CHAPTER 3

Installing StreamView Software

As described in the "Overview" chapter, two classes of software must be fully functional in an LS2020 networking environment to take full advantage of the capabilities of an LS2020 multiservice ATM switch:

- The Platform (chassis) Software

  This software is pre-installed on the hard disk at the factory prior to shipment of the LS2020 chassis to the customer site.

  However, as described in the "Basic LS2020 Configuration Tasks" chapter, you must perform certain basic, low-level configuration procedures for each LS2020 switch to make it operable in your network and to make the switch manageable from the NMS.

- The StreamView Network Management Software

  In contrast to platform software, the StreamView network management application must be installed and configured on the hard disk of the Sun SPARCstation that will be used as the NMS in configuring, monitoring, and controlling LS2020 switches in your network.

  StreamView requires a Sun SPARCstation running SunOS 4.1.x (Solaris1.1.x). Note that StreamView does not operate under Solaris Version 2.0 or later.

  This chapter presents high-level installation and configuration procedures that make StreamView operable on the NMS, regardless of whether HP OpenView is present.

Note Refer to the *LightStream 2020 Site Planning and Cabling Guide* for detailed information about the hardware and software requirements for using the NMS.

The StreamView software modules support the following functions:

- Configuring an LS2020 switch
- Monitoring an LS2020 switch
- Generating a topological map of your LS2020 network (requires HP OpenView)
- Running a remote CLI on LS2020 switches via SNMP
- Managing a network of LS2020 switches through the use of an enterprise-specific management information base (MIB)

Table 3-1 lists the facilities provided by the StreamView application and refers you to related LS2020 documents for more detailed information.

Table 3-1 LS2020 Facilities and Related Documentation

For Information about ...	See the ...
Running the LS-Configurator	*LightStream 2020 Network Operations Guide*
Running the CLI, the LS-Monitor, and the LS-Topology Map	*LightStream 2020 Network Operations Guide*
LynxOS commands	*LightStream 2020 NP O/S Reference Manual*
LS2020 SNMP management information base (MIB)	*LightStream 2020 Operations Guide*

Installing StreamView to Run Under HP OpenView

The following procedures apply when you are installing either a new version or an upgrade of StreamView network management software on an NMS running HP OpenView. These procedures assume that HP OpenView is already installed and operating properly on the Sun SPARCstation.

The StreamView installation procedure involves three network management modules and associated facilities, as listed below:

- LS-Configurator
- LS-Monitor
- LS-Topology Map
- A command line interface (CLI)
- An enterprise-specific MIB database

The StreamView installation procedure involves the use of the **`ovinstall`** command. This command is used to accomplish the following:

- Check the HP OpenView installation utilities version
- Create the */usr/OV/bin/ls_bin* directory
- Update several HP OpenView directories with LS2020 registration and bitmap files
- Load the enterprise-specific MIB into the */usr/OV/snmp_mibs* directory and install it under HP OpenView
- Create the */usr/OV/databases/ls* directory for the MIB configuration database

To install the StreamView network management software on an NMS that is running HP OpenView, perform the following steps:

Step 1 Log in to the NMS as root. If logging in as root is disabled, issue the following command to "user ID root:"

```
su password:<root password>
```

Step 2 Create a user account called *npadmin*, if it does not already exist.

The CLI uses the password for the npadmin account as the password for the CLI protected mode. If no npadmin account has been defined for the workstation, the CLI uses the root password as the CLI protected-mode password.

Step 3 Ensure that the */usr/OV/bin* directory is in your path (the installation procedure uses this directory). To display your path, issue the following command at the SunOS prompt:

```
echo $PATH
```

To set your path in a Bourne shell or a bash shell, issue the following command:

```
$ export PATH=$PATH:/usr/OV/bin
```

To set your path in a C shell (csh), issue the following command:

```
$ setenv PATH ${PATH}:/usr/OV/bin
```

Note You use the HP OpenView OVIC utility to install the StreamView software under HP OpenView. The installation procedure requires Version 1.4 or later of this utility. To verify its version number, execute the command shown below at the bash prompt of your NMS. For the sake of example, `LSnode:2#` is illustrated as the node name; substitute the name of your LS2020 node in executing this command.

```
LSnode:2# cat /usr/OV/install/system/OVIC/ovindex
```

Release 1.4 is indicated by the line "`cid: ov1.4`" in this file.

Step 4 Insert the tape containing the StreamView software into the NMS quarter-inch tape drive.

Step 5 Issue the HP OpenView **`ovinstall`** command at the root prompt, as shown below, to extract the LS-Configurator from tape:

```
# ovinstall -r -p LS-CONFIGURE -- -d <tape-drive>
```

Figure 3-1 shows a typical screen display that results from execution of the **`ovinstall`** command to extract the LS-Configurator software from tape.

If you specify an incorrect device in the **ovinstall** command, the installation process terminates immediately and returns the following message or its equivalent:

```
"ovinstall: cannot install product definition for LS-CONFIGURE"
```

Note When you use the **`ovinstall`** command to extract and install the three StreamView network management modules (LS-Configurator, LS-Monitor, and LS-Topology Map), the **`<tape-drive>`** parameter may be any one of the following: `/dev/rst0`, `/dev/rst1`, or `/dev/rst2`, depending on which port your tape drive uses. The command takes from 5 to 15 minutes to extract and install the specified StreamView module (LS-Configurator, LS-Monitor, or LS-Topology Map) and associated files.

Figure 3-1 Screen Display During LS-Configurator Extraction

```
# ovinstall -r -p LS-CONFIGURE -- -d /dev/rst1
Path is: /usr/OV/install/tools:/usr/OV/bin:/bin:/usr/bin:/etc:/usr/ucb:/usr/etc
Installing product definition for LS-CONFIGURE.
Running command: "ovupdate -d /dev/rst1 -p LS-CONFIGURE"
==================================
==================================
Stopping ovspmd.
Installing filesets:
         LSCFG
         LSMIN
Running command: “ovupdate -d /dev/rst1 -l ovi.install”
==================================
==================================
NOTE: Installation completed successfully.
Beginning configuration.
Customize script for fileset LSCFG succeeded.
Customize script for fileset LSMIN succeeded.
Customize script for fileset OVIC succeeded.
Configuration completed successfully. Examine /tmp/update.log for details.
Restarting ovspmd.
```

Note The **ovinstall** command creates a log file named */tmp/update.log*. If problems occur during the installation process, you can examine this file to determine what may have gone wrong. To open this file for inspection, issue the following command: **`more /tmp/update.log`**. An example of this file is provided in the appendix “StreamView Output Samples” under the heading “Sample Output to StreamView Installation Log File.”

Step 6 Issue the HP OpenView **`ovinstall`** command to extract the LS-Monitor from tape:

```
# ovinstall -r -p LS-MONITOR -- -d <tape-drive>
```

Figure 3-2 shows a typical screen display that results from executing the above **`ovinstall`** command to extract the LS-Monitor software from tape.

Figure 3-2 Screen Display During LS-Monitor Extraction

```
# ovinstall -r -p LS-MONITOR -- -d /dev/rst1
Path is: /usr/OV/install/tools:/usr/OV/bin:/bin:/usr/bin:/etc:/usr/ucb:/usr/etc
Installing product definition for LS-MONITOR.
Running command: "ovupdate -d /dev/rst1 -p LS-MONITOR"
==================================
==================================
Stopping ovspmd.
Installing filesets:
         LSMIN
         LSMONITOR
Running command: "ovupdate -d /dev/rst1 -l ovi.install"
==================================
==================================
NOTE:    Installation completed successfully.
Beginning configuration.
Customize script for fileset LSMIN succeeded.
Customize script for fileset LSMONITOR succeeded.
Customize script for fileset OVIC succeeded.
Configuration completed successfully. Examine /tmp/update.log for details.
Restarting ovspmd.
```

Step 7 Issue the HP OpenView **`ovinstall`** command to extract the LS-Topology Map software from tape:

```
# ovinstall -r -p LS-TOPOMAP -- -d <tape-drive>
```

Figure 3-3 shows a typical screen display that results from execution of the preceding **ovinstall** command to extract the LS-Topology Map software from tape.

Figure 3-3 Screen Display During LS-Topology Map Extraction

```
# ovinstall -r -p LS-TOPOMAP -- -d /dev/rst1
Path is: /usr/OV/install/tools:/usr/OV/bin:/bin:/usr/bin:/etc:/usr/ucb:/usr/etc
Installing product definition for LS-TOPOMAP.
Running command: "ovupdate -d /dev/rst1 -p LS-TOPOMAP"
====================================
====================================
Stopping ovspmd.
Installing filesets:
         LSMIN
         LSTOPOMAP
Running command: "ovupdate -d /dev/rst1 -l ovi.install"
====================================
====================================
NOTE:    Installation completed successfully.
Beginning configuration.
Customize script for fileset LSMIN succeeded.
Customize script for fileset LSTOPOMAP succeeded.
Configuration completed successfully. Examine /tmp/update.log for details.
Restarting ovspmd.
```

Step 8 Update the HP OpenView Fields database with StreamView fields by issuing the following command:

```
# ovw -fields
```

See the section "Sample Output from HP OpenView Fields Command" in the "StreamView Output Samples" appendix for sample output generated by this command.

Step 9 Ensure that the StreamView network management application has been installed properly by issuing the following command:

```
# ovw -verify
```

The verify program takes less than a minute to run and prints the names of verified objects. If the verification process fails, a message on the screen so indicates. In this case, call your service representative for assistance.

See the "Sample Output from HP OpenView Verify Command" section in the "StreamView Output Samples" appendix for sample output generated by the **ovw -verify** command.

Step 10 Issue the following command to check the status of the HP OpenView daemons:

```
# ovstatus
```

If the **ovstatus** command returns the following message:

```
"ovstatus: ovspnd is not running; use ovstart to start ovspnd"
```

issue the **ovstart** command from "user ID root," as shown below:

```
# ovstart
```

Step 11 To update variables associated with the SNMP community, execute the **xnmsnmpconf** command at the shell prompt.

This command displays the SNMP configuration screen. When displayed, double-click on the "Default" parameters field (which contains default values in text fields). Modify the following field values to read as shown:

Port (remote) **161**

Timeout **6.0**

Retry **2**

The default polling interval is 5 minutes, which determines how long it will be before the display indicates changes in the network. Setting the polling interval to a value less than 5 minutes causes additional SNMP traffic to be generated and is, therefore, not advised.

By default, LS2020 nodes require the use of the "write" community for SNMP **set** operations, as indicated below:

```
set community: write
```

However, you may choose to use another name for the community that has read/write privileges, or you may choose to allow SNMP **set** operations from any community.

To allow such operations, however, you must configure the HP OpenView environment appropriately using the **xnmsnmpconf** command.

Alternatively, you can change the files at the LS2020 nodes to conform to the behavior of HP OpenView.

See the *LightStream 2020 Network Operations Guide* for additional information about setting up SNMP communities in an LS2020 network.

Step 12 Verify that the */etc/services* file contains the following line:

```
snmp-trap  162/udp
```

If this line is not present in the */etc/services* file, create it. To do so, as "user ID root," open the */etc/services* file with the vi editor:

```
# vi /etc/services
```

Insert the `snmp-trap 162/udp` line in the appropriate location in the */etc/services* file and close the file.

The installation of StreamView is now complete. The next section describes how to create the proper usage environment for running StreamView under HP OpenView.

Setting Up User Environment for Running with HP OpenView

This section describes how to set up the StreamView application so that it will run under HP OpenView on the NMS. Each NMS user intending to run StreamView under HP OpenView must perform the procedures in this section.

These procedures assume that you have already installed the StreamView application on your NMS, as described in the preceding section, "Installing StreamView to Run Under HP OpenView."

This section provides instructions for setting up the StreamView usage environment for the Bourne shell (sh and bash) and the C shell (csh). For clarity, the setup procedures for the Bourne shell and the C shell are discussed under separate headings below.

Other shells may differ in details; in the case of another shell, consult the applicable documentation for that shell.

In preparation for setting up the user environment under HP OpenView, determine the type of shell each user is using.

In an NFS environment that uses the Network Information Services (NIS) facility, enter the following command:

```
# ypmatch <username> passwd
```

In an environment that does not use the NIS facility, enter the following command:

```
# egrep <username> /etc/passwd
```

The shell can be identified from the last field of the password entry, as shown in the following example:

```
jjones:o@elQMkzZv7oF:10563:312:Jon Jones:/home/jjones:/bin/bash
```

Setting Environment Variables for Bourne Shell and Derivatives

To set up StreamView to operate under HP OpenView and the Bourne shell, perform the following procedures:

Step 1 From your home directory, edit the *.profile* file or the *.bash_profile* file that is read by the Bourne shell on login. Add the following lines to the end of the file:

```
PATH=$PATH:/usr/OV/bin/ls_bin
export LSC_DATABASE=/usr/OV/databases/ls/configure.netdb
export LSC_CFGLOGPATH=/usr/OV/log
export LSC_CFGTCPPORT=6789
export XKEYSYMDB=<pathname>/XKeysymDB
```

Note To determine the `<pathname>` for `XKEYSYMDB` in the last line above, consult your Sun system administrator. The file `XKeysymDB` should be in the subdirectory `lib, lib/X11,` or `/usr/openwin/lib` under the directory containing your X Windows executables. You can use the command **`find / -name XKeysymDB -print`** to search for the `XKeysymDB` file. However, the search process may be lengthy and may disclose multiple copies of the file. Also, note the upper- and lower-case conventions in the `XKeysymDB` filename; this case sensitivity is critical. If `XKEYSYMDB` is incorrectly defined when OpenView is started, that is, no file named `XKeySymDB` is found where `XKEYSYMDB` points, error output is directed to the standard error output device (STDERR). A sample of such output is shown in the "StreamView Output Samples" appendix under the heading "Error Output When XKEYSYMDB Is Undefined."

Step 2 Determine whether a `UIDPATH` variable is already set in your login environment by issuing the following command:

```
% echo $UIDPATH
```

Step 3 If the system displays a search path in Step 2, add the following line to the end of the *.profile* file or the *.bash_profile* file:

```
export UIDPATH=$UIDPATH:/usr/OV/bin/ls_bin/%U
```

Otherwise, if the system displays the message "`UIDPATH: unbound variable`" or displays no message, add the following line to the *.profile* file or the *.bash_profile* file:

```
export UIDPATH=/usr/OV/bin/ls_bin/%U
```

Step 4 Determine whether an `XFILESEARCHPATH` variable is already set in your login environment by issuing the following command:

```
% echo $XFILESEARCHPATH
```

Step 5 If the system displays a search path in Step 4, add the following line to the end of the *.profile* file or the *.bash_profile* file:

```
export XFILESEARCHPATH=$XFILESEARCHPATH:/usr/OV/%T/%N%S
```

Otherwise, if the system displays the message "`XFILESEARCHPATH: unbound variable`" or displays no message, check for the existence of the following directory:

```
% ls /usr/openwin/lib/app-defaults/
```

If this directory *exists*, add the following lines to the end of the *.profile* or *.bash_profile* file:

```
export XFILESEARCHPATH=/usr/openwin/lib/%T/%N%S:\
/usr/OV/%T/%N%S
```

Check for the existence of the following directory:

```
% ls /usr/lib/X11/app-defaults/
```

If the previous directory *does not* exist, but this directory *does* exist, add the following lines to the end of the *.profile* or *.bash_profile* file:

```
export XFILESEARCHPATH=/usr/lib/X11/%T/%N%S:\
/usr/OV/%T/%N%S
```

If *both* of the above directories exist, add the following lines to the end of the *.profile* or *.bash_profile* file:

```
export XFILESEARCHPATH=/usr/openwin/lib/%T/%N%S:\
/usr/lib/X11/%T/%N%S:\
/usr/OV/%T/%N%S
```

If *neither* of the above directories exists, call your network administrator or Cisco Systems Customer Support for assistance.

Step 6 Any HPOV/NMS user logged in during the StreamView installation process should now log out and log in again to activate the new environment variables.

Step 7 If this is a new HP OpenView user, check the user's home directory for the existence of the *.Xdefaults* file (or its equivalent *.Xresources*). If this file contains data, proceed with Step 8.

If this file exists but contains no data, append the contents of the */usr/OV/newconfig/xdefaults* file to the user's *.Xdefaults* file by issuing the following command sequence:

```
% mv .Xdefaults Xdef.sav
% cat Xdef.sav /usr/OV/newconfig/xdefaults > .Xdefaults
```

This step gives StreamView access to the screen fonts and application colors needed for display purposes.

If you need to revert to the old *.Xdefaults* file, you can find its contents in the backup file *Xdef.sav.*

If the *.Xdefaults* file does not exist in the user's home directory, issue the following command to create it:

```
% cp /usr/ov/newconfig/xdefaults .Xdefaults
```

A sample *.Xdefaults* file is shown in the appendix "StreamView Output Samples."

Step 8 Issue the following command from the console of your NMS to start HP OpenView:

```
% ovw
```

If, after issuing the ovw command, the message "`ovw: cannot connect to database`" is returned, issue the following command:

```
% ovstatus
```

This command reports the nature of the problem, as shown below:

```
"ovstatus: ovspnd is not running; use ovstart to start ovspnd"
```

Issue the `ovstart` command from "user ID root," as shown below:

```
# ovstart
```

As an alternative, if you want to start HP OpenView and run it in background mode while keeping the current window active, issue the following command:

```
% ovw&
```

In background mode, the ovw process is fully usable.

Note If LS2020 applications are invoked from within HP OpenView, such applications inherit the environment and privileges of the user account from which the `ovw` start command is issued. Thus, when the LS-Configurator is invoked under HP OpenView, the access permissions for the configuration database file created by this module correspond to the privileges of the user issuing the `ovw` command.

Step 9 If the following error message appears in the parent window from which you started HP OpenView in Step 8, the `XFILESEARCHPATH` is not set correctly:

```
ovw: Xt Warning: Cannot convert string "helvr14" to type FontStruct
ovw: Xt Warning: Cannot convert string "helvr12" to type FontStruct
ovw: Xt Warning: Cannot convert string "helvr10" to type FontStruct
ovw: Xt Warning: Cannot convert string "helvr08" to type FontStruct
```

Shut down HP OpenView, revert to Step 5 above, and add "`/usr/OV/%T/%N%S`" to the `XFILESEARCHPATH`. Continue from that point with Step 6 and Step 8 to restart HP OpenView.

The first time the LS-Configurator tool (cfg) is executed, the database is created automatically with the name specified by LSC_DATABASE, taking on the extensions *.dir* and *.pag* and the file permissions of the first user.

All users who will create or modify LS2020 node configurations must be in the same UNIX group. If they are not in the same group, such users will be limited to read-only access to the database and, therefore, will not be able to update LS2020 nodes with configuration information from the global database.

For example, if the operations group has read-only access to the global database, "user ID root" should issue the following commands to ensure that the operations group has required read/write access privileges to the file *configure.netdb*:

```
su
cd /usr/OV/databases/ls
chgrp <ops-group> configure.netdb
```

Setting Environment Variables for C Shell and Derivatives

To set up StreamView to operate under HP OpenView and the C shell, perform the following steps:

Step 1 From your home directory, edit the *.cshrc* file that is read by the C shell on login. Add the following lines to the end of the file:

```
setenv PATH ${PATH}:/usr/OV/bin/ls_bin
setenv LSC_DATABASE /usr/OV/databases/ls/configure.netdb
setenv LSC_CFGLOGPATH /usr/OV/log
setenv LSC_CFGTCPPORT 6789
setenv XKEYSYMDB <pathname>/XKeysymDB
```

Note To determine the <pathname> for XKEYSYMDB in the last line above, consult your Sun system administrator. The file XKeysymDB should be in the subdirectory lib, lib/X11, or /usr/openwin/lib under the directory containing your X Windows executables. You can use the command find / -name XKeysymDB -print to search for the XKeysymDB file. However, be aware that the search process may be lengthy and find multiple copies of the file. Also, note the upper- and lower-case conventions in the XKeysymDB file name; this case sensitivity is critical. If XKEYSYMDB is incorrectly defined when OpenView is started, that is, no file named XKeySymDB is found where XKEYSYMDB points, error output is directed to the standard error output device (STDERR). A sample of such output is shown in the "StreamView Output Samples" appendix under the heading "Error Output When XKEYSYMDB Is Undefined."

Step 2 Determine whether a UIDPATH variable is already set in your login environment by issuing the following command:

```
% echo $UIDPATH
```

Step 3 If the system displays a search path in Step 2, add the following line to the end of the *.cshrc* file:

```
setenv UIDPATH ${UIDPATH}:/usr/OV/bin/ls_bin/%U
```

Otherwise, if the system displays the message "UIDPATH: Undefined variable" or displays no message, add the following line to the end of the *.cshrc* file:

```
setenv UIDPATH /usr/OV/bin/ls_bin/%U
```

Step 4 Determine whether an XFILESEARCHPATH variable is already set in your login environment by issuing the following command:

```
% echo $XFILESEARCHPATH
```

Step 5 If the system displays a search path in Step 4, add the following line to the end of the *.cshrc* file:

```
setenv XFILESEARCHPATH ${XFILESEARCHPATH}:/usr/OV/%T/%N%S
```

Otherwise, if the system displays the message "XFILESEARCHPATH: undefined variable" or displays no message, check for the existence of the following directory:

```
% ls /usr/openwin/lib/app-defaults/
```

If this directory *exists*, add the following line to the end of the *.cshrc* file:

```
setenv XFILESEARCHPATH /usr/openwin/lib/%T/%N%S:/usr/OV/%T/%N%S
```

Check for the existence of the following directory:

```
% ls /usr/lib/X11/app-defaults/
```

If the first directory *does not* exist, but this second directory *does* exist, add the following line to the end of the *.cshrc* file:

```
setenv XFILESEARCHPATH /usr/lib/X11/%T/%N%S:/usr/OV/%T/%N%S
```

If *both* of the directories exist, add the following line to the end of the *.cshrc file*:

```
setenv XFILESEARCHPATH /usr/openwin/lib/%T/%N%S:/usr/lib/X11/%T/%N%S:/usr/OV/%T/%N%S
```

If *neither* of the directories exists, call your network administrator or Cisco Systems Customer Support for assistance.

Step 6 Any HPOV/NMS user logged in during the StreamView installation process should now log out and log in again to activate the new environment variables.

Step 7 If this is a new HP OpenView user, check the user's home directory for the existence of the *.Xdefaults* file (or its equivalent *.Xresources*). If this file contains data, proceed with Step 8.

If this file exists but contains no data, append the contents of the */usr/OV/newconfig/xdefaults* file to the user's *.Xdefaults* file by issuing the following command sequence:

```
% mv .Xdefaults Xdef.sav
% cat Xdef.sav /usr/OV/newconfig/xdefaults > .Xdefaults
```

This step gives StreamView access to the screen fonts and application colors needed for display purposes.

If you need to revert to the old *.Xdefaults* file, you can find its contents in the backup file *Xdef.sav.*

If the *.Xdefaults* file does not exist in the user's home directory, issue the following command to create it:

```
% cp /usr/ov/newconfig/xdefaults .Xdefaults
```

A sample *.Xdefaults* file is shown in the appendix "StreamView Output Samples."

Step 8 Issue the following command from the console of your NMS to start HP OpenView:

```
% ovw
```

If, after issuing the ovw command, the message "`ovw: cannot connect to database`" is returned, issue the following command:

```
% ovstatus
```

This command reports the nature of the problem, as shown below:

```
"ovstatus: ovspnd is not running; use ovstart to start ovspnd"
```

Issue the **`ovstart`** command from "user ID root," as shown below:

```
# ovstart
```

As an alternative, if you want to start HP OpenView and run it in background mode while keeping the current window active, issue the following command:

```
% ovw&
```

In background mode, the ovw process is fully usable.

Note If you invoke LS2020 applications from within HP OpenView, the applications inherit the environment and privileges of the user account from which the `ovw` start command is issued. Thus, when the LS-Configurator is invoked under HP OpenView, the access permissions for the configuration database file created by this module correspond to the privileges of the user issuing the `ovw` command.

Step 9 If the following error message appears in the parent window from which you started HP OpenView in Step 8, the `XFILESEARCHPATH` is not set correctly:

```
ovw: Xt Warning: Cannot convert string "helvr14" to type FontStruct
ovw: Xt Warning: Cannot convert string "helvr12" to type FontStruct
ovw: Xt Warning: Cannot convert string "helvr10" to type FontStruct
ovw: Xt Warning: Cannot convert string "helvr08" to type FontStruct
```

In this case, shut down HP OpenView, revert to Step 5, and add "`/usr/OV/%T/%N%S`" to the `XFILESEARCHPATH`. Continue from that point with Step 6 and Step 8 to restart HP OpenView.

The first time the LS-Configurator tool (cfg) is executed, the database is created automatically with the name specified by LSC_DATABASE. It has the extensions *.dir* and *.pag* and the file permissions of the first user.

All users who will create or modify LS2020 node configurations must be in the same UNIX group. If not, such users will be limited to read-only access to the database and, therefore, will not be able to update LS2020 nodes with configuration information from the global database.

For example, if the operations group has read-only access to the global database, "user ID root" should issue the following commands to ensure that the operations group has required read-write access privileges to the file *configure.netdb*:

```
su
cd /usr/OV/databases/ls
chgrp <ops-group> configure.netdb
```

Installing StreamView to Run without HP OpenView

The following procedures apply when you are installing either a new version or an upgrade of the StreamView network management software on an NMS that is ***not running*** HP OpenView.

To install the StreamView application to operate stand-alone without HP OpenView, perform the following steps:

Step 1 Log in to the NMS as root.

Step 2 Create a user account called *npadmin*.

The CLI uses the password for the npadmin account as the password for the CLI protected mode. If no npadmin account is defined for the NMS, the CLI uses the root password as the CLI protected mode password.

Step 3 Back up your *ovsnmp.conf* file, if desired. This step is predicated on whether or not you have customized your existing configuration files and whether or not you wish to preserve them for a subsequent installation or upgrade of StreamView software.

For example, if you have already installed Release 2.1 of the StreamView network management software in a non-HP OpenView environment and you need to re-install the software for some reason, you should first back up any configuration files you have customized since the previous installation.

Specifically, if you have customized the file */usr/LightStream-2.1/templates/ovsnmp.conf*, you should save a backup copy of this file and restore it after the installation has been completed (see Step 7).

To back up the *ovsnmp.conf* file, change to the proper directory and copy the configuration file, as shown below:

```
# cd /usr/LightStream-2.1/templates
# cp -p ovsnmp.conf ovsnmp.conf.custom
```

Issue the list (`ls`) command to display the existing configuration files, as shown below:

```
# ls ovsnmp.conf*
```

This command will list the following configuration files:

```
ovsnmp.conf
ovsnmp.conf.custom
```

Step 4 Change to the root directory by issuing the following command:

```
# cd /
```

Step 5 Insert the StreamView software tape into the NMS quarter-inch tape drive.

Step 6 Issue the following commands in the order shown to extract the StreamView application files from tape:

```
# mt -f <tape-drive> rew
# mt -f <tape-drive> fsf 4
# tar xvpf <tape-drive>
```

The **<tape-drive>** parameter may be any one of the following, depending on which port your tape drive uses: `/dev/nrst0`, `/dev/nrst1`, or `/dev/nrst2`.

Note It is important to include the letter *n* as the leading character in the tape drive parameter (for example, `nrst0` for tape drive rst0). The letter *n* specifies “no rewind.” If you omit this character, you will not be able to read the tape.

The extraction process, which takes from 10 to 20 minutes to complete, creates the following directory structures:

```
/usr/LightStream-2.1
/usr/LightStream-2.1/bin
/usr/LightStream-2.1/db
/usr/LightStream-2.1/log
/usr/LightStream-2.1/mib
/usr/LightStream-2.1/templates
```

Step 7 Restore your ovsnmp.conf file, if necessary.

If you saved a backup copy of your *ovsnmp.conf* file in Step 3, determine whether differences exist between your backup copy of the "*ovsnmp.conf.custom*" file and the new *ovsnmp.conf* file. Do this by executing the following commands:

```
# cd /usr/LightStream-2.1/templates
# diff ovsnmp.conf ovsnmp.conf.custom
```

If no differences between these files are reported, the files are identical. On the other hand, if differences are reported, save the distribution copy of the *ovsnmp.conf* file by issuing the following command:

```
# mv ovsnmp.conf ovsnmp.conf.orig
```

Copy your custom configuration file to *ovsnmp.conf* by issuing the following command:

```
# cp ovsnmp.conf.custom ovsnmp.conf
```

The installation of the StreamView network management software is now complete. The next section describes how to set up the NMS environment for using StreamView in a non-HP OpenView environment.

Setting Up User Environment for Running without HP OpenView

This section describes how to set up the StreamView application so that it will run on the NMS without HP OpenView. Each LS2020 user intending to run StreamView on the NMS without HP OpenView must complete the procedures in this section.

It is assumed that you have already installed the StreamView application on your NMS to operate without HP OpenView, as described in the preceding section, "Installing StreamView to Run without HP OpenView."

This section provides instructions for setting up the StreamView usage environment for the Bourne shell (sh and bash) and the C shell (csh). For convenience and clarity, the setup procedures for these shells are described under separate headings below.

Note that other shells may differ in details; in the case of another shell, consult the appropriate shell documentation for additional information.

Setting Environment Variables for Bourne Shell and Derivatives

To set up the StreamView application to operate without HP OpenView under the Bourne shell, perform the following steps:

Step 1 Open the */etc/services* file with the vi editor:

```
vi /etc/services
```

Verify that the */etc/services* file contains the following entry:

```
snmp-trap   162/udp
```

If this entry is not present in the */etc/services* file, create the entry and close the file.

Step 2 Determine which type of shell each user is using:

In an NFS environment using the Network Information Services (NIS) facility, enter the following command:

```
ypmatch <username> passwd
```

In an environment that does not use the NIS facility, enter the following command:

```
egrep <username> /etc/passwd
```

The last field of the output that results from either of the above commands identifies the shell in use, as shown in the following example:

```
jjones:o@elQMkzZv7oF:10563:312:Jon Jones:/home/jjones:/bin/bash
```

Step 3 Each StreamView user must define several environment variables. To do so, go to your home directory and edit the *.profile* file or the *.bash_profile* file that the Bourne shell reads on login.

Note To determine the <pathname> for XKEYSYMDB shown in the Bourne shell procedures below, consult your Sun system administrator. The file XKeysymDB should be in the subdirectory lib, lib/X11, or /usr/openwin/lib under the directory containing your X Windows executables. You can use the command **find / -name XKeysymDB -print** to search for the XKeysymDB file. However, be aware that the search process may be lengthy and may disclose multiple copies of the file. Also, note the upper- and lower-case conventions in the XKeysymDB filename; this case sensitivity is critical. If XKEYSYMDB is incorrectly defined when OpenView is started, that is, no file named XKeySymDB is found where XKEYSYMDB points, error output is directed to the standard error output device (STDERR). A sample of such output is shown in the "StreamView Output Samples" appendix under the heading "Error Output When XKEYSYMDB Is Undefined."

Step 4 Determine whether a UIDPATH variable is already set in your login environment by entering the following command:

```
% echo $UIDPATH
```

Step 5 If the system displays a search path in Step 4, add the following lines to the end of the *.profile* file or the *.bash_profile* file:

```
PATH=$PATH:/usr/LightStream-2.1/bin
export UIDPATH=$UIDPATH:/usr/LightStream-2.1/bin/%U
export LSC_DATABASE=/usr/LightStream-2.1/db/configure.netdb
export LSC_CFGLOGPATH=/usr/LightStream-2.1/log
export LSC_CFGTCPPORT=6789
export OVSNMP_CONF_FILE=/usr/LightStream-2.1/templates/ovsnmp.conf
export XKEYSYMDB=<pathname>/XKeysymDB
```

After adding the data called for in this step to the appropriate file, skip to Step 7 below.

Step 6 If the system displays `UIDPATH: unbound variable` or no message in response to the `echo $UIDPATH` command, add the following lines to the end of the *.profile* file or the *.bash_profile* file:

```
PATH=$PATH:/usr/LightStream-2.1/bin
export UIDPATH=/usr/LightStream-2.1/bin/%U
export LSC_DATABASE=/usr/LightStream-2.1/db/configure.netdb
export LSC_CFGLOGPATH=/usr/LightStream-2.1/log
export LSC_CFGTCPPORT=6789
export OVSNMP_CONF_FILE=/usr/LightStream-2.1/templates/ovsnmp.conf
export XKEYSYMDB=<pathname>/XKeysymDB
```

Continue with Step 7.

Step 7 Any NMS user logged in during the StreamView installation and configuration process should now log out and log in again to activate the new environment variables.

Step 8 Check the user's home directory for the existence of the *.Xdefaults* file. If this file is present and contains data, skip to Step 9.

If this file exists but contains no data, append the contents of the */usr/LightStream-2.1/templates/xdefaults* file to the user's *.Xdefaults* file by issuing the following commands:

```
% mv .Xdefaults Xdef.sav
% cat Xdef.sav /usr/LightStream-2.1/templates/xdefaults > .Xdefaults
```

This step gives StreamView access to the screen fonts and application colors needed for display purposes.

If you need to revert to the old *.Xdefaults* file, you can find its contents in the backup file *Xdef.sav.*

If the *.Xdefaults* file does not exist in the user's home directory, issue the following command to create it:

```
% cp /usr/LightStream-2.1/templates/xdefaults .Xdefaults
```

A sample *.Xdefaults* file is shown in the appendix "StreamView Output Samples."

Step 9 By default, LS2020 nodes require the use of the "write" community for SNMP **`set`** operations. You may choose to use another name for your community with read/write access privileges, or you may choose to allow SNMP **`set`** operations from any community.

To configure this option in your NMS environment, edit the file */usr/LightStream-2.1/templates/ovsnmp.conf*, or change the files at each LS2020 node to conform to your workstation's behavior.

Refer to the *LightStream 2020 Network Operations Guide* for information about setting up SNMP communities in an LS2020 network. Use a text editor such as emacs or vi to modify the file */usr/LightStream-2.1/templates/ovsnmp.conf.* The file itself contains instructions for formatting each entry.

Note that the first time the LS-Configurator tool (cfg) is executed, the database is created automatically with the name specified by LSC_DATABASE, taking on the extensions *.dir* and *.pag* and the file permissions of the first user.

All users who will create or modify LS2020 node configurations must be in the same UNIX group. If they are not in the same group, users will be limited to read-only access to the database and, therefore, will not be able to update LS2020 nodes with configuration information from the global database.

For example, if the operations group has read-only access to the global database, "user ID root" should issue the following commands to ensure that the operations group has the required read/write access privileges to the file *configure.netdb*:

```
su
cd /usr/LightStream-2.1/db
chgrp <ops-group> configure.netdb
```

Setting Environment Variables for C Shell and Derivatives

To set up the StreamView application to operate without HP OpenView under the C shell, perform the following steps:

Step 1 Open the */etc/services* file with the vi editor:

```
vi /etc/services
```

Verify that the */etc/services* file contains the following entry:

```
snmp-trap   162/udp
```

If this entry is not present in the */etc/services* file, create the entry and close the file.

Step 2 Determine which type of shell each user is using, as described below.

In an NFS environment using the Network Information Services (NIS) facility, enter the following command:

```
ypmatch <username> passwd
```

In an environment that does not use the NIS facility, enter the following command:

```
egrep <username> /etc/passwd
```

The last field of the output that results from either of the above commands identifies the shell in use, as shown in the following example:

```
jjones:o@elQMkzZv7oF:10563:312:Jon Jones:/home/jjones:/bin/csh
```

Step 3 To use StreamView, you must define several environment variables. To define these variables, go to your home directory and edit the *.cshrc* file that the C shell reads on login.

Note To determine the <pathname> for XKEYSYMDB in the procedures below, consult your Sun system administrator. The file XKeysymDB should be in the subdirectory lib, lib/X11, or /usr/openwin/lib under the directory containing your X Windows executables. You can use the command find / -name XKeysymDB -print to search for the XKeysymDB file. However, the search process may be lengthy and may disclose multiple copies of the file. Also, note the upper- and lower-case conventions in the XKeysymDB filename; this case sensitivity is critical. If XKEYSYMDB is incorrectly defined when OpenView is started, that is, no file named XKeySymDB is found where XKEYSYMDB points, error output is directed to the standard error output device (STDERR). A sample of such output is shown in the "StreamView Output Samples" appendix under the heading "Error Output When XKEYSYMDB Is Undefined."

Step 4 Determine whether a UIDPATH variable is already set in your login environment by entering the following command:

```
% echo $UIDPATH
```

Step 5 If the system displays a path, add the following lines to the end of the *.cshrc* file:

```
setenv PATH ${PATH}:/usr/LightStream-2.1/bin
setenv UIDPATH ${UIDPATH}:/usr/LightStream-2.1/bin/%U
setenv LSC_DATABASE /usr/LightStream-2.1/db/configure.netdb
setenv LSC_CFGLOGPATH /usr/LightStream-2.1/log
setenv LSC_CFGTCPPORT 6789
setenv OVSNMP_CONF_FILE /usr/LightStream-2.1/templates/ovsnmp.conf
setenv XKEYSYMDB <pathname>/XKeysymDB
```

After adding the data called for in this step to the *.cshrc* file, skip to Step 7 below.

Step 6 If the system displays the message `UIDPATH: Undefined variable` or no message in response to the **`echo $UIDPATH`** command, add the following lines to the end of the *.cshrc* file:

```
setenv PATH ${PATH}:/usr/LightStream-2.1/bin
setenv UIDPATH /usr/LightStream-2.1/bin/%U
setenv LSC_DATABASE /usr/LightStream-2.1/db/configure.netdb
setenv LSC_CFGLOGPATH /usr/LightStream-2.1/log
setenv LSC_CFGTCPPORT 6789
setenv OVSNMP_CONF_FILE /usr/LightStream-2.1/templates/ovsnmp.conf
setenv XKEYSYMDB <pathname>/XKeysymDB
```

Continue with Step 7.

Step 7 Any NMS user logged in during the StreamView installation and configuration process should now log out and log in again to activate the new environment variables.

Step 8 Check the user's home directory for the existence of the *.Xdefaults* file. If this file is present and contains data, skip to Step 9.

If this file exists but contains no data, append the contents of the */usr/LightStream-2.1/templates/xdefaults* file to the user's *.Xdefaults* file by issuing the following commands:

```
% mv .Xdefaults Xdef.sav
% cat Xdef.sav /usr/LightStream-2.1/templates/xdefaults > .Xdefaults
```

This step gives StreamView access to the screen fonts and application colors needed for display purposes.

If you need to revert to the old *.Xdefaults* file, you can find its contents in the backup file *Xdef.sav.*

If the *.Xdefaults* file does not exist in the user's home directory, issue the following command to create it:

```
% cp /usr/LightStream-2.1/templates/xdefaults .Xdefaults
```

A sample *.Xdefaults* file is shown in the appendix "StreamView Output Samples."

Step 9 By default, LS2020 nodes require the use of the "write" community for SNMP **`set`** operations. You may choose to use another name for your community with read/write access privileges, or you may choose to allow SNMP **`set`** operations from any community.

To configure this option in your NMS environment, edit the file */usr/LightStream-2.1/templates/ovsnmp.conf*, or change the files at each LS2020 node to conform to your workstation's behavior.

Refer to the *LightStream 2020 Network Operations Guide* for information about setting up SNMP communities in an LS2020 network. Use a text editor such as emacs or vi to modify the file */usr/LightStream-2.1/templates/ovsnmp.conf.* The file itself contains instructions for formatting each entry.

The first time the LS-Configurator tool (cfg) is executed, the database is created automatically with the name specified by LSC_DATABASE, taking on the extensions *.dir* and *.pag* and the file permissions of the first user.

All users who will create or modify LS2020 node configurations must be in the same UNIX group. If they are not, such users will be limited to read-only access to the database and, therefore, will not be able to update LS2020 nodes with configuration information from the global database.

For example, if the operations group has read-only access to the global database, “user ID root” should issue the following commands to ensure that the operations group has required read/write access privileges to the file *configure.netdb*:

```
su
cd /usr/LightStream-2.1/db
chgrp <ops-group> configure.netdb
```