Troubleshooting

The Cisco ASR 901 router undergoes extensive testing before it leaves 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 contains the following sections:

- Problem Solving, page A-1
- Reading the LEDs, page A-4

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 *Cisco Information Packet* publication that shipped with your router. 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 took to isolate the problem

Note Ensure you provide the customer service representative with any upgrade or maintenance information that was performed on the Cisco ASR 901 router after your initial installation (see Appendix C, "Site Log" for Site Log information.)

Problem Solving

To solve a problem, isolate the problem to a specific subsystem by comparing the current router activity to the expected router activity.

The LEDs on the front panel of the router enable you to determine router performance and operation. For a description of these LEDs, see "Reading the LEDs" section on page A-4.

When solving a problem, check the following router subsystems:

- Power and cooling systems—External power source, power cable, router power supply and circuit breaker, and router fans. Also check for inadequate ventilation or air circulation.
- Modules—Checking the LEDs on the modules can help you to identify a failure.

   • Cables—Ensure that the external cables connecting the router to the network are all secure.

Troubleshooting the Power and Cooling Systems

See Table A-1 for information to help you isolate the problem.

Table A-1   *Troubleshooting the Power and Cooling Systems*

Symptom	Possible Cause	Corrective Action
The power (labeled PWR) LED on the front panel is not on.	The power source is not connected properly. **Note** When the Cisco ASR 901 1G router (DC unit) is powered ON, it takes about 30 seconds for the system LED to turn ON.	Check the DC input. Check the DC source.
The router shut down after being on for only a short time.	The cause is environmental.	Check for an environmentally induced shutdown. (See "Environmental Reporting Features" section on page A-2).
	The fans do not work; the router overheats and shuts down.	Check the fans.
	The chassis intake and exhaust vents are obstructed.	Check the chassis intake and exhaust vents for obstructions. Clear any obstructions.
	Installation does not meet environmental site requirements.	Check the environmental site requirements in the "System Specifications" on page -7.
The router partially boots, but the LEDs do not light.	There is a possible power supply failure.	Check the power LED on the front panel of the router. If the LED is on, the power supply is functional. If the LED is off, refer to the *Cisco Information Packet* for warranty information or contact customer service.

Environmental Reporting Features

The Cisco ASR 901 router has a temperature sensor to detect over temperature conditions inside the chassis. The over temperature detection triggers an alert at 70°C. This condition is reported to the processor as an interrupt, where software takes action to generate the appropriate alarms. If the router reaches a temperature of 85°C, the power supply will cycle to prevent the router from exceeding that temperature while being powered up state. See Table A-2 for help in interpreting environmental reporting features.

Table A-2   Interpreting Environmental Reporting Features

Symptom	Possible Cause	Corrective Action
The router operates at an abnormally high temperature. The following message appears on the console screen: `%SYS-1-OVERTEMP: System detected OVERTEMPERATURE condition. Please resolve cooling problem immediately!`	There is a fan failure. There is an air conditioner failure in the room. The air flow to cooling vents is blocked.	Take corrective steps. For information about environmental operating conditions, see the System Specifications, page 1-7).

Troubleshooting Cables, and Connections

Network problems can be caused by a cable or cable connection, or external device such as a modem, transceiver, hub, wall jack, WAN interface, or terminal. See Table A-3 for information to help you isolate the problem.

Table A-3   Troubleshooting Cables, and Connections

Symptom	Possible Cause	Corrective Action
The router is experiencing network problems.	The router does not boot properly. The router constantly or intermittently reboots.	Check the router chassis or software. For warranty information, refer to the *Cisco Information Packet* publication that shipped with your router or contact customer service.
	The router boots, but the console screen is frozen.	Verify that the parameters for your terminal are set as follows: (a) The terminal should have the same data rate as the router (9600 bps is the default). (b) 8 data bits. (c) No parity generated or checked. (d) 2 stop bits.
	The router powers on and boots only when a particular cable is disconnected.	There may be a problem with the module or cable. For warranty information, refer to the *Cisco Information Packet* publication that shipped with your order or contact customer service.

Reading the LEDs

The following sections describe the LEDs on the Cisco ASR 901 router.

- Chassis LEDs
- T1/E1 Interface LEDs

Chassis LEDs

Table A-4 summarizes the LEDs on the chassis of the Cisco ASR 901 router. These LEDs are common to all versions of the Cisco ASR 901 router.

Table A-4   LED Summary

Copper GE ports (from GE/FE Quad PHY) contain will have Two LEDS each			
RJ-45 Link	Solid Green	PHY	Link with no activity
L	FLASH Green		Link with activity
	Off		No link
RJ-45 Speed	Green	PHY	Speed 1000
S	Off		off
T1/E1 ports contain Two LEDs each			
Alarm	Off	WP2	Not configured
AL	Yellow		Alarm Condition
Active	Off	WP2	Out of Service / Not configured
C	Green		Carrier Condition (all-ok)
Copper GE (from Quad combo PHY) ports contain Two LEDS each.			
RJ-45 Link	Solid Green	PHY	Link with no activity
L	FLASH Green		Link with activity
	Off		No link
RJ-45 Speed	Green	PHY	Speed 1000
S	Off		off
System LED			
System	Off	HP	No power or unit not boot-up
	Alternating Green/Off		POST in progress
	Solid Green		System Healthy (normal operation)
	Solid Red		System Faulty
SFP LED			
SFP Link-Active	Orange	HP	Link and Active Indicator
L-A	Off		Not Enabled

T1/E1 Interface LEDs

Table A-5 summarizes the LEDs on the T1/E1 interface (available only for A901-12C-FT-D and A901-4C-FT-D).

Table A-5   T1/E1 Port LEDs

LED	Color/State	Description (two LEDs for each T1/E1 port)
Active (labeled C, left LED)	Green	Carrier condition—operating without problem
	Yellow	Loop condition
	Off	Out of service or not configured
Alarm (labeled AL, right LED)	Yellow	Alarm condition
	Off	No alarm

SFP Ethernet Interface LEDs

Table A-6 gives information about the LEDs on the SFP interface.

Table A-6   SFP LEDs

LED	Color/State	Description
SFP Link/Active (labeled LINK ACT)	Orange	Link and active indicator
	Off	Link not enabled

RJ-45 Ethernet Interface LEDs

Table A-7 summarizes the LEDs on the RJ-45 Ethernet interface.

Table A-7   100/1000 Ethernet Port LEDs

LED	Color/State	Description (two LEDs for each 100/1000 Ethernet port)
100/1000 RJ-45 link (labeled L, left LED)	Solid Green	Link with no activity
	Flash Green	Link with activity
	Off	No link detected
100/1000 RJ-45 speed (labeled S, right LED)	Green	Speed 1000
	Yellow	Speed 100
	Off	Off