ZXA10 F660

GPON ONT

User Manual

Version: V1.0

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Preface

Purpose

This manual provides procedures and guidelines that support the operation on the ZXA10 F660 Optical Network Terminal (ZXA10 F660 for short).

Intended Audience

This manual is intended for engineers and technicians who perform operation activities on ZXA10 F660.

Prerequisite Skill and Knowledge

To use this manual effectively, users should have a general understanding of wireless telecommunications technology. Familiarity with the following is helpful:

- ZXA10 system and its various components
- Local operating procedures

What Is in This Manual

This manual contains the following chapters:

Chapter Summary

Chapter	Summary
Chapter 1, Overview	Provides an overview of the product, including the packing list, product features, appearance, and system requirements, and system application environment.
Chapter 2, Configuration Preparation	Describes the procedures for configuring TCP/IP, and logging in to the device.
Chapter 3, Device Status	Describes the device information, network connection information, and user interface information.
Chapter 4, Network Configuration	Describes the configuration of WAN connection, WLAN, address management, and route management.
Chapter 5, Security Configuration	Describes the procedures for configuring the firewall, IP filter, URL filter, DMZ, and port forwarding.

Chapter	Summary
Chapter 6, Service Configuration	Describes the configuration of VoIP, DDNS, UPnP, DNS server, QoS, SNTP client, IGMP, and FTP application.
Chapter 7, Device Management	Describes TRO69 configuration, user management, device management, log management, and ping diagnosis.
Chapter 8, FAQ	Provides the FAQs and solutions.

Related Documentation

None

Conventions

ZTE documents employ the following typographical conventions.

Typographical Conventions

Typeface	Meaning
Italics	References to other Manuals and documents.
“Quotes”	Links on screens.
Bold	Menus, menu options, function names, input fields, radio button names, check boxes, drop-down lists, dialog box names, window names.
CAPS	Keys on the keyboard and buttons on screens and company name.
Constant width	Text that you type, program code, files and directory names, and function names.
[ ]	Optional parameters
{ }	Mandatory parameters
I	Select one of the parameters that are delimited by it.
Note:	Note: Provides additional information about a certain topic.
Checkpoint:	Checkpoint: Indicates that a particular step needs to be checked before proceeding further.

Typeface	Meaning
Tip:	Tip: Indicates a suggestion or hint to make things easier or more productive for the reader.

Mouse Operation Conventions are as follows:

Mouse Operation Conventions

Typeface	Meaning
Click	Refers to clicking the primary mouse button (usually the left mouse button) once.
Double-click	Refers to quickly clicking the primary mouse button (usually the left mouse button) twice.
Right-click	Refers to clicking the secondary mouse button (usually the right mouse button) once.
Drag	Refers to pressing and holding a mouse button and moving the mouse.

How to Get in Touch

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Customer Support If you have problems, questions, comments, or suggestions regarding your product, contact us by e-mail at support@zte.com.cn. You can also call our customer support center at (86) 755 26771900 and (86) 800-9830-9830.

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To minimize the environmental impact and take more responsibility to the earth we live, this document shall serve as formal declaration that ZXA10 F660 manufactured by ZTE CORPORATION is in compliance with the Directive 2002/95/EC of the European

Parliament - RoHS (Restriction of Hazardous Substances) with respect to the following substances:

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent Chromium (Cr (VI))
- PolyBrominated Biphenyls (PBB's)
- PolyBrominated Diphenyl Ethers (PBDE's)

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Chapter 1
Overview

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1.1 Product Introduction

ZXA10 F660 is a user-side access device module. It uses the computer network technology and broadband optical network technology to establish a home network center for the access of network devices. It provides users with various services.

Table 1-1 lists the ports and functions of ZXA10 F660 series products.

Table 1-1 ZXA10 F660 Ports and Functions

Product	Port	Function
ZXA10 F660	Four GE ports, two POTS ports, one Wi-Fi port, and two USB 2.0 ports	Supports Internet access, IPTV, VoIP, and Wi-Fi. It can be used as a home gateway.
ZXA10 F668	Four GE ports, two POTS ports, one Wi-Fi port, two USB 2.0 ports, and one CATV port	Supports Internet access, IPTV, VoIP, Wi-Fi, and CATV. It can be used as a home gateway.
ZXA10 F600G	Four GE ports and two USB 2.0 ports	Supports Internet access and IPTV.
ZXA10 F627	Four GE ports, two POTS ports, and one Wi-Fi port	Supports Internet access, IPTV, VoIP, and Wi-Fi. It can be used as a home gateway.
ZXA10 F625G	Four GE ports, two POTS port and one CATV port	Supports Internet access, IPTV, VoIP, and CATV. It can be used as a home gateway.
ZXA10 F607	Four GE ports and one Wi-Fi port	Supports Internet access, IPTV, and Wi-Fi. It can be used as a home gateway.

1.2 Packing List

Make sure that ZXA10 F660 package contains the following:

- One ZXA10 F660 host
- One AC-DC adaptor
- One RJ-45 straight-through cable
- Two RJ-11 telephone cables
- One ZXA10 F660 Optical Network Terminal User Manual

If any of the above contents is missing or damaged, please contact your dealer. Keep the packing box and components for the replacement purpose.

1.3 Features and Specifications

System Features

ZXA10 F660 has the following features:

- MAC cache: 4K
- Multicast services: 1024 multicast groups
- VLAN range: 1 - 4095
- GEM ports: 256
- T-CONTs: 40

Interface Features

The interface features are as follows:

- GPON interface: complies with the PON standard and SC/APC, in compliance with ITU G.984.1 - G.984.5 standards
- Ethernet interface: 10/100/1000 Mbps GE interfaces (RJ-45), in compliance with IEEE 802.3 and IEEE 802.3u standards
- POTS interface: RJ-11
- WLAN interface: complying with the IEEE 802.11n standard with built-in antenna

Technical Features

ZXA10 F660 implements data access and IP voice access.

- For data access, ZXA10 F660 implement L2 data switching and forwarding.

  By working with relevant network devices through signaling protocols such as H.248 and SIP, ZXA10 F660 implements IP voice function.

- ZXA10 F660 provides the security, QoS, and network management functions, such as multi-level authentication based on devices, users, and services.

  It supports data channel encryption, implementation of QoS requirements matching the local devices and network according to services with different requirements, and network management based on various management modes.

Certification Features

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

RF exposure information: The Maximum Permissible Exposure (MPE) level has been calculated based on a distance of d=20 cm between the device and the human body. To maintain compliance with RF exposure requirement, use product that maintain a 20cm distance between the device and human body.

NOTE **Note:**

Changes or modifications made to this equipment not expressly approved by (ZTE Corporation) may void the FCC authorization to operate this equipment.

Product Specifications

ZXA10 F660 specifications are as follows:

- Rated current: 1.3 A
- Rated voltage: 12 V DC
- Operating temperature: -5℃ - 50℃
- Operating humidity: 5% - 95%
- Dimensions: 260 mm x 50 mm x 185 mm (Width x Height x Depth)

1.4 Product Appearance

Front Panel

Figure 1-1 shows the front panel of ZXA10 F660.

Figure 1-1 Front Panel

Table 1-2 lists LEDs on the front panel.

Table 1-2 Front Panel LEDs

LED	Status	Description
PON	Green, ON	The ONT GPON is registered and the link is activated.
	OFF	The ONT is not discovered and registered.
	Flashing	The ONT is trying to be registered or set up the connection.
LOS	Red, ON	The ONU receives the optical power abnormally.
	OFF	The ONU receives the optical power normally. The IP address for the WAN connection is obtained.
	Flashing	Fails to obtain the IP address for the WAN connection.
WLAN	Green, ON	The WLAN function is enabled.
	OFF	The device is not powered ON or the wireless interface is disabled.
POTS1 POTS2	Green, ON	The device is registered on the SS, but no data is being transmitted.
	OFF	The device is not powered ON or fails to be registered on the SS.
	Flashing	Data is being transmitted.
Power indicator	Blue, ON	The device is powered ON normally.
	OFF	The device is not powered ON.
LAN1 - LAN4	Green, ON	The network interface is connected, but no data is being transmitted.
	OFF	The device is not powered ON or the network interface is not connected with a network device.
	Flashing	Data is being transmitted.

Back Panel

Figure 1-2 shows the back panel.

Figure 1-2 Back Panel

Table 1-3 lists the interfaces and buttons on the back panel.

Table 1-3 Interfaces and Buttons on the Back Panel

Interface/Button	Description
LAN1 - LAN4	RJ-45 LAN interface, connects to the local network through the RJ-45 network cable
POTS1 POTS2	RJ-11 telephone interface, connects to the telephone through the RJ-11 telephone cable
USB	USB interface, connects to a storage device or printer that has a USB interface
UPS	Secondary power monitoring interface
POWER	Power socket, connects to the power adapter, 12 V DC
WPS	WPS access switch
WLAN	WLAN button, to enable or disable WLAN
RESET	When the device is powered ON, press the button for more than 5 seconds to restore the factory default settings.

Side Panel

The side panel has an SC/APC single-mode fiber interface, implementing the services provided by the ISP in PON access mode. It connects to the GPON interface of ZXA10 F660 through an SC/APC single-mode fiber. Figure 1-3 shows the side panel.

Figure 1-3 Side Panel

1.5 System Requirements

The ZXA10 F660 system requirements are as follows:

- An ISP is needed so that the device can access the services provided by the ISP through the PON access mode.
- A computer that is installed with a 10 Mbps/100 Mbps/1000 Mbps Ethernet card is needed.
- If necessary, create a medium and small LAN by adding Ethernet hubs and cables.
- To use wireless access, an 802.11g/b wireless network card or a built-in 802.11g/b wireless network card is required.
- The computer that accesses the network should be installed with Windows 98/Me/2000/NT/XP/Vista/7 or Linux, network card driver program, and TCP/IP protocol, and its network settings are correct.
- A computer in the LAN is installed with a Web browser, such as Microsoft Internet Explorer 6.0 or higher, Netscape Communicator 4.0 or higher.

1.6 System Application Environment

ZXA10 F660 is an indoor device of ZTE series optical network terminal equipment. It works with the PON device to implement the FTTH application.

With the use of multiple user interfaces, hub, or Ethernet switch, ZXA10 F660 can implement the FTTO/B application.

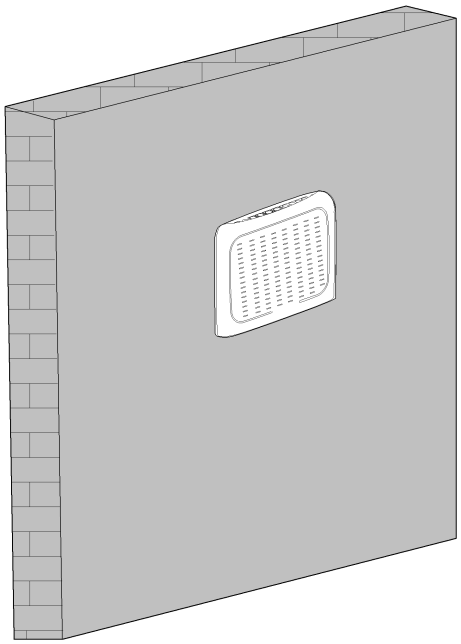
Figure 1-4 shows the ZXA10 F660 application environment.

Figure 1-4 System Application Environment

As an indoor device, ZXA10 F660 can be put on the desk with the base or hung on the wall without the base.

Figure 1-5 shows the ZXA10 F660 on a wall.

Figure 1-5 F66x Wall-Mount



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Chapter 2
Configuration Preparation

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2.1 Preliminary Setup

Generally, the ISP has already configured the device. The user can directly use it after hardware connection. However, the user may need to configure the device in some special situations. The user must confirm the following preliminary setups:

- Use one crossover or straight-through Ethernet cable to connect a computer to the device.
- Check the TCP/IP settings of the computer.
- Disable any running firewall or security software.
- Disable the proxy server of the Internet Explorer.
- Consult the ISP if some data from the ISP is needed.

2.2 Configuring TCP/IP

Short Description

Perform this procedure to configure TCP/IP of a computer connected to the ZXA10 F660.

Context

This instance takes Windows XP as an example.

The default network settings for the ZXA10 F660 are as follows:

- IP address: 192.168.1.1
- Subnet mask: 255.255.255.0
- Default gateway: 192.168.1.1

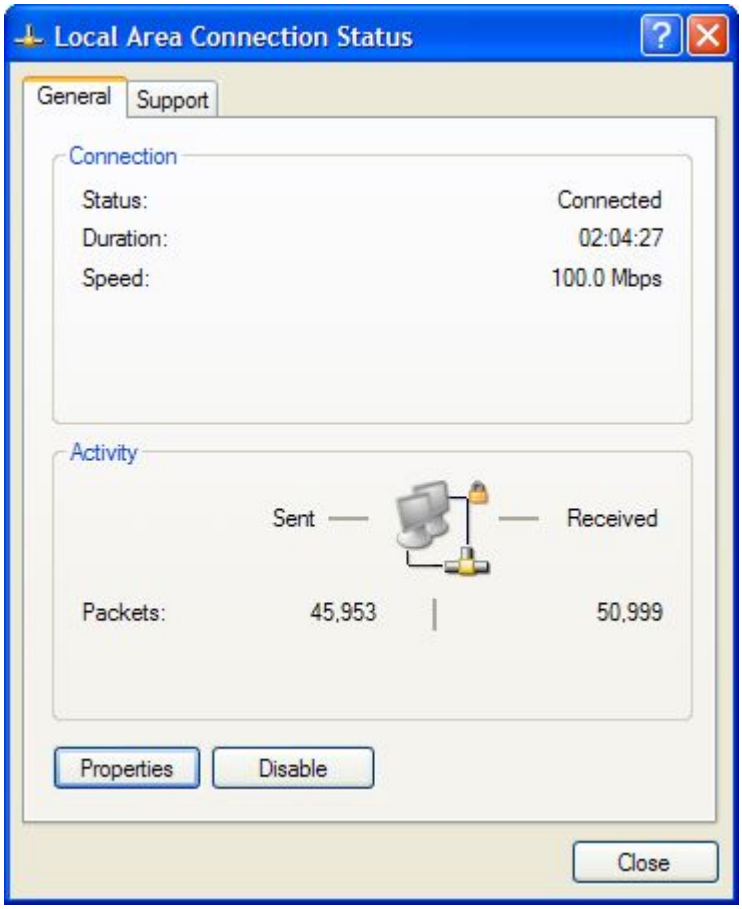
To configure TCP/IP, perform the following steps:

Steps

1. Choose **Start > Settings > Network Connections** to open the **Network Connections** window.

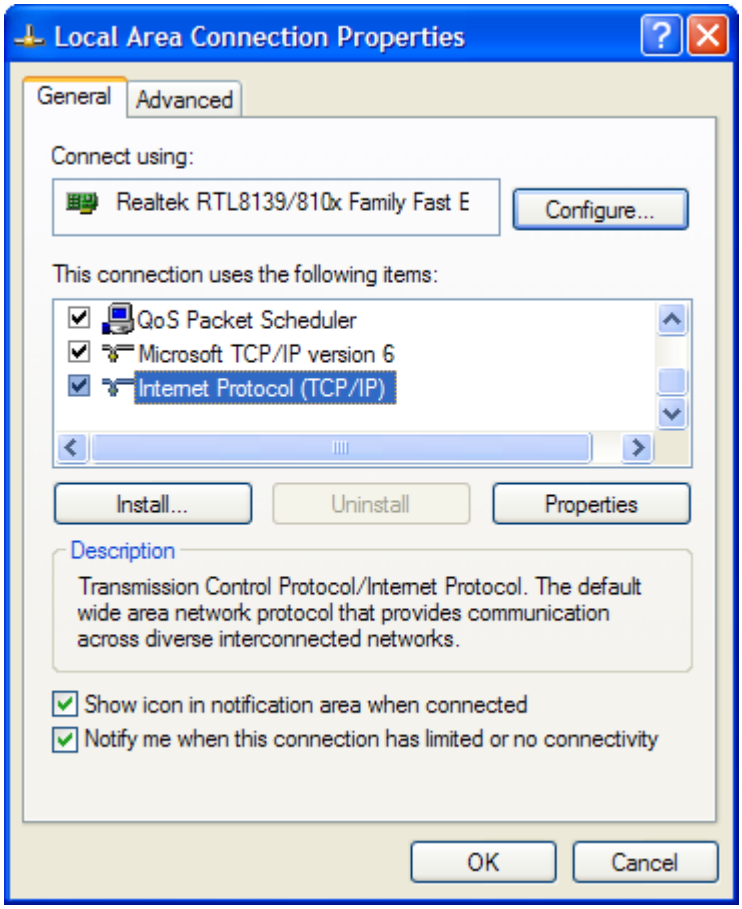
2. Double-click **Local Area Connection** to open the **Local Area Connection Status** dialog box, as shown in Figure 2-1.

Figure 2-1 Local Area Connection Status



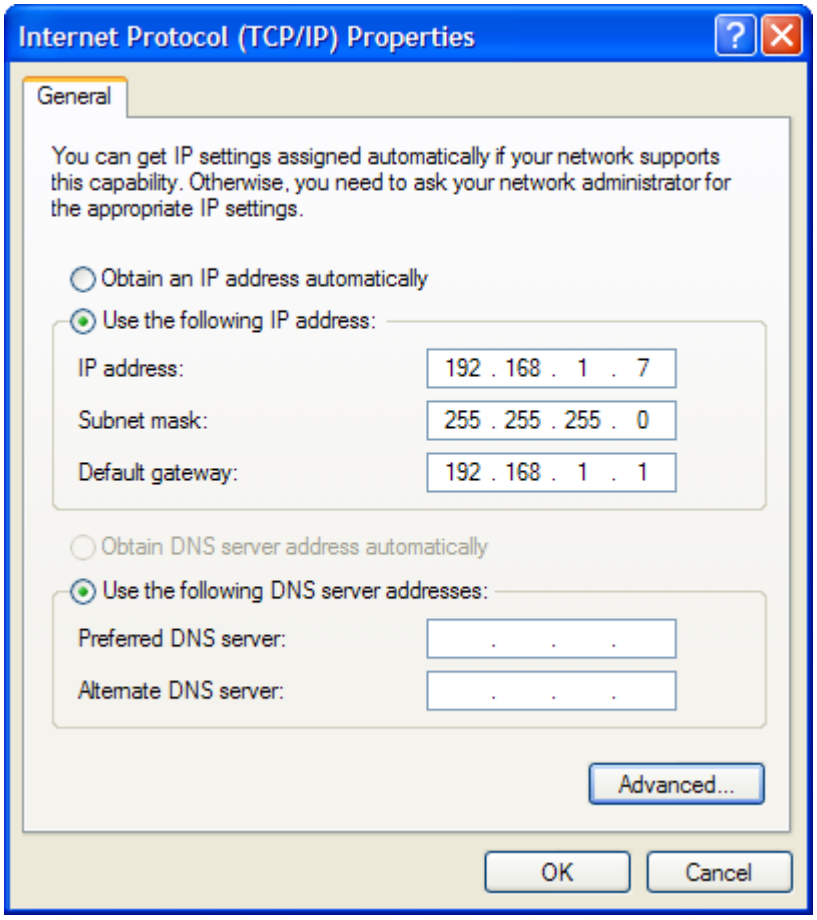
3. Click **Properties** in the **General** tab to open the **Local Area Connection Properties** dialog box.
4. Select **Internet Protocol (TCP/IP)**, as shown in Figure 2-2.

Figure 2-2 Local Area Connection Properties



5. Click **Properties** to open the **Internet Protocol (TCP/IP) Properties** dialog box. Select **Use the following IP address** and specify the **IP address**, **Subnet mask**, and **Default gateway**. For example, you can set the **IP address** to `192.168.1.7`, **Subnet mask** to `255.255.255.0`, and **Default gateway** to `192.168.1.1`, as shown in Figure 2-3.

Figure 2-3 Specifying the IP address in the Internet Protocol (TCP/IP) Properties



Note:

The IP address shall be in the same network segment as LAN port address of the device, which means the IP address you type in should be “192.168.1.x” (x can be any value from 2 to 254).

6. Click **OK** to save your settings.

Note:

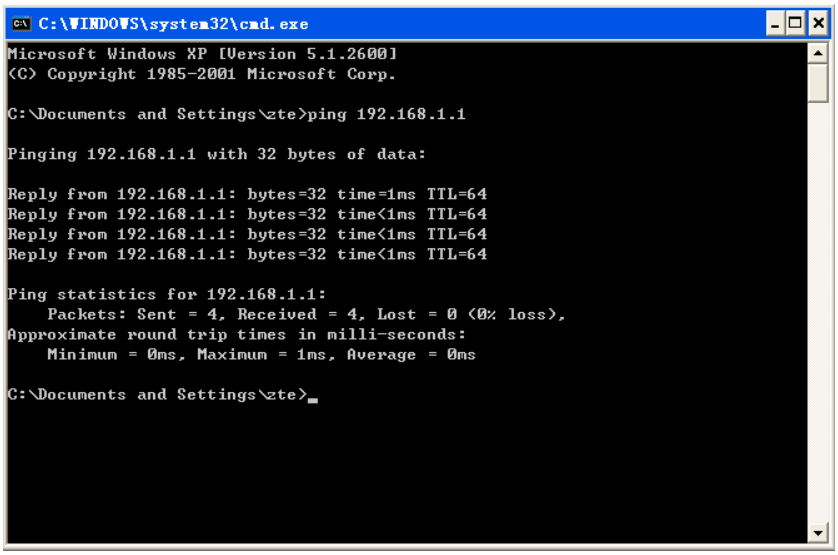
If you are accessing the WEB page of the device for the first time, please configure the device as you are told.

– End of Steps –

Follow-Up Action

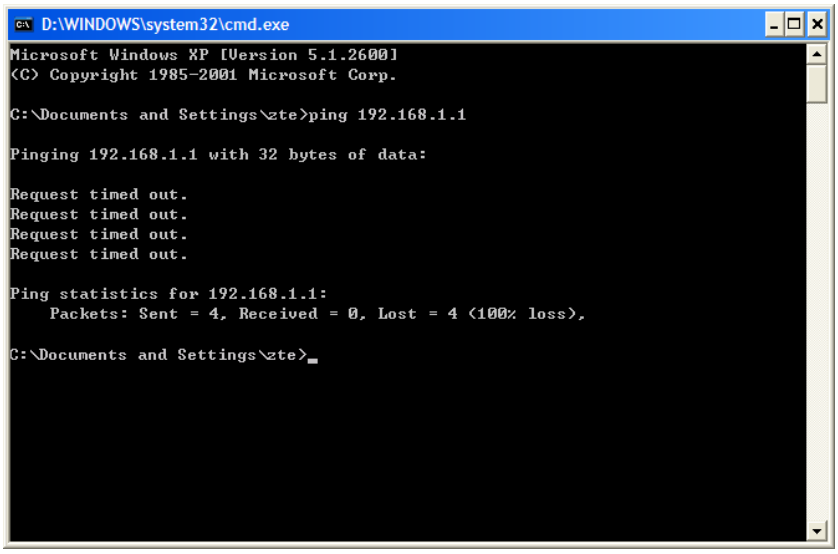
1. Choose **Start > Run** to open the **Run** dialog box.
2. Type `CMD` in the **Open** text box, and click **OK**.
3. Type `ping 192.168.1.1` in the pop-up window and press **Enter** to carry out the ping command.
   - If the command window displays the messages, as shown in Figure 2-4, it indicates that the communication between your PC and the device is normal and you are able to access the Internet now.

Figure 2-4 Successful Ping Message



   - If the command window displays the messages, as shown in Figure 2-5, it indicates that the communication between your PC and the device fails.

Figure 2-5 Failed Ping Message



If the communication between your PC and the device fails, ensure the following items:

- The Ethernet cable between the device and your PC has been connected properly.
- The driver of your network adapter has been installed properly.
- The TCP/IP setting has been configured correctly on your PC.

  If the ZXA10 F660 IP address is 192.168.1.1, the IP address of the computer must be from 192.168.1.2 to 192.168.1.254. The subnet mask must be 255.255.255.0 and the default gateway must be 192.168.1.1.

2.3 Logging In to the Device

Short Description

Perform this procedure to log in to the device.

Prerequisites

The device is properly connected and the computer is correctly configured.

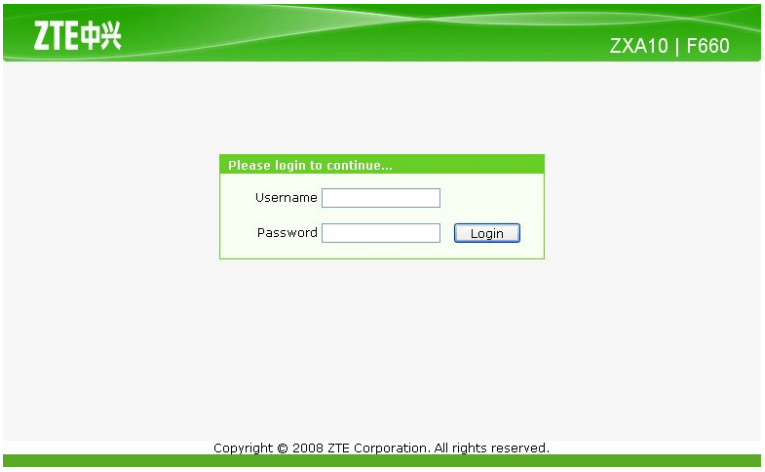
Context

To log in to the device, perform the following steps:

Steps

1. Open the Internet Explorer. Enter `http://192.168.1.1` (default IP address of the device) on the address bar and press **Enter**. The login dialog box is displayed, as shown in Figure 2-6.

Figure 2-6 Login



2. Enter the **Username** and **Password** (by default, both are `admin`). Click **Login**.

– End of Steps –

Result

Logging in to the device is successful.

Chapter 3
Device Status

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3.1 Device Information

On the Web interface of the device, click the **Status** tab. By default, the **Device Information** is selected. The right pane displays the device type, serial number, and version information, and registration password, as shown in Figure 3-1.

Figure 3-1 Device Information

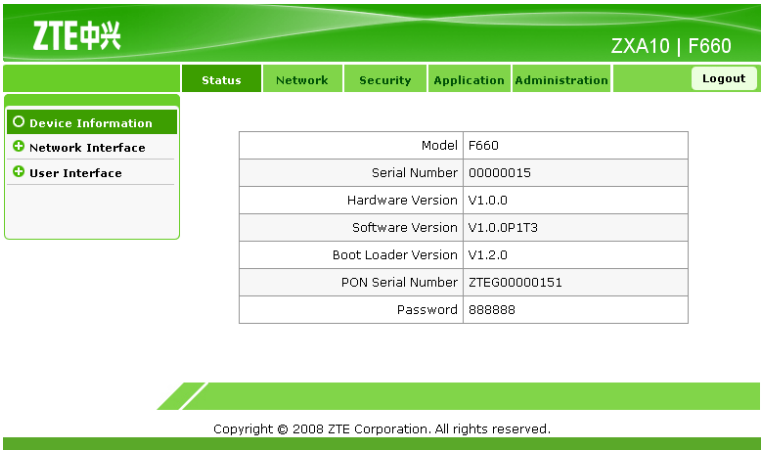

Table 3-1 lists the parameters for the device information.

Table 3-1 Device Information Parameters

Parameter	Description
Model	Device type
Serial Number	Device serial number
Hardware Version	Hardware version number
Software Version	Software version number
Boot Loader Version	Boot version number
PON Serial Number	PON serial number

Parameter	Description
Password	Password used by the ONU registration on the OLT

3.2 Network Connection Information

On the **Status** tab, select **Network Interface**. By default, the **WAN Connection** sub-node is selected. The right pane displays the WAN connection information, as shown in Figure 3-2.

Click **Refresh** to view the latest information.

Figure 3-2 WAN Connection

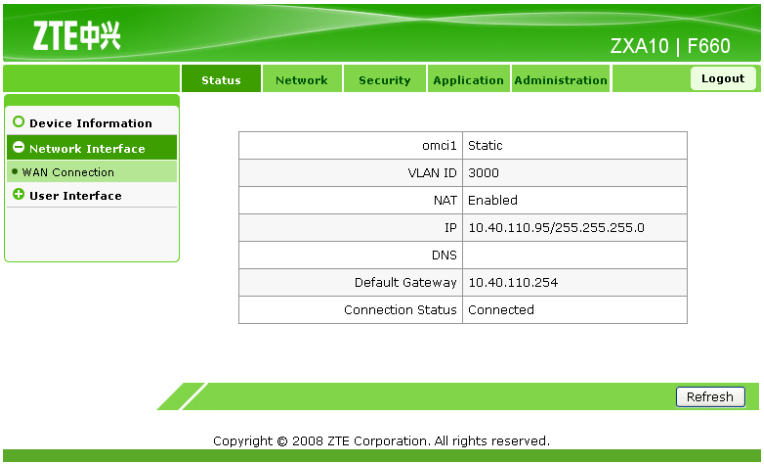

Table 3-2 lists the parameters for the network connection information.

Table 3-2 Parameters for the Network Connection Information

Parameter	Description
omci1	WAN connection type
VLAN ID	VLAN ID used by the WAN interface to send and receive data
NAT	Whether to enable the NAT function
IP	IP address used by ZXA10 F660
DNS	DNS used by ZXA10 F660
Default Gateway	Gateway used by ZXA10 F660
Connection Status	WAN connection status

NOTE **Note:**

OMCI1 is the WAN connection name, which is created by the OMCI interface remotely.

3.3 User Interface Information

This topic includes the following:

- WLAN Interface Information
- Ethernet Interface Information
- VoIP Status Information

3.3.1 WLAN Interface Information

On the **Status** tab, select **User Interface**. By default, **WLAN** is selected. The right pane displays the WLAN switch information, packet receiving and sending information, and authentication information, as shown in Figure 3-3.

Click **Refresh** to view the latest information.

Figure 3-3 WLAN Interface Information

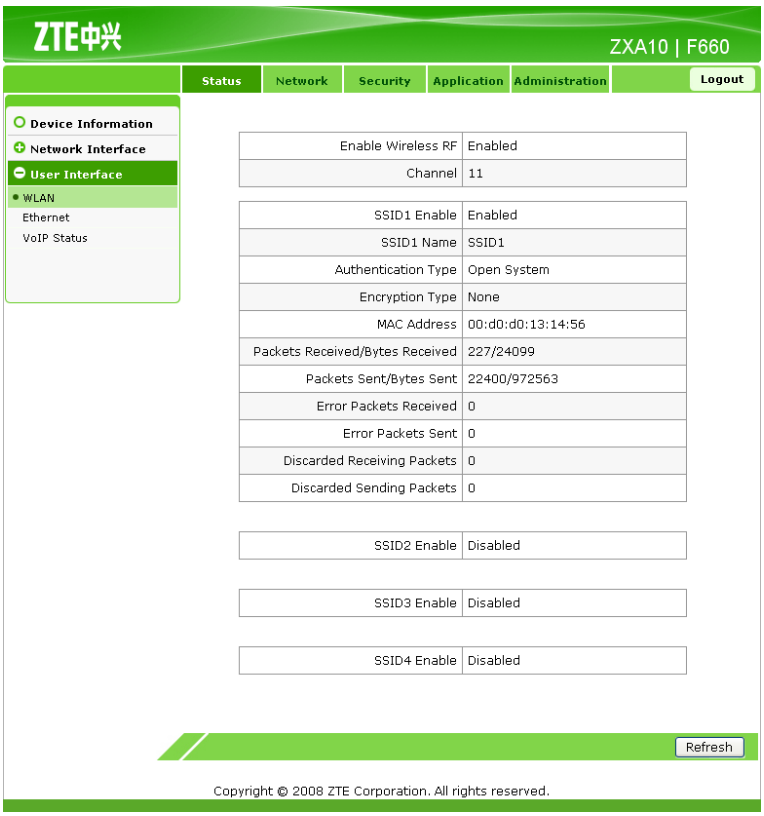

Table 3-3 lists the parameters for the WLAN interface information.

Table 3-3 Parameters for the WLAN Interface Information

Parameter	Description
Enable Wireless RF	Whether to enable the wireless RF
Channel	Channel
SSID1 Enable	Whether to enable the wireless network SSID1
SSID1 Name	SSID1 name, which identifies the wireless network service area
Authentication Type	Authentication mode
Encryption Type	Encryption mode
MAC Address	MAC address
Packets Received/Bytes Received	Number of received packets or bytes
Packets Sent/Bytes Sent	Number of sent packets or bytes
Error Packets Received	Error packets received
Error Packets Sent	Error packets sent
Discarded Receiving Packets	Discarded receiving packets
Discarded Sending Packets	Discarded sending packets

3.3.2 Ethernet Interface Information

On the **Status** tab, select **User Interface**. Select **Ethernet**. The right pane displays the packet receiving and sending information on the Ethernet interface, as shown in Figure 3-4.

Click **Refresh** to view the latest information.

Figure 3-4 Ethernet Interface Information

Table 3-4 lists the parameters for the Ethernet interface information.

Table 3-4 Parameters for the Ethernet Interface Information

Parameter	Description
Ethernet Port	Port name
Packets Received/Bytes Received	Number of received packets or bytes
Packets Sent/Bytes Sent	Number of sent packets or bytes
Error Frames	Ethernet error frames

3.3.3 VoIP Status Information

On the **Status** tab, select **User Interface**. Select **VoIP Status**. The right pane displays the VoIP status information, as shown in Figure 3-5.

Click **Refresh** to view the latest information.

Figure 3-5 VoIP Status Information

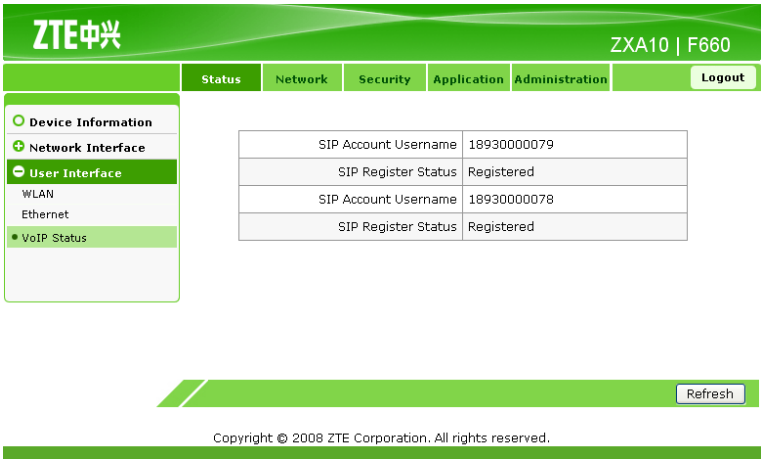

Table 3-5 lists the parameters for the VoIP status information.

Table 3-5 Parameters for the VoIP Status Information

Parameter	Description
SIP Account Username	Telephone number
SIP Register Status	Registration status of the voice service

Chapter 4
Network Configuration

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Configuring WAN Connection 4-1
WLAN Configuration 4-5
Address Management Configuration 4-13
Route Management Configuration 4-17

4.1 Configuring WAN Connection

Short Description

Perform this procedure to configure the WAN connection.

Prerequisites

The user has logged in to the Web interface of the device.

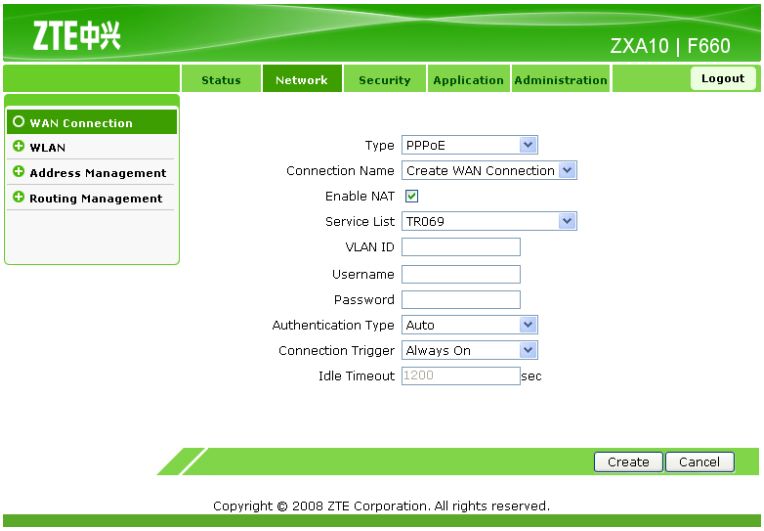
Context

To configure the WAN connection, perform the following steps:

Steps

1. On the Web interface of the device, click the **Network** tab. By default, **WAN Connection** is selected, as shown in Figure 4-1.

Figure 4-1 WAN Connection



2. The connection type can be **PPPoE**, **Static**, or **DHCP**.

   a. Configure the PPPoE mode.

   Select **PPPoE** for **Type**, as shown in Figure 4-2.

Figure 4-2 PPPoE Mode Configuration

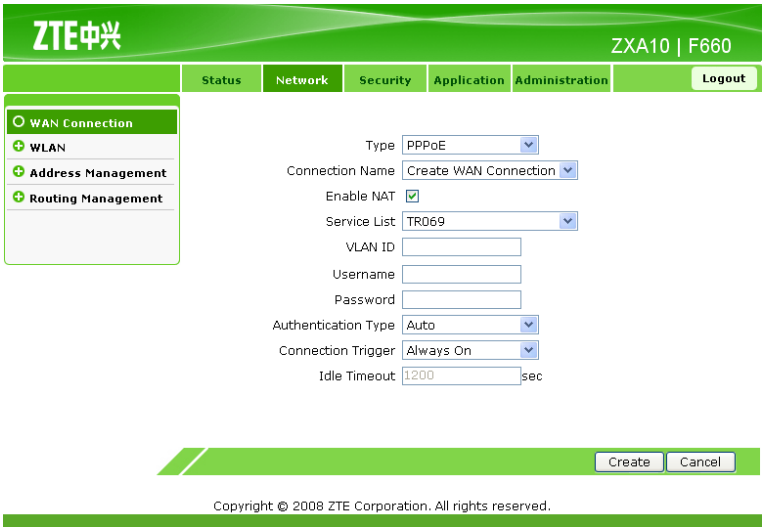


Table 4-1 lists the parameters for the PPPoE mode configuration.

Table 4-1 Parameters for PPPoE Mode Configuration

Parameter	Description
Type	Connection mode
Connection Name	PPPoE connection name, automatically generated by the system
Enable NAT	Whether to enable the NAT function
Service List	Service modes supported by the system: ● TR069 service mode Remote maintenance and management mode ● Internet service mode Broadband and IPTV service mode ● VoIP service mode Voice service mode
VLAN ID	VLAN ID
Username	User name, used by the device authentication on interworking
Password	Password, used by the device authentication on interworking
Authentication Type	Authentication type, the same as the authentication type for the uppper-layer device

Parameter	Description
Connection Trigger	Dial-up connection mode: ● Always On ● On Demand ● Manual
Idle Timeout	Idle time before the dial-up auto disconnection, available only in On Demand mode

b. Configure the static mode.

Select **Static** for **Type**, as shown in Figure 4-3.

Figure 4-3 Static Mode Configuration

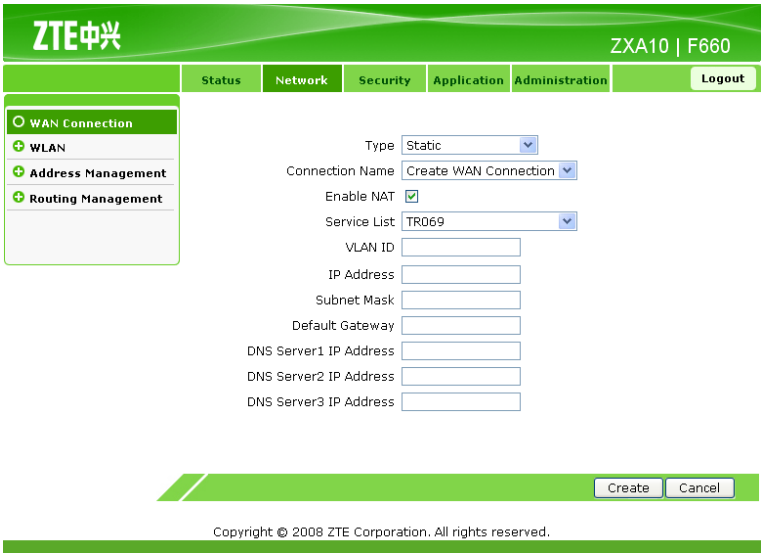


Table 4-2 lists the parameters for the static mode configuration.

Table 4-2 Static Mode Configuration

Parameter	Description
Type	Connection mode
Connection Name	Static connection name, automatically generated by the system
Enable NAT	Whether to enable the NAT function
Service List	Service modes supported by the system: ● TR069 service mode Remote maintenance and management mode ● Internet service mode Broadband and IPTV service mode ● VoIP service mode Voice service mode

Parameter	Description
VLAN ID	VLAN ID
IP Address	IP address used by ZXA10 F660
Subnet Mask	Subnet mask used by ZXA10 F660
Default Gateway	Gateway used by ZXA10 F660
DNS Server1 IP Address	IP address of DNS1 used by ZXA10 F660
DNS Server2 IP Address	IP address of DNS2 used by ZXA10 F660
DNS Server3 IP Address	IP address of DNS3 used by ZXA10 F660

c. Configure the DHCP mode.

Select **DHCP** for **Type**, as shown in Figure 4-4.

Figure 4-4 DHCP Mode Configuration

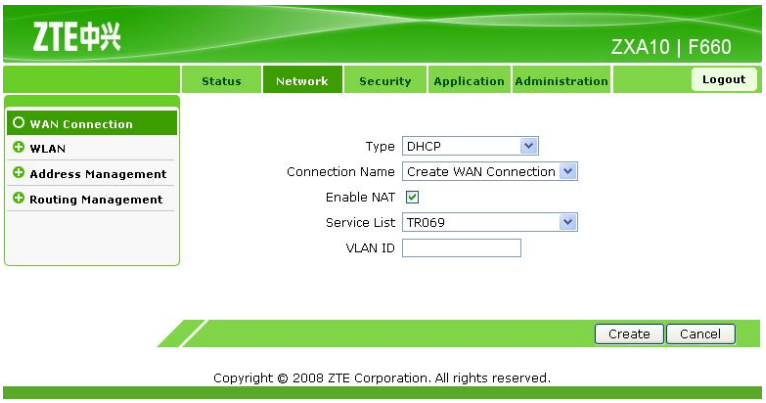


Table 4-3 lists the parameters for the DHCP mode configuration.

Table 4-3 DHCP Mode Configuration

Parameter	Description
Type	Connection mode
Connection Name	DHCP connection name, automatically generated by the system
Enable NAT	Whether to enable the NAT function
Service List	Service modes supported by the system: ● TR069 service mode Remote maintenance and management mode ● Internet service mode Broadband and IPTV service mode ● VoIP service mode Voice service mode
VLAN ID	VLAN ID

3. Click **Create** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

WAN connection configuration is complete.

4.2 WLAN Configuration

This topic includes the following:

- Configuring Basic WLAN Parameters
- Configuring Multi-SSID Parameters
- Configuring Security Properties
- Viewing Associated Devices

4.2.1 Configuring Basic WLAN Parameters

Short Description

Perform this procedure to configure the basic WLAN parameters.

Prerequisites

The user has logged in to the Web interface of the device.

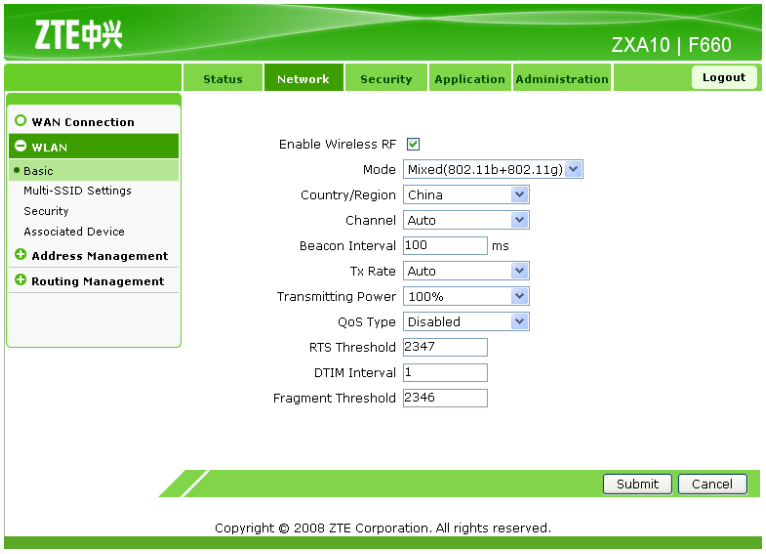
Context

To configure the basic WLAN parameters, perform the following steps:

Steps

1. On the **Network** tab, select **WLAN** on the left pane. By default, the **Basic** sub-node is selected, as shown in Figure 4-5.

Figure 4-5 Basic WLAN Configuration



2. Configure the basic WLAN parameters, as listed in Table 4-4.

Table 4-4 Basic WLAN Parameters

Parameter	Description
Enable Wireless RF	Whether to enable wireless RF
Mode	Wireless communication mode
Country/Region	Country or region name
Channel	Wireless channel number Select a proper channel according to the country code
Beacon Interval	Beacon interval
Tx Rate	Data transmission rate A low data transmission rate can enlarge the wireless communication area.
Transmitting Power	Transmission power
QoS Type	QoS priority type
RTS Threshold	RTS threshold
DTIM Interval	DTIM interval
Fragment Threshold	Fragment threshold If a packet size exceeds this threshold, the packet is divided into several fragments for transmission.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The basic WLAN parameters are configured.

4.2.2 Configuring Multi-SSID Parameters

Short Description

Perform this procedure to configure multi-SSID parameters.

Prerequisites

The user has logged in to the Web interface of the device.

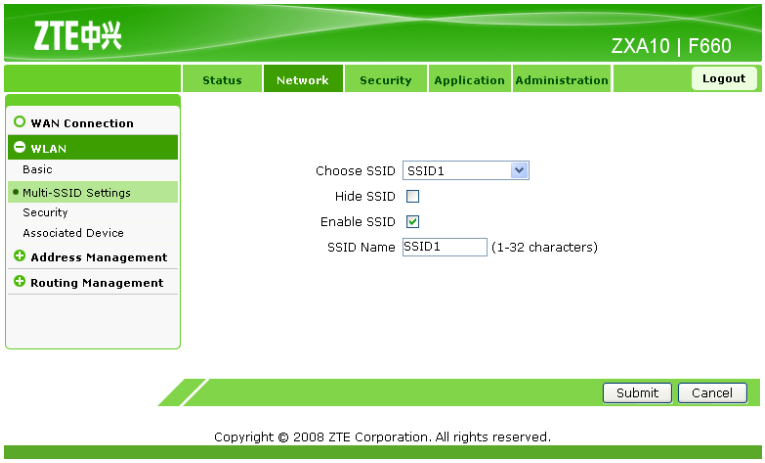
Context

To configure multi-SSID parameters, perform the following steps:

Steps

1. On the **Network** tab, click **WLAN** on the left pane. Select **Multi-SSID Settings**, as shown in Figure 4-6.

Figure 4-6 Multi-SSID Settings



2. Configure the multi-SSID parameters as shown in Table 4-5.

Table 4-5 Multi-SSID Parameters

Parameter	Description
Choose SSID	Choose the SSID that needs to be configured.
Hide SSID	Disable or enable SSID broadcast.
Enable SSID	Enable the SSID.

Parameter	Description
SSID Name	SSID name. It cannot exceed 32 characters and is case sensitive. It is used to control the WLAN access. The SSID name must match all the SSIDs of the related access nodes; otherwise, the device cannot be accessed. Up to four WLAN sub-ports are supported.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The multi-SSID parameters are configured.

4.2.3 Configuring Security Properties

Short Description

Perform this procedure to configure the security properties.

Prerequisites

The user has logged in to the Web interface of the device.

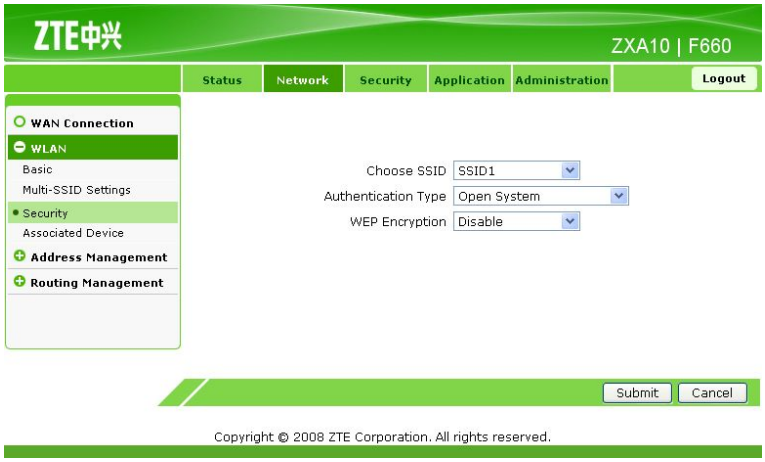
Context

To configure the security properties, perform the following steps:

Steps

1. On the **Network** tab, select **WLAN**, and then select **Security**, as shown in Figure 4-7.

Figure 4-7 Security Properties



SSID supports four authentication modes: **Open System**, **Shared Key**, **WPA-PSK**, and **WPA2-PSK**.

2. From the **Choose SSID** drop-down list, select an SSID.

   a. In **Authentication Type**, select **Open System**, and then enable **WEP Encryption** (by default, it is disabled). The **Open System** configuration information is displayed, as shown in Figure 4-8.

Figure 4-8 Open System Configuration

Table 4-6 lists the parameters for the **Open System** authentication mode.

Table 4-6 Parameters for Open System Authentication Mode

Parameter	Description
Choose SSID	Current SSID
Authentication Type	Current SSID authentication mode
WEP Encryption	To enable or disable WEP encryption
WEP Encryption Level	WEP encryption length ● The 128–bit encryption can be a 13–bit ASCII codes or a 26–bit hexadecimal number. ● The 64–bit encryption can be a 5–bit ASCII code or a 10–bit hexadecimal number. Generally, the 64–bit encryption can meet the user requirements. To enhance security, use the 128–bit encryption.
WEP Key Index	Current encryption value
WEP Key1	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number
WEP Key2	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number

Parameter	Description
WEP Key3	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number
WEP Key4	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number

b. In **Authentication Type**, select **Shared Key**. By default, **WEP Encryption** is enabled. The **Shared Key** configuration information is displayed, as shown in Figure 4-9.

Figure 4-9 Shared Key Configuration

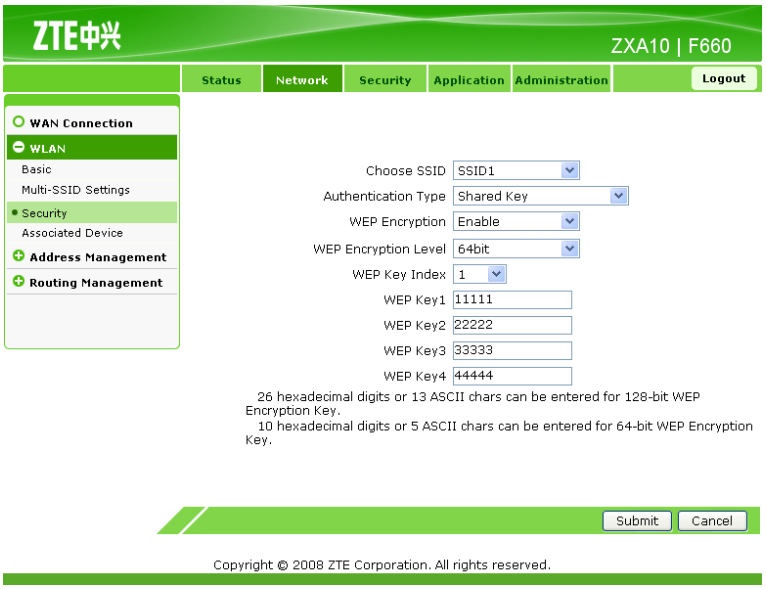


Table 4-7 lists the parameters for the **Shared Key** authentication mode.

Table 4-7 Parameters for Shared Key Authentication Mode

Parameter	Description
Choose SSID	Current SSID
Authentication Type	Current SSID authentication mode
WEP Encryption	To enable or disable WEP encryption
WEP Encryption Level	WEP encryption length ● The 128–bit encryption can be a 13–bit ASCII codes or a 26–bit hexadecimal number. ● The 64–bit encryption can be a 5–bit ASCII code or a 10–bit hexadecimal number. Generally, the 64–bit encryption can meet the user requirements. To enhance security, use the 128–bit encryption.
WEP Key Index	Current encryption value

Parameter	Description
WEP Key1	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number
WEP Key2	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number
WEP Key3	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number
WEP Key4	WEP encryption value Range: 5–bit ASCII code or 10–bit hexadecimal number

c. In **Authentication Type**, select **WPA-PSK**. The **WPA-PSK** configuration information is displayed, as shown in Figure 4-10.

Figure 4-10 WPA-PSK Configuration

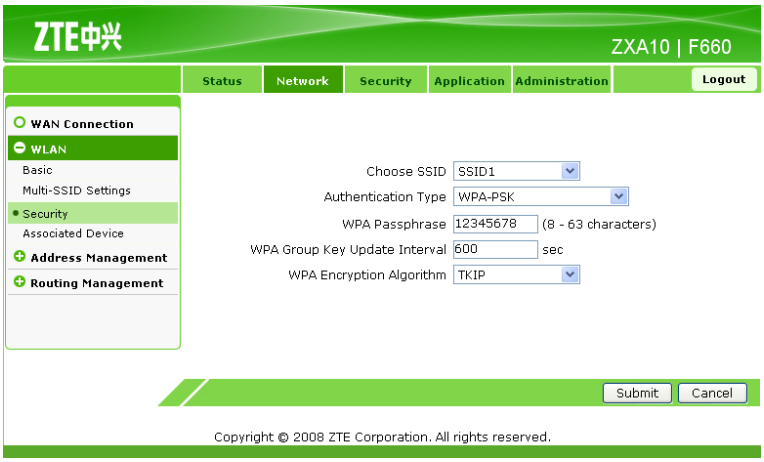


Table 4-8 lists the parameters for the **WPA-PSK** authentication mode.

Table 4-8 Parameters for WPA-PSK Authentication Mode

Parameter	Description
Choose SSID	Current SSID
Authentication Type	Current SSID authentication mode
WPA Passphrase	WPA pre-shared key Range: 8 – 63 characters
WPA Group Key Update Interval	Update interval of the WPA group key
WPA Encryption Algorithm	WPA encryption algorithm

Note:

The configuration method for the **WPA2-PSK** authentication mode is the same as that for the **WPA-PSK** authentication mode.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The security properties are configured.

4.2.4 Viewing Associated Devices

Short Description

Perform this procedure to view the associated devices.

Prerequisites

The user has logged in to the Web interface of the device.

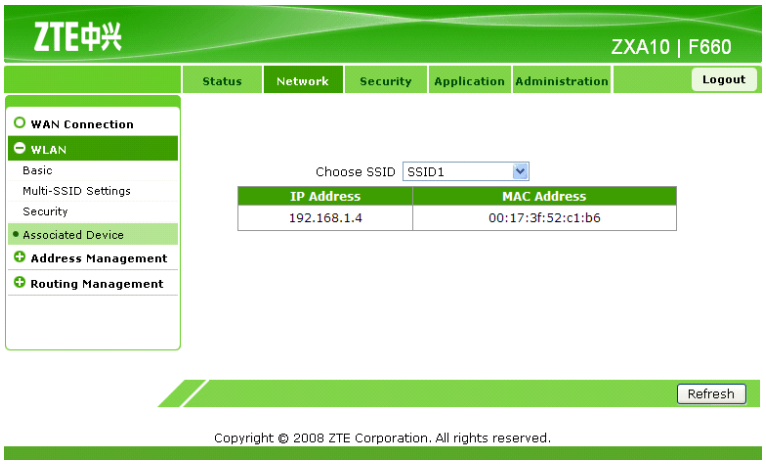
Context

To view the associated devices, perform the following steps:

Steps

1. On the **Network** tab, select **WLAN**, and then select **Associated Device**, as shown in Figure 4-11.

Figure 4-11 Associated Device



2. Select **SSID**, and then click **Refresh** to view the MAC addresses of the associated devices.

– End of Steps –

Result

The associated devices are listed.

4.3 Address Management Configuration

This topic includes the following:

- Configuring DHCP Server
- Configuring DHCP Binding
- Configuring Specific Address Range

4.3.1 Configuring DHCP Server

Short Description

Perform this procedure to configure the DHCP server.

Prerequisites

The user has logged in to the Web interface of the device.

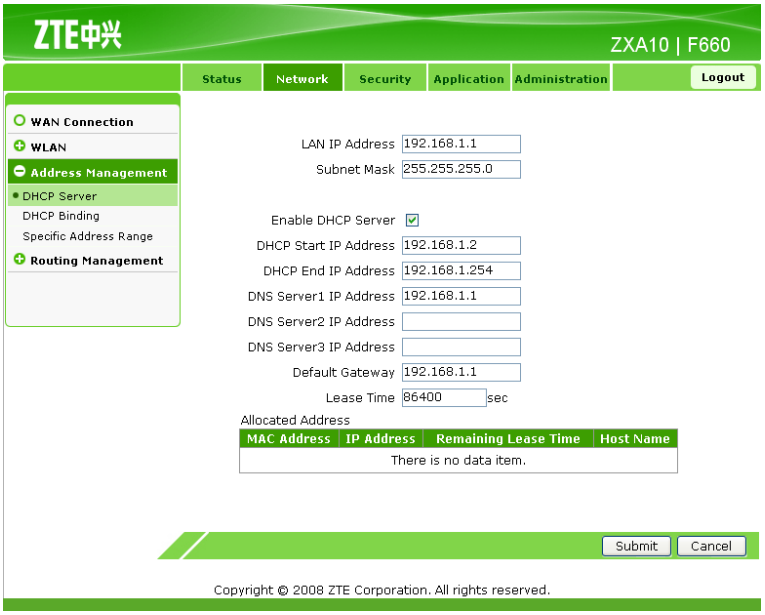
Context

To configure the DHCP server, perform the following steps:

Steps

1. On the **Network** tab, select **Address Management**. By default, **DHCP Server** is selected, as shown in Figure 4-12.

Figure 4-12 DHCP Server



2. On the **DHCP Server** tab, configure the parameters, as listed in Table 4-9.

Table 4-9 Parameters for DHCP Server Configuration

Parameter	Description
LAN IP Address	IP address of the LAN group (interface subnet)
Subnet Mask	Subnet mask of the LAN group
Enable DHCP Server	To enable or disable the DHCP server
DHCP Start IP Address	Starting IP address allocated by the DHCP server
DHCP End IP Address	Ending IP address allocated by the DHCP server
DNS Server1 IP Address	IP address of the DNS server
DNS Server2 IP Address	IP address of the DNS server
DNS Server3 IP Address	IP address of the DNS server
Default Gateway	IP address of the default gateway
Lease Time	Lease time of the IP address by the DHCP server

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The DHCP server is configured.

4.3.2 Configuring DHCP Binding

Short Description

Perform this procedure to configure the DHCP binding.

Prerequisites

The user has logged in to the Web interface of the device.

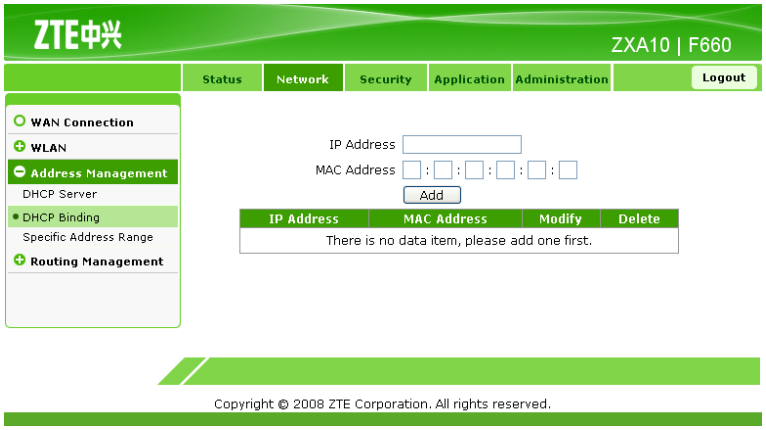
Context

To configure the DHCP binding, perform the following steps:

Steps

1. On the **Network** tab, select **Address Management**, and then select **DHCP Binding**, as shown in Figure 4-13.

Figure 4-13 DHCP Binding



2. Configure binding between the MAC address and IP address. Create a DHCP binding table to map the client MAC address to the IP address.

   The DHCP server allocates IP addresses according to the binding relations, and the binding relations do not expire.

   For example, if the MAC address is set to `00-0a-e2-c6-48-ba` and the IP address is set to `192.168.1.113`, it indicates that the DHCP server allocates the IP address 192.168.1.113 to the host which the MAC address corresponds to.

NOTE **Note:**

The IP address belongs to the address pool that is provided by the DHCP server in the LAN group.

---

3. Click **Add** to finish the configuration. Click **Modify** to modify the configuration. Click **Delete** to delete the configuration.

– End of Steps –

Result

DHCP binding is configured.

4.3.3 Configuring Specific Address Range

Short Description

Perform this procedure to configure the specific address range.

Prerequisites

The user has logged in to the Web interface of the device.

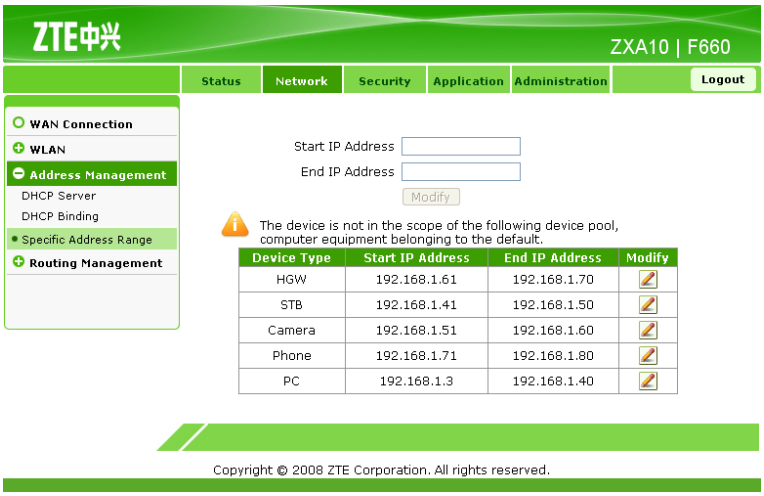
Context

To configure the special address range, perform the following steps:

Steps

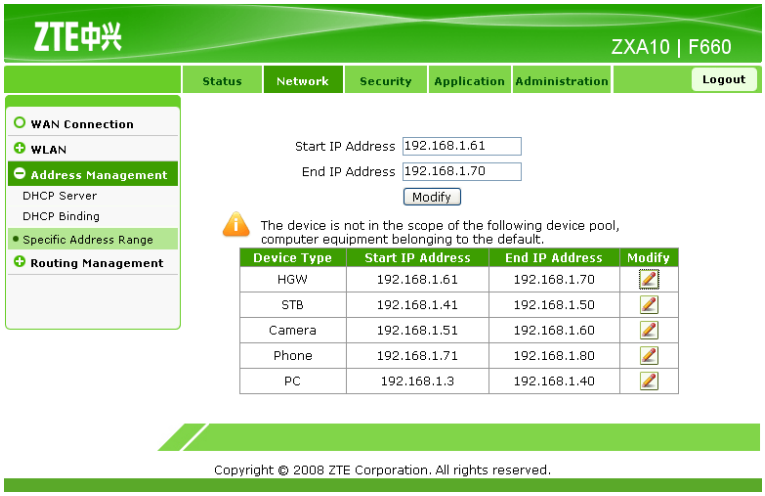
1. On the **Network** tab, select **Address Management**, and then select **Specific Address Range**, as shown in Figure 4-14.

Figure 4-14 Specific Address Range



2. Click **Modify** to modify the parameters, as shown in Figure 4-15.

Figure 4-15 Specific Address Range Configuration



3. In **Start IP Address** and **End IP Address**, enter the IP addresses, and then click **Modify**.

– End of Steps –

Result

The specific address range is configured.

4.4 Route Management Configuration

This topic includes the following:

- Configuring Default Gateway
- Configuring Static Routing

4.4.1 Configuring Default Gateway

Short Description

Perform this procedure to configure the default gateway.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the default gateway, perform the following steps:

Steps

1. On the **Network** tab, select **Routing Management**. By default, **Default Gateway** is selected, as shown in Figure 4-16.

Figure 4-16 Default Gateway

2. From **WAN Connection**, select the connection interface at the WAN side.

NOTE **Note:**

This interface is available when configured on **WAN Connection**.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The default gateway is configured.

4.4.2 Configuring Static Routing

Short Description

Perform this procedure to configure the static routing.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the static routing, perform the following steps:

Steps

1. On the **Network** tab, select **Routing Management**, and then select **Static Routing**, as shown in Figure 4-17.

Figure 4-17 Static Routing

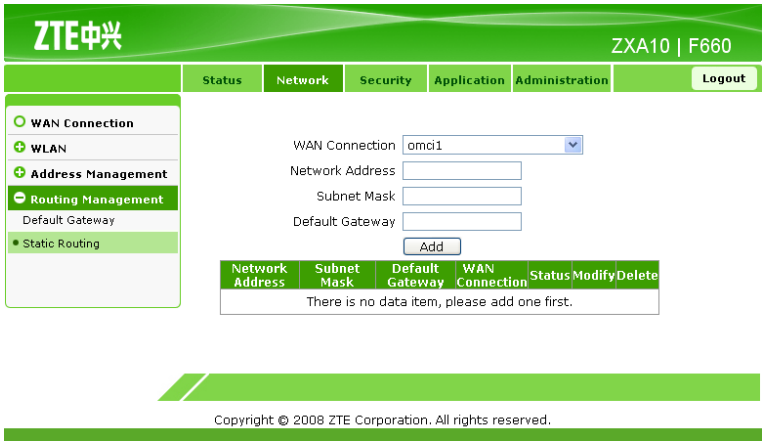


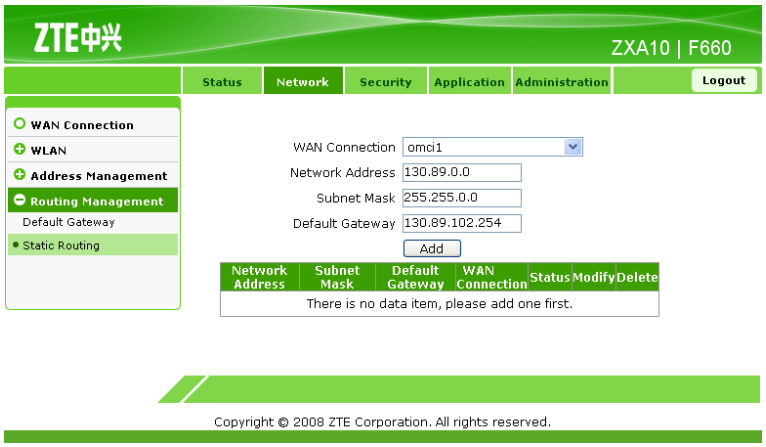
Table 4-10 lists the parameters for static routing configuration.

Table 4-10 Parameters for Static Routing Configuration

Parameter	Description
WAN Connection	Network-side interface type
Network Address	Network address
Subnet Mask	Subnet mask
Default Gateway	Gateway

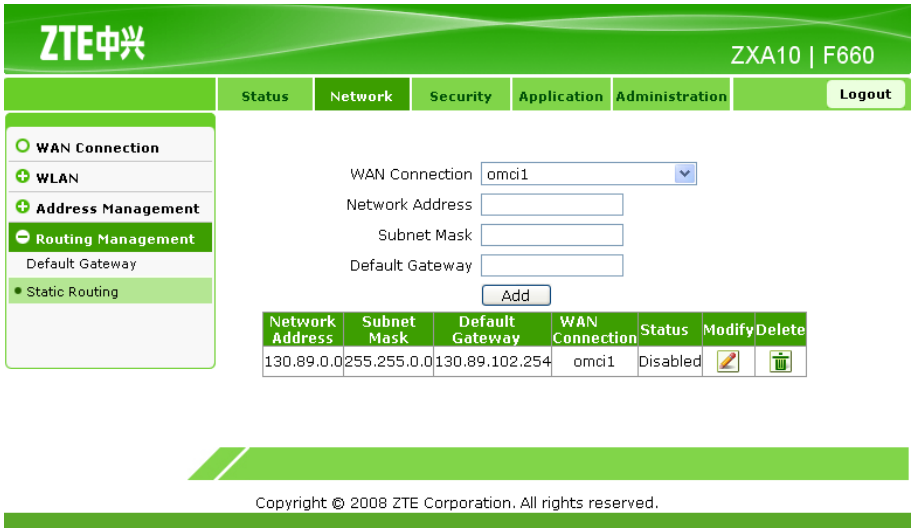
2. From the **WAN Connection** drop-down list, select the network-side interface.
3. Configure **Network Address**, **Subnet Mask**, and **Default Gateway**, as shown in Figure 4-18.

Figure 4-18 Static Routing Configuration



4. Click **Add** to finish the configuration, as shown in Figure 4-19. Click **Modify** to modify the configuration. Click **Delete** to delete the configuration.

Figure 4-19 Static Routing Configuration Completed



– End of Steps –

Result

The static routing is configured.

Chapter 5
Security Configuration

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5.1 Configuring Firewall

Short Description

Perform this procedure to configure the firewall.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the firewall, perform the following steps:

Steps

1. On the Web interface, click the **Security** tab. By default, **Firewall** is selected, as shown in Figure 5-1.

Figure 5-1 Firewall Configuration

2. Set the firewall parameters, as listed in Table 5-1.

Table 5-1 Firewall Parameters

Parameter	Description
Enable Anti-Hacking Protection	To enable or disable anti-hacking protection
Firewall Level	Firewall level ● **High**: Allow legal WAN-side access but prohibit WAN-side ping. ● **Low**: Allow legal WAN-side access and WAN-side ping.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The firewall is configured.

5.2 Configuring IP Filter

Short Description

Perform this procedure to configure IP filter.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure IP filter, perform the following steps:

Steps

1. On the **Security** tab, select **IP Filter**, as shown in Figure 5-2.

Figure 5-2 IP Filter

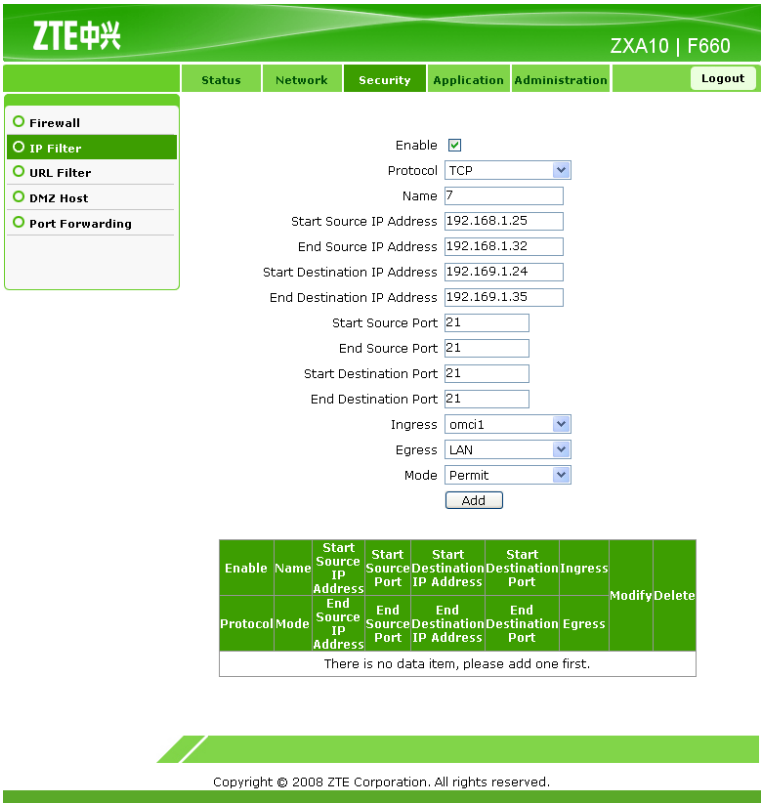
Table 5-2 lists the parameters for IP filter configuration.

Table 5-2 Parameters for IP Filter Configuration

Parameter	Description
Enable	To enable the IP filter function
Protocol	Protocol
Name	Name
Start Source IP Address	Starting source IP address
End Source IP Address	Ending source IP address
Start Destination IP Address	Starting destination IP address
End Destination IP Address	Ending destination IP address
Start Source Port	Starting source port number
End Source Port	Ending source port number
Start Destination Port	Starting destination port number
End Destination Port	Ending destination port number
Ingress	Ingress interface
Egress	Egress interface
Mode Discard Permit	Mode, including discard and permit

2. On the **IP Filter** tab, set the filter parameters, as shown in Figure 5-3.

Figure 5-3 IP Filter Configuration



3. Click **Add** to finish the configuration, as shown in Figure 5-4. Click **Modify** to modify the configuration. Click **Delete** to delete the configuration.

Figure 5-4 IP Filter Configuration Completed

– End of Steps –

Result

IP filter is configured.

5.3 Configuring URL Filter

Short Description

Perform this procedure to configure the URL filter.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the URL filter, perform the following steps:

Steps

1. On the **Security** tab, select **URL Filter**, as shown in Figure 5-5.

Figure 5-5 URL Filter

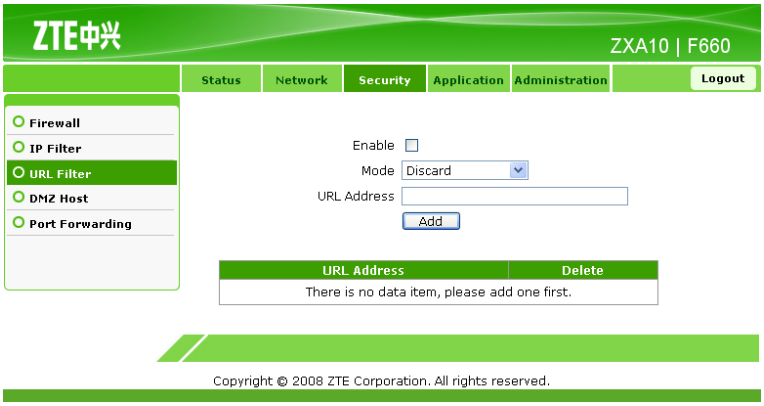


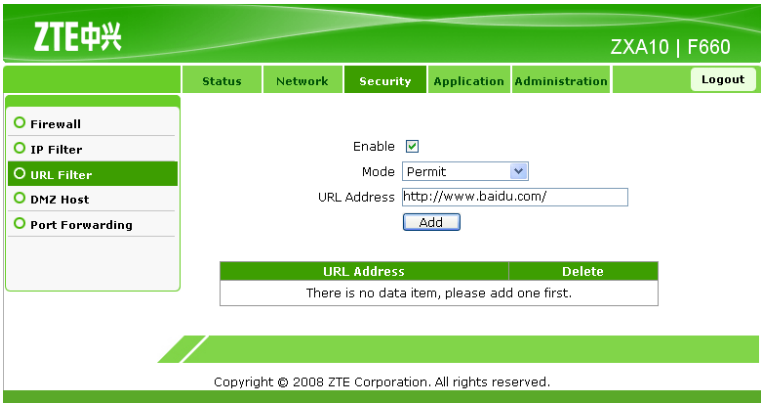
Table 5-3 lists the parameters for URL filter configuration.

Table 5-3 Parameters for URL Filter Configuration

Parameter	Description
Enable	To enable the URL filter function
Mode	Mode, including discard and permit
URL Address	URL address

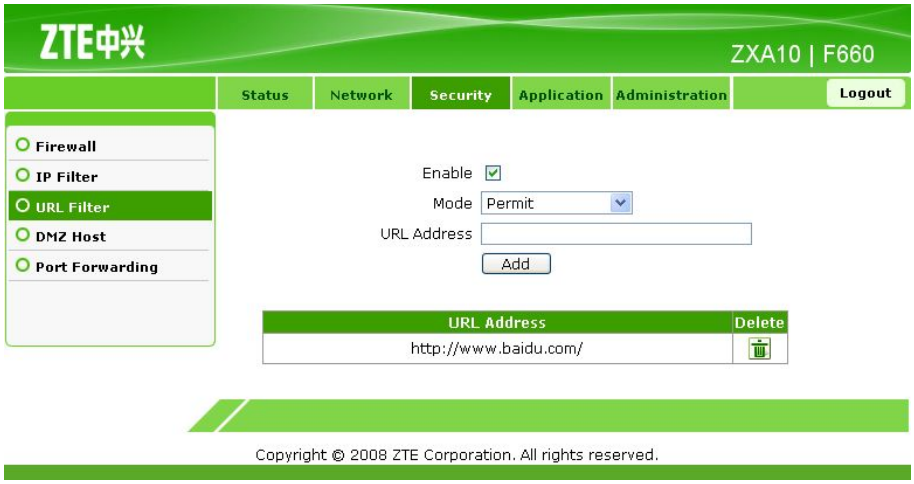
2. On the **URL Filter** tab, set the filter parameters, as shown in Figure 5-6.

Figure 5-6 URL Filter Configuration



3. Click **Add** to finish the configuration, as shown in Figure 5-7. Click **Delete** to delete the configuration.

Figure 5-7 URL Filter Configuration Completed



– End of Steps –

Result

URL filter is configured.

5.4 Configuring DMZ Host

Short Description

Perform this procedure to configure the DMZ host.

Prerequisites

The user has logged in to the Web interface of the device.

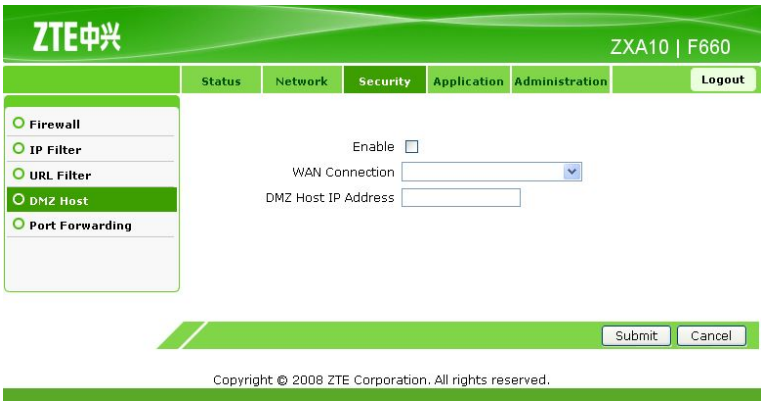
Context

To configure the DMZ host, perform the following steps:

Steps

1. On the **Security** tab, select **DMZ Host**, as shown in Figure 5-8.

Figure 5-8 DMZ Host



2. Configure the DMZ host parameters, as shown in Figure 5-9.

Figure 5-9 DMZ Host Configuration

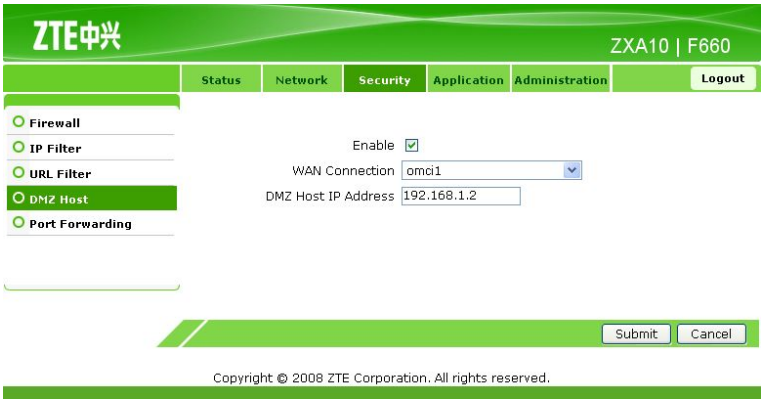


Table 5-4 lists the parameters for DMZ host configuration.

Table 5-4 Parameters for DMZ Host Configuration

Parameter	Description
Enable	To enable the DMZ host
WAN Connection	WAN-side connection interface
DMZ Host IP Address	IP address of the DMZ host

NOTE **Note:**

After the DMZ full port mapping function is enabled, all the ports are enabled by default. The LAN-side host provides services through DNAT.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The DMZ host is configured.

5.5 Configuring Port Forwarding

Short Description

Perform this procedure to configure port forwarding.

Prerequisites

The user has logged in to the Web interface of the device.

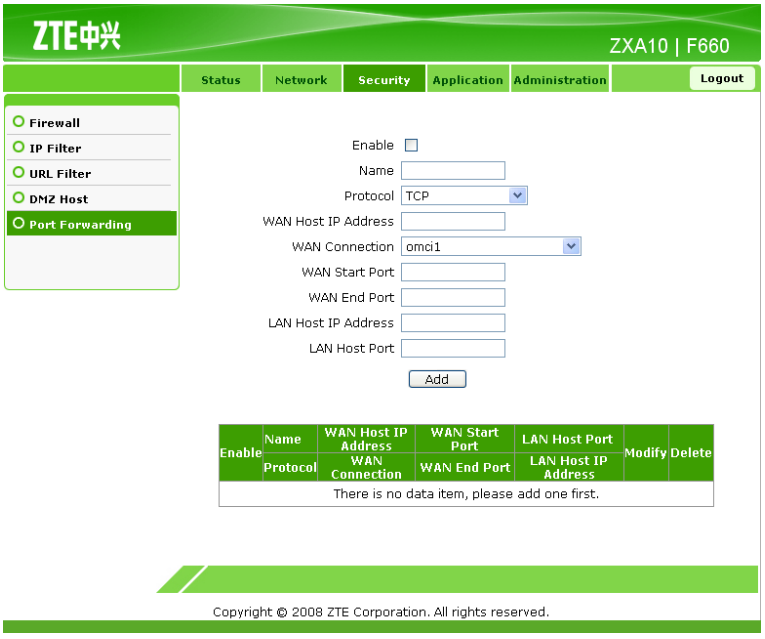
Context

To configure port forwarding, perform the following steps:

Steps

1. On the **Security** tab, select **Port Forwarding**, as shown in Figure 5-10.

Figure 5-10 Port Forwarding



2. Configure the port forwarding parameters, as shown in Figure 5-11.

Figure 5-11 Port Forwarding Configuration

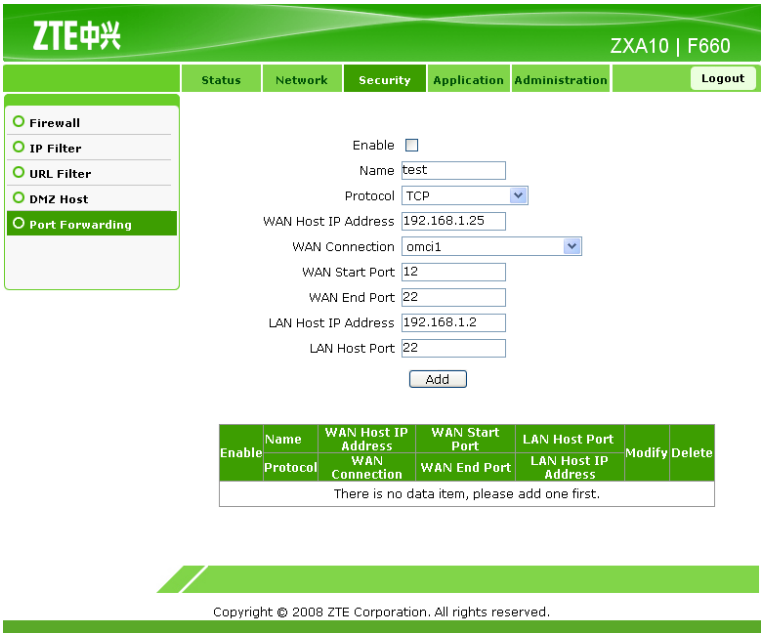


Table 5-5 lists the parameters for port forwarding configuration.

Table 5-5 Parameters for Port Forwarding Configuration

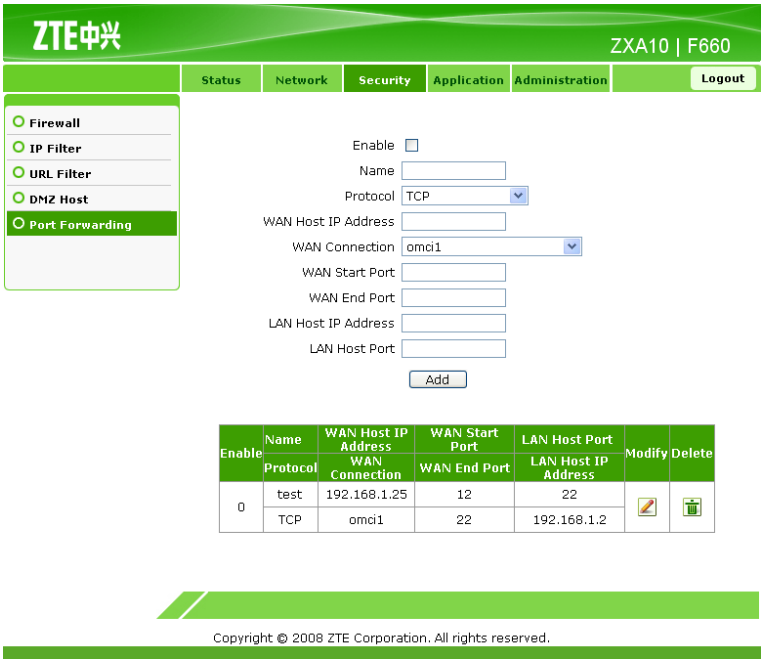
Parameter	Description
Enable	To enable the port forwarding function
Name	Host name
Protocol	Protocol name, including TCP, UDP, as well as TCP and UDP protocols
WAN Host IP Address	Starting IP address of the WAN-side host
WAN Connection	WAN connection
WAN Start Port	Starting port number of the WAN-side host
WAN End Port	Ending port number of the WAN-side host
LAN Host IP Address	IP address of the LAN-side host
LAN Host Port	Port number of the LAN-side host

Note:

If a redirection policy of port access with the source address of the WAN-side IP address and the destination address of the LAN-side IP address is configured, it is used in the scenario where the WAN-side client accesses the LAN-side server.

3. Click **Add** to finish the configuration, as shown in Figure 5-12. Click **Modify** to modify the configuration. Click **Delete** to delete the configuration.

Figure 5-12 Port Forwarding Configuration Completed



– End of Steps –

Result

Port forwarding is configured.

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Chapter 6
Service Configuration

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6.1 SIP VoIP Service Configuration

This topic includes the following:

- Configuring VoIP WAN Connection
- Configuring SIP
- Configuring SIP Accounts
- Configuring VoIP Advanced Parameters
- Configuring VoIP Media Parameters
- Configuring Fax

6.1.1 Configuring VoIP WAN Connection

Short Description

Perform this procedure to configure the VoIP WAN connection.

Prerequisites

The user has logged in to the Web interface of the device.

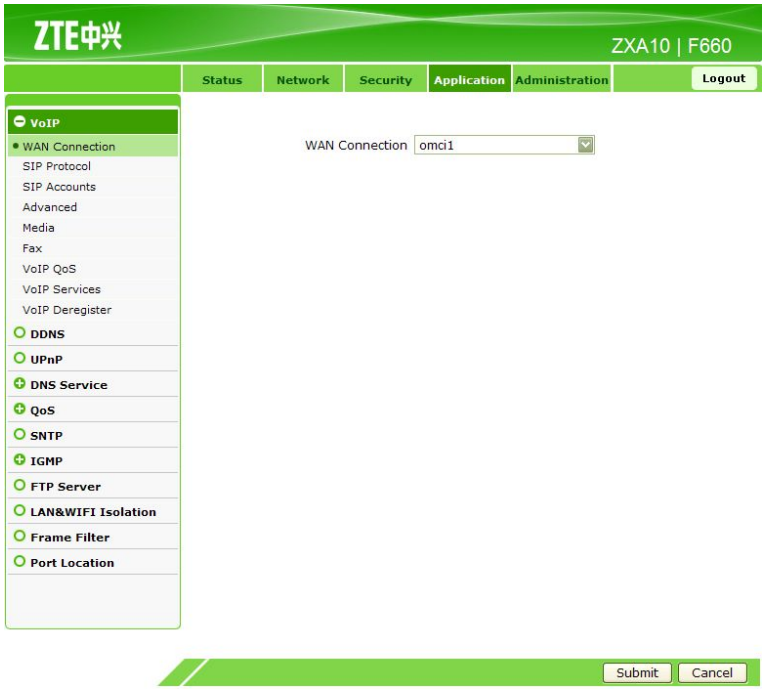
Context

To configure the VoIP WAN connection, perform the following steps:

Steps

1. On the Web interface, click the **Application** tab. Select **VoIP**. By default, **WAN Connection** is selected, as shown in Figure 6-1.

Figure 6-1 WAN Connection



2. Select a connection interface from **WAN Connection**.
3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The VoIP WAN connection is configured.

6.1.2 Configuring SIP

Short Description

Perform this procedure to configure SIP.

Prerequisites

The user has logged in to the Web interface of the device.

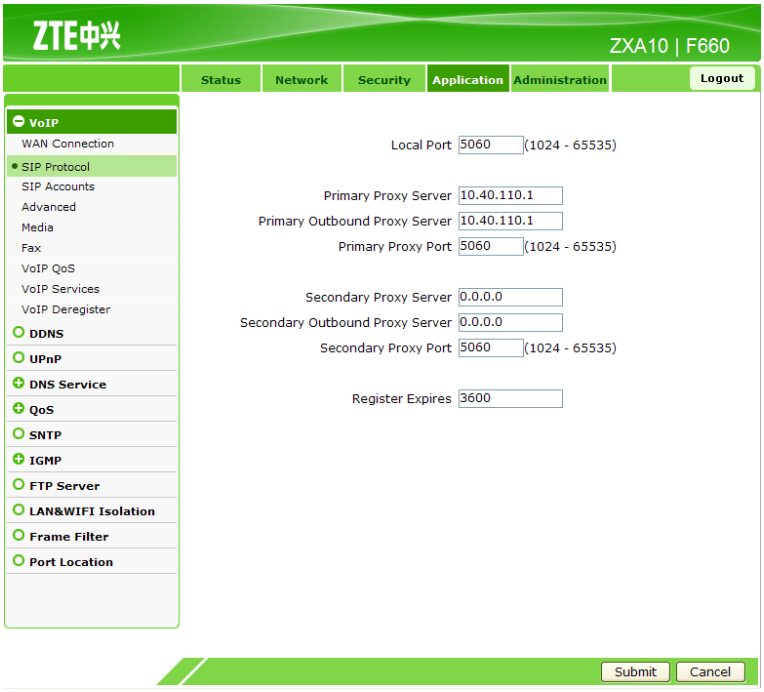
Context

To configure SIP, perform the following steps:

Steps

1. On the **Application** tab, select **VoIP**, and then select **SIP Protocol**, as shown in Figure 6-2.

Figure 6-2 SIP Protocol



2. Configure the SIP protocol parameters, as listed in Table 6-1.

Table 6-1 Parameters for SIP Protocol Configuration

Parameter	Description
Local Port	Local port number used by the VoIP protocol
Primary Proxy Server	IP address of the primary proxy server
Primary Outbound Proxy Server	IP address of the primary outbound proxy server
Primary Proxy Port	Port number of the primary proxy server
Secondary Proxy Server	IP address of the secondary proxy server
Secondary Outbound Proxy Server	IP address of the secondary outbound proxy server
Secondary Proxy Port	Port number of the secondary proxy server
Register Expires	Registration expiration time Unit: second

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

SIP is configured.

6.1.3 Configuring SIP Accounts

Short Description

Perform this procedure to configure SIP accounts.

Prerequisites

The user has logged in to the Web interface of the device.

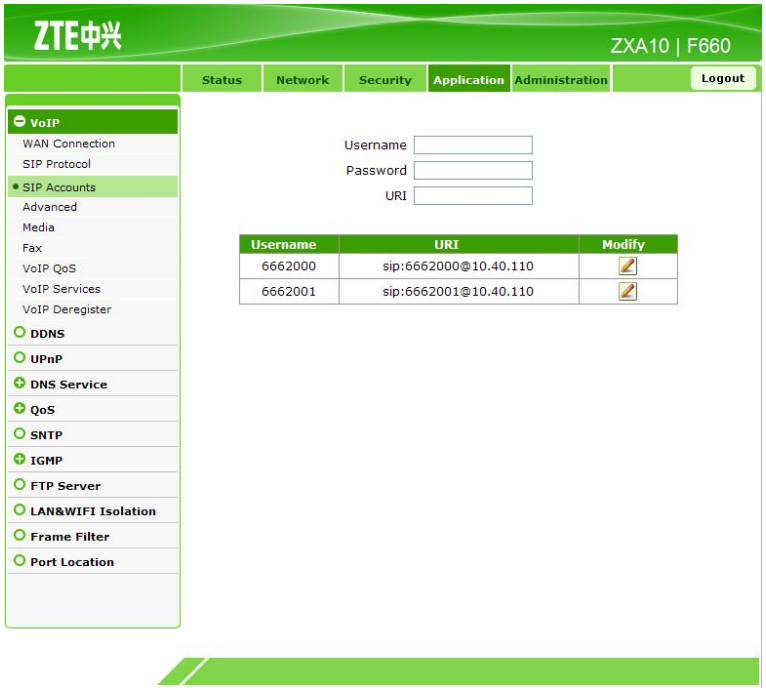
Context

To configure SIP accounts, perform the following steps:

Steps

1. On the **Application** tab, select **VoIP**, and then select **SIP Accounts**, as shown in Figure 6-3.

Figure 6-3 SIP Accounts



2. Click **Modify** to modify the account parameters, as shown in Figure 6-4.

Figure 6-4 SIP Account Configuration

Table 6-2 lists the parameters for SIP account configuration.

Table 6-2 Parameters for SIP Account Configuration

Parameter	Description
Username	Name of the SIP authentication user
Password	Password of the SIP authentication user
URI	User registration identification, that is, the user SIP call number

3. Click **Modify**.

– End of Steps –

Result

The SIP accounts are configured.

6.1.4 Configuring VoIP Advanced Parameters

Short Description

Perform this procedure to configure the VoIP advanced parameters.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the VoIP advanced parameters, perform the following steps:

Steps

1. On the **Application** tab, select **VoIP**, and then select **Advanced**, as shown in Figure 6-5.

Figure 6-5 Advanced Parameters

2. Configure the advanced parameters, as shown in Table 6-3.

Table 6-3 Advanced Parameters

Parameter	Description
Echo Cancellation	To enable or disable echo cancellation
VAD&CNG	To enable or disable VAD and CNG
DTMF	DTMF mode, including RFC2833, RFC2198, and DTMF in Voice
Jitter Buffer	Jitter buffer, including fixed and adaptive
Min Value	Minimum jitter buffer value Unit: ms
Max Value	Maximum jitter buffer value Unit: ms

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The VoIP advanced parameters are configured.

6.1.5 Configuring VoIP Media Parameters

Short Description

Perform this procedure to configure the VoIP media parameters.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure VoIP media parameters, perform the following steps:

Steps

1. On the **Application** tab, select **VoIP**, and then select **Media**, as shown in Figure 6-6.

Figure 6-6 Media Parameters

2. Configure the media parameters, as shown in Figure 6-7.

Figure 6-7 Media Parameter Configuration

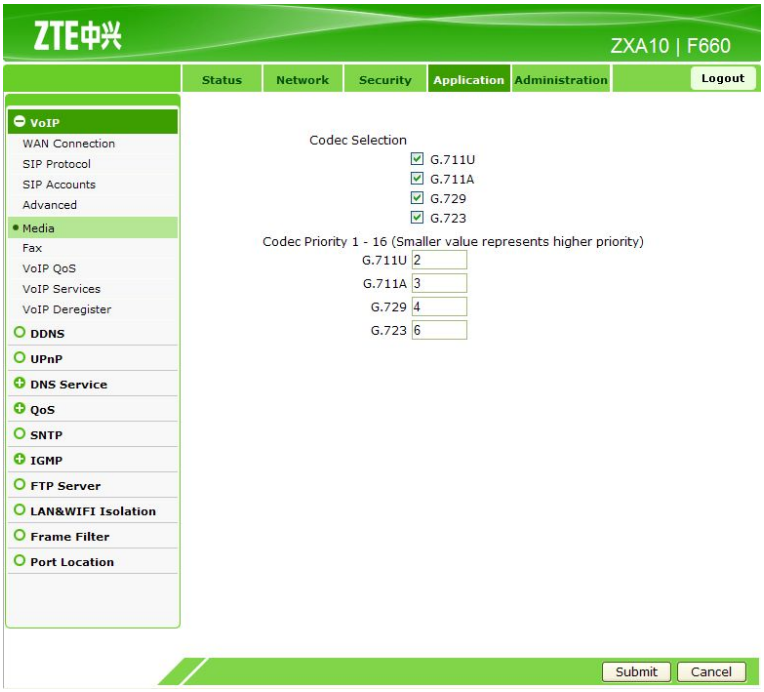


Table 6-4 lists the media parameters.

Table 6-4 Media Parameters

Parameter	Description
Codec Selection	Code type
Codec Priority	Code priority The smaller the value is, the higher the priority is.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The VoIP media parameters are configured.

6.1.6 Configuring Fax

Short Description

Perform this procedure to configure fax.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure fax, perform the following steps:

Steps

1. On the **Application** tab, select **VoIP**, and then select **Fax**, as shown in Figure 6-8.

Figure 6-8 Fax Configuration

2. Select **Enable T38**.

NOTE **Note:**

To disable T38 fax mode, clear the check box.

---

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

Fax is configured.

6.2 Configuring DDNS

Short Description

Perform this procedure to configure DDNS.

Prerequisites

The user has logged in to the Web interface of the device.

Context

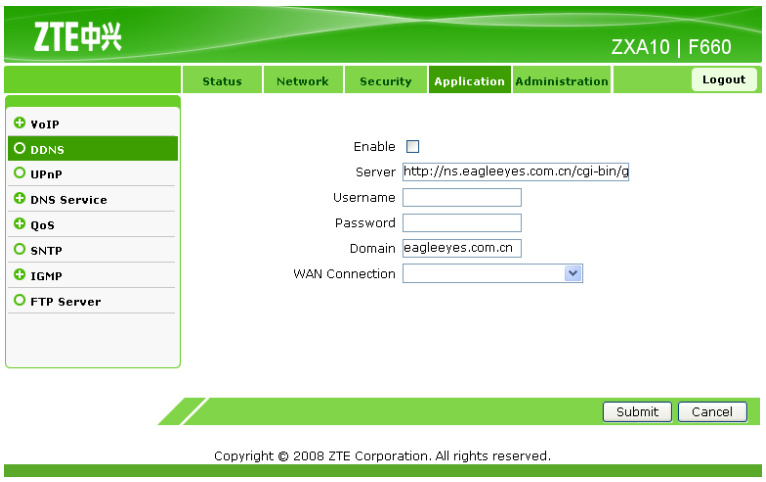
After DDNS is applied, the host that has the dynamic IP address can also provide the domain name service. For example, when the host obtains an IP address through xDSL dial-up or DHCP server dynamic allocation, and the host provides the domain name service, by using DDNS, the effect on the domain name access when the IP address changes is eliminated.

To configure DDNS, perform the following steps:

Steps

1. On the **Application** tab, select **DDNS**, as shown in Figure 6-9.

Figure 6-9 DDNS



2. Configure the DDNS parameters, as shown in Figure 6-10.

Figure 6-10 DDNS Configuration

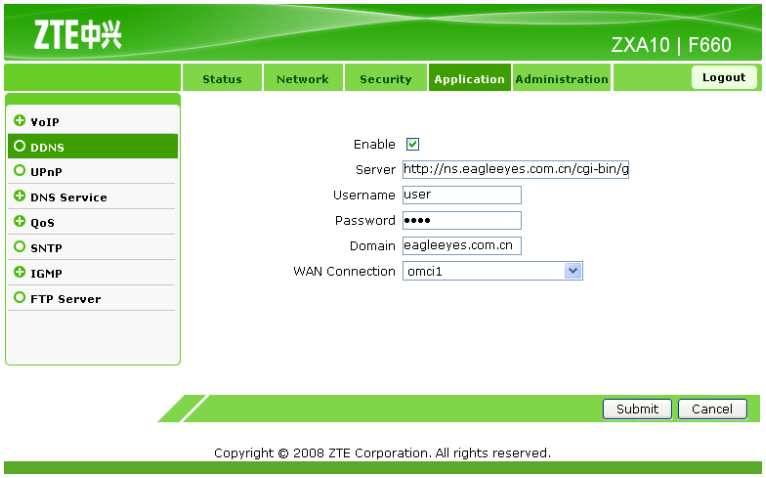


Table 6-5 lists the parameters for DDNS configuration.

Table 6-5 Parameters for DDNS Configuration

Parameter	Description
Enable	To enable the DDNS function
Server	Server address If the GNUDIP HTTP protocol is used, the sever address is a URL address. By default, it is http://ns.eagleeyes.com.cn/cgi-bin/gdipupdt.cgi.
Username	DDNS server user name
Password	DDNS server password
Domain	Domain name corresponding to the user, valid only when the GNUDIP protocol is used
WAN Connection	WAN-side connection interface

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

DDNS is configured.

6.3 Configuring UPnP

Short Description

Perform this procedure to configure UPnP.

Prerequisites

The user has logged in to the Web interface of the device.

Context

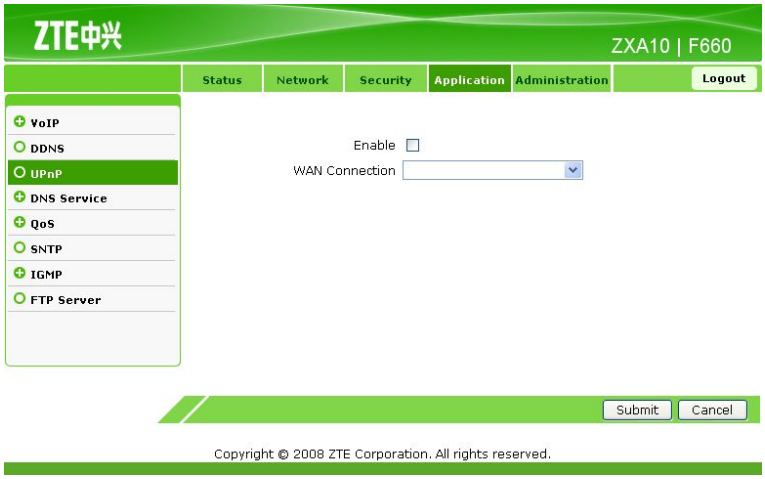
The UPnP function supports zero configuration and device auto-discovery. After this function is configured, the device can be dynamically added to a network to obtain the IP address, announce the function, and know the functions of other devices.

To configure UPnP, perform the following steps:

Steps

1. On the **Application** tab, select **UPnP**, as shown in Figure 6-11.

Figure 6-11 UPnP



2. Configure the UPnP parameters, as shown in Figure 6-12.

Figure 6-12 UPnP Configuration

Table 6-6 lists the UPnP parameters.

Table 6-6 UPnP Parameters

Parameter	Description
Enable	To enable UPnP
WAN Connection omci1	WAN-side connection interface

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

UPnP is configured.

6.4 DNS Configuration

This topic includes the following:

- Configuring Domain Name
- Configuring Host Name

6.4.1 Configuring Domain Name

Short Description

Perform this procedure to configure the domain name.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the domain name, perform the following steps:

Steps

1. On the **Application** tab, select **DNS Service**. By default, **Domain Name** is selected, as shown in Figure 6-13.

Figure 6-13 Domain Name

2. Set **Domain Name**.
3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The domain name is configured.

6.4.2 Configuring Host Name

Short Description

Perform this procedure to configure the host name.

Prerequisites

The user has logged in to the Web interface of the device.

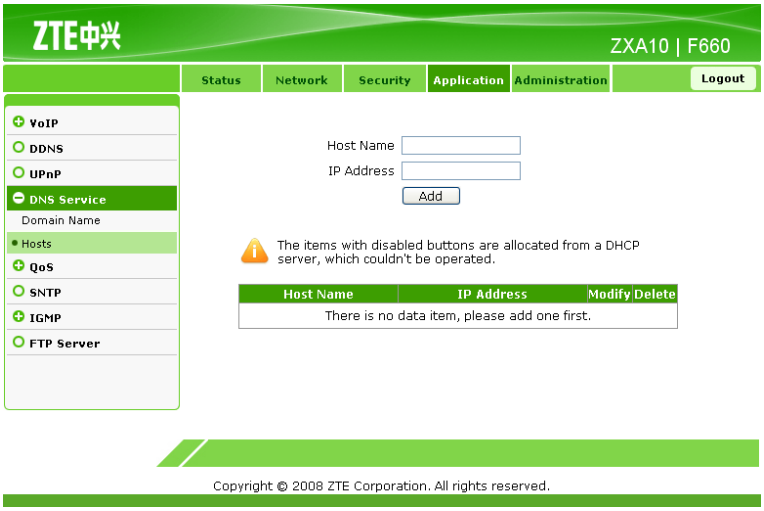
Context

To configure the host name, perform the following steps:

Steps

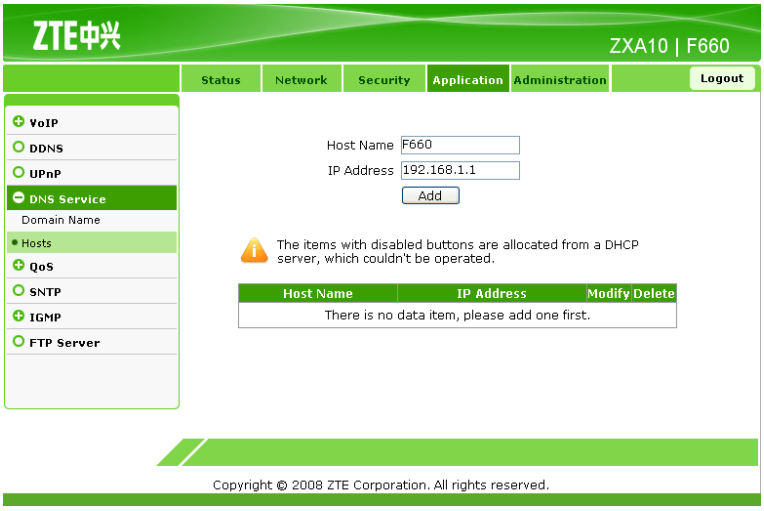
1. On the **Application** tab, select **DNS Service**, and then select **Hosts**, as shown in Figure 6-14.

Figure 6-14 Host Name



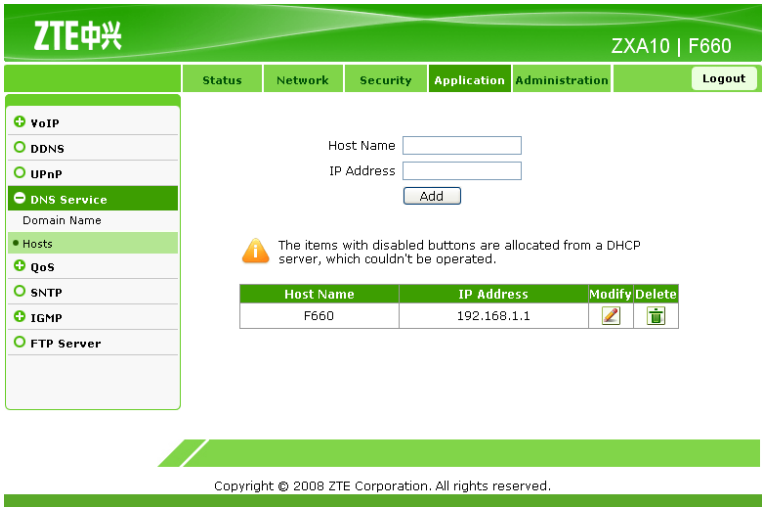
2. Set **Host Name** and **IP Address**, as shown in Figure 6-15.

Figure 6-15 Host Name Configuration



3. Click **Add** to finish the configuration, as shown in Figure 6-16. Click **Modify** to modify the configuration. Click **Delete** to delete the configuration.

Figure 6-16 Host Name Configuration Completed



– End of Steps –

Result

The host name is configured.

6.5 QoS Configuration

This topic includes the following:

- Configuring Basic QoS Parameters
- Configuring QoS Rule
- Configuring QoS Rule Type
- Configuring QoS Local Application
- Configuring QoS Queue Management
- Configuring QoS Ingress Rate Limit

6.5.1 Configuring Basic QoS Parameters

Short Description

Perform this procedure to configure the basic QoS parameters.

Prerequisites

The user has logged in to the Web interface of the device.

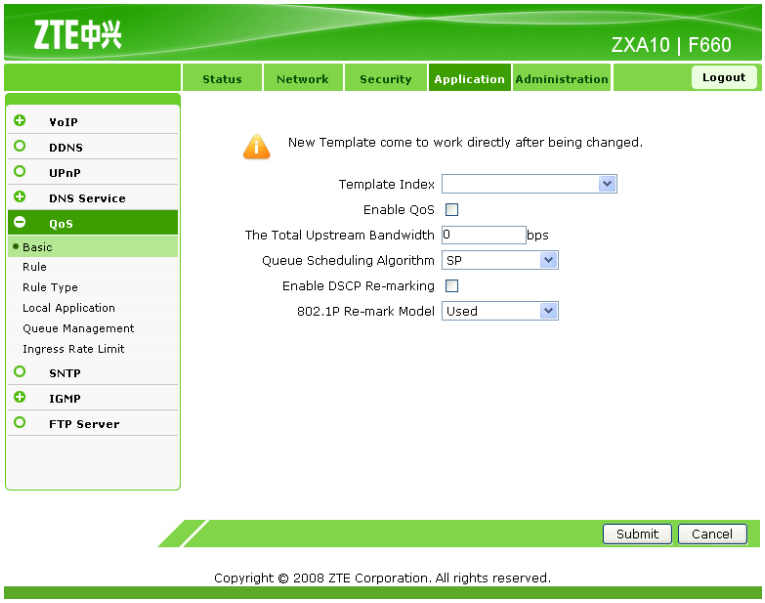
Context

To configure the basic QoS parameters, perform the following steps:

Steps

1. On the **Application** tab, select **QoS**. By default, **Basic** is selected, as shown in Figure 6-17.

Figure 6-17 Basic QoS Parameters



NOTE **Note:**

The template index is enabled immediately after changed.

2. Configure the basic QoS parameters, as shown in Figure 6-18.

Figure 6-18 Basic QoS Parameter Configuration

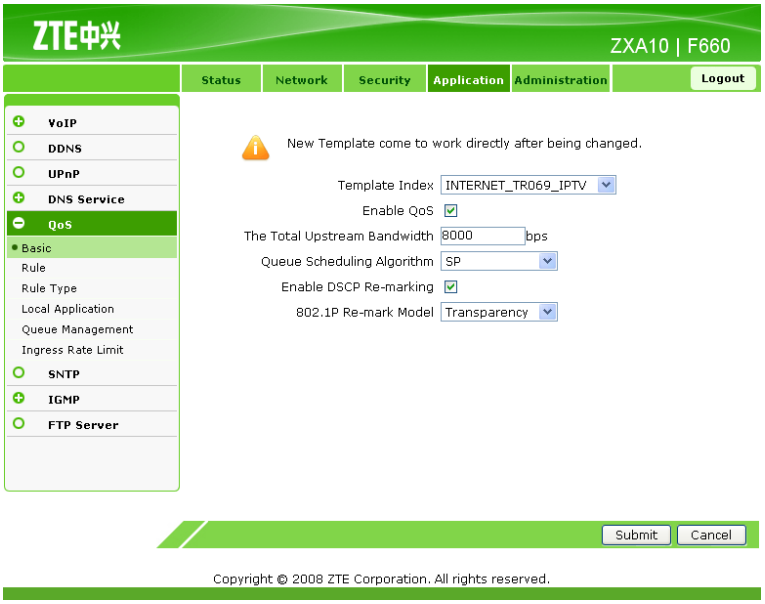


Table 6-7 lists the basic QoS parameters.

Table 6-7 Basic QoS Parameters

Parameter	Description
Template Index	Template index
Enable QoS	To enable or disable the QoS function
The Total Upstream Bandwidth	Upstream bandwidth through the WAN port Range: 8000 – 104857600 bps
Queue Scheduling Algorithm	Queue scheduling algorithm Range: SP and DWRR
DWRR bandwidth locked	To lock DWRR bandwidth (when the queue scheduling algorithm is DWRR)
Enable DSCP Re-marking	To enable or disable DSCP remarking
802.1P Re-mark Model	To enable or disable the 802.1p remarking mode Range: disable, transparent transmission, and enable

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The basic QoS parameters are configured.

6.5.2 Configuring QoS Rule

Short Description

Perform this procedure to configure the QoS rule.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the QoS rule, perform the following steps:

Steps

1. On the **Application** tab, select **QoS**, and then select **Rule**, as shown in Figure 6-19.

Figure 6-19 QoS Rule

2. Configure the QoS rule parameters, as shown in Figure 6-20.

Figure 6-20 QoS Rule Configuration

Table 6-8 lists the parameters for QoS rule configuration.

Table 6-8 Parameters for QoS Rule Configuration

Parameter	Description
802.1p Re-marking	802.1P remarking
DSCP Re-marking	DSCP remarking
CAR(Committed Access Rate)	Ingress rate limit rule
Queue	Congestion management queue

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The QoS rule is configured.

6.5.3 Configuring QoS Rule Type

Short Description

Perform this procedure to configure the QoS rule type.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the QoS rule type, perform the following steps:

Steps

1. On the **Application** tab, select **QoS**, and then select **Rule Type**, as shown in Figure 6-21.

Figure 6-21 Rule Type

2. Configure the QoS rule type parameters, as shown in .

   Table 6-9 lists the parameters for QoS rule type Configuration

Table 6-9 Parameters for QoS Rule Type Configuration

Parameter	Description
Classification Rules	Classification rules
Protocol	Protocol Range: TCP, UDP, ICMP, and RTP
Type	Type
Minimum	Minimum value
Maximum	Maximum value

3. Click **Add** to finish the configuration, as shown in Figure 6-22.

Figure 6-22 Rule Type Configuration Completed

4. Click **Modify** to modify the configuration. Click **Delete** to delete the configuration.

– End of Steps –

Result

The QoS rule type is configured.

6.5.4 Configuring QoS Local Application

Short Description

Perform this procedure to configure the QoS local application.

Prerequisites

The user has logged in to the Web interface of the device.

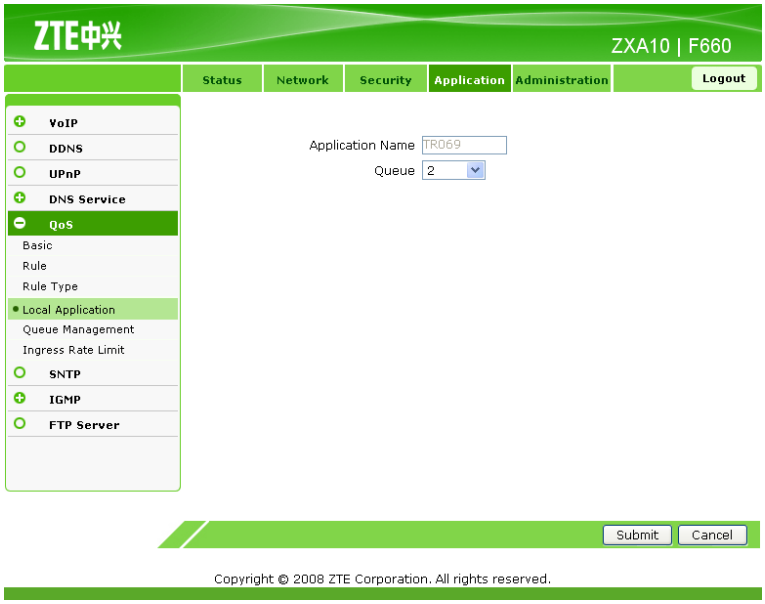
Context

To configure the QoS local application, perform the following steps:

Steps

1. On the **Application** tab, select **QoS**, and then select **Local Application**, as shown in Figure 6-23.

Figure 6-23 Local Application



2. In the **Queue** drop-down list, select a queue number.

NOTE **Note:**

At present, only the TR069 service mode is supported.

---

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The QoS local application is configured.

6.5.5 Configuring QoS Queue Management

Short Description

Perform this procedure to configure QoS queue management.

Prerequisites

The user has logged in to the Web interface of the device.

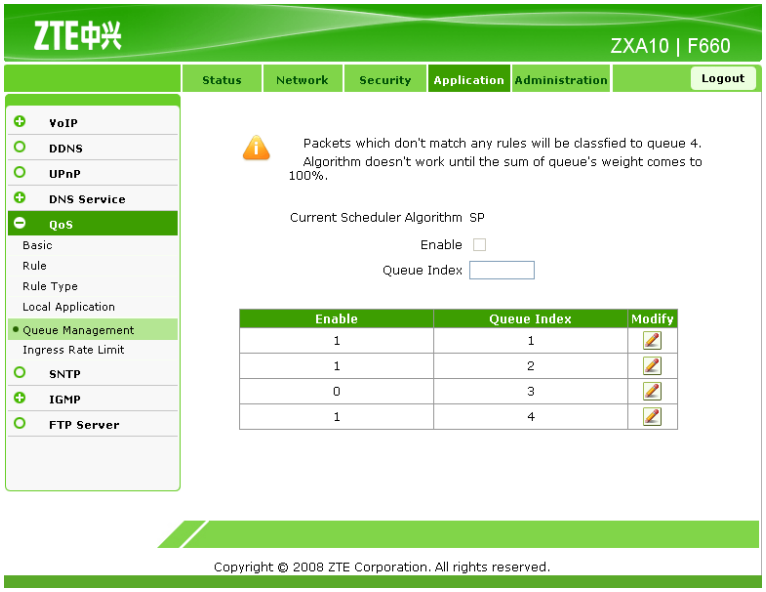
Context

To configure QoS queue management, perform the following steps:

Steps

1. On the **Application** tab, select **QoS**, and then select **Queue Management**, as shown in Figure 6-24.

Figure 6-24 Queue Management



2. Click the **Modify** icons in the table to modify the queue management functions.
3. Select or clear **Enable** to enable or disable the queue management function.
4. Click **Modify** to finish the configuration.

NOTE **Note:**

1 indicates enabled and **0** indicates disabled.

When the congestion management algorithm is DWRR, the queue weight needs to be configured.

Weight refers to the ratio of the data flow passing through the queues to the total data flow.

– End of Steps –

Result

QoS queue management is configured.

6.5.6 Configuring QoS Ingress Rate Limit

Short Description

Perform this procedure to configure the QoS ingress rate limit.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the QoS ingress rate limit, perform the following steps:

Steps

1. On the **Application** tab, select **QoS**, and then select **Ingress Rate Limit**, as shown in Figure 6-25.

Figure 6-25 Ingress Rate Limit

2. Configure the parameters for QoS ingress rate limit, as shown in Figure 6-26.

Figure 6-26 Ingress Rate Limit Configuration

Table 6-10 lists the parameters for ingress rate limit configuration.

Table 6-10 Parameters for Ingress Rate Limit Configuration

Parameter	Description
Visiting Interface	User interface for the rate limit rule
Enable	To enable the ingress rate limit function
Rate	Limit rate 8000 bps – 104857600 bps

3. Click **Add** to finish the configuration. Click **Modify** to modify the configuration. Click **Delete** to delete the configuration.

– End of Steps –

Result

The QoS ingress rate limit is configured.

6.6 Configuring SNTP Client

Short Description

Perform this procedure to configure the SNTP client.

Prerequisites

The user has logged in to the Web interface of the device.

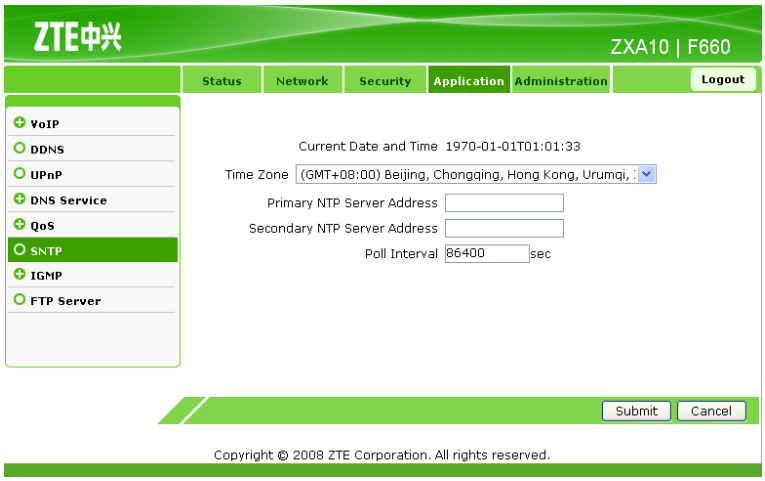
Context

To configure the SNTP client, perform the following steps:

Steps

1. On the **Application** tab, select **SNTP**, as shown in Figure 6-27.

Figure 6-27 SNTP



2. Configure the SNTP parameters, as shown in Figure 6-27.

Figure 6-28 SNTP Configuration

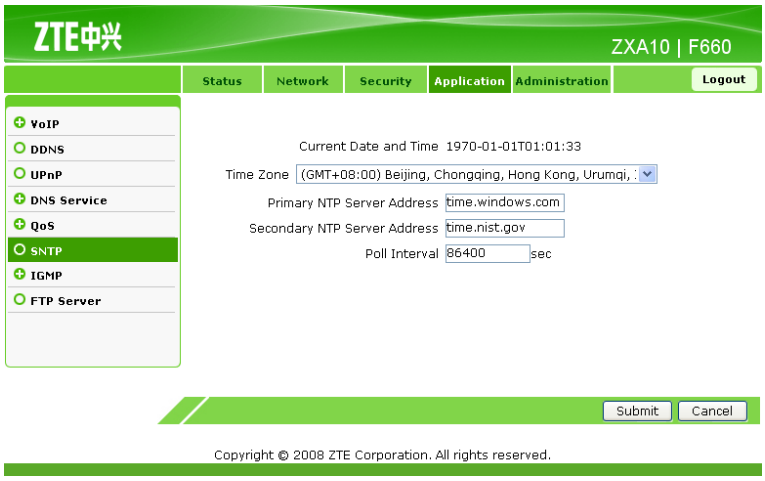


Table 6-11 lists the SNTP parameters.

Table 6-11 SNTP Parameters

Parameter	Description
Time Zone	Time zone where the subscriber is located
Primary NTP Server Address	IP address of the primary NTP server

Parameter	Description
Secondary NTP Server Address	IP address of the secondary NTP server
Poll Interval	Interval for server synchronization Unit: second

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The SNTP client is configured.

6.7 IGMP Configuration

This topic includes the following:

- Configuring Basic IGMP Parameters
- Configuring Multicast VLAN
- Configuring Multicast MAC Limit
- Configuring MVLAN Tag Strip

6.7.1 Configuring Basic IGMP Parameters

Short Description

Perform this procedure to configure the basic IGMP parameters.

Prerequisites

The user has logged in to the Web interface of the device.

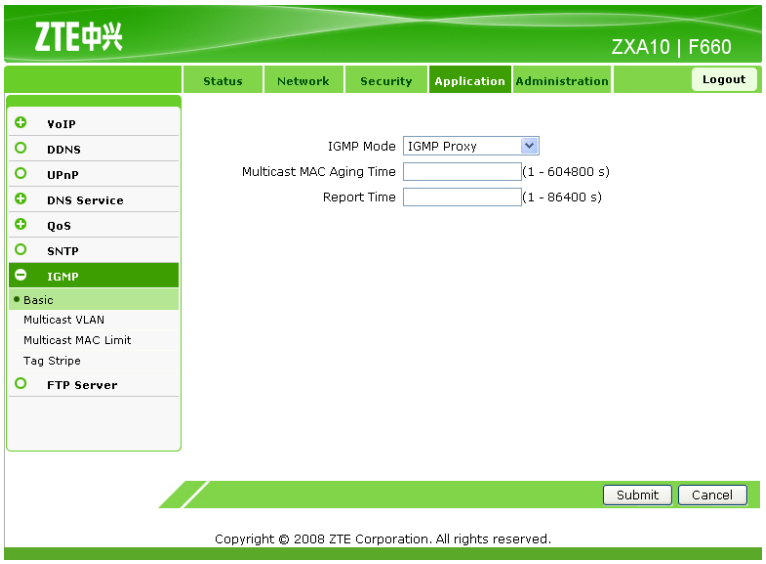
Context

To configure the basic IGMP parameters, perform the following steps:

Steps

1. On the **Application** tab, select **IGMP**. By default, **Basic** is selected, as shown in Figure 6-29.

Figure 6-29 Basic IGMP Configuration



2. **IGMP Mode** includes **IGMP Snooping**, **IGMP Proxy**, and **Disabled**. **Disabled** indicates to disable the IGMP mode configuration.
   - Configure **IGMP Snooping**.

     From the **IGMP Mode** drop-down list, select **IGMP Snooping**, as shown in Figure 6-30.

Figure 6-30 IGMP Snooping Configuration

Table 6-12 lists the parameters for IGMP snooping configuration.

Table 6-12 Parameters for IGMP Snooping Configuration

Parameter	Description
IGMP Mode	IGMP mode
Multicast MAC Aging Time	Aging time of the multicast address

Parameter	Description
Non-Fast-Leave	To enable the Non-Fast-Leave mode

- Configure **IGMP Proxy**.

  From the **IGMP Mode** drop-down list, select **IGMP Proxy**, as shown in Figure 6-31.

Figure 6-31 IGMP Proxy Configuration

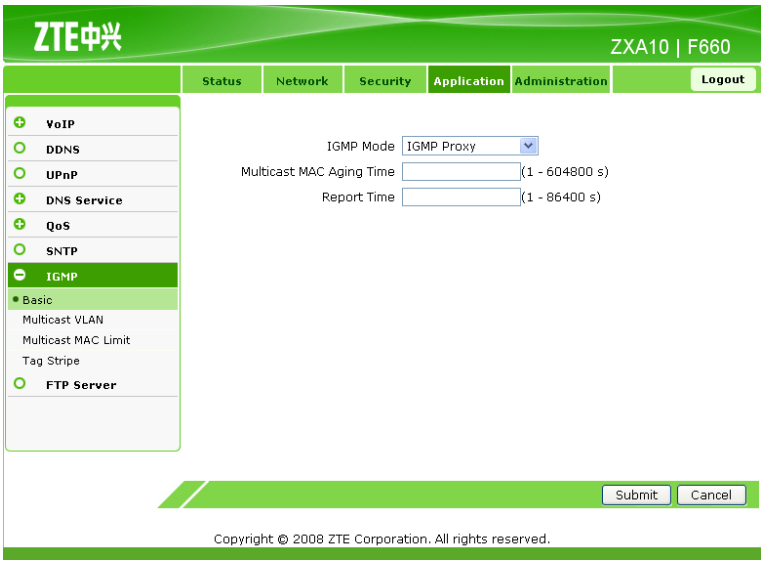


Table 6-13 lists the parameters for IGMP proxy configuration.

Table 6-13 Parameters for IGMP Proxy Configuration

Parameter	Description
IGMP Mode	IGMP mode
Multicast MAC Aging Time	Aging time of the multicast address
Report Time	Periodical report time of multicast messages

NOTE **Note:**

ZXA10 F660 periodically reports the IGMP member report messages to the upper-layer multicast router according to the **Report Time**.

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The basic IGMP parameters are configured.

6.7.2 Configuring Multicast VLAN

Short Description

Perform this procedure to configure the multicast VLAN.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure the multicast VLAN, perform the following steps:

Steps

1. On the **Application** tab, select **IGMP**, and then select **Multicast VLAN**, as shown in Figure 6-32.

Figure 6-32 Multicast VLAN

2. Configure the multicast VLAN parameters, as shown in Figure 6-33.

Figure 6-33 Multicast VLAN Configuration

Table 6-14 lists the parameters for the multicast VLAN configuration.

Table 6-14 Parameters for Multicast VLAN Configuration

Parameter	Description
IGMP Mode	IGMP mode, configured on the **Basic** tab
Enable Multicast VLAN	To enable the multicast VLAN function
Enable Translation	To enable multicast VLAN translation
Multicast VLAN	To create a multicast VLAN
New VLAN	Multicast VLAN ID
Interface Name	LAN interface to be added to the multicast VLAN

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The multicast VLAN is configured.

6.7.3 Configuring Multicast MAC Limit

Short Description

Perform this procedure to configure multicast MAC limit.

Prerequisites

The user has logged in to the Web interface of the device.

Context

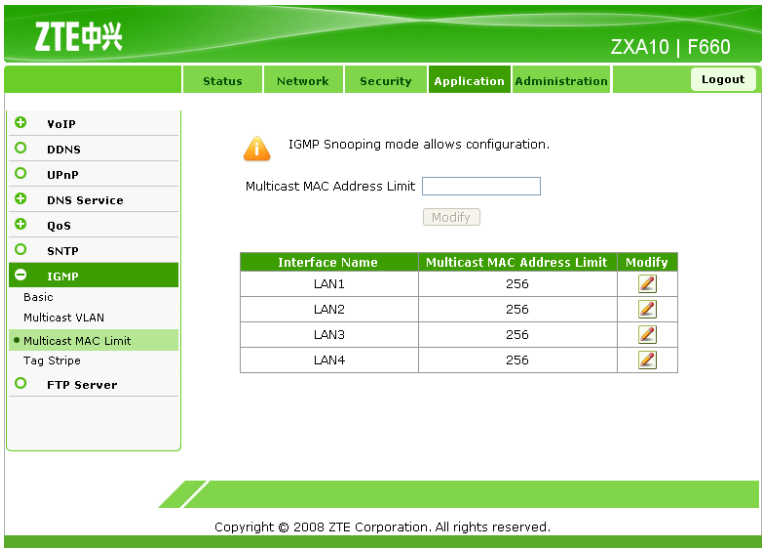
The multicast MAC limit function can be configured only when the IGMP mode is **IGMP Snooping**. **IGMP Proxy** does not support this function.

To configure multicast MAC limit, perform the following steps:

Steps

1. On the **Application** tab, select **IGMP**, and then select **Multicast MAC Limit**, as shown in Figure 6-34.

Figure 6-34 Multicast MAC Limit



2. Click the **Modify** icon to configure the multicast MAC limit, as shown in Figure 6-35.

Figure 6-35 Multicast MAC Limit Configuration

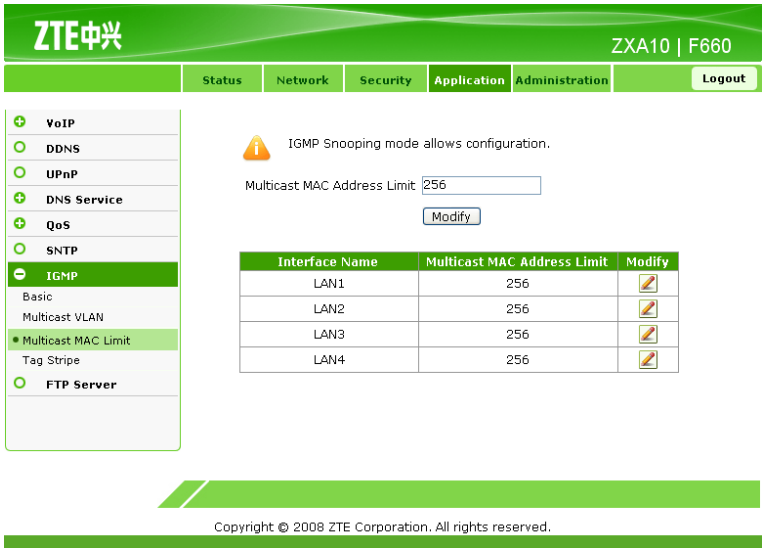


Table 6-15 lists the parameters for the multicast MAC limit configuration.

Table 6-15 Parameters for Multicast MAC Limit Configuration

Parameter	Description
Multicast MAC Address Limit	Maximum multicast addresses for each LAN port Range: 0 – 256

3. Click **Modify**.

– End of Steps –

Result

Multicast MAC limit is configured.

6.7.4 Configuring MVLAN Tag Strip

Short Description

Perform this procedure to configure MVLAN tag strip.

Prerequisites

The user has logged in to the Web interface of the device.

Context

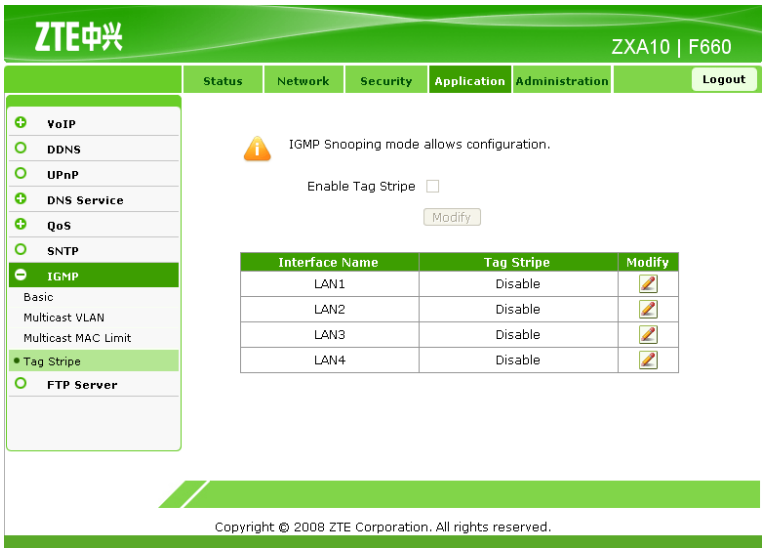
The MVLAN tag strip function can be configured only when the IGMP mode is **IGMP Snooping**. **IGMP Proxy** does not support this function.

To configure MVLAN tag strip, perform the following steps:

Steps

1. On the **Application** tab, select **IGMP**, and then select **Tag Stripe**, as shown in Figure 6-36.

Figure 6-36 MVLAN Tag Strip



2. Click the **Modify** icon to configure MVLAN tag strip, as shown in Figure 6-37.

Figure 6-37 MVLAN Tag Strip Configuration

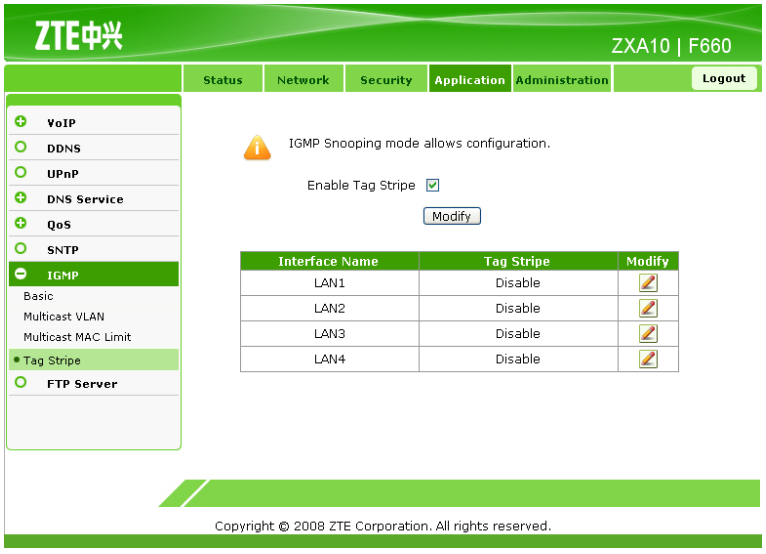


Table 6-16 lists the parameters for MVLAN tag strip configuration.

Table 6-16 Parameters for MVLAN Tag Strip Configuration

Parameter	Description
Enable Tag Stripe	To enable the MVLAN tag strip function

3. Click **Modify**.

– End of Steps –

Result

MVLAN tag strip is configured.

6.8 Configuring FTP Application

Short Description

Perform this procedure to configure FTP application.

Prerequisites

The user has logged in to the Web interface of the device.

Context

To configure FTP application, perform the following steps:

Steps

1. On the **Application** tab, select **FTP Application**, as shown in Figure 6-38.

Figure 6-38 FTP Server

2. Configure the FTP server parameters, as shown in Figure 6-39.

Figure 6-39 FTP Server Configuration

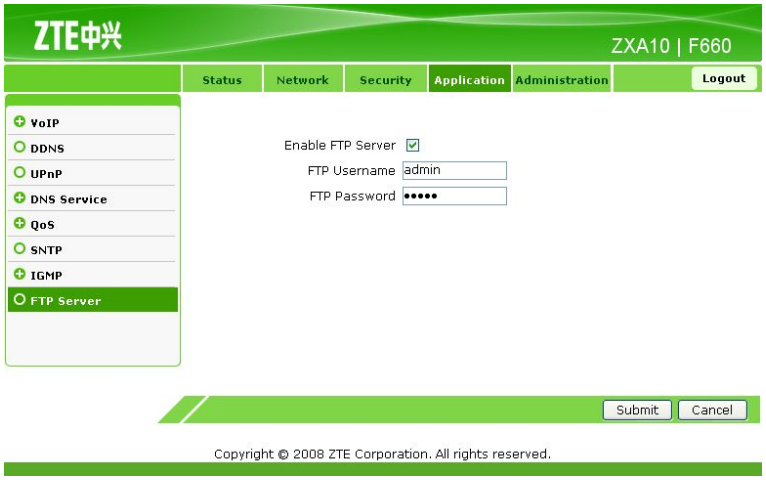


Table 6-17 lists the FTP server parameters.

Table 6-17 FTP Server Parameters

Parameter	Description
Enable FTP Server	To enable the FTP server
FTP Username	FTP login user name
FTP Password	FTP login password

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

FTP application is configured.

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Chapter 7
Device Management

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Log Management 7-9
Ping Diagnosis 7-10

7.1 TR069 Configuration

This topic includes the following:

- Configuring Basic TR069 Parameters
- Importing TRO69 Certificate

7.1.1 Configuring Basic TR069 Parameters

Short Description

Perform this procedure to configure the basic TR069 parameters.

Prerequisites

The user has logged in to the Web interface of the device.

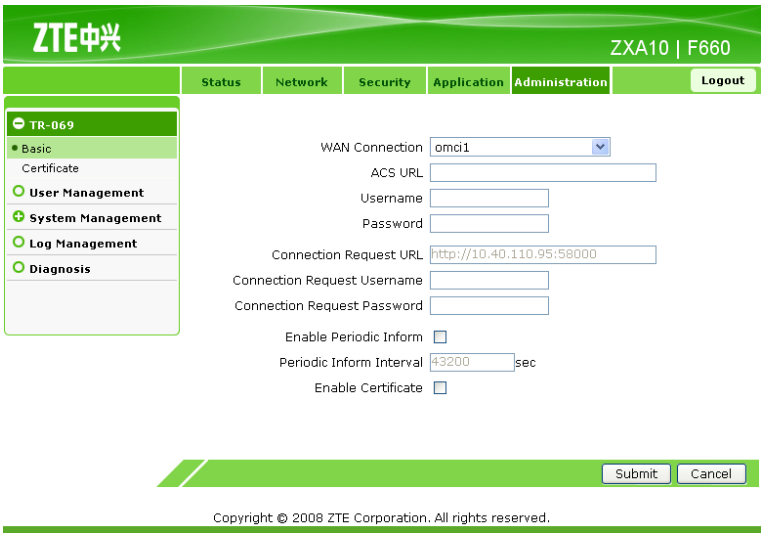
Context

To configure the basic TR069 parameters, perform the following steps:

Steps

1. On the **Administration** tab, select **TR-069**. By default, **Basic** is selected, as shown in Figure 7-1.

Figure 7-1 Basic TR069 Parameters



2. Configure the basic TR069 parameters, as shown in Figure 7-2.

Figure 7-2 Basic TR069 Parameter Configuration

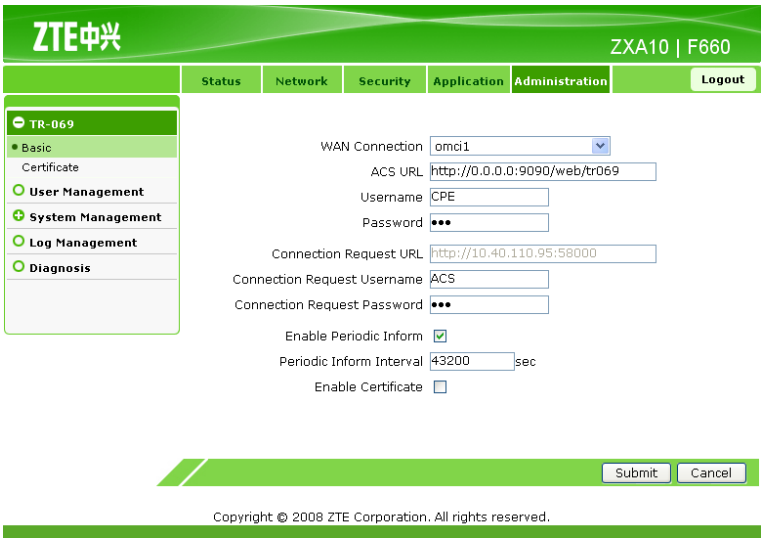


Table 7-1 lists the basic TR069 parameters.

Table 7-1 Basic TR069 Parameters

Parameter	Description
WAN Connection	WAN-side connection interface
ACS URL	Network server URL
Username	User name
Password	Password
Connection Request URL	Connection request URL
Connection Request Username	Connection request user name

Parameter	Description
Connection Request Password	Connection request password
Enable Periodic Inform	To enable periodic report
Periodic Inform Interval	Periodic report interval
Enable Certificate	To enable certificate

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

The basic TR069 parameters are configured.

7.1.2 Importing TRO69 Certificate

Short Description

Perform this procedure to import the TR069 certificate.

Prerequisites

The user has logged in to the Web interface of the device.

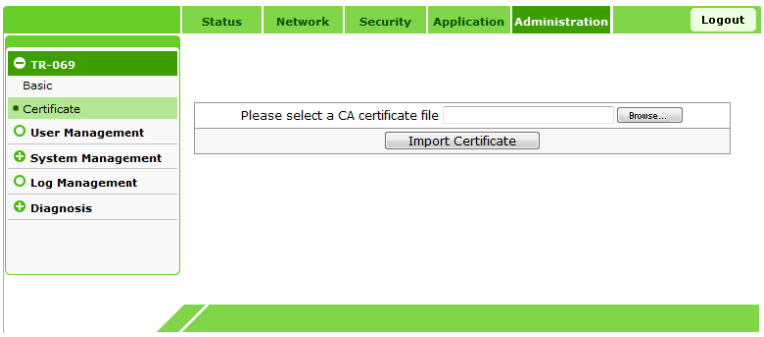
Context

To import the TR069 certificate, perform the following steps:

Steps

1. On the **Administration** tab, select **TR-069**, and then select **Certificate**, as shown in Figure 7-3.

Figure 7-3 TRO69 Certificate



2. Click **Browse** to select the certificate file.

3. Click **Import Certificate** to import the file.

– End of Steps –

Result

The TR069 certificate is imported.

7.2 User Management

Short Description

Perform this procedure to manage users.

Prerequisites

The user has logged in to the Web interface of the device.

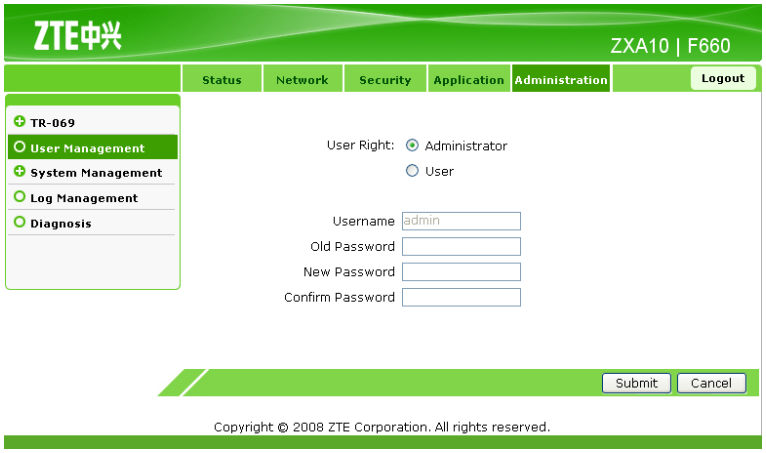
Context

To manage users, perform the following steps:

Steps

1. On the **Administration** tab, select **User Management**, as shown in Figure 7-4.

Figure 7-4 User Management



2. Configure the user management parameters.

Note:

User Right includes **Administrator** and **User**.

---

3. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

User management is complete.

7.3 Device Management

This topic includes the following:

- System Management
- Software Upgrade
- Configuration Management

7.3.1 System Management

Short Description

Perform this procedure to manage the system.

Prerequisites

The user has logged in to the Web interface of the device.

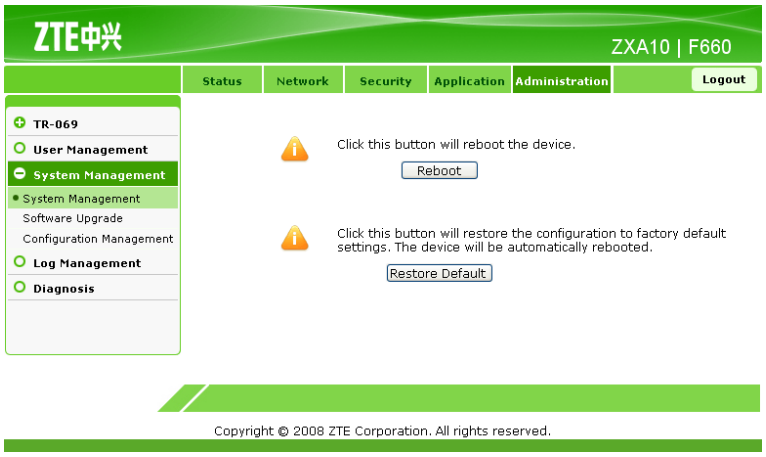
Context

To manage the system, perform the following steps:

Steps

1. On the **Administration** tab, select **System Management**, as shown in Figure 7-5.

Figure 7-5 System Management



2. Click **Reboot** to reboot the device.

3. Click **Restore Default** to restore the system to the factory default settings.

– End of Steps –

Result

System management is complete.

7.3.2 Software Upgrade

Short Description

Perform this procedure to upgrade the software.

Prerequisites

The user has logged in to the Web interface of the device.

Context

Caution!

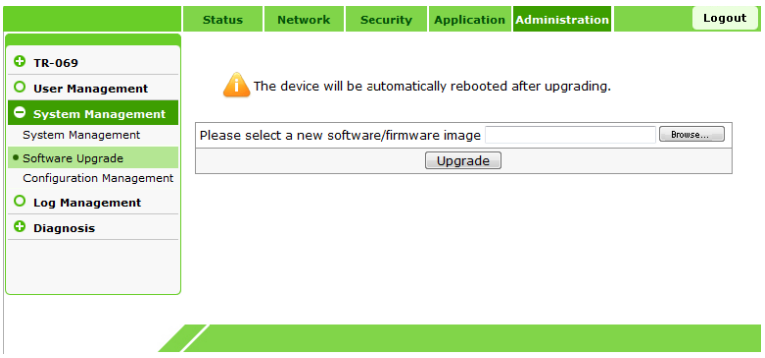
Generally, the software is upgraded by the ZTE CORPORATION engineers. If the user wants to upgrade the software, contact the local office of ZTE CORPORATION to obtain the latest software version.

To upgrade the software, perform the following steps:

Steps

1. On the **Administration** tab, select **System Management**, and then select **Software Upgrade**, as shown in Figure 7-6.

Figure 7-6 Software Upgrade



2. Click **Browse** to select the software version.
3. Click **Upgrade** to upgrade the software, as shown in Figure 7-7.

Figure 7-7 Upgrading Software

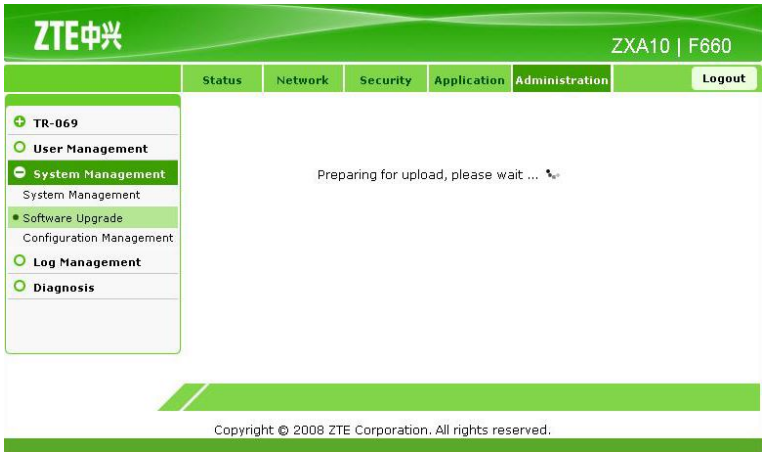
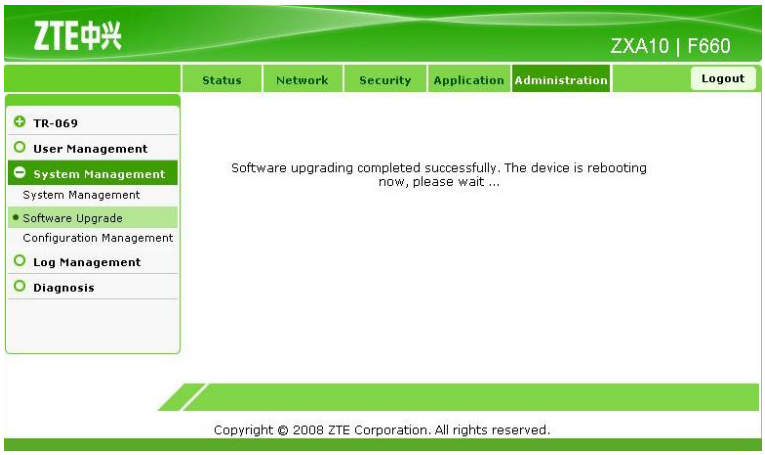


Figure 7-8 shows the result of software upgrade.

Figure 7-8 Software Upgrade Completed



NOTE **Note:**

During the upgrade process, the device cannot be powered off; otherwise, it may be damaged.

During the upgrade process, the system prompts a message. After the upgrade is complete, the system returns to the login interface.

– End of Steps –

Result

The software is upgraded.

7.3.3 Configuration Management

Short Description

Perform this procedure to manage the device configuration.

Prerequisites

The user has logged in to the Web interface of the device.

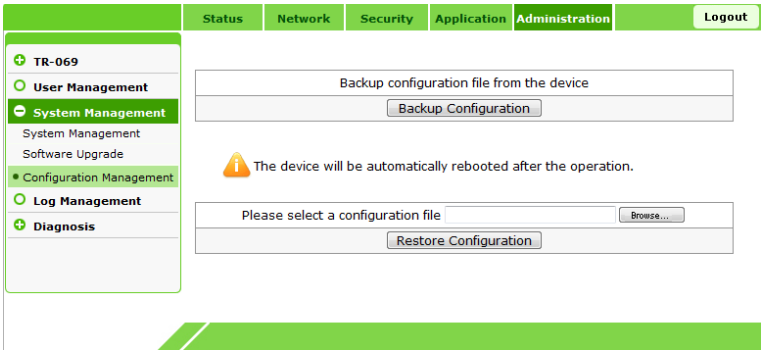
Context

To manage the device configuration, perform the following steps:

Steps

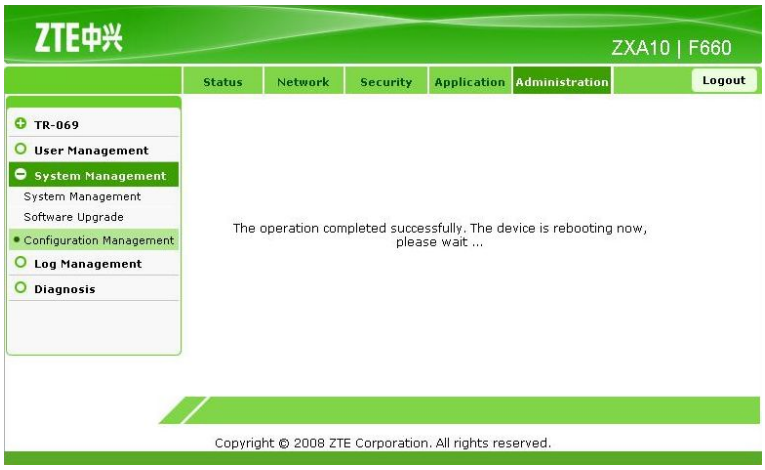
1. On the **Administration** tab, select **System Management**, and then select **Configuration Management**, as shown in Figure 7-9.

Figure 7-9 Configuration Management



2. Click **Backup Configuration** to back up the existing configuration file.
3. Click **Browse** to select the backed up configuration file.
4. Click **Restore Configuration** to restore the backed up configuration file, as shown in Figure 7-10.

Figure 7-10 Importing File Completed



– End of Steps –

Result

The configuration management is complete.

7.4 Log Management

Short Description

Perform this procedure to manage logs.

Prerequisites

The user has logged in to the Web interface of the device.

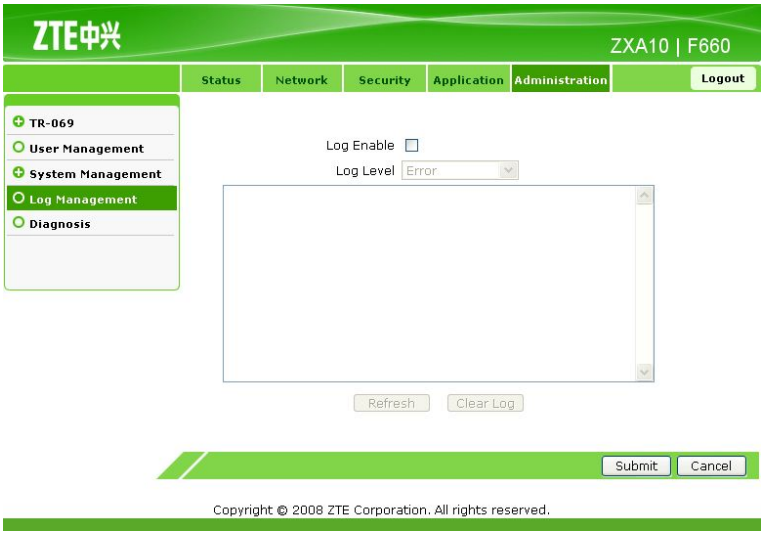
Context

To manage logs, perform the following steps:

Steps

1. On the **Administration** tab, select **Log Management**, as shown in Figure 7-11.

Figure 7-11 Log Management



2. Configure the log management parameters, as listed in Table 7-2.

Table 7-2 Log Management Parameters

Parameter	Description
Log Enable	Whether to enable the log server
Log Level	Log level, including **Debug**, **Informational**, **Notice**, **Warning**, **Error**, **Critical**, **Alert**, and **Emergency** When **Log Level** is configured, only the logs above the specified level are saved.

3. Click **Refresh** to display the latest 20 logs.
4. Click **Clear Log** to clear the current log records.
5. Click **Submit** to finish the configuration. Click **Cancel** to cancel the configuration.

– End of Steps –

Result

Log management is complete.

7.5 Ping Diagnosis

Short Description

Perform this procedure to diagnose ping connection.

Prerequisites

The user has logged in to the Web interface of the device.

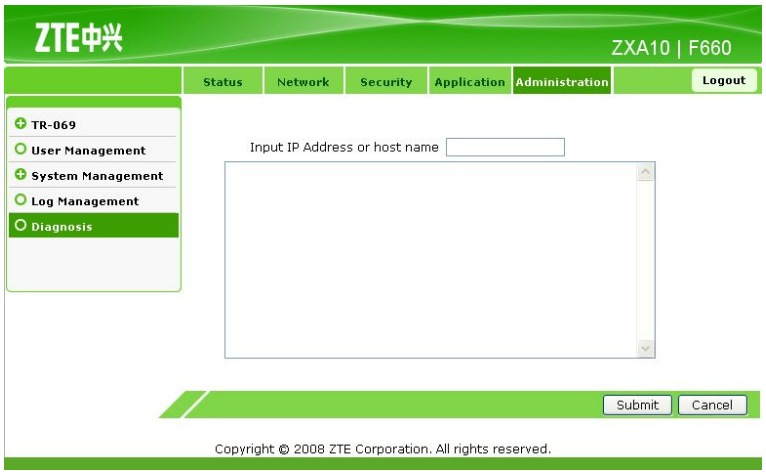
Context

To diagnose ping connection, perform the following steps:

Steps

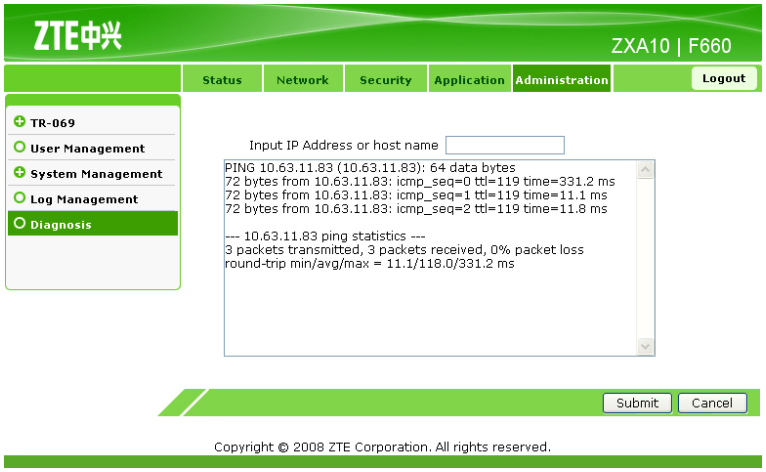
1. On the **Administration** tab, select **Diagnosis**, as shown in Figure 7-12.

Figure 7-12 Ping Diagnosis



2. In **Input IP Address or host name** , enter the host IP address or host name.
3. Click **Submit** to diagnose the connection, as shown in Figure 7-13. Click **Cancel** to cancel the configuration.

Figure 7-13 Ping Diagnosis Result



– End of Steps –

Result

Ping diagnosis is complete.

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Chapter 8
FAQ

Table of Contents

FAQ 8-1

8.1 FAQ

How Can I set TCP/IP on the Computer Connected to the Device?

The default device IP address is `192.168.1.1`. Therefore, set the computer IP address to 192.168.1.2 – 192.168.1.254 and the subnet mask to 255.255.255.0.

How Can I Ensure That My Computer Is Successfully Connected to the Device?

On the command line interface, carry out the **ping 192.168.1.1** command. If the connection fails, the interface prompts connection timeout.

How Can I Set the Device Through the Web Interface?

Make sure that the computer is connected to the device. Then open the Internet Explorer and enter `http://192.168.1.1` on the address bar to access the Web interface of the device. The default user name and password are `admin`.

How Can I Restore the Device to the Factory Default Settings?

Press the **RST** reset button for more than 10 seconds to reboot the device. Then the device is restored to the factory default settings.

Why Is the PON Link Indicator Always OFF?

If the PON link indicator is always OFF, it indicates that the PON link is not successfully set up. Make sure that the fiber is correctly connected with the PON port and the subscriber device. Make sure that the tail fiber is straight and is in good condition.

Why Does the Device Fail to Make a Call?

Check whether the telephone cable is correctly connected to the POTS1 or POTS2 port. Then access the Web interface of the device. Click the **Application** tab to check the VoIP configuration. If the VoIP configuration is correct and the telephone cable is correctly connected, but the call still cannot be made, contact the service provider.

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Glossary

CATV
- CAble TeleVision

CNG
- Comfort Noise Generation

DC
- Direct Current

DDNS
- Dynamic Domain Name Server

DHCP
- Dynamic Host Configuration Protocol

DMZ
- Demilitarized Zone

DNAT
- Destination Network Address Translation

DNS
- Domain Name Server

DSCP
- Differentiated Services Code Point

DSL
- Digital Subscriber Line

DTMF
- Dual-ToneMulti-Frequency

DWRR
- Deficit Weighted Round Robin

FTP
- File Transfer Protocol

FTTH
- Fiber to the Home

GE
- Gigabit Ethernet

GPON
- Gigabit Passive Optical Network

HTTP
- Hypertext Transfer Protocol

ICMP
- Internet Control Message Protocol

IEEE
- Institute of Electrical and Electronics Engineers

IGMP
- Internet Group Management Protocol

IP
- Internet Protocol

IPTV
- Internet Protocol Television

ISP
- Internet Service Provider

ITU
- International Telecommunications Union

LAN
- Local Area Network

MAC
- Medium Access Control

NAT
- Network Address Translation

NTP
- Network Time Protocol

OLT
- Optical Line Terminal

OMCI
- ONT Management Control Interface

ONT
- Optical Network Terminal

ONU
- Optical Network Unit

PON
- Passive Optical Network

POTS
- Plain Old Telephone Service

PPPoE
- Point to Point Protocol over Ethernet

QoS
- Quality of Service

RF
- Radio Frequency

RTP
- Real-time Transport Protocol

SIP
- Session Initiation Protocol

SNTP
- Simple Network Time Protocol

SP
- Strict Priority

SS
- Soft Switch

TCP
- Transfer Control Protocol

TCP/IP
- Transfer Control Protocol/Internet Protocol

UDP
- User Datagram Protocol

URL
- UniformResource Locator

VAD
- Voice Activity Detectors

VLAN
- Virtual Local Area Network

VoIP
- Voice over Internet Protocol

WAN
- Wide Area Network

WEP
- Wired Equivalent Privacy

WLAN
- Wireless Local Area Network

WPA
- Wi-Fi Protected Access

Wi-Fi
- Wireless Fidelity