CHAPTER 7

Troubleshooting

There are several ways to determine problems associated with the Catalyst 2800 installation and performance. The LEDs on the front panel are the quickest way to evaluate the operation of the Catalyst 2800; statistics provided by the management console or SNMP management station can provide more details about the cause of connectivity and performance problems; the Power-On Self-Test ensures that the Catalyst 2800 is functioning properly at installation and when subsequently powered on.

Potential 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 the Catalyst 2800 is turned on. While a test is running, the column of 10Base-T port 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 thirty seconds each; all the other tests last less than thirty 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 2800 functionality has been lost.
3	RS-232 port failure. Must use in-band management; other functionality not affected.
2	None.
1	Individual ports are failing. Possible loss of faulty ports.

Diagnosing Problems

Use Table 7-1 to identify your problem and resolve it.

Table 7-2 Common Problems and Their Solutions

Symptom	Possible Cause	Resolution
Poor Performance or Excessive Errors	**Incorrect Full-Duplex Settings for 100Base-T Connections**	
	The full-duplex setting on the Catalyst 2800 is indicated by the Full Duplex LED on the module front panel. Check the port's statistics:	
	• FCS and alignment errors on the port mean the Catalyst 2800 port is configured for full-duplex and the other device is a repeater or half-duplex device.	Configure Catalyst 2800 port for half-duplex.
	• Late collisions mean the Catalyst 2800 port is configured for half-duplex and the attached device is full-duplex.	Configure the Catalyst 2800 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 2800 port and the attached device exceeds 100 meters.	Reduce the cable length to within the recommended distances.

Symptom	Possible Cause	Resolution
	• If attached to a repeater, the total distance between the two end stations exceeds the 100Base-T cabling guidelines.	See your 100Base-T repeater documentation for cabling guidelines.
	For 10Base-T connections: The distance between the Catalyst 2800 port and the attached device exceeds 100 meters.	Reduce the cable length to within the recommended distances.
Poor Performance or Excessive Errors	**Bad Adapter in Attached Device**	
	Excessive errors found in port statistics.	Run adapter card diagnostic utility.
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 the "Catalyst 2800 Connector Pinouts" section 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're 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.

Symptom	Possible Cause	Resolution
	Wrong Port 25 Connector Option	
	This port has two possible connectors. The physical connection does not match the one configured in management.	See the "Port Configuration" section in the "Out-of-Band Management" chapter for instructions. If you are using SNMP, see the "Catalyst 2800 Enterprise-Specific MIB" section in the "In-Band Management" chapter for the correct MIB object to use.
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 the "VLAN Configuration" section in the "Out-of-Band Management" chapter to list ports of a VLAN. If you're using SNMP, see the "Catalyst 2800 Enterprise-Specific MIB" section in the "In-Band Management" chapter for the MIB objects to use.
	• 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 one of the two connections between the two VLANs.
No Power	**Catalyst 2800 Unplugged**	
	Power LED not lit.	Plug the Catalyst 2800 in.
	Blown fuse	
	Power LED not lit.	Replace with fuse as described in the "Catalyst 2800 Rear Panel" section 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 the "RS-232 Interface Configuration" section in the "Out-of-Band Management" chapter for more information. If you are using SNMP, see the "RS-232 MIB (RFC1317)" section in the "In-Band Management" chapter.
Cannot Access Out-of-Band Management	**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 the Catalyst 2800. See the "Serial Connector Pinouts" section in the "Technical Specifications" appendix for technical details.
Expansion Slot Enabled LED Does Not Come On	**Catalyst 2800 Module Not Properly Installed**	See the Troubleshooting section of the *Catalyst 2800 Modules User Guide*.