CHAPTER 5

Network Management

This chapter describes the different types of SNMP-based network management tools, called StreamView, used for network operation. It also briefly discusses using SNMP for network management.

Network Management Tools

To manage your LightStream 2020 (LS2020) network using local management tools, you can connect to a local console port on the switch or Telnet to the network processor. You can also manage the network by using a network management station (NMS) with a network connection to the switch. Since the LS2020 network uses SNMP as its management protocol, it is also compatible with a variety of SNMP-based management systems.

If you use the local console on the switch or Telnet to the NP, the LS2020 switch provides a line-based interface, called the command line interface (CLI) from which you can perform network management functions. If you use an NMS to manage your network, you are provided with the StreamView tools, as well as a version of the CLI that runs on the workstation.

Note StreamView tools are currently supported on the Sun SPARCstation.

The following sections give a brief description of the LS2020 network tools you can use to perform network management functions.

Command Line Interface (CLI)

The command line interface (CLI) tool is a simple line-oriented interface that you can use to perform network operations for any switch in the network through Telnet. The CLI can also be loaded and run on a Sun SPARCstation in which case the CLI converts the CLI commands you enter into SNMP messages to be sent to the LS2020 switches. From the CLI, you can perform a variety of network management functions, such as network monitoring, control, and troubleshooting. The CLI does not provide a graphical user interface.

For details on using CLI, see the *LightStream 2020 Network Operations Guide*. For information on CLI commands, see the *LightStream 2020 CLI Reference Manual*.

LS2020 Configurator

You configure the LS2020 network using an NMS-based configuration program, called the *configurator.* Initially, you use the configurator to create configurations for all the LS2020 switches in your network. You can then use the configurator to change existing configurations or to add new ones as your network grows. The configurator features a user-friendly graphical interface that, in many cases, reduces configuration tasks to clicking a mouse button. The configurator runs on a Sun SPARCstation and consists of three configuration tools:

- cfg—Configures chassis, card, and port parameters
- pvc—Configures permanent virtual circuits
- vli—Configures workgroups

For more information about the configurator, see the *LightStream 2020 Configuration Guide.*

LS2020 Topology Map

The LS2020 NMS-based topology map application displays a graphical map that represents the physical topology of an LS2020 network. The LS2020 topology map runs on the HP OpenView platform. When you start HP OpenView, the map application is automatically invoked. The application builds the current LS2020 submap and then periodically polls each LS2020 node for status information.

This application displays all the LS2020 switches and the trunks that connect them. Status changes are indicated in color. Trunk information is made available by double clicking on the desired trunk.

For more information about the topology map, see the *LightStream 2020 Network Operations Guide.*

LS2020 Monitor

The LS2020 monitor is a graphical interface that displays the status of individual LS2020 switches, cards, and ports. When you open the monitor, it displays the front of the LS2020 switch with bulkheads for the cards as they appear in the actual switch.

By doubling clicking on a particular card, you can view card information, port descriptions, and port status information.

For more information about the monitor, see the *LightStream 2020 Network Operations Guide.*

Management Functions for LS2020 Networks

Table 5-1 lists the network management tools and documents for you to use when performing these functions.

Table 5-1 Network Management Functions

To do this...	Use the...	See the...
Configure the network	Configurator	*LightStream 2020 Network Configuration Guide*
Manage security	CLI	*LightStream 2020 Network Operations Guide*
Issue network control commands	CLI	*LightStream 2020 Network Operations Guide* and *LightStream 2020 CLI Command Reference Manual*
Monitor network status	Monitor, CLI, and Topology Map	*LightStream 2020 Network Operations Guide*
View and collect network statistics	CLI, Monitor	*LightStream 2020 Network Operations Guide*
Run diagnostics to isolate hardware problems	CLI/diagnostics	*LightStream 2020 Hardware Troubleshooting Guide*

Using SNMP for Network Management

The LS2020 network uses SNMP as its management protocol and is compatible with a variety of SNMP-based management systems. The LS2020 software contains an SNMP agent that interacts with your network management tools. You can manage your network with a minimal knowledge of SNMP. If you are familiar with SNMP, you can also use low-level CLI commands such as getsnmp and setsnmp to monitor and manage your LS2020 network.

The SNMP agent is called the master management agent (MMA) and runs on the network processor. It is the focal point for all requests, responses, and trap messages that go to and from network management software. The MMA is a MIB manager and provides access to the MIB for external users (SNMP-compatible NMSs) and internal users (the CLI within an LS2020 switch). The MMA manages the LS2020 MIB and provides a single interface to all data internal to the LS2020 switch.

For details on the LS2020 MIB, see the *LightStream 2020 CLI Reference Manual.* For more information about SNMP, see *The Simple Book: An Introduction to Management of TCP/IP-based Internets*. Marshall T. Rose, 1991, Prentice Hall, Inc. (ISBN 0-13-812611-9).