

Troubleshooting

This section describes the troubleshooting scenarios.

Before troubleshooting a software problem, you must connect a terminal or PC to the router by using the light-blue console port. With a connected terminal or PC, you can view status messages from the router and enter commands to troubleshoot a problem.

You can also remotely access the interface (Ethernet, ADSL, or telephone) by using Telnet. The Telnet option assumes that the interface is up and running.

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Before contacting Cisco or your reseller

If you cannot locate the source of a problem, contact your local reseller for advice. Before you call, you should have the following information ready:

- Chassis type and serial number
- Maintenance agreement or warranty information
- Type of software and version number
- Date you received the hardware
- Brief description of the problem
- Brief description of the steps you have taken to isolate the problem

show interfaces troubleshooting command

Use the **show interface** command to display the status of all physical ports (Ethernet, Fast Ethernet, and ATM) and logical interfaces on the router. Table 1: show interfaces Command Output Description , on page 2describes messages in the command output.

The following example shows how to view the status of Ethernet or Fast Ethernet Interfaces:

```
Router# show interfaces ethernet 0 **similar output for show interfaces fastethernet 0
command **
Ethernet0 is up, line protocol is up
Hardware is PQUICC Ethernet, address is 0000.Oc13.a4db
(bia0010.9181.1281)
Internet address is 192.0.2.1/24
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
 reliability 255/255., txload 1/255, rxload 1/255
 Encapsulation ARPA, loopback not set
 Keepalive set (10 sec)
```

The following example shows how to view the status of ATM Interfaces:

```
Router# show interfaces atm 0
ATM0 is up, line protocol is up
  Hardware is PQUICC_SAR (with Alcatel ADSL Module)
  Internet address is 192.0.2.1/8
  MTU 1500 bytes, sub MTU 1500, BW 640 Kbit, DLY 80 usec,
     reliability 40/255, txload 1/255, rxload 1/255
  Encapsulation ATM, loopback not set
  Keepalive not supported
  Encapsulation(s):AAL5, PVC mode
  10 maximum active VCs, 1 current VCCs
  VC idle disconnect time:300 seconds
  Last input 01:16:31, output 01:16:31, output hang never
  Last clearing of "show interface" counters never
  Input queue:0/75/0 (size/max/drops); Total output drops:0
  Queueing strategy:Per VC Queueing
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     512 packets input, 59780 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 1024 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     426 packets output, 46282 bytes, 0 underruns
     0 output errors, 0 collisions, 2 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

The following example shows how to view the status of Dialer Interfaces:

```
Router# show interfaces dialer 1
Dialer 1 is up, line protocol is up
 Hardware is Dialer interface
 Internet address is 10.0.0.1/24
 MTU 1500 bytes, BW 100000 Kbit, DLY 100000 usec, reliability
  255/255. txload 1/255, rxload 1/255
 Encapsulation PPP, loopback not set
 Keepalive set (10 sec)
DTR is pulsed for 5 seconds on reset
LCP Closed
```

The table below describes possible command output for the **show interfaces** command.

Table 1: show interfaces Command Output Description

Output	Cause
For ATM Interfaces	
ATM 0 is up, line protocol is up	The ATM line is up and operating correctly.

Output	Cause
ATM 0 is down, line protocol is down	• The ATM interface has been disabled with the shutdown command. or • The ATM line is down, possibly because the ADSL cable is disconnected or because the wrong type of cable is connected to the ATM port.
ATM 0.*n* is up, line protocol is up	The specified ATM subinterface is up and operating correctly.
ATM 0.*n* is administratively down, line protocol is down	The specified ATM subinterface has been disabled with the shutdown command.
ATM 0.*n* is down, line protocol is down	The specified ATM subinterface is down, possibly because the ATM line has been disconnected (by the service provider).
For Ethernet/Fast Ethernet Interfaces	
Ethernet/Fast Ethernet *n* is up, line protocol is up	The specified Ethernet/Fast Ethernet interface is connected to the network and operating correctly.
Ethernet/Fast Ethernet *n* is up, line protocol is down	The specified Ethernet/Fast Ethernet interface has been correctly configured and enabled, but the Ethernet cable might be disconnected from the LAN.
Ethernet/Fast Ethernet *n* is administratively down, line protocol is down	The specified Ethernet/Fast Ethernet interface has been disabled with the **shutdown** command, and the interface is disconnected.
For Dialer Interfaces	
Dialer *n* is up, line protocol is up	The specified dialer interface is up and operating correctly.
Dialer *n* is down, line protocol is down	• This is a standard message and may not indicate anything is actually wrong with the configuration. or • If you are having problems with the specified dialer interface, this can mean it is not operating, possibly because the interface has been brought down with the **shutdown** command, or the ADSL cable is disconnected.

ATM troubleshooting commands

Use the following commands to troubleshoot your ATM interface:

ping atm interface command

Use the **ping atm interface** command to determine whether a particular PVC is in use. The PVC does not need to be configured on the router to use this command. The below example shows the use of this command to determine whether PVC 8/35 is in use.

The following example shows how to determine if a PVC is in use:

```
Router# ping atm interface atm 0 8 35 seg-loopback

Type escape sequence to abort.
Sending 5, 53-byte segment OAM echoes, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 148/148/148 ms
```

This command sends five OAM F5 loopback packets to the DSLAM (segment OAM packets). If the PVC is configured at the DSLAM, the ping is successful.

To test whether the PVC is being used at the aggregator, enter the following command:

```
Router# ping atm interface atm 0 8 35 end-loopback

Type escape sequence to abort.
Sending 5, 53-byte end-to-end OAM echoes, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 400/401/404 ms
```

This command sends end-to-end OAM F5 packets, which are echoed back by the aggregator.

show atm interface command

To display ATM-specific information about an ATM interface, use the **show atm interface atm 0 command from** privileged EXEC mode.

The following example shows how to view information about an ATM interface:

```
Router# show atm interface atm 0
Interface ATM0:
AAL enabled: AAL5 , Maximum VCs:11, Current VCCs:0
Maximum Transmit Channels:0
Max. Datagram Size:1528
PLIM Type:INVALID - 640Kbps, Framing is INVALID,
DS3 lbo:short, TX clocking:LINE
0 input, 0 output, 0 IN fast, 0 OUT fast
Avail bw = 640
Config. is ACTIVE
```

The table below describes some of the fields shown in the command output.

Table 2: show atm interface command output description

Field	Description
ATM interface	Interface number.
AAL enabled	Type of AAL enabled.
Maximum VCs	Maximum number of virtual connections this interface supports.

Field	Description
Current VCCs	Number of active virtual channel connections (VCCs).
Maximum Transmit Channels	Maximum number of transmit channels.
Max Datagram Size	Configured maximum number of bytes in the largest datagram.
PLIM Type	Physical layer interface module (PLIM) type.

debug atm commands

Use the **debug** commands to troubleshoot configuration problems that you might be having on your network. The **debug** commands provide extensive, informative displays to help you interpret any possible problems.

Guidelines for using debug commands

Read the following guidelines before using debug commands to ensure appropriate results.

- All debug commands are entered in privileged EXEC mode.
- To view debugging messages on a console, enter the **logging console debug** command.
- Most **debug** commands take no arguments.
- To disable debugging, enter the **undebug all** command.
- To use **debug** commands during a Telnet session on your router, enter the **terminal monitor** command.



Caution Debugging is assigned a high priority in your router CPU process, and it can render your router unusable. For this reason, use **debug** commands only to troubleshoot specific problems. The best time to use debug commands is during periods of low network traffic so that other activity on the network is not adversely affected.

You can find additional information and documentation about the **debug** commands in the Cisco IOS Debug Command Reference.

debug atm errors command

Use the **debug atm errors** command to display ATM errors. The **no** form of this command disables debugging output.

The following example shows how to view the ATM errors:

```
Router# debug atm errors
ATM errors debugging is on
Router#
01:32:02:ATM(ATM0.2):VC(3) Bad SAP received 4500
01:32:04:ATM(ATM0.2):VC(3) Bad SAP received 4500
01:32:06:ATM(ATM0.2):VC(3) Bad SAP received 4500
01:32:08:ATM(ATM0.2):VC(3) Bad SAP received 4500
01:32:10:ATM(ATM0.2):VC(3) Bad SAP received 4500
```

debug atm events command

Use the **debug atm events** command to display events that occur on the ATM interface processor and to diagnose problems in an ATM network. This command provides an overall picture of the stability of the network. The **no** form of this command disables debugging output.

If the interface is successfully communicating with the Digital Subscriber Line Access Multiplexer (DSLAM) at the telephone company, the modem state is 0x10. If the interface is not communicating with the DSLAM, the modem state is 0x8. Note that the modem state does not transition to 0x10.

The following example shows how to view the ATM interface processor events-success:

```
Router# debug atm events
Router#
00:02:57: DSL: Send ADSL_OPEN command.
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Sent command 0x5
00:02:57: DSL: Received response: 0x26
00:02:57: DSL: Unexpected response 0x26
00:02:57: DSL: Send ADSL_OPEN command.
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Sent command 0x5
00:03:00: DSL: 1: Modem state = 0x8
00:03:02: DSL: 2: Modem state = 0x10
00:03:05: DSL: 3: Modem state = 0x10
00:03:07: DSL: 4: Modem state = 0x10
00:03:09: DSL: Received response: 0x24
00:03:09: DSL: Showtime!
00:03:09: DSL: Sent command 0x11
00:03:09: DSL: Received response: 0x61
00:03:09: DSL: Read firmware revision 0x1A04
00:03:09: DSL: Sent command 0x31
00:03:09: DSL: Received response: 0x12
00:03:09: DSL: operation mode 0x0001
00:03:09: DSL: SM: [DMTDSL_DO_OPEN -> DMTDSL_SHOWTIME]
```

The following example shows how to view the ATM interface processor events—failure:

```
Router# debug atm events
Router#
00:02:57: DSL: Send ADSL_OPEN command.
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Sent command 0x5
00:02:57: DSL: Received response: 0x26
00:02:57: DSL: Unexpected response 0x26
00:02:57: DSL: Send ADSL_OPEN command.
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Using subfunction 0xA
00:02:57: DSL: Sent command 0x5
00:03:00: DSL: 1: Modem state = 0x8
00:03:00: DSL: 1: Modem state = 0x8
00:03:00: DSL: 1: Modem state = 0x8
00:03:00: DSL: 1: Modem state = 0x8
00:03:00: DSL: 1: Modem state = 0x8
00:03:00: DSL: 1: Modem state = 0x8
```

debug atm packet command

Use the **debug atm packet** command to display all process-level ATM packets for both outbound and inbound packets. The output reports information online when a packet is received or a transmission is attempted. The **no** form of this command disables debugging output.

Caution Because the **debug atm packet** command generates a significant amount of output for every packet processed, use it only when network traffic is low, so that other system activities are not adversely affected.

The command syntax is:

debug atm **packet** [**interface atm** *number* [**vcd** *vcd-number*][**vc** *vpi/vci number*]]

no debug atm **packet** [**interface atm** *number* [**vcd** *vcd-number*][**vc** *vpi/vci number*]]

where the keywords are defined as follows:

interface atm *number* (Optional) ATM interface or subinterface number.

vcd *vcd-number* (Optional) Number of the virtual circuit designator (VCD).

vc *vpi/vci number* VPI/VCI value of the ATM PVC.

The below example shows sample output for the **debug atm packet** command.

```
Router# debug atm packet
Router#
01:23:48:ATM0(O):
VCD:0x1 VPI:0x1 VCI:0x64 DM:0x0 SAP:AAAA CTL:03 OUI:000000 TYPE:0800 Length:0x70
01:23:48:4500 0064 0008 0000 FF01 9F80 0E00 0010 0E00 0001 0800 A103 0AF3 17F7 0000
01:23:48:0000 004C BA10 ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD
01:23:48:ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD
01:23:48:ABCD ABCD ABCD ABCD ABCD
01:23:48:
01:23:48:ATM0(I):
VCD:0x1 VPI:0x1 VCI:0x64 Type:0x0 SAP:AAAA CTL:03 OUI:000000 TYPE:0800 Length:0x70
01:23:48:4500 0064 0008 0000 FE01 A080 0E00 0001 0E00 0010 0000 A903 0AF3 17F7 0000
01:23:48:0000 004C BA10 ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD
01:23:48:ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD
01:23:48:ABCD ABCD ABCD ABCD ABCD
01:23:48:
```

The table below describes some of the fields shown in the **debug atm packet** command output.

Table 3: debug atm packet command output description

Field	Description
ATM0	Interface that is generating the packet.
(O)	Output packet. (I) would mean receive packet.
VCD: 0x*n*	Virtual circuit associated with this packet, where *n* is some value.
VPI: 0x*n*	Virtual path identifier for this packet, where *n* is some value.
DM: 0x*n*	Descriptor mode bits, where *n* is some value.

Field	Description
Length: *n*	Total length of the packet (in bytes) including the ATM headers.

System report

System reports or crashinfo files save information that helps Cisco technical support representatives to debug problems that caused the Cisco IOS image to crash. It is necessary to collect critical crash information quickly and reliably and bundle it in a way that it can be identified with a specific crash occurrence. System reports are generated and saved into the '/core' directory, either on harddisk: or flash: filesystem. The system does not generate reports in case of a reload.

In case of a system crash, the following details are collected:

1. Full process core
    - IOSd core file and IOS crashinfo file if there was an IOSd process crash
2. Tracelogs
3. System process information
4. Bootup logs
5. Certain types of /proc information

This report is generated before the router goes down to rommon/bootloader. The information is stored in separate files which are then archived and compressed into the tar.gz bundle. This makes it convenient to get a crash snapshot in one place, and can be then moved off the box for analysis.

Device hostname, the ID of the module that generated the system report and its creation timestamp are embedded in the file name:

```
<hostname>_<moduleID>-system-report_<timestamp>.tar.gz
```

Example:

Router1_RP_0-system-report_20210204-163559-UTC

A device with hostname Router1 experienced an unexpected reload of RP0 module and the system-report was generated on 4th February 2021 at 4:39:59 PM UTC.

```
├── bootflash/
│   └── pd_info/
│       ├── dmesg_output-20210204-163538-UTC.log
│       ├── filesystems-20210204-163538-UTC.log
│       ├── memaudit-20210204-163538-UTC.log
│       ├── proc_cpuinfo-20210204-163538-UTC.log
│       ├── proc_diskstats-20210204-163538-UTC.log
│       ├── proc_interrupts-20210204-163538-UTC.log
│       ├── proc_oom_stats-20210204-163538-UTC.log
```

```
        ├── proc_softirqs-20210204-163538-UTC.log
        ├── system_report_trigger.log
        └── top_output-20210204-163538-UTC.log
    ├── harddisk/
    │   ├── core/
    │   │   └── Router1_RP_0_hman_17716_20210212-123836-UTC.core.gz
    │   └── tracelogs/
    ├── tmp/
    │   ├── fp/
    │   │   └── trace/
    │   ├── maroon_stats/
    │   ├── rp/
    │   │   └── trace/
    │   └── Router1_RP_0-bootuplog-20210204-163559-UTC.log
    └── var/
        └── log/
            └── audit/
                └── audit.log
```

Recovering a lost password

To recover a lost enable or lost enable-secret password, refer to the following sections:

1. Change the Configuration Register
2. Reset the Router
3. Reset the Password and Save your Changes (for lost enable secret passwords only)
4. Reset the Configuration Register Value.

Note Recovering a lost password is only possible when you are connected to the router through the console port. These procedures cannot be performed through a Telnet session.

Tip See the “Hot Tips” section on Cisco.com for additional information on replacing enable secret passwords.

Change the configuration register

To change a configuration register, follow these steps:

SUMMARY STEPS

1. Connect an ASCII terminal or a PC running a terminal emulation program to the CONSOLE port on the Fthe router.
2. Configure the terminal to operate at 9600 baud, 8 data bits, no parity, and 1 stop bit.

3. At the privileged EXEC prompt (r*outer_name* #), enter the **show version** command to display the existing configuration register value (shown in bold at the bottom of this output example):
4. Record the setting of the configuration register.
5. To enable the break setting (indicated by the value of bit 8 in the configuration register), enter the **config-register 0x01** command from privileged EXEC mode.

DETAILED STEPS

Procedure

Step 1 Connect an ASCII terminal or a PC running a terminal emulation program to the CONSOLE port on the Fthe router.

Step 2 Configure the terminal to operate at 9600 baud, 8 data bits, no parity, and 1 stop bit.

Step 3 At the privileged EXEC prompt (r*outer_name* #), enter the **show version** command to display the existing configuration register value (shown in bold at the bottom of this output example):

Example:

```
Router# show version
.
.
.



Suite License Information for Module:'esg'

--------------------------------------------------------------------------------
Suite                 Suite Current         Type           Suite Next reboot
--------------------------------------------------------------------------------
FoundationSuiteK9     None                  None           None
securityk9
appxk9


Technology Package License Information:

------------------------------------------------------------------
Technology    Technology-package           Technology-package
              Current       Type           Next reboot
------------------------------------------------------------------
appxk9           None             None             None
securityk9       None             None             None
ipbase           ipbasek9         None             ipbasek9

cisco C1111-8PLTELAWN (1RU) processor with 1464345K/6147K bytes of memory.
Processor board ID FGL212392WT
8 Virtual Ethernet interfaces
11 Gigabit Ethernet interfaces
2 Cellular interfaces
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
6762495K bytes of flash memory at bootflash:.
7855044K bytes of USB flash at usb0:.
0K bytes of WebUI ODM Files at webui:.

Configuration register is 0x2100
```

```
Router#
```

Step 4 Record the setting of the configuration register.

Step 5 To enable the break setting (indicated by the value of bit 8 in the configuration register), enter the **config-register 0x01** command from privileged EXEC mode.

- Break enabled—Bit 8 is set to 0.
- Break disabled (default setting)—Bit 8 is set to 1.

Reset the Router

To reset the router, follow these steps:

SUMMARY STEPS

1. If break is disabled, turn the router off (O), wait 5 seconds, and turn it on (|) again. Within 60 seconds, press the **Break** key. The terminal displays the ROM monitor prompt.
2. Press break. The terminal displays the following prompt:
3. Enter **confreg 0x142** to reset the configuration register:
4. Initialize the router by entering the **reset** command:
5. Enter **no** in response to the prompts until the following message is displayed:
6. Press **Return**. The following prompt appears:
7. Enter the enable command to enter enable mode. Configuration changes can be made only in enable mode:
8. Enter the **show startup-config** command to display an enable password in the configuration file:

DETAILED STEPS

Procedure

Step 1 If break is disabled, turn the router off (O), wait 5 seconds, and turn it on (|) again. Within 60 seconds, press the **Break** key. The terminal displays the ROM monitor prompt.

Note
Some terminal keyboards have a key labeled *Break* . If your keyboard does not have a Break key, see the documentation that came with the terminal for instructions on how to send a break.

Step 2 Press break. The terminal displays the following prompt:

Example:

```
rommon 2>
```

Step 3 Enter **confreg 0x142** to reset the configuration register:

Example:

```
rommon 2> confreg 0x142
```

Step 4 Initialize the router by entering the **reset** command:

Example:

```
rommon 2> reset
```

The router cycles its power, and the configuration register is set to 0x142. The router uses the boot ROM system image, indicated by the system configuration dialog:

Example:

```
--- System Configuration Dialog ---
```

Step 5 Enter **no** in response to the prompts until the following message is displayed:

Example:

```
Press RETURN to get started!
```

Step 6 Press **Return**. The following prompt appears:

Example:

```
Router>
```

Step 7 Enter the enable command to enter enable mode. Configuration changes can be made only in enable mode:

Example:

```
Router> enable
```

The prompt changes to the privileged EXEC prompt:

Example:

```
Router#
```

Step 8 Enter the **show startup-config** command to display an enable password in the configuration file:

Example:

```
Router# show startup-config
```

What to do next

If you are recovering an enable password, do not perform the steps in the Reset the Password and Save Your Changes section. Instead, complete the password recovery process by performing the steps in the Reset the Configuration Register Value section.

If you are recovering an enable secret password, it is not displayed in the **show startup-config** command output. Complete the password recovery process by performing the steps in the Reset the Password and Save Your Changes section.

Reset the router

To reset the router, follow these steps:

SUMMARY STEPS

1. If break is disabled, turn the router off (O), wait 5 seconds, and turn it on (|) again. Within 60 seconds, press the **Break** key. The terminal displays the ROM monitor prompt.
2. Press break. The terminal displays the following prompt:
3. Enter **confreg 0x142** to reset the configuration register:
4. Initialize the router by entering the **reset** command:
5. Enter **no** in response to the prompts until the following message is displayed:
6. Press **Return**. The following prompt appears:
7. Enter the enable command to enter enable mode. Configuration changes can be made only in enable mode:
8. Enter the **show startup-config** command to display an enable password in the configuration file:

DETAILED STEPS

Procedure

Step 1 If break is disabled, turn the router off (O), wait 5 seconds, and turn it on (|) again. Within 60 seconds, press the **Break** key. The terminal displays the ROM monitor prompt.

Note
Some terminal keyboards have a key labeled *Break* . If your keyboard does not have a Break key, see the documentation that came with the terminal for instructions on how to send a break.

Step 2 Press break. The terminal displays the following prompt:

Example:

```
rommon 2>
```

Step 3 Enter **confreg 0x142** to reset the configuration register:

Example:

```
rommon 2> confreg 0x142
```

Step 4 Initialize the router by entering the **reset** command:

Example:

```
rommon 2> reset
```

The router cycles its power, and the configuration register is set to 0x142. The router uses the boot ROM system image, indicated by the system configuration dialog:

Example:

```
--- System Configuration Dialog ---
```

Step 5 Enter **no** in response to the prompts until the following message is displayed:

Example:

```
Press RETURN to get started!
```

Step 6 Press **Return**. The following prompt appears:

Example:

```
Router>
```

Step 7 Enter the enable command to enter enable mode. Configuration changes can be made only in enable mode:

Example:

```
Router> enable
```

The prompt changes to the privileged EXEC prompt:

Example:

```
Router#
```

Step 8 Enter the **show startup-config** command to display an enable password in the configuration file:

Example:

```
Router# show startup-config
```

What to do next

If you are recovering an enable password, do not perform the steps in the Reset the Password and Save Your Changes section. Instead, complete the password recovery process by performing the steps in the Reset the Configuration Register Value section.

If you are recovering an enable secret password, it is not displayed in the **show startup-config** command output. Complete the password recovery process by performing the steps in the Reset the Password and Save Your Changes section.

Reset the password and save your changes

To reset your password and save the changes, follow these steps:

SUMMARY STEPS

1. Enter the **configure terminal** command to enter global configuration mode:
2. Enter the **enable secret** command to reset the enable secret password in the router:
3. Enter **exit** to exit global configuration mode:
4. Save your configuration changes:

DETAILED STEPS

Procedure

Step 1 Enter the **configure terminal** command to enter global configuration mode:

Example:

```
Router# configure terminal
```

Step 2 Enter the **enable secret** command to reset the enable secret password in the router:

Example:

```
Router(config)# enable secret
password
```

Step 3 Enter **exit** to exit global configuration mode:

Example:

```
Router(config)# exit
```

Step 4 Save your configuration changes:

Example:

```
Router# copy running-config startup-config
```

Reset the configuration register value

To reset the configuration register value after you have recovered or reconfigured a password, follow these steps:

SUMMARY STEPS

1. Enter the **configure terminal** command to enter global configuration mode:
2. Enter the **configure register** command and the original configuration register value that you recorded.
3. Enter **exit** to exit configuration mode:
4. Reboot the router, and enter the recovered password.

DETAILED STEPS

Procedure

Step 1 Enter the **configure terminal** command to enter global configuration mode:

Example:

```
Router# configure terminal
```

Step 2 Enter the **configure register** command and the original configuration register value that you recorded.

Example:

```
Router(config)# config-reg
value
```

Step 3 Enter **exit** to exit configuration mode:

Example:

```
Router(config)# exit
```

Note
To return to the configuration being used before you recovered the lost enable password, do not save the configuration changes before rebooting the router.

Step 4 Reboot the router, and enter the recovered password.