CHAPTER 3

Using the Catalyst 1600 Token Ring Switch

This chapter explains how to read the information displayed by the LEDs and the LCD display on the Catalyst 1600 Token Ring switch. It also explains how to use the reset button, and download boot code or run-time microcode to the Catalyst 1600.

You can use the Reset button on the Catalyst 1600 to reboot the device, erase the management password, load new microcode, erase the stored configuration information, or reboot using the boot code stored in PROM.

Reading Status Information

You can view information about the status of the Catalyst 1600 from the LEDs beside each Token Ring port, or the LCD display on the front panel of the device.

Alternatively, you can view the LEDs and LCD display from the management station, by running TrueView Catalyst 1600 Manager. For more information, refer to *TrueView Catalyst 1600 Manager User Guide*.

Reading the System Status LED

The Catalyst 1600 has a system status LED near the reset button (see Figure 1-1), which indicates whether the Catalyst 1600 passed the startup self-test (see the section “Starting the Self-test Program” in Chapter 2 “Installing the Catalyst 1600 Token Ring Switch”).

The LED displays the information shown in Table 3-1.

Table 3-1 System Status LED States

LED state	Description
Green	Catalyst 1600 is operating normally
Red	A system self-test failure occurred

Reading Port LEDs

Each Token Ring switch port has two LEDs (see Figure 1-1), which indicate the status, mode, and ring speed of the port.

The upper LED displays the information shown in Table 3-2.

Table 3-2 Upper LED States for Token Ring Port

LED state	Description
Off	Port is disabled
Yellow	Port is opening, or is open but not forwarding frames
Green	Port is open and also forwarding frames
Red flashing	Port has failed to open, or has closed unexpectedly

When the upper LED is yellow or green, the lower LED provides the information shown in Table 3-3.

Table 3-3 Lower LED States for Token Ring Port

LED state	Description
Green	Port is configured for node mode at 16 Mbps
Green flashing	Port is configured for node mode at 4 Mbps
Yellow	Port is configured for concentrator mode at 16 Mbps
Yellow flashing	Port is configured for concentrator mode at 4 Mbps

Reading Status Messages on the LCD Panel

The Catalyst 1600 has an LCD panel that allows you to scroll through status messages. The LCD panel also displays alert messages that indicate changes in the status of the switch and each of the ports (see the section “Reading Status Messages on the LCD Panel”).

To scroll through the status messages, press the paddle switch to the left of the LCD panel (see Figure 1-1) upwards to view the previous message, or downwards to view the next message.

Note A status message on the LCD panel can describe four of the ports. For example, the forwarding status of ports on a Catalyst 1600 with eight Token Ring switch ports is shown by two messages. The first message describes ports 1 through 4, and the second message describes ports 5 through 8.

The LCD displays the status messages shown in Table 3-4.

Table 3-4 Status Messages on the LCD Panel

Message	Description
`Catalyst 1600 Token Ring Switch` `Switch name`	Displays the Catalyst 1600 name.
`28-06-95 11.34 1.1` `Hardware version 1.0`	The version numbers of the hardware and software.
`Bridge No : 1` `Address : 0002D0000F62`	The bridge number and base address that identify the device. The addresses of ports increment from the base address.
`IP addr : 194.32.22.119` `Subnet : 255.255.255.0`	The IP address and subnet mask that identify the device.
`1: 401 Fwd 2: 402 FwdS` `3: 403 FwdS 4: 404 Disa`	The number of the ring attached to each Token Ring switch port, and the forwarding status of each port. `Disa` Source routing is disabled. `Brkn` Source routing is enabled, but the port interface is disabled. `Test` The bridge test is running on the port. `Fail` The bridge test for the port has failed. Two ports are connected to the same ring, or a device with the same bridge number as the Catalyst 1600 exists between two rings that are attached to Token Ring switch ports. `Fwd` The port forwards source-routed frames, but does not forward spanning-tree explorer frames. `FwdS` The port forwards source-routed frames and spanning-tree explorer frames.

Message	Description
`1: Normal 2: Closed` `3: Normal 4: Opening`	The status of each port. The port status messages are described in this section.
`1: Node 16 2: Node 4` `3: Node 16 4: Conc 16`	The interface mode (node or concentrator) and ring speed (4- or 16Mbps) of each port.
`Frames Rx: 10,260` `Frames Tx: 10,260`	The number of source-routed frames that the Catalyst 1600 has received and transmitted.
`Frames/ Sec: 5` `Bytes / Sec: 101`	The number of frames per second, and bytes per second, that the Catalyst 1600 is forwarding.

The LCD displays the Token Ring switch port status messages shown in Table 3-5.

Table 3-5 Token Ring Switch Port Status Messages on the LCD Panel

Message	Description
`Closed`	The port is closed.
`Opening`	The port is opening.
`Open`	The port is open.
`OpenFail`	The last open request failed.
`Normal`	The port is operating normally.
`Closing`	The port is closing.
`Removed`	The port has closed because of a ring error, or was removed from the ring by a ‘remove’ MAC frame because a management station detected a fault on the ring.
`?Wire`	If the port is configured in node interface mode, a problem exists with the Token Ring switch port or the device attached to the port. If the port is configured in concentrator interface mode, this message does not appear.
`?Signal`	The port is not receiving a valid Token Ring signal from the ring. Check that the cable is not disconnected or broken.

Message	Description
?Beacon	If the port is configured in node interface mode, the ring to which the Token Ring switch port is attached is beaconing. If the port is configured in concentrator interface mode, there is a problem with the Token Ring switch port or with the attached device.
?HardErr	A hard error condition exists on the ring to which the Token Ring switch port is connected.
?Single	If the port is configured in node interface mode, the Token Ring switch port is the only node on the ring. If the port is configured in concentrator interface mode, either no device is connected to the Token Ring switch port or there is a problem with the cable connection between the port and the attached device. This message does not represent an error condition unless you expect more nodes to appear on the ring.

Reading Alert Messages on the LCD Panel

The LCD panel displays alert messages that indicate changes in the status of the Catalyst 1600 and each of the ports.

Alert messages are displayed for a period of two seconds, during which time you cannot view status messages. However, if you use the paddle switch to change the current status message while an alert is displayed, the change is reflected when the alert message disappears.

The LCD displays the alert messages shown in Table 3-6.

Table 3-6 Alert Messages on the LCD Panel

Message	Description
`Manager requested load of new code`	A management station running TrueView Catalyst 1600 Manager is downloading to the Catalyst 1600.
`Burnt-in Address is not valid`	To confirm the problem, reset the Catalyst 1600 to start the self-test program, which tests the burnt-in addresses of the Catalyst 1600 and each Token Ring switch port.
`Port <no.>: Open success`	The Catalyst 1600 successfully connected the port to the ring.
`Port <no.>: Open failed Check cable`	The Catalyst 1600 failed to connect the port to the ring. Check that the cables are not loose or wrongly connected.
`Port <no.>: Open failed Check ring speed`	The Catalyst 1600 failed to connect the port to the ring. Check that the ring speed is correct for the ring by using the serial interface or TrueView Catalyst 1600 Manager.
`Port <no.>: Open failed Signal loss`	The Catalyst 1600 failed to connect the port to the ring because the port is not receiving a valid Token Ring signal from the ring. Check that the cable is not disconnected or broken.
`Port <no.>: Open failed Duplicate address`	The Catalyst 1600 failed to connect the port to the ring because there are two ports on the network with the same locally administered address (LAA). Check the node addresses of the port and nodes on the ring.
`Port <no.>: Open failed Beacon on open`	The Catalyst 1600 failed to connect the port to the ring because the ring is beaconing. Check your network connections.
`Port <no.>: Open failed No reply from RPS`	The Catalyst 1600 failed to connect the port to the ring because there is no response from the Ring Parameter Server (RPS). Check your network management software.
`Port <no.>: Open failed Remove received`	A management program prevented a port from opening onto the ring because it detected a fault.

Message	Description
`Port <no.>: Open failed`	The Catalyst 1600 failed to connect the port to the ring because an unexpected problem occurred. Contact your customer service representative and quote the error number.
`Port <no.>: Ring status normal`	The Token Ring to which the port is connected is operating normally.
`Port <no.>: Closed Auto removal`	The port removed itself from the ring because a fault exists. Check that the cable is not disconnected or broken.
`Port <no.>: Closed Remove received`	A management program removed a port from the ring because it detected a fault.
`Port <no.>: Closed Wire fault`	The port was removed from the ring because a problem exists between the Token Ring switch port and the device to which it is connected. Check the cable connections.
`Port <no.>: Closed Signal loss`	The Catalyst 1600 failed to connect the port to the ring because the port is not receiving a valid Token Ring signal from the ring. Check that the cable is not disconnected or broken.
`Port <no.>: Closed Beaconing`	The ring to which the port is connected is beaconing. Check your network connections.
`Port <no.>: Closed Hard error`	The ring to which the port is connected is inoperative because a hard error occurred.
`Port <no.>: Closed Single station`	The Token Ring switch port is the only node on the ring. This message does not represent an error condition unless you expect more nodes to appear on the ring.

Resetting the Catalyst 1600

You can use the Reset button (see Figure 1-1) to run the self-test program, return the configuration to the default factory settings, or start up using the boot code stored in read-only memory (ROM).

To reset the Catalyst 1600:

Step 1 Press and hold the Reset button.

The LCD display shows a sequence of messages.

Step 2 When the message shows the command you want, release the reset button.

The Catalyst 1600 performs the function described by the LCD display when you release the Reset button.

The reset sequence is described in Table 3-7.

Table 3-7 Catalyst 1600 Reset Sequence

Reset stage	Description
`Release reset now to start normal boot`	Runs the self-test program and starts the Catalyst 1600.
`Release reset now to erase mgmt password`	Resets the Catalyst 1600 password to the default password PUBLIC.
`Release reset now to load new microcode`	Runs the loader program, which waits for new microcode to be downloaded from the management station then erases the old microcode.
`Release reset now to erase stored config`	Restores the configuration of the Catalyst 1600 to the factory default settings.
`Release reset now to force boot from ROM`	Forces the Catalyst 1600 to restart using the boot microcode stored in ROM. If you have not upgraded the boot code, this step does not appear in the reset sequence.

Downloading Microcode

You can download boot code or run-time microcode to the Catalyst 1600 using TrueView Catalyst 1600 Manager. When you download a file containing microcode, a loader program downloads the new microcode, erases existing microcode held in read-only memory (ROM), and restarts the Catalyst 1600.

For more information about downloading microcode to the Catalyst 1600, refer to the *TrueView Catalyst 1600 Manager User Guide*.