C H A P T E R 6

Troubleshooting

This chapter provides troubleshooting hints for problems you may encounter when installing and using the WS-C1400 Concentrator.

The chapter discusses the following problems:

- LEDs on the concentrator are off

- Status LED is red, or the Tests field of the **show system** display is a nonzero value

- Link status LED is orange

- Link status LED is off

- 1/A or 2/B status LED is green, but the ring is down

- SNMP agent problems

Concentrator LEDs Off

Verify your connection to the power supply outlet. Check each end of the power cord for a possible loose connection.

If a wall switch controls the outlet, try turning the switch on and off. If the LEDs remain off, try plugging the unit into another outlet that you know is working.

If you have determined that the concentrator has received power, but the LEDs remain off and the concentrator appears nonfunctional, contact a service representative.

Status LED Red

After applying power, or at any time during regular operation, the status LED may be red because the concentrator detected an internal problem. Or if you monitor the concentrator from a remote location, you may notice that the Sys-Status field of the **show system** display has a major alarm displayed. (See the section "show system" in the appendix "Command Reference.")

To ensure that a transient condition has not caused the LED to be red, reset the concentrator by pressing the reset button on the rear panel or entering the **reset** command in the admin. interface.

If the LED is still red after a reset, try to identify the fault. If possible, connect to the admin. interface through the admin. port. Enter the **show test** command to see the concentrator diagnostic test results. For more information, refer to the appendix "Command Reference." If you cannot solve the problem or connect to the admin. interface, contact a service representative.

Status LED Orange

After applying power, or at any time during regular operation, the status LED may be orange because the concentrator detected a minor problem. Or if you monitor the concentrator from a remote location, you may notice that the Sys-Status field of the **show system** display has a minor or major alarm displayed. (See the section "show system" in the appendix "Command Reference.")

For example, a minor problem would be that one line card has failed but the other remains operational. The failed line card could be swapped out and replaced by you without returning the concentrator to us.

Link Status LED Off—Ports 1/A through 16

The link status LEDs have three states: green, orange, and off. Green, the normal state for ports with connected stations, indicates a detected signal and normal function.

If a station is connected and the concentrator status LED is green but the link status LED is off, use the following checklist to try and identify the problem:

- Is the workstation on and functioning normally? Check the status LED on the workstation adapter.

- Change the port on the concentrator. Is the link status LED green as a result? If it is, the problem is with the original port in the concentrator.

- If you change ports on the concentrator and the link status LED remains off, you probably have a cabling problem.

  Check for crossed transmit and receive pairs and continuity in the cabling. You can also plug the workstation into a different wall jack to isolate the bad cabling.

- If you are unable to determine the problem after taking these steps, contact your service representative.

Link Status LED Orange—Ports 1/A through 16

If the M port is connected to the A port of another dual attachment concentrator or station in a dual homing configuration, the link status LED will be orange during normal operation.

Otherwise, an orange link status LED indicates that the concentrator receives a signal from the workstation but fails to make the connection. Change ports on the concentrator; if the link status LED remains orange, you probably have a cabling problem. Check for faulty transmit pairs and excessive cable length. Check the **show port** display in the admin. interface for high link error monitor rejected counts (the Lem-Rej-Ct field). (See the section "show port" in the appendix "Command Reference.")

If the 1/A or 2/B link status LED is orange and the ports are FDDI, the ends of the fiber may need cleaning, or you may have excessive loss in your fiber cable. Check with your cable installer.

If all the link status LEDs are orange for all connections, there might be an interoperability problem with an incompatible network adapter.

1/A or 2/B Link Status LED Green, but Ring is Down

Green 1/A and 2/B link status LEDs indicate physical connectivity, but cannot indicate a twisted connection (A to A and B to B). Check your cabling carefully to ensure that A ports connect to downstream B ports and B ports connect to upstream A ports.

Power On Diagnostic

Any time the user initiates a cold or warm restart, the concentrator executes diagnostic tests of all vital functions and will take the following actions upon completion:

- If all tests pass the status LEDs will be green (concentrator and line cards) and the A and B ports and all the M ports will go into service. Subsequently the bypass switch will be energized.

- If the diagnostic ends with any failure the concentrator will assume the status outlined in Table 6-1.

Table 6-1   Power On Diagnostic Matrix

FAILING TEST	Conc Status LED	Module Status LED	Bypass Switch	Card	A&B	M
BOOT to NVRAM & SERIAL Prom	RED	OFF	OFF	ISO	OUT	OUT
Power supply and Fan 1 and/or 2	RED	[1]	ON	[1]	[1]	[1]
CCE and MAC accessibility	RED	OFF	OFF	ISO	OUT	OUT
Slot 1 and/or 2 accessibility						
Control Logic	ORG	RED	ON	ISO	OUT	OUT
Line Card Serial Prom Only	ORG	ORG	ON	INS	IN	IN
QPHY for slot 1 and/or 2 accessibility [3]						

FAILING TEST	Conc Status LED	Module Status LED	Bypass Switch	Card	A&B	M
At least one failing *and* at least one working	ORG	ORG	ON	INS	[2]	[2]
All failing	ORG	RED	ON	ISO	OUT	OUT
MASIC	RED	[1]	ON	[1]	[1]	[1]
RING-level functionality - MAIN	RED	OFF	OFF	ISO	OUT	OUT
RING-level functionality - CARD (no ext LB)	ORG	RED	ON	ISO	OUT	OUT
RING-level functionality - CARD w/ ext LB	ORG	ORG	ON	INS	[2]	[2]

[1] = Depends on the other line card test results (major failure, but the concentrator may still work properly)

[2] = The failing PHY port will be out of service, all others will be in service

[3] = Test is performed only on the slot(s) that pass the slot accessibility test

RED = Status LED red, major alarm

ORG = Status LED orange, minor alarm

ISO = Card not inserted into the main paths (for example, isolated at motherboard CCE level)

INS = Card is inserted in the main path

OUT = Port out of service (disabled or not initialized)

IN = Port in service (enabled)

OFF = Bypass switch not energized (concentrator isolated from backbone)

ON = Bypass switch is energized

> **Note** The A and B ports will not be enabled in the event of a major alarm. This will isolate the concentrator from the backbone if a bypass switch is not installed or the network has a CDDI backbone (typical for a stackable configuration).

SNMP Agent Problems

If your SNMP manager has trouble communicating with the SNMP agent in the concentrator, check your SNMP configuration parameters.

Your network manager can help determine if your IP addressing (IP address, subnet mask, and broadcast address) is correct. If the SNMP management workstation is on a different network, be sure that the **set route** command in the admin. interface is configured with the IP address of the local router interface and that the metric value is correct. (For information on the **set route** command, refer to the section "set route" in the appendix "Command Reference.")

Check the community string configuration in the **show snmp** display. (See the section "show snmp" in the appendix "Command Reference.")

Use the admin. interface **ping** command to check the network connection between the concentrator and the network management station. (See the section "ping Command" in the appendix "Command Reference.")

If the network management workstation does not receive authentication failure traps, check for the Auth Traps Disabled field in the **show snmp** display.

If the network management workstation does not receive cold start traps, check the trap receiver address field in the **show snmp** display. Configure the trap receiver address of the network management workstation, and configure community strings to be the string that the network management workstation expects in a trap message.

Also, check the **show mac** display and look at the receive and transmit counters. (See the section "show mac" in the appendix "Command Reference.") The SMT counters should increment approximately every 30 seconds. If they do not increment, contact your service representative.