CHAPTER 6

Troubleshooting

If you encounter problems with your Cisco 1800 series fixed-configuration router, use the information in this chapter to isolate problems in the router or to eliminate the router as the source of the problem.

This document includes the following sections:

If you cannot locate the source of the problem, contact a customer service representative for information on how to proceed. For technical support information, see the "Obtaining Documentation and Submitting a Service Request" section of the Preface. Before you call the Cisco Technical Assistance Center (TAC), 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 new chassis
- Brief description of the problem
- Brief explanation of the steps you have taken to isolate the problem

Solving Problems

The key to solving problems is to isolate each problem to a specific subsystem by comparing what the router is doing to what it should be doing.

Observing the LED indicators on the front and back panels of the router can help you determine router performance and operation. See the following sections:

When solving problems, consider the following router subsystems:

- Power and cooling systems—External power source, power cable, router power supply and circuit breaker, and router blower and fan. Also consider inadequate ventilation or air circulation.
- Cables—External cables that connect the router to the network.

Troubleshooting the Power and Cooling Systems

Both the system LED and the fans can help you troubleshoot a power problem. To attempt to isolate the problem, check the items identified in the sections that follow.

Normal Indications

With the power switch on, the normal indications are:

- SYS OK LED on green and continuous
- Fans operating
- POE LED on green and continuous if the inline power supply is installed

Fault Indications

Check the following symptoms to locate or eliminate faults in the power and cooling systems:

- With the power switch on, is the SYS OK LED on?
  - If the LED is green and continuous, the router is receiving power and is functional.
  - If the LED is off, check the power source and power cable.
- With the power switch on and the SYS OK LED on and green, do the fans operate?
  - If no, check the fans.
  - If yes, the power system is functioning.
- Does the router shut down after being on a short time?
  - Check for an environmentally induced shutdown. See the "Environmental Reporting Features" section on page 6-2.
  - Check the environmental site requirements in the "General Site Requirements" section on page 2-4.
  - Check for a power supply failure by inspecting the SYS OK LED on the front panel. If the LED is green, the power supply is functional.
- Does the router partially boot, but the LEDs do not come on?
  - Check for a power supply failure by inspecting the SYS OK LED on the front panel of the router. If the SYS OK LED is blinking or continuous green, the power supply is functional.
  - If the SYS OK LED is not on, see the "Cisco One-Year Limited Hardware Warranty Terms" section of the Preface for warranty information, or contact customer service.

Environmental Reporting Features

The following system messages indicate environmental problems:

- If the router is operating at an abnormally high temperature, the following message is displayed on the console screen:

  ```
  %SYS-1-OVERTEMP: System detected OVERTEMPERATURE condition. Please resolve cooling
  problem immediately!
  ```

  Some causes of abnormally high router temperature are as follows:

  - Fan failure
  - Air conditioner failure in the room
  - Blocked cooling vents

  Take steps to correct the problem. Also see the "Site Environment" section on page 2-4.

- If the fan is not rotating at the desired speed, the following message is displayed on the console screen:

  ```
  %ENVMON-3-FAN_FAILED: Fan not rotating.
  ```

  Make sure that the fan power cable is properly attached to the mainboard fan power connector. If the problem persists, contact your technical support representative.

Troubleshooting Cables and Connections

Network problems can be caused by cables or cable connections, or by external devices such as a modem, transceiver, hub, wall jack, WAN interface, or terminal. Check for the following symptoms to help isolate the problem:

- The interface ports do not initialize.
  - Check external cable connections.
- The router does not boot properly, or it constantly or intermittently reboots.
  - Check the router chassis or software. See the "Cisco One-Year Limited Hardware Warranty Terms" and the "Obtaining Documentation and Submitting a Service Request" sections of the Preface for warranty and customer service contact information.
- The router boots, but the console screen is frozen, it displays no output, or it displays garbled output.
  - Check the external console connection.
  - Verify that the parameters for your terminal are set as follows:

    (a) The same data rate as configured for the router (9600 baud is the default)

    (b) 8 data bits

    (c) 1 stop bit

    (d) No parity generated or checked
- The router powers on and boots only when a particular cable is disconnected.
  - There may be a problem with the module or cable. See the "Cisco One-Year Limited Hardware Warranty Terms" and the "Obtaining Documentation and Submitting a Service Request" sections of the Preface for warranty and customer service contact information.

Reading System LEDs

Check the system LEDs on the front panel of the router for information about the power, data packet activity, and CompactFlash activity. See Table 6-1.

Table 6-1 System LEDs on Cisco 1800 Series Fixed-Configuration Routers

LED Indicator	State	Meaning	Possible Causes and Corrective Actions
SYS OK	Off	If the fan is not running— • No output from the internal power supply.	Power is not switched on at the router. Power is not available from source. Faulty input power wires or connections. Failed power supply in the router.
		If the fan is running— • Router fault	Failure in one or more system board components. Contact Cisco technical support. See the "Obtaining Documentation and Submitting a Service Request" section of the Preface.
	Solid green	Router is receiving power, and the internal power supply is functional.	Normal indication. No action is required.
	Blinking green	During bootup, router is booting up normally.	Normal indication. No action is required.
		After bootup, router is operating in ROM monitor mode.	See the router rebooting and ROM monitor information in the *Cisco IOS Configuration Fundamentals Configuration Guide* for your Cisco IOS software release.
POE[1]	Off	Inline power is not installed.	No action is required.
	Solid green	Inline power is functional.	Normal indication. No action is required for inline power supply.
	Solid amber	Inline power output has failed.	Replace inline power supply. See the "Installing the Optional Inline Power Supply" section on page 7-5.
CF	Off	The CompactFlash memory is not being accessed.	Normal indication. No action is required. The CompactFlash memory card can be removed if the CF LED remains off.
	Solid green or blinking	The CompactFlash memory is being accessed.	Normal indication. No action is required. Caution: Do not remove the CompactFlash memory card while it is being accessed.

1. Inline power is a field-upgradable option on Cisco 1800 series fixed-configuration routers, and is not installed by default.

Reading Port and Connection LEDs

Check the port and connection LEDs to determine router performance and operation. See Table 6-2.

Table 6-2 Port and Connection Indicators on Cisco 1800 Series Fixed-Configuration Routers

LED Indicator	State	Meaning	Corrective Action
FE*x*	Off	The Ethernet interface next to the LED is not receiving packets.	Ethernet is not active or is not connected. Check Ethernet connections and make corrections as necessary. Router is not configured properly. Check configuration and make corrections as necessary.
	Solid or blinking green	The Ethernet interface next to the LED is receiving packets.	Normal indication. No action is required.
CD[1] (on Cisco 1801, Cisco 1802, and Cisco 1803 routers)	Off	No DSL connection is established.	Normal indication unless a DSL connection is required. If a DSL connection is expected, check DSL connections and make corrections as necessary. Router is not configured properly. Check configuration and make corrections as necessary.
	Green	DSL connection is established.	Normal indication. No action is required.
CD[1] (on Cisco 1811 routers)	Off	No analog modem connection is established.	Normal indication unless a modem connection is required. If a modem connection is expected, check modem connections and make corrections as necessary. Router is not configured properly. Check configuration and make corrections as necessary.
	Green	Analog modem connection is established.	Normal indication. No action is required.
LPBK[2]	Off	DSL interface is operating in normal mode.	Normal indication. No action is required.
	Green	DSL interface is in loopback mode.	—
LINK[3]	Off	No ISDN BRI S/T connection is established.	Normal indication unless an ISDN BRI connection is required. If an ISDN BRI connection is expected, check ISDN BRI S/T connections and make corrections as necessary. Router is not configured properly. Check configuration and make corrections as necessary.
	Green	An ISDN BRI S/T D channel connection is established.	Normal indication. No action is required.
B1[3]	Blinking green	Activity on the first B channel.	Indication is for information only.
B2[3]	Blinking green	Activity on the second B channel.	Indication is for information only.

Table 6-2 Port and Connection Indicators on Cisco 1800 Series Fixed-Configuration Routers (continued)

LED Indicator	State	Meaning	Corrective Action
SPD[4]	Green	Connection running at high speed (V.90)	Indication is for information only.
	Off	Connection running at low speed (V.32/V.32b/V.34)	Indication is for information only.
BUSY[4]	Blinking green	Activity on the analog modem connection	Indication is for information only.

1. This LED does not exist on Cisco 1812 routers.
2. This LED exists on Cisco 1801, Cisco 1802, and Cisco 1803 routers only.
3. This LED does not exist on Cisco 1811 routers.
4. This LED exists on Cisco 1811 routers only.

System Messages

This section describes system and recovery messages that may appear during operation of a Cisco 1800 series fixed-configuration router. Cisco IOS software displays system error and recovery messages on an external device console terminal screen. (For more information, see the "Connecting to a Console Terminal or Modem" section on page 4-5.)

The terminal should display one of the following prompts:

`Router>` (indicates the user EXEC command mode)

or

`Router#` (indicates the privileged EXEC command mode)

The Cisco IOS software checks the system condition once every 30 seconds. If the condition still exists, the error message appears again; if the error condition has cleared, a recovery message appears.

Table 6-3 describes system error and recovery messages and the LED conditions that might accompany them.

Table 6-3 System Error and Recovery Messages

LED Type	LED Color	Message, Meaning, and Recommended Action
—	—	Error: `%ENVMON-3-FAN_FAILED: Fan not rotating.` Explanation: The fan is not rotating at the desired speed. Recovery: Make sure that the fan power cable is properly attached to the system board fan power connector. If the problem persists, contact your technical support representative.
—	—	Message: `%ENVMON-1-NO_PROCESS: Failed to create environmental monitor process` Explanation: The router failed to establish the environmental monitor process. The amount of memory available in the router may not be sufficient. Recommended action: Increase the amount of memory (RAM) in the router.

Recovering a Lost Password

You can recover a lost enable password. However, an enable secret password is encrypted and is not recoverable. If you lose an enable secret password that is configured on your router, you can replace it with a new enable secret password.

For password recovery and replacement procedures for the Cisco 1800 series fixed-configuration routers, see the *Password Recovery Procedures* document on Cisco.com.

More Troubleshooting Help—Cisco Technical Assistance Center

For online troubleshooting help, go to the TAC Case Collection Tool and Troubleshooting Assistant.

You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.