CHAPTER 7

Troubleshooting

There are several ways to determine problems associated with Catalyst 2100's installation and performance. The LEDs on the front panel are the quickest way to evaluate the operation of the Catalyst 2100; the statistics provided by the management console or the SNMP-compatible workstation can provide more details about the cause of connectivity and performance problems; the Power-On Self-Test ensures that Catalyst 2100 is functioning properly at installation and when subsequently powered on.

Common problems can be grouped into the following categories:

- POST failure
- Poor performance
- No connectivity
- Unable to access out-of-band management

POST Failure

The Power-On Self-Test is a series of 15 tests run in reverse numerical order starting with number 15 when Catalyst 2100 is turned on. While a test is running, the column of 10Base-T ports LEDs with the test number is off. When the test passes, the LEDs come back on and the next test begins. Tests 9 and 10 last about 30 seconds each; all the other tests last less than 30 seconds.

If a test fails, the associated LED column remains off for the remainder of the tests. Upon completion of all tests, the LED display will remain fixed, with the column of LEDs for each passed test turned on and each failed test turned off. When all tests pass, all LEDs are turned off. Table 7-1 describes the implications of the tests.

Table 7-1 POST Tests

Test, Port #	Impact of Failure
Tests 15 through 4	Catalyst 2100 functionality has been lost.
3	RS-232 port failure. Must use in-band to start management console; other functionality not affected.
2	None.
1	Individual ports are failing. Possible loss of faulty ports.

Diagnosing Problems

Table 7-2 Common Problems and Solutions

Symptom	Possible Cause	Resolution
Poor performance or excessive errors	Incorrect Full-Duplex Settings The full-duplex setting on Catalyst 2100 is indicated by the Full Duplex LED on the front panel. Check the port's statistics:	
	• FCS and alignment errors on the port mean the Catalyst 2100 port is configured for full-duplex and the other device is a repeater or half-duplex device.	Configure Catalyst 2100 port for half-duplex.
	• Late collisions mean the Catalyst 2100 port is configured for half-duplex and the attached device is full-duplex.	Configure the Catalyst 2100 port for full-duplex.
	Cabling Distance Exceeded Port statistics show excessive FCS, late-collision or alignment errors. For 100Base-TX connections:	
	• The distance between the Catalyst 2100 port and the attached device exceeds 100 meters.	Reduce the cable length to within the recommended distances.
	• If attached to a repeater, the total distance between the two farthest devices exceeds the 100Base-T cabling guidelines.	See your 100Base-T repeater documentation for cabling guidelines.
	For 10Base-T connections: The distance between the Catalyst 2100 port and the attached device exceeds 100 meters.	See your 10Base-T repeater documentation.
	Bad Adapter in Attached Device Excessive errors found in port statistics.	Run adapter card diagnostic utility.

Symptom	Possible Cause	Resolution
No Connectivity	Incorrect or Bad Cable The following are indicated by no link at both ends: • A cross-over cable was used when a straight-through was required, or vice-versa. • The cable could be incorrectly wired. Replace cable with a tested good one.	See "Catalyst 2100 Connector Pinouts" in the "Technical Specifications" appendix for the correct pinouts and the proper application of cross-over vs. straight-through cables.
	• Bad cable	Replace with a tested good one.
	NetWare Network Numbers Misconstrued If NetWare is used, the following message can appear on the server screen: Router configuration error detected. Node xxxxxxxx claims network zzzzzzzz should be yyyyyyyy. If you are using the IP protocol, try pinging the other end.	All the nodes connected to ports in a single VLAN should all be assigned the same network number.
	Wrong Port 25 Connector Option This port has two possible connectors and is not properly configured. The physical connection does not match the one configured in management.	See "Port Configuration" in the "Out-of-Band Management" chapter for instructions. If you are using SNMP, see "Standard MIBs and MIB Extensions" in the "In-Band Management" chapter.

Symptom	Possible Cause	Resolution
No Connectivity	VLANs Misconfigured	
	• Ports are assigned to different VLANs and cannot communicate.	Ensure the two nodes are connected to ports on the same VLAN. See "VLAN Configuration" in the "Out-of-Band Management" chapter to list ports of a VLAN. If you're using SNMP, see "Standard MIBs and MIB Extensions" in the "In-Band Management" chapter.
	• If a port belongs to two or more VLANs and the VLANs are connected in other ways besides the overlapping port, an unstable topology can be created.	If there is a router, check the router configuration. Eliminate all but one of the connections between the two VLANs.
	Attached Station Not Turned On	Turn the station on.
No Power	Catalyst 2100 Unplugged	
	Power LED not lit.	Plug Catalyst 2100 in.
	Blown fuse	
	Power LED not lit.	Replace with fuse as described in "Catalyst 2100 Rear Panel" in the "Introduction" chapter.

Symptom	Possible Cause	Resolution
Cannot Access Out-of-Band Management	Baud Rate Misconfigured	Test the connection using different baud rates. See "RS-232 Interface Configuration" in the "Out-of-Band Management" chapter for more information. You can also set these values with an SNMP-compatible management station.
	Wrong RS-232 Cable	
	A null-modem cable is needed when attaching directly to terminals or other stations; a straight-through cable is needed when attaching to modems. `ATQ0H0` may appear on the terminal screen.	Use the cable provided with Catalyst 2100.