

# Hardware Troubleshooting

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This appendix contains procedures that help you troubleshoot physical problems with a Catalyst 2600 Token Ring Switch and its connections to other devices.

## Obtaining Service

There are no serviceable parts inside the Catalyst 2600. Do not remove the cover for any reason. The Catalyst 2600 and each Universal Feature Card (UFC) are individually replaceable.

## Summary of the Hardware Troubleshooting Process

If one or more devices (such as a computer) connected to an Catalyst 2600 are unable to communicate with other devices in the network, use the following steps to start the troubleshooting process:

- Step 1** Using the network sketch, the label on the cable connected to the device, or other network records, locate the Catalyst 2600 to which the device is connected.
- Step 2** If all troubled devices connect to a single UFC, use the UFC documentation to assist in troubleshooting.
- Step 3** If you have set up a console session (described in “Planning for Configuration and Management”), it can be used to determine whether diagnostics have been completed correctly. Refer to “Resetting the Catalyst 2600 and Running Diagnostic Tests” in “Managing Your Catalyst 2600.”
- Step 4** Observe the LEDs on the Catalyst 2600 front panel. Review “Understanding the LEDs” in this chapter before proceeding with the troubleshooting process.
- Step 5** Select a troubleshooting procedure as described in “Choosing a Troubleshooting Procedure”.

## Understanding the LEDs

Table C-1 lists the Catalyst 2600 status LEDs and their meanings.

**Table C-1 Catalyst 2600 Status LEDs and Their Meanings**

Led	Position	State	Meaning
Power (green)	Top	On	The power supply current is good.
		Off	The power supply current is bad.
OK (green)	Middle	On	The Catalyst 2600 is working correctly.
		Off	The Catalyst 2600 is not working correctly.
Fault (unlabeled) (Amber)	Bottom	On	A power-on failure has occurred
		Off	The Catalyst 2600 is working correctly.
		Blinking	Diagnostics are in progress.

Table C-2 lists the port LEDs and their meanings.

**Table C-2 Port LEDs and Their Meanings**

Led	Position	State	Meaning When On
Link (green)	Top	On	Connected
		Off	Disabled or faulty port, if the Catalyst 2600 Fault LED is on.
		Blinking	Attempting to connect.
FDX (green)	Middle	On	The port has been set to full-duplex mode.
		Off	The port has been set to half-duplex mode.
Tx/Rx (green)	Bottom		Data is being transmitted or received by the port.

## Choosing a Troubleshooting Procedure

Use Table C-3 to determine which troubleshooting procedure you should use.

**Table C-3 Symptom, LED State, and Recommended Procedure**

Symptom and LED State	Go to:
All of the LEDs are off.	Procedure A
The Fault (amber) LED is on or the OK LED is off.	Procedure B
None of the devices connected to the Catalyst 2600 can communicate, the Fault (amber) LED is off, and the Power LED is on.	Procedure C
A single device connected to the Catalyst 2600 is having trouble communicating.	Procedure D
A UFC's Fault (amber) LED is on or a device connected to a UFC is experiencing problems.	See the service and troubleshooting chapter in the UFC documentation.

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**Note** Segment refers to a single cable or interconnected cables between a Catalyst 2600 Token Ring port and the device at the other end.

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## Procedure A

Use this procedure if all LEDs are off:

- Step 1** Verify that the power cord is connected at both ends and that the power outlet is working.
- Step 2** If the power cord is connected correctly, the outlet is working, and the problem persists, the problem is in the Catalyst 2600. Contact the Cisco TAC.

## Procedure B

Use this procedure if the Fault LED (amber) is on.

- Step 1** Reset the Catalyst 2600 by disconnecting the power cord, waiting 10 seconds, and then reconnecting the cord. If the problem goes away, resume using the Catalyst 2600.
- Step 2** If you have just downloaded new software, clear NVRAM and reset the Catalyst 2600 using the instructions under “Resetting the Catalyst 2600 and Running Diagnostic Tests” in “Managing Your Catalyst 2600.”

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**Note** Clearing NVRAM returns all configuration parameters to their default values.

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- Step 3** Reset the Catalyst 2600 and monitor the diagnostic messages for individual port failures. Correct any individual port problems that are detected. If the failing ports are UFC ports, use the UFC documentation to try to correct the problem.
- Step 4** If the problem persists, the problem is in the Catalyst 2600. Contact the Cisco TAC.

## Procedure C

Use this procedure if all devices connected to the Catalyst 2600 have communication problems, the Catalyst 2600 fault LED is off, and the OK LED is on.

- Step 1** Reset the Catalyst 2600 by disconnecting power cord for 10 seconds.
- If the problem is corrected, resume using the Catalyst 2600.
  - If the box status LEDs indicate a failure, go to “Procedure B.”
  - If the problem persists, check all the configuration parameters.
  - If the problem continues, go to “Procedure D” to correct problems with the individual ports.

### Procedure D

Use this procedure if one device connected to the Catalyst 2600 is having a communication problem, the Catalyst 2600 fault LED is off, OK LED is on, and other attached devices can communicate through the Catalyst 2600.

**Step 1** Check the port LEDs.

- If the port Connect LED is on, the problem is probably external to the Catalyst 2600. Go to Step 2.
- If the port Connect LED is off, the port is probably disabled. Check that the port configuration matches the attached device, and then go to Step 3.
- If the port Connect LED is blinking, go to Step 4.

**Step 2** If the Connect LED on the failing port is on, and the attached device still cannot communicate:

- If the attached device is directly connected, it might be set up incorrectly. Go to Step 4.
- In a shared environment, check the segment cabling and the media access unit.
- If problem persists, try another identically configured port on the Catalyst 2600. If the new port works, there is a problem with the failed port. Contact the Cisco TAC.

**Step 3** Determine whether the port has been disabled:

- If the port is disabled, enable it. A port will disable itself when the Config Loss parameter is exceeded. This can be caused by poor cables, a faulty station connected to the Catalyst 2600, or a bad port on the Catalyst 2600.
- If the port is not disabled, disconnect the port cable. If the LED does not start flashing within a few seconds, the port is bad and the Catalyst 2600 needs service. Try moving the cable to another port with a flashing Connect LED until service can be arranged. If the Catalyst 2600 can be temporarily removed from service, connect a console and reset the Catalyst 2600 with diagnostics to see whether the port passes diagnostics and initializes. If it does not, the problem is in the Catalyst 2600. Contact the Cisco TAC.

**Step 4** Restart communications program on the failed connected device.

- If the communication program appears to start without errors, observe the Connect LED on the Catalyst 2600 port. If it is on, the problem may have been corrected. Check the Config Loss parameter in the Port Configuration Menu for possible causes of the failure.
- If problem persists, try another identically configured port on the Catalyst 2600. If the new port works there is a problem with the failed port. Obtain service. Contact the Cisco TAC.

**Step 5** If the Catalyst 2600 is connected to a Token Ring concentrator, perform the following steps:

- Verify that the Catalyst 2600 duplex setting matches the attached device.
- Verify that the concentrator is operating correctly.
- Verify that only one cable interconnects the two devices. In other words, only one port on the Catalyst 2600 should be connected to a port on the concentrator.

**Step 6** For each device that is having a communication problem, connect its segment to another Token Ring port on the Catalyst 2600. Try each of the remaining ports to determine whether the problem is in a particular port.

- If the problem is corrected by using a different port, the problem might be in the Catalyst 2600. Contact the Cisco TAC.
- If the problem persists, continue with the Step 7.

**Step 7** The problem does not appear to be in the Catalyst 2600, the cables, or the devices connected to the Catalyst 2600. The problem might be in the network applications or other software running on the devices that are having the communication problem. Refer to the software documentation for software problem determination procedures, or consult your network administrator.

