

High Frequency Electromagnetic Software

SONNET[®] 12 Suites



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UNIX and Linux
Installation

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UNIX AND LINUX INSTALLATION

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Chapter 1 Introduction

Requirements

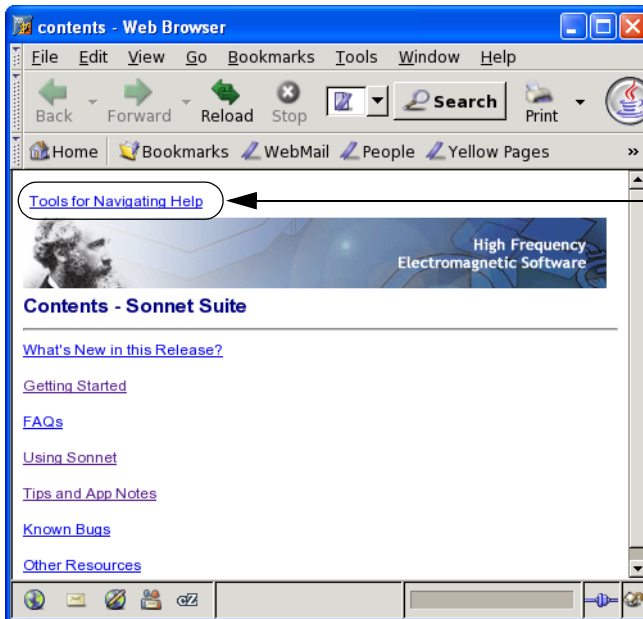
For up to date requirements and testing status, please refer to:

<http://www.sonnetsoftware.com/requirements>

Using Help

Sonnet Help on the UNIX and Linux platforms is displayed using your web browser. By default, when you open Sonnet help, a single frame view of the main contents appears to ensure that you are able to access help no matter what web browser you are using. If you wish to use the tri-frame view, which allows you to access the Search and Index capabilities, click on the “Tools for Navigating Help” link that appears at the top left hand corner of the view as shown below.

UNIX and Linux Installation



Click here to open the tri-frame view and access Search and Index functions

Chapter 2 UNIX Installation

Step-by-step Instructions

These instructions are for users who are loading in Sonnet on a UNIX platform. You may do the installation remotely. If you are installing the software on a PC with Windows, please refer to the **Windows Installation Manual**.

For instructions on setting up remote *em* processing once your installation is complete, please refer to the PDF manual, [Remote *em* Processing](#). To access this manual, select *Help* ⇒ *Manuals* from the menu of any Sonnet application. Click on the Installation and Administration button in the PDF which appears on your display, then click on the Remote *em* Processing button.

For instructions on setting up *emCluster* Computing once your installation is complete, please refer to the PDF manual, [emcluster Processing](#). To access this manual, select *Help* ⇒ *Manuals* from the menu of any Sonnet application. Click on the Installation and Administration button in the PDF which appears on your display, then click on the **Setting Up *emcluster*** button.

Step 1: Obtaining Licensing Information

All users, both previous and new, require a new license. This includes previous users upgrading from a 12.0 beta release. You may request a license from the Sonnet web site at:

www.sonnetsoftware.com/license

Follow the on screen instructions to request your license.

In response to your license request, Sonnet will email licensing information which allows you to enable your software. Once you have received your licensing information from Sonnet, continue the installation at Step 2 below.

Step 2: Stop License Server



WARNING

You should ensure that no one is presently running Sonnet before stopping the license manager.

If you have a license server for Sonnet already running, then stop it before installing the license data files. First make sure no one is using the software. Anyone running the software will lose their license and not regain it. To stop the license server, type:

```
bin/sflexnet stop
```

Step 3: Installing the Software

NOTE:

The software does not need to be loaded in using root. However, we suggest that you use root so that users are prevented from changing or removing the Sonnet modules. The software may be loaded under any account.

- 1 Go to the correct directory as detailed below:

DOWNLOAD: You should already be in the directory in which you downloaded the software as a result of the download instructions. If you are not logged in as root, we suggest that you do so and change directory to the download directory.

CD-ROM: If you are installing your software from a CD-ROM, load the CD-ROM, then go to the “cdrom” directory.

Type:

```
cd /cdrom/sonnetsoftware
```

Once you are in the correct directory, do the following to load in the software:

2 Type:

```
sh unixinst
```

Then follow the screen instructions.

3 To complete the installation, go to the Sonnet directory and run “installm”. For example, if you copied the software to “/home/sonnet”, then type:

```
cd /home/sonnet
```

```
./installm
```

Again, note that you must substitute your pathname in place of “/home/sonnet”.

When the installation is complete, a UNIX prompt will appear on the screen.

4 When you have completed these instructions, continue with the next step.

Step 4: Creating the License

All users, both new and previous, require a new license. This is true even if you are upgrading from a 12.0 beta release. This license is used in conjunction with the license manager to determine which products you are authorized to use. You must have a license to run Sonnet.

You should have received your license information in response to the License Request you made on the Sonnet website. Your license information should have been sent in an e-mail.

Please follow the instructions in your email to enable your software. Once the licensing is complete, continue with the next step.

Step 5: Starting License Manager

Before you can run the Sonnet programs, you must start the license manager daemon, `lmgrd`. The `lmgrd` program will start-up the Sonnet vendor daemon, `sonnetd`. You can have only one Sonnet vendor daemon running on a particular license server.

NOTE: If your license server uses a firewall, the firewall must be configured to allow the two licensing programs, “`lmgrd`” and “`sonnetd`” to execute. The ports used for communicating to the license server are 7852 (`lmgrd`) and 7853 (`sonnetd`). Please see your system administrator for instructions on configuring your firewall.

Start the license manager on the license server.

Type:

```
bin/sflexnet start
```

Step 6: Start License Manager on Boot

Typically, you will want to startup the license manager daemon each time you reboot the server. To do this you must make a change to your system startup files to start up the license manager daemon automatically on bootup. Sonnet has provided a utility to perform the necessary setup on any platform.

NOTE: In the instructions below, replace `<Sonnet Directory>` with the full path to our Sonnet directory.

To startup the license manager daemon automatically when you reboot the server, you should run the program `soninstallservice`. For instructions on running this program, type:

```
cd <Sonnet Directory>
```

bin/soninstallservice -h

where <Sonnet Directory> is the name of the directory in which you installed Sonnet.

You may also use this utility to install the remote *em* service and the Sonnet *emCluster* service. Please refer to the [Remote em Processing](#) and [emcluster Processing](#) documents available in PDF format on the Administration and Installation page of the manual interface (*Help* ⇒ *Manuals*).

Step 7: User Environment Setup

To execute the software, you must first define the variable, SONNET_DIR, to the directory where you loaded in the software, then add the directory, “\$SONNET_DIR/bin”, to your PATH. Also, *xgeom*, *emstatus*, *emgraph*, *emvu*, *patvu* and the Sonnet task bar are Motif programs and require that you define your DISPLAY variable. If you are upgrading to a new release of Sonnet, then these steps may have already been done.

Home Directory and Display

NOTE: In the instructions below, replace <Sonnet Directory> with the name of your Sonnet directory.

csh users

If you are using csh, then you should have the following lines in your “.login”:

```
setenv SONNET_DIR <Sonnet Directory>
```

```
set path=( $path $SONNET_DIR/bin )
```

```
setenv DISPLAY :0
```

After updating your “.login” file, log out of the system, then log back in to activate the changes.

sh, ksh, and bash users

If you are using sh, ksh, or bash, then you should have the following lines in your “.profile”:

```
SONNET_DIR=<Sonnet Directory>; export SONNET_DIR
```

```
PATH=$PATH:$SONNET_DIR/bin; export PATH
```

```
DISPLAY=:0; export DISPLAY
```

After updating your “.profile” file, log out of the system, then log back in to activate the changes.

Step 8: Testing the Installation

A test program for the software is provided. This program verifies that the environmental variables are set up properly. As part of the test, it runs a simple test case for various Sonnet programs to ensure that they are functioning properly.

NOTE: **Software should be unlocked and the license manager should be running before executing this test.**

System Administrator

If you are not a user of the software and do not have the SONNET_DIR environment variable or the path set, you may still test the software. First log on to the computer which is authorized to run Sonnet. Next type:

```
cd <Sonnet Directory>
```

```
bin/testem -r
```

Sonnet Users

To run the test program, log into your account and type:

```
testem
```

Step 9: Verifying OpenGL is installed.

OpenGL must be installed on each Unix platform where the project editor and current response viewer are executed. To verify if you have OpenGL installed, follow the appropriate directions below. If OpenGL is not installed, see your system administrator.

Solaris

Run the following command:

```
pkginfo | grep OpenGL
```

If OpenGL is installed, you will see something like the following:

```
application SUNWgldoc      Sun OpenGL for Solaris Documentation and Man Pages
application SUNWgldp      Sun OpenGL for Solaris Device Pipeline Support
application SUNWgldpx     Sun OpenGL for Solaris 64-bit Device Pipeline Support
application SUNWglh       Sun OpenGL for Solaris Header Files
application SUNWglrt      Sun OpenGL for Solaris Runtime Libraries
application SUNWglrtu     Sun OpenGL for Solaris Platform Specific Runtime Libs
application SUNWglrtx     Sun OpenGL for Solaris 64-bit Runtime Libraries
application SUNWglr       Sun OpenGL for Solaris Runtime Generic Software
application SUNWglrx      Sun OpenGL for Solaris 64-bit Optimized SW Rasterizer
application SUNWglrsz     Sun OpenGL for Solaris Optimized SW Rasterizer
system      SUNWxscreensaver-hacks-gl      XScreenSaver OpenGL display mode modules
```

If OpenGL is not installed, then nothing will be displayed.

Removing the Software from your System

If you have an evaluation copy of Sonnet, you should remove the software once your evaluation is completed.

To remove the software from your system:

- Login as root.
- Stop the license manager
Type:

```
cd <Sonnet Directory>
```

```
bin/sflexnet stop
```

```
cd ..
```

- Remove the software.
Type:

```
rm -rf <Sonnet Directory>
```

Chapter 3 Linux Installation Instructions

These instructions are for users who are loading in Sonnet on a Linux platform. You may do the installation remotely.

Step 1: Obtaining Licensing Information

All users, both previous and new, require a new license. This is true even if you are upgrading from a 12.0 beta release. You may request a license from the Sonnet web site:

www.sonnetsoftware.com/license

Follow the on screen instructions to request your license.

In response to your license request, Sonnet will email licensing information which allows you enable your software. Once you have received your licensing information from Sonnet, continue the installation at Step 2 below.

Step 2: Installing the Software

To load in the software:

- 1 Login as root.

NOTE:

The software does not need to be loaded in using root. However, we suggest that you use root so that users are prevented from changing or removing the Sonnet modules. The software may be loaded under any account.

- 2 Create the directory in which you wish to place the Sonnet software; this will be referred to as the Sonnet directory. For example, if you wish to place the software in “/home/sonnet”, then you would need to type the following:

mkdir /home/sonnet

You may place the software in any directory you wish; just substitute your pathname in place of “/home/sonnet”.

- 3 Go to the correct directory as detailed below:

DOWNLOAD: Change directory to the download directory.

CD-ROM: If you are installing your software from a CD-ROM, load the CD-ROM, then change directory to where the CD-ROM is mounted. An example of the command is shown below. This command can vary dependent on your operating system and your CD-ROM device.

Type:

cd /media/sonnetsoftware

Once you are in the correct directory, do the following to load in the software:

- 4 Type:

sh unixinst

Then follow the screen instructions.

- 5 To complete the installation, go to the Sonnet directory and run “installm”. For example, if you copied the software to “/home/sonnet”, then type:

cd /home/sonnet

./installm

Again, note that you must substitute your pathname in place of “/home/sonnet”.

- 6 When the installation is complete, a Linux prompt will appear on the screen.

Step 3: User Environment Setup

To execute the software, you must first define the variable, `SONNET_DIR`, to the directory where you loaded in the software, then add the directory, “`$SONNET_DIR/bin`”, to your `PATH`. Also, *xgeom*, *emstatus*, *emgraph*, *emvu*, *patvu* and the Sonnet task bar are Motif programs and require that you define your `DISPLAY` variable.

Home Directory and Display

NOTE: In the instructions below, replace *<Sonnet Directory>* with the name of your Sonnet directory.

csh users

If you are using csh, then you should have the following lines in your “.login”:

```
setenv SONNET_DIR <Sonnet Directory>
set path=( $path $SONNET_DIR/bin )
setenv DISPLAY :0
```

After updating your “.login” file, log out of the system, then log back in to activate the changes.

sh, ksh, and bash users

If you are using sh, ksh, or bash, then you should have the following lines in your “.profile”:

```
SONNET_DIR=<Sonnet Directory>; export SONNET_DIR
PATH=$PATH:$SONNET_DIR/bin; export PATH
```

```
DISPLAY=:0; export DISPLAY
```

After updating your “.profile” file, log out of the system, then log back in to activate the changes.

Step 4: Creating the License

All users, previous or new, require a new license. This is true even if you are upgrading from a 12.0 beta release. This license is used in conjunction with the license manager to determine which products you are authorized to use. You must have a license to run Sonnet.

You should have received your license information in response to the License Request form you sent to Sonnet. Your license information should have been sent in an e-mail.

Please follow the instructions in your email to create the license files. Once the license files are created, continue with *Step 5: Starting License Manager*.

NOTE: If you received a hardware key in your installation package, please see Chapter 5, “USB Hardware Key” for instructions on installing your hardware key and hardware key driver.

Step 5: Starting License Manager

Before you can run the Sonnet programs, you must start the license manager daemon, `lmgrd`. The `lmgrd` program will start-up the Sonnet vendor daemon, `sonnetd`. You can have only one Sonnet vendor daemon running on a particular license server.

NOTE: If your license server uses a firewall, the firewall must be configured to allow the two licensing programs, “`lmgrd`” and “`sonnetd`” to execute. Please see your system administrator for instructions on configuring your firewall.

Start the license manager on the license server.

Type:

```
bin/sflexnet start
```

Step 6: Start License Manager on Boot

Typically, you will want to startup the license manager daemon each time you reboot the server. To do this you must make a change to your system startup files to start up the license manager daemon automatically on bootup. If you are upgrading to a new release of Sonnet then these changes may have already been made. If you wish to use FLEXnet commands directly to start up the license manager then see "[Starting FLEXnet Using lmgrd](#)" on page 34.

NOTE: In the instructions below, replace *<Sonnet Directory>* with the full path to our Sonnet directory.

To change the startup files on your system, so that the license manager daemon automatically starts when you reboot the server, you should run the program `soninstallservice`. For instructions on running this program, type:

```
cd <Sonnet Directory>
```

```
bin/soninstallservice -h
```

where *<Sonnet Directory>* is the name of the directory in which you installed Sonnet.

You may also use this utility to install the remote *em* service and the Sonnet *emCluster* service. Please refer to the [Remote em Processing](#) and [emcluster Processing](#) documents available in PDF format on the Administration and Installation page of the manual interface (*Help* ⇒ *Manuals*).

Step 7: Testing the Installation

A test program for the software is provided. This program verifies that the environmental variables are set up properly. As part of the test, it runs a simple test case for various Sonnet programs to ensure that they are functioning properly.

NOTE: Software should be unlocked and the license manager should be running before running this test.

System Administrator

If you are not a user of the software and do not have the SONNET_DIR environment variable or the path set, you may still test the software. First log on to the computer which is authorized to run Sonnet. Next type:

```
cd <Sonnet Directory>
```

```
bin/testem -r
```

Sonnet Users

To run the test program, log into your account and type:

```
testem
```

Step 8: Verifying OpenGL is installed.

OpenGL must be installed on each Linux platform where the project editor and current response viewer are executed. To verify if you have OpenGL installed, follow the directions below: If OpenGL is not installed then see your system administrator.

Run the following command:

```
glxinfo | grep OpenGL
```

If OpenGL is installed, you will see something like the following:

```
OpenGL vendor string: Mesa project: www.mesa3d.org
OpenGL renderer string:Mesa GLX Indirect
OpenGL version string:1.2 (1.4 Mesa 5.0.2)
OpenGL extensions:
```

If OpenGL is not installed, then nothing will be displayed.

Step 9: 64-bit Processing Memory Setting

If you are not using Linux on a 64-bit processor, you may skip this step.

There is an overcommit memory setting in Linux operating systems which allows a process to allocate more memory than is available in the system. If allocated memory that does not exist is accessed, a daemon process starts to kill other processes rendering the computer unstable and usually resulting in the need for a reboot. To avoid having this condition occur, do the following:

1 Logon to root.

You must be root to execute this procedure.

2 Open a terminal and enter:

```
cd /proc/sys
```

3 Enter:

```
chmod -R a+w vm
```

This changes the permissions so that you may edit the necessary file.

4 Enter:

```
cd vm
```

Changes to the directory in which the overcommit_memory file resides.

5 Enter:

```
vi overcommit_memory
```

Edit the overcommit_memory file which consists of one digit.

6 Change the 0 (zero) to a 2 and save the file.

7 Enter:

```
cd ..
```

This returns you to the /proc/sys directory

8 Enter:

```
chmod -R a-w vm
```

This restores the permissions on the directory. This completes changing the setting.

Removing the Software from your System

If you have an evaluation copy of Sonnet, you should remove the software once your evaluation is completed.

To remove the software from your system:

- Login as root.
- Stop the license manager
Type:

```
cd <Sonnet Directory>  
bin/sflexnet stop  
cd ..
```
- Remove the software.
Type:

```
rm -rf <Sonnet Directory>
```

Chapter 4 Get Hostid

If you are evaluating or purchasing then you will need to select a machine to act as the license server. All of the requests for licenses will be sent to this server. If you have a floating license, then you will be able to run Sonnet on any supported platform in the network. If you are purchasing a node-locked license, then you must also get the hostid for the machine to which the software is locked.

For triple-redundant servers, list all three hostids.

For UNIX license servers, your Host ID is the UNIX operating system hostid.

For Linux PC license servers, your Host ID is one of the following:

- The Ethernet address

OR

- Your hardware key ID number (if you are using a hardware key) - printed on hardware key. The numbers vary depending on which type of hardware key you are given. Examples are 69002261 and 9-49B9C6E7.

Get Hostid with Sonnet not yet Installed

If you have not yet installed Sonnet, then you may obtain the hostid using the instructions below:

Solaris

The Host ID for Solaris is a 32-bit hostid. To obtain the Host ID, enter “hostid” at a command prompt on the license server. An example value is “170a3472.”

Linux PC

If you have received a hardware key in your installation package, the hardware key ID number is printed on the hardware key.

If you are going to use your ethernet address, enter the following command on the license server:

```
/sbin/ifconfig eth0
```

The value after `HWaddr` in the output is your ethernet address; you should remove the colons. An example is shown below with the ethernet address in bold. After removing the colons the value is 000BDBC7A4DE

```
11.02.0.059 alpha (mfg)> /sbin/ifconfig eth0
eth0 Link encap:Ethernet HWaddr 00:0B:DB:C7:A4:DE
inet addr:192.56.4.17 Bcast:192.56.4.255 Mask:255.255.255.
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:409190 errors:0 dropped:0 overruns:0 frame:0
TX packets:79932 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:512123697 (488.3 Mb) TX bytes:15198013 (14.4 Mb)
Interrupt:24 Base address:0xecc0 Memory:fe5e0000-fe600000
```

Get Hostid with Sonnet Installation Already Completed

This section applies to all UNIX and Linux license servers. If you have already installed the software from Sonnet, then you may obtain the hostid by logging on to the license server and typing:

bin/sonnet

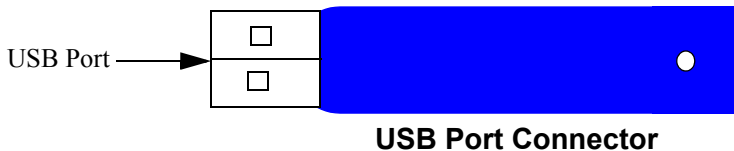
When the Sonnet task bar appears on your display select *Admin* ⇒ *Host ID* from the main menu. An output window appears which displays the Host ID.

Chapter 5 USB Hardware Key

Installing the Hardware Key

In most cases, a Linux installation is locked to your ethernet address, but in some cases you require a hardware key in addition to the licensing file to run. The hardware key must be connected to your computer in order to run the software and would be included in your software package. For a standard evaluation or node-locked license, the hardware key is connected to the local machine. For a floating license, the hardware key is only required on the server.

A Linux installation uses a USB key, as shown below. This hardware key should be connected to a USB port on your computer. Once you have installed the Sonnet software, you will need to install the hardware key driver which allows your computer to communicate with the hardware key. Directions are given below.



Installing the Driver

If you are using a Hardware Key to license your software, you must install the Hardware Key Driver in order to access your hardware key.

NOTE: You must run the Sonnet task bar from root to install or uninstall the driver.

To install the driver, do the following:

- 1 Open the Sonnet task bar. To do so, type:

cd <Sonnet Directory>

where <Sonnet Directory> is the directory in which Sonnet software was installed.

bin/sonnet

- 2 On the Sonnet task bar, select *Admin* ⇒ *Hardware Key* ⇒ *Install Driver* from the main menu.



- 3 Follow the on-screen instructions for installing the device driver.
- 4 Once the installation is complete, test the driver by selecting *Admin* ⇒ *Hardware Key* ⇒ *Test Key* from the task bar main menu.

A window should appear on your display with the message “Hardware Key Test Passed.” If the hardware key test is not good, check to make sure that your hardware key is properly connected to your computer and retest. If you continue to have problems, contact your Sonnet representative.

Chapter 6 FLEXnet Licensing Support

This release of Sonnet implements floating licensing using FLEXnet Licensing from Acreso Software (previously Macrovision). You may already be familiar with this software since most vendors use it to manage their licenses. This chapter talks about Sonnet specific issues for FLEXnet Licensing. Refer to the **FLEXnet License Administration Guide**, available in the PDF Manuals, for a detailed description of FLEXnet licensing. This Manual is published by Acreso Software and is delivered along with the PDF documentation.

FLEXnet Standard Configuration for Sonnet

The following is the standard configuration for Sonnet:

Version	FLEXnet Licensing 11.5
License File	\$\$SONNET_DIR/licenses/sonnet.lic
Option File	\$\$SONNET_DIR/licenses/license.opt
Log File	\$\$SONNET_DIR/log/flex*.log
Daemon Name	sonnetd
Time out default	15 minutes



WARNING

Sonnet uses FLEXnet Licensing 11.5. You must be cautious if you plan to combine Sonnet with other vendor licenses. When combining license files, you must use a single license manager daemon (lmgrd). You can not use Sonnet with an earlier version of lmgrd.

Motif programs such as *xgeom*, *emvu*, and *patvu* all have time-out enabled. If these programs are not used in 15 minutes, another user may check out the timed-out license. The default time-out period can be changed using the FLEXnet licensing TIMEOUT feature stored in the options file.

If the “sonnet.lic” file is stored in “\$\$SONNET_DIR/licenses” directory, then all Sonnet programs internally set the SONNETD_LICENSE_FILE variable to “\$\$SONNET_DIR/licenses/sonnet.lic”. Therefore, the users does not have to set this environment variable. If the “sonnet.lic” file is moved to a different directory, then this variable must be set.

FLEXnet licensing Administration - *sflexnet*

For your convenience a program called *sflexnet* has been added to help administer FLEXnet licensing. From *sflexnet* you can start and stop the licensing manager and get a status of the licenses. To get a full list of options, type in “sflexnet”, then type in “help”.

Some commands that *sflexnet* can handle are:

start	Starts the license manager. Before the license manager is started, <i>sflexnet</i> makes sure another license manager is not already running. Also, a new log file is created in “\$SONNET_DIR/log”. By default, 5 log files are kept around.
stop	Stops the license manager by executing the <code>lmdown</code> command. If the <code>lmdown</code> command is not successful, you will be asked if you want to kill the license manager.
restart	Restarts the license manager by executing a “stop” then a “start”.
status	Determines the status of the license manager.
status -a	Determines the status of all of the licenses.
status <feature>	Determines the status of a specific feature. To determine the names of the features use “status -a”.
diag <feature>	Tries to get a license for the feature. Prints out diagnostic information if a license can not be obtained. Useful in determining why a license can not be obtained by a user.
log	Prints out the last 10 lines of the license manager log file.

You can either execute *sflexnet* as an interactive utility or you can run single *sflexnet* commands by typing in “`sflexnet <command>`”. For example, to get the status of *xgeom*, type:

```
sflexnet status xgeom
```

The program *sflexnet* actually executes FLEXnet commands and handles setting the environment for these commands. From *sflexnet* you can execute FLEXnet commands directly, like `lmstat`, `lmhostid`, `lmdown`, etc. For example, to get the status of the *xgeom* license, type:

```
sflexnet lmstat -f xgeom
```

For a description of FLEXnet commands see the **FLEXnet License Administration Guide** in the Chapter on License Administration Tools.

Sflexnet assumes that the license file is stored in “\$SONNET_DIR/licenses/sonnet.lic”.

Starting the License Manager

Before you can run any of the Sonnet programs you must have the license daemon running on the license server. You can start the license daemon, one of three ways:

- *Suggested method:* Start the FLEXnet license manager in the server’s local system startup files. See section under Step 6: **Start License Manager on Boot** on page 12.
- Start the license daemon by running the “sflexnet start” command on the license server. This must be done each time the license server machine is rebooted.
- Run any of the Sonnet programs on the license server machine. If the license manager is not running, then it will be started up automatically.

Starting FLEXnet Using lmgrd

You may have other applications using FLEXnet licensing for licensing and wish to start the license server the same way as your other applications. In general, *sflexnet* was created to simplify the startup procedure, but it is not necessary. You can directly access the FLEXnet commands. All of the FLEXnet commands are delivered in the “\$SONNET_DIR/arch/<ARCH>/flexnet” directory, where <ARCH> is:

Workstation	<ARCH>
Solaris	sun4_u5
Linux	linux86

An example of a startup line using the FLEXnet module directly is:

```
/opt/sonnet/arch/sun4_u5/flexnet/lmgrd -c /opt/sonnet/licenses/sonnet.lic
```

Updating the “sonnet.lic” File

You may at times receive a new “sonnet.lic” file. When this occurs, you will have to restart the license manager. This section explains how this is done. For the experienced FLEXnet administrator, you may want to do a “lmreread” instead of restarting the license manager.

The following are instructions to restart the license manager.

- First login as “root” on the license server.
- Change directory to the Sonnet directory.

Type:

```
cd <Sonnet Directory>
```

- Determine the users that are using the Sonnet applications.

Type:

```
bin/sflexnet status -a
```

- Ask these users to quit their Sonnet applications. Users who are using Sonnet programs like *em*, *xgeom*, etc. may lose their license when the license manager is restarted. These programs will have to be exited, then restarted. Note that in *xgeom*, even without a license the users may still save their work to a file. Also, in all of the applications it may take a few minutes before the application actually loses the license.
- Restart the license manager.

Type:

```
bin/sflexnet restart
```

- The *sflexnet* program will run *lmstop* then *lmgrd* to restart the license manager.

Combining Licenses

You may combine the Sonnet licensing information with other applications using FLEXnet. You can either use a single *lmgrd* with multiple license files or a single *lmgrd* with a single license file. Refer to the **FLEXnet End User Manual** for a detailed description of FLEXnet. Before attempting to combine license files, you should be very familiar with this manual.

Sonnet uses FLEXnet Licensing 11.5. When combining license files, you must use a single license manager daemon (*lmgrd*). You can not use Sonnet with an earlier version of *lmgrd*, therefore you must use the most recent version of *lmgrd*.

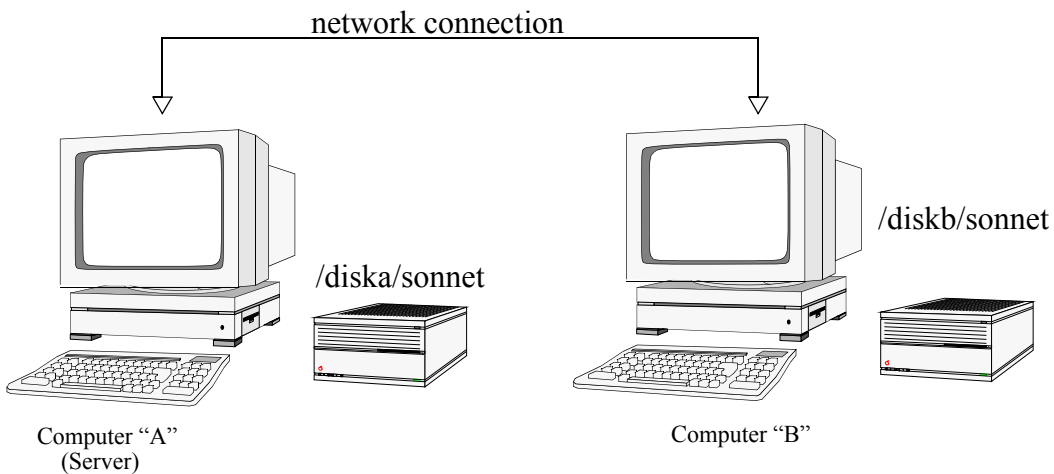
In general, we suggest that you do not combine Sonnet's license with other vendor's licenses. If, however, you wish to combine the licenses, we suggest that you first run Sonnet separately from other FLEXnet applications to verify that you have a good license and that the license manager works. Then you can combine the licenses.

Once you have combined the licenses, you must set the `SONNETD_LICENSE_FILE` variable to point to the location of the “sonnet.lic” file.

Networked Computers with Local File Systems

The instructions in this manual assume that your computers share a common file system. However, your network may not have a common file system. Instead it may only have local files systems. The example that follows explains the installation procedure for computers that are on the same network but do not share a common file system.

Suppose you have two machines, “A”, and “B” with disks “/diska” and “/diskb” as shown below, follow these steps:



- 1 Follow the installation instructions in Chapter 2, **UNIX Installation**, on page 9 for the server (Computer “A”). Make sure this is running properly before proceeding.
- 2 Copy the software from `/diska/sonnet` to `/diskb/sonnet`. This copies all of the software, including the “sonnet.lic” file.
- 3 Run “installm” on computer “B”.
- 4 Redefine the `SONNET_DIR` variable to point to “`/diskb/sonnet`” for users logged onto computer “B”, and “`/diska/sonnet`” for users logged onto computer “A”.

NOTE: The license manager runs only on the license server (computer “A”). Do not attempt to start the license manager on any other computer (computer “B”).

Sonnet applications may now be run on either computer. When a Sonnet application is run on computer “B”, it reads the SERVER line in the license file on “/diskb/sonnet” and determines that computer “A” is the server. It then requests a license from the license manager running on computer “A”.

Licensing Functionality

FLEXnet can give you some useful features. For example,

- You can make a list of users who may only have access to a specific feature. For example, a specific group may have purchased the software. You could restrict the users of the software to only users in this group.
- You may prevent a user or users from accessing a specific feature.
- You can reserve copies of a feature for a specific user or host. For example, you can reserve a copy of *xgeom* for a specific user or for a specific computer.

Appendix I License Usage for Multi-threaded Processing

There are two types of multi-threaded licenses. The Desktop license which enables up to two threads of processing at one time and the High Performance license which allows you to use up to eight threads at a time. It is not uncommon to have both types of licenses available when using floating licenses for multiple users. In this case, the software uses an algorithm whose intention is to make the most efficient use of your licenses. The software always uses the highest thread capacity license as long as it provides a speed advantage. If there is no speed advantage then the lesser capacity license is used. There are some scenarios described below to demonstrate how the algorithm operates.

NOTE:

If you plan on using your computer as a dedicated Sonnet server, we recommend that you not get a computer with hyperthreading or that you turn the hyperthreading off. Due to how processing resources are allocated, there is no significant reduction in Sonnet processing time using hyperthreading.

Scenario 1: You have one Desktop license and one High Performance license and are performing your analysis on a computer with a dual core. Since your computer is only capable of processing two threads at a time, there is no speed

advantage to using the High Performance license, so the Desktop license is used to run the job. If the Desktop license is not available, then the High Performance license will be used.

Scenario 2: You have one Desktop license and one High Performance license and are performing your analysis on a computer with eight cores. The software would attempt to use the High Performance license first since this license can utilize all available processing resources and therefore finish the job faster. If the High Performance license is not available, then the Desktop license is used, but this limits the analysis to only two of your cores.

Scenario 3: You have one desktop license and one High Performance license and are performing your analysis on a computer with four cores. The software would attempt to use the High Performance license first so that all four cores would be used and the analysis would take less time. Only four of the possible eight threads enabled by the license would be used due to the physical limitations of the computer. If the High Performance license is not available, then the Desktop license is used, but this limits the analysis to only two of your cores. Note that in the case of the High Performance license, the extra four threads are unused and unavailable to other users while the license is checked out.

It is possible to override this algorithm by using your own settings for multi-threaded license use. There are two ways to do so: using the thread initialization file or the Thread Control dialog box.

The thread initialization file is usually used by a system administrator to set up thread controls for multiple users. The thread initialization file, `threadcontrol.ini` may be found in the `<Sonnet Directory>/data` folder where `<Sonnet Directory>` is the location where the software was installed. The fields available in the initialization file are the same as the controls available in the dialog box; see below for details.

The second way to override the algorithm is through the Thread control dialog box. The settings in this dialog box affect only your analysis jobs. To access the Thread control dialog box, open the Sonnet task bar and select *Admin* ⇒ *Thread Control* from the task bar main menu. Click on the Help button in the dialog box for an explanation of the controls.

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