



Troubleshooting

Your Cisco 3700 series router goes through extensive testing and burn-in before leaving the factory. If you encounter problems, use the information in this appendix to help isolate problems or to eliminate the router as the source of the problem.

This appendix includes the following sections:

- [Solving Problems, page A-2](#)
- [Reading Front-Panel LEDs, page A-4](#)
- [Reading Rear Panel LEDs, page A-6](#)
- [Error Messages, page A-8](#)
- [Recovering a Lost Password, page A-12](#)



Note

To troubleshoot a network module, see the online [Cisco Network Modules Hardware Installation Guide](#); to troubleshoot interface cards, see the online [Cisco Interface Cards Installation Guide](#).

If you cannot locate the source of the problem, contact a customer service representative for information on how to proceed. For information about obtaining technical support, see the “[Obtaining Technical Assistance](#)” section on [page xvii](#). Before you call, 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 the problem to a specific subsystem by comparing what the router is doing to what it should be doing.

The LEDs on the front and rear panel of the router enable you to determine router performance and operation. LEDs are described in the following sections:

- [Reading Front-Panel LEDs, page A-4](#)
- [Reading Rear Panel LEDs, page A-6](#)

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.
- Modules—LEDs on the modules help identify a failure.
- 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. Check the following items to help isolate the problem:

- With the power switch on, does the system LED stay on or blink?
 - If the LED is green, the router is receiving power and is functional.
 - If the LED is amber, the router is receiving power but is not functional.
 - If the LED is off, check the power source and power cable.
- With the power switch on and the system LED on, do the fans operate?
 - If no, check the fans.
- With the power switch on and the system LED off, do the fans operate?
 - If yes, the router is receiving power. The fans are connected directly to the DC outputs of the power supply.
 - If no, check the power source and power cable.
- Does the router shut down after being on for a short time?
 - Check for an environmentally induced shutdown. See the next section, “[Environmental Reporting Features](#).”
 - Check the environmental site requirements in the “[General Site Requirements](#)” section on [page 2-3](#).
 - Check for a power supply failure by inspecting the system and power supply LEDs on the front panel. If they are green, the power supplies are functional.

- Router partially boots, but LEDs do not go on.
 - Check for a power supply failure by inspecting the system LED on the front panel of the router. If the system LED is on, the power supply is functional.
 - If the system LED is not on, see the [“Obtaining Technical Assistance”](#) section on page xvii for information about customer service.
 - Check for a power supply failure by inspecting the power supply LEDs on the front panel. See the [“Reading Front-Panel LEDs”](#) section on page A-4 for power supply LED descriptions.

Environmental Reporting Features

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
- Air blockage to cooling vents

Take steps to correct the problem. See also the [“Site Environment”](#) section on page 2-4 and the [“Equipment Racks”](#) section on page 2-4.

Troubleshooting Modules, Cables, and Connections

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

- Module is not recognized by the router.
 - Make sure that the module is firmly seated in its slot.
 - Check the LEDs on the module. Each module has its own set of LEDs. For information on these LEDs, see the online [Cisco Network Modules Hardware Installation Guide](#).
 - Make sure you have a version of Cisco IOS software that supports the module. Check the online [Software Configuration Guide for Cisco 2600, Cisco 3600, and Cisco 3700 Series Routers](#) or accompanying configuration note for software requirements for the network module.
- Module is recognized, but interface ports do not initialize.
 - Make sure that the module is firmly seated in its slot.
 - Check external cable connections.
 - Make sure that you have a version of Cisco IOS software that supports the network module and interface card. Check the [Cisco Network Modules Hardware Installation Guide](#) and the [Cisco Interface Cards Hardware Installation Guide](#) or accompanying configuration notes for the affected network module and interface card software requirements.

- Router does not boot properly, or constantly or intermittently reboots.
 - Make sure that all modules are firmly seated in their slots.
 - Check the router chassis or software. See the [“Obtaining Technical Assistance”](#) section on page xvii for information about customer service.
- Router boots, but the console screen is frozen.
 - 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) No parity generated or checked
 - (d) 2 stop bits
- Router powers on and boots only when a particular module is removed.
 - Check the module. See the [“Obtaining Technical Assistance”](#) section on page xvii for information about customer service.
- Router powers on and boots only when a particular cable is disconnected.
 - There may be a problem with the module or cable. See the [“Obtaining Technical Assistance”](#) section on page xvii for information about customer service.

Reading Front-Panel LEDs

The LEDs on the front panel of the router enable you to determine router performance and operation. [Figure A-1](#) and [Figure A-2](#) show the LEDs on the front panel of the router. For an explanation of these LEDs see [Table A-1](#) and [Table A-2](#).

Figure A-1 Cisco 3725 Router Front-Panel LEDs

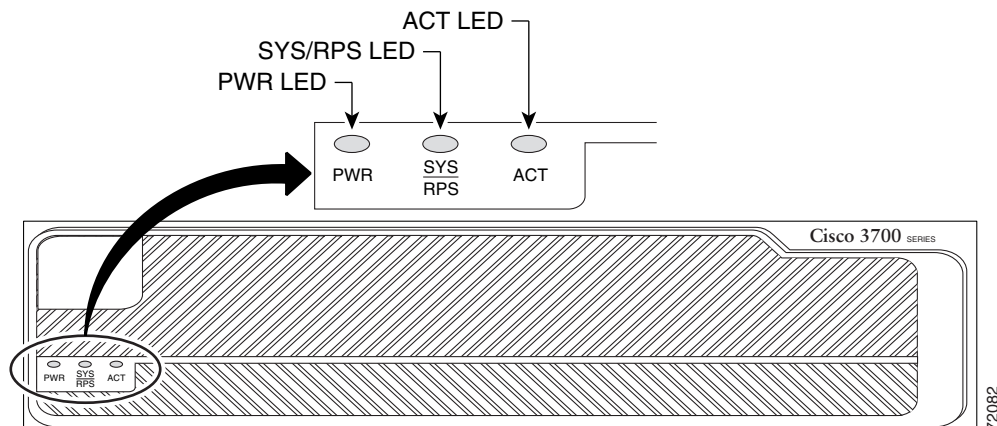


Table A-1 Cisco 3725 Router Front-Panel Indicators

LED Indicator	State	Description
PWR	Off	Router is not receiving power.
	Solid green	Router is receiving power.
SYS/RPS	Off	Router is not receiving power.
	Rapid blinking	System is booting up or in ROM monitor mode.
	Blinking once per second	Redundant power system has failed.
	Solid green	System is operating normally.
ACT	Off	No packet transfers are occurring.
	Blinking	System is actively transferring packets.

Figure A-2 Cisco 3745 Router Front-Panel LEDs

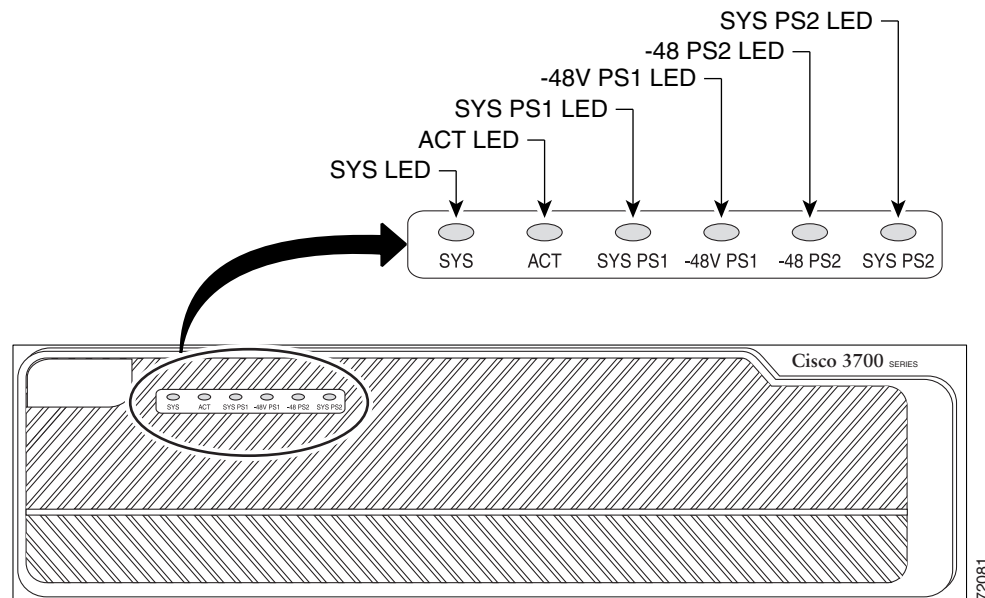


Table A-2 Cisco 3745 Router Front-Panel Indicators

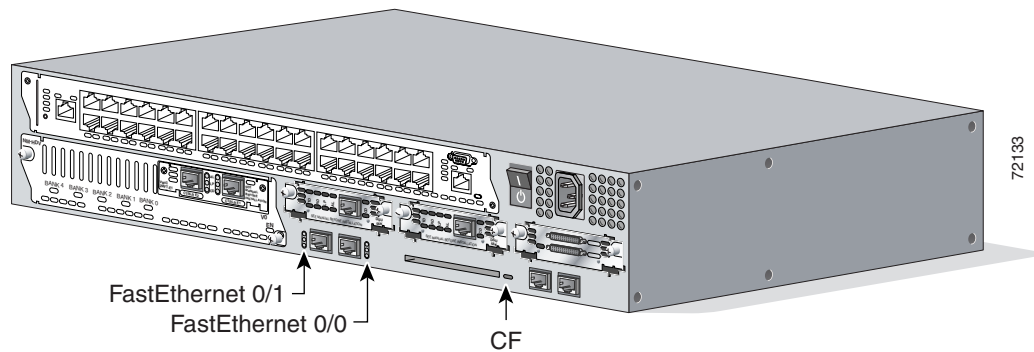
LED Indicator	State	Description
SYS	Off	Router is not receiving power.
	Blinking green	Running ROM monitor with no errors detected.
	Solid green	Router is operating normally.
	Amber	Router is receiving power but malfunctioning.
ACT	Off	No interrupts or packet transfers occurring.
	Solid or blinking green	System is receiving interrupts, or is actively transferring packets.

Table A-2 Cisco 3745 Router Front-Panel Indicators

LED Indicator	State	Description
SYS PS1 and SYS PS2	Off	Power supply not present, or failed.
	Solid green	Power supply installed and operating normally.
	Amber	Power supply installed and powered off, or fault condition detected.
-48V PS1 and -48V PS2	Off	-48-V power module not present, or failed.
	Solid green	-48-V power module installed and operating normally.
	Amber	-48-V power module installed and powered off, or fault condition detected.

Reading Rear Panel LEDs

The LEDs on the rear panel of the router enable you to determine router performance and operation. [Figure A-3](#) and [Figure A-4](#) show the LEDs on the rear panel of the router. For an explanation of these LEDs, see [Table A-3](#) and [Table A-4](#).

Figure A-3 Cisco 3725 Router Rear-Panel LEDs**Table A-3 Cisco 3725 Router Rear-Panel Indicators**

LED Indicator	State	Description
CF	Off	CompactFlash (CF) memory card can be ejected; device is idle.
	Solid or blinking green	Do not eject the CF; it is busy.
Fast Ethernet 0/0 ACT and Fast Ethernet 0/1 ACT	Off	Interface not receiving packets.
	Solid or blinking green	Interface receiving packets.
Fast Ethernet 0/0 LINK and Fast Ethernet 0/1 LINK	Off	No link established.
	Solid green	Link is established.

Table A-3 Cisco 3725 Router Rear-Panel Indicators (continued)

LED Indicator	State	Description
Fast Ethernet 0/0 100Mbps and Fast Ethernet 0/1 100Mbps	Off	10-Mbps communication speed attained, or no link established.
	Solid green	100-Mbps communication speed attained.

Figure A-4 Cisco 3745 Router Rear-Panel LEDs

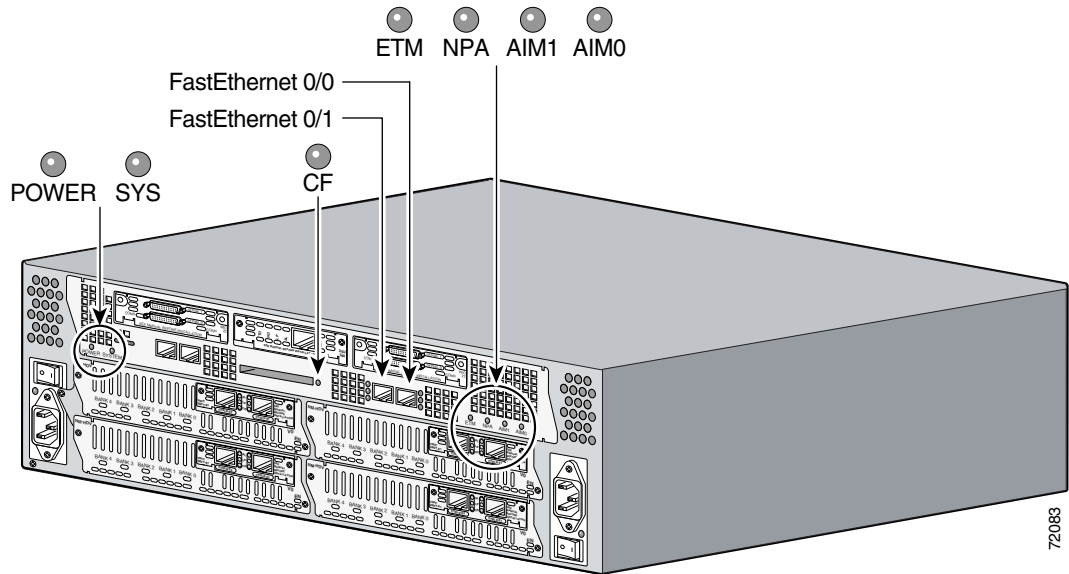


Table A-4 Cisco 3745 Router Rear-Panel Indicators

LED Indicator	State	Description
POWER	Off	An error condition is detected in the operating ranges.
	Solid green	Operating voltages on mainboard are within acceptable ranges.
SYS	Off	Router not receiving power.
	Blinking green	Router running ROM monitor; no errors detected.
	Solid green	Router operating normally.
CF	Amber	Router receiving power but malfunctioning.
	Off	CF can be ejected; device is idle.
Fast Ethernet 0/0 ACT and Fast Ethernet 0/1 ACT	Solid or blinking green	Do not eject CF; device is busy.
	Off	Interface not receiving packets.
Fast Ethernet 0/0 LINK and Fast Ethernet 0/1 LINK	Solid or blinking green	Interface receiving packets.
	Off	No link established.
Fast Ethernet 0/0 100Mbps and Fast Ethernet 0/1 100Mbps	Solid green	Link is established.
	Off	10-Mbps communication speed attained, or no link established.
	Solid green	100-Mbps communication speed attained.

Table A-4 Cisco 3745 Router Rear-Panel Indicators (continued)

LED Indicator	State	Description
ETM	Off	Enhanced timing module (ETM) not present.
	Amber	ETM present with failure.
	Solid green	ETM present and enabled.
NPA	Not used	Reserved for future development.
AIM0 and AIM1	Off	Advanced integration module (AIM) not present.
	Amber	AIM present with failure.
	Solid green	AIM present and enabled.

Error Messages

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 3-22.)

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 A-5](#) describes system error and recovery messages and LED conditions that might accompany them.



Note

[Table A-5](#) does not provide a complete list of system LED conditions. (For all LED conditions that can occur in your router, see the [“Reading Front-Panel LEDs”](#) section on page A-4 and the [“Reading Rear Panel LEDs”](#) section on page A-6.)

Table A-5 System Error and Recovery Messages

LED Type	LED Color	Message
—	—	<p>Error:</p> <pre>%INITSYS-1-PS:</pre> <p>Explanation:</p> <p>The router failed to establish the environmental monitor process. This error is probably due to insufficient memory.</p> <p>Recovery:</p> <p>Add memory to the router.</p>
System	Amber	<p>Error:</p> <pre>%SYS-1-OVERTEMP: System detected OVERTEMPERATURE condition. Please resolve cooling problem immediately!</pre> <p>Explanation:</p> <p>The router is operating at an abnormally high temperature possibly caused by one or more of the following conditions:</p> <ul style="list-style-type: none"> • Fan failure • Air conditioner failure in the room • Air blockage to cooling vents <p>Recovery:</p> <p>Check the possible causes. See also the “Site Environment” section on page 2-4 and the “Equipment Racks” section on page 2-4.</p> <p>When the error condition is resolved, the following informational message appears:</p> <pre>%OVERTEMP_OK, PS, LOG_ERR, 0: System temperature is now normal.</pre>
System	Amber	<p>Error:</p> <pre>%THERMAL-3-PS: System detected Power System # THERMAL FAIL condition.</pre> <p>Explanation:</p> <p>The operating temperature of the specified power supply (1 or 2) exceeded the acceptable range possibly caused by one or more of the following conditions:</p> <ul style="list-style-type: none"> • Fan failure • Air conditioner failure in the room • Air blockage to cooling vents <p>Recovery:</p> <p>Check the possible causes. If you need to replace the Cisco 3745 fan assembly, see the Installing Field-Replaceable Units in Cisco 3745 Routers hardware configuration note.</p> <p>When the error condition is resolved, the following informational message appears:</p> <pre>%THERMOK-3-PS: Power System THERMAL condition is now normal.</pre>

Table A-5 System Error and Recovery Messages (continued)

LED Type	LED Color	Message
PS1, PS2, LED on power supply rear panel	Amber	<p>Error:</p> <pre>%PS-3-DCOUTPUTVOLTFAIL: System detected Power System # DC FAIL condition.</pre> <p>Explanation:</p> <p>The cable connected to the specified DC power supply (1 or 2) is loose, or the DC power supply has failed.</p> <p>Recovery:</p> <ol style="list-style-type: none"> 1. Check the power supply LEDs to identify the faulty unit. 2. Power down the faulty power supply and circuit breaker. 3. Check that cables are seated properly and terminal blocks are wired correctly. 4. Power up the circuit breaker and the power supply. 5. If the error condition persists, replace the power supply. (For Cisco 3745 routers, see the Installing Field-Replaceable Units in Cisco 3745 Routers hardware configuration note. For Cisco 3725 routers, see the Installing Universal DC Power Supplies in Cisco 3725 Routers hardware configuration note that shipped with the new power supply.) <p>When the error condition is resolved, the following informational message appears:</p> <pre>%PS-3-DCOUTPUTVOLTOK: Power System DC condition is now normal.</pre>
PS1, PS2, LED on power supply rear panel	Amber	<p>Error:</p> <pre>%PS-3-INPUTVOLTFAIL: System detected Power System # AC FAIL condition.</pre> <p>Explanation:</p> <p>The cable connected to the specified AC power supply (1 or 2) is loose, or the AC power supply has failed.</p> <p>Recovery:</p> <ol style="list-style-type: none"> 1. Check the power supply LEDs to identify the faulty unit. 2. Power down the faulty power supply. 3. Check that the power cables are seated properly. 4. Power up the power supply. 5. If the error condition persists, replace the power supply. (For Cisco 3745 routers, see the Installing Field-Replaceable Units in Cisco 3745 Routers hardware configuration note. For Cisco 3725 routers, see the Installing AC Power Supplies in Cisco 3725 Routers hardware configuration note that shipped with the new power supply.) <p>When the error condition is resolved, the following informational message appears:</p> <pre>%PS-3-INPUTVOLTOK: Power System AC condition is now normal.</pre>

Table A-5 System Error and Recovery Messages (continued)

LED Type	LED Color	Message
System PS1, PS2, LED on power supply rear panel	Amber Amber	<p>Error:</p> <pre>%PS-3-MULTFAIL: There is more than one failure with the Power System #; please resolve problems immediately.</pre> <p>Explanation:</p> <p>The specified power supply (1 or 2) has experienced multiple failures. This is a critical condition that must be resolved immediately.</p> <p>Recovery:</p> <ol style="list-style-type: none"> 1. Check the power supply LEDs to identify the faulty unit. 2. Power down the faulty power supply and circuit breaker (for a DC power supply). 3. Check that cables are seated properly and terminal blocks are wired correctly. 4. Power up the circuit breaker (for a DC power supply) and the power supply. 5. If the error condition persists, replace the power supply. See the instructions that ship with the new power supply.) <p>When the error condition is resolved, the following informational message appears:</p> <pre>%PS-3-PSOK: Power System is now normal.</pre>
—	—	<p>Error:</p> <pre>%FAN-3-FAN_FAILED: Fan # had a rotation error reported.</pre> <p>Explanation:</p> <p>The specified fan is not rotating at the desired speed.</p> <p>Recovery:</p> <p>Replace the fan cage as described in the Installing Field-Replaceable Units in Cisco 3745 Routers hardware configuration note.</p> <p>When the error condition is resolved, the following informational message appears:</p> <pre>%FAN-3-FAN_OK: Fan # had earlier reported a rotation error. It is ok now.</pre>
—	—	<p>Error:</p> <pre>%OIR-6-REMCARD: Card removed from slot x, interfaces disabled.</pre> <p>Explanation:</p> <p>The online insertion and removal (OIR) function detected the removal of a network module processor from the specified chassis slot. The interfaces on that processor are administratively shut down and removed. In addition, the routing table is flushed of any routes through the removed interfaces.</p> <p>For more information, see the online Cisco Network Modules Hardware Installation Guide.</p> <p>This is an informational message that does not require any recovery procedure.</p>

Table A-5 System Error and Recovery Messages (continued)

LED Type	LED Color	Message
—	—	<p>Error:</p> <p>%OIR-6-INSCARD: Card inserted in slot x, interfaces administratively shut down.</p> <p>Explanation:</p> <p>The OIR function detected the insertion of a network module processor in the specified chassis slot. The interfaces on that processor are administratively shut down until configured, or if an interface of that type was previously configured, it is restored to its previous state.</p> <p>For more information, see the online Cisco Network Modules Hardware Installation Guide.</p> <p>This is an informational message that does not require any recovery procedure.</p>
—	—	<p>Error:</p> <p>%OIR-3-SEATED: Insert/removal failed for slot x, check card seating.</p> <p>Explanation:</p> <p>The OIR function detected an incorrectly seated network module in the specified chassis slot.</p> <p>For more information, see the online Cisco Network Modules Hardware Installation Guide.</p> <p>Recovery:</p> <p>Remove and reinstall the network module in the indicated slot.</p>
—	—	<p>Error:</p> <p>%CIRRUS-4-DOWNREV_NM: Network Module card in slot x is incompatible with the system.</p> <p>Explanation:</p> <p>The network module card in the specified slot is incompatible and must be upgraded to operate in the router.</p> <p>For more information, see the online Cisco Network Modules Hardware Installation Guide.</p> <p>Recovery:</p> <p>Contact your technical support representative to upgrade your network module. (See the “Obtaining Technical Assistance” section on page xvii.)</p>

Recovering a Lost Password

You can recover a lost enable password, but 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 Cisco 3700 series routers, see the [Password Recovery Procedure for the Cisco 3700 Series Routers](#) document at the following URL:

http://www.cisco.com/warp/public/474/pswdrec_3700.html