

MATRIX_x[®]

7.0

SYSTEM ADMINISTRATOR'S GUIDE

UNIX



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1

Installation Overview and Platform Requirements

This manual tells how to install MATRIX_X[®] Product Family release 7.X. To install RealSim[™] (available on Windows hosts only), see the *RealSimPC Controller Installation Guide (Windows Version)* or the *RealSim AC-1000 Controller Installation Guide (Windows NT Version)*.

1.1 Manual Organization

This manual includes the following chapters:

- Chapter 1 (this chapter) defines the release 7.X installation and platform requirements.
- [Chapter 2, Software Structure](#), describes the MATRIX_X directory structure and planning options.
- [Chapter 3, Licensing and Terminology](#), describes licensing-related terminology and tasks.
- [Chapter 4, Installation and Related Tasks](#), gives a detailed explanation of the MATRIX_X 7.X installation procedure and related tasks.
- [Chapter 5, FLEXlm Licensing Tools](#), discusses the release 7.X license manager utilities, license manager debugging, and daemon log file.

This guide also has an [Index](#).

1.2 Installation Overview

The MATRIX_X 7.X software includes an installation program that performs a complete installation of the product. The installation instructions provided are for the C Shell. If you want to install 7.X using a different shell, use the equivalent commands for the shell you prefer. The installation software includes the utilities described in [Table 1-1](#).

Table 1-1 **Installation Utilities**

| Utility | Description | Path |
|--|--|-----------------|
| INSTALLMX INSTALLLM INSTALLALTTIA INSTALLALTTIAFP | Automated installation programs for installing the MATRIX _X software, standalone license manager, and Altia animation software. | \$ISIHOME |
| lmhostid | Command used to report the host ID of a system. | \$ISIHOME/ISILM |
| lm_startup | Script used to start the license manager. | \$ISIHOME/ISILM |

MATRIX_X software also includes the Flexible License Manager (FLEXlm[®]), which resides in the **ISILM** directory.



NOTE: MATRIX_X can be installed on a file server using a shared license manager.

1.3 Platform Requirements

Wind River supports the MATRIX_X 7.X software in the hardware and software environments described in the following sections.

1.3.1 Hardware Requirements

The following requirements apply to UNIX systems running MATRIX_X software:

- Minimum 64 MB RAM per user, 96 MB (or more) recommended.

- Minimum 256 MB swap space per user, 384 MB (or more) recommended (typical ratio of RAM to swap space is 1 : 4).
- Approximately 340 MB of disk space to complete a full MATRIX_X installation. See [Table 1-4](#), p.4 for details.
- A CD-ROM drive for software installation or use of online books.
- A 3-button mouse or equivalent preferred.

1.3.2 Software Requirements

The following requirements apply to UNIX systems running MATRIX_X software:

- The MATRIX_X software requires a supported version of UNIX. Supported versions are described in [Table 1-3](#).
- Floating licenses require properly functioning TCP/IP networking.
- The MATRIX_X Help system requires Netscape Navigator 3.0 or later (a current version of Navigator Stand-Alone International is included on the MATRIX_X product CD).
- Window Managers: MATRIX_X 7.X has been tested with the window managers shown in [Table 1-2](#). While Wind River software may work under other X Windows-based window managers, their use is not supported. The applicable X11 version is R5 or later for all supported UNIX platforms.

Table 1-2 **Supported Window Managers**

| Platform | Window Manager |
|------------------|---|
| Compaq Tru64 5.0 | Digital Common Desktop Environment (CDE). See table note below. |
| HP-UX | HP Common Desktop Environment (CDE) |
| IBM AIX | AIX Common Desktop Environment (CDE) |
| SGI IRIX | 4D Window Manager (4Dwm) |
| Sun Solaris® | OpenWindows 3.X or Common Desktop Environment (CDE) |

NOTE: For Compaq Tru64, Xmath graphics require the Open3D shared library **libPEX5.so**. To determine whether it is installed, type:

```
% ls /usr/shlib/libPEX5.so
```

If this file exists, you do not need to do anything else.

1.3.3 Compatible Compilers and Operating System Versions

The MATRIX_X 7.X software was developed and tested with the operating system versions and compiler versions listed in [Table 1-3](#). These configurations are recommended for optimal compatibility.

Other operating system versions and compiler versions may be compatible with the MATRIX_X software. For the latest information, check the Wind River Support page at www.windriver.com, send email to Support@WindRiver.com, or contact Technical Support at 1-800-958-8885.

Table 1-3 **Verified Compilers and Operating System Versions**

| OS Version/Compiler | C | C++ | FORTRAN |
|---------------------|----------|----------------|------------------|
| Compaq Tru64 5.0 | 5.2 | 5.7 | 5.0 (FORTRAN 77) |
| HP-UX 11.00 | 11.01.06 | A.03.13 (aC++) | 11.00.01 |
| IBM AIX 4.3.3 | 3.6.6 | 3.6.6 | 6.1.0 |
| SGI IRIX 6.5.6 | 7.2.1 | 7.2.1 | 7.2.1 |
| Sun Solaris 2.7 | SC4.2 | SC4.2 | SC4.0 |



WARNING: Other compilers may work in some cases, but are not supported. Wind River recommends against using unsupported compilers.

1.3.4 Minimum Disk Space Requirements

The minimum space requirements for MATRIX_X 7.X on a UNIX host are shown in [Table 1-4](#).

Table 1-4 **Minimum Disk Space Requirements**

| Product | Space Required |
|-----------------------------------|----------------|
| MATRIX _X | 260 MB |
| License Manager | 5 MB |
| Altia Design Animation (optional) | 40 MB |
| Altia FacePlate (optional) | 35 MB |
| Full installation | ~340 MB |

1.3.5 Requirements for Configuration Management Operation

The MATRIX_X configuration management (CM) feature provides integration between SystemBuild and various configuration management tools. A user can store catalog items in files, and perform common version management operations from within the SystemBuild environment. Wind River currently supports the following CM tools:

- ClearCase™ using both dynamic and snapshot views on the Solaris, HP/UX, IBM AIX, and SGI IRIX operating systems
- Merant PVCS™ on the Solaris, HP/UX, and IBM AIX operating systems

Each of these tools has its own native working environment that must be installed and functioning before the tool can be used with SystemBuild.

1.3.6 Related Publications

Wind River provides a library of publications to support its products. Of special interest to the users of this publication are the following:

- *Getting Started (UNIX Version)*
- *FLEXlm End User Manual* (from GLOBETrotter Software, Inc.)

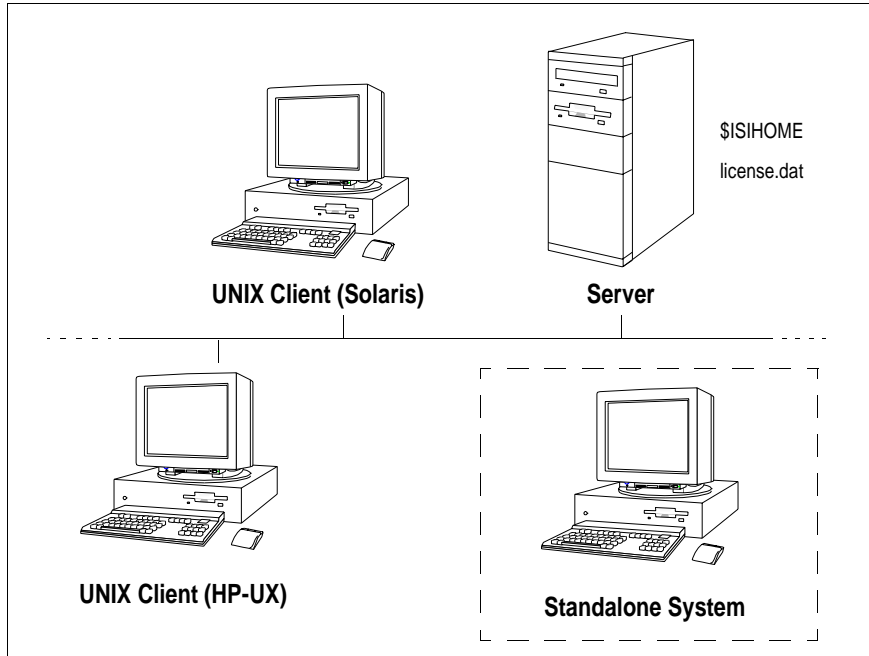
Both of the above and other MATRIX_X documents are on the online documentation CD. For additional documentation, see the MATRIX_X Help or the Wind River home page at <http://www.windriver.com>.

1.4 Installation Configurations

MATRIX_X supports standalone and server installation on UNIX systems. Multiple different versions of MATRIX_X software can be installed at one time on the same server, possibly for heterogeneous platforms. All of these versions can access the same **license.dat** file using a common license server.

All machines that will use MATRIX_X software must be able to access the **\$SIHOME** root directory. [Figure 1-1](#) shows a typical client-server configuration.

Figure 1-1 Typical Client-Server Configuration



1.5 Licensing

MATRIX_x uses FLEXlm[®] licensing utilities. For licensing information, see [Licensing and Terminology](#), p. 13, [FLEXlm Licensing Tools](#), p. 51, or the GLOBEtr[®] *FLEXlm End User Manual* on the MATRIX_x documentation CD.

1.6 Troubleshooting Resources

For troubleshooting tips, see [Troubleshooting Your Installation](#), p.48. For troubleshooting assistance check the Wind River Support page at www.windriver.com, send email to Support@WindRiver.com, or contact Technical Support at 1-800-958-8885 or 1-800-872-4977.

To participate in an unmoderated online forum with other MATRIX_X customers, you can subscribe to the MATRIX_X list server. Once you subscribe to the **matrixx** email list, you will automatically receive all messages sent to the list. To join the list server discussion group, send a message similar to the following:

To: `listserv@windriver.com`
Subject: `Subscription`

`subscribe matrixx Your_Name`

where *Your_Name* is a string for your name in any format (for example, MatrixX.User).

To leave the discussion group, send the same message with **unsubscribe** replacing **subscribe**. (The list server records and responds to the sending email address.)

2

Software Structure

This chapter describes installation planning options and MATRIX_X directory structure.

2.1 Planning Options

Before starting the installation, you should make decisions about how and where you want to install MATRIX_X tools. These issues must be addressed *before* you start the installation procedure detailed in [Chapter 4](#).

MATRIX_X 7.X can be installed in the same root directory (\$SIHOME) as release 6.X . This enables you to run two versions simultaneously with the same launching scripts and also to share the same license daemon. The MATRIX_X 7.X installation will not affect an older release of MATRIX_X software as long as you do not use the same parent directory.



NOTE: MATRIX_X 7.X cannot be installed in the same root directory as releases 5.X or earlier.

You can install a copy of MATRIX_X on a local node using either floating or node-locked licensing, or, you can use a file server (a shareable disk) and a shared license manager to install the MATRIX_X software on a network server. The directory structure detailed here is of interest in both situations, as it handles multiple releases and multiple platforms.

2.2 Directory Structure

The directory structure shown in [Figure 2-1](#), p. 11 shows the MATRIX_X product structure, which enables you to manage the software in a central location, even in a heterogeneous network environment. This structure reduces the system administration issues of multiple installations for a given platform, because installation can be completed solely on a file server using a common license manager. You can safely install multiple versions of MATRIX_X 7.X into a common root installation directory (**\$SIHOME**).



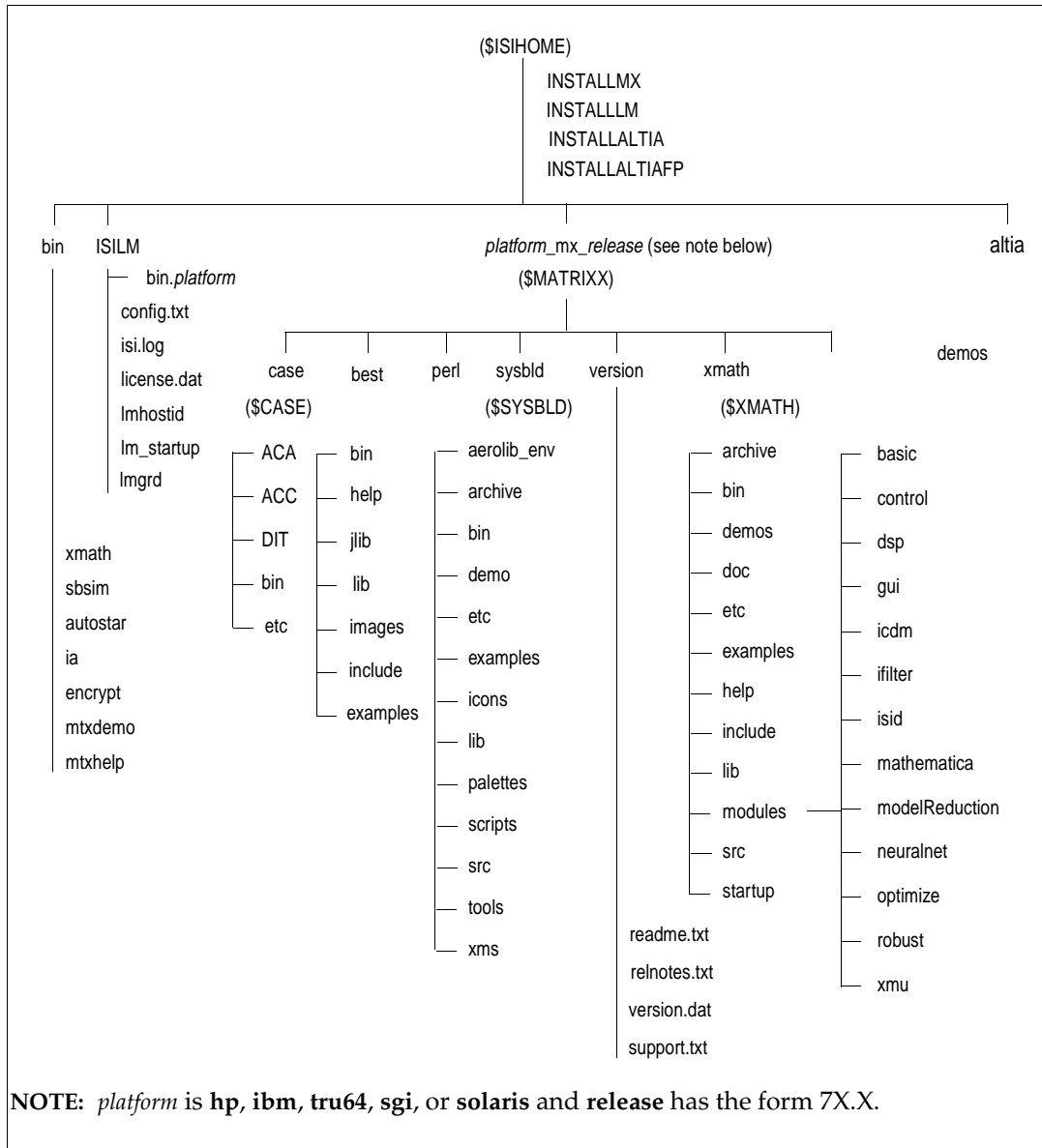
NOTE: All machines that will use MATRIX_X software must be able to access the **\$SIHOME** root directory.

The commands used to invoke the MATRIX_X suite of products are platform independent. These commands are found in the directory **\$SIHOME/bin**. Consequently, it is important that all users include **\$SIHOME/bin** in their path statements.



NOTE: **\$SIHOME** and *install-dir* (referred to elsewhere in this document) are effectively equivalent.

Figure 2-1 **MATRIX_x Product Family Sample File Structure**



3

Licensing and Terminology

This chapter provides an overview of licensing and describes licensing-related terminology and tasks. Release 7.X includes a license daemon, **lmgrd**, which controls all Wind River product licenses. The **lmgrd** daemon resides in the directory named, **ISILM/bin.platform**, and must be running on your license server (or on all three if you have a redundant license server configuration). It does not have to be on the node where you install MATRIX_x 7.X.

3.1 Licensing Overview

MATRIX_x licensing includes the following features:

- Floating and node-locked licenses
- Redundant license servers (optional)
- Flexible license checkout

3.1.1 Floating and Node-Locked Licenses

License configurations for counted floating licenses, node-locked licenses, and evaluation licenses are available on UNIX systems. To check out a floating license or counted node-locked licenses, a client system must be connected to the network and have properly functioning TCP/IP software. Evaluation and

uncounted node-locked licenses do not require that you have a running license server or network support.

Windows NT, Windows 2000, Windows 98, Windows 95, and UNIX systems can check out floating licenses from a UNIX license server by referencing a copy of the same **license.dat** file used by the UNIX server, or by using a proxy license file (3.5, p.21).

3.1.2 Redundant License Servers

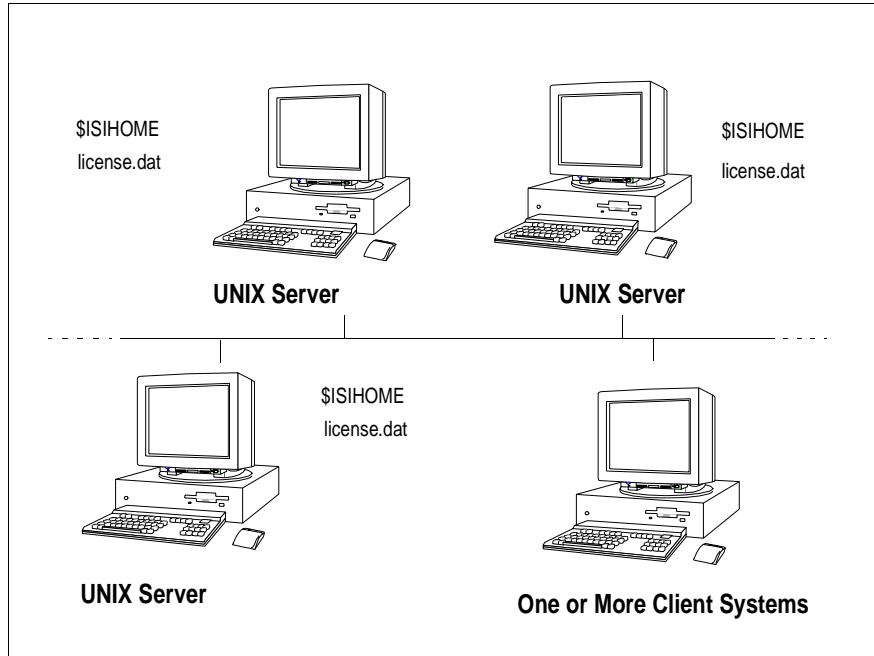
Redundant license servers are a set of three nodes designated to serve the same license file. If any node fails, the other two nodes will still be available to serve the licenses for MATRIX_x.

To support the redundant license server scheme, Wind River License Administration requires information for three servers. For UNIX servers, this includes the **hostname** and **hostid** (or equivalent parameter) for each server.

Wind River issues redundant license server keys once you provide the hostid of the three servers. At a minimum, you need to run the standalone license server installation program (**INSTALLLM**) and start the license server on each machine. Follow the instructions described in [Installing the Redundant License Servers](#), p.35.

[Figure 3-1](#) shows a typical redundant license-server configuration.

Figure 3-1 **Typical Redundant License-Server Configuration**



3.1.3 Flexible License Checkout

With MATRIX_X 7.X licensing, a feature (product component) is checked out as you use it. A feature stays checked out until you exit that product component. For example, Xmath and SystemBuild modules are checked out when first used and stay checked out until you exit Xmath or SystemBuild. SystemBuild is checked out when you launch the Catalog Browser (by starting SystemBuild) and stays checked out until you exit SystemBuild. The flexible license checkout feature is also known as on-demand checkout.

3.2 Xmath Licensing Commands

Xmath has the following license-related commands:

- **LICENSECHECKOUT** for checking out features for future use
- **LICENSEUSER** for displaying assigned licenses for any feature names specified
- **LICENSEINFO** for displaying a license report for your site
- **LICENSEFILE** for displaying the current license file search path
- **ISIREFNUM** for identifying your Wind River reference number

All of these commands must be run from the Xmath Commands window.

3.2.1 LICENSECHECKOUT

LICENSECHECKOUT is an intrinsic command that checks out a license for the listed feature or features. Run **LICENSEINFO** to see a list of feature names. Features are specified as strings, and the name must be exactly as displayed by **LICENSEINFO**.

Although features are normally checked out on-demand, you can use **LICENSECHECKOUT** to reserve features for future use (for example, for a scheduled demo or presentation). They are checked in when you exit Xmath.

This command can be placed in a global or local **startup.ms** file to check out required features at startup. The syntax is as follows:

```
LICENSECHECKOUT feature1,feature2,...featureN
```

For example:

```
LICENSECHECKOUT "Xmath","Control","Sysid","Sysid2","sysbld","case"
```

3.2.2 LICENSEUSER

The **LICENSEUSER** utility displays assigned licenses for any feature names specified. The default feature is Xmath if no argument is specified. **LICENSEUSER** accepts feature names in string form. To see a list of the feature names for products you have purchased (for example, **aca** indicates AutoCode Ada), issue the **LICENSEINFO** command. The syntax for **LICENSEUSER** is as follows:

```
LICENSEUSER feature1,feature2,...featureN
```

Typical output is shown in [Example 3-1](#).

Example 3-1 LICENSEUSER Output

```
licenseuser "xmath","aca"
```

Users of Xmath:

```
Number of licenses purchased : 10
Number of unused licenses    : 4
```

| User | Node Name | Starting Time |
|---------|-----------|--------------------------|
| muemura | sampras | Thu May 29 19:33:44 2001 |
| lynch | tribble | Thu May 29 19:34:36 2001 |
| sanjay | castaway | Sat May 31 19:01:04 2001 |
| rpizzi | castor | Mon Jun 2 15:21:54 2001 |
| dawn | venus | Wed Jun 4 11:05:06 2001 |
| uma | sampras | Mon Jun 9 13:45:47 2001 |

Users of aca:

```
Number of licenses purchased : 4
Number of unused licenses    : 2
```

| User | Node Name | Starting Time |
|---------|-----------|--------------------------|
| muemura | sampras | Thu May 29 19:56:44 2001 |
| uma | sampras | Mon Jun 9 13:51:47 2001 |

3.2.3 LICENSEINFO

LICENSEINFO displays a license report for your site as shown in [Example 3-2](#).

Example 3-2 LICENSEINFO License Report

```
licenseinfo

License File: $SIHOME/ISILM/license.dat
=====
License Server Name: hardrock
License Server ID: 38234001
=====
Module Name           Feature Name  Expiration Date  Type      Seats  Licensed Node
Xmath                 Xmath       31-jan-2002     Floating  10
Control Design Module Control      31-jan-2002     Floating  10
SystemBuild          sysbld      31-jan-2002     Floating  10
HyperBuild Module    hyper       15-jan-2002     Floating  10
AutoCode C Single Processor acc         31-jan-2002     Node-Locked 4      80379b46
Model Reduction Module Modred      31-jan-2002     Floating  10
Interactive Animation Module Icdm       31-jan-2002     Floating  10
Robust Control Module Robust      31-jan-2002     Floating  10
RT/Fuzzy Module      blk_fuz     31-jan-2002     Floating  10
AutoCode Ada Single Processor aca        31-jan-2002     Floating  10
DocumentIt           docit       31-jan-2002     Node-Locked 4      80379b46
```

3.2.4 LICENSEFILE

The LICENSEFILE command displays the current license file search path. The syntax and example output are as follows:

LICENSEFILE

License files searched by MATRIXx are as follows:

```
/homes/isi/isilm/license.dat
/homes/isi/isilm/tplic.dat
```


3.2.5 ISIREFNUM

The **ISIREFNUM** command displays the Wind River reference number (also known as your customer identification number). You should have this number ready if you plan to call Wind River customer support.

The syntax and example output are as follows:

```
ISIREFNUM
```

```
Your Wind River Reference Number is as follows:
```

```
CUSTOMID99
```

3.3 Using Licensing

With concurrent licensing, you can have a different number of licenses for each module or application. An application or module is either available on a first-come, first served basis, or node-locked to a given CPU. Some common uses of licensing are as follows:

- To see all the features your site has purchased or to view the license expiration date, use the command **LICENSEINFO**.
- To see who is using a given feature, or to see if a feature is available, use the **LICENSEUSER** command and specify the desired feature.
- To see the current license file search path, use the command **LICENSEFILE**.
- To reserve features for future use (for example, for a scheduled demo or presentation), use the **LICENSECHECKOUT** feature.

The initial distribution of licenses is determined at the time of the installation; to change licensing, your system administrator must get a new key from Wind River License Administration. To generate a new license file from this key, run **INSTALLLM** as described in [Chapter 4, Updating a License File](#).

Wind River uses the **FLEXlm** license manager, a product of **GLOBEtrotter Software, Inc.** If you have license manager questions beyond the scope of this document, please see the *FLEXlm End User Manual* on the **MATRIX_X** online documentation CD. For additional information about **FLEXlm**, see the **GLOBEtrotter FAQ** at www.globetrotter.com/flmfaq.htm.

3.4 License Files

The set of licensed features available for checkout by a MATRIX_X user are contained in one or more license files, each containing encrypted feature lines. The following default license files are used by the MATRIX_X products:

- **\$SIHOME/ISILM/license.dat** — This primary license file contains feature lines for built-in MATRIX_X features. The **license.dat** file is generated from Wind River provided authorization keys during the MATRIX_X or standalone license manager installation procedures.
- **\$SIHOME/ISILM/tplic.dat** — This optional file contains license feature lines for third-party MATRIX_X components. The encrypted feature lines in this file and the instructions for using the file will typically be provided by your third-party supplier. Multiple features from different third-party suppliers can be placed in this file. Typically, this file will also contain the same SERVER and DAEMON lines as **license.dat**. This file is not modified during a MATRIX_X or license manager installation, nor is it deleted by uninstall procedures.

The search paths used to locate these license files are set in the environment variable **\$LM_LICENSE_FILE** by the MATRIX_X product launching scripts. The above Wind River license file paths are prepended to any existing definition of **\$LM_LICENSE_FILE**, thus allowing access to other MATRIX_X or non-MATRIX_X products also licensed by a FLEXlm license manager.

Normally, the only things you can change in a license file are:

- The hostname (not the hostid).
- The port number on the SERVER line. If this port number is already in use, the license daemon (**lmgrd**) will report **Address In Use**. The default port number used in MATRIX_X 7.X license files is 27000 (for prior releases it was 5200). A valid number is any unused port number between 1025 and 64000. The port number can be removed and the FLEXlm license manager will serve on any available FLEXlm reserved port in the range 27000-27009. For redundant license servers, however, you must use a fixed port number.
- The path to the vendor daemon executable on the DAEMON line. (The vendor daemon is named **mtxlm.d**.)
- **name=value** pairs on a FEATURE line can be changed if **name** is lowercase.

Redundant license server files contain three SERVER lines. The first SERVER line defines the primary license server. The second and third lines define the secondary license servers.

3.5 Proxy License Files

If you are using a floating-license server, each licensing client needs a copy of the same license file used by the server. Alternatively, to avoid copying the license server file to each installation of MATRIX_X, you can create a proxy license file in the ISILM directory of each MATRIX_X installation. This approach can be used for both single and redundant license server configurations. The proxy license file (**license.dat**) can be constructed by taking the **SERVER** line or lines from the license server file and then adding a line containing **USE_SERVER**.

For example, a proxy license file for a single server configuration would be as follows:

```
SERVER host1 17003456 27000
USE_SERVER
```

A proxy license file for a redundant server configuration, for example, would be:

```
SERVER host1 17003456 27002
SERVER host2 17004355 27002
SERVER host3 17007ea8 27002
USE_SERVER
```

Unless your server nodes are changed, you will not have to update the license file for each individual MATRIX_X installation when the server license file is updated.

Although a proxy license file is the preferred way to reference the actual license file used by a remote license server, you can also use a **port@host** definition for either of the environment variables **LM_LICENSE_FILE** or **MTXLMD_LICENSE_FILE**. **port** is the license file port number and **host** is the hostname, and both are taken from the **SERVER** line of the actual license file. **MTXLMD_LICENSE_FILE** is similar in use to **LM_LICENSE_FILE**, except that it is specific to the MATRIX_X license manager daemon and overrides any concurrent definition of **LM_LICENSE_FILE**.

3.6 Compatibility

MATRIX_X releases 6.X and 7.X use the vendor daemon **mtxlm** (versus **isilm** in releases prior to 6.X). If you are installing MATRIX_X 7.X in a common root directory with MATRIX_X 6.X, you must kill the license manager daemon because the common license manager directory (**ISILM**) is updated during the installation of release 7.X.



NOTE: Because of the addition of new features and new license manager functionality, license keys issued prior to MATRIX_X 6.X cannot be used to regenerate a license file for release 7.X.

3.7 Licensing Requirements

If you are a new user, your software is shipped with an evaluation key. Note that the key clearly states the expiration date. You can install the evaluation license, and then later regenerate the license file for a standard installation (as described in [Updating a License File](#), p.43). In order to obtain a standard license, you must provide the **computername** and **hostid** for each license server machine.

3.7.1 Finding the Host ID

FLEXlm uses different machine identifications for different machine architectures. For example, all Sun machines have a unique host machine identification. An Ethernet address is used on some machine architectures as the “host ID.” An Ethernet address is a 6-byte quantity, with each byte specified as 2 hexadecimal characters. Specify all 12 hex characters when using an Ethernet address as a host ID. For example, if the Ethernet address is 8:0:20:0:5:ac, you specify 0800200005AC as the host ID. To find an Ethernet address for a machine, use the command **ifconfig interface** from the root account, where a valid *interface* can be found by typing **netstat -i**.

For 32-bit host IDs, which are displayed as less than 8 hex characters, prepend the ID with zeros (0's) until it has exactly 8 hex characters. The same requirement applies to an Ethernet ID which should be padded to exactly 12 hex characters.

The program `$ISIHOME/ISILM/lmhostid` will print the exact host ID that FLEXlm expects to use on any given machine. Table 3-1 lists alternate methods to obtain the required host ID for each machine architecture.

Table 3-1 **Obtaining the Host ID on Different Platforms**

| Platform | Host ID | OS Command | Example |
|--------------|-------------|--|--------------|
| Compaq Tru64 | Ethernet ID | <code>netstat -i</code> | 080020005532 |
| HP-UX | 32-bit ID | <code>echo `uname -i` 16o p dc</code> | 778DA450 |
| IBM AIX | 32-bit ID | <code>uname -m</code> then remove the last 2 digits, and use the remaining last 8 digits (006003294C00) | 6003294C |
| SGI IRIX | 32-bit ID | <code>echo `etc/sysinfo -s` 16o p dc</code> | 69064C3C |
| Solaris | 32-bit ID | <code>hostid</code> | 73201bba |

3.7.2 Finding the Computer Name

Use either the `hostname` or the `uname -n` command at the UNIX prompt to display the Computer Name.

3.7.3 Contacting Wind River License Administration

Contact License Administration in one of the following ways:

- Complete a Key Request Form (included with your software) and fax it to 408-542-1953.
- Send email with the information asked for in the Key Request Form to license@windriver.com.
- Call 1-800-545-0463 (options 8 and 5) between 8 a.m. and 5 p.m. Pacific Time, Monday through Friday, and follow the voice mail directions which route you to the License Key Request administrator.

Wind River supplies the authorization key(s) and checksum(s) used to generate the license file, which enables you to use the packages and modules you purchased. An authorization key or checksum is an alphanumeric string that does *not* contain the numbers 0, 1, or 5 to avoid confusion with uppercase letters O, I, and S.

4

Installation and Related Tasks

This chapter describes how to install MATRIX_X software, including any optional components such as Altia Design animation, and perform related tasks. It also describes how to view online books and install Adobe Acrobat with Search.

4.1 MATRIX_X 7.X Installation

This section describes how to use the installation program **INSTALLMX** to install MATRIX_X 7.X software on a single platform using a CD-ROM drive.

Requirements

Your system must meet the hardware and software requirements for your platform specified in [Chapter 1, Installation Overview and Platform Requirements](#).

Privileges

No special privilege is required to install the MATRIX_X 7.X software. Wind River recommends that you perform the installation from an account that allows write permission to the installer only. If you plan a heterogeneous installation (installing the MATRIX_X software for more than one platform) do *not* use root

privilege. However, you may need root privilege to perform these installation-related tasks:

- Mount the CD-ROM.
- Kill an existing license daemon before installing, if it was started from another account.
- Modify the boot file to start the license daemon automatically after rebooting the license server.

4.1.1 Preparing for Installation

Preparing for installation includes two tasks (as applicable):

- Mount your CD-ROM.
- If you are an existing MATRIX_X user, stop any MATRIX_X 6.X license daemons on the installation machine.

Mounting your CD-ROM Drive

You can use either a local or remote CD-ROM drive to access the MATRIX_X 7.X installation file sets. If you do not already have a mounted CD-ROM, mount one with the following procedure:

Mounting a Local CD-ROM Drive

1. Log in to the root account and make a CD-ROM mount point. For example,

```
% mkdir /cdrom
```

2. Mount the directory with the appropriate command for your platform:

```
Compaq Tru64: % mount -r -t cdfs -o noversion /dev/rz4c /cdrom
```

```
HP-UX: % mount -F cdfs -r -o cdcase /dev/dsk/c0t2d0 /cdrom
```

```
IBM AIX: % mount -r -v cdrfs /dev/cd0 /cdrom
```

```
SGI IRIX: % mount -rvt iso9660 /dev/scsi/sc0d410 /cdrom
```

```
Solaris: % mount -r -F hsfs /dev/dsk/c0t6d0s0 /cdrom
```



NOTE: Device names (for example, `/dev/sr0`) vary depending on configuration.

3. Log out of the root account.

Mounting a Remote CD-ROM Drive

1. Log in as root on the machine that has the CD-ROM drive attached to it.
2. Create a directory to be the CD-ROM drive mount point (for example, `mkdir /cdrom`) and mount the CD-ROM drive according to the command specified in [Step 2 of Mounting a Local CD-ROM Drive](#).
3. Export the mount point of the CD-ROM drive to the NFS client; this allows your installation machine to mount the directory.

```
% exportfs -i -o ro /cdrom
```

4. Log out from the machine that has the CD-ROM drive attached.
5. Log in to your installation machine as `root`.
6. Create a directory on the installation machine to be the mount point for the remote CD-ROM drive machine, and then mount it.

```
% mkdir /cdrom  
% mount cdrom_drive_machine_name:/cdrom /cdrom_target
```

7. Log out from the installation machine (unless you need to stop a `MATRIXx` license daemon).

Stopping `MATRIXx` License Daemons (for Existing `MATRIXx` Users)

If you have existing `MATRIXx` release 7.X or 6.X software installed and are installing release 7.X in the same `$SIHOME` directory (recommended), you will need to stop existing `MATRIXx` license daemons because they will be affected by the installation process.

1. Log in to the installation machine and check to see if a release 6.X or 7.X `lmgrd` is running by entering:

```
Compaq, HP-UX, IBM, SGI, Solaris: % ps -ef | grep ISILM/bin | grep -v grep
```

2. If a 6.X or 7.X `lmgrd` daemon is present (as determined by the displayed installation path), note the process ID and kill it (if the `lmgrd` daemon was started by root, you need root privilege to kill the process).

For example:

```
% kill process-id
```

4.1.2 Installation Procedure

Before running the installation program, you will need the Wind River reference number, authorization key, and checksum. You will also need the hostname of your MATRIX_X license server. If you have an existing license (for example release 6.X), you will not need this information.

1. Make sure that you are logged on to the correct operating system type (for example, Solaris) under the desired account. The installation procedure detects your operating system type, so it must match the target installation operating system.
2. Run the **setup.sh** script that resides in the **matrixx** directory on the CD. The **setup.sh** script prompts you for your installation directory.



NOTE: Do not install MATRIX_X 7.X into an existing MATRIX_X 5.X directory.

The **setup.sh** script extracts your product files and runs the installation program. The installation program prompts you for your reference number, authorization key, and checksum if you choose to generate a new license file. If you have redundant server keys, the installation program also prompts for the hostnames of two other machines.

When you are prompted to generate a new license file, do one of the following:

- If you have an existing license file, exit with Ctrl-C when prompted to avoid generating a new license file.
 - If you need a new license file, enter the license key data when prompted.
 - If you intend to access a floating license provided by another host:
 - ♦ Exit with Ctrl-C when prompted (to avoid generating a new license).
 - ♦ With a text editor, create a proxy license file named **license.dat** in the *install-dir*/ISILM directory as described in [Proxy License Files](#), p.21.
3. For evaluation licenses or if you already have a MATRIX_X license server running on another node, you can skip this step. Otherwise, start the 7.X license manager with the following command:

```
% install-dir/ISILM/lm_startup
```



NOTE: *install-dir* and `$SIHOME` (referred to elsewhere in this document) are effectively equivalent.

To shut down the license manager, enter:

```
% install-dir/ISILM/lmdown -c license.dat
```

To check the status to see if startup worked, enter:

```
% install-dir/ISILM/lmstat -c license.dat
```

This lets you know if both the license server and vendor daemon are *up*.

You can also check the *install-dir/ISILM/isi.log* file to see if the license server is running correctly.

4. To start Xmath 7.X, and test the installation, type:

```
% install-dir/bin/xmath &
```

or

```
% install-dir/bin/xmath-v release &
```

where *release* is the software release that you just installed, or one of the releases in *install-dir/bin*.

5. If you are installing redundant license servers, complete the procedure described in [Installing the Redundant License Servers](#), p.35.
6. (Optional) Once you have verified that Xmath starts successfully, go to [Installing Altia Design](#), p.31, if you plan to use Altia animation.
7. To ensure that the MATRIX_X 7.X license daemon is available after a reboot, add the following startup command to the platform boot file as described in [Table 4-1](#), p.30:

```
/bin/su username -c "umask 022; /path-to-lmgrd/lmgrd -c /path-to-isilm/  
license.dat -l /path-to-isilm/isi.log"
```

where:

| | |
|-----------------------|---|
| <i>/path-to-lmgrd</i> | equivalent to <i>install-dir/ISILM/bin.platform</i> |
| <i>/path-to-isilm</i> | equivalent to <i>install-dir/ISILM</i> |

platform is **hp, ibm, osf, sgi, or solaris**
username is a nonprivileged user

Table 4-1 License Daemon Startup Command Instructions

| Platform | Boot File Instructions |
|-------------------|---|
| Compaq Tru64 5.0: | <ul style="list-style-type: none"> ■ Create /etc/rc3.d/S91/matrixx1md containing the startup command. ■ Enter the following: <pre>ln /etc/rc3.d/matrixx1md /etc/init.d/matrixx1md</pre> |
| HP-UX 11.00: | <ul style="list-style-type: none"> ■ Create /sbin/rc2.d/S900matrixx1md containing the startup command. ■ Enter the following: <pre>ln /sbin/rc2.d/S900matrixx1md /sbin/init.d/matrixx1md</pre> |
| IBM AIX 4.3.3: | Append the startup command to /etc/rc.nfs |
| SGI IRIX 6.5.6: | <ul style="list-style-type: none"> ■ Create /etc/rc2.d/S91/matrixx1md containing the startup command. ■ Enter the following: <pre>ln /etc/rc2.d/S91matrixx1md /etc/init.d/matrixx1md</pre> |
| Solaris 2.7: | <ul style="list-style-type: none"> ■ Create /etc/rc2.d/matrixx1md containing the startup command. ■ Enter the following: <pre>ln /etc/rc3.d/S26matrixx1md /etc/init.d/matrixx1md</pre> |

Permissions

License administration does not require root permission. This includes FLEXlm, **lmgrd**, and the vendor daemon. In fact, Wind River recommends that you do not run the license server (**lmgrd**) as root, because root processes can introduce security risks. If **lmgrd** is started from root, as in a system boot script, Wind River

recommends that you use the `/bin/su` command to run `lmgrd` as a nonprivileged user. You will have to ensure that the vendor daemons listed in the `license.dat` file have execute permissions for `username`. The paths to the vendor daemons are listed on the corresponding DAEMON lines.

4.2 Installing Other Components

This section describes the installation procedures for installing optional MATRIX_X components. This includes

- [Installing Altia Design on page 31](#)
- [Installing Altia FacePlate on page 32](#)
- [Installing the Standalone License Manager on page 32](#)
- [Installing the Redundant License Servers on page 35](#)
- [Installing the TradeWinds Daemon on page 35.](#)

4.2.1 Installing Altia Design

Since the Altia Design software uses the Wind River license manager, you must have either MATRIX_X or the standalone license manager installed. Before beginning installation, follow the instructions in [Mounting your CD-ROM Drive](#).

To install Altia Design, follow these steps:

1. Make sure that you are logged on to the correct operating system type (for example, Solaris) under the desired account. The installation procedure detects your operating system type, so it must match the target installation operating system.
2. Run the `setup.sh` script that resides in the `altia/design` directory on the CD. The `setup.sh` script prompts you for the installation directory (which should be the same as your MATRIX_X installation directory). The `setup.sh` script extracts your product files and runs the installation program.
3. After the installation program completes, you can run the Altia Design editor with the following command:

```
% install-dir/bin/altia
```

4. (Optional) You can execute the automated demo with the *install-dir/bin/altia_demo* command. You can also run any of the five tutorials with the *install-dir/bin/altia_tutorial1* through the *altia_tutorial5* command.



NOTE: The Altia software uses the Wind River license manager. It does this by setting up the Altia code words file with the location of the MATRIX_X license file (*license.dat*) during execution of the installation program.

4.2.2 Installing Altia FacePlate

Since the Altia FacePlate software uses the Wind River license manager, you must have either MATRIX_X or the standalone license manager installed. Before beginning installation, follow the instructions in [Mounting your CD-ROM Drive](#).

To install Altia FacePlate, follow these steps:

1. Make sure that you are logged on to the correct operating system type (for example, Solaris) under the desired account. The installation procedure detects your operating system type, so it must match the target installation operating system.
2. Run the **setup.sh** script that resides in the **altia/face** directory on the CD. The **setup.sh** script prompts you for the installation directory (which should be the same as your MATRIX_X installation directory). The **setup.sh** script extracts your product files and runs the installation program.
3. After the installation program completes, you can run the Altia FacePlate with the following command:

```
% install-dir/bin/altiafp
```



NOTE: The Altia software uses the Wind River license manager. It does this by setting up the Altia code words file with the location of the MATRIX_X license file (*license.dat*) during execution of the installation program.

4.2.3 Installing the Standalone License Manager

The standalone license manager installation, which populates only the **ISILM** subdirectory tree, is a subset of the full MATRIX_X installation. It can be used to provide support for other standalone product installations such as Altia

animation, which requires MATRIX_X licensing but may not need the full MATRIX_X product set to function. In addition, it can provide the required licensing installation on single or redundant license servers.

The sequence of steps to install the standalone license manager is essentially the same as installing MATRIX_X. Before beginning installation, follow the instructions in [Mounting your CD-ROM Drive](#).

Before running the installation program, you will need the reference number, authorization key, and checksum. You will also need the hostname of any MATRIX_X license server.

1. Make sure that you are logged on to the correct operating system type (for example, Solaris) under the desired account. The installation procedure detects your operating system type, so it must match the target installation operating system.
2. Run the **setup.sh** script that resides in the **isilm** directory on the CD. The **setup.sh** script prompts you for your installation directory.



NOTE: Do not install MATRIX_X 7.X into an existing MATRIX_X 5.X directory.

The **setup.sh** script extracts your product files and runs the installation program. The installation program prompts you for your Wind River reference number, authorization key, and checksum if you choose to generate a new license file. If you have redundant server keys, the installation program also prompts for the hostnames of two other machines.



NOTE: Self-extracting versions of this same installation program are provided under the **isilm** directory on the CD for each of the supported license server platforms. Simply run the desired self-extracting shell script rather than **setup.sh** once you are logged on to the correct operating system type, and then follow the instructions in this section.

3. Start the 7.X license manager with the following command (skip this step for an evaluation license).

```
% install-dir/ISILM/lm_startup
```

You can check the *install-dir/ISILM/isi.log* file to see if the license server is running correctly.

4. To ensure that the license daemon is available after a reboot, follow the instructions in [Step 7](#), p.29 (skip this step for an evaluation license).

5. Each separate installation of MATRIX_X can access the license server with a proxy license file as described in 3.5 *Proxy License Files*, p.21.

4.2.4 Installing the Redundant License Servers

At a minimum, installing redundant license servers requires the installation of license manager software and starting the license manager daemon on two other nodes in addition to the primary license server. Special license keys are required for a redundant license server configuration.

To install a typical redundant license server configuration, follow these steps:

1. Perform a standalone license manager installation on the primary license server (see 4.2.3 *Installing the Standalone License Manager*, p.32) or a complete MATRIX_X installation if you want this machine to also serve the MATRIX_X application files (see 4.1.2 *Installation Procedure*, p.28). Either procedure requires generating a license file and starting the license daemon.
2. On each of two secondary license servers, run either the standalone license manager installation (see 4.2.3 *Installing the Standalone License Manager*, p.32) or a complete MATRIX_X installation (if you want to replicate all the MATRIX_X files), and then start the license daemon on each machine.



NOTE: Rather than generating the license file on each secondary license server, copy **license.dat** from the **ISILM** directory of the primary server to the **ISILM** directory of each secondary server before starting the license daemons. Edit the **DAEMON** line of each secondary copy of **license.dat** to point to the daemon path that contains **mtxlmnd** for that server.

3. To ensure that the license daemons are available after a reboot, follow the instructions in [Step 7](#), p.29.
4. Each separate installation of MATRIX_X can access the license server with a proxy license file as described in [3.5](#), p.21.

4.2.5 Installing the TradeWinds Daemon

This section describes how to install the TradeWinds service so that it is automatically started during system bootup. The TradeWinds service combines the following functionalities:

- A CORBA (Common Object Request Broker Architecture) naming service (full implementation)
- A session manager
- A portmapper (local lookup service)

You must have root privilege and the ability to write to the **/usr** file system, since this is where the TradeWinds daemon files are installed. If an existing TradeWinds daemon is currently running, you must identify the process and stop it. No other users of MATRIX_x products should be using the software installations during this procedure since the TradeWinds daemon process could be serving requests from these installations.

To identify the current TradeWinds daemon process, from the UNIX command prompt (denoted by %), enter the following:

```
% ps -aef | grep "windriver/tradewinds" | grep -v grep
```

and note the process id (pid) of the daemon. Kill the process as follows:

```
% kill process-id
```

Run the **setup.sh** script which resides in the **tradewinds** directory of the cdrom.

You are prompted for the destination directory for the TradeWinds daemon files:

```
Enter installation directory
```

Enter **/usr** in response to this prompt.



NOTE: You must have permission to write to the **/usr** file system.

To modify the system boot files to start the daemon automatically take the steps described in [Table 4-2](#)

Table 4-2 TradeWinds Startup Command Instructions

| Platform | Boot File Instructions |
|-------------------|--|
| Compaq Tru64 5.0: | <ul style="list-style-type: none"> ■ Create <code>/etc/rc3.d/S92tradewindsd</code> containing the following: <pre>#!/sbin/sh /usr/windriver/tradewinds/tradewind -ORBconfig /usr/windriver/tradewinds/tw.cfg > /dev/null 2> /usr/windriver/tradewinds/ traderr.log &</pre> ■ In the <code>/etc/init.d</code> directory, create a link to this file with the following command: <pre>ln /etc/rc3.d/S92tradewindsd /etc/init.d/tradewindsd</pre> |
| HP-UX 11.00: | <ul style="list-style-type: none"> ■ Create <code>/sbin/rc2.d/S910tradewindsd</code> containing the following: <pre>#!/sbin/sh /usr/windriver/tradewinds/tradewind -ORBconfig /usr/windriver/tradewinds/tw.cfg > /dev/null 2> /usr/windriver/tradewinds/ traderr.log &</pre> ■ In the <code>/sbin/init.d</code> directory, create a link to this file with the following command: <pre>ln /sbin/rc2.d/S910tradewindsd /sbin/init.d/tradewindsd</pre> |
| IBM AIX 4.3.3: | <p>Append the following lines to the <code>/etc/rc.nfs</code> file:</p> <pre>/usr/windriver/tradewinds/tradewind -ORBconfig /usr/windriver/tradewinds/tw.cfg > /dev/null 2> /usr/windriver/tradewinds/ traderr.log &</pre> |

Table 4-2 TradeWinds Startup Command Instructions (Continued)

| Platform | Boot File Instructions |
|-----------------|---|
| SGI IRIX 6.5.6: | <ul style="list-style-type: none">■ Create /etc/S94tradewindsd containing the following: <pre>#!/sbin/sh /usr/windriver/tradewinds/tradewind -ORBconfig /usr/windriver/tradewinds/tw.cfg > /dev/null 2> /usr/windriver/tradewinds/ traderr.log &</pre>■ In the /etc/init.d directory, create a link to this file with the following command the following: <pre>ln /etc/rc2.d/S94tradewindsd /etc/init.d/tradewindsd</pre> |
| Solaris 2.7: | <ul style="list-style-type: none">■ Create a file in the /etc/rc3.d directory named S27tradewinds containing the following: <pre>#!/sbin/sh LD_LIBRARY_PATH=/usr/windriver/tradewinds;export LD_LIBRARY_PATH /usr/windriver/tradewinds/tradewind -ORBconfig /usr/windriver/tradewinds/tw.cfg > /dev/null 2> /usr/windriver/tradewinds/ traderr.log &</pre>■ In the /etc/init.d directory, create a link to this file with the following command: <pre>ln /etc/rc3.d/S27tradewindsd /etc/init.d/tradewindsd</pre> |

4.3 Using Online Documentation

MATRIX_x online documentation is provided in PDF format on a separate CD. The documents can be accessed from the MATRIX_x online documentation CD or copied to any location on your local system.

Viewing and Searching PDF Files

To view MATRIX_x online documentation, launch Adobe Acrobat Reader with Search (version 3.01 or higher), and then open the **welcome.pdf** file. The **welcome.pdf** file is a table of contents for PDF documentation on the CD. Click any document title to open that document.

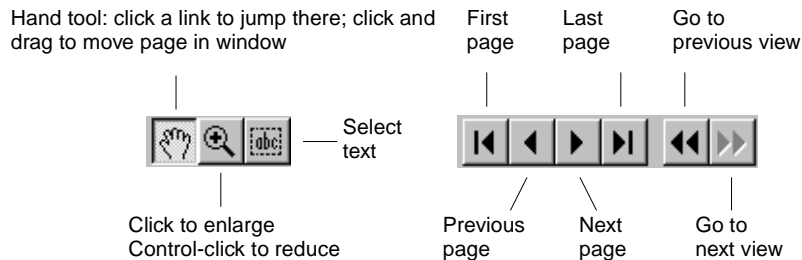
If you do not have Acrobat on your system, see [Installing Acrobat Reader with Search](#).

Using Acrobat Reader

Each document has a “bookmarks” pane displayed on the left.

All bookmarks and blue text are hypertext links. To follow a link, be sure the hand tool is selected; then click the bookmark or blue text.

Use the following Acrobat toolbar buttons for browsing and navigation:



Select Help→Reader Guide for a detailed description of all Acrobat capabilities.

Bookmarks can contain the following links:

- Welcome: Link to the Welcome screen.
- Document Title: Link to the cover of the current document.
- Contents: Link to the Table of Contents for the current document.

- Chapter and Section Bookmarks: Links to chapters and sections in the document.
- A right-pointing triangle in front of a bookmark means there are sub-bookmarks; click the triangle to expand to lower-level bookmarks.
- Index: Link to the Index of the current document if one exists.

Pasting Text into Other Applications

To copy examples or text from a PDF document into an application, first click Tools → Select Text, or click the abc button. Select the text, and then use the usual technique on your platform to copy and paste the text into the target application.

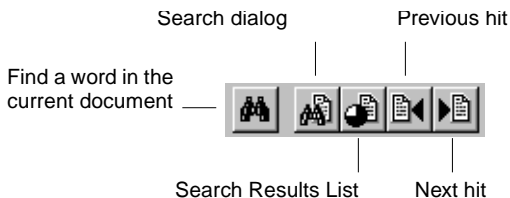
Printing a Large Document on UNIX

When printing in a UNIX environment, a book might fail to print because it is too large for your printer's memory resources. To alleviate this problem, edit the Acrobat print destination to create a symbolic link to the specified printer by appending `-s` to the printer string. For example:

```
/usr/ucb/lpr -s
```

If printing problems persist you may have to print a range of pages rather than the entire book.

Find and Search in PDF



The Acrobat Reader Find feature locates words or word phrases in the current PDF document.

To use Find, click the plain binoculars on the toolbar, or select Tools→Find.

To make a full-text search over all documents on the CD, use the Search tool. Click the binoculars overlaid on a document on the toolbar, or select Tools→Search. In the Search dialog, enter the word or phrase you want to find, select options as desired, and then click Search. Search displays a Search Results List dialog of documents containing the term. Click any document in the list to open it. All instances of the term on the first page where it occurs are highlighted.

To find the next or previous occurrence, click the Next or Previous hit buttons on the Acrobat toolbar. To return to the Search Results List dialog, click the Search Results List button.

The Search command includes powerful features for expanding a search using automatic word-stemming, a thesaurus to find synonyms, and a “sounds like” feature. You can also use wild cards in terms, control case matching, and include Boolean connectives.

For further details on Search, select Help→Plug-In Help→Using Acrobat Search to read the online guide.

4.4 Installing Acrobat Reader with Search

1. For systems using **automount**, go to [Step 2](#), p.42.

For systems without **automount**, instructions depend on whether the CD-ROM drive is local or on a remote machine.

- a. In both cases, log in as **root** on the system with the CD-ROM drive.
- b. Make a directory to be the CD-ROM mount point (for example, **mkdir /cdrom**).
- c. Mount the CD-ROM drive as described in *Mounting your CD-ROM Drive*, p.26.

For a Local CD-ROM Drive

- d. Proceed to [Step 2](#), p.42.

For a Remote CD-ROM Drive

- e. Export the mount point (directory) of the CD-ROM drive to the NFS client; this allows your installation machine to mount the directory.

```
# exportfs -i -o ro /cdrom
```

- f. Log out from the remote machine that has the CD-ROM drive attached.
- g. Log in to your installation machine as **root**.
- h. Create a directory on the installation machine to be the mount point for the remote CD-ROM drive machine, and then mount it.

```
# mkdir /cdrom  
# mount cdrom_drive_machine_name:/cdrom /cdrom
```

2. Change to the CD-ROM directory containing the Acrobat Reader with Search installation script:

```
# cd cdrom_dir/acroread/unix/rdr_srch
```

If your system uses automount, *cdrom_dir* may be */cdrom/name* (where *name* is the name of the CD-ROM). *cdrom_dir* is */cdrom* if you followed the manual installation instructions in [Step 1](#).

3. Read the **instguid.txt** file, and then run the installation script:

```
# ./install
```

4. After the **install** script is complete, create a link to the Acrobat Reader with Search launch script as described in **instguid.txt**.

Using Acrobat, you can read the online books directly from the CD. Alternatively, you can copy the document directories to a local system or place them in a common directory on a network server. There is no predetermined location for the file set; specifically, there is no need for the documentation files to be in the product installation tree.

Because you've already installed Acrobat, don't copy the **Acroread** directory, or you may overwrite your installation.

5. If you had to mount the CD-ROM drive, unmount it:

```
# umount /cdrom
```


For a Remote CD-ROM Drive, In Addition:

- a. Log in as `root` to the machine that has the CD-ROM drive attached.
 - b. Unmount the CD-ROM drive by typing:

```
# umount /cdrom
```
 - c. Log out of the remote machine.
6. Log out of the installation machine.

4.5 Unmounting Your CD-ROM Drive

After the installation is completed, you need to unmount the CD-ROM directories mounted as described in [Mounting your CD-ROM Drive](#), p.26:

1. Log in as `root` to the machine with a mounted CD-ROM directory.
2. Unmount any mounted CD-ROM directories. For example:

```
% umount /cdrom
```

3. Log out.

4.6 Updating a License File

Run `INSTALLLM` to perform license maintenance. This utility runs the license file generator. To update a license file, take the following steps:

1. Change directory to `install-dir`.
2. Run `INSTALLLM` with the following command:

```
% ./INSTALLLM
```

4.7 Using MATRIX_X Help

MATRIX_X 7.X provides a hypertext markup language (HTML) help system. MATRIX_X Help is a self-contained system with multiple hypertext links from one component to another. This help system, augmented by online and printed manuals, covers most MATRIX_X topics except for installation.

MATRIX_X Help runs with Netscape. An OEM version of Netscape is automatically included in the MATRIX_X installation.

Using Netscape with MATRIX_X

Environment Variables

If you plan to access MATRIX_X Help using `$XMATH/bin/netscape`, make sure that the following Netscape environment variables are *not* set before starting Xmath:

```
MOZILLA_HOME  
CLASSPATH
```

You can determine if these variables are set by looking at the output from the UNIX command `env`. If these values are set for a different version of Netscape (such as 2.0+), the Exit button in the “Netscape: MATRIX_X Help” incorrectly interprets the associated JavaScript code. This causes all Netscape-related windows to close and produces a core file.

Printing Files

To print an MATRIX_X Help topic, go to the Topics Hierarchy, and select a topic (for example, Dynamic Systems→Control Design) and then right click and hold. A Netscape window displays with one of the options saying “Open Frame in New Window.” Once the online help topic is in the new window, select Print (or any other standard Netscape capability).

Additional Netscape Information

For more information on Netscape products, see Netscape’s home page at:

<http://home.netscape.com>

4.8 Installation-Related Tasks

Table 4-3 lists installation-related tasks with corresponding page references.

Table 4-3 Installation Tasks

| To learn about... | Go to... |
|---|----------|
| Setting Up a User Environment (.cshrc) | p.45 |
| Running Multiple MATRIX_x Versions | p.45 |
| Recording Your Wind River Reference Number | p.46 |
| Moving the ISIHOMEDIR Directory Tree to Another Directory | p.46 |
| Configuration Management Installation Tasks | p.46 |
| Troubleshooting Your Installation | p.48 |

4.8.1 Setting Up a User Environment (.cshrc)

To allow access to MATRIX_x 7.X each time you log in, place the following command in your `.cshrc` file.

```
set path=(install-dir/bin compiler_path $path)
```

where `install-dir` is your installation directory and `compiler_path` is the path by which the user can access a compiler for linking external files such as LNXs and UCBs. Specify all compilers the user will require.



NOTE: In previous MATRIX_x versions, makefiles on some platforms contained literal compiler paths. All makefiles now contain only `cc`, `CC`, and `f77` statements. All users must now include explicit compiler paths in their path definitions or linking will not work.

4.8.2 Running Multiple MATRIX_x Versions

You can install multiple versions of MATRIX_x 7.X or later under a common installation directory. If you have multiple versions installed in a common directory, the following command lets you run a selected version:

```
% install-dir/bin/command_name -v version
```

where *install-dir* is your installation directory, **command_name** is **xmath**, **sbsim**, **autostar**, **ia**, **encrypt**, **mtxdemo**, or **mtxhelp**, and **version** is one of the versions in the *install-dir/bin* directory. The version string appears as a suffix on the launching scripts.

4.8.3 Recording Your Wind River Reference Number

To help us provide rapid support when you call Wind River, the installation procedure prompts you for the 10-character Wind River reference number while installing MATRIX_X 7.X or the license manager. Your reference number is stored in the file *install-dir/ISILM/config.txt*. If you do not have a reference number, you can obtain one from Wind River License Administration when you request your Authorization Key and enter it into the first line of the **config.txt** file as follows:

```
REFERENCE NUMBER: 10_character_string
```



NOTE: Enter your Wind River reference number without any spaces.

You can use the Xmath **ISIREFNUM** command to display the reference number.

4.8.4 Moving the ISIHOMEDirectory Tree to Another Directory

If you want to move the **ISIHOMEDirectory** tree to another directory after installing MATRIX_X 7.X, the preferred method is as follows:

1. Save the **license.dat** file (if required).
2. Delete the MATRIX_X software after stopping the license daemon.
3. Reinstall MATRIX_X in the new directory location.
4. Copy the **license.dat** file to the new directory location.
5. Restart the license daemon.

4.8.5 Configuration Management Installation Tasks

The MATRIX_X configuration management (CM) utility provides integration between SystemBuild and ClearCase and Merant PVCS CM tools.

Before using this feature, you must install the CM license key. For information about obtaining and installing license features, see [Chapter 3, Licensing and Terminology](#).

Each of these third-party CM tools has its own native working environment that must be installed and functioning before the tool can be used with SystemBuild.

SystemBuild decides which tool to use by looking at the **CMToolConfig** property setting specified in the `$$SYSBLD/etc/sysbld.ini` or the user's `user.ini` file.



NOTE: Since the CM tool selection will generally be a system-wide setting, an administrator will usually set this value in the `sysbld.ini` file.

4

Setting Up ClearCase

To perform ClearCase operations, SystemBuild uses a Perl script to relay calls into your ClearCase system. The script is located in `$$SYSBLD/cm/ClearCase.pl`. To use ClearCase, make sure the line.

```
CMToolConfig = ClearCase.pl
```

appears in the [OPTIONS] section of the `sysbld.ini` or `user.ini` file. The script accesses ClearCase functionality through the `cleartool`, `clearprompt`, and `xclearcase` commands, which are usually located in `/usr/atria/bin`. ClearCase operations will not be available unless this directory is in the user's path.

To test the user's environment, run

```
cleartool man -g checkin
```

from the user's UNIX shell. A graphical help viewer for ClearCase's checkin operation should appear.

Setting Up PVCS

SystemBuild uses PVCS's project command-line interface (PCLI) and command-line interface (CLI) to perform PVCS operations. To use PVCS, make sure the line

```
CMToolConfig = PVCSPLI
```

appears in the [OPTIONS] section of the `sysbld.ini` or `user.ini` file. This implementation uses a PCLI script that relays the CM operations from SystemBuild to PVCS. It uses commands such as `pcli`, `get`, and `put` and expects these commands to be in the user's search path. These commands are normally located in the `/usr/pvcs/platform/vm/bin` directory. Also, PVCS requires that the `pvcs_install_dir/vm/solaris/lib/sparc/native_threads` library path be included in the user's library search path. For example, in a Solaris environment with PVCS

installed in `/usr/pvcs`, the following lines (or equivalent) must appear in each user's `.cshrc` file:

```
if ($?LD_LIBRARY_PATH) then
  setenv LD_LIBRARY_PATH \
    ${LD_LIBRARY_PATH}:/usr/pvcs/vm/solaris/lib/sparc/native_threads
else
  setenv LD_LIBRARY_PATH /usr/pvcs/vm/solaris/lib/sparc/native_threads
endif
```

To test the user's environment, run the following commands from a UNIX prompt:

```
pcli run -h
get -h
```

These commands present information about the `run` and `get` commands from PVCS.

4.8.6 Troubleshooting Your Installation

If you try to perform one of the following tasks and receive an error message, you may be able to correct it by identifying the cause as described in [Table 4-4](#).

Table 4-4 Error Message Definitions

| Command | Error Message or Problem | Cause or Remedy |
|--------------------------------------|---|---|
| <code>lmdiag</code> | On HP systems, <code>lmdiag</code> reports an incorrect Ethernet address (although <code>lanscan</code> suggests that the Ethernet address is correct). | As root, enter the following command: <code>chmod a+r /dev/lan0</code> |
| <code>lmdiag</code> | <code>lmdiag</code> reports that the hostid is correct, but the license daemon has not been started. | Kill all <code>lmgrd</code> processes started for the <code>license.dat</code> file (they are trying to use the same TCP/IP port) and start a new <code>lmgrd</code> process. |
| <code>lmrread -c license_file</code> | | |

Table 4-4 Error Message Definitions

| Command | Error Message or Problem | Cause or Remedy |
|------------------|---|---|
| | You cannot use lmreread to change server node names or port numbers. | You have changed the server name or port number. Kill the old daemon, then restart the license daemon using <i>install-dir/ISILM/lm_startup</i> . |
| INSTALLMX | Message: | You have entered the wrong authorization keys or checksum, or, if you have an Evaluation License, the keys have expired. |
| INSTALLLM | Invalid keys. | |

5

FLEXlm Licensing Tools

This chapter describes the FLEXlm licensing utilities. This includes explaining how to troubleshoot common license manager problems and describing messages from the daemon log file. For additional licensing documentation, see the *FLEXlm End User Manual* from GLOBEtrouter Software, Inc. on the MATRIX_X documentation CD.

5.1 FLEXlm Utilities

MATRIX_X 7.X uses FLEXlm for its license server. FLEXlm provides the following OS utilities to help manage the licensing activities on the network:

| | |
|-----------------|---|
| lmstat | Helps you monitor the status of all network licensing activities. |
| lmdiag | Lets you diagnose problems when you cannot check out a license. |
| lmdown | Provides the means for an orderly shutdown of license daemons. |
| lmgrd | Starts the license daemon. |
| lmhostid | Reports the host ID of a system. |

| | |
|-----------------|--|
| lmreread | Causes the license daemon to reread the license file and start any new vendor daemons. |
| lmver | Reports the FLEXlm version of a library or a binary. |

5.1.1 *lmgrd*

lmgrd is the main daemon program for FLEXlm. When you invoke **lmgrd**, it looks for the license file. The license file contains information about vendors and features. Syntax is:

```
lmgrd [ -c license_file ] [ -t timeout ] [ -s interval ] [ -b ]  
      [-l logfile ]
```

where:

| | |
|------------------------|--|
| <i>-c license_file</i> | Uses the specified license file. If this option is not specified, lmgrd looks for the environment variable LM_LICENSE_FILE . If that environment variable is not set, lmgrd looks for the license.dat file in the /usr/local/flexlm/licenses directory. |
| <i>-t timeout</i> | Sets a timeout interval, in seconds, during which redundant daemons must complete their connections to each other. The default value is 10 seconds. A larger value may be needed if the daemons are being run on busy systems or a heavily loaded network. |
| <i>-s interval</i> | Specifies the logfile timestamp interval, in minutes. The default is 360 minutes. |
| <i>-b</i> | Specifies backward compatibility. |
| <i>-l logfile</i> | Specifies the pathname to the log file. If this option is not specified, the log will be sent to standard output. |

5.1.2 *lmstat*

The **lmstat** utility helps you monitor the status of all network licensing activities, including:

- Which daemons are running
- Users of individual features

- Users of features served by a specific daemon

Syntax is:

```
lmstat [-a] [-S [DAEMON]] [-f [feature]] [-s [server_name]]
        [-t value] [-c license_file][-A] [-l [regular expression]]
```

where:

| | |
|--------------------------------|---|
| -a | Displays everything. |
| -A | Lists all active licenses. |
| -c <i>license_file</i> | Uses <i>license_file</i> . |
| -S [DAEMON] | Lists all users of the specified daemon's features. |
| -f [feature_name] | Lists users of the specified feature(s). |
| -l [regular expression] | Lists users of matching license(s). |
| -s [server_name] | Displays status of server node(s). |
| -t <i>value</i> | Sets lmstat time-out to <i>value</i> . |

5.1.3 *lmreread*

The **lmreread** utility causes the license daemon to reread the license file and start any new vendor daemons that have been added. Additionally, all pre-existing daemons will be signaled to reread the license file for changes in feature licensing information. Syntax is:

```
lmreread [-c license_file]
```



NOTE: If you use the **-c** option, the license file specified will be read by **lmreread**, not by **lmgrd**; **lmgrd** rereads the file it read originally. Also, **lmreread** cannot be used to change server node names or port numbers. Vendor daemons will not reread their option files as a result of **lmreread**.

5.1.4 *lmhostid*

The **lmhostid** utility reports the host ID of a system. From the Command Prompt enter:

```
lmhostid [ether | long]
```

The output of this command is as follows:

```
lmhostid - Copyright (C) 1989-2000, Globetrotter Software, Inc.  
The FLEXlm host ID of this machine is "00500482aed0"
```

The **ether** option causes **lmhostid** to print the Ethernet address on Hewlett-Packard (HP) systems. On HP systems the **long** option prints the value of the HP ID module. These options are only available in FLEXlm v2.21 or later. The default is **long** for FLEXlm v2.21 or earlier, and **ether** for FLEXlm v2.4 or later.

5.1.5 *lmdown*

The **lmdown** utility allows an orderly shutdown of license daemons (both **lmgrd** and its vendor daemon) on all nodes. Syntax is:

```
lmdown [-c license_file]
```

where the **-c license_file_path** argument specifies the location of the license file to be shut down.



CAUTION: The system administrator should protect the execution of **lmdown**, because shutting down the license daemons will cause loss of access to licenses; current users may lose data.

5.1.6 *lmdiag*

lmdiag allows you to diagnose problems when you cannot check out a license.

Usage is:

```
lmdiag [-c license_file] [-n] [feature]
```

where **-c license_file** path to file to diagnose. **-n** run in noninteractive mode; **lmdiag** will not prompt for any input in this mode. In this mode, extended connection diagnostics are not available. **feature** diagnose this feature only.

If no feature is specified, **lmdiag** will operate on all features in the license file(s) in your path. **lmdiag** will first print information about the license, then attempt to check out each license. If the checkout succeeds, **lmdiag** will indicate this. If the checkout fails, **lmdiag** will give you the reason for the failure. If the checkout fails because **lmdiag** cannot connect to the license server, then you have the option of running “extended connection diagnostics.”

These extended diagnostics attempt to connect to each port on the license server node, and can detect if the port number in the license file is incorrect. **lmdiag** will indicate each port number that is listening, and if it is an **lmdiag** process, **lmdiag** will indicate this as well. If **lmdiag** finds the vendor daemon for the feature being tested, then it will indicate the correct port number for the license file to correct the problem.

5.1.7 *lmver*

lmver reports the FLEXlm version of a library in binary. Usage is:

```
lmver [filename]
```

where *filename* can be **mtxlm** or **lmgrd**.

5.2 Resolving Problems

This section offers some general debugging tips, and discusses information you should gather before contacting support. 5.3 *Troubleshooting License Manager Problems*, p.56 lists common license manager problems users have encountered before.

5.2.1 General Debugging Tips

The following are tips for debugging:

- Examine the **\$SIHOME/ISILM/isi.log** file.
- If you cannot check out a feature, run:

```
$SIHOME/ISILM/lmdiag -c $SIHOME/ISILM/license.dat
```

- If the license daemon appears to have started correctly (which you should be able to determine from the **isi.log** file), try running **lmstat** to see if that program has the same problem as your application.

```
lmstat -a -c $SIHOME/ISILM/license.dat
```

5.2.2 Support Issues

When you make a support call, please be prepared to answer the following questions:

- What kind of machine is your license daemon running on? What version of the operating system is the application running on?
- What version of FLEXlm does the program use? Use the following command on your **mtxlm** vendor daemon and application:

```
$SIHOME/ISILM/lmver $SIHOME/ISILM/bin.platform/mtxlm
```

- What error or warning messages appear in the log file? Did the daemon start correctly? Look for a message such as:

```
server xyz started for: feature1 feature2.
```

- What is the output from running **lmstat -a**?
- Are you running other products which are also licensed by FLEXlm? Wind River does not support combined license files.

5.3 Troubleshooting License Manager Problems

This section lists areas of FLEXlm administration that have given customers difficulty in the past. Categories are [Host ID Problems](#), p.56, [Connection Problems](#), p.57, and [Other Client Problems](#), p.58.

5.3.1 Host ID Problems

SYMPTOM `When I run the license manager on my machine, it tells me it is the wrong host ID.`

| | |
|----------|--|
| CAUSE | <p>The vendor daemon checks the host ID listed on the server line in the license file; if it does not match the host ID of the machine it is running on, this message will be printed.</p> <p>Possible causes include:</p> <ol style="list-style-type: none"> 1. You are trying to run the license daemon on a different machine from the machine the file was made for. 2. The host ID of the machine you are running on changed (for example, the HP ID module was moved, or the CPU board was replaced). 3. The host ID in the license file was modified. |
| SOLUTION | <p>Verify that the host ID of the machine where the vendor daemon (or node-locked client program) is being run matches the host ID specified in the license file (on the server line for the vendor, or on the feature line for a node-locked client). You can run the lmhostid program to see what FLEXlm thinks the host ID is. You cannot modify the host ID in the license file. If the host ID of your server machine changes, you will have to get a new license file from your software vendor.</p> |

5.3.2 Connection Problems

| | |
|----------|--|
| SYMPTOM | <p>The application program (or lmstat) can't connect to the server to check out a license.</p> |
| CAUSE | <p>The FLEXlm routines in the application are unable to make a TCP connection to the server and port specified in the license file. Possible reasons for this are:</p> <ol style="list-style-type: none"> 1. The wrong license file is being referenced by the application program. 2. The server machine specified in the license file is down. 3. The vendor daemon specified in the license file is not running. 4. The hostname in the license file is not recognized by the system. 5. The network between the client machine and the server machine is down. 6. TCP is not running on your machine. |
| SOLUTION | <p>Verify that the application is using the proper license file. Verify that the specified server machine is up and reachable by executing another command that uses TCP, such as rsh or rlogin, from the client to the server. Verify that the vendor daemon is running (you can use the ps command on the server to look for it). Examine the license log file to see if any problems are reported, particularly messages indicating that the vendor daemon has quit. Run lmstat -a from the server machine to verify that the vendor daemon is alive. Run lmstat -a from the client</p> |

machine to verify the connection from client to vendor daemon across the network. Try using: **telnet hostname portnum** where **hostname** and **portnum** are the same as on the **server** line in your license file.

5.3.3 Other Client Problems

SYMPTOM When I run my application program (or vendor daemon), I get the error **bad code**.

CAUSE Possible causes for this are:

1. The license file was modified (either the host ID on a **server** line or anything on the **feature** line was changed).
2. The vendor used the wrong version of his license creation program to generate your license file (or there is a bug in that process).

SOLUTION You cannot modify the license file. If you need to change something in your license file, you must get a new license from Wind River.

SYMPTOM When the second user tries to check out a license, the vendor daemon prints an error concerning **Parameter mismatch** in the log file and refuses the license.

CAUSE The most likely cause of this problem is that you are simultaneously trying to run two different versions of the application program, and the software vendor has not specifically set up the new version for this kind of compatibility. Check the license server log file for a **comm version mismatch** warning message; this indicates that someone is running a V1.5 client with a V2.1 or later license server.

SOLUTION Run only the new version (or old version) of the application.

5.3.4 Other Server Problems

SYMPTOM When I start **lmgrd**, it says **Retrying socket bind (address in use: port xxxx)**.

CAUSE The license server listens on the port **xxxx** that has already been used by another server program. 99.44% of the time, if it's in use, it's because **lmgrd** from Wind River or another vendor is already running on the port - or was recently killed, and the port isn't freed yet.

SOLUTION In the **license.dat** file, Wind River has put 27000 at the end of the **SERVER** line as the port number. You can remove it to let **lmgrd** scan for a free port from 27000 to 27009. You can also specify a port number selected by yourself for other concerns such as farewell.

! **WARNING:** The **portscan** feature of **lmgrd** is only available for FLEXlm release 6+ licenses. You cannot drop the port numbers when configuring redundant servers.

| | |
|----------|---|
| SYMPTOM | When I start up lmgrd , it says exec1 failed on my vendor daemon. |
| CAUSE | lmgrd uses exec1 to start each vendor daemon running. If there is a problem starting the vendor daemon, this message is output to the log file. This error is typically caused by one of the following: <ol style="list-style-type: none">1. There is no executable at the location referred to by the license file (and printed out in the log file).2. The executable does not have the proper protection to be run (the file does not have the x bit set, or one of the directories in the path is not readable).3. There was an error building the executable, and it cannot be run.4. The executable is for a different machine architecture. |
| SOLUTION | Verify that the path to the vendor daemon is absolute (that is, starts with slash (/), and that it points to the executable program itself, not the containing directory (for FLEXlm 1.5). Ensure that the file exists by doing an ls -l of the vendor daemon filename(s) specified in the log file. Make sure you do this as the same user that started lmgrd . Verify that the file is executable. If you are running as root and using an NFS-mounted file system, the relevant protection bits are the <i>other</i> bits (not the <i>user</i> bits), even if the file is owned by root. Run a whatis on the file. whatis should tell you the file is an executable for the machine you are trying to run it on. Run the vendor daemon directly from the command prompt. If the vendor daemon is properly linked, it will tell you that it must be run from lmgrd ; if it crashes or fails to execute, then it is not properly linked. |
| SYMPTOM | The license server keeps reporting lost lock errors in the log file and exiting . |
| CAUSE | The lockfile (normally placed in /usr/tmp) is being removed by someone else. There could be another daemon running, or the system administrator (or a script) could have deleted the file. |
| SOLUTION | Check to see if there is more than one copy of the daemon running: use the command ps -aux grep isi to search for it. Check for more than one lmgrd running as well, since it will restart your vendor daemon when it is killed. If more than one lmgrd is running, kill them all (using simple kill commands, not kill -9 etc.), then kill any remaining vendor daemons (try a simple kill before trying kill -9) and start one fresh copy of lmgrd . Check to see whether a shell script is running that cleans out /tmp (or /usr/tmp). If so, try modifying it so that it does not delete zero length files. |

5.4 Daemon Log File

Daemons generate log files with **DAEMON NAME messages** where:

| | |
|--------------------|--|
| DAEMON NAME | Either license daemon or the string from the DAEMON line that describes your daemon. In the case where a single copy of the daemon cannot handle all of the requested licenses, an optional underscore followed by a number indicates that this message comes from a forked daemon. |
| message | The text of the message. |

The log file is available as **\$SIHOME/ISILM/isi.log**. The log files can be used to:

- Inform users when they need to purchase additional application software licenses.
- Diagnose configuration problems.
- Diagnose daemon software errors.

5.4.1 Informational Messages

These messages are only informational and do not necessarily indicate an error or a problem.

| | |
|--|--|
| Connected to <i>node</i>. | This daemon is connected to its peer on node <i>node</i> . |
| CONNECTED, master is <i>name</i>. | The license daemons log this message when a quorum is up and everyone has selected a master. |
| DENIED: <i>N</i> feature to user (<i>N</i> licenses) | <i>user</i> was denied access to <i>N</i> licenses of <i>feature</i> . |
| EXITING DUE TO SIGNAL <i>nnn</i>. EXITING with code <i>nnn</i>. | All daemons list the reason that the daemon has exited. |
| EXPIRED: <i>feature</i>. | <i>feature</i> has passed its expiration date. |
| IN: <i>feature</i> by user (<i>N</i> licenses). | <i>user</i> has checked back in <i>N</i> licenses of <i>feature</i> . |
| License Manager server started. | The license daemon was started. |

| | |
|--|---|
| Lost connection to <i>host</i>. | A daemon can no longer communicate with its peer on node <i>host</i> , which can cause the clients to have to reconnect, or cause the number of daemons to go below the minimum number, in which case clients may start exiting. If the license daemons lose the connection to the master, they will kill all the vendor daemons; vendor daemons will shut themselves down. |
| Lost quorum. | The daemon lost quorum, so it will only process connection requests from other daemons. |
| MULTIPLE <i>xxx</i> servers running. Please kill, and restart license daemon. | The license daemon has detected that multiple copies of vendor daemon <i>xxx</i> are running. The user should kill all <i>xxx</i> daemon processes and restart the license daemon. |
| OUT: feature by user (<i>N</i> licenses). | <i>user</i> has checked out <i>N</i> licenses of <i>feature</i> |
| RESERVE feature for HOST <i>name</i>. RESERVE feature for USER <i>name</i>. | A license of <i>feature</i> is reserved for either user <i>name</i> or host <i>name</i> . |
| REStarted <i>xxx</i> (internet port <i>nnn</i>) | Vendor daemon <i>xxx</i> was restarted at internet port <i>nnn</i> . |
| Retrying socket bind (address in use). | The license servers try to bind their sockets for approximately 6 minutes if they detect "address in use" errors. |
| Selected (EXISTING) master node. | This license daemon has selected an existing master (node) as the master. |
| SERVER shutdown requested. | A daemon was requested to shut down via a user-generated kill command. |
| [NEW] Server started for: <i>feature-list</i> | A (possibly new) server was started for the features listed. |
| Shutting down <i>xxx</i>. | The license daemon is shutting down the vendor daemon <i>xxx</i> . |
| SIGCHLD received. Killing child servers. | A vendor daemon logs this message when a shutdown was requested by the license daemon. |
| Started <i>name</i>. | The license daemon logs this message whenever it starts a new vendor daemon. |
| Trying connection to <i>node</i>. | The daemon is attempting a connection to <i>node</i> . |

5.4.2 Configuration Problem Messages

| | |
|---|--|
| <code>hostname: Not a valid server host, exiting</code> | This daemon was run on an invalid hostname. |
| <code>hostname: Wrong hostid, exiting</code> | The host ID is wrong for hostname . |
| <code>BAD CODE for <i>feature-name</i></code> | The specified feature name has a bad encryption code. |
| <code>CANNOT OPEN options file <i>file</i></code> | The options file specified in the license file could not be opened. |
| <code>license daemon: lost all connections</code> | This message is logged when all the connections to a daemon are lost, which often indicates a network problem. |
| <code>lost lock, exiting</code> | Error closing lock file. |
| <code>Unable to re-open lock <i>file</i></code> | The vendor daemon has a problem with its lock file, usually because of an attempt to run more than one copy of the daemon on a single node. Locate the other daemon that is running via a ps command, and kill it with kill -9 . |
| <code>NO DAEMON line for <i>daemon</i></code> | The license file does not contain a <i>DAEMON</i> line for <i>daemon</i> . |
| <code>No <i>license</i> service found</code> | The TCP <i>license</i> service did not exist in <i>/etc/services</i> . |
| <code>No license data for <i>feat</i>, feature unsupported</code> | There is no feature line for <i>feat</i> in the license file. |
| <code>No features to serve!</code> | A vendor daemon found no features to serve. This could be caused by bad data in the license file. |
| <code>UNSUPPORTED FEATURE request: <i>feature</i> by user</code> | The <i>user</i> has requested a feature that this vendor daemon does not support. This can happen for a number of reasons: the license file is bad, the feature has expired, or the daemon is accessing the wrong license file. |
| <code>Unknown host: <i>hostname</i></code> | The hostname specified on a <i>SERVER</i> line in the license file does not exist in the network database (probably <i>/etc/hosts</i>). |

| | |
|---------------------------------------|---|
| <code>NO DAEMON lines, exiting</code> | The license daemon logs this message if there are no DAEMON lines in the license file. Since there are no vendor daemons to start, there is nothing to do. |
| <code>NO DAEMON line for name</code> | A vendor daemon logs this error if it cannot find its own DAEMON name in the license file. |

5.4.3 Daemon Software Error Messages

| | |
|------------------------------|--|
| <code>select: message</code> | An error in a select system call was detected. |
| <code>server exiting</code> | The server is exiting. This is normally due to an error. |

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