APPENDIX B

TCS Hub Commands

This appendix tells you how to access the test and control system (TCS) interface and how to use TCS commands to manage your network of LightStream 2020 enterprise ATM switches. TCS hub commands allow you to communicate directly to the TCS and they allow you to perform some functions when you do not have access to the command line interface (CLI). You can use the TCS hub commands to do the following:

- Get help on any TCS hub command
- Connect to a card
- Force a TCS hub on either of the switch cards (SA or SB) to become the primary or secondary TCS hub
- Change the default baud rates for the console and modem ports associated with each switch card

Each of these tasks is described in this appendix. The commands discussed here are a subset of the TCS hub commands. The remaining TCS hub commands are not described here because you can use CLI commands to perform the same functions more easily. Refer to the *LightStream 2020 System Overview* for a further discussion of the TCS.

Access to the TCS Hub Interface

You access the TCS hub interface by connecting a VT100-compatible terminal (or modem) to the console (or modem) port on the back of the LightStream 2020 switch. Press the [**Return**] key to obtain a TCS prompt.

Prompts

When you access the TCS, you see one of a variety of prompts. Table B-1 explains each of the possible prompts.

Table B-1 TCS Prompt Descriptions

Prompt	Character	Case
TCS HUB<A> tcs hub<a> TCS HUB<<A>> tcs hub<<a>>	The character **A** or **a** indicates you are connected to the TCS hub on switch card A.	A prompt shown in uppercase characters (TCS HUB<A>) indicates that the TCS hub is the primary TCS hub. A prompt in lowercase characters indicates the TCS hub is the secondary TCS hub.
TCS HUB<B> tcs hub<b> TCS HUB<<B>> tcs hub<<b>>[1]	The character B or b indicates you are connected to the TCS hub on switch card B.	A prompt shown in uppercase characters (TCS HUB<B>) indicates that the TCS hub is the primary TCS hub. A prompt in lowercase characters indicates the TCS hub is the secondary TCS hub.

[1]The significance of the single or double brackets in the prompt is not relevant to this discussion.

User Interface for TCS Hub Commands

The TCS interface is similar to the CLI. Each CLI command includes the object identifier of the component to which the command is directed (chassis, card, port, etc.). A TCS hub command is always directed to a card, so it includes the slot number rather than the object identifier.

Online Help

Like the CLI, the TCS interface has an online help facility. It provides a **help** command, and it also allows you to enter a question mark (**?**) to list options for a command. Unlike CLI, the TCS does not provide a command completion feature using the [**Tab**] key.

Line Editing Keys

The TCS provides a number of line editing keys. Some of these keys are different from those used in the CLI. Table B-2 lists the TCS line editing keys.

Table B-2 TCS Command Line Editing Keys

Control Keys	Function
^P	Yank previous command.
^N	Yank next command.
^A	Go to start of line.
^E	Go to end of line.
^B	Go back one character.
^F	Go forward one character.
^U	Kill entire line.
^D	Delete character under cursor.
[Esc] B	Go back one word.
[Esc] F	Go forward one word.

Getting Help on TCS Commands

This procedure tells you how to access online help on any TCS hub command. When you enter the **help** command, the TCS displays a list of all commands available as shown in Figure B-1. When you enter the **help** command followed by a command name, the system displays information on that command as shown in Figure B-2.

Procedure

At any TCS prompt, enter:

```
TCS HUB<<A>> help [<command>]
```

where

- [<command>] = An optional argument. The name of any TCS hub command on which you want help.

Figure B-1 TCS help screen.

```
TCS HUB<<A>> help

       baud          <rate>
       connect       <slot>
       help          <command>
       init          <slot><init_string>
       margin        <slot><percent>
       maxreq        <count>
       pmode         [<on/off>]
       power         <slot><on/off>
       primary       <slot>
       ptrace        <slot>
       read          <slot><obj><addr>[<by,wo,lo,bl>]
       reset         <slot>
       secondary     <slot>
       set           <slot><obj1><obj2><value>
       show          <slot><obj1><obj2>
       skippoll      <count>
       skipalt       <count>
       switch        <ena/dis><slot #>
       swreset       <on/off>

Spacebar to continue, 'q' to quit:

       trace         <slot>
       write         <slot><obj><addr><data>[<by,wo,lo,bl>]
       vector        <0,1,2,3,4>
       version       (no args)

         Command±line editing keys:
              ^P: yank previous command
              ^N: yank next command
              ^K: kill to end of line
              ^A: goto start of line
              ^E: goto end of line
              ^B: back one character
              ^F: forward one character
              ^U: kill entire line
              ^D: delete character under cursor
              <ESC>±b: go back one word
              <ESC>±f: go forward one word

  Commands can be abbreviated to any unique command string.
```

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Note If you use the TCS command **power <slot> off** to turn off a card, you must use the command **reset <slot>** to bring the card back into service. The command **power <slot> on** turns on the power, but does not activate the card.

When you enter the **help show** command with no argument, a screen similar to Figure B-2 is displayed**.**

Figure B-2 TCS help show screen.

```
TCS HUB<<A>> help show

SYNTAX:
        show <slot><obj1> <obj2>

DESCRIPTION:
        show :  cli show command
```

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TCS Hub Tasks

This section describes tasks performed from the TCS hub interface:

- Connecting to a card
- Forcing a TCS hub to become primary or secondary
- Changing baud rates on console and modem ports

Connecting to a Card

This procedure describes how to logically connect from a terminal attached to the console or modem ports to a given slot within a LightStream 2020 switch. You can connect to a switch card, an NP, or a line card. You can also connect to an NP to access the CLI from the console or modem ports.

Procedure

Step 1 Access the TCS hub interface by connecting a VT100-compatible terminal (or a modem) to the console (or modem) port on the back of the LightStream 2020 switch. Press the **[Return]** key to obtain the TCS prompt.

Step 2 If you do not see a TCS prompt, enter the following characters:

‘.

Step 3 At the TCS prompt, enter:

```
TCS HUB<<A>> connect <slot#>
```

where

<slot#> =1 - 10, SA, or SB

Examples of the **connect** command:

```
TCS HUB<<A>> connect 1
```
(connects to an NP in slot 1)

```
TCS HUB<<A>> connect 7
```
(connects to a line card in slot 7)

Step 4 To exit from connect mode, enter:

‘.

Expected Results

The information displayed when you connect to a card varies depending on the software running in that card at the time the connection is made.

Operational Tips

If you get no response to a **connect** command, you may need to reset the card before you connect to it or download software into it.

Forcing a TCS Hub to Become Primary or Secondary

The TCS hub residing on a switch card controls the switch card itself and acts as a communications hub for the system-wide TCS. In a LightStream 2020 with two switch cards (SA and SB), the TCS hub on one switch card is the primary TCS hub, and the TCS hub on the other switch card is the secondary TCS hub. The procedure below forces the TCS hub on one switch card to become the primary (or secondary) TCS hub. As you force one TCS hub to be come the primary, the other becomes the secondary and vice versa.

Use this procedure before removing the switch card with the primary hub from the chassis. This procedure does *not* disrupt the flow of traffic through the switch; it only specifies the card that is to be used as the TCS hub.

Note This procedure does not affect which switch card has the active switching fabric–that is, which card is actively passing traffic. The procedure to force active and backup switch cards to reverse roles is described in the *LightStream 2020 Network Operations Guide*.

Procedure

Step 1 Access the TCS hub interface by connecting a VT100-compatible terminal (or a modem) to the console (or modem) port on the back of the LightStream 2020 switch. Press the **[Return]** key to obtain the TCS prompt.

Step 2 If you do not see a TCS prompt, enter the following characters:

```
‘.
```

Step 3 Determine which TCS hub is the primary or secondary TCS hub by noting the character between the angle brackets (< >) in the TCS prompt. (Refer to Table B-1 for details.)

Step 4 To force a TCS hub to be the primary TCS hub, enter the following command at the TCS prompt:

```
TCS HUB<<A>> primary <slot #>
```

or, to force a TCS hub to be the secondary TCS hub, enter the following command at the TCS prompt:

```
TCS HUB<<A>> secondary <slot #>
```

where

<slot #> =SA or SB

Expected Results

The TCS hub you specified is set as the primary (or secondary) TCS hub. It takes the TCS approximately 4 seconds to switch the primary and secondary TCS hubs. This process delays only temporarily the servicing of pending TCS slave requests.

Changing Baud Rates on Console and Modem Ports

Follow this procedure to change the baud rate on the console or modem port associated with a switch card. Console ports can be set to the following baud rates:

- 300
- 1200
- 2400
- 4800
- 9600 (default)
- 19200
- 38400

Modem ports can be set to the following baud rates:

- 2400 (default)
- 9600

Step 1 Access the TCS hub interface by connecting a VT100-compatible terminal (or a modem) to the console (or modem) port on the back of the LightStream 2020 switch. Press the **[Return]** key to obtain the TCS prompt.

Step 2 If you do not see a TCS prompt, enter the following characters:

```
‘.
```

Step 3 To display the current baud rate, enter the command shown below:

```
show <sa | sb> <console | modem> baudrate
```

where

`<sa | sb>` specifies either the switch card in slot A or the one in slot B

`<console | modem>` specifies either the console port or the modem port

For example, **show sa modem baudrate** displays the baud rate for the modem port associated with the switch card in slot A.

Step 4 To change a port’s baud rate, enter the command shown below:

```
set <sa | sb> <console | modem> baudrate <rate>
```

where

`<sa | sb>` specifies either the switch card in slot A or the one in slot B

`<console | modem>` specifies either the console port or the modem port

`<rate>` is one of the baud rates listed at the beginning of this procedure

For example, **set sb console baudrate 19200** sets the baud rate for the console port associated with the switch card in slot B to 19,200.

Step 5 To make a change of baud rate effective, you must do one of the following:

- Power-cycle the chassis
- Reset the switch card using this command:

```
reset <sa | sb>
```

- For modem ports only–use this command to reinitialize the modem port:

```
init <sa | sb> modem
```