H3C

H3C MSR830 Router Series

Installation Guide

Preface

The H3C MSR830 Router Series Installation Guide includes seven chapters, which describe the preparing for installation, installing the router, replacement procedure, troubleshooting, chassis views and technical specifications, LEDs, and slot arrangement.

This preface includes the following topics about the documentation:

- Audience.
- Conventions.
- Documentation feedback.

Audience

This documentation is intended for:

- Network planners.
- Field technical support and servicing engineers.
- Network administrators working with the MSR830 Router Series.

Conventions

The following information describes the conventions used in the documentation.

Command conventions

Convention	Description
Boldface	**Bold** text represents commands and keywords that you enter literally as shown.
Italic	*Italic* text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x	y	... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[x	y	...]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x	y	... } *	Asterisk marked braces enclose a set of required syntax choices separated by vertical bars, from which you select a minimum of one.
[x	y	...] *	Asterisk marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in Boldface. For example, the **New User** window opens; click **OK**.

Convention	Description
>	Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**.

Symbols

Convention	Description
⚠ WARNING!	An alert that calls attention to important information that if not understood or followed can result in personal injury.
△ CAUTION:	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
① IMPORTANT:	An alert that calls attention to essential information.
NOTE:	An alert that contains additional or supplementary information.
💡 TIP:	An alert that provides helpful information.

Network topology icons

Convention	Description
	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the access controller engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a wireless terminator unit.
	Represents a wireless terminator.
	Represents a mesh access point.
	Represents omnidirectional signals.
	Represents directional signals.
	Represents a security product, such as a firewall, UTM, multiservice security gateway, or load balancing device.
	Represents a security module, such as a firewall, load balancing, NetStream, SSL VPN, IPS, or ACG module.

Examples provided in this document

Examples in this document might use devices that differ from your device in hardware model, configuration, or software version. It is normal that the port numbers, sample output, screenshots, and other information in the examples differ from what you have on your device.

Documentation feedback

You can e-mail your comments about product documentation to info@h3c.com.

We appreciate your comments.

Contents

Preparing for installation

Figure 1 **This document applies to the following device models:**

Model	Product code
MSR830-6EI-GL	RT-MSR830-6EI-GL
MSR830-6HI-GL	RT-MSR830-6HI-GL
MSR830-10HI-GL	RT-MSR830-10HI-GL
MSR830-10EI-GL	RT-MSR830-10EI-GL

Safety recommendations

Safety symbols

When reading this document, note the following symbols:

⚠ **WARNING** means an alert that calls attention to important information that if not understood or followed can result in personal injury.

△ **CAUTION** means an alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.

General safety recommendations

- Keep the chassis and installation tools away from walk areas.
- Make sure the ground is dry and flat and anti-slip measures are in place.
- Unplug all the external cables (including power cords) before moving the chassis.

Electricity safety

- Locate the emergency power-off switch in the room before installation. Shut the power off at once in case accident occurs. Disconnect the power cord of the router if necessary.
- Make sure the router is correctly grounded.
- Do not open or close the chassis cover when the router is powered on.
- Correctly connect the interface cables of the router.
- Use an uninterrupted power supply (UPS).
- Do not work alone when the router has power.
- Always make sure the power has been disconnected during the installation and replacement procedures.

Examining the installation site

The router can only be used indoors. To make sure the router operates correctly and to prolong its service lifetime, the installation site must meet the following requirements.

Temperature and humidity

Maintain temperature and humidity in the equipment room at acceptable levels.

- Lasting high relative humidity tends to cause poor insulation, electricity leakage, mechanical property change of materials, and corrosion of metal parts.
- Lasting low relative humidity is likely to result in loose screws due to washer contraction, and even ESD, which causes the circuits to fail.
- A high temperature is the most undesirable condition, because it accelerates the aging of insulation materials and significantly lowers reliability and service life of the router.

For the temperature and humidity requirements of the router, see Table 1.

Table 1 Temperature and humidity requirements

Temperature	Humidity
0°C to 45°C (32°F to 113°F)	5% to 90% (noncondensing)

Cleanliness

Dust buildup on the chassis might result in electrostatic adsorption, which causes poor contact of metal components and contact points, especially when indoor relative humidity is low. In the worst case, electrostatic adsorption can cause communication failure.

Table 2 Dust concentration limit in the equipment room

Substance	Concentration limit (particles/m^3)
Dust particles	$\leq 3 \times 10^4$ (No visible dust on desk in three days)
NOTE: Dust particle diameter ≥ 5 µm	

The equipment room must also meet limits on salts, acids, and sulfides to eliminate corrosion and premature aging of components, as shown in Table 3.

Table 3 Harmful gas limits in the equipment room

Gas	Max. (mg/m^3)
SO_2	0.2
H_2S	0.006
NH_3	0.05
Cl_2	0.01
NO_2	0.04
Cl_2	0.01

Cooling system

To ensure good ventilation, the following requirements must be met:

- The air inlet and outlet vents are not blocked, and leave at least 100 mm (3.94 in) of clearance.
- The installation site has a good cooling system.

ESD prevention

△ **CAUTION:**

Check the resistance of the ESD wrist strap for safety. The resistance reading must be in the range of 1 to 10 megohm (Mohm) between human body and the ground.

To prevent electrostatic discharge (ESD), follow these guidelines:

- Make sure the router and the floor are correctly grounded.
- Take dust-proof measures for the equipment room.
- Maintain the humidity and temperature at acceptable levels.
- Always wear an ESD wrist strap and ESD clothing when touching a circuit board or transceiver module.

  The router does not supply an ESD wrist strap. Prepare an ESD wrist strap yourself.

To attach an ESD wrist strap:

1. Wear the wrist strap on your wrist.
2. Lock the wrist strap tight around your wrist to keep good contact with the skin.
3. Secure the wrist strap lock and the alligator clip lock together.
4. Attach the alligator clip to the rack grounding terminal.
5. Make sure the rack is correctly grounded.

EMI

Electromagnetic interference (EMI) might be coupled from the source to the router through the following coupling mechanisms:

- Capacitive coupling
- Inductive coupling
- Radiative coupling
- Common impedance coupling
- Conductive coupling

To prevent EMI, take the following actions:

- Take measures against interference from the power grid.
- Do not use the router together with the grounding equipment or lightning-prevention equipment of power equipment, and keep the router far away from them.
- Keep the router far away from high-power radio launchers, radars, and equipment with high frequency or high current.
- Use electromagnetic shielding when necessary.

Lightning protection

To better protect the router from lightning, do as follows:

- Make sure the grounding cable of the chassis is correctly grounded.
- Make sure the grounding terminal of the AC power receptacle is correctly grounded.
- Install a lightning arrester at the input end of the power supply to enhance the lightning protection capability of the power supply.

Rack-mounting

Before mounting the router in a standard 19-inch rack, adhere to the following requirements:

- The rack is equipped with a good ventilation system.
- The rack is sturdy enough to support the router and its accessories.
- For heat dissipation and device maintenance, make sure the front and rear of the rack are at least 0.8 m (2.62 ft) away from walls or other devices, and the headroom in the equipment room is no less than 3 m (9.84 ft).

Installation tools

Flat-head screwdriver	Phillips screwdriver	Needle-nose pliers	Wire-stripping pliers
Diagonal pliers	ESD wrist strap	Marker	Heat gun

Installation accessories

Ring terminal	Cage nut (user-supplied)	M6 rack screw	M3 mounting bracket screw
Mounting brackets	Rubber feet	Bail latch	
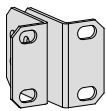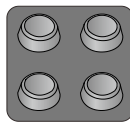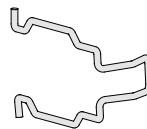
Pre-installation checklist

Table 4 Pre-installation checklist

Item		Requirements	Result
Installation site	Ventilation	• There is a minimum clearance of 100 mm (3.94 in) around the inlet and outlet vents for heat dissipation of the router chassis. • A good ventilation system is available at the installation site.	

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Item		Requirements	Result
	Temperature	0°C to 45°C (32°F to 113°F).	
	Humidity	5% RH to 90% RH (noncondensing).	
	Cleanliness	• Dust concentration ≤ 3 × 104 particles/m3. • No visible dust on desk within three days.	
	ESD prevention	• The equipment and floor are correctly grounded. • The equipment room is dust-proof. • The humidity and temperature are at acceptable levels, respectively. • Wear an ESD wrist strap and uniform when touching a circuit board.	
	EMI prevention	• Take effective measures to protect the power system from the power grid system. • Separate the protection ground of the router from the grounding device or lightning protection grounding device as far as possible. • Keep the router far away from radio stations, radar and high-frequency devices working in high current. • Use electromagnetic shielding when necessary.	
	Lightning protection	• The grounding cable of the chassis is correctly grounded. • The grounding terminal of the AC power receptacle is correctly grounded. • A port lightning arrester is installed. (Optional.) • A power lightning arrester is installed. (Optional.) • A signal lightning arrester is installed at the input end of an external signal cable. (Optional.)	
	Electricity safety	• Equip an UPS. • The power-off switch in the equipment room is identified and accessible so that the power can be immediately shut off when an accident occurs.	
	Workbench	• The workbench is stable enough. • The workbench is correctly grounded.	
Safety precautions		• The router is far away from any moist area and heat source. • The emergency power switch in the equipment room is located.	
Tools		• Installation accessories supplied with the router. • User supplied tools.	
Reference		• Documents shipped with the router. • Online documents.	

Contents

Installing the router

⚠ WARNING!

To avoid injury, do not touch bare wires, terminals, or parts with high-voltage hazard signs.

ⓘ IMPORTANT:

- The barcode on the router chassis contains product information that must be provided to local sales agent when you return a faulty router for service.
- Keep the tamper-proof seal on a mounting screw on the chassis cover intact, and if you want to open the chassis, contact H3C for permission. Otherwise, H3C shall not be liable for any consequence.
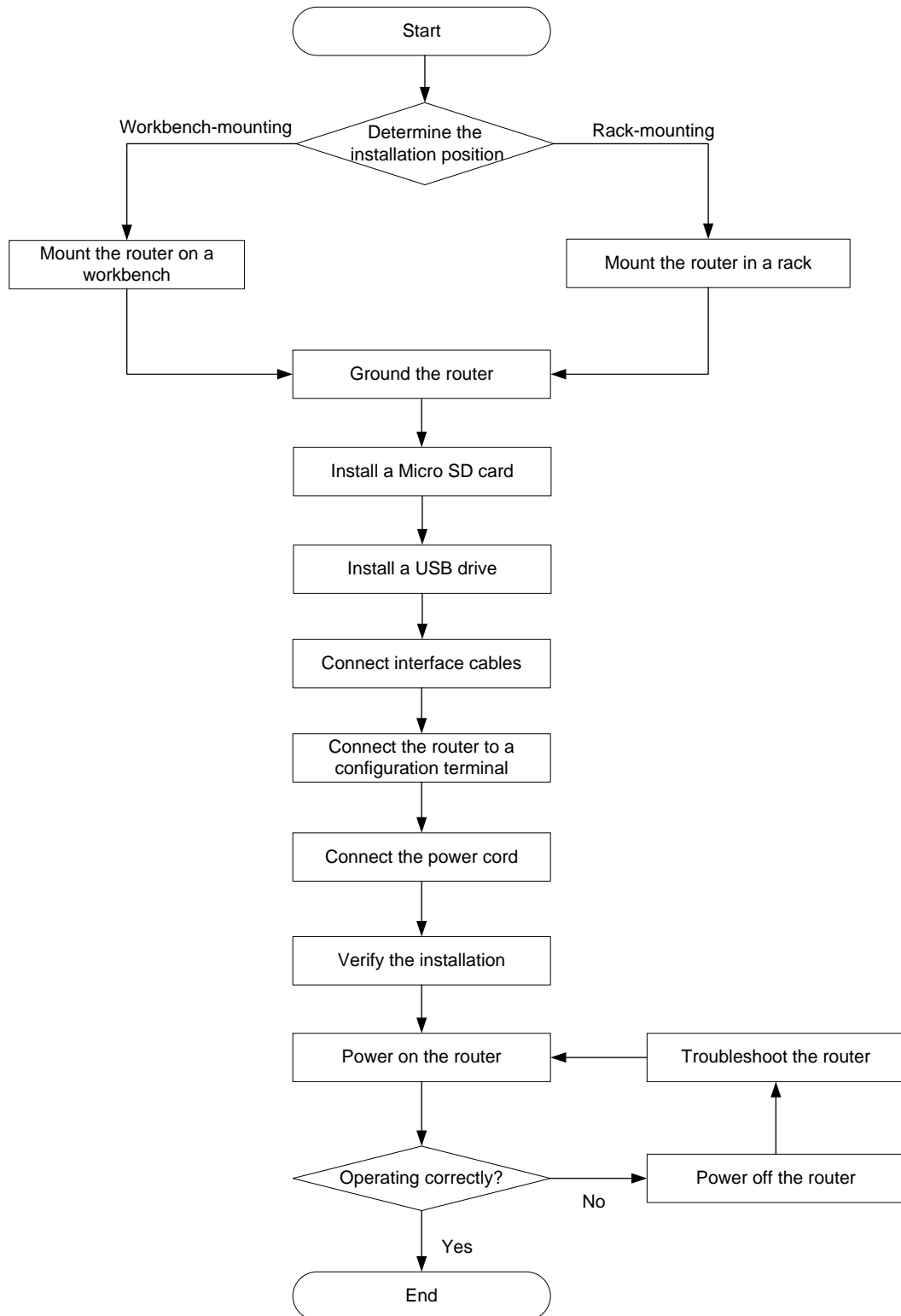
Installation prerequisites

- You have read "Preparing for installation" carefully.
- All requirements in "Preparing for installation" are met.

Installation flow

You can install the router on a workbench or in a rack. Select an installation method according to the installation environment, and follow the installation flowchart shown in Figure 1.

Figure 1 Installation flow

```
                          ┌─────────────┐
                          │    Start    │
                          └─────────────┘
                                 │
                                 ▼
                          ╱─────────────╲
  Workbench-mounting     ╱  Determine the ╲     Rack-mounting
 ◄──────────────────────◄   installation   ►──────────────────────►
                         ╲    position     ╱
                          ╲───────────────╱
         │                                              │
         ▼                                              ▼
┌──────────────────┐                          ┌──────────────────────┐
│ Mount the router │                          │ Mount the router in a │
│  on a workbench  │                          │        rack           │
└──────────────────┘                          └──────────────────────┘
         │                                              │
         └──────────────►┌──────────────────┐◄─────────┘
                         │ Ground the router │
                         └──────────────────┘
                                 │
                                 ▼
                         ┌──────────────────────┐
                         │ Install a Micro SD card│
                         └──────────────────────┘
                                 │
                                 ▼
                         ┌──────────────────┐
                         │ Install a USB drive│
                         └──────────────────┘
                                 │
                                 ▼
                         ┌──────────────────────┐
                         │ Connect interface cables│
                         └──────────────────────┘
                                 │
                                 ▼
                         ┌──────────────────────┐
                         │ Connect the router to a│
                         │ configuration terminal │
                         └──────────────────────┘
                                 │
                                 ▼
                         ┌──────────────────────┐
                         │ Connect the power cord │
                         └──────────────────────┘
                                 │
                                 ▼
                         ┌──────────────────────┐
                         │ Verify the installation│
                         └──────────────────────┘
                                 │
                                 ▼
                         ┌──────────────────┐      ┌──────────────────────┐
                         │ Power on the router│◄────│ Troubleshoot the router│
                         └──────────────────┘      └──────────────────────┘
                                 │                            ▲
                                 ▼                            │
                         ╱───────────────╲            ┌──────────────────────┐
                        ╱ Operating correctly?╲  No   │ Power off the router   │
                        ╲                     ╱──────►│                       │
                         ╲───────────────────╱        └──────────────────────┘
                                 │ Yes
                                 ▼
                          ┌─────────────┐
                          │     End     │
                          └─────────────┘
```

Installing the router
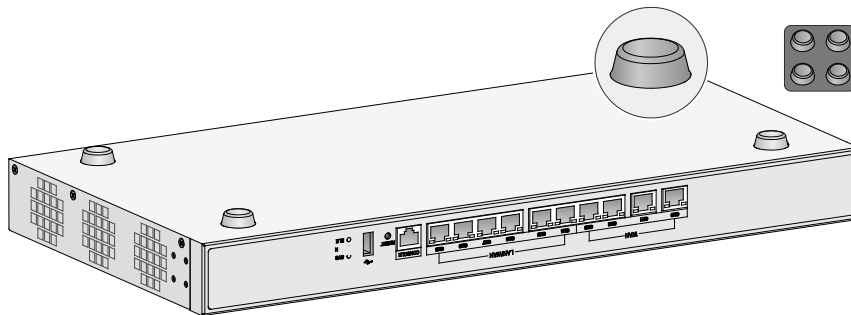
Mounting the router on a workbench

> **⊘ IMPORTANT:**
> - Ensure good ventilation and 100 mm (3.94 in) of clearance around the chassis for heat dissipation.
> - Do not place heavy objects on the router.
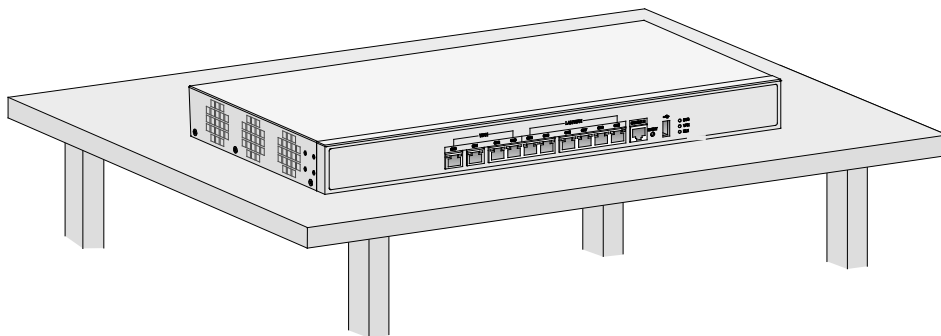
To mount the router on a workbench:

1. Make sure the workbench is clean, stable, and correctly grounded.
2. Place the router upside down on the workbench and attach the rubber feet to the four round holes in the chassis bottom.

Figure 2 Attaching the rubber feet

3. Place the router on the workbench with the upside up.

Figure 3 Mounting the router on a workbench


Installing the router in a rack

> **⚠ WARNING!**
> The mounting brackets can only support the weight of the router. To avoid damage to the router, do not place any objects on the router.

To install the router in a rack:

1. Use a mounting bracket to mark the positions of cage nuts on the front rack posts. Make sure the cage nut installation holes on the front rack posts are on a horizontal line.

2. Install cage nuts, as shown in Figure 4.

   a. Insert one ear of a cage nut into the marked installation hole.

   b. Use a flathead screwdriver to push the other ear into the same hole.
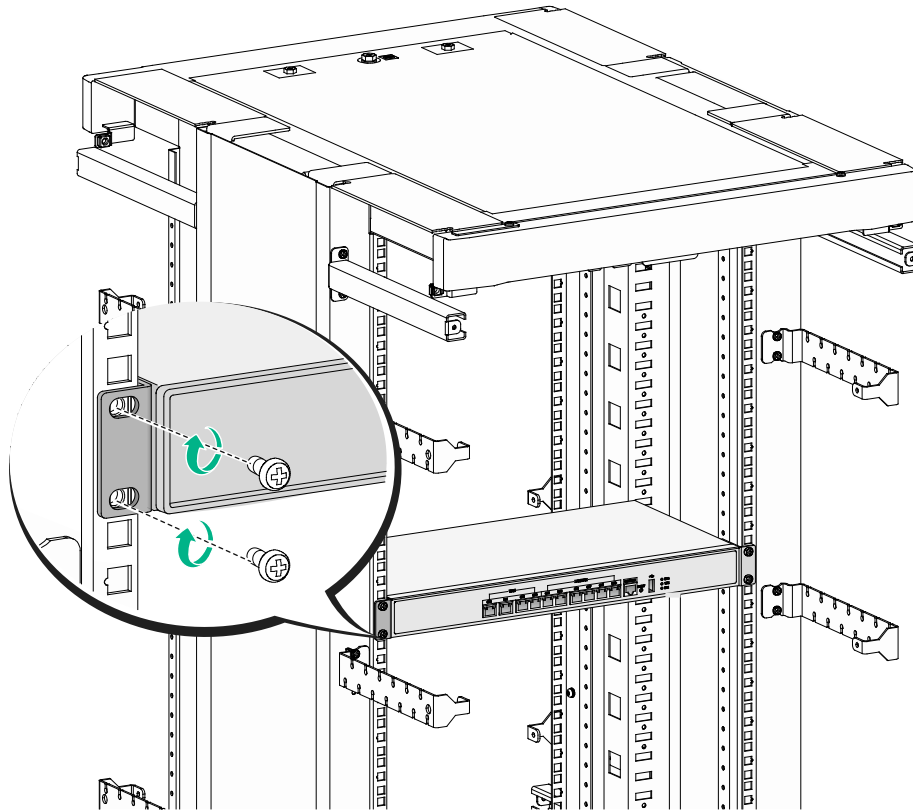
Figure 4 Installing cage nuts
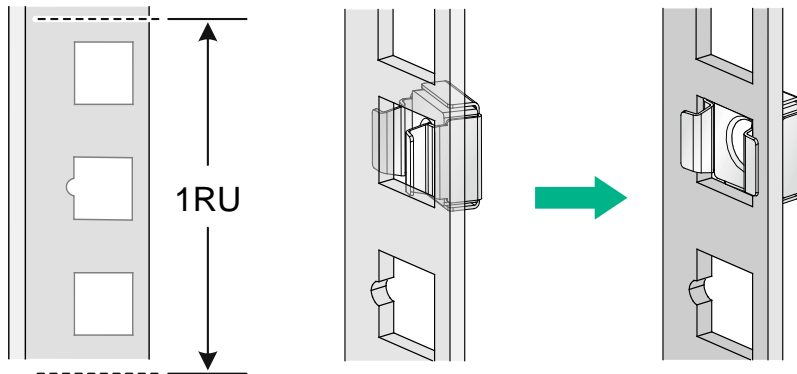
3. Attach mounting brackets to both sides of the router, as shown in Figure 5.

Figure 5 Attaching the mounting bracket to the router
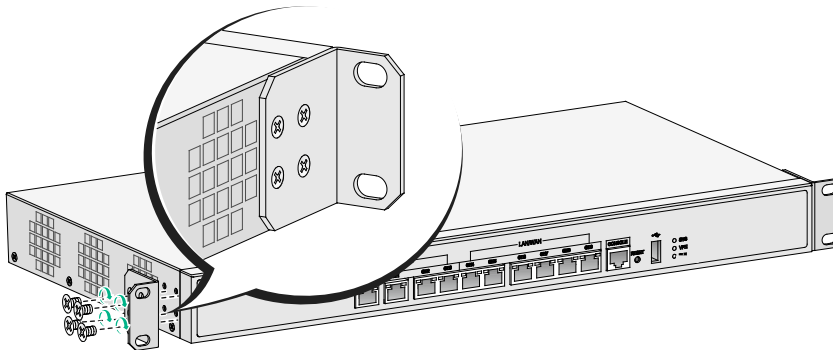
4. Use M6 screws to attach the mounting brackets on the router to the front rack posts, as shown in Figure 6.

Figure 6 Securing the router to the rack

Grounding the router

⚠ **WARNING!**

Correctly connecting the router grounding cable is crucial to lightning protection and EMI protection.

ⓘ **IMPORTANT:**

The resistance reading must be smaller than 5 ohms between the chassis and the ground.
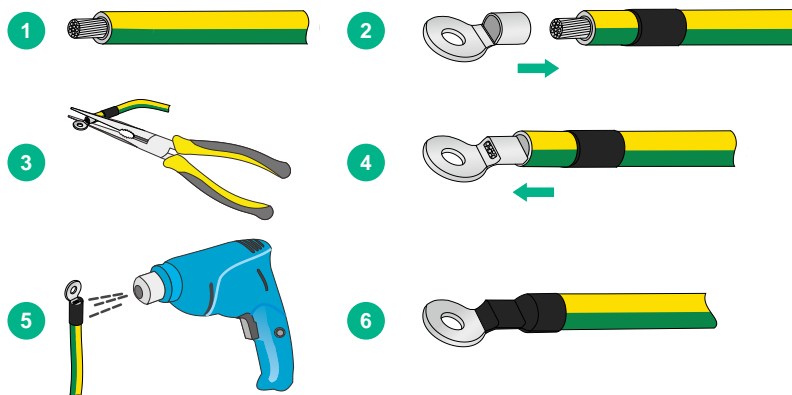
Attaching the ring terminal to the grounding cable

The router comes with a ring terminal. No grounding cable is provided with the router. Purchase a grounding cable yourself. Before grounding the router, attach the provided ring terminal to the grounding cable.

To attach the ring terminal to the grounding cable:

1. Cut the grounding cable to the desired length. Use the wire-stripping pliers to peel 5 mm (0.20 in) of insulation sheath from one end of the grounding cable.
2. Add a heat-shrink tubing onto the cable, and insert the bare metal part of the grounding cable into the ring terminal.
3. Use the needle-nose pliers to secure the metal part of the cable in the ring terminal.
4. Cover the joint with the heat-shrink tubing, and use a heat gun to shrink the tubing around the cable.
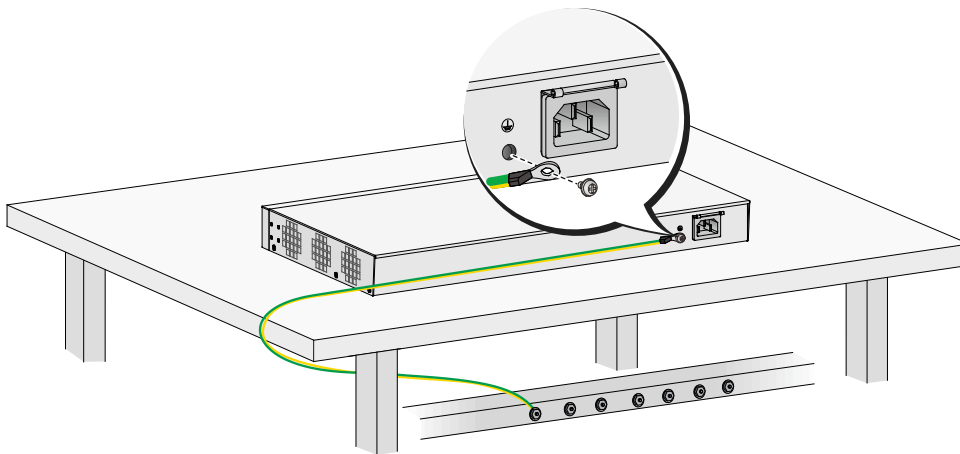
Figure 7 Attaching the ring terminal to the grounding cable

Grounding the router with a grounding strip

1. Remove the grounding screw from the grounding hole on the rear panel of the chassis.
2. Use the grounding screw to attach the ring terminal of the grounding cable to the grounding hole.
3. Use a screwdriver to fasten the grounding screw.
4. Remove the hex nut from a grounding post on the grounding strip.
5. Use the removed hex nut to attach the other end of the grounding cable to the grounding post.

Figure 8 Connecting the router with a grounding strip

Grounding the router through the rack

(!) **IMPORTANT:**

Make sure the rack is correctly grounded before grounding the router through the rack.

To connect the grounding cable through the rack:

1. Remove the grounding screw from the grounding hole on the rear panel of the chassis.
2. Use the grounding screw to attach the ring terminal of the grounding cable to the grounding hole.
3. Use a screwdriver to fasten the grounding screw.

4. Remove the nut from the grounding post of the grounding point on the rack.

5. Use the needle-nose pliers to bend a hook at the other end of the grounding cable, and use the removed nut to attach the hook to the grounding post.

Figure 9 Grounding the router through the rack
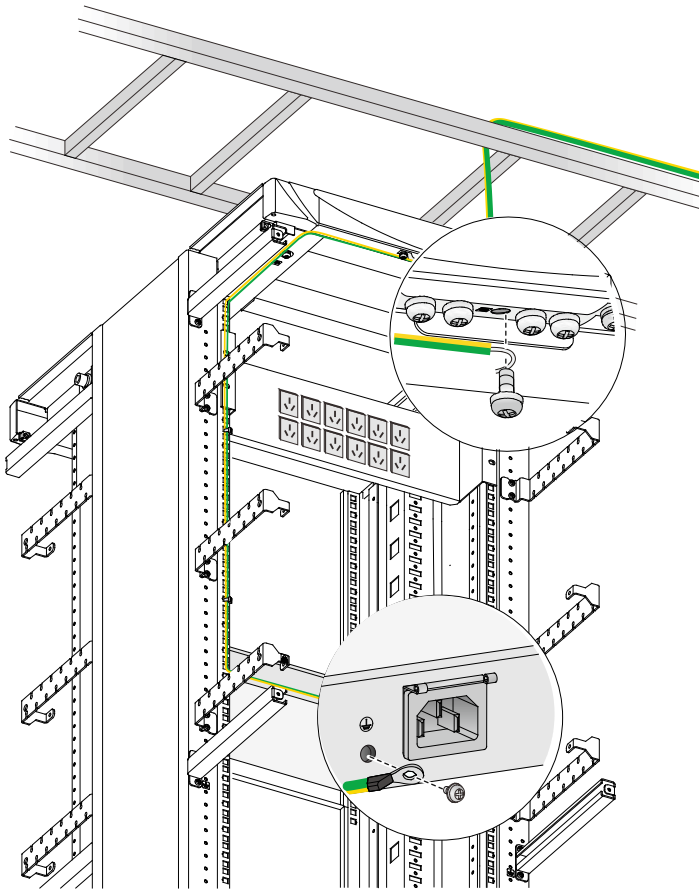
Installing a Micro SD card

△ **CAUTION:**

To avoid damaging the Micro SD card slot, do not use excessive force when you install a Micro SD card.

Only the MSR830-6HI-GL and MSR830-10HI-GL routers support Micro SD cards.

To install a Micro SD card:

1. Remove the screw on cover over the Micro SD card slot and remove the cover.

2. Insert the Micro SD card into the slot along the slide rails.

If you encounter any resistance, re-orient the card and try to insert it again.

3. Reinstall the cover and fasten the screw on the cover.

Figure 10 Installing a Micro SD card
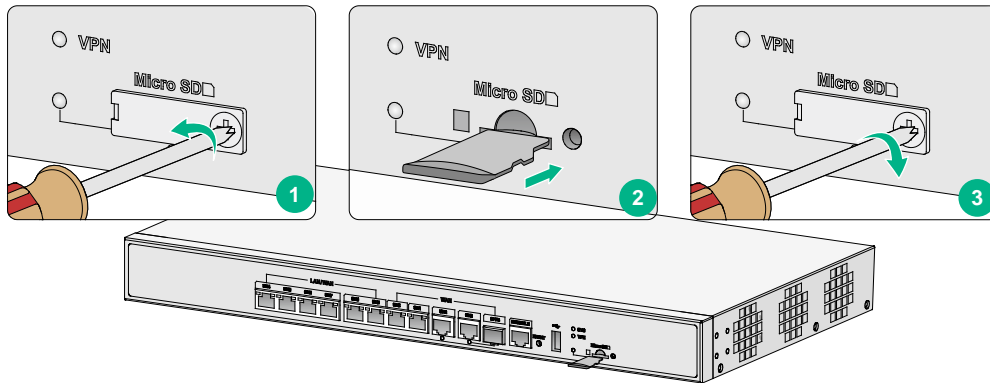
Connecting a USB drive

Connect a USB drive to the USB port of the router as shown in Figure 11.

Figure 11 Connecting a USB drive
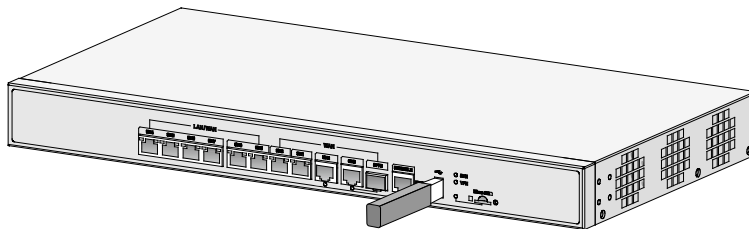
Connecting interface cables

Connecting an AC power cord

1. Make sure the router is correctly grounded.
2. Attach the bail latch to the router.
3. Connect one end of the AC power cord to the AC receptacle on the router, and the other end to the AC power source.
4. Use the bail latch to secure the power cord.

Figure 12 Connecting an AC power cord
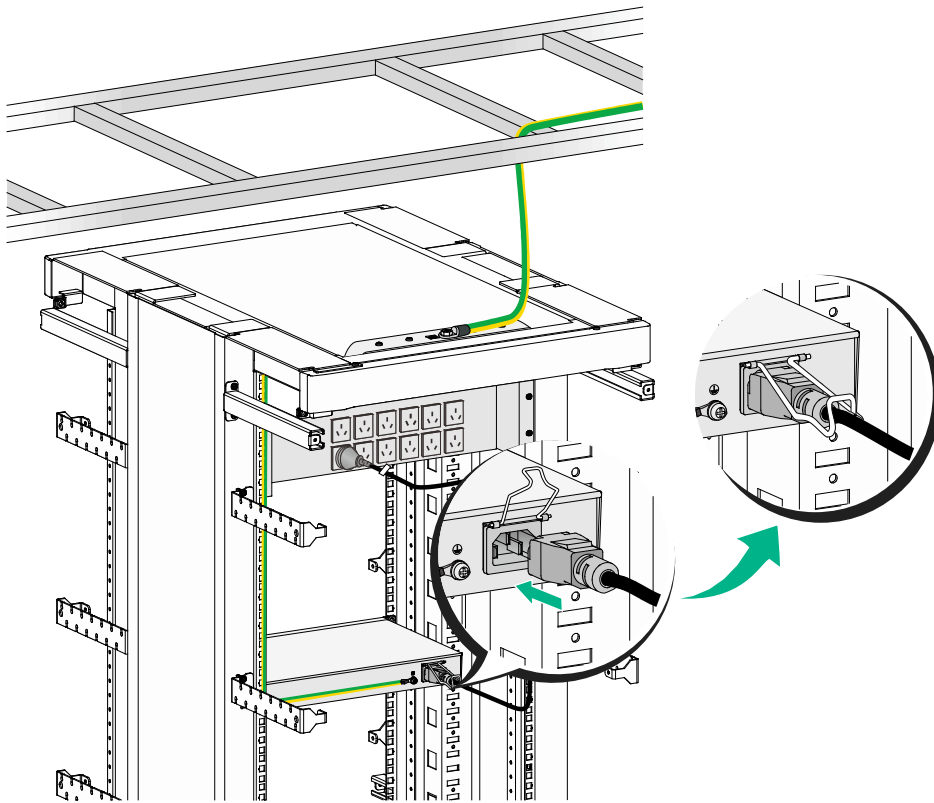
Connecting an Ethernet cable

1. Connect one end of the cable to an Ethernet port on the router and the other end to an Ethernet port on the peer device.
2. Examine the port LED on the router. For more information about the LEDs, see "LED description."

Figure 13 Connecting the Ethernet cable

Connecting an optical fiber

> **⚠ WARNING!**
>
> Do not stare into any fiber port when you connect an optical fiber. The laser light emitted from the optical fiber might hurt your eyes.

> **⚠ CAUTION:**
>
> - To connect a fiber port by using an optical fiber, first install a transceiver module in the port and then connect the optical fiber to the transceiver module.
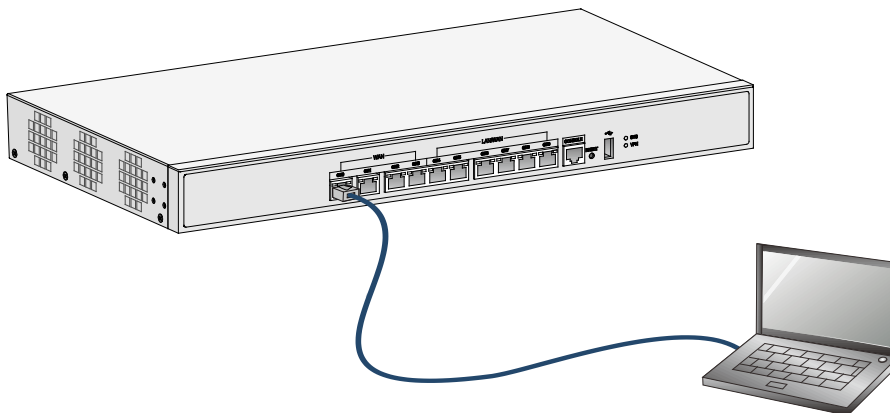> - Install a dust cap on any open optical fiber connector and insert a dust plug into any open fiber port or transceiver module port to protect them from contamination and ESD damage.
> - Never bend an optical fiber excessively. The bend radius of an optical fiber must be not less than 100 mm (3.94 in).
> - Keep the fiber end clean.
> - Make sure the Tx and Rx ports on a transceiver module are connected to the Rx and Tx ports on the peer end, respectively.

Only the MSR830-6HI-GL and MSR830-10HI-GL routers support transceiver modules.

To connect an optical fiber:

1. Remove the dust plug from a fiber port of the router.
2. Remove the dust plug from the transceiver module, and plug the end without a pull latch into the fiber port.
3. Remove the dust cap from the fiber connector.
4. Identify the Rx and Tx ports. Plug the LC connector at one end of one fiber cable into the Rx port of the router and the LC connector at the other end into the Tx port of the peer device. Plug the LC connector at one end of another fiber cable into the Tx port of the router and the LC connector at the other end to the Rx port of the peer device.
5. Examine the fiber port LED. For more information, see "Appendix B LEDs."

Figure 14 Connecting an optical fiber
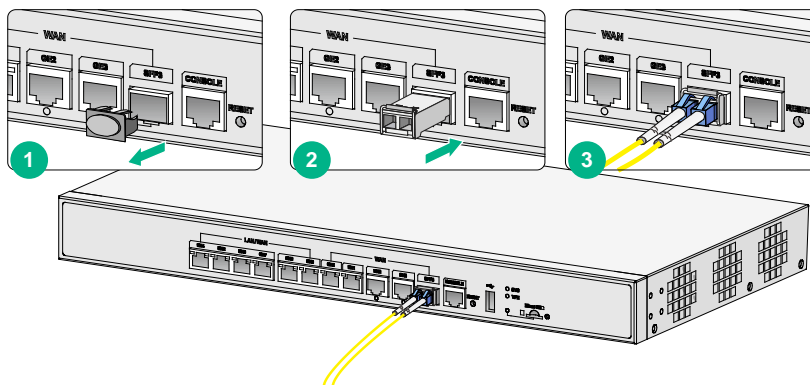
Connecting the console cable and setting terminal parameters

To access the router at the first time, you can only use a console cable to connect the console port on the router to a configuration terminal.

Connecting the console cable

> **IMPORTANT:**
> - When you connect a PC to a powered-on router, first connect the DB-9 connector of the console cable to the PC, and then connect the RJ-45 connector to the router.
> - If the PC does not have a DB-9 port, prepare a DB-9-to-RJ-45 adapter.

To connect the console cable:

1. Select a configuration terminal, which can be an ASCII terminal with an RS-232 serial port or a PC. (A PC is more commonly used.)
2. Connect the DB-9 connector (female) of the console cable to the RS-232 serial port on the configuration terminal and the RJ-45 connector to the console port of the router.

Figure 15 Connecting the console cable
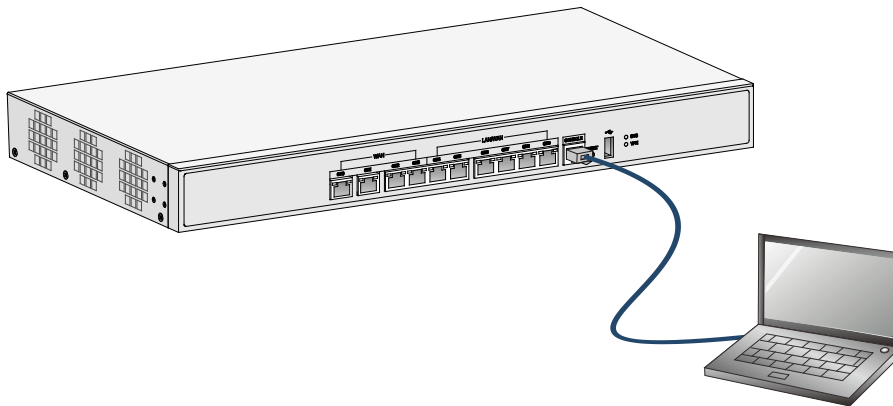
Setting terminal parameters

To access the device through the console port, you must run a terminal emulator program (HyperTerminal, PuTTY, or Tera Term) on the configuration terminal. For information about using a terminal emulator program, see the program's user guide.

The following are the required terminal settings:

- **Baud rate**—9600.
- **Data bits**—8.
- **Stop bits**—1.
- **Parity**—none.
- **Flow control**—none.

Verifying the installation

After you complete the installation, verify the following information:

- There is enough space for heat dissipation around the router, and the rack or workbench is stable.
- The USB device, if any, is correctly installed.
- The router and the power source are correctly grounded.
- The correct power source is used.
- The router is connected correctly to the console terminal and other devices.

Accessing the router for the first time

⚠ **WARNING!**

Before powering on the router, locate the switch for the power source so that you can cut off power promptly in case of an emergency.

For a router starting with empty configuration, you must press **Ctrl+D** to access the CLI.

To access the router for the first time:

1. Verify that the installation and configuration environment is as described in "Verifying the installation."
2. Power on the router.
3. During the booting process, verify the following items:
   - The system LED (SYS) on the front panel is flashing green at 1 Hz. For more information about LEDs, see "Appendix B LEDs."
   - The configuration terminal displays information correctly.

     The router first initializes its memory at startup and then runs BootWare.

     ```
     System is starting...
     Press Ctrl+D to access BASIC-BOOTWARE MENU
     Booting Normal Extended BootWare


     ***************************************************************************
     *                                                                         *
     *              H3C MSR830 BootWare, Version 1.12                          *
     *                                                                         *
     ***************************************************************************
     Copyright (c) 2004-2017 New H3C Technologies Co., Ltd.


     Compiled Date      : Jun 20 2017
     CPU ID             : 0xc
     CPU L1 Cache       : 32KB
     CPU L2 Cache       : 1024KB
     Memory Type        : DDR3 SDRAM
     Memory Size        : 1024MB
     Flash Size         : 256MB
     PCB Version        : 1.0
     ```

```
BootWare Validating...
Press Ctrl+B to access EXTENDED-BOOTWARE MENU...
Loading the main image files...
Loading file flash:/msr830hi-cmw710-system-e0707p02.bin.....................
.......................................Done.
Loading file flash:/msr830hi-cmw710-security-e0707p02.bin....Done.
Loading file flash:/msr830hi-cmw710-voice-e0707p02.bin....Done.
Loading file flash:/msr830hi-cmw710-data-e0707p02.bin......Done.
Loading file flash:/msr830hi-cmw710-boot-e0707p02.bin.........Done.

Image file flash:/msr830hi-cmw710-boot-e0707p02.bin is self-decompressing...
................................................................
................................................................
................................................................
................................................................
................................................................
................................................................
................................................................
................Done.
System image is starting...
□Cryptographic algorithms tests passed.
Line con0 is available.

Press ENTER to get started.
```

4. Press **Enter**. The router is ready to configure when you see the following prompt:

```
<H3C>
```

5. Configure basic settings for the router. For more information, see the relevant documents.

Contents

Replacement procedure

> **IMPORTANT:**
> - The barcode on the router chassis contains product information that must be provided to local sales agent when you return a faulty router for service.
> - Keep the tamper-proof seal on a mounting screw on the chassis cover intact, and if you want to open the chassis, contact H3C for permission. Otherwise, H3C shall not be liable for any consequence.
> - Always wear an ESD wrist strap when you perform a replacement procedure.

Replacing a Micro SD card

> **CAUTION:**
> - The router supports hot swapping of Micro SD cards. Before hot-swapping a Micro SD card, execute the **umount** command to avoid SD card damage and data loss.
> - To avoid damaging the Micro SD card slot, do not use excessive force when you install a Micro SD card.

To replace a Micro SD card:

1. Remove the screw on the cover over the Micro SD card slot and then remove the cover.
2. Push the Micro SD card horizontally to release it. The SD card will spring out from the slot.
3. Remove the Micro SD card from the slot.

   Keep the removed Micro SD card for future use.
4. Install a new Micro SD card or install the slot cover if no new card is to be installed. For the installation procedure, see "Installing a Micro SD card."
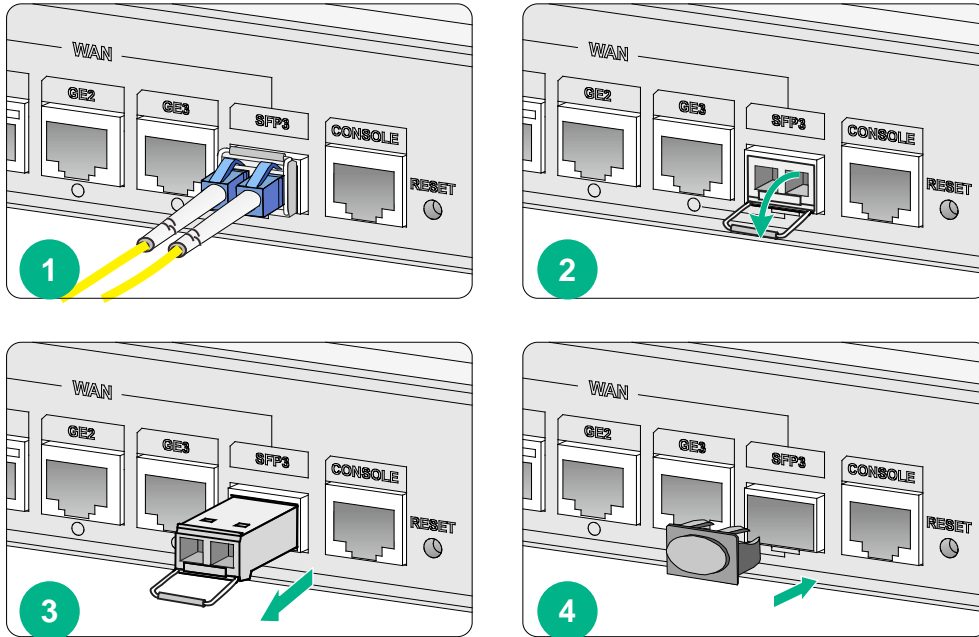
Figure 1 Removing a Micro SD card
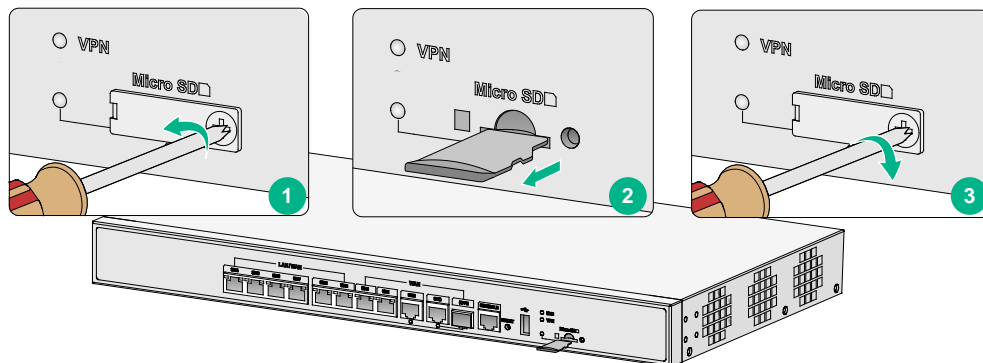
Replacing a transceiver module

1. Gently open the clasp on the transceiver module. If the clasp is obstructed and you cannot use your finger to open it, use a pair of flat-head tweezers to open it.
2. Hold the clasp and pull the transceiver module slowly out of the fiber port.

3. Insert a dust plug into the transceiver module port and keep the removed transceiver module secure.

4. Install a new transceiver module or insert a dust plug into the fiber port if you are not to install a new transceiver module.

Figure 2 Removing a transceiver module

Contents

Troubleshooting

Power supply system failure

Symptom

The router cannot be powered on. The system LED is off.

Solution

To resolve the issue:
1. Verify that the power cord of the router is correctly connected to the router and the power source.
2. Verify that the power source is operating correctly.
3. Verify that the power cord is in good condition.
4. If the issue persists, contact H3C Support.

Configuration terminal issues

If the configuration environment setup is correct, the configuration terminal displays boot information when the router is powered on. If the setup is incorrect, the configuration terminal displays nothing or garbled text.

No terminal display

Symptom

The configuration terminal displays nothing when the router is powered on.

Solution

To resolve the issue:
1. Verify that the power supply system is operating correctly.
2. Verify that the console cable is correctly connected.
3. Verify that the console cable is connected to the serial port that is configured for the configuration terminal.
4. Verify that the configuration terminal parameters are configured as follows:
   - **Baud rate**—9600
   - **Data bits**—8
   - **Parity**—none
   - **Stop bits**—1
   - **Flow control**—none

- o **Terminal emulation**—VT100
  5. Verify that the console cable is in good condition.
  6. If the issue persists, contact H3C Support.

Garbled terminal display

Symptom

The configuration terminal displays garbled characters when the router is powered on.

Solution

Verify that the **Data bits** field is set to **8** for the configuration terminal. If the **Data bits** field is set to **5** or **6**, the configuration terminal displays garbled characters.

No response from the serial port

Symptom

No boot information is displayed on the configuration terminal when the router starts up or restarts up.

Solution

Verify that the serial cable is in good condition and the serial port settings are correct.

Restoring the factory settings

Scenario 1

Symptom

When you replace the router, the router password is lost. As a result, you cannot log in to the router and do not know the router configuration.

Solution

Because the router is replaced, you do not need to save the configuration of the router. In this case, you can press the **RESET** button for more than 4 seconds to reboot the router and restore the factory settings. Then, you can use the username and password shipped with the router to log in to the router.

When the router configuration must be saved and you have a console cable, you can log in to the router through the BootWare menu.

Scenario 2

Symptom

After the configuration is modified, the network connectivity is lost. When you check the configuration, the configuration is very complicated and it is hard to locate the errors. In this case, you must configure the router again.

Solution

If you have not saved any configuration, you can reboot the router by pressing the **RESET** button for a short time or power off the router.

If you have saved some configurations, you can use the CLI to delete the configuration file or press the **RESET** button for more than 4 seconds to restore the factory settings.

Scenario 3

Symptom

The router crashes.

Solution

Press the **RESET** button for a short time to reboot the router.

Reset button usage guidelines

You can use the button to reboot the system or restore the factory settings.

- Press the **RESET** button for a short time to reboot the router.
- Press the **RESET** button for more than 4 seconds to reboot the router and restore the factory settings.
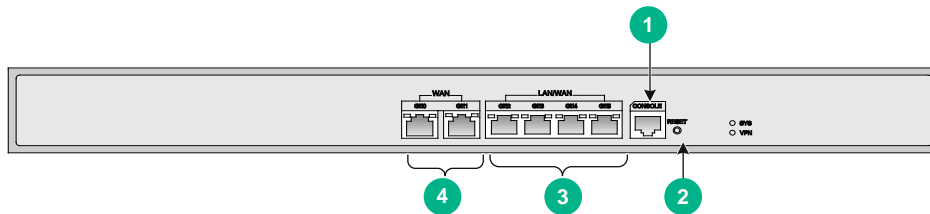
Contents

Appendix A Chassis views and technical specifications

Chassis views

The following figures are for illustration only.

MSR830-6EI-GL

Figure 1 MSR830-6EI-GL front view

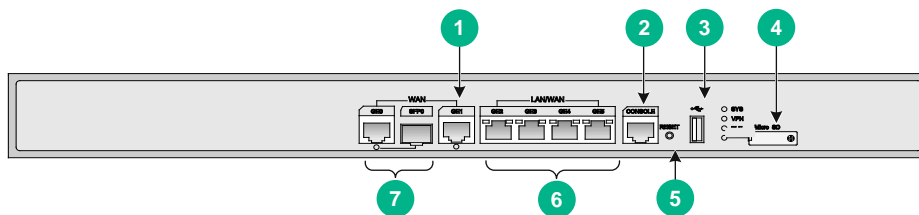| (1) Console port	(2) Reset button
(3) Gigabit Ethernet LAN/WAN ports (GE2 to GE5)	(4) Gigabit Ethernet WAN ports (GE0 and GE1)

Figure 2 MSR830-6EI-GL rear view

(1) Grounding terminal	(2) AC-input power receptacle

MSR830-6HI-GL

Figure 3 MSR830-6HI-GL front view

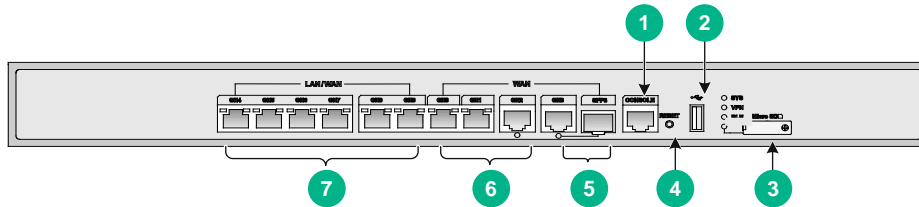| (1) Gigabit Ethernet WAN port (GE1)	(2) Console port
(3) USB port	(4) Micro SD card slot
(5) Reset button	(6) Gigabit Ethernet WAN ports (GE2 to GE5)
(7) Combo interface 0	

Figure 4 MSR830-6HI-GL rear view

(1) Grounding terminal	(2) AC-input power receptacle

MSR830-10HI-GL

Figure 5 MSR830-10HI-GL front view

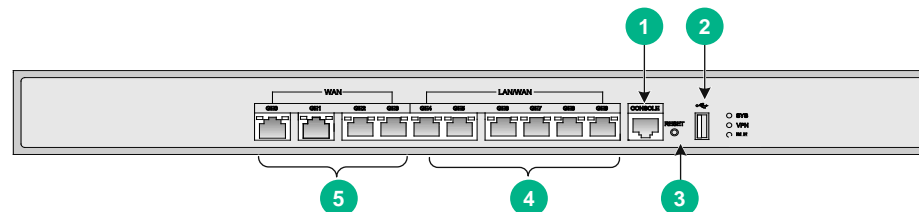| (1) Console port	(2) USB port
(3) Micro SD card slot	(4) Reset button
(5) Combo interface 3	(6) Gigabit Ethernet WAN ports (GE0 to GE2)
(7) Gigabit Ethernet LAN/WAN ports (GE4 to GE9)	

Figure 6 MSR830-10HI-GL rear view

(1) Grounding terminal	(2) AC-input power receptacle

MSR830-10EI-GL

Figure 7 MSR830-10EI-GL front view

(1) Console port	(2) USB port
(3) Reset button	(4) Gigabit Ethernet LAN/WAN ports (GE4 to GE9)
(6) Gigabit Ethernet WAN ports (GE0 to GE3)	

Figure 8 MSR830-10EI-GL rear view

(1) Grounding terminal	(2) AC-input power receptacle

Technical specifications

Table 1 Technical specifications (1)

| Item	MSR830-6EI-GL	MSR830-10EI-GL	MSR830-6HI-GL	MSR830-10HI-GL
Console ports	1	1	1	1
USB ports	N/A	1	1	1
GE copper ports	6	10	6	10
SFP ports	N/A	N/A	1	1
Micro SD slots	N/A	N/A	1	1
Reset button	1	1	1	1
Memory	1GB DDR3	1GB DDR3	1GB DDR3	1GB DDR3
Flash	256 MB	256 MB	256 MB	256 MB
Dimensions (H × W × D) (excluding rubber feet and mounting brackets)	44 × 440 × 225 mm (1.73 × 17.32 × 8.86 in)	44 × 440 × 225 mm (1.73 × 17.32 × 8.86 in)	44 × 440 × 225 mm (1.73 × 17.32 × 8.86 in)	44 × 440 × 225 mm (1.73 × 17.32 × 8.86 in)
Input voltage	100 VAC to 240 VAC @ 50 Hz/60 Hz	100 VAC to 240 VAC @ 50 Hz/60 Hz	100 VAC to 240 VAC @ 50 Hz/60 Hz	100 VAC to 240 VAC @ 50 Hz/60 Hz
Operating temperature	0°C to 45°C (32°F to 113°F)			
Humidity	5% RH to 95% RH (noncondensing)			

Contents

Appendix B LEDs

Panel LEDs

MSR830-6EI-GL

Figure 1 MSR830-6EI-GL LEDs
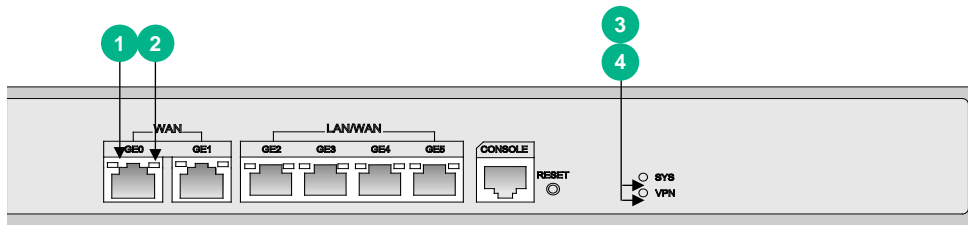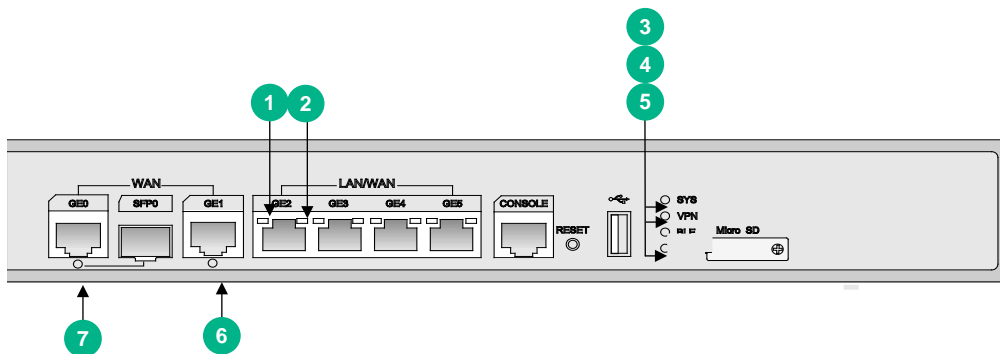

(1) Gigabit Ethernet port yellow LED	(2) Gigabit Ethernet port green LED
(3) System status LED (SYS)	(4) VPN status LED

MSR830-6HI-GL

Figure 2 MSR830-6HI-GL LEDs

(1) Gigabit Ethernet port yellow LED	(2) Gigabit Ethernet port green LED
(3) System status LED (SYS)	(4) VPN status LED
(5) Micro SD card LED	(6) Gigabit Ethernet port LED
(7) Combo interface LED	

MSR830-10HI-GL

Figure 3 MSR830-10HI-GL LEDs

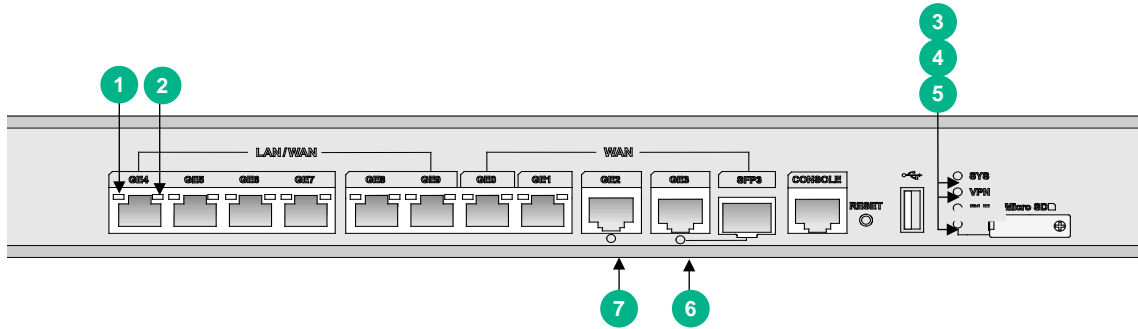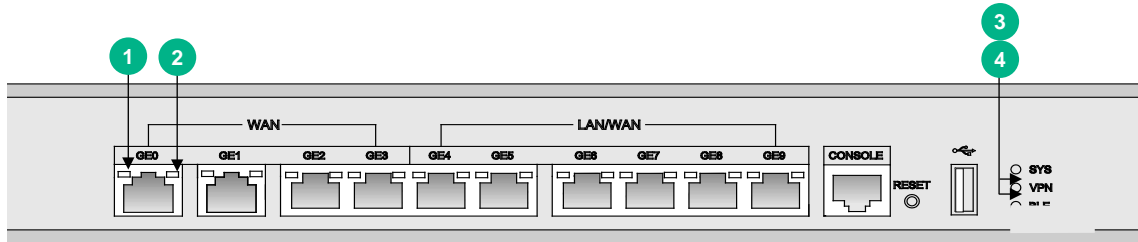|	
(1) Gigabit Ethernet port yellow LED	(2) Gigabit Ethernet port green LED
(3) System status LED (SYS)	(4) VPN status LED
(5) Micro SD card LED	(6) Combo interface LED
(7) Gigabit Ethernet port LED	

MSR830-10EI-GL

Figure 4 MSR830-10EI-GL LEDs

(1) Gigabit Ethernet port yellow LED	(2) Gigabit Ethernet port green LED
(3) System status LED (SYS)	(4) VPN status LED

LED description

LEDs	State	Description
Gigabit Ethernet port LED	Steady green	A 1000 Mbps link is present.
	Flashing green	Data is being received or transmitted at 1000 Mbps.
	Steady yellow	A 10/100 Mbps link is present.
	Flashing yellow	Data is being received or transmitted at 10/100 Mbps
	Off	No link is present.
System status LED (SYS)	Steady green	The SDRAM is performing self-test.
	Flashing green (8 Hz)	The system software image is being copied and decompressed.

LEDs	State	Description
	Flashing green (1 Hz)	Comware has started with the configuration file and the router has booted up.
	Flashing yellow (1 Hz)	The SDRAM has failed the self-test.
	Flashing yellow (8 Hz)	The extended segment does not exist.
	Steady yellow	The boot image does not exist.
	Off	No power input, or exceptions have occurred.
VPN status LED	Steady on	A minimum of one IPsec VPN tunnel is present.
	Off	No IPsec VPN tunnel is present.
Micro SD card LED	Steady green	An inserted Micro SD card has passed the detection.
	Off	No Micro SD card is inserted or a Micro SD card is incorrectly inserted.
Combo interface LED	Steady green	A 1000 Mbps link is present.
	Flashing green	Data is being received or transmitted at 1000 Mbps.
	Steady yellow	A 10/100 Mbps link is present.
	Flashing yellow	Data is being received or transmitted at 10/100 Mbps.
	Off	No link is present.