
# Troubleshooting

The front-panel LEDs provide troubleshooting information about the switch. They show power-on self-test (POST) failures, port-connectivity problems, and overall switch performance. For a full description of the LEDs, see the "LEDs" section on page 2-18.

You can also get statistics from the Cluster Management Suite (CMS), the command-line interface (CLI), the Cisco Intelligence Engine 2100 (IE2100) Series Configuration Registrar, or a Simple Network Management Protocol (SNMP) workstation. Refer to the switch software configuration guide, the switch command reference, or the documentation that came with your IE2100 or SNMP application for details.

This chapter provides these topics for troubleshooting problems:


- Understanding POST Results, page 4-2
- Diagnosing Problems, page 4-2

# Understanding POST Results

When the switch powers on, it automatically begins POST, a series of tests that verifies that the switch functions properly. When the switch begins POST, the system LED is off. If POST completes successfully, the system LED turns green. If POST fails, the system LED turns amber.

**Note** POST failures are usually fatal. Call Cisco Systems if your switch does not pass POST.

# Diagnosing Problems

Common switch problems fall into these categories:

- Poor performance
- No connectivity
- Corrupted software

Table 4-1 describes how to detect and solve these problems.

***Table 4-1 Common Problems and Solutions***

| Symptom | Possible Cause | Resolution |
|---|---|---|
| **Poor performance or excessive errors.** | Duplex autonegotiation mismatch. | Refer to the switch software configuration guide for information about identifying autonegotiation mismatches. |
| | **Cabling distance exceeded.**<br>• Port statistics show excessive FCS,[1] late-collision, or alignment errors.<br>• For 10BASE-T, 100BASE-TX, and 1000BASE-T connections:<br>– The distance between the port and the attached device exceeds 328 feet (100 meters).<br>– If the switch is attached to a repeater, the total distance between the two end stations exceeds the cabling guidelines. | • Refer to the switch software configuration guide for information about displaying port statistics.<br>• Reduce cable length to within the recommended distances.<br>• Refer to your repeater documentation for cabling guidelines. |
| | • For GBIC[2] module port connections: The distance between the GBIC module port and the attached device exceeds the GBIC cabling guidelines. | • Refer to your GBIC module documentation for cabling guidelines. |
| | • For SFP[3] module port connections: The distance between the SFP module port and the attached device exceeds the SFP cabling guidelines. | • See Table 2-2 on page 2-17 for SFP cabling guidelines. |

*Table 4-1 Common Problems and Solutions (continued)*

| Symptom | Possible Cause | Resolution |
|---|---|---|
| **Poor performance or excessive errors (continued).** | **Bad adapter in attached device.**<br>• Excessive errors found in port statistics. | • Run adapter card diagnostic utility. |
| | **STP[4] checking for possible loops.** | Wait 30 seconds for port status LED to turn green. |
| **No connectivity.** | **Incorrect or bad cable.**<br>No link at both ends.<br>• A crossover cable was used when a straight-through was required, or the reverse. | • For the correct pinouts and the proper application of crossover vs. straight-through cables, see the "Cable and Adapter Specifications" section on page B-9. |
| | • The cable is wired incorrectly. | • Replace it with a tested good cable. |
| | • STP checking for possible loops. | • Wait 30 seconds for port status LED to turn green. |
| | Switch not recognizing a GBIC module. | Refer to your GBIC module documentation for more information. |
| | Switch not recognizing an SFP module. | Refer to your SFP module documentation for more information. |
| **Unreadable characters on the management console.** | Incorrect baud rate. | Reset the terminal-emulation software to 9600 baud. |
| **System LED is amber, and all port LEDs are off.** | Corrupted software. | Attach a monitor to the serial port to display the switch boot loader. For more information, refer to the switch software configuration guide. |

*Table 4-1 Common Problems and Solutions (continued)*

| Symptom | Possible Cause | Resolution |
|---|---|---|
| **System LED is amber.** | • Internal fan fault detected. | • Check if the fan has failed by using the **show env fan** privileged EXEC command.<br>If the fan has failed, call Cisco Systems. |
| | • Nonfatal or fatal POST error detected. | • Use the **show post** privileged EXEC command to see which POST test failed. |
| **Switch placed in error-disabled state after CWDM[5] GBIC or SFP module is inserted.** | Bad or non-Cisco-approved CWDM GBIC module or SFP module. | Remove the CWDM GBIC or SFP module from the switch, and replace it with a Cisco-approved module. Use the **errdisable recovery cause gbic-invalid** global configuration command to verify port status, and enter a time interval to recover from the error-disabled state.<br>Refer to the switch software configuration guide for information about the **errdisable recovery** command. |

*Table 4-1 Common Problems and Solutions (continued)*

| Symptom | Possible Cause | Resolution |
|---|---|---|
| **STAT LED on Catalyst 2950 LRE[6] switch is not on.** | Telephone cable is loose or is not connected properly. | Reseat telephone cable into the telephone wall jack and the Cisco LRE CPE[7]. |
| | Telephone cable is defective. | Replace the telephone cable. |
| | Cable trunking defective. | Repair the cable trunking, or select an alternative pair of cables. |
| | Cisco LRE CPE is not communicating with Catalyst 2950 LRE switch, or Cisco LRE CPE might be attempting to exceed the rate or the reach selected by the switch. | • Reduce cable length to within the recommended distances. (See the "LRE Port" section on page 2-13 for LRE cabling guidelines.)<br>• Refer to the switch software configuration guide for information about verifying LRE port link status. |
| | Catalyst 2950 LRE switch does not support the Cisco LRE CPE. | See the compatibility matrix, Table 2-1 on page 2-4, for more information. |

1. FCS = frame check sequence
2. GBIC = Gigabit Interface Converter
3. SFP = small form-factor pluggable
4. STP = Spanning Tree Protocol
5. CWDM = Coarse Wave Division Multiplexer
6. LRE = Long-Reach Ethernet
7. CPE = customer premises equipment