Diagnostic Commands in the CLI

This chapter describes five diagnostic and troubleshooting command used with a LightStream 2020 multiservice ATM switch (LS2020 switch):

connect   Logically attach the console or modem I/O port to a specified card in the node in which the CLI session is running.

loadcard   Load the specified file into the specified card, start the card, and establish a console connection between the CLI and the TCS slave on the card.

test   Run field diagnostics tests from the CLI.

read   Read memory and hardware registers accessible by the TCS. For qualified personnel only.

write   Write hex values to memory and hardware registers. For qualified personnel only.

See also the **ping** command, described in the chapter entitled "CLI Control Commands;" **ping** is also used for diagnostic purposes.

connect

Use the **connect** command to connect the CLI to a line card as a console.

Description
Use the **connect** command to connect the CLI to the specified line card so it can act as a terminal for a program, such as diagnostics, running on the line card. Type **~.** (tilde-dot) to interrupt the connection.

Note   The **connect** command requires CLI protected mode. (See the **protected** command in the chapter entitled "CLI Control Commands.") The **connect** command affects *only* the node on which the CLI is running when you execute it, regardless of any target that has been set with the command **set snmp hostname** *name*. The command does not work on a Sun workstation.

Syntax

```
connect card# [force] [diagnostic]
```

Arguments

card#   The card number, in the range 3 – 10. (An attempted connection to an NP slot is refused.)

force   Optionally force this CLI session to take control of the slot even if the slot was being used by another CLI in the network.

diagnostic   Used only when one is connecting to a card to run diagnostics. See the *LightStream 2020 Hardware Reference &Troubleshooting Guide*.

loadcard

Use the **loadcard** command to load a file into a card, start it, and establish a console connection with its TCS slave.

Description

The **loadcard** command loads a line card program, such as the operational software or a diagnostic program, into the specified card. The command resets the card and then loads and starts the line card software.

Note   The **test** command is the preferred way to run diagnostics on a card from the CLI.

The **loadcard** command requires CLI protected mode. (See the **protected** command in the chapter entitled "CLI Control Commands.") The **loadcard** command affects *only* the node on which the CLI is running when you execute it, regardless of any target that has been set with the command **set snmp hostname** *name*. The command does not work on a Sun workstation.

Syntax

```
loadcard card# [load-address] [filename]
```

Arguments

card#   The card number, in the range 3 – 10.

load-address   The load address (optional). Normally, you omit this argument and use the default load address.

filename   The name of the file containing the program you want to load (optional). If no filename is specified, this command loads the operational software for the card.

test

Use the **test** command to run diagnostics on a specified card.

Description

The **test** command runs diagnostic tests on a specified card. These tests indicate whether the card should be replaced. If a card fails, record the displayed error codes and report them when returning the card. When you invoke the **test** command, the software automatically takes the card out of service (changing its status to testing), identifies the type of card, and runs tests that are appropriate for the card, as specified in files in /usr/diag.

Note The **test** command requires CLI protected mode. (See the **protected** command in the chapter entitled "CLI Control Commands.") The **test** command affects *only* the node on which the CLI is running when you execute it, regardless of any target that has been set with the command **set snmp hostname** *name*. The command does not work on a Sun workstation.

The **test** command takes the tested card out of service. To test the NP on a single-NP system, you must deactivate the node, load diagnostics manually, and run tests through the diagnostics interface. See the *Lightstream 2020 Hardware Reference & Troubleshooting Guide* for information about this procedure, and for information about replacing a defective card.

Syntax

```
test card# [-l][-p][-s][-x][-Ffile] test card# -r test card# -m [-Ffile]
```

Switches

The switches that can be used with the **test** command are, in alphabetical order, as follows:

-F_file_   Load diagnostics from *file* rather than from the default file for the card. Here, *file* can only be a copy of the default file, and you must ensure that *file* matches the card type.

-l   Run tests that require looping plugs or cables. For additional details, see the *LightStream 2020 Hardware Reference &Troubleshooting Guide.*

-m   Access the diagnostics interface to run tests interactively. This is equivalent to loading the manufacturing diagnostics with **loadcard** and connecting to the card (see the *Lightstream 2020 Hardware Reference & Troubleshooting Guide*). The following message is the last displayed after the diagnostics have been loaded:

```
fcload: slot card#: releasing per-slot synchronization lock.
```

Press **Return** periodically until the prompt appears. Type **?** for a list of tests. Type **^C** to terminate a test in progress. Type **~.** to exit. You cannot use the **-r** switch to retrieve output of **test -m**.

-p   Poll test output approximately once every second until completion or timeout. Tests completed between these snapshots are not displayed. If a test runs longer than one polling interval, successive dots in the display indicate the successive polls. You can terminate a test in progress with **^C**. You can use the **-r** switch after tests have been completed.

-r   Retrieve results of tests, until the card status changes to `active` or `inactive` or until the card is loaded with some other software, overwriting the memory locations in which test results are stored. If the same test is active over successive polls with **test -r**, the heartbeat value in the display indicates whether the diagnostics are running.

             The **-r** switch does not retrieve results of tests run interactively with the **-m** switch.

-s   Run tests that loop data through the switch fabric for the specified slot.

             Do not use the **-s** switch on an operational system. If the card is defective, spurious data could be communicated over the network.

-x   Run long memory tests. These extended tests may take an hour or more to run.

The default behavior, with only the *card#* argument, is to run standard pass/fail tests in the background. The **-l**, **-s**, and **-x** switches add other tests to the default set.

read

Use the **read** command to read memory and hardware registers accessible by the TCS.

Note   This command is for use by support personnel only. It is of no value to anyone who lacks detailed knowledge of memory locations, hardware registers, their contents, and their functions in the LS2020 node.

The **read** command affects *only* the node on which the CLI is running when you execute it, regardless of any target that has been set with the command **set snmp hostname** *name*. It does not work on a Sun workstation.

The **read** command requires CLI protected mode.

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write

Use the **write** command to write values into memory and hardware registers that are accessible by the TCS.

⚠️   **Caution**   The **write** command is for use by support personnel only. Unless one has detailed knowledge of memory locations, hardware registers, their contents, and their purposes, use of this command will almost certainly destroy the functioning of the LS2020 node.

Note   This command affects *only* the node on which the CLI is running when you execute it, regardless of any target that has been set with the command **set snmp hostname** *name*. It does not work on a Sun workstation. The **write** command requires CLI protected mode.