR-069						
Configuration File		ACS	paramet	ers config						
USB Backup Restore	CFG									
Firmware Upgrade		li	the TRO	69 auto-pro	visioning fun	ction is ena	bled, you can s	set the ACS parameters of the t	terminal.	
Restore Default Confi	iguration	- 1								
Maintenance		Enable Period Inform:								
Log		Per	iod Inforn	n Interval:		43200 *[1 - 2147483647](s)				
ONT Authentication		Peri	iod Inforn	n Time:				ample:20(09-12-20T12:23:34)	
Time Setting		ACS	URL:			tp://10.16	7.18.188:9090			
TR-069		ACS	3 User Na	ame:		hgw		*		
Advanced Power Mar	nagement	ACS	8 Passwo	ord:		•••		*(Password length is from 1 to	o 256 char	acters)
Modify Login Passwo	rd	Cor	nection I	Request Us	ser Name:	itms		*		
		Cor	nection I	Request Pa	assword:	•••		*(Password length is from 1 to	256 char	acters)
						Apply	Cancel			

Configuring the interconnection between the ONT and the TR-069 requires creating a WAN interface. In addition, **Service List** of the WAN interface must contain the TR069. For details, see **WAN Configuration**.

2. Click Apply.

Table 3-16 describes the TR-069 parameters.

Table 3-16 TR-069	parameters
-------------------	------------

Parameter	Description
Period Inform	Indicates whether to enable the notification function.
	• If the notification function is enabled, the ONT actively sends a connection request to the TR-069 server.
	• If the notification function is disabled, the ONT does not actively send a connection request to the TR-069 server.
	When the notification function is enabled, the Period Inform Interval and Period Inform Time parameters can be set.
Period Inform Interval	Indicates the interval for the ONT to send a connection request to the TR-069 server.
Period Inform Time	Indicates the time for the ONT to send a connection request to the TR-069 server.
ACS URL	Indicates the address of the TR-069 server to which the ONT sends a connection request.

Parameter	Description
ACS User Name	Indicates the user name for the ONT to register with the TR-069 server.
ACS Password	Indicates the password for the ONT to register with the TR-069 server.
Connection Request User Name	Indicates the user name to be carried when the TR-069 server initiates a connection request to the ONT.
Connection Request Password	Indicates the password to be carried when the TR-069 server initiates a connection request to the ONT.

Advanced Power Management

1. Click the **System Tools** tab and then choose **Advanced Power Management** from the navigation tree. In the pane on the right, you can start the ONT energy conservation mode and set the power saving mode, as shown in **Figure 3-50**.

	HG82	47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		System	n Tools >	Advanced I	Power Manag	ement				
Configuration File										
USB Backup Restor	e CFG	0	n this pa	ge, you car	i set the powe	er managei	ment mode of the Ol	NT.		
Firmware Upgrade										
Restore Default Cor	figuration	Enabl	le power	mode con	figuration					
Maintenance		Enat	ble:							
Log		Chec	k the box	cunder "Er	nable" to com	tinue to us	e the service while	the system is in battery (backup) n	iode.
ONT Authentication		Serv	rice Type		Enable					
Time Setting		USB):							
TR-069		LAN			V					
Advanced Power M	anagement	WLA	NI:							
Modify Login Passw	ord	VOIO	CE:							
		CAT	V:		V					
		Rem	note Man	agement:	V					
					Apply	Cancel				

2. Click Apply.

Modify Login Password

1. Click the **System Tools** tab and then choose **Modify Login Password** from the navigation tree. In the right pane, change the password of the **root** user, as shown in **Figure 3-51**.

Figure 3-51 Modify Login Password

	HG82	.47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syste	m Tools >	• Modify Log	gin Password					
Configuration File										
USB Backup Restore	e CFG		On this pa	age, you ca	n change the	password	of the root user to er	nsure security and make it	easy to re	emember.
Firmware Upgrade										
Restore Default Configuration		Us	Username:		root	root				
Maintenance		Ne	New Password:		•••••	(Password length is from 1 to 64 characters)				
Log		Co	Confirm Password:		•••••		(Password length is from 1 to 64 characters)			
ONT Authentication					Apply	Can	cel			
Time Setting										
TR-069										
Advanced Power Management										
Modify Login Passw	ord									

2. Click Apply.

4 Service Configuration Examples

About This Chapter

This topic provides examples of how to configure the Internet access service, voice service, and Wi-Fi access service.

Context

The BMS V200R012C05 is used in the following configuration examples. The screen snapshots may vary with different N2000 BMS versions but the configuration procedures are similar. For details, see the associated configuration manual.

4.1 Introduction to the Configuration Method

This topic lists the configuration methods supported by the Internet access service, voice service, and Wi-Fi access service.

4.2 Commissioning

Before configuring services on the ONT, you need to add an ONT through the OLT CLI or the N2000 BMS and configure associated traffic streams and service parameters. If you configure services on the ONT using the TR-069 server, you need to add on ONT on the TR-069 server. This topic describes how to perform configurations before configuring services on the ONT.

4.3 XML Configuration Methods

4.4 Configuring the Internet Access Service

This topic provides an example of how to configure the Internet access service.

4.5 Configuring a SIP-based Voice Service

This topic provides an example of how to configure the SIP-based voice service.

4.6 Configuring the H.248-based Voice Service

This topic provides an example of how to configure the H.248-based voice service.

4.7 Configuring the Wi-Fi Access Service

This topic provides an example of how to configure the Wi-Fi access service.

4.1 Introduction to the Configuration Method

This topic lists the configuration methods supported by the Internet access service, voice service, and Wi-Fi access service.

 Table 4-1 lists the configuration methods supported by the Internet access service, voice service, and Wi-Fi access service.

Service Type	Through the Web Page	Through the N2000 BMS	Through the TR-069 server
Internet access service	Supported	Supported	Supported
Voice service	Supported	Supported	Supported
Wi-Fi access service	Supported	Not supported	Supported

Table 4-1 Supported configuration methods

4.2 Commissioning

Before configuring services on the ONT, you need to add an ONT through the OLT CLI or the N2000 BMS and configure associated traffic streams and service parameters. If you configure services on the ONT using the TR-069 server, you need to add on ONT on the TR-069 server. This topic describes how to perform configurations before configuring services on the ONT.

4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) This topic describes how to add an ONT and configure relevant service ports for the ONT by means of the OLT CLI before configuring services for the ONT.

4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS) This topic describes how to add an ONT and configure relevant service ports for the ONT by means of the OLT CLI before configuring services for the ONT.

4.2.3 Commissioning Interoperation Between the TR-069 Server and the ONT Through the Web Page

To configure and issue ONT services using the TR-069 server, you need to add the ONT on the TR-069 server so that the TR-069 server can manage the ONT.

4.2.4 Commissioning Interoperation Between the TR-069 Server and the ONT Through the NMS To configure and issue ONT services using the TR-069 server, you need to add the ONT on the TR-069 server so that the TR-069 server can manage the ONT.

4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT)

This topic describes how to add an ONT and configure relevant service ports for the ONT by means of the OLT CLI before configuring services for the ONT.

Data Plan

Table 4-2 provides the data plan for commissioning the interoperation between the OLT and the ONT (through CLI of the OLT)..

Table 4-2 Data plan for commissioning the interoperation between the OLT and the ONT (through CLI of the OLT)

Parameter	Data
OLT	• SVLAN ID:
	 L2 Internet access service (ONT working in bridge mode): 100
	 L3 Internet access service (ONT working in gateway mode): 150
	- Voice service (SIP/H.248): 200
	- Wi-Fi: 300
	- TR-069 server management channel: 320
	 VLAN type: smart VLAN The VLAN attribute of Internet access service and Wi-Fi service is QinQ.
	• Upstream port: 0/19/0
ONT	• Port ID: 0/2/0
	• ONT ID: 0
	 ONT authentication mode: SN (485754430DBCEA03)
	• CVLAN ID: planned to be the same as the SVLAN ID
	• L2 and L3 Internet access services: ETH1 and ETH2 (indicating LAN 1 and LAN 2 of the device interface)
Traffic profile	 Internet access/Wi-Fi/TR-069 server management channel:
	- Profile ID: 8
	- CIR: 4 Mbit/s
	- Priority: 1
	Packets are scheduled according to the priorities carried in the packets.
	• Voice service:
	- Profile ID: 9
	 Upstream and downstream rates: unlimited
	- Priority: 6
	Packets are scheduled according to the priorities carried in the packets.

Parameter	Data
DBA profile	 Profile ID: 12 DBA profile type: type 2 (assured bandwidth 10240 kbit/s)
Line profile	 Profile ID: 12 Upstream FEC: disabled (default) QoS mode: priority queue Internet access/Wi-Fi/TR-069 server management channel: 1 Voice service: 3 Mapping mode: VLAN (default) GEM ports 0-4 for the L2 Internet access service, L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively.
Service profile	 Profile ID: 12 Ports of the HG8240 or HG8245: 4 Ethernet ports 2 POTS ports Ports of the HG8247: 1 CATV port 4 Ethernet ports 2 POTS ports

Flowchart

Figure 4-1 shows the flowchart for commissioning the interoperation between the OLT and the ONT (through CLI of the OLT).



Figure 4-1 Flowchart for commissioning the interoperation between the OLT and the ONT (through CLI of the OLT)

Procedure

Step 1 Create SVLANs and add an upstream port to them.

Set SVLANs 100, 150, 200, 300, and 320 for the L2 Internet access service, L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively. Create smart SVLANs and set the attributes of the SVLANs for the Internet access service and Wi-Fi service to QinQ. Add upstream port 0/19/0 to the SVLANs.

```
huawei(config)#vlan 100,150,200,300,320 smart
huawei(config)#vlan attrib 100,150,300 q-in-q
huawei(config)#port vlan 100,150,200,300,320 0/19 0
```

Step 2 Configure the traffic profile.

Run the **display traffic table ip** command to query the existing traffic profiles in the system. If the traffic profiles existing in the system do not meet the requirements, run the **traffic table ip** command to add a traffic profile.

Set the priorities of the traffic profiles for Internet access/Wi-Fi/TR-069 server management channel and voice service to 1 and 6 respectively. The larger the value, the higher the priority.

```
huawei(config)#traffic table ip index 8 cir 4096 priority 1 priority-policy tag-In-
Packag
huawei(config)#traffic table ip index 9 cir off priority 6 priority-policy tag-In-
Packag
```

Step 3 Configure the DBA profile.

Set the DBA profile ID to 12, profile type to type2 (assured bandwidth), and assured bandwidth of access users to 10240 kbit/s.

- The bandwidth type and the attribute of the DBA profile must be compatible with the service to be carried.
- The system supports five DBA profile types, namely, type1 (fixed bandwidth), type2 (assured bandwidth), type3 (assured bandwidth+maximum bandwidth), type4 (maximum bandwidth), and type5 (fixed bandwidth+assured bandwidth+maximum bandwidth).
- By default, the systems provides DBA profiles 1-9, each of which provides typical values for traffic parameters. By default, T-CONT 0 is bound to DBA profile 1.
- You can run the **display dba-profile** command to query the information about the DBA profile.

huawei(config)#dba-profile add profile-id 12 type2 assure 10240

Step 4 Configure the ONT line profile.

Create ONT line profile 12 and bind T-CONT 1 to DBA profile 12. In this way, the T-CONT can provide flexible DBA solutions based on the configurations of the DBA profile.

```
huawei(config)#ont-lineprofile gpon profile-id 12
huawei(config-gpon-lineprofile-12)#tcont 1 dba-profile-id 12
```

Add GEM ports 0-4 and bind them to T-CONT 1. Set the QoS mode to priority-queue, the priority-queue of Internet access/Wi-Fi/TR-069 server management channel to 1, and the priority-queue of the voice service to 3.

- To change the default QoS mode, run the **qos-mode** command to set the QoS mode to gem-car or flowcar, and then run the **gem add** command to set the index of the traffic profile bound to the GEM port.
- When the QoS mode is priority-queue, the default queue priority is 0; when the QoS mode is flow-car or gem-car, traffic profile 6 is bound to the GEM port by default (no rate limitation).
- To enable the FEC function, run the **fec-upstream enable** command to improve the reliability of data transmission between the OLT and the ONT.

```
huawei(config-gpon-lineprofile-12) #gem add 0 eth tcont 1 priority-queue 1
huawei(config-gpon-lineprofile-12) #gem add 1 eth tcont 1 priority-queue 1
huawei(config-gpon-lineprofile-12) #gem add 2 eth tcont 1 priority-queue 3
huawei(config-gpon-lineprofile-12) #gem add 3 eth tcont 1 priority-queue 1
huawei(config-gpon-lineprofile-12) #gem add 4 eth tcont 1 priority-queue 1
```

Configure the mapping between the GEM port and the ONT-side service to the VLAN mapping mode (default) and map the service ports of CVLANs 100, 150, 200, 300, 320 to GEM ports 0-4, which are used for configuring the L2 Internet access service, L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively.

```
huawei(config-gpon-lineprofile-12)#mapping-mode vlan
huawei(config-gpon-lineprofile-12)#gem mapping 0 0 vlan 100
huawei(config-gpon-lineprofile-12)#gem mapping 1 1 vlan 150
huawei(config-gpon-lineprofile-12)#gem mapping 2 2 vlan 200
huawei(config-gpon-lineprofile-12)#gem mapping 3 3 vlan 300
huawei(config-gpon-lineprofile-12)#gem mapping 4 4 vlan 320
huawei(config-gpon-lineprofile-12)#gem mapping 4 4 vlan 320
huawei(config-gpon-lineprofile-12)#gem mapping 4 4 vlan 320
```


After a profile is configured, run the **commit** command to make the configuration take effect before the system quits the profile mode.

Step 5 Configure the ONT service profile.

Set the ONT service profile ID to 12, the number of ETH ports on the ONT to 4, the number of POTS ports on the ONT to 2, and the VLAN ID of ETH1 (for L2 Internet access service) to 100.

- The port capability set in the ONT service profile must be the same as the actual ONT capability set. The HG8240 and HG8245 each have four ETH ports and two POTS ports. The HG8247 has one CATV port, four ETH ports, and two POTS ports.
- The **port vlan** command is use for specifying a port VLAN and managing the attribute of the UNI port on the ONT remotely. This command is applicable for only the L2 service (L2 Internet access service) when the ONT functions as a bridge device. When the ONT functions as a gateway device, the configuration of the port VLAN is implemented on the ONT Web page, NMS, or TR-069 server.

```
huawei(config)#ont-srvprofile gpon profile-id 12
huawei(config-gpon-srvprofile-12)#ont-port eth 4 pots 2------
configurations for HG8240/HG8245
huawei(config-gpon-srvprofile-12)#ont-port catv 1 eth 4 pots 2------
configurations for HG8247
huawei(config-gpon-srvprofile-12)#port vlan eth 1 100
huawei(config-gpon-srvprofile-12)#commit
```

+huawei(config-gpon-srvprofile-13)#quit

After a profile is configured, run the **commit** command to make the configuration take effect before the system quits the profile mode.

Step 6 Add an ONT.

Set the ONT ID to 0 and connect ONT 0 to GPON port 0; set the ONT authentication mode to the SN mode (SN 485754430DBCEA03) and the management protocol to OMCI; bind the ONT to ONT line profile 12 and ONT service profile 12.

- There are two modes of adding an ONT, offline mode and auto-find mode. In offline mode, run the **ont add** command to add an ONT offline; in auto-find mode, run the **ont confirm** command to confirm the automatically discovered ONT. This topic considers the HG8245 V100R002C00 as an example.
- Before confirming an automatically discovered ONT, run the **port portid ont-auto-find** command in the GPON mode to enable the ONT auto-find function of the port.

```
huawei(config)#interface gpon 0/2
huawei(config-if-gpon-0/2)#port 0 ont-auto-find enable
huawei(config-if-gpon-0/2)#display ont autofind 0
```

 Number
 F/S/P
 SN
 Password

 0
 0/2/0
 485754430DBCEA03

 huawei(config-if-gpon-0/2) #ont confirm 0 ontid 0 sn-auth 485754430DBCEA03 omci ont

huawei(config-if-gpon-0/2)#ont confirm 0 ontid 0 sn-auth 485/54430DBCEA03 omci ontlineprofile-id 12 ont-srvprofile-id 12

 After adding the ONT, run the display ont info command to query the current status of the ONT. Ensure that Run state of the ONT is up, Config state is normal, and Match state is match. huawei(config-if-gpon-0/2) #display ont info 0 all

	011E TD	234	0	D .	a	
E/S/P DBA	ONT-ID	SN	Control	Run	Coniig	Match
DDII			flag	state	state	state
type						
0/ 2/0	0	485754430DBCEA03	active	up	normal	match
SK						

• If the ONT state in the actual query result is different from the preceding description, run the **display ont capability** command to query the actual ONT capabilities, and then modify the created ONT profiles so that they are consistent with the ONT actual capabilities. Then, add an ONT again.

Step 7 Configure a native VLAN for an ONT port.

The native VLAN ID of ETH port 1 is 100.

The **ont port native-vlan** command is used for configuring the native VLAN of an ETH port. When a packet is transmitted to the ONT, a VLAN tag is added to the packet; when a packet is transmitted out of the ONT, the VLAN tag is removed from the packet. This command is applicable for only the L2 service (L2 Internet access service) when the ONT functions as a bridge device. When the ONT functions as a gateway device, the configuration of the port VLAN is implemented on the ONT Web page, NMS, or TR-069 server.

huawei(config-if-gpon-0/2) #ont port native-vlan 0 0 eth 1 vlan 100

Step 8 Configure service streams.

Configure service ports 1, 2, 3, 4, 5, and 6 for the L2 Internet access service, L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively. Set the traffic profile IDs of Internet access/Wi-Fi/TR-069 server management channel and voice service to 8 and 9 respectively.

```
scivic to 8 and 9 respectively.
huawei(config-if-gpon-0/2)#quit
huawei(config)#service-port 1 vlan 100 gpon 0/2/0 ont 0 gemport 0 multi-service
user-vlan 100 inbound traffic-table index 8 outbound traffic-table index 8
huawei(config)#service-port 2 vlan 150 gpon 0/2/0 ont 0 gemport 1 multi-service
user-vlan 150 inbound traffic-table index 8 outbound traffic-table index 8
huawei(config)#service-port 3 vlan 200 gpon 0/2/0 ont 0 gemport 2 multi-service
user-vlan 200 inbound traffic-table index 9 outbound traffic-table index 9
huawei(config)#service-port 4 vlan 300 gpon 0/2/0 ont 0 gemport 3 multi-service
user-vlan 300 inbound traffic-table index 8 outbound traffic-table index 8
huawei(config)#service-port 5 vlan 320 gpon 0/2/0 ont 0 gemport 4 multi-service
user-vlan 320 inbound traffic-table index 8 outbound traffic-table index 8
```

Step 9 Save the data.

huawei(config)#**save**

----End

Configuration File

```
vlan 100,150,200,300,320 smart
vlan attrib 100,150,300 g-in-g
port vlan 100,150,200,300,320 0/19 0
traffic table ip index 8 cir 4096 priority 1 priority-policy tag-In-Packag
traffic table ip index 9 cir off priority 6 priority-policy tag-In-Packag
dba-profile add profile-id 12 type2 assure 10240
ont-lineprofile gpon profile-id 12
tcont 1 dba-profile-id 12
gem add 0 eth tcont 1 priority-queue 1
gem add 1 eth tcont 1 priority-queue 1
gem add 2 eth tcont 1 priority-queue 3
gem add 3 eth tcont 1 priority-queue 1
gem add 4 eth tcont 1 priority-queue 1
mapping-mode vlan
gem mapping 0 0 vlan 100
gem mapping 1 1 vlan 150
gem mapping 2 2 vlan 200
gem mapping 3 3 vlan 300
gem mapping 4 4 vlan 300
commit
quit
ont-srvprofile gpon profile-id 12
ont-port eth 4 pots 2
ont-port catv 1 eth 4 pots 2
port vlan eth 1 100
commit.
quit
interface gpon 0/2
port 0 ont-auto-find enable
display ont autofind 0
ont confirm 0 ontid 0 sn-auth 485754430DBCEA03 omci ont-lineprofile-id 12 ont-
srvprofile-id 12
display ont info 0 all
ont port native-vlan 0 0 eth 1 vlan 100
service-port 1 vlan 100 gpon 0/2/0 ont 0 gemport 0 multi-service user-vlan 100
inbound traffic-table index 8 outbound traffic-table index 8
service-port 2 vlan 150 gpon 0/2/0 ont 0 gemport 1 multi-service user-vlan 150
inbound traffic-table index 8 outbound traffic-table index 8
service-port 3 vlan 200 gpon 0/2/0 ont 0 gemport 2 multi-service user-vlan 200
inbound traffic-table index 9 outbound traffic-table index 9
service-port 4 vlan 300 gpon 0/2/0 ont 0 gemport 3 multi-service user-vlan 300
inbound traffic-table index 8 outbound traffic-table index 8
service-port 5 vlan 320 gpon 0/2/0 ont 0 gemport 4 multi-service user-vlan 320
inbound traffic-table index 8 outbound traffic-table index 8
save
```

4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)

This topic describes how to add an ONT and configure relevant service ports for the ONT by means of the OLT CLI before configuring services for the ONT.

Prerequisite

If an ONT is added to the OLT by running commands, the ONT can be auto-discovered in the corresponding slot on the NMS. In this case, you do not need to add the ONT any more. You can skip this operation and proceed with service configuration.

Data Plan

Table 4-3 provides the data plan for commissioning the interoperation between the OLT and the ONT (through the NMS).

Table 4-3 Data plan for commissioning the interoperation between the OLT and the ON	NT
(through the NMS)	

Item	Data Plan
OLT	 SVLAN ID: L2 Internet access service (ONT working in bridge mode): 100 L3 Internet access service (ONT working in gateway mode): 150 Voice service (SIP/H.248): 200 Wi-Fi: 300 TR-069 server management channel: 320 VLAN type: Smart VLAN The VLAN attribute of Internet access service and Wi-Fi service is QinQ. Upstream port: 0/19/0
ONT	 Port ID: 0/2/0 ONT ID: 0 ONT authentication mode: SN (485754430DBCEA03) CVLAN ID: planned to be the same as the SVLAN ID L2 and L3 Internet access services: ETH1 and ETH2 (indicating LAN 1 and LAN 2 of the device interface)
Traffic profile	 Internet access/Wi-Fi/TR-069 server management channel: Name: ip-traffic-table_8 CIR: 4 Mbit/s Priority: 1 Packets are scheduled according to the priorities carried in the packets. Voice service: Name: ip-traffic-table_9 Upstream and downstream rates: unlimited Priority: 6 Packets are scheduled according to the priorities carried in the packets.
DBA profile	 Name: 10M-Assure DBA profile type: Assured Bandwidth (10240 kbit/s)

Item	Data Plan
Line profile	• Name: lineprofile-gpon
	• Upstream FEC function: OFF (default)
	• Traffic control: Priority Queue
	- Internet access/Wi-Fi/TR-069 server management channel: 1
	- Voice service: 3
	• Mapping mode: VLAN (default)
	• GEM ports 0-4 for the L2 Internet access service, L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively.
Service profile	• Name: srvprofile-gpon
	• Ports of the HG8240 or HG8245:
	- 4 Ethernet ports
	- 2 POTS ports
	• Ports of the HG8247:
	- 1 CATV port
	- 4 Ethernet ports
	- 2 POTS ports

Flowchart

Figure 4-2 shows the flowchart for commissioning the interoperation between the OLT and the ONT (through the NMS).

Figure 4-2 Flowchart for commissioning the interoperation between the OLT and the ONT (through the NMS)



Procedure

Step 1 Create SVLANs and add an upstream port to them.

Set SVLANs 100, 150, 200, 300, and 320 for the L2 Internet access service, L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively. Create smart SVLANs and set the attributes of the SVLANs for the Internet access service and Wi-Fi service to QinQ. Add upstream port 0/19/0 to the SVLANs. The following section considers l2 Internet access service as an example to describe how to create an SVLAN.

1. In the Main Topology, right-click the required OLT in the **Physical View** navigation tree and choose **Device Management** from the shortcut menu.

- 2. In the NE Explorer, choose VLAN from the navigation tree. In the VLAN list, right-click and choose Add from the shortcut menu.
- 3. In the dialog box that is displayed, click the **Basic Info** tab. On the **Basic Info** tab page, set the parameters as follows:
 - Set Vlan ID to 100.
 - Set Type to Smart VLAN.
 - Set Attribute to QinQ.

Figure 4-3 shows how to configure an SVLAN.

Figure 4-3 Configuring an SVLAN

Add VLAN			×
Base Info Configure VLAN			
	VLAN ID(1-4095):	100	*
	Name:	VLANID_100	*
	Alias:		
	Туре:	Smart VLAN	*
	Attribute:	QinQ	*
	VLAN Priority:	Unconfigured	
		Pack Nort Dana Cancel	

4. Click **Next**. In the dialog box that is displayed, expand the **Physical Port List** branch, and add the SVLAN to upstream port 0/19/0.

Figure 4-4 shows how to add the SVLAN to an upstream port.

Add VLAN			×
Base Info Configure VLAN	Sub Port Extended Info Physical Port List Frame:0 Slot:10 Page Slot:19 Frame:0 Slot:20	SubPort List Frame:0 Slot19 Port00	
	<u>B</u> ack	Next Done Cancel	

5. Click Done.

Step 2 Configure the traffic profile.

- 1. Choose **Profile** > **Traffic Profile** from the main menu.
- 2. In the window that is displayed, right-click and choose **Add Global Profile** from the shortcut menu. In the dialog box that is displayed, set the traffic profile parameters.

Set the priorities of Internet access service, Wi-Fi service, and TR-069 server management channel to 1 and set the priority of voice service to 6. The greater the number is, the higher the priority is.

Figure 4-5 and **Figure 4-6** provide parameter settings in the traffic profiles of Internet access service, Wi-Fi service, TR-069 server management channel, and voice service.

Figure 4-5 Configuring the traffic profile of Internet access service, Wi-Fi service, and TR-069 server management channel

Add MEF IP Traffic Profile	×			
Description Into				
 Configure the desired parameters. When narameter CIR is not set narameter CIRs narameter PIR and narameter 				
PBS do not need to be configured. Here, the rate is not restricted.				
 Parameter PIR must be greater than or equal to parameter CIR. Parameter PRS must be greater than or equal to parameter CRS 				
Profile Parameters				
Name:	ip-traffic-table_8 *			
Alias:				
CIR (kbit/s) (64-10240000):	4096			
CBS (bytes) (2000-10240000):	*			
PIR (kbit/s) (64-10240000):	8192 *			
PBS (bytes) (2000-10240000):	264144 *			
Outer Priority (0-7):	1*			
Outer Copy Priority:	Assign Priority			
Inner Priority (0-7):	0 *			
Inner Copy Priority:	Assign Priority			
Index of Inner Priority Mapping Profile:	<u>1</u>			
Priority Policy:	Tag-In-Package 🔹			
Traffic Color Mode:	color-blind 👻			
	OK Cancel Apply			

Add HEF IP Traffic Profile			
 Description Info Configure the desired parameters. When parameter CIR is not set, parameter CBS, parameter PIR, and parameter PBS do not need to be configured. Here, the rate is not restricted. Parameter PIR must be greater than or equal to parameter CIR. Parameter PBS must be greater than or equal to parameter CBS. 			
Profile Parameters			
Name:	ip-traffic-table_9 *		
Alias:			
CIR (kbit/s) (64-10240000):			
CBS (bytes) (2000-10240000):			
PIR (kbit/s) (64-10240000):			
PBS (bytes) (2000-10240000):			
Outer Priority (0-7):	6*		
Outer Copy Priority:	Assign Priority 💌		
Inner Priority (0-7):	0 *		
Inner Copy Priority:	Assign Priority 💌		
Index of Inner Priority Mapping Profile:	1		
Priority Policy:	Tag-In-Package 💌		
Traffic Color Mode:	color-blind 💌		
	OK Cancel Apply		

Figure 4-6 Configuring the traffic profile of the voice service

- 3. Click **OK**.
- 4. Right-click the new traffic profile and choose **Download to NE** from the shortcut menu. In the dialog box that is displayed, select the OLT and click **OK**.
- Step 3 Configure the DBA profile.
 - 1. Choose **Profile** > **PON** > **GPON Profile** from the main menu.
 - 2. In the window that is displayed, click the **DBA Profile** tab. On the **DBA Profile** tab page, right-click and choose **Add Global Profile** from the shortcut menu. In the dialog box that is displayed, set the parameters as follows:
 - Set Name to 10M-Assure.
 - Set **T-CONT type** to **Assured Bandwidth**.
 - Set Assured Bandwidth to 10240.

Figure 4-7 shows how to configure the DBA profile.

Figure 4-7 Configuring the DBA profile

Add	DBA Profile		×
[^{Pn}	ofile Parameters		
N	lame:	10M-Assure	*
A	lias:		
Т	-CONT type:	Assured Bandwidth 🗨	
A	ssured Bandwidth (kbit/s) (128-1235456):	10240	*
F	ïxed Bandwidth (kbit∕s) (128-1235456):	128	
N	1aximum Bandwidth (kbit/s) (128-1235456):	128	
в	andwidth Compensation:	No	
		OK Cancel <u>A</u> pply	

- There are five types of DBA profiles, supporting fixed bandwidth, assured bandwidth, assured bandwidth/maximum bandwidth, maximum bandwidth, and mixed mode.
- DBA profiles dba-profile_1 to dba-profile_9 are default DBA profiles. The default profiles provide typical traffic parameter settings. T-CONT 0 is bound to the DBA profile named dba-profile_1 by default.
- 3. Click OK.

Step 4 Configure the ONT line profile.

- 1. Choose **Profile** > **PON** > **GPON Profile** from the main menu.
- 2. In the window that is displayed, click the **GPON Line Profile** tab. On the **GPON Line Profile** tab page, right-click and choose **Add Global Profile** from the shortcut menu. In the dialog box that is displayed, set **Name** to **lineprofile-gpon**.

Figure 4-8 shows how to configure the ONT line profile.

d GPON Line Profile		
lame: lineprofile-gpon	* Alias:	
Configuration	Name	Value
— Base Info.	Upstream FEC Switch	OFF
Line	Mapping Mode	VLAN
	Qos Mode	Priority Queue

Figure 4-8 Configuring the ONT line profile

3. Add a T-CONT.

In the dialog box as shown in **Figure 4-8**, choose **Line** from the navigation tree. Rightclick and choose **ADD T-CONT** from the shortcut menu. In the dialog box that is displayed, set the parameters as follows:

- Set **T-CONT index** to **1**.
- Set DBA Profile to 10M-Assure.

Figure 4-9 shows how to add a T-CONT.

Figure 4-9 Adding a T-CONT

Add GPON Line Profile	9	×
Add GPON Line Profile Name: lineprofile-gpon Configuration Base Info. Line	Alias: Name Upstream FEC Switch Mapping Mode ADD T-CONT T-CONT Parameters T-CONT Index: 1 DBA Profile: 10M-Assure	Value OFF VLAN ity Queue
	OK Cancel	Cancel <u>Apply</u>

- 4. Click OK.
- 5. Add a GEM port.

The following section considers L2 Internet access service as an example to describe how to add a GEM port. GEM ports 1-4 are used for L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively. The priority queue of Internet access service, Wi-Fi service, and TR-069 server management channel is 1 and the priority queue of the voice service is 6.

In the left pane, right-click the new **T-CONT1** and choose **ADD GEM Port** from the shortcut menu. In the dialog box that is displayed, set the parameters as follows:

- Set **GEM Port index** to **0**.
- Set **Priority Queue** to 1.
- Set Service Type to ETH.

Figure 4-10 shows how to add a GEM port.

Figure 4-10 Adding a GEM port

Add GPON Line Prof	ile 🔰	K
Name: lineprofile-gpon	* Alias:	ĺ
Configuration	ADD GEI Port Value GEM Port Parameters Ire T-CONT Index: 1 GEM Port Index(0-127): 0 Priority Queue: 1 CAR Profile: Service Type: ETH Encryption Switch: ON	
	Cascade Switch: OFF OK Cancel OK Cancel Apply)

- 6. Click OK.
- 7. Add a GEM connection.

The following section considers L2 Internet access service as an example to describe how to add a GEM connection. GEM connection 150, 200, 300, and 320 are used for L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively.

In the left pane, right-click **GEM Port0** that is created and choose **ADD GEM Connection** from the shortcut menu. In the dialog box that is displayed, set **VLAN ID** to **100**, the CVLAN.

Figure 4-11 shows how to add a GEM connection.

8	
Add GPON Line Prot	ile 🛛
Name: lineprofile-gpor	* Alias:
Configuration	ADD GEL Connection
Base Info.	GEM Connection Parameters
GEM Port0	GEM Port Index(0-127): 0
	GEM Connection Index: 0
	VLAN ID(1-4094): 100
	Priority:
	Port Type:
	Port ID(1-8):
	CAR Profile:
	OK Cancel
	OK Cancel <u>Apply</u>

Figure 4-11 Adding a GEM connection

- 8. Click OK.
- 9. Right-click the new line profile and choose **Download to NE** from the shortcut menu. In the dialog box that is displayed, select the required OLT and click **OK**.

Step 5 Configure the ONT service profile.

- 1. Choose **Profile** > **PON** > **GPON Profile** from the main menu.
- 2. In the window that is displayed, click the **GPON Service Profile** tab. On the **GPON Service Profile** tab page, right-click and choose **Add Global Profile** from the shortcut menu. Parameter values vary with terminal types.

Assume that the HG8240 or HG8245 is used. Set the parameters as follows:

- Set Name to srvprofile-gpon.
- Set Number of Pots Ports to 2.
- Set Number of ETH Ports to 4.

Figure 4-12 shows how to configure the ONT service profile (HG8240/HG8245).

Add GPON Service Profile		×	
Name: srvprofile-gpon * Alias:			
Configuration	Name	Value	
– Base Info.	Number of Pots Ports(0-8)	2	
UNI Port	Number of IPhost Ports	1	
	Number of ETH Ports(0-8)	4	
	Number of TDM Ports(0-8)	0	
	TDM Port Type	T1	
	Service Type of TDM Port	TDMoverGEM	
	Number of MOCA Ports(0-8)	0	
	Number of CATV Ports(0-8)	0	
	MAC Address Learning Switch	ON	
	Transparent Transmission S	OFF	
	Multicast VLAN Forward Mode	Untag	
	Multicast VLAN(1-4095)		
	Upstream IGMP packet forwa	Unconcern	
	Upstream IGMP packet forwa		
	ОК	Cancel <u>A</u> pply	

Figure 4-12 Configuring the ONT service profile (HG8240/HG8245)

Assume that the HG8247 is used. Set the parameters as follows:

- Set Name to srvprofile-gpon.
- Set Number of Pots Ports to 2.
- Set Number of ETH Ports to 4.
- Set Number of CATV Ports to 1.

Figure 4-13 shows how to configure the ONT service profile (HG8247).
me: srvprofile-gpon	* Alias:			
Configuration	Name	Value		
– Base Info.	Number of Pots Ports(0-8)	2		
└─ UNI Port	Number of IPhost Ports	1		
	Number of ETH Ports(0-8)	4		
	Number of TDM Ports(0-8)	0		
	TDM Port Type	T1		
	Service Type of TDM Port	TDMoverGEM		
	Number of MOCA Ports(0-8)	0		
	Number of CATV Ports(0-8)	1		
	MAC Address Learning Switch	ON		
	Transparent Transmission S	OFF		
	Multicast VLAN Forward Mode	Untag		
	Multicast VLAN(1-4095)			
	Upstream IGMP packet forwa	Unconcern		
	Upstream IGMP packet forwa			

Figure 4-13 Configuring the ONT service profile (HG8247)

The port capability set in the ONT service profile must be the same as the actual port capability set of the ONT. The HG8240 and HG8245 each has four Ethernet ports and two POTS ports. The HG8247 has one CATV port, four Ethernet ports, and two POTS ports.

3. Configure the default VLAN ID.

The default VLAN ID of Ethernet port 1 is 100 for L2 Internet access service.

This operation is applicable to only L2 Internet access service. Specifically, when an ONT works as a bridge, packets must be labeled with VLAN tags before entering the ONT and the VLAN tags must be stripped from the packets before the packets leave the ONT; when an ONT works as a gateway device, the VLAN IDs of ports can be set on the Web page of the ONT, on the NMS, or on the TR-069 server.

In the dialog box as shown in **Figure 4-13**, choose **UNI Port** from the navigation tree. In the right pane, right-click Ethernet port 1 and choose **Config VLAN of UNI Port** from the shortcut menu. In the dialog box that is displayed, select the **Default VLAN** check box and set **Default VLAN** to **100**, the CVLAN ID.

Figure 4-14 shows how to configure the default VLAN ID.

Add GPOI	Config ETH Port		×	×
Name: 🛿	Port Type:	ETH	•	
Configu	Port ID:	1	*	
- Bas	PriorityPolicy:	Unconcern	•	
	QinQ:	Unconcern	•	
	Vlan Type:	Translation	•	
	☑ Default VLAN ID(1-4094):	100		
	S-VLAN(0-4095) A S-Prior	ity(0-7) A C-VLAN(0-4095) A C-Priority(0-7	') ^	
		OK Cance		pply

Figure 4-14 Configuring the default VLAN ID

- 4. Click **OK**.
- 5. Configure the VLAN switching pair of a UNI port.

The following section considers L2 Internet access service as an example to describe how to configure the VLAN switching pair of a UNI port. Both **S-VLAN** and **C-VLAN** must be set to 150, 200, 300, and 320 for L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel respectively.

In the lower pane, right-click and choose Add from the shortcut menu. In the dialog box that is displayed, set both S-VLAN and C-VLAN to 100. In this case, S-VLAN must be the same as C-VLAN.

Figure 4-15 shows how to configure the VLAN switching pair of the UNI port.

Add GPOI	Config ETH Por	t 🔀	×
Name: 🛛	Port Type:	ETH	
Configu	Port ID:	1 *	
– Bas	PriorityPolicy:	Unconcern 💌	
	QinQ:		
	Vlan Type:	Add VLAN	_
	🖌 Default VLAN ID	S-VLAN(0-4095): 100 *	
	S-VLAN(0-4095)	S-Priority(0-7):	
		C-VLAN(0-4095): 100 *	
		C-Priority(0-7):	
		OK Cancel	
		OK Cancel	pply

Figure 4-15 Configuring the VLAN switching pair of the UNI port

- 6. Click **OK**.
- 7. Right-click the new service profile and choose **Download to NE** from the shortcut menu. In the dialog box that is displayed, select the OLT and click **OK**.

Step 6 Add an ONT.

- An ONT can be added in auto-discovery or offline mode. This topic considers the auto-discovery mode as an example to describe how to add an ONT.
- You can also right-click on the **GPON ONU** tab page of an OLT and choose **Add** from the shortcut menu to add an ONT offline.
- 1. On the **GPON UNI Port** tab page, select one or more required ONTs from the ONT list, right-click, and then choose **Enable ONU Auto Find** from the shortcut menu to enable the ONT auto-discovery function.
- On the GPON UNI Port tab page, select the required ONT from the ONT list, and click the Auto-Discovered ONU Info tab in the lower pane. Right-click and choose Confirm ONU from the shortcut menu. In the dialog box that is displayed, set the parameters as follows:
 - Set ONU ID to 0.
 - Set ONU Type to ONT.
 - Set Line Profile to lineprofile-gpon.

- Set Service Profile to srvprofile-gpon.
- Set Authentication Mode to SN.

Figure 4-16 shows how to add an ONT.

Figure 4-16 Adding an ONT

Confirm ONU				
Affiliated Port:	0/2/2	*	Splitter:	Splitter(L1)
Name:	Frame0/Slot2/Port0	*	Alias:	
ONU ID(0-127):	🗌 Auto Assign 🛛 🛛	*	Splitter Port ID(1-128): 1
ONU Type:	ONT	*		
Basic Parame	ters Network Managem	ient Channe	l Parameters	
Line Profile:	lineprofile-gpon	*	Service Profile:	srvprofile-gpon*
Alarm Profile:			ONU VAS Profile:	
Authenticatio	in Info			
Authenticati	ion Mode: SN	•	Timeout Dura (h)(1-168):	ation 🗾 No Limit 📃 📩
SN:	485754430DB	CEA03	Password:	*
ONU Type				
Verdor ID:	HWTC(2011)	•	Terminal Type:	_
Software Ve	ersion:	_		
			🗌 Locate to	ONU list after operation succeeds
			ОК	Cancel <u>A</u> pply

- 3. On the **GPON ONU** tab page, select the added ONT, and click the **Running Info** tab to view the information about the ONT. The ONT information is as follows:
 - Running Status: Online
 - Operation Status: Activate
 - Configuration Status: Normal
 - Match Status: Match

Figure 4-17 shows how to view the ONT status.

Service Profile	GEM Port IGMP User	T-CONT	The Ont's UNI Port Info	IP Host	ServicePort Info		
Details	Running Int	fo	ONO OF	otics Module	Info	Alarm Profile	Line Profile
Running Info							
Running Status	= Online						
Operation Status	= Activate						
Configuration Stat	us = Normal						
DBA Status	= SR						
Match Status	= Match						

4. If the actual status of the auto-discovered ONT is different from the preceding description, check whether the specified line profile and service profile match the actual ONT capabilities. If they are unmatched, modify the created ONT profiles so that they are consistent with the ONT actual capabilities. Then, add an ONT again.

Step 7 Configure service streams.

Service streams must be configured separately for L2 Internet access service, L3 Internet access service, voice service, Wi-Fi service, and TR-069 server management channel. Internet access service, Wi-Fi service, and TR-069 server management channel use the traffic profile named ip-traffic-table_8 and the voice service use the traffic profile named ip-traffic-table_9. The following section considers L2 Internet access service as an example to describe how to configure service streams.

- 1. On the **GPON ONU** tab page, select the required ONT and click the **ServicePort Info** tab in the lower pane.
- 2. On the **ServicePort Info** tab page, right-click and choose **Add** from the shortcut menu. In the dialog box that is displayed, set the parameters as follows:
 - Set VLAN Choice to Smart VLAN.
 - Set VLAN ID to 100. This VLAN is the SVLAN.
 - Set Interface Selection to 0/2/0/0/0.
 - Set Service Type to Multi-Service VLAN.
 - Set User VLAN to 100.
 - Select the Keep the upstream and downstream settings the same check box, and set Upstream Traffic Name and Downstream Traffic Name to ip-traffic-table_8.

Figure 4-18 shows how to configure service streams.

Add Service Port	
Basic Info ID(1-32768): Name: 100/0_2_0/0/0/Multi-Service VLAN/100 * Alias:	Attributes Connection Type: LAN-GPON
Network Side	User Side
□ Bundle ID(1-8192):	Interface Selection: 0/2/0/00
Traffic Profile Info	Downotroom Traffic Name: In traffic table 0
	OK Cancel Apply

Figure 4-18 Configuring service streams

3. Click **OK**.

----End

4.2.3 Commissioning Interoperation Between the TR-069 Server and the ONT Through the Web Page

To configure and issue ONT services using the TR-069 server, you need to add the ONT on the TR-069 server so that the TR-069 server can manage the ONT.

Prerequisite

ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see **4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT)** or **4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)**.

Data Plan

Table 4-4 provides the data plan for commissioning interoperation between the TR-069 server and the ONT through the Web page.

Parameter	Data	Description
Service type of the WAN interface	TR069	When configuring the TR-069 management channel, you need to select only TR069 or a combination with TR069. In this example, TR069 is selected.
Connection mode	Route	-
VLAN ID of the WAN interface	320	The VLAN ID of the WAN interface must be the same as the CVLAN ID configured on the OLT.
Mode of obtaining an IP address	DHCP	 There are three modes to obtain an IP address: DHCP: Obtain an IP address dynamically. Static: Configure an IP address manually. PPPoE: Access in the PPPoE dialup mode. In this example, the DHCP mode is configured. You can also select the static or PPPoE mode according to the data plan of the upper-layer network.
ACS URL	http:// 10.11.11.1:9070	It can be the IP address, port ID, domain name of the ACS server.
Periodical notification interval	43200	It is the default value of the system.
ACS user name	hgw	It is the default value of the system.
ACS password	hgw	It is the default value of the system.
User name of a requested connection	server	It must be the same as that planned on the TR-069 server.
Password of a requested connection	server	It must be the same as that planned on the TR-069 server.

Table 4-4 Data plan for commissioning interoperation between the TR-069 server and the ONT through the Web page

Flowchart

Figure 4-19 shows the flowchart for commissioning interoperation between the TR-069 server and the ONT through the Web page.

Figure 4-19 Flowchart for commissioning interoperation between the TR-069 server and the ONT through the Web page



Procedure

Step 1 Configure the parameters of the WAN interface.

- 1. Coose WAN > WAN Configuration.
- 2. In the pane on the right, click **New**. In the dialog box that is displayed, configure the parameters of the WAN interface as follows:
 - Select **Enable** to enable the WAN connection that is newly set up.
 - Set Service List to TR069.
 - Set Mode to Route.
 - Set VLAN ID to 320.
 - Set IP Acquisition Mode to DHCP.

Figure 4-20 shows how to configure the parameters of the WAN interface.

	HG82	47									Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network A	Application	Voice	System Tools
WAN Configuration		WAN	I > WAN (Configuratio	n						
		(6 0	On this pa equipmer consisten	ige,you can it through th t with those	configure WA e WAN interfa of the upper-I	N paramet ce. During ayer netwo	ers.The ONT home the communication, rk equipment.	gateway con the parame	mmunicates v eter settings o	vith the up f the WAN	per-layer network interface must be
				Conne	stion Name		VI AN/Drior	it.,		D. Acquicit	New Delete
				Conne	CUOINAINE			ity		PACQUISI	IOIT MODE
		Ena	able WAN	Connection	n: 🗹						
		Ser	vice List:		TRO	69	~				
		Mo	de:		Rout	e	~				
		VLA	AN ID:		320		*(1-409	4)			
		802	802.1p: 0								
		IP A	Acquisitio	n Mode:	💿 D	нср 🔘	Static 🔘 PPPoE				
		Ver	ndor ID:				(The ver	ndor ID mus	st be 0 - 63 ch	aracters ir	n length.)
					App	oly Ca	ancel				

Figure 4-20 Configuring the parameters of the WAN interface

3. Click Apply.

Step 2 Configure the TR-069 parameters.

- 1. In the navigation tree on the left, choose System Tools > TR-069.
- 2. In the pane on the right, set the TR-069 client parameters (other parameters use the default values) as follows:
 - Set ACS URL to http://10.11.11.1:9070.
 - Set Connection Request User Name and Connection Request Password to server.

Figure 4-21 shows how to configure the parameters of the TR-069 client.

Figure 4-21 Configuring the parameters of the TR-069 client

	HG8247										l	Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Ru	es Network Appli	ication	Voice	System Tools	
Reboot		Sys	tem Tools	s > TR-069								
Configuration File		ACS	ACS parameters config									
USB Backup Restore CFG												
Firmware Upgrade			ii ule i Ru	109 auto-pri	ovisioning fai	iction is en	abieu, you can	set the ACO paramete	ers or the	terminal.		_
Restore Default Confi	guration	En	able Peri	od Inform:								
Maintenance		Pe	Period Inform Interval:			43200		*[1 - 2147483647](s)				
Log		Pe	Period Inform Time:			yyyy-mm-ddThh:mm:ss(For example:2009					09-12-20T12:23:3	34)
ONT Authentication		AC	ACS URL:			http://10.11.11.1:9070 •						
Time Setting		AC	ACS User Name:			hgw	hgw *					
TR-069		AC	ACS Password:				••• *(The length of password is between 1 and 256)					
Advanced Power Mar	agement	Co	nnection	Request U	ser Name:	server	server					
ONT Mode		Co	nnection	Request P	assword:	•••••		*(The length of pass)	word is b	etween 1 :	and 256)	
Modify Login Passwo	rd					Apply	Cancel					

3. Click Apply.

Step 3 Save the configuration.

Choose **System Tools** > **Configuration File** from the navigation tree. In the right pane, click **Save Configuration**, as shown in **Figure 4-22**.

	HG8247										
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
Reboot		Syste	m Tools >	 Configura 	tion File						
Configuration File											
USB Backup Restor	e CFG		You can o	lick"Save (Configuration"	to save th	e current configuratio	on to the flash memory.			
Firmware Upgrade											
Restore Default Con	figuration	S	ave Confi	guration							
Maintenance											
Log			You can o	lick "Down	load Configur	ation File" 1	to back up the currer	it configuration.			
ONT Authentication			ownload	Configurati	on Filo						
Time Setting			ownoau	Connigurati	UITFILE						
TR-069			lf vou ente	ar the nath	of the configur	otion file o	nd then click "Unloar	Configuration File" your	home gate	way will be undated	
Advanced Power Ma	anagement		with the s	aved config	guration file.	anon me a	no area entre option	s configuration the , your	nome gate	may min be appared	
Modify Login Passw	ord						Burning	Universit Configuration			
		Co	riliguratio	n File:			Browse	Opioad Configuratio	n File		

Step 4 Confirm the ONT.

Log in to the TR-069 server and then choose **Subnet view** > **TR-069 Subnet** from **WLAN and Home Network View** in the navigation tree on the left. In the pane on the right, right-click and choose **Refresh** from the shortcut menu. The reported ONT list is displayed. Then, select the ONT list, right-click, and choose **Confirm** from the shortcut menu.

----End

Result

On the TR-069 server, you can configure ONT services. For details, see the configuration examples.

4.2.4 Commissioning Interoperation Between the TR-069 Server and the ONT Through the NMS

To configure and issue ONT services using the TR-069 server, you need to add the ONT on the TR-069 server so that the TR-069 server can manage the ONT.

Prerequisite

ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see **4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT)** or **4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)**.

Data Plan

Table 4-5 provides the data plan for commissioning interoperation between the TR-069 server and the ONT through the NMS.

Item	Data	Description
Service type of the WAN interface	TR069	When configuring the TR-069 management channel, you need to select only TR069 or a combination with TR069. In this example, TR069 is selected.
Connection mode	Route	-
VLAN ID of the WAN interface	320	The VLAN ID of the WAN interface must be the same as the CVLAN ID configured on the OLT.
Mode of obtaining an IP address	DHCP	 There are three modes to obtain an IP address: DHCP: Obtain an IP address dynamically. Static: Configure an IP address manually. PPPoE: Access in the PPPoE dialup mode. In this example, the DHCP mode is configured. You can also select the static or PPPoE mode according to the data plan of the upper-layer network.
ACS URL	http:// 10.11.11.1:9070	It can be the IP address, port ID, domain name of the ACS server.
Periodical notification interval	43200	It is the default value of the system.
ACS user name	hgw	It is the default value of the system.
ACS password	hgw	It is the default value of the system.
User name of a requested connection	server	It must be the same as that planned on the TR-069 server.
Password of a requested connection	server	It must be the same as that planned on the TR-069 server.

Table 4-5 Data plan for commissioning interoperation between the TR-069 server and the ONT through the NMS

Flowchart

Figure 4-23 shows the flowchart for commissioning interoperation between the TR-069 server and the ONT through the NMS.

Figure 4-23 Flowchart for commissioning interoperation between the TR-069 server and the ONT through the NMS



Procedure

- **Step 1** Choose **Profile** > **ONT VAS Profile** from the main menu.
- Step 2 Right-click and choose Add from the shortcut menu.
- Step 3 In the dialog box that is displayed, set Profile Name, Vendor ID, Terminal Type, and Version. Where, Version must be set to V1R002C00-Later.
 Figure 4-24 shows how to create an ONT VAS profile.

Issue 02 (2011-01-26)

8 6	1	
Add ONT VAS Profile		
Profile Name: ont-hg8245	* Vendor ID:	HWTC *
Terminal Type: 245	▼ * Version:	V1R002C00 ~ Later 💌 *
 E- 245 Config Info. Time Services WAN Device LANDevice ALG Ability Security Layer 3 Forwarding 	Parameter Name	Parameter Value
Import.		K Cancel <u>A</u> pply

Figure 4-24 Creating an ONT VAS profile

Step 4 Configure the parameters of the WAN interface.

Choose WAN Device > WAN Device 1 > WAN Connection from the navigation tree. Rightclick WAN Connection and choose Add IP Connection from the shortcut menu. Choose WAN IP Interface 1 from the navigation tree. In the right pane, configure the parameters of the WAN interface as follows:

- Set WAN Interface Name to tr069.
- Set WAN Enable to enable.
- Set Connection Type to IP_Routed.
- Set Vlan ID to 320.
- Set Addressing Type to DHCP.
- Set Service Type to TR069.

Figure 4-25 shows how to configure the parameters of the WAN interface.

Add OWT VAS Profile				
Profile Name: ont-hg8245	* Vendor ID: H	IWTC 💌		
Terminal Type: 245	▼ * Version: V	'1R002C00 ~ Later 🛛 👻 *		
E⊢ 245 Config Info.	Parameter Name	Parameter Value		
Services	WAN Interface Name	tr069		
	WAN Enable	enable 🔻		
	Connection Type	IP_Routed 🗸 🗸		
H WAN Connection	NATEnabled	disable 👻		
i di⊢ WAN IP Interfa	Vlan ID(1~4094)	320		
ti – WAN IP Int	Priority(0~7)	0		
	MultiCast VLAN(1~4094)			
ALG Ability	Addressing Type	рнср 🗸		
	Service Type	INTERNET 👻		
— Layer 5 Forwarding	DNS Enabled	enable 👻		
	DNS Server			
	Option60 Vender Class ID			
Import Export OK Cancel Apply				

Figure 4-25 Configuring the parameters of the WAN interface

Step 5 Configure the TR-069 parameters.

- 1. In the Add ONT VAS Profile dialog box, click Export in the lower pane to export the XML configuration file.
- 2. Open the XML configuration file and modify the parameters in the XML file as follows:
 - Set URL to http://10.11.11.1:9070.
 - Set ConnectionRequestPassword and ConnectionRequestUsername to server.
- 3. Save the XML configuration file.
- 4. In the Add ONT VAS Profile dialog box, click Import in the lower pane to import the modified XML configuration file.
- Step 6 Click OK.
- Step 7 Bind the ONT VAS profile to the ONT.

On the GPON ONU tab page, select one or more ONTs, right-click, and then choose **Bind VAS Profile** from the shortcut menu. In the dialog box that is displayed, select the new profile and click **OK** to bind the profile to the ONT.

Step 8 Confirm the ONT.

Log in to the TR-069 server and then choose **Subnet view** > **TR-069 Subnet** from **WLAN and Home Network View** in the navigation tree on the left. In the pane on the right, right-click and choose **Refresh** from the shortcut menu. The reported ONT list is displayed. Then, select the ONT list, right-click, and choose **Confirm** from the shortcut menu.

----End

Result

On the TR-069 server, you can configure ONT services. For details, see the configuration examples.

4.3 XML Configuration Methods

4.3.1 Configuring the ONT through Web Page by Uploading the XML Configuration File This topic describes how to configure an ONT through the Web page by uploading the XML configuration file.

4.3.2 Configuring the ONT through NMS by Importing the XML Configuration File This topic describes how to configure the ONT through NMS by importing the XML configuration file.

4.3.1 Configuring the ONT through Web Page by Uploading the XML Configuration File

This topic describes how to configure an ONT through the Web page by uploading the XML configuration file.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- The environment for service configuration on the Web page must be available and you must be logged into the Web page successfully. For details, see **3.2 Logging In Through the Web Page**.

Context

The ONT can be configured by uploading the XML configuration file. By using the method, configurations of the voice, WAN interface management, LAN port management, and line management are implemented on the ONT. The naming rule of the XML configuration file released with the software is XXXX_default_service_cfg.xml (XXXX indicates the software version number).

Procedure

Step 1 Download the XML configuration file.

- 1. In the navigation tree on the left, choose **System Tools** > **Configuration File**.
- 2. In the pane on the right, click **Download Configuration File**, as shown in **Figure 4-26**.

Upload Configuration File

Logout

	HG82	247							
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice
Reboot		Syster	m Tools :	Configura	tion File				
Configuration File									
USB Backup Restore	CFG	· ·	You can (click "Save (Configuration	" to save th	e current configurati	on to the flash memory.	
Firmware Upgrade									
Restore Default Confi	guration	S	ave Confi	iguration					

Download Configuration File

Configuration File:

with the saved configuration file

Figure 4-26 Downloading the XML configuration file

3. In the dialog box that is displayed, click **Save** to save the XML configuration file.

You can click "Download Configuration File" to back up the current configuration

If you enter the path of the configuration file and then click "Upload Configuration File", your home gateway will be updated

Browse...

Step 2 Modify the XML configuration file.

Log ONT Auti

In the case of initial deployment, use the XML configuration file released with the software. Thus, you need not perform operations in step 1.

- 1. Open the XML configuration file downloaded in step 1 and find the parameters requiring modification.
- 2. Modify the relevant parameters.
- 3. Save the modified XML configuration file.
- Step 3 Upload the XML configuration file.
 - 1. In the navigation tree on the left, choose System Tools > Configuration File.
 - 2. In the pane on the right, click **Browse**. Then, select the XML configuration file saved in step 2 and click **Open**.
 - 3. In the pane on the right, click **Upload Configuration File**. After the XML configuration file is uploaded, the ONT automatically restarts and then the configuration takes effect.

----End

4.3.2 Configuring the ONT through NMS by Importing the XML Configuration File

This topic describes how to configure the ONT through NMS by importing the XML configuration file.

Prerequisite

ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see **4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT)** or **4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)**.

Context

The ONT can be configured by importing the XML configuration file. By using the method, configurations of the voice, WAN interface management, LAN port management, and line management are implemented on the ONT. Configuring the ONT through NMS by importing the XML configuration file is typically applied in the following scenarios:

- Configuring services for a single ONT
- Bulk configuring services for ONTs

Procedure

- Configuring services for a single ONT
 - 1. To export the XML configuration file, do as follows:
 - (1) On the **GPON ONU** tab page, right-lick an ONT and choose **Configure Value-Added Service** from the shortcut menu.
 - (2) In the dialog box that is displayed, click **Export** to export the XML configuration file.

Figure 4-27 shows how to export the XML configuration file.

Figure 4-27 Exporting the XML configuration file

Configure VAS					X
Profile Name:	0.45		Vendor ID:	HWTC	▼
Terminal Type:	245	-	Version:	V1R002C00	•
Activated Status:	activated				
E - 245 Config Info Time Services WAN Device ALG Ability Security Layer 3 For). e warding	Paramete	r Name	Parar	neter Value ch to ONT Load Task
	<u>U</u> nbir	id <u>I</u> mport	E <u>x</u> por	t ОК	Cancel

- 2. To modify the XML configuration file, do as follows:
 - (1) Open the exported XML configuration file and locate the configuration parameters to be modified.
 - (2) Modify the parameter values according to requirements.
 - (3) Save the changes to the XML configuration file.
- 3. To import the XML configuration file to the NMS, do as follows:
 - (1) On the **GPON ONU** tab page, right-click an ONT and choose **Configure Value-Added Service** from the shortcut menu.
 - (2) In the dialog box that is displayed, click Import. In the dialog box that is displayed, select the modified XML configuration file to import.
 Figure 4-28 shows how to import the XML configuration file.

Figure 4-28	Importing	the XML	configuration	file
-------------	-----------	---------	---------------	------

Configure VAS					×
Profile Name:			Vendor ID:	HWTC	▼
Terminal Type:	245	•	Version:	V1R002C00	•
Activated Status:	activated				
 ⊇ 245 Config Info Time Services WAN Device ALG Ability Security Layer 3 For 	e warding	Paramete	r Name	Parameter Value	
	<u>U</u> nbind	Import	E <u>x</u> por	t OK Cancel	

(3) Click **OK**. The NMS applies new configuration data to the ONT.

- Bulk configuring services for ONTs
 - 1. To create an ONT VAS profile, do as follows:
 - (1) Choose **Profile** > **ONT VAS Profile** from the main menu.
 - (2) In the window that is displayed, right-click and choose Add from the shortcut menu.
 - (3) In the dialog box that is displayed, set Profile Name, Vendor ID, Terminal Type, and Version. Where, Version must be set to V1R002C00-Later.

Figure 4-29 shows how to create an ONT VAS profile.

Figure 4-29 Creating an ONT VAS profile

Add ONT VAS	Profile			×
Profile Name: Terminal Type:	ont-hg8245	★ Vendor ID:	HWTC	*
renninar rype.	1	version.		
 ⇒ 245 Config Ir → Time ⊕ Services ⊕ WAN Device → ALG Abiliti ⊕ Security → Layer 3 F 	ifo.	Parameter Name	Parameter Value	
	Import	E <u>x</u> port	OK Cancel <u>A</u>	oply

 To export the XML configuration file, do as follows: In the Add ONT VAS Profile dialog box, click Export to export the XML configuration file.

Figure 4-30 shows how to export the XML configuration file.

8 I	<u> </u>	0			
Add ONT VAS Pro	ofile				
Profile Name: on Terminal Type: 24	ıt-8245 45	* Ven ▼* Vers	dor ID: HWTC sion: V1R0() 02000 ~ Later	▼ * ▼ *
 245 Config Info. Time Services WAN Device ALG Ability Security Layer 3 Forw 	rarding	Parameter Na	me	Parameter Value	
	Import	E <u>x</u> port	ОК	Cancel <u>A</u>	oply

Figure 4-30 Exporting the XML configuration file

- 3. To modify the XML configuration file, do as follows:
 - (1) Open the exported XML configuration file and locate the configuration parameters to be modified.
 - (2) Modify the parameter values according to requirements.
 - (3) Save the changes to the XML configuration file.
- 4. To import the XML configuration file, do as follows:

In the **Add ONT VAS Profile** dialog box, click **Import** to import the XML configuration file to the NMS.

Figure 4-31 shows how to import the XML configuration file.

Add ONT VAS	Profile				
Profile Name:	ont-8245	*	Vendor ID:	HWTC	*
Terminal Type:	245	*	Version:	V1R002C00 ~ Later	*
E - 245 Config Ir	ifo. ice ce ty orwarding	Paramet	er Name	Parameter	Value
	<u>I</u> mpor	E <u>x</u> port		OK Cancel	Apply

Figure 4-31 Importing the XML configuration file

- 5. Click OK.
- 6. To bind the ONT VAS profile to ONTs, do as follows:

On the GPON ONU tab page, select one or more ONTs, right-click, and then choose **Bind VAS Profile** from the shortcut menu. In the dialog box that is displayed, select the new profile and click **OK** to bind the profile to the ONTs.

After voice parameters in the XML file are issued, the ONT re-starts the voice process. Then, the voice parameters are read from the XML file and take effect. The ONT does not need to reset.

```
----End
```

4.4 Configuring the Internet Access Service

This topic provides an example of how to configure the Internet access service.

4.4.1 Data Plan

This topic provides the typical data plan for configuring the Internet access service so as to make good preparations for the configuration.

4.4.2 Configuration Flowchart

This topic shows the flowchart for configuring the L3 Internet access service.

4.4.3 Configuration Method

The Internet access service can be configured through the Web page, N2000 BMS, or TR-069 server.

4.4.1 Data Plan

This topic provides the typical data plan for configuring the Internet access service so as to make good preparations for the configuration.

The Internet access service includes the L2 Internet access service and L3 Internal access service.

- L2 Internet access service: In this mode, the ONT functions as a bridge device. Instead, the OLT issues the L2 Internet access service to the ONT.
- L3 Internet access service: The ONT functions as a gateway device and the WAN interface needs to be configured.

This topic mainly describes how to configure the L3 Internet access service. The L2 Internet access service need not be configured on the ONT but on the OLT. For details, see **4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT)**, or **4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)**.

 Table 4-6 provides the data plan for configuring the L3 Internet access service.

Parameter	Data	Description
Working mode of a LAN port	L3 mode	Configure port LAN2 to work in layer 3 mode.
Service type of the WAN interface	INTERNET	When Connection mode is set to Route , you can select Internet, TR069, VoIP, or a combination of them.
		When configuring the Internet access service, you need to select only Internet or a combination with Internet. In this example, Internet is selected.
Connection mode	Route	It can be set to route or bridge. In this example, route is selected.
VLAN ID of the WAN interface	150	The VLAN ID of the WAN interface must be the same as the VLAN ID of the traffic streams configured on the OLT.

Table 4-6 Data plan for configuring the L3 Internet access service

Parameter	Data	Description
Mode of obtaining an IP address	 PPPoE User name: iadtest@pppoe Password: iadtest 	 There are three modes to obtain an IP address: DHCP: Obtain an IP address dynamically. Static: Configure an IP address manually. PPPoE: Access in the PPPoE dialup mode. In this example, the PPPoE mode is selected. You can also choose the DHCP or static mode according to the data plan of the upper-layer network. When the PPPoE mode is selected, the configured user name and password must be the same as those planned on the BRAS.
802.1p	1	The larger the priority value, the higher the priority. The priorities are the same as those planned on the OLT, that is, the priority sequence is the voice service, multicast service, and Internet access service/Wi-Fi in a descending order.
NAT function	Enable	Enable the network address translation (NAT) function.
Port binding	LAN2	The WAN interface is bound to port LAN2 connected to the PC. The PC can access the Internet.
DHCP function	Enable	The PC connected to port LAN2 obtains an IP address from the DHCP address pool configured on the ONT. By default, the DHCP function is enabled and need not be configured.

4.4.2 Configuration Flowchart

This topic shows the flowchart for configuring the L3 Internet access service.

Figure 4-32 shows the flowchart for configuring the L3 Internet access service through the Web page.



Figure 4-32 Flowchart for configuring the Internet access service through the Web page

Figure 4-33 shows the flowchart for configuring the L3 Internet access service through the N2000 BMS.





Figure 4-34 shows the flowchart for configuring the L3 Internet access service through the TR-069 server.



Figure 4-34 Flowchart for configuring the L3 Internet access service through the TR-069 server

4.4.3 Configuration Method

The Internet access service can be configured through the Web page, N2000 BMS, or TR-069 server.

Configuring the Internet Access Service Through the Web Page

This topic provides an example of how to configure the Internet access service through the Web page.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- The environment for service configuration on the Web page must be available and you must be logged into the Web page successfully. For details, see **3.2 Logging In Through the Web Page**.
- A PC is connected to port LAN2 on the ONT. The IP address of the PC is allocated by the DHCP server (the ONT). PPPoE dialup is performed on the ONT to implement the L3 Internet access service of the PC.

Context

This topic describes how to configure only L3 Internet access service. For L2 Internet access service, configuration is not required on the ONT but on the OLT. For details, see **4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT)** or **4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)**.

Procedure

Step 1 Configure the working mode of a LAN port.

1. In the navigation tree on the left, choose LAN > LAN Port Work Mode. Select the check boxes of LAN 2 to set port LAN2 to work in the L3 mode.

Figure 4-35 shows how to configure the working mode of a LAN port.

Figure 4-35 Configuring the working mode of a LAN port

	HG8247							Log	gout		
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
LAN Port Work Mode		LAN	> LAN Po	ort Work M	ode						
LAN Host Configuratio	LAN Host Configuration										
DHCP Server Configuration On this page, you can configure the LAN ports to work in layer3 mode by selecting the corresponding check box. The layer3 ports will be assigned working as HG ports.						check box. The					
LAN1 🗹 LAN2 🗌 LAN3 🗌 LAN4											
										Apply Cance	d

2. Click Apply.

Step 2 Configure the parameters of the WAN interface.

- 1. In the navigation tree on the left, choose WAN > WAN Configuration.
- 2. In the pane on the right, click **New**. In the dialog box that is displayed, set the parameters of the WAN interface as follows:
 - Select **Enable** next to **NewWanConnction** to enable the WAN connection that is newly set up.
 - Set Service List to INTERNET.
 - Set Mode to Route.
 - Set VLAN ID to 150.
 - Set 802.1p to 1.
 - Set IP Acquisition Mode to PPPoE.
 - Select **Enable** next to **NAT** to enable the NAT function.
 - Set User Name to iadtest@pppoe and Password to iadtest.
 - Select the check box of LAN2 in Binding options, indicating that the WAN interface is bound to LAN2.

Figure 4-36 shows how to configure the parameters of the WAN interface.

	HG82	47									Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward F	Rules Netwo	ork Application	Voice	System Tools
WAN Configuration		WAN >	WAN C	onfiguratio	on						
		Or eq co	n this pag uipment	ge,you can t through th with those	i configure W/ ne WAN interf e of the upper-	AN param ace. Durin ·layer netv	eters.The ON g the commu vork equipme	T home gateway nication, the par nt.	/ communicates ameter settings	with the up of the WAN	per-layer network Interface must be
											New Delete
				Conn	ection Name		VL	AN/Priority		IP Acquisi	tion Mode
		Enab	ile WAN	Connectio	n: 🗹						
		Servi	ce List:		INT	ERNET	*				
		Mode	9:		Rou	te	~				
		VLAN	ID:		150			* (1-4094)			
		802.1	lp:		1		*				
		Multi	Cast VLA	AN ID:				(1-4094)			
		IP Ac	quisition	n Mode:	0 (онср С) Static 💿	PPPoE			
		Enab	ie NAT:		V						
		User	Name:		iadte	est@pppo	e	*(1-63)Charact	ers		
		Pass	word:		••••	•••		*(1-63)Characte	ers		
		Dial	Method		Auto)	~				
		Bindi	ing optio	ns:		JAN1 SSID1	LAN2	LAN3	LAN4		
					Ap	ply C	Cancel				

Figure 4-36 Configuring the parameters of the WAN interface

- 3. Click Apply.
- **Step 3** Save the configuration.

Choose System Tools > Configuration File from the navigation tree. In the right pane, click Save Configuration, as shown in Figure 4-37.

Figure 4-37 Saving the configuration

	HG8247							Logout		
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syste	m Tools >	Configura	tion File					
Configuration File										
USB Backup Restore	e CFG		You can c	lick"Save (Configuration'	' to save th	e current configurati	on to the flash memory.		
Firmware Upgrade	nware Upgrade									
Restore Default Con	Restore Default Configuration Save Configuration									
Maintenance										
Log			You can c	lick"Down	load Configur	ation File" 1	o back up the currer	nt configuration.		
ONT Authentication			ounload	Configurati	on Filo					
Time Setting			ownoau	conngurau	UITFILE					
TR-069		Kusu astartka natk of the configuration file and then alia! "Italand Configuration File" usur kome astaryou will be undeted								
Advanced Power Ma	nagement		with the saved configuration file.							
Modify Login Passw	ord	Co	nfiguration	n File:			Browse	Upload Configuratio	n File	

----End

Result

- 1. Query the connection status of the ONT.
 - In the navigation tree on the left, choose **Status** > **WAN Information**. In the pane on the right, the **Status** is **Connected** and the obtained IP address is displayed in IP.

Figure 4-38 shows the connection status of the L3 Internet access service.

Figure 4-38 Querying connection status of L3 Internet access service

	HG8247							Logout			
HUAWEI	Status	WAN	LAN	WLAN	Security	Route Forw	ard Rules 1	letwork Appl	lication Vo	ice System To	ols
WAN Information		Status > WAN Information									
VolP Information											
WLAN Information			On this page, you can query the connection status and line status of the WAN interface.								
Eth Port Information			WANN	lame	Status	IP Acquisition	IP	Subnet	VI AN/Priority	MAC Address	Connect
DHCP Information						Mode	Address	Mask	,		
Optical Information		1_1	ITERNET	_R_VID_150	Connected	PPPoE	192.168.11.52		150/1	00:00:00:00:00:03	AlwaysOn
Battery Information		İ 👘									
Device Information											
Remote Manage											

2. Verify the service.

The PC obtains the IP addresses automatically. After the PPPoE dialup is successfully performed on the ONT, the PC can automatically obtain the IP addresses allocated by the ONT through DHCP. Then, the Internet access service is provisioned after websites are entered into Internet Explorer (IE) address bars of the PC.

Configuring the Internet Access Service Through the NMS

This topic provides an example of how to configure the Internet access service through the NMS.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- A PC is connected to port LAN2 on the ONT. The IP address of the PC is allocated by the DHCP server (the ONT). PPPoE dialup is performed on the ONT to implement the L3 Internet access service of the PC.

Context

- This topic describes how to configure only L3 Internet access service. For L2 Internet access service, configuration is not required on the ONT but on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- The procedures for configuring the HG8240, HG8247, and HG8245 are the same. This topic considers the HG8245 as an example to describe how to configure the ONT.
- The following section considers the creation of an ONT VAS profile as an example to describe how to bulk configure ONTs. To configure a single ONT, right-click the ONT on the GPON ONU tab page, and choose **Configure Value-Added Service** from the shortcut menu. Details will not be provided in this topic.

Procedure

- **Step 1** Choose **Profile** > **ONT VAS Profile** from the main menu.
- Step 2 Right-click and choose Add from the shortcut menu.
- Step 3 In the dialog box that is displayed, set Profile Name, Vendor ID, Terminal Type, and Version. Where, Version must be set to V1R002C00-Later.

Figure 4-39 shows how to create an ONT VAS profile.

Figure 4-39 Creating an ONT VAS profile

Add ONT VAS Profile		×
Profile Name: ont-hg8245 Terminal Type: 245	★ Vendor ID:★ Version:	HWTC • *
 ⇒ 245 Config Info. → Time ⇒ Services ⊕ WAN Device ⊕ LANDevice → ALG Ability ⊕ Security → Layer 3 Forwarding 	Parameter Name	Parameter Value
Impor	t E <u>x</u> port O	K Cancel <u>A</u> pply

Step 4 Configure the working mode of a LAN port.

Choose LANDevice > LAN Interface 1 > LAN Interface > LAN Ethernet Configuration 2 from the navigation tree. In the right pane, set LAN Port twothree-port enable to enable, indicating that port LAN2 works in the L3 mode (gateway mode).

Figure 4-40 shows how to configure the working mode of a LAN port.

Figure 4-40 Configuring the working mode of a LAN port

Add ONT VAS I	rofile					
Profile Name:	ont-hg8245	*	Vendor ID:	HWTC		*
Terminal Type:	245	*	Version:	V1R002C0	0 ~ Later	*
⊡- 245 Config In	fo.	Paramet	er Name	-	Parameter Value	
— Time		LAN Ethernet Con	figuration inde	ex 2		
🕂 - Services		LAN port two three	e-port enable	enable		•
🕁- WAN Devi	ice					
🖕 LANDevic	e					
🚊 🗄 LAN Ir	nterface 1					
E LA	N Interface					
	– LAN Ethernet Con					
	- LAN Ethernet Con					
	- LAN Ethernet Con					
	– LAN Ethernet Con					
	N-side global confi					
ALG Abilit	v					
- ∓⊢ Security	·					
Laver 3 Fr	nwarding					
Layoron	Simalang					
< <u>(</u>						
	Import	E <u>x</u> port		K (Cancel A	ipply

- When LAN Port two three-port enable is set to disable, it indicates that the corresponding LAN port works in the L2 mode.
- When LAN Port two three-port enable is set to enable, it indicates that the corresponding LAN port works in the L3 mode.

By default, LAN Port two three-port enable is set to disable.

Step 5 Configure the parameters of the WAN interface.

1. Choose WAN Device > WAN Device 1 > WAN Connection from the navigation tree. Right-click the WAN Connection branch and choose Add PPP Connection from the shortcut menu. Choose the **WAN PPP Interface1** branch from the navigation tree. In the right pane, configure the parameters of the WAN interface as follows:

- Set WAN Interface Name to wan-internet.
- Set WAN Enable to enable.
- Set Connection Type to IP_Routed.
- Set NATEnable to enable.
- Set Service Type to INTERNET.
- Set Vlan ID to 150.
- Set **Priority** to **1**.

Figure 4-41 shows how to configure the parameters of the WAN interface.

Figure 4-41 Configuring the parameters of the W.
--

Add ONT VAS I	Profile		×
Profile Name:	ont-hg8245	* Vendor ID: HWTC •] *
Terminal Type:	245	▼ * Version: V1R002C00 ~ Later ▼	*
E 245 Config In Time Services WAN Devic WAN I WAN I WAN I C UANDevic ALG Abilit E LANDevic ALG Abilit Layer 3 Fo	fo. ice Device 1 AN Connection 1 I WAN Connection 1 I WAN PPP Interface I WAN PPP Interface 1 re y orwarding	Parameter Name Parameter Value WAN PPP interface index 1 WAN Interface Name wan-internet WAN Enable enable Connection Type IP_Routed NATEnabled enable Service Type INTERNET Vlan ID(1~4094) 150 Priority(0~7) 1	
	Import	Export OK Cancel Apply	

Select LAN&WANBindNode under WAN PPP Connection 1 in the navigation tree. In the right pane, set LAN2 Enabled to enable to bind the WAN interface to LAN port 2.
 Figure 4-42 shows how to bind the WAN interface.

Add ONT VAS	Profile					X
Profile Name:	ont-hg8245	*	Vendor ID:	HWTC		*
Terminal Type:	245	*	Version:	V1R002	2C00 ~ Later	*
245 Config Ir Time Services WAN Devices WAN W E UANDevice ALG Abiliti Security Layer 3 F	IfO. ice Device 1 AN Connection HWAN Connection 1 WAN PPP Interface WAN PPP Interface 1 LAN &WAN BindNor ce by orwarding	LAN1 LAN2 LAN3 SSID SSID SSID	Parameter N Enabled Enabled Enabled Enabled 2 Enabled 3 Enabled 4 Enabled	ame	Parameter Value disable disable disable disable disable disable disable	
P	Import	zport		ок [Cancel <u>A</u> pp	ly

Figure 4-42 Binding the WAN interface

- Step 6 Click OK.
- Step 7 Bind the ONT VAS profile to the ONT.

On the GPON ONU tab page, select one or more ONTs, right-click, and then choose **Bind VAS Profile** from the shortcut menu. In the dialog box that is displayed, select the new profile and click **OK** to bind the profile to the ONT.

- **Step 8** On the GPON ONU tab page, right-click an ONT and choose **Configure Value-Added Service** from the shortcut menu.
- Step 9 Configure the PPPoE user name and password.

Choose WAN Device > WAN Device 1 > WAN Connection > WAN Connection 1 > WAN PPP Interface > WAN PPP Interface 1 from the navigation tree. In the right pane, set User Name to iadtest@pppoe and Password to iadtest.

Figure 4-43 shows how to configure the PPPoE user name and password.

Configure VAS						
Profile Name:	ont-8245		Vendor ID:	HWTC	-	
Terminal Type:	245	•	Version:	V1R002C00	Ŧ	
Activated Status:	activated					
⊡- 245 Config Info).	Paramete	r Name	Parameter Value		
- Time		WAN PPP interface	index	1		
- Services		WAN Interface Nam	e	wan-internet		
	e	WAN Enable		enable	•	
	evice 1	Connection Type		IP_Routed		
	WAN Connection	NATEnabled		enable	-	
	È- WAN PPP Inte	User Name		iadtest@pppoe		
		Password				
- LANDevice		Service Type		INTERNET	-	
ALG Ability		Vlan ID(1~4094)		150		
E Security		Priority(0~7)		0		
<u>[<]</u>]		Switch to ONT Loa	d Tas	

Figure 4-43 Configuring the PPPoE user name and password

Step 10 Click **OK**. In the dialog box that is displayed, click **OK**. Then, the configuration takes effect after the device automatically restarts.

----End

Result

The PC obtains the IP addresses automatically. After the PPPoE dialup is successfully performed on the ONT, the PC can automatically obtain the IP addresses allocated by the ONT through DHCP. Then, the Internet access service is provisioned after websites are entered into Internet Explorer (IE) address bars of the PC.

Configuring the Internet Access Service Through the TR-069 Server

This topic provides an example of how to configure the Internet access service through the TR-069 server.

Issue 02 (2011-01-26)

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- ONT must be auto-discovered on the TR-069 server. For details, see **4.2.3 Commissioning** Interoperation Between the TR-069 Server and the ONT Through the Web Page or **4.2.4 Commissioning Interoperation Between the TR-069 Server and the ONT** Through the NMS.
- A PC is connected to port LAN2 on the ONT. The IP address of the PC is allocated by the DHCP server (the ONT). PPPoE dialup is performed on the ONT to implement the L3 Internet access service of the PC.

Context

- This topic describes how to configure only L3 Internet access service. For L2 Internet access service, configuration is not required on the ONT but on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- Every data change must be saved. You can click **Save** in a window to save data changes. If you navigate to another node without saving data changes, a dialog box will be displayed prompting you to save the data changes. In this case, click **YES** in the dialog box. New data will be automatically applied to the ONTs after the data changes are saved.

When configuring services on the TR-069 server, do not modify the WAN interface connecting the TR-069 server and the ONT. Otherwise, the TR-069 server loses communication with the ONT.

Procedure

- Step 1 Log in to the TR-069 server and choose Subnet View > TR069 Subnet from the navigation tree. In the terminal list, right-click an ONT and choose Tools > Configure in Real Time from the shortcut menu.
- Step 2 In the Configure in Real Time dialog box, set Root Node to Internet gateway device.
- Step 3 Configure the working mode of a LAN port.

Choose InternetGatewayDevice > LANDevice > 1 > LANEthernetInterfaceConfig > 2 from the navigation tree. In the right pane, set X_HW_L3Enable to 1, indicating that port LAN2 works in the L3 mode.

Figure 4-44 shows how to configure the working mode of a LAN port.

Configure in Real Time				×
Root Node Internet gateway device	✓			
InternetGatewayDevice	Parameter		Value	
	V UW LOCashia	1	Value	
	X_HWV_L3Enable	1		
X HW WlanEnable				
WLANConfiguration				
LANHostConfigMana				
Hosts				
LANEthernetInterfa				
± 1				
+ 2				
± 3				
. 4				
X_HW_LANGlobalCc				
WANDevice				
Services				
X_HW_DHCPSLVSERVER				
. Time				
 Layer3Forwarding 				
X_HW_Security				
X_HW_APMPolicy				
+ DeviceInfo				
Add Delete				
Refresh Modify	<			>
	[ОК	Cancel	Save

Figure 4-44 Configuring the working mode of a LAN port

- When **X_HW_L3Enable** is set to **0**, it indicates that the corresponding LAN port works in the L2 mode.
- When **X_HW_L3Enable** is set to **1**, it indicates that the corresponding LAN port works in the L3 mode.

By default, X_HW_L3Enable is set to 0.

Step 4 Configure the parameters of the WAN interface.

- 1. Choose InternetGatewayDevice > WANDevice > 1 > WANConnectionDevice from the navigation tree. Click Add in the lower left part to create an instance.
- 2. Choose **2** > **WANPPPConnection** from the navigation tree and click **Add** in the lower left part. Choose the new **1** branch from the navigation tree. In the right pane, set parameters as follows:
 - Set **Enable** to **1**, indicating that the WAN connection is enabled.
 - Set **Connection Type** to **IP_Routed**, indicating that the connection type of the WAN interface is in routing mode.
 - Set NATEnable to 1, indicating that the NAT function is enabled.
 - Set Username to iadtest@pppoe and Password to iadtest, indicating that the PPPoE user name is iadtest@pppoe and the password is iadtest.

- Set X_HW_SERVICELIST to INTERNET, indicating that the WAN interface provides Internet access.
- Set X_HW_VLAN to 150, indicating the VLAN ID of the WAN interface is 150.

```
• Set X_HW_PRI to 1, indicating the priority level of the WAN interface is 1.
```

- If the WAN interface obtains IP addresses in static or DHCP mode, choose **WANIPConnection** to set the parameters of the WAN interface.
- If the WAN interface obtains IP addresses in PPPoE mode, choose **WANPPPConnection** to set the parameters of the WAN interface.

Figure 4-45 shows how to configure the parameters of the WAN interface.

Figure 4-45 Configuring the parameters of the WAN interface

Configure in Real Time 🛛 🛛 🛛								
Root Node Internet gateway de	vice	~						
InternetGatewayDevice	~	Darameter	Value					
		Enable	1					
		ConnectionStatus	Unconfigured					
		ConnectionType	IP_Routed					
WANConnectionNur		DefaultGateway						
WANConnectionDev I		Name	wan2					
□ □ 2		NATEnabled	1					
WANIPConne		Username	iadtest@pppoe					
WANPPPConn		Password	iadtest					
Services		ExternalIPAddress						
X_HW_DHCPSLVSERVER		DNSEnabled	1					
⊕ Time		DNSServers						
Layer3Forwarding X HW/ Socurity	-	MACAddress	28:6E:D4:0D:BC:EC					
X HW APMPolicy X HW APMPolicy		PortMappingNumberOfEntries	0					
		X_HW_SERVICELIST	INTERNET					
X_HW_BatteryInfo		X_HW_VLAN	150					
< HW ALG	-	X_HW_PRI	1					
		X_HW_MultiCastVLAN	4294967295					
Add Delete	J							
Refresh Modify		<						
			OK Cancel Save					

Step 5 Bind a LAN port.

Choose **1X_HW_LANBIND** from the navigation tree. In the right pane, set **Lan2Enable** to **1** to bind the WAN interface to LAN port 2.

Figure 4-46 shows how to bind a LAN port.
Figure 4-46 Binding a LAN port

Configure in Real Time				×
Root Node Internet gateway devi	icı 💊	2		
WANPPPConnection	^	Parameter	Value	
I		Lan1Enable	0	
ConnectionStatus		Lan2Enable	1	
ConnectionType		Lan3Enable	0	
DefaultGateway		Lan4Enable	0	
NATEnabled		SSID1Enable	0	
Username		SSID2Enable	0	
ExternalIPAddress		SSID3Enable	0	
DNSEnabled		SSID4Enable	0	
Add Delete				
Refresh Modify		<		>
			OK Cancel Save	

Step 6 Click OK after the configuration.

----End

Result

The PC obtains the IP addresses automatically. After the PPPoE dialup is successfully performed on the ONT, the PC can automatically obtain the IP addresses allocated by the ONT through DHCP. Then, the Internet access service is provisioned after websites are entered into Internet Explorer (IE) address bars of the PC.

4.5 Configuring a SIP-based Voice Service

This topic provides an example of how to configure the SIP-based voice service.

4.5.1 Data Plan

This topic provides the typical data plan for configuring the SIP-based voice service to make good preparations for the configuration.

4.5.2 Configuration Flowchart

This topic provides the flowchart for configuring the SIP-based voice service.

4.5.3 Configuration Method

The SIP-based voice service can be configured through the Web page, N2000 BMS, or TR-069 server.

4.5.1 Data Plan

This topic provides the typical data plan for configuring the SIP-based voice service to make good preparations for the configuration.

 Table 4-7 provides the data plan for configuring the SIP-based voice service.

Parameter Description Data Service type of VoIP When configuring the voice service, you just need to the WAN select VoIP or a combination with VoIP. In this interface example, VoIP is selected. Connection Route It can be set to route and bridge. In the case of the mode voice service, only route can be selected. VLAN ID of the 200 The VLAN ID of the WAN interface must be the WAN interface same as the VLAN ID of the traffic streams configured on the OLT. DHCP Mode of There are three modes of obtaining an IP address. obtaining an IP • DHCP: Obtain an IP address dynamically. address • Static: Configure an IP address manually. • PPPoE: Access in the PPPoE dialup mode. In this example, the DHCP mode is configured. You can also select the static or PPPoE mode according to the data plan of the upper-layer network. 802.1p 6 The larger the service priority value, the higher the service priority. The priorities are the same as those planned on the OLT, that is, the priority sequence is the voice service, multicast service, and Internet access service/Wi-Fi in a descending order. Region China Signaling SIP • Device software version V100R002C00 supports protocol the SIP protocol. • Device software version V100R002C01 supports the H.248 protocol. For the SIP voice service, load V100R002C00 software version if the available software version is not V100R002C00. This item need not be configured on the Web page. If the software version is V100R002C00, only the page about SIP voice parameters is displayed; if the software version is V100R002C01, only the page about H.248 voice parameters is displayed.

Table 4-7 Data plan for configuring the SIP-based voice service

Parameter	Data	Description
IP address of the SIP server	172.23.1.2	The IP address of the SIP server must be the same as the IP address configured on the softswitch.
Domain name for SIP registration	softx3000.huawei. com	The registration domain name must be the same as the registration domain name configured on the softswitch.
Telephone number and password of SIP users	 User 1: telephone number 88001234 (77770085); password iadtest1. User 2: telephone number 88001235 (77770086); password iadtest2. 	The telephone numbers must be the same as those set on the softswitch.
SIP digitmap	8800xxxx 7777xxxx(For web configure)	Indicates that the eight-digit telephone numbers starting with 8800 are allowed to have voice services. This parameter must be consistent with the CO data plan in a specific country/region.

4.5.2 Configuration Flowchart

This topic provides the flowchart for configuring the SIP-based voice service.

Figure 4-47 shows the flowchart for configuring the SIP-based voice service through the Web page.



Figure 4-47 Flowchart for configuring the SIP-based voice service through the Web page

Figure 4-48 shows the flowchart for configuring the SIP-based voice service through the N2000 BMS.



Figure 4-48 Flowchart for configuring the SIP-based voice service through the N2000 BMS

Figure 4-49 shows the flowchart for configuring the SIP-based voice service through the TR-069 server.



Figure 4-49 Flowchart for configuring the SIP-based voice service through the TR-069 server

4.5.3 Configuration Method

The SIP-based voice service can be configured through the Web page, N2000 BMS, or TR-069 server.

Configuring SIP-based Voice Service Through the Web Page

This topic provides an example of how to configure the SIP-based voice service through the Web page.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see **4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)**.
- The environment for service configuration on the Web page must be available and you must be logged into the Web page successfully. For details, see **3.2 Logging In Through the Web Page**.
- Two telephone sets are connected to TEL1 and TEL2 on the ONT respectively.

Procedure

Step 1 Configure the parameters of the voice WAN interface.

- 1. Coose WAN > WAN Configuration.
- 2. In the pane on the right, click **New**. In the dialog box that is displayed, configure the parameters of the WAN interface as follows:
 - Select **Enable** next to **NewWanConnction** to enable the WAN connection that is newly set up.
 - Set Service List to VOIP.
 - Set Mode to Route.
 - Set VLAN ID to 200.
 - Set 802.1p to 6.
 - Set IP Acquisition Mode to DHCP.

Figure 4-50 shows how to configure the parameters of the voice WAN interface.

Figure 4-50 Configuring the parameters of the voice WAN interface through the Web page

	HG82	.47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
WAN Configuration		WAN	I > WAN C	Configuratio	n					
		(6 0	On this pa equipmen consisten	ige,you can it through th t with those	configure WA e WAN interfa of the upper-I	N paramet ice. During layer netwo	ers.The ONT home the communication ork equipment.	gateway communicate: , the parameter setting:	s with the up of the WAN	per-layer network I interface must be
										New Delete
				Conne	ection Name		VLAN/Prior	rity	IP Acquis	tion Mode
		Ena	able WAN	Connection	n: 💌					
		Ser	vice List:		VOIP		~			
		Mo	de:		Rout	e	~			
		VLA	AN ID:		200		*(1-409	4)		
		802	2.1p:		6		~			
		IP A	Acquisition	n Mode:	💿 D	нср 🔘	Static 🔘 PPPoE			
		Ver	ndor ID:				(The ve	ndor ID must be 0 - 63	characters i	n length.)
					App	oly Ca	ancel			

3. Click Apply.

Step 2 Configure the parameters of the SIP-based voice interface.

- 1. In the navigation tree on the left, choose Voice > VoIP Interface Configuration.
- 2. In the pane on the right, configure the parameters of the SIP-based voice interface as follows:
 - Set Proxy Server Address below Primary Server to 172.23.1.2.
 - Set Home Domain to softx3000.huawei.com.
 - Set **Digitmap** to **7700xxxx**.
 - Set Region to CN China.
 - Set Signaling Port Name to 1_VOIP_R_VID_200.

Figure 4-51 shows how to configure the parameters of the SIP-based voice interface.

	HG82	247									Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rul	les	Network Application	Voice	System Tools
VolP Basic Configurati	ion	Void	ce > VolF	Basic Cor	nfiguration						
VolP Advanced Config	uration	Inte	rface Ba	isic Param	eters						
			You can	set the void	ce interface b	asic param	eters.				
		Pri	imary Pro	oxy Address	s: 17	2.23.111.11	1	*(IP or	r Domain)		
Primary Proxy Port:						60		*(1-65	i535)		
		Sta	tandby Proxy Address: (IP or Domain)								
		Sta	andby Pr	oxy Port:	5060 (1-65535)						
		Ho	me Dom	nain:	so	ft3000.huav	wei.com	(IP or I	Domain)		
		Lo	cal Port:		50	160		*(1-65	i535)		
		Di	gitmap:		77	77xxxx				*	
		Dig	gitmap M	latch Mode:	Mi	Min					
		Re	egistratio	n Period:	60	10		(Uints	s)(1~65534)		
	gnaling F	ort:	2_ me	2_VOIP_R_VID_200 (Select the name of the WAN that will carry the voice signaling messages.)					voice signaling		
		Me	edia Port		sig	inaling port	(Sele) when it is emp	ct Medi ty.)	a for voice signaling. Ti	ne media pi	ort is same with
		Re	gion:		CI	N - China	-	·			
					4	Vlaa	Cancel				

Figure 4-51 Configuring the parameters of the SIP-based voice interface through the Web page

3. Click Apply.

Step 3 Configure the parameters of the SIP-based voice users.

- 1. In the navigation tree on the left, choose Voice > VoIP User Configuration.
- 2. In the pane on the right, configure the parameters of voice user 1 as follows:
 - Set Public User Name to 77770085.
 - Select **Enable** to enable the voice user configuration.
 - Set **Password** to **iadtest1**.
 - Set Associated POTS to 1.

In the pane on the right, click **New** to add voice user 2, and configure the parameters of voice user 2 as follows:

- Set Public User Name to 77770086.
- Select **Enable** to enable the voice user configuration.
- Set **Password** to **iadtest2**.
- Set Associated POTS to 2.

Figure 4-52 shows how to configure the parameters of voice user 2.

Figure 4-52 Configuring the parameters of the SIP-based voice user 2 through the Web page

User Basic Parameters										
You can set the voice user basic parameters.										
					New Delete					
	Sequence	Register User Name	Auth User Name	Password	Associated POTS					
	1	77770085	77770085	*******	1					
	2	77770086	77770086	******	2					
Enable User:										
Register User N	Vame:	77770085	* (Telphone Number)	* (Telphone Number)						
Associated POT	rs:	1 🔽								
Auth User Nam	e:	77770085	(The length must be between 0-64)							
Password:		(The length must be between 0-64)								
		Apply Cancel								

- 3. Click Apply.
- Step 4 Save the configuration.

Choose System Tools > Configuration File from the navigation tree. In the right pane, click Save Configuration, as shown in Figure 4-53.

Figure 4-53 Saving the configuration

	Logout									
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syste	m Tools :	 Configura 	tion File					
Configuration File										
USB Backup Restor	e CFG		You can (lick "Save (Configuration'	to save th	e current configuratio	on to the flash memory.		
Firmware Upgrade										
Restore Default Configuration Save Configuration										
Maintenance										
Log			You can (lick "Down	load Configur	ation File"	to back up the currer	nt configuration.		
ONT Authentication				o 6 4						
Time Setting			ownioad	Configurati	on File					
TR-069			lf you ont	ar the nath i	of the configur	ration file a	nd then click "Unloar	A Configuration File", your	home ast	hetchru ed lliw vewe
Advanced Power Ma	anagement	in you enter the pain of the configuration file and then click. Opticad Configuration File, your nome gateway will be updated with the saved configuration file.								
Modify Login Passw	ord		<i>c v</i>	F 11				11.1 I.O. C. F.		
		- Co	ntiguratio	n File:			Browse	Upload Configuratio	n File	

Step 5 Restart the voice process.

In the navigation tree on the left, choose **Status** > **VoIP Information**. In the pane on the right, click **Restart VoIP**, as shown in **Figure 4-54**.

Figure 4-54 Restarting the voice process

	HG8247 Logout										
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
WAN Information	mation Status > VolP Information										
VolP Information	P Information										
WLAN Information		On this page, you can query the voice user list and status.									
Eth Port Information	Eth Port Information										
DHCP Information		S	equence	Regi	ster User Na	me(Teleph	ione Number)	User Status		Call Status	
Optical Information		1		777700	85			Up	Idle		
Battery Information		2	2 77770086 Up Idle								
Device Information	Device Information										
Remote Manage	To restart the VoIP service, click "Restart VoIP". Restart VoIP										

----End

Result

1. Query the connection status of the ONT.

In the navigation tree on the left, choose **Status** > **WAN Information**. In the pane on the right, the **Status** is **Connected** and the obtained IP address is displayed in **IP**.

Figure 4-55 shows how to query the connection status of voice service.

Figure 4-55 Querying connection status of voice service

HG8247 Loge									Logout	
HUAWEI Statu	s WAN	LAN	WLAN	Security	Route F	orward Rules	Network A	pplication	Voice System	Tools
WAN Information	Stat	Status > WAN Information								
VolP Information										
WLAN Information		On this page, you can query the connection status and line status of the WAN interface.								
Eth Port Information					IP					
DHCP Information		N	/AN Name	Status	Acquisition	IP Address	Subnet Mask	VLAN/Priority	MAC Address	Connect
Optical Information	1.1		200	Connected		171120116	266 266 266 0	543(7	00.92.40.59.44.01	AlwaysOn
Battery Information	1_4	011 _1(_10)_	_200	Connected	Diloi	171.1.20.110	200.200.200.0	343/7	00.02.40.30.44.01	/ amayoon
Device Information										
Remote Manage										

2. Query the registration status of the voice user.

In the navigation tree on the left, choose **Status** > **VoIP Information**. In the pane on the right, the **User Status** is **Up**.

Figure 4-56 shows how to query the registration status of voice user.

HG8247 Logout										
HUAWEI Status	WAN LAN	WLAN Security	Route Forward Rules	Network Application	Voice System Tools					
WAN Information	Status > VoIP In	Status > VoIP Information								
VolP Information										
WLAN Information	On this page	On this page, you can query the voice user list and status.								
Eth Port Information	Port Information									
DHCP Information	Sequence	Register User Na	me(Telephone Number)	User Status	Call Status					
Ontical Information	1	77770085		Up	Idle					
	2	77770086		Up	Idle					
Battery Information										
Device Information	ormation To restart the VolP service click "Pestart VolP"									
Remote Manage	TO TESTAILTINE YOU SERVICE, UICK TRESTAIL YOU .									
	Restart Vo	IP								

Figure 4-56 Querying the registration status of voice user

3. Verify the service.

User 1 with telephone number **77770086** can call user 2 with telephone number **77770086**, and the communication between them is normal. The same is true when user 2 calls user 1.

Configuring SIP-based Voice Service Through the NMS

This topic provides an example of how to configure the SIP-based voice service through the NMS.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- Two telephone sets are connected to TEL1 and TEL2 on the ONT respectively.

Context

- The procedures for configuring the HG8240, HG8247, and HG8245 are the same. This topic considers the HG8245 as an example to describe how to configure the ONT.
- The following section considers the creation of an ONT VAS profile as an example to describe how to bulk configure ONTs. To configure a single ONT, right-click the ONT on the GPON ONU tab page, and choose **Configure Value-Added Service** from the shortcut menu. Details will not be provided in this topic.

Procedure

- **Step 1** Choose **Profile** > **ONT VAS Profile** from the main menu.
- Step 2 Right-click and choose Add from the shortcut menu.
- Step 3 In the dialog box that is displayed, set Profile Name, Vendor ID, Terminal Type, and Version. Where, Version must be set to V1R002C00-Later.

Figure 4-57 shows how to create an ONT VAS profile.

Add ONT VAS I	rofile				X
Add ONT VAS D Profile Name: Terminal Type: - 245 Config In - Time - Services - WAN Device - ALG Abiliti - Security - Layer 3 Fr	Profile ont-hg8245 245 fo. ice e y prwarding	* * *	Vendor ID: Version: er Name	HWTC V1R002C00 ~ L	▼ * ater ▼ * neter Value
	Import	E <u>x</u> port		DK Canc	el <u>A</u> pply

Figure 4-57 Creating an ONT VAS profile

Step 4 Configure the parameters of the voice WAN interface.

Choose WAN Device > WAN Device 1 > WAN Connection from the navigation tree. Rightclick WAN Connection and choose Add IP Connection from the shortcut menu. Choose WAN IP Interface 1 from the navigation tree. In the right pane, set the parameters as follows:

- Set WAN Interface Name to wan-voice.
- Set WAN Enable to enable.
- Set Connection Type to IP_Routed.
- Set Vlan ID to 200.
- Set **Priority** to **6**.
- Set Addressing Type to DHCP.
- Set Service Type to VOIP.

Figure 4-58 shows how to configure the parameters of the voice WAN interface.

Add ONT VAS Profile	2	×
Profile Name: ont-hg8245	* Vendor ID: HWTC * Version: V1R002C00 ~ Later *	▼ * ▼ *
- 245 Config Info Time - Services - WAN Device - WAN Device - WAN Connection - WAN Connection 1 - WAN IP Interface - ALG Ability - Security - Layer 3 Forwarding	Parameter Name Parameter Value WAN IP interface index 1 WAN Interface Name wan-voice WAN Enable enable Connection Type IP_Routed NATEnabled disable Vian ID(1~4094) 200 Priority(0~7) 6 MultiCast VLAN(1~4094) DHCP Service Type VOIP DNS Enabled enable	
Import	Export OK Cancel Apply	У

Figure 4-58 Configuring the parameters of the voice WAN interface

Step 5 Configure the voice protocol parameters.

Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 from the navigation tree. In the right pane, configure the voice protocol parameters as follows:

- Set Signaling Protocol to SIP.
- Set **Region** to **CN China**.
- Set Associate WAN Interface to wan1 to bind the WAN interface for voice configuration.

Figure 4-59 shows how to configure the voice protocol parameters.

	1	
Add OWT VAS Profile		
Add ONT VAS Profile Profile Name: ont-hg8245 Terminal Type: 245 - 245 Config Info Time - Services - Voice Service 1 - Interface Configuration - Interface 1 - Physical Interface - VVAN Device - ALG Ability - Security - Layer 3 Forwarding	 ★ Vendor ID: HWTC ★ Version: V1R00 Parameter Name Interface index Signaling Protocol Region DTMF Method Associate WAN Interface Digitmap Match Mode 	✓ 2C00 ~ Later ✓ Parameter Value 1 SIP China ✓ InBand ✓ Wan1 ✓ Min
Import	<u>xport</u> OK	Cancel <u>A</u> pply

Figure 4-59 Configuring the voice protocol parameters

Step 6 Configure the SIP service parameters.

Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > SIP from the navigation tree. In the right pane, set Proxy Server to 172.23.1.2 and Home Domain to softx3000.huawei.com.

Figure 4-60 shows how to configure the SIP service parameters.

g. i i i g. g. i i i F.		
Add ONT VAS Profile		×
Profile Name: ont-hg8245	Vendor ID: HWTC	*
Terminal Type: 245 Terminal Type: 245 - 245 Config Info. - Time - Services - Voice Service 1 - Voice Service 1 - Interface Configuration - Interface 1 - H248 - H248 - RTP - Fax T38 - Fax/Modem - User - Physical Interface - ALG Ability - Security - Layer 3 Forwarding	Version: V1R002C00 ~ Later Parameter Name Parameter Value Proxy Server 172.23.1.2 Proxy Server Port(0~65535) 5060 Secondary Proxy Server 5060 Secondary Proxy Server P 5060 Home Domain softx3000.huawei.com Local Port(0~65535) 5060 Registration Period(1~65 600 Register Retry Interval(1~ 30 DSCP(0~63) 0	
E	xport OK Cancel Apply	

Figure 4-60 Configuring the SIP service parameters

Step 7 Configure the SIP user digitmap.

Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > SIP > Digit Map > Digit Map 1 from the navigation tree. In the right pane, set Digit Map Body to 8800xxxx.

This step considers the value **8800xxxx** of **Digit Map Body** as an example to describe how to configure the digitmap. In this example, 8-digit numbers beginning with 8800 can be used to make calls. You can set **Digit Map Body** according to requirements of different offices.

Figure 4-61 shows how to configure the SIP user digitmap.

Add ONT VAS	Profile			×
Profile Name:	ont-hg8245		* Vendor ID: HW	<u>ГС</u> ▼*
Terminal Type:	245		▼ * Version: V1R	002C00 ~ Later 🔹 🔻
245 Config Ir Time Services Voice LANDevin - ALG Abilli F. Security	nfo. e Service oice Service 1 le Interface Configuration le Interface 1 SIP SIP SIP Profile Digit Map Digit Map 1 Digit Map 2 Digit Map 3 H248 Fax/Modem User Physical Interface vice ce		Parameter Name SIP digitmap index Digit Map Name Digit Map Type Digit Map Body Start Timer(0~900)(s) Short Timer(0~900)(s) Long Timer(0~900)(s)	Parameter Value 1 dmmNormal Normal 8800xxxx 20 5 10
I <u> </u>	Import	E	port OK	Cancel <u>A</u> pply

Figure 4-61 Configuring the SIP user digitmap

Step 8 Configure the voice users.

1. Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > User from the navigation tree. Right-click User and choose Add from the shortcut menu.

You can configure a maximum of two users on the HG8240/HG8245/HG8247.

Choose User > User 1 from the navigation tree. In the right pane, set Interface ID to 1. In the same way, choose User > User 2 from the navigation tree. In the right pane, set InterfaceID to 2.

Figure 4-62 shows how to configure the voice users.

	0					
Add UNI VAS I	Profile					<u> </u>
Profile Name:	ont-hg8245	*	Vendor ID:	HWTC		*
Terminal Type:	245	*	Version:	V1R002	C00 ~ Later	*
⊡- 245 Config In	f0.		Parameter N	ame	Paramet	ter Value
- Time		User	rindex		2	
🖻 - Services		Inter	face ID		2	•
😑 Voice	Service					
E-Vo	pice Service 1					
 	Interface Configuration					
	E⊢ Interface 1					
	Fax 150					
	dia user 1					
	⊕-User 2					
	Physical Interface					
🕂 - WAN Dev	ice					
🔄 🗄 LANDevic	e					
— ALG Abilit	у					
⊕- Security						
Layer 3 F	orwarding					
	Import	E <u>x</u> port		ок С	Cancel	Apply

Figure 4-62 Configuring the voice users

- Step 9 Click OK.
- **Step 10** Bind the ONT VAS profile to the ONT.

On the GPON ONU tab page, select one or more ONTs, right-click, and then choose **Bind VAS Profile** from the shortcut menu. In the dialog box that is displayed, select the new profile and click **OK** to bind the profile to the ONT.

- Step 11 On the GPON ONU tab page, right-click an ONT and choose Configure Value-Added Service from the shortcut menu.
- Step 12 Configure the information about SIP voice users.
 - Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > User > User 1 from the navigation tree. In the right pane, set Directory Number to 88001234.

Figure 4-63 shows how to configure the telephone number of SIP voice user 1.

	8	1			
Configure VAS					X
Profile Name:	ont-8245		Vendor ID:	HWTC	-
Terminal Type:	245	T	Version:	V1R002C00	-
Activated Status:	activated				
⊡- 245 Config Inf	o.	Paramete	r Name	Parameter Value	
– Time		User index		1	
E- Services		User Enabled		Enabled	-
E-Voice S	Service	Directory Number		88001234	
	ce Service I Interface Configur	Interface ID		1	-
	⊨ Interface 1	Priority Enable		disable	-
⊕- WAN Device ⊕- LANDevice — ALG Ability ⊕- Security — Layer 3 Fo	P + H248 P + H248 P - RTP Fax T38 Fax/Moder User User User 1 User 2 Physical Interface ce				
<u><</u>					
				Switch to ONT Load	Task
	<u>U</u> nbin	d Import	Expo	rt OK Cano	el

Figure 4-63 Configuring the telephone number of SIP voice user 1

 Choose User 1 > SIP from the navigation tree. In the right pane, set Auth User Name to 88001234@softx3000.huawei.com and Auth Password to iadtest1.

Figure 4-64 shows how to configure the authentication information of SIP voice user 1.

	8 8						
Configure VAS							\times
Profile Name:	ont-8245			Vendor ID:	HWTC		•
Terminal Type:	245		-	Version:	V1R00	2000	-
Activated Status:	activated						
⊡- 245 Config Info).	<u>.</u>		Parameter Nan	ne	Parameter Value	
- Time			Auth U	ser Name		88001234 @softx3000.hua	ar 📗
E- Services		L.	Auth P	assword			
🔄 🗄 Voice S	ervice	L.					
😑 Voic	e Service 1	L.					
	Interface Configuration						
	⊡- Interface 1						
	⊕- SIP						
	⊕- H248						
	€-RTP						
	- Fax T38						
	– Fax/Modem						
	⊡-User						
	- H248						
	ter User 2 Diveria a Unita of a co						
	Priysical Interface						
	e						
		•					
<u> < </u>							
						🔲 Switch to ONT Load Ta	sk
	Unbind	Ī	mport	E <u>x</u> por	t	OK Cancel	

Figure 4-64 Configuring the authentication information of SIP voice user 1

3. In the same way, set **Directory Number** of User 2 to 88001235, Auth User Name to 88001235@softx3000.huawei.com, and Auth Password to iadtest2.

Figure 4-65 and **Figure 4-66** show how to configure the telephone number and the authentication information of SIP voice user 2.

Configure VAS						\mathbf{X}
Profile Name: ont-8245			Vendor ID:	HWTC	:	•
Terminal Type: 245		-	Version:	V1R00	12000	-
Activated Status: activated						
⊡- 245 Config Info.			Parameter Nar	ne	Parameter Value	
- Time		User ir	ndex		2	
🔁 Services		User E	nabled		Enabled	•
📥 Voice Service		Directo	ny Number		88001235	
⊡- Voice Service 1		Interfac	e ID		2	-
		Priority	Enable		disable	•
H248 H248 H248 H248 FaxT38 Fax/Modem User User User User User SIP H248 SIP Callin Codec WAN Device LANDevice LANDevice LANDevice Unbind	g F	 	Expor	t	Switch to ONT Load OK Cance	Task

Figure 4-65 Configuring the telephone number of SIP voice user 2

	0 0						
Configure VAS							×
Profile Name:	ont-8245			Vendor ID:	HWTC	:	-
Terminal Type:	245		-	Version:	V1R00	02000	-
Activated Status:	activated						
⊟- 245 Config Info			F	arameter Nan	ne	Parameter Value	
- Time			Auth Us	er Name		88001235 @softx3000.h	ua [,]
📮 Services			Auth Pa	ssword			
📄 📄 Voice Se	ervice						
📥 📥 Voic	e Service 1						
¢-I	nterface Configuration						
	占 Interface 1						
	🕁 SIP						
	⊕– H248						
	🕁 RTP						
	— Fax T38						
	— Fax/Modem						
	占 User						
	🗄 User 1						
	占 User 2						
	H248						
	- SIP Calling F						
	+- Codec						
L ⊫-F	Physical Interface						
H-WAN Device	9						
	-						
<u><</u>		J					
						🔲 Switch to ONT Load T	ask
	Unbind	Ţ	mport	E <u>x</u> port	t	OK Cance	

Figure 4-66 Configuring the authentication information of SIP voice user 2

Step 13 Click **OK**. In the dialog box that is displayed, click **OK**. Then, the configuration takes effect after the device automatically restarts.

----End

Result

User 1 with telephone number **77770086** can call user 2 with telephone number **77770086**, and the communication between them is normal. The same is true when user 2 calls user 1.

Configuring SIP-based Voice Service Through the TR-069 Server

This topic provides an example of how to configure the SIP-based voice service through the TR-069 server.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- ONT must be auto-discovered on the TR-069 server. For details, see 4.2.3 Commissioning Interoperation Between the TR-069 Server and the ONT Through the Web Page or 4.2.4 Commissioning Interoperation Between the TR-069 Server and the ONT Through the NMS.
- Two telephone sets are connected to TEL1 and TEL2 on the ONT respectively.

Context

- This topic describes how to configure only L3 Internet access service. For L2 Internet access service, configuration is not required on the ONT but on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- Every data change must be saved. You can click **Save** in a window to save data changes. If you navigate to another node without saving data changes, a dialog box will be displayed prompting you to save the data changes. In this case, click **YES** in the dialog box. New data will be automatically applied to the ONTs after the data changes are saved.

When configuring services on the TR-069 server, do not modify the WAN interface connecting the TR-069 server and the ONT. Otherwise, the TR-069 server loses communication with the ONT.

Procedure

- Step 1 Log in to the TR-069 server and choose Subnet View > TR069 Subnet from the navigation tree. In the terminal list, right-click an ONT and choose Tools > Configure in Real Time from the shortcut menu.
- Step 2 In the Configure in Real Time dialog box, set Root Node to Internet gateway device.
- Step 3 Configure the parameters of the voice WAN interface.
 - 1. Choose InternetGatewayDevice > WANDevice > 1 > WANConnectionDevice from the navigation tree. Click Add in the lower left part to create an instance.
 - 2. Choose **2** > **WANIPConnection** from the navigation tree. Click **Add** in the lower left part. Choose **1** from the navigation tree. In the right pane, set the parameters as follows:
 - Set Enable to 1, indicating that the WAN connection is enabled.
 - Set **Connection Type** to **IP_Routed**, indicating that the connection type of the WAN interface is in routing mode.
 - Set **Addressing Type** to **DHCP**, indicating that the WAN interface obtains IP addresses in DHCP mode.

- Set X_HW_SERVICELIST to VOIP, indicating that the WAN interface provides the VoIP access service.
- Set X_HW_VLAN to 200, indicating the VLAN ID of the WAN interface is 200.

• Set X_HW_PRI to 6, indicating that the priority level of the WAN interface is 6.

- If the WAN interface obtains IP addresses in static or DHCP mode, choose **WANIPConnection** to set parameters of the voice WAN interface.
- If the WAN interface obtains IP addresses in PPPoE mode, choose **WANPPPConnection** to set parameters of the voice WAN interface.

Figure 4-67 shows how to configure the parameters of the voice WAN interface.

Figure 4-67 Configuring the parameters of the voice WAN interface

Configure in Real Time			>
Root Node Internet gateway de	VİCI	✓	
InternetGatewavDevice	~	Parameter	Value
LANDevice WANDevice		Enable ConnectionStatus	1 Unconfigured
UNANConnectionNur		Connection Type	IP_Routed
± 1 = 2		NATEnabled	0
WANIPConne	Ξ	Addressing Type External IP Address	DHCP
WANPPPConr Services		SubnetMask DefaultGateway	
X_HW_DHCPSLVSERVER Time Laver2Eenwarding		DNSEnabled DNSServers	1
		MACAddress	28:6E:D4:0D:BC:EC
		X_HW_SERVICELIST	U VOIP
X_HW_ALG X HW MainUPnP	•	X_HW_VLAN X_HW_PRI	200 6
Add Delete		X_HW_MultiCastVLAN X_HW_VenderClassID	4294967295
Refresh Modify		<	
			DK Cancel Save

Step 4 Configure the voice protocol parameters.

Choose InternetGatewayDevice > Services > VoiceService > 1 > VoiceProfile > 1 from the navigation tree. In the right pane, set the parameters as follows:

- Set SignalingProtocol to SIP, indicating that the SIP protocol is used.
- Set **Region** to **CN**, indicating the country code of China.
- Set X_HW_PortName to wan2, indicating that the new WAN interface 2 is bound.

Figure 4-68 shows how to configure the voice protocol parameters.

Configure in Real Time			×
Root Node Internet gateway de	VİCI	~	
InternetGatewayDevice	^	Parameter	Value
LANDevice		Name	
WANDevice Seprises		Reset	0
		SignalingProtocol	SIP
= 1		Region	CN
VoiceProfile		DTMFMethod	InBand
+ 1 - Phylatorface		DigitMap	8800xxxx
		X_HW_DigitMapMatchMode	Min
		X_HW_PortName	wan2
X_HW_LineTest		X_HW_OverseaVer	0
± X_HW_InnerCall		X_HW_HowlerSendFlag	1
Time		X_HW_InterfaceState	Closed
E Layer3Forwarding			
X_HW_Security			
X_HW_APMPOlicy DeviceInfo			
X HW BattervInfo			
H X HW ALG	~		
Add Delete			
Refresh Modify		<	
			OK Cancel Save

Figure 4-68 Configuring the voice protocol parameters

Step 5 Configure the SIP service parameters.

Choose InternetGatewayDevice > Services > VoiceService > 1 > VoiceProfile > 1 > SIP from the navigation tree. In the right pane, set the parameters as follows:

- Set **ProxyServer** to **softx3000.huawei.com**, indicating that the address of the SIP proxy server is **softx3000.huawei.com**.
- Set **RegistarServer** to **172.23.1.2**, indicating that the SIP registration address is **172.23.1.2**.

Figure 4-69 shows how to configure the SIP service parameters.

Configure in Real Time				×
Root Node Internet gateway de	vic			
Services	~	Parameter	Value	
VoiceService	-1	ProxyServer	softx3000.huawei.com	~
□ 1 □ 1		ProxyServerPort	5060	
		ProxyServerTransport	UDP	
Name		X HW SecondaryProxyServer		
Reset		X HW SecondaryProxyServer	5060	
Region		RegistrarServer	172.23.1.2	
DTMFMeth		UserAgentDomain		
X HW Dig		UserAgentPort	5060	
X_HW_Por		Organization		
X_HW_OVE		RegistrationPeriod	600	
X_HW_Inte		TimerT1	500	
■ SIP		TimerT2	4000	
± X_HVV_H24		TimerT4	5000	
± RTP		RegisterRetryInterval	30	
± Tone		InboundAuthUsername		
	≤	InboundAuthPassword		
		UseCodecPriorityInSDPRespor	0	
Add Delete		DSCPMark	0	
Refresh Modify		CIDBacaaaaMaaMumbarOfEle		<u>×</u>
			OK Cancel	Save

Figure 4-69 Configuring the SIP service parameters

Step 6 Configure the SIP user digitmap.

Choose InternetGatewayDevice > Service > VoiceService > 1 > VoiceProfile > 1 > SIP > X_HW_SIPDigitmap > 1 from the navigation tree. In the right pane, set DigitMap to 8800xxxx.

Figure 4-70 shows how to configure the SIP user digitmap.

Configure in Real Time						
Root Node Internet gateway device 🗸						
ProxyServerTransport	Parameter	Value				
X_HW_SecondaryProxy X_HW_SecondaryProxy	DMName	dmmNormal				
RegistrarServer	Digitmap Type	Normal				
UserAgentDomain UserAgentPort	DigitMap	8800xxxx				
Organization	DigitMapStartTimer	20				
TimerT1	DigitMapShortTimer	5				
TimerT2	DigitMapLongTimer	10				
RegisterRetryInterval						
InboundAuthUsername						
UseCodecPriorityInSDPF						
DSCPMark						
ResponseMap						
X_HW_SIPProfile						
E X_HW_SIPDigitmap						
± 2						
+ 3						
Add Delete						
Refresh Modify	<		>			
		OK Cancel	Save			

Figure 4-70 Configuring the SIP user digitmap

Step 7 Configure the information about SIP voice users.

 Choose InternetGatewayDevice > Service > VoiceService > 1 > VoiceProfile > 1 > Line > 1 from the navigation tree. In the right pane, set DirectoryNumber to 88001234, indicating that the telephone number of SIP user 1 is 88001234.

Figure 4-71 shows how to configure the information about SIP voice users.

Configure in Real Time					×
Root Node Internet gateway dev	vici	~			
D TMFMethod DigitMap	^	Parameter		Value	
X_HW_DigitMapMatchMode X_HW_PortName		Enable	Enabled	24	
X_HW_OverseaVer		PhyReferenceList	1	34	
X_HW_InterfaceState		X_HW_RtpLoop	Disable		
		X_HW_Priority	0 Toitiplizio	2	
MGCP RTP		CallState	Idle	g	
Tone EpyT28					
X_HW_FaxModem					
	-				
± 1 + 2					
PhyInterface					
X_HW_RemoteCapServer X_HW_DialSN					
X HW LineTestThreshold	~				
Add Delete]				
Refresh Modify		<			>
		(ОК	Cancel	Save

Figure 4-71 Configuring the telephone number of SIP voice user 1

 Choose 1 > SIP from the navigation tree. In the right pane, set AuthUserName to 88001234@softx3000.huawei.com and AuthPassword to iadtest1, indicating that the user name and password of user 1 for authentication are 88001234@softx3000.huawei.com and iadtest1 respectively.

Figure 4-72 shows how to configure the password of SIP voice user 1.

Configure in Real Time					×
Root Node Internet gateway de	evice	✓			
± KIP	^	Parameter		Value	
± Ione = EsyT29		AuthUserName	880012	34 @softx3000.	huawei.com
X HW FaxModem		AuthPassword	iadtest1		
🗆 Line					
🗆 1					
DirectoryNumber					
PhyReferenceList					
X_HW_RtpLoop					
X_HVV_Priority Status					
CallState					
± MGCP					
VoiceProcessing					
± 2	~				
Add Delete					
Refresh Modify		<	Ш		>
			ОК	Cancel	Save

Figure 4-72 Configuring the password of SIP voice user 1

3. Set information about SIP user 2 in the same way.

Choose InternetGatewayDevice > Service > VoiceService > 1 > VoiceProfile > 1 > Line from the navigation tree. Click Add in the lower left part. Choose 2 from the navigation tree. In the right pane, set DirectoryNumber to 88001235, indicating the telephone number of SIP user 2 is 88001235.

Choose 2 > SIP from the navigation tree. In the right pane, set AuthUserName to 88001235@softx3000.huawei.com and AuthPassword to iadtest2, indicating that the user name and password of user 2 for authentication are 88001235@softx3000.huawei.com and iadtest2 respectively.

Step 8 Restart the voice process.

Choose InternetGatewayDevice > Services > VoiceService > 1 > VoiceProfile > 1 from the navigation tree. In the right pane, set Reset to 1, indicating that the voice process will be restarted.

Figure 4-73 shows how to configure restart the voice process.

C	Configure in Real Time									
	Root Node Internet gateway device									
		_	_							
	InternetGatewayDevice	^	Parameter	Value						
	WANDevice		Name							
	Services	≡	Reset							
	VoiceService		SignalingProtocol	SIP						
	= 1 = VaiceBrafile		Region	CN						
			DTMFMethod	InBand						
	Name		DigitMap	8800xxxx						
	Reset		X_HW_DigitMapMatchMode	Min						
	Region		X_HW_PortName	wan2						
	DTMFMeth DigitMap X_HW_Dig X_HW_Por		X_HW_OverseaVer	0						
			X_HW_HowlerSendFlag	1						
			X_HW_InterfaceState							
	X_HW_Ove									
	X_HW_Into X_HW_Into									
	± SIP									
	X_HW_H2									
		<u> </u>								
	Add Delete	J								
	Refresh Modify		<							
				OK Cancel Save						

Figure 4-73 Restarting the voice process

Step 9 Click OK after the configuration.

----End

Result

User 1 with telephone number **77770086** can call user 2 with telephone number **77770086**, and the communication between them is normal. The same is true when user 2 calls user 1.

4.6 Configuring the H.248-based Voice Service

This topic provides an example of how to configure the H.248-based voice service.

4.6.1 Data Plan

This topic provides the typical data plan for configuring the H.248-based voice service to make good preparations for the configuration.

4.6.2 Configuration Flowchart

This topic provides the flowchart for configuring the H.248-based voice service.

4.6.3 Configuration Method

The H.248-based voice service can be configured through the Web page, N2000 BMS, or TR-069 server.

4.6.1 Data Plan

This topic provides the typical data plan for configuring the H.248-based voice service to make good preparations for the configuration.

Table 4-8 provides the data plan for configuring the H.248-based voice service.

Parameter	Data	Description				
Service type of the WAN interface	VOIP	When configuring the voice service, you just need to select VoIP or a combination with VoIP. In this example, VoIP is selected.				
Connection mode	Route	It can be set to route and bridge. In the case of the voice service, only route can be selected.				
VLAN ID of the WAN interface	200	The VLAN ID of the WAN interface must be the same as the VLAN ID of the traffic streams configured on the OLT.				
Mode of obtaining an IP	DHCP	There are three modes of obtaining an IP address.				
address		• DHCP: Obtain an IP address dynamically.				
		• Static: Configure an IP address manually.				
		• PPPoE: Access in the PPPoE dialup mode.				
		In this example, the DHCP mode is configured. You can also select the static or PPPoE mode according to the data plan of the upper-layer network.				
802.1p	6	The larger the service priority value, the higher the service priority. The priorities are the same as those planned on the OLT, that is, the priority sequence is the voice service, multicast service, and Internet access service/Wi-Fi in a descending order.				
Region	China	-				

Table 4-8 Data plan for configuring the H.248-based voice service

Parameter	Data	Description					
Signaling protocol	H.248	• Device software version V100R002C00 supports the SIP protocol.					
	 Device software version V100R002C0 supports the H.248 protocol. 						
		For the SIP voice service, load V100R002C01 software version if the available software version is not V100R002C01.					
		This item need not be configured on the Web page. If the software version is V100R002C00, only the page about SIP voice parameters is displayed; if the software version is V100R002C01, only the page about H.248 voice parameters is displayed.					
IP address of the MGC server	172.23.1.2	The IP address of the MGC server must be the same as the IP address configured on the MGC.					
MG registration mode	Domain name	The MG registration mode must be the same as the mode configured on the MGC. There are three registration modes: domain name, IP address, and device name.					
Domain name for MG registration	user.huawei.com	The domain name for MG registration must be the same as the registration domain name configured on the MGC.					
Termination ID	• Line 1 termination ID: A0; corresponding telephone number: 88001234	The termination IDs of line 1 and line 2 configured on the MGC correspond to telephone numbers 88001234 and 88001235 respectively.					
	• Line 2 termination ID: A1; corresponding telephone number: 88001235						

4.6.2 Configuration Flowchart

This topic provides the flowchart for configuring the H.248-based voice service.

Figure 4-74 shows the flowchart for configuring the H.248-based voice service through the Web page.



Figure 4-74 Flowchart for configuring the H.248-based voice service through the Web page

Figure 4-75 shows the flowchart for configuring the H.248-based voice service through the N2000 BMS.



Figure 4-75 Flowchart for configuring the H.248-based voice service through the N2000 BMS

Figure 4-76 shows the flowchart for configuring the H.248-based voice service through the TR-069 server.



Figure 4-76 Flowchart for configuring the H.248-based voice service through the TR-069 server

4.6.3 Configuration Method

The H.248-based voice service can be configured through the Web page, N2000 BMS, or TR-069 server.

Configuring the H.248-based Voice Service Through the Web Page

This topic provides an example of how to configure the H.248-based voice service through the Web page.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see **4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS)**.
- The environment for service configuration on the Web page must be available and you must be logged into the Web page successfully. For details, see **3.2 Logging In Through the Web Page**.
- Two telephone sets are connected to TEL1 and TEL2 on the ONT respectively.

Procedure

Step 1 Configure the parameters of the voice WAN interface.

- 1. Coose WAN > WAN Configuration.
- 2. In the pane on the right, click **New**. In the dialog box that is displayed, configure the parameters of the WAN interface as follows:

- Select **Enable** next to **NewWanConnction** to enable the WAN connection that is newly set up.
- Set Service List to VOIP.
- Set Mode to Route.
- Set VLAN ID to 200.
- Set **802.1p** to **6**.
- Set IP Acquisition Mode to DHCP.

Figure 4-77 shows how to configure the parameters of the voice WAN interface.

Figure 4-77 Configuring the parameters of the voice WAN interface through the Web page

	HG82	47									Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network	Application	Voice	System Tools
WAN Configuration		WAN	> WAN C	onfiguration	ı						
)n this pa quipment onsistent	ge,you can t through the with those	configure WAI e WAN interfa of the upper-l:	N paramet ce. During ayer netwo	ers.The ONT home <u>c</u> the communication, rk equipment.	ateway co the param	ommunicates w neter settings of	ith the up; The WAN	per-layer network interface must be
											New Delete
				Conne	ction Name		VLAN/Priori	ity	IF	P Acquisit	ion Mode
		Ena	ble WAN	Connection	:						
		Ser	vice List:		VOIP		~				
		Mo	ie:		Route	9	*				
		VLA	NID:		200		*(1-4094	ł)			
		802	.1p:		6		~				
		IP A	cquisition	n Mode:	💿 DI	нср 🔾	Static 🔘 PPPoE				
		Ver	dor ID:				(The ven	idor ID mu	ist be 0 - 63 ch	aracters in	length.)
					App	ly Ca	incel				

3. Click Apply.

Step 2 Configure the parameters of the H.248-based voice interface.

- 1. In the navigation tree on the left, choose Voice > VoIP Interface Configuration.
- 2. In the pane on the right, configure the parameters of the H.248-based voice interface as follows:
 - Set MGC Address below Primary Server to 172.23.1.2.
 - Set **Register Format** to **DomainName** and **MG Domain** to **user.huawei.com**.
 - Set Signaling Port Name to 1 VOIP R VID 200.
 - Set Region Settings to CN China.

Figure 4-78 shows how to configure the parameters of the H.248-based voice interface.

Figure 4-78 Configuring the parameters of the H.248-based voice interface through the Web page

	247									Logout			
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Ru	les	Network Application	Voice	System Tools		
VoIP Basic Configura	tion	Vo	ice > VoIP	Basic Cont	figuration								
VolP Advanced Configuration			Interface Basic Parameters										
			You can	set the voic	e interface ba	asic param	eters.						
		P	rimary MG	C Address:	17:	2.23.1.2		*(IP o	or Domain)				
		P	Primary MGC Port:			2944			5535)				
		St	Standby MGC Address:						(IP or Domain)				
		St	Standby MGC Port:		294	2944			(1-65535)				
		М	MG Domain:		sof	soft3000.huawei.com							
		L	Local Port:		294	2944 *(1-6553			5535)				
		D	Device Name:										
		М	MID Format:										
		D	Digitmap Match Mode:			Min							
		R	RTP TID Prefix:			A100							
		St	Start Number of RTP TID:		ID: 0	0							
		W	idth of RTI	P TID Numl	ber: 6	6							
		Si	gnaling P	ort:	2_ me:	VOIP_R_VI	ID_200 💽 (S	electt	he name of the WAN that	will carry th	ne voice signaling		
		м	edia Port:		sigr	naling port i	(Sele name when it i	ct WAN s emp	N name for media. The m ity.)	nedia port n	ame is same with		
		R	egion:		CN	I - China		·					
				A	pply C	Cancel							

3. Click Apply.

Step 3 Configure the parameters of the H.248-based voice users.

- 1. In the navigation tree on the left, choose Voice > VoIP User Configuration.
- 2. In the pane on the right, configure the parameters of voice user 1 as follows:
 - Set Line Name to A0.
 - Set Associated POTS to 1.
 - Select **Enable** to enable the voice user configuration.

In the pane on the right, click **New** to add voice user 2, and configure the parameters of voice user 2 as follows:

- Set Line Name to A1.
- Set Associated POTS to 2.
- Select **Enable** to enable the voice user configuration.

Figure 4-79 shows how to configure the parameters of the H.248-based voice user.
8					υ	10
	User Basic Param	eters				
	You can set the	e voice User b				
					New	Delete
			Sequence	Line Name	Associated	POTS
		1		A0	1	
		2		A3	2	
	Enable Line Nam	e:	V			
	Line Name:		A0	×		
	Associated POTS	:	1 🗸			

Apply Cancel

Figure 4-79 Configuring the parameters of the H.248-based voice user through the Web page

- 3. Click Apply.
- **Step 4** Save the configuration.

Choose System Tools > Configuration File from the navigation tree. In the right pane, click Save Configuration, as shown in Figure 4-80.

Figure 4-80 Saving the configuration

	HG82	.47								Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools
Reboot		Syster	m Tools >	Configura	tion File					
Configuration File										
USB Backup Restore	e CFG		You can d	lick"Save (Configuration"	to save th	e current configuratio	on to the flash memory.		
Firmware Upgrade										
Restore Default Conf	figuration	S	ave Confi	guration						
Maintenance										
Log			You can o	lick "Down	load Configur	ation File"	to back up the currer	it configuration.		
ONT Authentication		D	ownload	Configurati	on Filo					
Time Setting			ownioau	conngurau	onrne					
TR-069			lf vou ente	or the nath	of the configur	ation file a	nd then click "Unloar	1 Configuration File" your	home date	he undated
Advanced Power Ma	nagement		with the s	aved config	juration file.	acon no a	a area and a produ	2 comparation r no , your	nomo gui	ana, nin se apauloa
Modify Login Passwo	ord	Cor	nfiguratio	n File:			Browse	Upload Configuratio	n File	

Step 5 Restart the voice process.

In the navigation tree on the left, choose **Status** > **VoIP Information**. In the pane on the right, click **Restart VoIP**, as shown in **Figure 4-81**.

Figure 4-81 Restarting the voice process

HG82	47					Logout
HUAWEI Status	WAN LAN	WLAN Sec	urity Route Fo	rward Rules Net	work Application	Voice System Tools
WAN Information	Status > VoIP	Information				
VoIP Information						
WLAN Information	On this pa	ge, you can query	the voice user list and	status.		
Eth Port Information						
DHCP Information	Sequence	Line Name	Telephone Number	User Status	Call Status	Interface Status
Optical Information	1	AO		Up	Idle	Inservice
Battery Information	2	A3		Up	Idle	
Device Information						
Remote Manage	To restart th	e VoIP service, cli	ck "Restart VolP".			
nemote manage-	Restart \	/oIP				

----End

Result

1. Query the connection status of the ONT.

In the navigation tree on the left, choose **Status** > **WAN Information**. In the pane on the right, the **Status** is **Connected** and the obtained IP address is displayed in IP.

Figure 4-82 shows how to query the connection status of voice service.

Figure 4-82 Querying connection status of voice service

	HG824	47									Logout
HUAWEI	Status	WAN	LAN	WLAN	Security	Route F	orward Rules	Network A	pplication	Voice System	Tools
WAN Information		Statu	s≻WANI	Information							
VolP Information											
WLAN Information			in this pai	ge, you can o	query the conn	ection statu	s and line stati	JS OF THE WAIN II	nterrace.		
Eth Port Information						IP					
DHCP Information				WAN Name	Status	Acquisition	IP Address	Subnet Mask	VLAN/Priority	MAC Address	Connect
Optical Information		1. VC		200	Connecter		171 1 20 116	255 255 255 0	543(7	00:82:40:58:44:01	AlwaysOn
Battery Information			/// _/(_//		oonnootot	DITOT	111.1.20.110	200.200.200.0	040/1	00.02.40.00.44.01	
Device Information											
Remote Manage											

2. Query the registration status of the voice user.

In the navigation tree on the left, choose **Status** > **VoIP Information**. In the pane on the right, the **User Status** is **Up**.

Figure 4-83 shows how to query the registration status of voice user.

Figure 4-83 Querying the registration status of voice user

HG824	17					Logout				
HUAWEI Status	WAN LAN	WLAN Sec	urity Route Fo	rward Rules Ne	twork Application	Voice System Tools				
WAN Information	Status > VoIP I	Status > VoIP Information								
VolP Information										
WLAN Information	On this pa	ge, you can quer	/ the voice user list and	status.						
Eth Port Information										
DHCP Information	Sequence	Line Name	Telephone Number	User Status	Call Status	Interface Status				
Optical Information	1	AO		Up	Idle	Inservice				
Battery Information	2	A3		Up	Idle	moormoo				
Davice Information										
	To restart the	e VoIP service, cl	ick "Restart VolP".							
Remote Manage	Restart V	(oIP								

3. Verify the service.

User 1 with telephone number **88001234** can call user 2 with telephone number **88001235**, and the communication between them is normal. The same is true when user 2 calls user 1.

The termination IDs of line 1 and line 2 configured on the MGC correspond to telephone numbers **88001234** and **88001235** respectively.

Configuring the H.248-based Voice Service Through the NMS

This topic provides an example of how to configure the H.248-based voice service through the NMS.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- Two telephone sets are connected to TEL1 and TEL2 on the ONT respectively.

Context

- The procedures for configuring the HG8240, HG8247, and HG8245 are the same. This topic considers the HG8245 as an example to describe how to configure the ONT.
- The following section considers the creation of an ONT VAS profile as an example to describe how to bulk configure ONTs. To configure a single ONT, right-click the ONT on the GPON ONU tab page, and choose **Configure Value-Added Service** from the shortcut menu. Details will not be provided in this topic.

Procedure

- **Step 1** Choose **Profile** > **ONT VAS Profile** from the main menu.
- Step 2 Right-click and choose Add from the shortcut menu.
- Step 3 In the dialog box that is displayed, set Profile Name, Vendor ID, Terminal Type, and Version. Where, Version must be set to V1R002C00-Later.
 Figure 4-84 shows how to create an ONT VAS profile.

Figure 4-84 Creating an ONT VAS profile

Step 4 Configure the parameters of the voice WAN interface.

Choose WAN Device > WAN Device 1 > WAN Connection from the navigation tree. Rightclick WAN Connection and choose Add IP Connection from the shortcut menu. Choose WAN IP Interface 1 from the navigation tree. In the right pane, set the parameters as follows:

- Set WAN Interface Name to wan-voice.
- Set WAN Enable to enable.
- Set Connection Type to IP_Routed.
- Set Vlan ID to 200.
- Set **Priority** to **6**.
- Set Addressing Type to DHCP.
- Set Service Type to VOIP.

Figure 4-85 shows how to configure the parameters of the voice WAN interface.

Add ONT VAS Profile		×
Profile Name: ont-hg8245 Terminal Type: 245	* Vendor ID: HWTC ▼ Version: V1R002C00 ~ Later]*]*
 □ 245 Config Info. □ Time □ Services □ WAN Device 1 □ WAN Connection □ WAN Connection 1 □ WAN IP Interface □ WAN IP Interface 1 □ ALG Ability □ Security □ Layer 3 Forwarding 	Parameter NameParameter ValueWAN IP interface index1WAN Interface Namewan-voiceWAN EnableenableConnection TypeIP_RoutedNATEnableddisableVlan ID(1~4094)200Priority(0~7)6MultiCast VLAN(1~4094)Addressing TypeDHCPService TypeVOIPDNS EnabledenableDNS ServerOption60 Vender Class ID	
E	E <u>x</u> port OK Cancel <u>A</u> pply	

Figure 4-85 Configuring the parameters of the voice WAN interface

Step 5 Configure the voice protocol parameters.

Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 from the navigation tree. In the right pane, configure the voice protocol parameters as follows:

- Set Signaling Protocol to H248.
- Set Region to China.
- Set Associate WAN Interface to wan1 to bind the WAN interface for voice configuration.

Figure 4-86 shows how to configure the voice protocol parameters.

9		1			
Add ONT VAS I	Profile				×
Profile Name: Terminal Type:	ont-hg8245 245	* Vendor ID:* Version:	HWTC	2C00 ~ Later	▼ *
 ⊇45 Config In Time Services Voice Voice<td>fo. Service bice Service 1 Interface Configuration SIP F H248 F RTP Fax T38 Fax/Modem User Physical Interface ice y orwarding</td><td>Parameter N Interface index Signaling Protocol Region DTMF Method Associate WAN Int Digitmap Match Mo</td><td>ame erface ode</td><td>Parameter Value 1 H248 China InBand wan1 Min</td><td></td>	fo. Service bice Service 1 Interface Configuration SIP F H248 F RTP Fax T38 Fax/Modem User Physical Interface ice y orwarding	Parameter N Interface index Signaling Protocol Region DTMF Method Associate WAN Int Digitmap Match Mo	ame erface ode	Parameter Value 1 H248 China InBand wan1 Min	
1	Import	Export C	ж (Cancel <u>A</u> pply	

Figure 4-86 Configuring the voice protocol parameters

Step 6 Configure the MGC parameters.

Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > H248 from the navigation tree. In the right pane, set Primary MGC to 172.23.1.2 and MID Format to Domain name.

Figure 4-87 shows how to configure the MGC parameters.

Add ONT VAS	Profile					X
Profile Name: Terminal Type:	ont-hg8245 245 1fo.	* •	Vendor ID: Version: Parameter N	HWTC V1R002 ame	2C00 ~ Later Parameter Value	• * • *
E- Services E- Voice Service E- Voice Service 1 E- Interface Configuration E- Interface 1	Prim Secc Secc	2944 2944 2944 2944				
	E⊢ Interface 1	MID DSC	Format P(0~63)		Domain name O	-
	r rivoled interface ce ty orwarding					
	Import			ок (Cancel Appl	y)

Figure 4-87 Configuring the MGC parameters

Step 7 Configure the voice users.

1. Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > User from the navigation tree. Right-click User and choose Add from the shortcut menu.

You can configure a maximum of two users on the HG8240/HG8245/HG8247.

Choose User > User 1 from the navigation tree. In the right pane, set Interface ID to 1. In the same way, choose User > User 2 from the navigation tree. In the right pane, set InterfaceID to 2.

Figure 4-88 shows how to configure the voice users.

				_
Add ONT VAS Profile				×
Profile Name: ont-hg8245	* Vendor ID:	HWTC		*
Terminal Type: 245	▼ * Version:	V1R002C00	~ Later •	▼ *
E⊢ 245 Config Info.	Parameter N	ame	Parameter Value	
– Time	User index	2		
🔁 Services	Interface ID	2		•
🖕 Voice Service				
📥 Voice Service 1				
⊨ Interface Configuration				
📥 📥 Interface 1				
I III IIII IIII IIII IIII IIII IIII I				
H248				
RTP				
— Fax T38				
– Fax/Modem				
📥 User				
🖶 User 1				
庄 – User 2				
WAN Device				
🕀 LANDevice				
— ALG Ability				
⊕– Security				
Layer 3 Forwarding				
	Export		ancol Anniu	_
<u> </u>			ancer <u> A</u> pply	

Figure 4-88 Configuring the voice users

- Step 8 Click OK.
- **Step 9** Bind the ONT VAS profile to the ONT.

On the GPON ONU tab page, select one or more ONTs, right-click, and then choose **Bind VAS Profile** from the shortcut menu. In the dialog box that is displayed, select the new profile and click **OK** to bind the profile to the ONT.

- Step 10 On the GPON ONU tab page, right-click an ONT and choose Configure Value-Added Service from the shortcut menu.
- Step 11 Configure the MG domain name.

Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > H248 from the navigation tree. In the right pane, set Domain name to user.huawei.com.

Figure 4-89 shows how to configure the MG domain name.

Configure VAS						
Profile Name:	ont-8245		Vendor ID:	HWTC	-	
Terminal Type:	245	•	Version:	V1R002C01	Ŧ	
Activated Status:	activated					
E- 245 Config Infe	o.	Paramete	r Name	Parameter Value		
— Time		Primary MGC		172.23.1.2		
E- Services		Primary MGC port(0	~65535)	2944		
📋 📄 🗄 Voice S	Service	Secondary MGC				
E-Voi	ce Service 1	Secondary MGC po	rt(0~65535)	2944		
	Interface Configur	Local Port(0~65535)	2944		
		Domain name	·	user.huawei.com		
	⊕- <mark>H248</mark>	Device name				
	⊕- RTP	MID Format		Domain name	•	
	— Fax T38	DSCP(0~63)		0		
	— Fax/Moder			-		
	⊡ User					
E VIAN Devia	Physical Interface					
	e l					
F⊢ Security						
Laver 3 For	rwarding					
	-					
<						
				Switch to ONT Load	1 Task	
	<u>U</u> nbin	d	Expor	t OK Cano	cel	

Figure 4-89 Configuring the MG domain name

Step 12 Configure the TIDs of H.248 voice users.

Choose Services > Voice Service > Voice Service 1 > Interface configuration > Interface1 > User from the navigation tree. In the right pane, set the TIDs as follows:

- 1. Choose User 1 > H248 from the navigation tree. In the right pane, set TID to A0.
- 2. Choose User 2 > H248 from the navigation tree. In the right pane, set TID to A1.

TIDs A0 and A1 are configured on the MGC and telephone numbers 88001234 and 88001235 are bound to TIDs A0 and A1 respectively.

Figure 4-90 and **Figure 4-91** show how to configure the TID of H.248 voice user 1 and the TID of H.248 voice user 2.

	8 8						
Configure VAS							×
Profile Name:	ont-8245			Vendor ID:	HWT	>	•
Terminal Type:	245		•	Version:	V1R0	02C01	•
Activated Status:	activated						
⊡- 245 Config Info	l.		Ρ	arameter Nan	ne	Parameter Value	
— Time		TI	D			AO	
🖨 Services							
📥 Voice S	ervice						
📥 📥 Voic	e Service 1						
	nterface Configuration						
	占 Interface 1						
	🕁 SIP						
	🛨 H248						
	🕂 RTP						
	— Fax T38						
	— Fax/Modem						
	占 User						
	占 User 1						
	t SIP						
	- H248						
	- SIP Calling	F					
	🗄 Codec						
	i±⊢ User 2						
i i i i i i i i i i i i i i i i i i i	Physical Interface						
🕁- WAN Device	е						
🕂 LANDevice							
<u>N</u>	······, (Switch to ONT Load 3	 Task
							aon
	Unbind	<u>I</u> mpo	ort	E <u>x</u> port		OK Cance	

Figure 4-90 Configuring the TID of H.248 voice user 1

	2 2						
Configure VAS							×
Profile Name:	ont-8245			Vendor ID:	HWTC	;	
Terminal Type:	245		-	Version:	V1R00	12C01	-
Activated Status:	activated						
⊡- 245 Config Info				Parameter Nam	ne	Parameter Value	
- Time			TID			A1	
😑 Services							
📄 🖄 🖻 🗠 Voice Se	ervice						
⊡- Voic	e Service 1						
	nterface Configuration						
	E-Interface 1						
	⊞-SIP						
	– Fax 130 – Fax(Modern						
	the User 1						
	E-User 2						
	t siP						
	– <mark>H248</mark> – SIP Calling I	_					
	⊕ Codec						
H H	Physical Interface						
⊕– WAN Device	e						
01 A 01-012		Ľ.					
			J				
						Switch to ONT Load	lask
	Unbind		mport	E <u>x</u> port		OK Cance	

Figure 4-91 Configuring the TID of H.248 voice user 2

Step 13 Click **OK**. In the dialog box that is displayed, click **OK**. Then, the configuration takes effect after the device automatically restarts.

----End

Result

User 1 with telephone number **88001234** can call user 2 with telephone number **88001235**, and the communication between them is normal. The same is true when user 2 calls user 1.

The termination IDs of line 1 and line 2 configured on the MGC correspond to telephone numbers **88001234** and **88001235** respectively.

Configuring the H.248-based Voice Service Through the TR-069 Server

This topic provides an example of how to configure the H.248-based voice service through the TR-069 server.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- ONT must be auto-discovered on the TR-069 server. For details, see 4.2.3 Commissioning Interoperation Between the TR-069 Server and the ONT Through the Web Page or 4.2.4 Commissioning Interoperation Between the TR-069 Server and the ONT Through the NMS.
- Two telephone sets are connected to TEL1 and TEL2 on the ONT respectively.

Context

- This topic describes how to configure only L3 Internet access service. For L2 Internet access service, configuration is not required on the ONT but on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- Every data change must be saved. You can click **Save** in a window to save data changes. If you navigate to another node without saving data changes, a dialog box will be displayed prompting you to save the data changes. In this case, click **YES** in the dialog box. New data will be automatically applied to the ONTs after the data changes are saved.

When configuring services on the TR-069 server, do not modify the WAN interface connecting the TR-069 server and the ONT. Otherwise, the TR-069 server loses communication with the ONT.

Procedure

- Step 1 Log in to the TR-069 server and choose Subnet View > TR069 Subnet from the navigation tree. In the terminal list, right-click an ONT and choose Tools > Configure in Real Time from the shortcut menu.
- Step 2 In the Configure in Real Time dialog box, set Root Node to Internet gateway device.
- Step 3 Configure the parameters of the voice WAN interface.
 - 1. Choose InternetGatewayDevice > WANDevice > 1 > WANConnectionDevice from the navigation tree. Click Add in the lower left part to create an instance.
 - 2. Choose **2** > **WANIPConnection** from the navigation tree. Click **Add** in the lower left part. Choose **1** from the navigation tree. In the right pane, set the parameters as follows:
 - Set Enable to 1, indicating that the WAN connection is enabled.
 - Set **Connection Type** to **IP_Routed**, indicating that the connection type of the WAN interface is in routing mode.
 - Set **Addressing Type** to **DHCP**, indicating that the WAN interface obtains IP addresses in DHCP mode.

- Set X_HW_SERVICELIST to VOIP, indicating that the WAN interface provides the VoIP access service.
- Set X_HW_VLAN to 200, indicating the VLAN ID of the WAN interface is 200.

• Set X_HW_PRI to 6, indicating that the priority level of the WAN interface is 6.

- If the WAN interface obtains IP addresses in static or DHCP mode, choose **WANIPConnection** to set parameters of the voice WAN interface.
- If the WAN interface obtains IP addresses in PPPoE mode, choose **WANPPPConnection** to set parameters of the voice WAN interface.

Figure 4-92 shows how to configure the parameters of the voice WAN interface.



Configure in Real Time 🛛 🛛 🛛								
Root Node Internet gateway de	vici	.						
InternetGatewayDevice	<u>^</u>	Parameter	Value					
LANDevice		Enable	1					
		ConnectionStatus	Unconfigured					
WANConnectionNur		ConnectionType	IP_Routed					
WANConnectionDev		Name	wan2					
± 1		NATEnabled	0					
= 2 = WANIPConne		AddressingType	DHCP					
± 1		ExternalIPAddress						
WANPPPConn		SubnetMask						
Services X UNV DUCDELVEEDVED		DefaultGateway						
Time		DNSEnabled	1					
		DNSServers						
		MACAddress	28:6E:D4:0D:BC:EC					
X_HW_APMPolicy Device Infe	-	PortMappingNumberOfEntries	0					
T X HW BattervInfo		X_HW_SERVICELIST	VOIP					
X_HW_ALG		X_HW_VLAN	200					
	≤	X_HW_PRI	6					
		X_HW_MultiCastVLAN	4294967295					
Add Delete]	X_HW_VenderClassID						
Refresh Modify		<						
			OK Cancel Save					

Step 4 Configure the voice protocol parameters.

Choose InternetGatewayDevice > Services > VoiceService > 1 > VoiceProfile > 1 from the navigation tree. In the right pane, set the parameters as follows:

- Set SignalingProtocol to H248, indicating that the H.248 protocol is used.
- Set **Region** to **CN**, indicating the country code of China.
- Set X_HW_PortName to wan2, indicating that the new WAN interface 2 is bound.

Figure 4-93 shows how to configure the voice protocol parameters.

Configure in Real Time Root Node Internet gateway dev	/ici	 ✓ 	×
 InternetGatewayDevice LANDevice WANDevice 	-	Parameter Name Reset	Value
 Services VoiceService 1 		SignalingProtocol	H248
UoiceProfile		DTMFMethod	InBand
PhyInterface X_HW_RemoteC X_HW_Distance		X_HW_DigitMapMatchMode	Min
X_HW_Diabit X_HW_LineTest X_HW_InnerCall		X_HW_Portivarile X_HW_OverseaVer	0
X_HW_DHCPSLVSERVER Time Lavor2Eerwarding		X_HW_InterfaceState	Closed
Layers Forwarding X_HW_Security X_HW_APMPolicy DeviceInfo X_HW_BatteryInfo X_HW_ALG	~		
Add Delete)		m Ì S
Modily			OK Cancel Save

Figure 4-93 Configuring the voice protocol parameters

Step 5 Configure the H.248 service parameters.

Choose InternetGatewayDevice > Services > VoiceService > 1 > VoiceProfile > 1 > X_HW_H248 from the navigation tree. In the right pane, set the parameters as follows:

- Set CallAgent1 to 172.23.1.2, indicating that the IP address of the MGC server is 172.23.1.2.
- Set **Domain** to **user.huawei.com**, indicating that the MG registration address is **user.huawei.com**.
- Set **MIDFormat** to **DomainName**, indicating that the MG uses its domain name to register.

Figure 4-94 shows how to configure the H.248 service parameters.

Configure in Real Time		-							
Configure in Real fille									
Root Node Internet gateway de	evici	v							
🗆 VeiceBrofile									
		Parameter	Value						
Name		CallAgent1	172.23.1.2						
Reset		CallAgentPort1	2944						
SignalingProtocol		CallAgent2							
DTMEMethod		CallAgentPort2	2944						
DigitMap		LocalPort	2944						
X_HW_DigitMapMatchl	• ≡	Domain	user.huawei.com						
X_HW_OverseaVer		DeviceName							
X_HW_HowlerSendFla	⊆	MIDFormat	DomainName						
		CallAgentMID1							
		CallAgentMID2							
MGCP		DSCPMark	0						
RTP Trans									
± Ione									
+ X HW FaxModem									
X HW Ring									
. E Line	~								
<									
Add Delete									
Refresh Medify		1							
Modily									
			OK Cancel	Save					

Figure 4-94 Configuring H.248 service parameters

Step 6 Configure the TIDs of H.248 voice users.

 Choose InternetGatewayDevice > Services > VoiceService > 1 > VoiceProfile > 1 > Line > 1 > X_HW_H248 from the navigation tree. In the right pane, set LineName to A0, indicating that the TID of H.248 voice user 1 is A0. The user telephone number set on the MGC is 88001234.

Figure 4-95 shows how to configure the TID of H.248 voice user 1.

Configure in Real Time	vice	J		×
		Parameter LineName	Value A0	
⊕ X_HW_Ring □ Line □ 1 Enable				
DirectoryNumber PhyReferenceList X_HW_RtpLoop X_HW_Priority Status				
CallState SIP X_HW_H248 K_MCCP				
CallingFeatures VoiceProcessing Stats				
Codec E PhyInterface X_HW_RemoteCapServer	•			
Add Delete Refresh Modify		<		>
		(OK Cancel	Save

Figure 4-95 Configuring the TID of H.248 voice user 1

2. Configure the TID of H.248 voice user 2 in the same way.

Choose InternetGatewayDevice > Service > VoiceService > 1 > VoiceProfile > 1 >Line from the navigation tree. Click Add in the lower left part. Choose $2 > X_HW_H248$ from the navigation tree. In the right pane, set LineName to A1, indicating that the TID of H.248 voice user 2 is A1. The user telephone number set on the MGC is 88001235.

Figure 4-96 shows how to configure the TID of H.248 voice user 2.

Configure in Real Time					×
Root Node Internet gateway de	ViC	~			
<pre>koot Node Internet gateway de</pre>		Parameter LineName	A1	Value	
Refresh Modify		<			>
		(ок 🔰	Cancel	Save

Figure 4-96 Configuring the TID of H.248 voice user 2

Step 7 Restart the voice process.

Choose InternetGatewayDevice > Services > VoiceService > 1 > VoiceProfile > 1 from the navigation tree. In the right pane, set Reset to 1, indicating that the voice process will be restarted.

Figure 4-97 shows how to restart the voice process.

Configure in Real Time	Configure in Real Time									
Root Node Internet gateway dev	/iC(v								
InternetGatewayDevice	~	Parameter	Value							
LANDevice		Name								
WANDevice Seprices		Reset	1							
	3	SignalingProtocol	H248							
= 1		Region	CN							
VoiceProfile		DTMFMethod	InBand							
Name		DigitMap								
Reset		X_HW_DigitMapMatchMode	Min							
Region		X_HW_PortName	wan2							
DTMFMetho		X_HW_OverseaVer	0							
X HW Digit				X_HW_HowlerSendFlag	1					
X_HW_Porth		X_HW_InterfaceState	Closed							
X_HW_Over X_HW_Howl										
X_HW_Inter										
■ MGCP	~									
Add Delete	1									
	J									
Refresh Modify		<								
			OK Cancel Save							

Figure 4-97 Restarting the voice process

Step 8 Click OK after the configuration.

----End

Result

User 1 with telephone number **88001234** can call user 2 with telephone number **88001235**, and the communication between them is normal. The same is true when user 2 calls user 1.

The termination IDs of line 1 and line 2 configured on the MGC correspond to telephone numbers **88001234** and **88001235** respectively.

4.7 Configuring the Wi-Fi Access Service

This topic provides an example of how to configure the Wi-Fi access service.

4.7.1 Data Plan

This topic provides the typical data plan for configuring the Wi-Fi access service to make good preparations for the configuration.

4.7.2 Configuration Flowchart

This topic shows the flowchart for configuring the Wi-Fi access service.

4.7.3 Configuration Method

The Wi-Fi access service can be configured through the Web page or TR-069 server.

4.7.1 Data Plan

This topic provides the typical data plan for configuring the Wi-Fi access service to make good preparations for the configuration.

 Table 4-9 provides the data plan for configuring the Wi-Fi access service.

Parameter	Data	Description
Service type of the WAN interface	INTERNET	When Connection mode is set to Route , you can select Internet, TR069, VoIP, or a combination of them.
		When configuring the Wi-Fi access service, you need to select only Internet or a combination with Internet. In this example, Internet is selected.
Connection mode	Route	It can be set to route or bridge. In this example, route is selected.
VLAN ID of the WAN interface	300	The VLAN ID of the WAN interface must be the same as the VLAN ID of the traffic streams configured on the OLT.
Mode of obtaining an IP	PPPoE	There are three modes to obtain an IP address.
address	 User name: iadtest@pppoe Password: 	 DHCP: Obtain an IP address dynamically. Static Conference on ID address memorylly.
		 PPPoE: Access in the PPPoE dialup mode
	iadtest	In this example, the PPPoE mode is selected. You can also choose the DHCP or static mode according to the data plan of the upper-layer network. When the PPPoE mode is selected, the configured user name and password must be the same as those planned on the BRAS.
802.1p	1	The larger the service priority value, the higher the service priority. The priorities must be the same as those planned on the OLT, that is, the priority sequence is the voice service, multicast service, and Internet access service/Wi-Fi service in a descending order.
NAT function	Enable	Enable the network address translation (NAT) function.
Port binding	SSID1	-

Table 4-9 Data plan for configuring the Wi-Fi access service

Parameter	Data	Description
DHCP function	Enable	The PC connected to port LAN2 obtains an IP address from the DHCP address pool configured on the ONT. By default, the DHCP function is enabled and need not be configured.
SSID1	ChinaNet-huawei	Indicates the wireless network, which is used to differentiate the different networks when a user accesses the network.
Security mode	WPA Pre-Shared Key	The network security mode includes Open, Shared, WPA Pre-Shared Key, WPA2 Pre-Shared Key, WPA Enterprise, WPA2 Enterprise, and Wi-Fi Protected Setup.
WPA encryption mode	TKIP&AES Key: chinahuawei	The WPA encryption mode includes TKIP, AES, and TKIP&AES.

4.7.2 Configuration Flowchart

This topic shows the flowchart for configuring the Wi-Fi access service.

Figure 4-98 shows the flowchart for configuring the Wi-Fi access service through the Web page.

Figure 4-98 Flowchart for configuring the Wi-Fi access service through the Web page



Figure 4-99 shows the flowchart for configuring the Wi-Fi access service through the TR-069 server.





4.7.3 Configuration Method

The Wi-Fi access service can be configured through the Web page or TR-069 server.

Configuring the Wi-Fi Access Service Through the Web Page

This topic provides an example of how to configure the Wi-Fi access service through the Web page.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- The environment for service configuration on the Web page must be available and you must be logged into the Web page successfully. For details, see **3.2 Logging In Through the Web Page**.
- A notebook or mobile phone with the Wi-Fi function is available. The IP address of the notebook or mobile phone with the Wi-Fi function is allocated by the DHCP server (ONT). After PPPoE dialup is successfully performed on the ONT, the notebook or mobile phone with the Wi-Fi function can access the Internet by searching for the SSID.

Procedure

Step 1 Configure the Wi-Fi parameters.

- 1. In the navigation tree, choose Wi-Fi > Wi-Fi Basic Configuration.
- 2. Select Enable Wireless to enable the Wi-Fi function. Then, set the parameters as follows:
 - Set SSID to ChinaNet-huawei.
 - Set Authentication Mode to WPA Pre-Shared Key.
 - Set Encryption Mode to TKIP&AES and WPA PreSharedKey to chinahuawei.

Figure 4-100 shows how to configure the Wi-Fi parameters.

	11001										
HUAWEI	Status	WAN	LAN	VLAN	Securit	y Route	Forwa	rd Rules	Network	Application Voi	ice System Tools
AN Configuration		WLAN	I > WLAN Co	nfiguratio	n						
			On this page Enable WLA	, you can N	set the V	VLAN parame	eters, inclu	ding the	WLAN switch	, SSID configuration,	, and channel selection
		Bas	ic Configrati	on 		COID Chata		-4-10	No	Deve deved COID	New Dele
			1	x SSIL	essNet	Enable	32 32	ated Dev	ice Number	Enable	Linconfigured
		ssi) Configurati	on in Det	ail	Linabio	02			Lindbio	onconingeroe
		SS	ID Name:		1	VirelessNet		•			
		En	able SSID:		[~					
		As	sociated Dev	ice Numt	ber:	32		•			
		Bro	adcast SSID	:	[Image: A set of the					
		WN	M Enable:		[~					
		Aut	thentication N	lode:		Open		*			
		En	cryption Mod	э:		None		*			
						Apply	Cancel				
		Adv	ance Configr	ation							
		Tra	ansmitting Po	wer:		100%		~			
		Re	gulatory Don	nain:		CHINA		*			
		Ch	annel:		4	Auto		*			
		Ch	annel Width:			20MHz		~			
		Мо	de:			302.11b/g/n		~			
		DT	IM Period:		1			(1-2	55, default: 1)		
		Be	acon Period:		1	00		ms	(20-1000ms,	default: 100)	
		RT	S Threshold		2	346		Byte	(s) (1-2346 b	yte, default: 2346)	
		E.e.				0.40					

Figure 4-100 Configuring the Wi-Fi parameters

3. Click Apply.

Step 2 Configure the parameters of the WAN interface.

- 1. In the navigation tree on the left, choose WAN > WAN Configuration.
- 2. In the pane on the right, click **New**. In the dialog box that is displayed, set the parameters of the WAN interface as follows:
 - Select **Enable** next to **NewWanConnction** to enable the WAN connection that is newly set up.
 - Set Service List to INTERNET.
 - Set Mode to Route.
 - Set VLAN ID to 300.
 - Set **802.1p** to **1**.
 - Set IP Acquisition Mode to PPPoE.
 - Select **Enable** next to **NAT** to enable the NAT function.
 - Set User Name to iadtest@pppoe and Password to iadtest.
 - Select the check box of **SSID1** in **Binding options**, indicating that the WAN interface is bound to SSID1.

Figure 4-101 shows how to configure the parameters of the WAN interface.

	HG82	47								Logout
HUAWEI	Status	WAN	AN WLAN	Security	Route	Forward Ru	iles Network A	Application	Voice	System Tools
WAN Configuration		WAN ≻	WAN Configurat	tion						
		On equ cor	this page,you ca upment through ssistent with thos	an configure WA the WAN interfa se of the upper-I	N parame ce. Durini ayer netw	ters.The ONT g the commur ork equipmer	home gateway co lication, the param It.	mmunicates eter settings	with the up of the WAN	iper-layer network I interface must be
										New Delete
			Con	nection Name		VLA	N/Priority		IP Acquisi	tion Mode
		Enabl	e WAN Connect	ion: 🗹						
		Servio	e List:	INTE	RNET	*				
		Mode		Rout	e	*				
		VLAN	ID:	300			(1-4094)			
		802.1	p:	1		*				
		MultiC	ast VLAN ID:			1	(1-4094)			
		IP Acc	uisition Mode:	O D	нср 🔘	Static 💿 F	PPOE			
		Enabl	e NAT:							
		User	Name:	iadte	st@pppoe	•	*(1-63)Characters			
		Pass	word:	••••	•••		(1-63)Characters			
		Dial N	lethod	Auto		*				
		Bindir	ng options:	□ L ▼ S	AN1 SID1	LAN2	LAN3	LAN4		
				App	oly C	ancel				

Figure 4-101 Configuring the parameters of the WAN interface

- 3. Click Apply.
- Step 3 Save the configuration.

Choose System Tools > Configuration File from the navigation tree. In the right pane, click Save Configuration, as shown in Figure 4-102.

Figure 4-102 Saving the configuration

	₩ HG8247										
HUAWEI	Status	WAN	LAN	WLAN	Security	Route	Forward Rules	Network Application	Voice	System Tools	
Reboot		Syste	m Tools >	Configura	tion File						
Configuration File											
USB Backup Restore	CFG		You can c	lick"Save (Configuration'	to save the	e current configuratio	on to the flash memory.			
Firmware Upgrade											
Restore Default Conf	iguration	S	ave Confi	guration							
Maintenance											
Log			You can c	lick"Down	load Configur	ation File" t	o back up the currer	nt configuration.			
ONT Authentication				O a n E au mati	en File						
Time Setting			ownoau	conngurau	UITFILE						
TR-069			lf vou onte	ar the nath	of the configur	otion file o	ad then click "I Inloa	d Configuration File", your	home dates	vay will be undated	
Advanced Power Mar	nagement		with the s	aved config	guration file.	auon illo di	is more optoa	a configuration rife , your	nome gates	ray min be appared	
Modify Login Passwo	ord	Co	nfiguratio	n File:			Browse	Upload Configuratio	n File		

----End

Result

1. Query the connection status of the ONT.

In the navigation tree on the left, choose **Status** > **WAN Information**. In the pane on the right, the **Status** is **Connected** and the obtained IP address is displayed in **IP**.

Figure 4-103 shows how to query the connection status.

Figure 4-103 Querying connection status of Wi-Fi access service

	HG82	247									
HUAWEI	Status	WAN	LAN	WLAN	Security	Route Fo	ward Rules	Network Applicat	ion Vo	ice System To	ols
WAN Information		Statu	Status > WAN Information								
VolP Information											
Wi-Fi Information			On this page, you can query the connection status and line status of the WAN interface.								
Eth Port Information			WAN Name		Status	IP Acquisition	IP	Subnet	VLAN/ Priority	MAC Address	Connect
DHCP Information					Status	Mode	Address	Mask	Thomy	Inte Autors	connect
Optical Information		1_IN	ITERNET	[_R_VID_30) connected	PPPoE	192.168.1.98	255.255.255.0	300/1	00:00:00:00:00:03	AlwaysOn
Battery Information		i i									
Device Information											
Remote Manage											

2. Verify the service.

The notebook or mobile phone with the Wi-Fi function can search for the wireless signals of SSID **ChinaNet-huawei**. After the correct authentication key **chinahuawei** is entered, the Wi-Fi access service is implemented.

Configuring the Wi-Fi Access Service Through the TR-069 Server

This topic provides an example of how to configure the Wi-Fi access service through the TR-069 server.

Prerequisite

- ONT must be added or auto-discovered on the OLT and associated service streams must be configured on the OLT. For details, see 4.2.1 Commissioning the Interoperation Between OLT and ONT (Through CLI of the OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).
- ONT must be auto-discovered on the TR-069 server. For details, see 4.2.3 Commissioning Interoperation Between the TR-069 Server and the ONT Through the Web Page or 4.2.4 Commissioning Interoperation Between the TR-069 Server and the ONT Through the NMS.
- A notebook or mobile phone with the Wi-Fi function is available. The IP address of the notebook or mobile phone with the Wi-Fi function is allocated by the DHCP server (ONT). After PPPoE dialup is successfully performed on the ONT, the notebook or mobile phone with the Wi-Fi function can access the Internet by searching for the SSID.

Context

This topic describes how to configure only L3 Internet access service. For L2 Internet access service, configuration is not required on the ONT but on the OLT. For details, see 4.2.1
 Commissioning the Interoperation Between OLT and ONT (Through CLI of the

OLT) or 4.2.2 Commissioning the Interoperation Between OLT and ONT (Through the NMS).

• Every data change must be saved. You can click **Save** in a window to save data changes. If you navigate to another node without saving data changes, a dialog box will be displayed prompting you to save the data changes. In this case, click **YES** in the dialog box. New data will be automatically applied to the ONTs after the data changes are saved.

When configuring services on the TR-069 server, do not modify the WAN interface connecting the TR-069 server and the ONT. Otherwise, the TR-069 server loses communication with the ONT.

Procedure

- Step 1 Log in to the TR-069 server and choose Subnet View > TR069 Subnet from the navigation tree. In the terminal list, right-click an ONT and choose Tools > Configure in Real Time from the shortcut menu.
- Step 2 In the Configure in Real Time dialog box, set Root Node to Internet gateway device.
- Step 3 Configure the Wi-Fi parameters.
 - 1. Choose **InternetGatewayDevice** > **LANDevice** > **1** > **WLANConfiguration** > **1** from the navigation tree. In the right pane, set the parameters as follows:
 - Set **Enable** to **1**, indicating that the WLAN service is enabled.
 - Set **RegulatoryDomain** to **CN**, indicating the country code of China.
 - Set SSID to ChinaNet-huawei.
 - Set **BeaconType** to **WPA** and **WPAEncryptionModes** to **TKIPandAESEncryption**, indicating that the encryption mode of the WPA is **TKIP&AES**.
 - Set WPAAthenticationMode to PSKEncryption, indicating that the authentication mode is Pre-Shared Key.

Figure 4-104 shows how to configure the Wi-Fi parameters.

Configure in Real Time					
Root Node Internet gateway device 🗸					
🗉 InternetGatewayDevice	Parameter	Value			
E LANDevice	Name	ath0			
= 1	Enable	1			
WLANConfiguration	RegulatoryDomain	CN			
• 1	Standard	11ng			
LANHostConfigMana	TransmitPower	100			
+ LANEthernetInterfa	Channel	6			
X_HW_LANGlobalCc	AutoChannelEnable	1			
WANDevice	X_HW_HT20	1			
Services	SSID	ChinaNet-huawei			
± X_HVV_DHCPSLVSERVER + Time	SSIDAdvertisementEnabled	0			
Layer3Forwarding	WMMEnable	1			
X_HW_Security	BeaconType	WPA			
X_HW_APMPolicy	BasicEncryptionModes	None			
+ X HW BattervInfo	BasicAuthenticationMode	None			
X_HW_ALG	WPAEncryptionModes	TKIPandAESEncryption			
🗉 X HW MainUPnP 🗠	WPAAuthenticationMode	PSKEncryption			
	IEEE11iEncryptionModes	AESEncryption			
Add Delete	IEEE11iAuthenticationMode	PSKAuthentication			
Refresh Modify	MEDKavIndav				
	OK Cancel Save				

Figure 4-104 Configuring the Wi-Fi parameters

2. Choose **PreSharedKey** > 1, 1 from the navigation tree. In the right pane, set **PreSharedKey** to **chinahuawei**, indicating that the WPA encryption key is **chinahuawei**.

Figure 4-105 shows how to configure the WPA encryption key.

Configure in Real Time					x	
Root Node Internet gateway device						
X_HVV_RadiusPort X_HW_RadiusKey	^	Parameter		Value		
TotalBytesSent		PreSharedKey	chinahuawei			
TotalBytesReceived						
TotalPacketsSent						
I OTAIPACKETSKECEIVED						
TransmitPowerSupporte						
WMMSupported						
WEPKey						
PreSharedKey						
± 1						
± stats						
+ Hosts						
± X_HW_LANGlobalConfiguration						
NDevice						
vices						
W_DHCPSLVSERVER						
he	~					
< · · · · · · · · · · · · · · · · · · ·						
Add Delete]					
Refresh Modify		<			>	
(india)			ок С	ancel	Save	

Figure 4-105 Configuring the WPA encryption key

Step 4 Configure the parameters of the WAN interface.

- 1. Choose InternetGatewayDevice > WANDevice > 1 > WANConnectionDevice from the navigation tree. Click Add in the lower left part to create an instance.
- 2. Choose **2** > **WANPPPConnection** from the navigation tree. Click **Add** in the lower left part. Choose the new **1** branch from the navigation tree. In the right pane, set the parameters as follows:
 - Set **Enable** to **1**, indicating that the WAN connection is enabled.
 - Set **Connection Type** to **IP_Routed**, indicating that the connection type of the WAN interface is in routing mode.
 - Set NATEnable to 1, indicating that the NAT function is enabled.
 - Set Username to iadtest@pppoe and Password to iadtest, indicating that the PPPoE user name is iadtest@pppoe and the password is iadtest.
 - Set X_HW_SERVICELIST to INTERNET, indicating that the service type of the WAN interface is Internet.
 - Set X_HW_VLAN to 300, indicating that the VLAN ID of the WAN interface is 300.
 - Set X_HW_PRI to 1, indicating that the priority level of the WAN interface is 1.

- If the WAN interface obtains IP addresses in static or DHCP mode, choose **WANIPConnection** to set the parameters of the WAN interface.
- If the WAN interface obtains IP addresses in PPPoE mode, choose **WANPPPConnection** to set the parameters of the WAN interface.

Figure 4-106 shows how to configure the parameters of the WAN interface..

Figure 4-106 Configuring the parameters of the WAN interface

Configure in Real Time 🛛 🔍							
Root Node Internet gateway devic							
InternetGatewayDevice	<u>^</u>	Parameter	Value				
LANDevice		Enable	1				
		ConnectionStatus	Unconfigured				
WANConnectionNu		ConnectionType	IP_Routed				
WANConnectionDev		DefaultGateway					
± 1		Name	wan2				
= 2 + WANIPConne		NATEnabled	1				
WANPPPConn		Username	iadtest@pppoe				
± 1		Password	iadtest				
Services X IIIM DUCDELVCEDVED		ExternalIPAddress					
Time		DNSEnabled	1				
E Layer3Forwarding		DNSServers					
		MACAddress	28:6E:D4:0D:BC:EC				
X_HW_APMPolicy DeviceInfe	-	PortMappingNumberOfEntries	s 0				
X HW BattervInfo		X_HW_SERVICELIST	INTERNET				
X_HW_ALG		X_HW_VLAN	300				
	≤	X_HW_PRI	1				
		X_HW_MultiCastVLAN	4294967295				
Add Delete							
Refresh Modify		<		>			
			OK Cancel	Save			

Step 5 Bind the SSID.

Choose InternetGatewayDevice > WANDevice > 1 > WANConnectionDevice > 1 > WANIPConnection > 1 > X_HW_LANBIND from the navigation tree. In the right pane, set SSID1Enable to 1, indicating that the WAN interface is bound to SSID 1.

Figure 4-107 shows how to bind the SSID.

Configure in Real Time						
Root Node Internet gateway device 🗸						
= 1	^	Parameter	Value			
Enable ConnectionStatus ConnectionType		Lan1Enable	0			
		Lan2Enable	0			
DefaultGateway		Lan3Enable	0			
NATEnabled		Lan4Enable	0			
Username		SSID1Enable	1			
Password ExternalIPAddress		SSID2Enable	0			
DNSEnabled	_	SSID3Enable	0			
DNSServers MACAddress PortMappingNumbert X_HW_SERVICELIST X_HW_VLAN X_HW_PRI X_HW_MultiCastVLAI PortMapping X_HW_LANBIND es DHCPSLVSERVER		SSID4Enable	0			
Refresh Modify		<	Ш			
			OK Cancel Save			

----End

Result

The notebook or mobile phone with the Wi-Fi function can search for the wireless signals of SSID **ChinaNet-huawei**. After the correct authentication key **chinahuawei** is entered, the Wi-Fi access service is implemented.

5 ONT Downstream User Guide

About This Chapter

This topic describes the configuration flow of the ONT when it is connected to a downstream TV set, telephone set, STB, PC, Wi-Fi laptop, or USB storage device.

Refer to respective operations described in this section according to the type of the terminal connected to the HG8240/HG8245/HG8247. For details about the terminals that can be connected to the HG8240/HG8247, HG8247, see **2.2 Typical Network Applications**.

5.1 Using a TV Set

This topic describes the configuration flow of the ONT connected to a downstream TV set.

5.2 Using a STB

This topic describes the configuration flow of the ONT connected to a downstream STB.

5.3 Using a PC

This topic describes the configuration flow of the ONT connected to a downstream PC.

5.4 Using a Telephone Set

This topic describes the configuration flow of the ONT connected to a downstream telephone set.

5.5 Using a Wi-Fi Laptop

This topic describes the configuration flow of the ONT connected to a Wi-Fi laptop.

5.6 Using a USB Storage Device

This topic describes the configuration flow of the ONT connected to a downstream USB storage device.

5.1 Using a TV Set

This topic describes the configuration flow of the ONT connected to a downstream TV set.

Procedure

Step 1 Connect a TV set to the ONT.

Connect the CATV port of the ONT to the TV set by using a coaxial cable and make sure that they are properly connected.

- Step 2 Turn on the power supply.Turn on the power supply of the TV set, and press the POWER button on the ONT. If the POWER LED is always on, it indicates that the ONT is connected to the power supply.
- Step 3 Enjoy the high-speed video service.

Watch programs according to the prompts displayed on the screen of the TV set.

----End

5.2 Using a STB

This topic describes the configuration flow of the ONT connected to a downstream STB.

Procedure

Step 1 Connect a STB to the device.

Connect a LAN port of the ONT to the STB by using the STB cable and make sure that they are connected properly.

Step 2 Turn on the power supply.

Power on the TV set and the STB and then press the POWER button of the ONT. If the POWER LED is always on, it indicates that the ONT is connected to the power supply.

Step 3 Configure the IP address of the STB.

There are three methods of configuring the IP address of the STB:

- Configuring the static IP address
- Obtaining the IP address dynamically through the DHCP server
- Obtaining the IP address through the PPPoE dialup

The service provider determines the specific method to be adopted.

Step 4 Enjoy the high-speed video service.

Watch programs according to the prompts displayed on the screen of the TV set.

----End

5.3 Using a PC

This topic describes the configuration flow of the ONT connected to a downstream PC.

Procedure

Step 1 Connect a PC to the device.

Connect a LAN port of the ONT to the PC by using an Ethernet cable and make sure that they are connected properly.

- Step 2 Turn on the power supply.Power on the PC and then press the POWER button of the ONT. If the POWER LED is always on, it indicates that the ONT is connected to the power supply.
- Step 3 Configure the IP address of the PC.

There are three methods of configuring the IP address of the PC:

- Configuring the static IP address
- Obtaining the IP address dynamically through the DHCP server
- Obtaining the IP address through the PPPoE dialup

The service provider determines the specific method to be adopted.

Step 4 Enjoy the high-speed data service.

Run the Internet Explorer and input correct Web site addresses to browse Web pages.

The working parameters of the ONT are configured by the service provider remotely. Hence, the ONT supports plug and play (PnP) and requires no configuration on the user side.

```
----End
```

5.4 Using a Telephone Set

This topic describes the configuration flow of the ONT connected to a downstream telephone set.

Procedure

Step 1 Connect a telephone set to the device.

Connect the TEL port of the ONT to the telephone set by using a telephone cable and make sure that they are connected properly.

Step 2 Turn on the power supply.

Press the POWER button on the ONT. If the POWER LED is always on, it indicates that the ONT is connected to the power supply.

Step 3 Enjoy the high-quality voice service.

After picking up the telephone, dial the callee number, and wait for the callee to answer the telephone.

----End

5.5 Using a Wi-Fi Laptop

This topic describes the configuration flow of the ONT connected to a Wi-Fi laptop.

Procedure

Step 1 Turn on the power supply.

Turn on the power supply of the Wi-Fi laptop, and press the POWER button on the ONT. If the POWER LED is always on, it indicates that the ONT is connected to the power supply.

Step 2 Enable the Wi-Fi function on the ONT.

Press the WLAN button. If the WLAN LED is always on, it indicates that the Wi-Fi function is enabled. By default, the Wi-Fi function is enabled.

- Step 3 Configure the Wi-Fi parameters of the laptop, including the following:
 - Wireless network name (SSID)
 - Wireless network key

The service provider determines the parameters to be configured.

- **Step 4** If WPS is adopted as the encryption mode for the STA (Wi-Fi laptop) to request access to the wireless network, press the WPS button on the side panel of the ONT and press the WPS button on the laptop (or run the WPS program installed on the laptop) within two minutes.
- Step 5 Enjoy the high-speed data service.

Run the Internet Explorer and input correct Web site addresses to browse Web pages.

- A Wi-Fi Ethernet card must be installed on the laptop.
- The working parameters of the ONT are configured by the service provider remotely. Hence, the ONT supports plug and play (PnP) and requires no configuration on the user side.

----End

5.6 Using a USB Storage Device

This topic describes the configuration flow of the ONT connected to a downstream USB storage device.

Procedure

Step 1 Turn on the power supply.

Press the POWER button on the ONT. If the POWER LED is always on, it indicates that the ONT is connected to the power supply.

Step 2 Connect a USB storage device to the ONT.

Connect the USB port of the ONT to the USB storage device by using a USB data cable and make sure that they are properly connected.

Step 3 Log in to the ONT Web page on a PC. Then, configure associated USB parameters. For details ,see6.3.6 USB LED Off. After the configuration is complete, you can download files through the ONT.

----End
6 Troubleshooting

About This Chapter

This topic describes the preliminary troubleshooting flow and methods, preparations before troubleshooting, and methods of locating faults according to the status of LEDs.

6.1 General Troubleshooting Flowchart and Methods

This topic describes the general troubleshooting flowchart and the methods of preliminarily locating faults.

6.2 Tools Used for Troubleshooting

This topic describes the tools required for troubleshooting: digital multimeter and optical power meter.

6.3 Fault Locating According to the LED Status

This topic describes how to locate a fault according to the status of the LEDs on the ONT.

6.1 General Troubleshooting Flowchart and Methods

This topic describes the general troubleshooting flowchart and the methods of preliminarily locating faults.

Context

Figure 6-1 shows the general troubleshooting flowchart.

Figure 6-1 General troubleshooting flowchart



Procedure

Step 1 Locate a fault preliminarily.

Find the fault location and determine the cause of the fault. **Table 6-1** lists the possible causes during preliminary fault locating.

Fault Type	Possible Cause
ONT registration failure	• The PON terminal goes online in an incorrect mode.
	• The optical fiber connected to the ONT is of poor quality or is loosely connected.
	• The optical power of the ONT is not within the normal range.
	• The minimum and maximum logical distances configured on the OLT port to which the ONT is connected are inconsistent with the actual distances.
	• The ONT auto-find function is disabled on the OLT port.
	• When the ONT is added, the configured SN of the ONT is different from the actual ONT SN.
	• An ONT with the same SN is already connected to the OLT.
	• The ONT is a rogue ONT.
Call failure or poor voice quality	• The connection between the telephone set and the ONT is abnormal.
	• The ONT port to which the telephone set is connected is configured incorrectly.
	• The telephone set does not register with the voice server.
	• The voice service of the telephone set is not configured with a high priority.
	• The line connections are abnormal.
	• The telephone set is faulty.
	• The numbers configured on the ONT are incomplete.
	• The codec and authentication configured on the ONT are incorrect.
	• A phone number conflict occurs during the registration.
	• The voice IP address fails to be obtained.

 Table 6-1 Possible causes during preliminary fault locating

Fault Type	Possible Cause
Internet access failure	• The user terminal or the loop line is faulty.
	• The PON port is faulty.
	• The data configuration of the upper-layer device is incorrect.
	• The PON board on the OLT is faulty.
	• The optical path is faulty.
	• The board or port on the ONT is faulty.
	• There are network attacks.
	• The WAN port fails to obtain the address.
	• The ping operation with the IP addresses of the ONT WAN port and the ONT fails.
	• The WAN MAC address of the ONT defaults to 00000000002.
	• The NAT function is disabled on the bound WAN port.
	• The LAN port on the ONT is a bridge Ethernet port, but the PC connected to the LAN port fails to obtain the IP address allocated by the upper-layer network.

Step 2 Check the status of the optical fiber.

Check the following items:

- Whether the optical fiber is properly connected.
- Whether the optical fiber is bent excessively.
- Whether the optical fiber connector is clean.
- Whether the mean launched Tx optical power is normal.
- Whether the Rx optical sensitivity is normal.

Step 3 Check the ONT status.

Check the status of the LEDs on the ONT. For details, see **6.3 Fault Locating According to the LED Status**.

You can also query the ONT status on the OLT.

In the GPON mode, run the **display ont info** command to check the ONT information. Specifically, mainly check **Control Flag**, **Run State**, **Config State**, and **Match State**.

- If **Control Flag** is **active** and **Run State** is **up**, it indicates that the ONT works in the normal state, that is, the user passes the authentication and goes online.
- If Control Flag is active and Run State is down, it indicates that the user is offline.
- If Control Flag is deactive, the ONT registration is disabled. In this case, run the ONT activate command in the GPON mode to activate the control flag.
- If **Config State** is **normal**, it indicates that the ONT configuration recovery is successful.

- If **Config State** is **failed**, it indicates that the ONT configuration recovery fails. A possible cause of this failure is that the ONT is bound to an incorrect ONT profile. To resolve this problem, run relevant commands to issue a correct ONT profile, or reset the ONT.
- If Match State is match, it indicates that the configured capacity set of the ONT is the same as the actual ONT capabilities. If Match State is mismatch, it indicates that the configured capacity set of the ONT is different from the actual ONT capabilities, which will cause registration failure. In this case, add a new ONT service profile.
- Step 4 Check the statistics of the ONT.
 - In the GIU mode, run the **display port statistics** command to query the traffic statistics of the upstream port of the ONT. Specifically, check whether receive and transmit traffic exists.
 - In the GPON mode, run the **display statistics ont** command to query the performance statistics of the ONT PON port.
 - In the GPON mode, run the **display statistics ont-eth** command to query the performance statistics of the ONT.

Step 5 Check the data configuration of the ONT.

- Run the **display dba-profile** command to check the DBA profile bound to the ONT.
- Run the **display service-port** command to check whether the traffic stream configuration is correct.
- Run the **display vlan** command to check whether the upstream port of the ONT is added to a VLAN.
- **Step 6** Check the status of the upper-layer device. Specifically, check whether the OLT is in the normal state.

----End

6.2 Tools Used for Troubleshooting

This topic describes the tools required for troubleshooting: digital multimeter and optical power meter.

6.2.1 Digital Multimeter

This topic describes the functions and usage instructions of the digital multimeter.

6.2.2 Optical Power Meter

This topic describes the appearance, functions, and usage instructions of the optical power meter.

6.2.1 Digital Multimeter

This topic describes the functions and usage instructions of the digital multimeter.

The digital multimeter is a simple and practical test meter frequently used in the electrotechnical and electronic industries. It is inexpensive, convenient to carry and easy to use, and has a complete set of functions.

Basically, the digital multimeter is used to measure the resistance, DC voltage, AC voltage, current and capacitance, and test diodes and triodes.

To use the digital multimeter, do as follows:

- 1. Turn on the power supply. (If a digital multimeter without a dedicated power switch is used, skip this step.)
- 2. Select the items to be tested.
- 3. Choose a proper measurement range.
- 4. Perform the measurement correctly.
- 5. (Optional) Press the button for keeping the current measurement value unchanged.
- 6. Read the measurement value.

6.2.2 Optical Power Meter

This topic describes the appearance, functions, and usage instructions of the optical power meter.

The optical power meter is a necessary test meter for testing an optical fiber communication system. It is mainly used to measure the optical power of various wavelengths at multiple measurement points of an optical link. Optical power indicates the energy of the light at a measurement point of an optical link and is an important index of the optical fiber network. When the optical power is smaller than a specified value, the optical receive end will fail to detect optical signals. In other words, the optical receive end cannot receive the signals sent from the transmit end. Hence, it is important to use the optical power meter correctly.

The following considers EXFO's PPM-350B optical power meter as an example to describe how to use an optical power meter. (Other dedicated optical power meters for PON are used in a similar way.)

The PPM-350B optical power meter can measure the optical power of various wavelengths, including 1310 nm, 1490 nm, and 1550 nm in the GPON network. Figure 6-2 shows the appearance of the PPM-350B optical power meter.

Figure 6-2 Appearance of the PPM-350B optical power meter



As shown in **Figure 6-2**, the PPM-350B optical power meter is different from common optical power meters. Specifically, the PPM-350B has a downstream input optical port and an upstream input optical port and can display the optical power of three wavelengths: 1310 nm, 1490 nm, and 1550 nm.

Figure 6-3 shows the common measurement points.

Figure 6-3 Measurement points of the optical power in the GPON network



Maintenance engineers should also know related optical specifications on the ONT side, such as the maximum output optical power of the 1310 nm wavelength, minimum input optical power of the 1490 nm wavelength, and receiver sensitivity of the 1490 nm or 1550 nm wavelength. **Table 6-2** lists the optical specifications on the ONT side.

Table 6-2	Optical	specifications	of optical	ports on	GPON	ONTs
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Parameter Type	Wavelength (nm)	Unit	Min.	Max.
Upstream data	1310	dBm	+0.5	+5
Downstream data	1490	dBm	-28	-8
Downstream CATV	1550	dBm	-8	+2

To use an optical power meter, do as follows:

- 1. Connect optical fibers to optical ports correctly in upstream and downstream directions.
- 2. Turn on the power supply.
- 3. Choose the measurement unit (dB or dBm).
- 4. Perform the measurement.

Figure 6-4 shows the measurement interface of the optical power meter.

[dBm Warning
CCLI ^{dBm Pass}

Figure 6-4 Measurement interface of the optical power meter

Optical channel loss is the total insertion loss caused by optical fibers, optical splitters, optical fiber connectors, and fiber connection points. **Table 6-3** shows the estimation of optical channel loss in the engineering design.

Item		Average Loss (dB)
Connection point	Connector	0.3
	Mechanical splicing	0.2
	Fusion splicing	0.1
Optical splitter	1:64	19.7
	1:32	16.5
	1:16	13.5
	1:8	10.5
	1:4	7.2
	1:2	3.2
Optical fiber (G. 652)	1310 nm (1 km)	0.35
	1490 nm (1 km)	0.25

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Table 6-3	Optical	loss	parameters	1n	enginee	ring
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Optical channel loss = L x a + n1 x b + n2 x c + n3 x d + e + f (dB)

- a indicates the average loss of an optical fiber per kilometer (unit: dB/km). L indicates the total length of the optical fiber (unit: km). The loss of patch cords and pigtail fibers used in engineering can be ignored because they are usually very short.
- b indicates the loss of a fusion splicing point (unit: dB) and n1 indicates the number of fusion splicing points.
- c indicates the loss of a mechanical splicing point (unit: dB) and n2 indicates the number of mechanical splicing points.
- d indicates the loss of a connector (unit: dB) and n3 indicates the number of connectors.
- e indicates the loss of an optical splitter (unit: dB). Only 1-level optical splitting is considered here. In the case of 2-level optical splitting, the loss of two optical splitters must be considered.
- f indicates the engineering margin, and generally its value is 3 dB.

6.3 Fault Locating According to the LED Status

This topic describes how to locate a fault according to the status of the LEDs on the ONT.

6.3.1 POWER LED Off

This topic describes how to locate the fault when the POWER LED does not illuminate.

6.3.2 PON LED Off

This topic describes how to locate the fault when the PON LED does not illuminate.

6.3.3 LOS LED Blinking

This topic describes how to locate the fault when the LOS LED blinks.

6.3.4 LAN LED Off

This topic describes how to locate the fault when the LAN LED does not illuminate.

6.3.5 TEL LED Off This topic describes how to locate the fault when the TEL LED does not illuminate.

6.3.6 USB LED Off This topic describes how to locate the fault when the USB LED does not illuminate.

6.3.7 WLAN LED Off

This topic describes how to locate the fault when the WLAN LED does not illuminate.

6.3.8 WPS LED Off This topic describes how to locate the fault when the WPS LED does not illuminate.

6.3.9 CATV LED Off This topic describes how to locate the fault when the CATV LED does not illuminate.

6.3.1 POWER LED Off

This topic describes how to locate the fault when the POWER LED does not illuminate.

Procedure

Step 1 Check whether the power adapter matches the device.

Step 2 Check whether the power cables are properly connected.

Step 3 Check whether the POWER button is pressed for power-on.

Step 4 Check whether the mains supply is normal (whether the mains supply meets the requirements for Huawei's product).

----End

6.3.2 PON LED Off

This topic describes how to locate the fault when the PON LED does not illuminate.

Procedure

- **Step 1** Check whether the OPTICAL interface on the ONT rear panel is connected to the optical fiber properly.
- **Step 2** Check whether the GPON ONT fails to register with the OLT. If such a problem occurs, contact the service provider for help.

----End

6.3.3 LOS LED Blinking

This topic describes how to locate the fault when the LOS LED blinks.

Procedure

- Step 1 Check whether the optical fiber is connected properly.
- **Step 2** Check whether the optical fiber connector is clean.

----End

6.3.4 LAN LED Off

This topic describes how to locate the fault when the LAN LED does not illuminate.

Procedure

- Step 1 Check whether the network cables match the device.
- **Step 2** Check whether the network cables are properly connected.
- Step 3 Check whether the LED of the network interface card (NIC) is normal. If the LINK LED is always on, it indicates that the network cables are properly connected. If the ACT LED blinks, it indicates that data is being transmitted.
- Step 4 Check whether the NIC works in the normal state.

In **Device Manager** of the Windows operating system, check whether there is a device marked with ? or ! under **Network Adapter**. If there is a device marked with ? or ! under **Network Adapter**, uninstall the NIC and then re-install it, or install the NIC in another slot. If the problem persists, replace the NIC.

----End

6.3.5 TEL LED Off

This topic describes how to locate the fault when the TEL LED does not illuminate.

Procedure

Step 1 Check whether a voice user is configured and enabled.

----End

6.3.6 USB LED Off

This topic describes how to locate the fault when the USB LED does not illuminate.

Procedure

Step 1 Check whether the USB storage device is correctly connected.

----End

6.3.7 WLAN LED Off

This topic describes how to locate the fault when the WLAN LED does not illuminate.

Procedure

- Step 1 Check whether the ONT is correctly connected to the power supply.
 If the POWER LED is always on, it indicates that the ONT is correctly connected to the power supply.
- **Step 2** Check whether the Wi-Fi function is correctly configured and enabled.
- Step 3 Check whether the Wi-Fi terminal is correctly configured and whether its connection to the ONT is set up.

----End

6.3.8 WPS LED Off

This topic describes how to locate the fault when the WPS LED does not illuminate.

Procedure

Step 1 Check whether the ONT is correctly connected to the power supply.
If the POWER LED is always on, it indicates that the ONT is correctly connected to the power supply.

- Step 2 Check whether the Wi-Fi function is correctly configured.
- Step 3 Check whether the WPS button is pressed.
- Step 4 Check whether the WPS function is enabled.

----End

6.3.9 CATV LED Off

This topic describes how to locate the fault when the CATV LED does not illuminate.

Procedure

- Step 1 Contact the service provider to check whether the CATV service is provisioned.
- Step 2 Check whether the optical fiber is properly connected.
- Step 3 Measure the optical power of the downstream 1550 nm wavelength by using an optical power meter. Check whether the measured optical power complies with the optical specifications of optical ports on GPON ONTs as specified in 6.2.2 Optical Power Meter.
 - If the measured optical power complies with the specifications, proceed to the next step.
 - If the measured optical power does not comply with the specifications, check whether the endface of the optical fiber connected to the ONT is contaminated. If it is contaminated, wipe the endface of the optical fiber in a unidirectional manner with paper that is specially used for cleaning optical fibers or lens of cameras.
- **Step 4** Check whether the combiner works in the normal state.

----End

7 Technical Specifications

About This Chapter

This topic describes the technical specifications of the ONT, include its physical specifications and the standards and protocols which the ONT complies with.

7.1 Physical Specifications

This topic describes the physical specifications of the ONT, including its dimensions, weight, voltage range, and environment parameters.

7.2 Protocols and Standards

This topic provides the protocols and standards which the ports of the ONT comply with.

7.1 Physical Specifications

This topic describes the physical specifications of the ONT, including its dimensions, weight, voltage range, and environment parameters.

 Table 7-1 lists the physical specifications of the HG8240/HG8245/HG8247.

Item	HG8240	HG8245	HG8247
Dimensions (length x width x depth)	195 mm x 155 mm x 34 mm	195 mm x 174 mm x 34 mm	268 mm x 213 mm x 34 mm
Weight (including the power adapter)	About 500 g	About 550 g	About 800 g
Overall system power supply	11-14 V DC, 1 A	11-14 V DC, 2 A	11-14 V DC, 2 A
Power adapter input range	100-240 V AC, 50-60 Hz	100-240 V AC, 50-60 Hz	100-240 V AC, 50-60 Hz
Typical power consumption	8W	9W	12W
Temperature range	0°C to +40°C	0°C to +40°C	0°C to +40°C
Humidity range	5%-95% (non- condensing)	5%-95% (non- condensing)	5%-95% (non- condensing)

 Table 7-1 Physical specifications

7.2 Protocols and Standards

This topic provides the protocols and standards which the ports of the ONT comply with.

- GPON: ITU-T G.984
- VoIP: H.248, SIP, G.711A/u, G.729a/b, and T.38
- Multicast: IGMPv2, IGMPv3, and IGMP snooping
- Routing: NAT, NAPT, and ALG
- Ethernet: IEEE 802.3ab
- USB: USB 1.1/USB 2.0
- Wi-Fi: IEEE 802.11n

The USB protocol and Wi-Fi protocol are applicable to the HG8245 and HG8247 only.

8 Acronyms and Abbreviations

ALG	Application Level Gateway
BRAS	Broadband Remote Access Server
CATV	Community Antenna Television
DBA	Dynamic Bandwidth Assignment
DHCP	Dynamic Host Configuration Protocol
DMZ	Demilitarized Zone
DNS	Domain Name Server
DoS	Denial of Service
FTP	File Transfer Protocol
FTTH	Fiber To The Home
GPON	Gigabit-capable Passive Optical Network
НТТР	Hyper Text Transport Protocol
IGMP	Internet Group Management Protocol
ISP	Internet Service Provider
LAN	Local Area Network
MAC	Media Access Control
NAPT	Network Address and Port Translation
NAT	Network Address Translation
NMS	Network Management System
OLT	Optical Line Terminal
OMCI	Optical Network Termination Management and Control Interface
PON	Passive Optical Network
PPPoE	Point to Point Protocol over Ethernet

PSTN	Public Switched Telephone Network
SIP	Session Initiation Protocol
ѕоно	Small Office and Home Office
SSID	Service Set Identifier
STB	Set Top Box
ТСР	Transmission Control Protocol
ТКІР	Temporal Key Integrity Protocol
UDP	User Datagram Protocol
UPnP	Universal Plug and Play
URL	Uniform Resource Locator
VLAN	Virtual Local Area Network
VoIP	Voice over IP
WLAN	Wireless Local Area Network
WEP	Wired Equivalent Privacy
WPA	Wi-Fi Protected Access
WPS	Wi-Fi Protected Setup