LeonardoSpectrum Installation Guide

Software Release v2002a

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TRADEMARKS

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Chapter 1
Quick Installation

This chapter provides quick installation steps for installing LeonardoSpectrum on your PC and UNIX platforms.

PC Windows 98/2000/NT

Installing from a CD-ROM

Use these steps for installing LeonardoSpectrum from a CD:

1. Load the CD-ROM in your local drive or your network drive.

   Run the `install.exe program.` Type the following:

   `<cdrom drive>:\install.exe`

Dongle (Hardware Security Key) Instructions for PC

LeonardoSpectrum supports the Globetrotter (green) Rainbow and Dallas dongles for Exemplar, MTI (Model Technology), and MGLS (Mentor Graphics Licensing) styles of licensing. In addition, Exemplar and MTI licensing support the old-style Exemplar Rainbow dongles.

Globetrotter Rainbow dongle.

The label on this dongle shows a number beginning with `FLEXID=7-`, followed by **8 hexadecimal** characters. The Globetrotter **lmtools** program displays the value of your dongle when you click on the **Hostid** button.

Globetrotter Dallas dongle.

The label on this dongle shows a number beginning with `FLEXID=8-`, followed by **12 hexadecimal** characters. The Globetrotter **lmtools** program displays the value of your dongle when you click on the **Hostid** button.

Exemplar old-style Rainbow dongle.

The hostid is **4 hexadecimal** characters. You can view the hostid by running the Exemplar **pchostid** program. The old-style Rainbow dongle can use the same driver as the current Globetrotter Rainbow dongle. If you do not see the hostid displayed when the dongle is attached to your PC, refer to “Installing a Dongle Driver” on page 2-2 for instructions on installing the appropriate device driver.

PC Platforms - Color Flashing

The LeonardoInsight schematic viewer works best with at least 16-bit color settings. Setting the color to less than 16 bits may result in color flashing when you move between windows.

To change the color setting, do the following:

1. Go to: `Control Panel -> Display -> Settings`
2. Set your Display Color Palette to minimum 16 bit (High Colors or True Color, not 256 Colors or less).

Invoking the LeonardoSpectrum GUI from a PC

When you invoke LeonardoSpectrum with the *leonardo* command, the tool comes up with the Graphical User Interface (GUI). Double-click on the LeonardoSpectrum Windows Shortcut or type the following from a Windows Command Prompt:

```
C:\> leonardo
```

You can customize the leonardo invocation with optional command switches. Refer to the leonardo command in the LeonardoSpectrum Reference Manual for details.

Running LeonardoSpectrum in Batch Mode from a PC

When you use the *spectrum* command, the tool comes up with a command line interface and it can be driven in batch mode. From a Windows Command Prompt type:

```
C:\> spectrum [<options>]
```

Refer the topic Batch Mode Operations in the LeonardoSpectrum Reference Manual.

UNIX Workstations

Installation Procedure


Note

Your system may also require one or more operating system patches which can be installed before or after you install LeonardoSpecturm. Refer to Sun Microsystems Patches or HP-UX 10.20 and HP-UX 11.00 Patches in this section for details.

Use the following steps to install LeonardoSpectrum in these operating environments: Solaris 7, Solaris 8, HP-UX 10.20, and HP-UX 11.00.

1. On the CDhost, log in as **root**, if required.
2. Create a `/cdrom` directory, if the directory is not already existing. For example:

   ```
   % mkdir /cdrom
   ```

3. Insert the LeonardoSpectrum CD-ROM.
4. Mount the CD-ROM drive on the directory you just created. Refer to the following table for the mount command for your workstation.

Operating System	Mount Command for Local Drive
Solaris 7/8	`automount`
HP-UX 10.20/11.00	`/etc/mount -r -F cdfs /dev/dsk/c1t2d0 /cdrom`

5. Verify that the CD-ROM was mounted correctly. For example:

   ```
   % ls /cdrom
   ```

6. If necessary, create a directory to install LeonardoSpectrum. For example:

   ```
   % mkdir <exemplar_installation_dir>/leonardo_spectrum
   ```

7. Change the working directory to the installation directory. For example:

   ```
   % cd <exemplar_installation_dir>/leonardo_spectrum
   ```

8. Install the LeonardoSpectrum software from the CD-ROM by executing the executable file.

Operating System	Command to Install Software
Solaris 7/8	`/cdrom/cdrom0/unix/ls2001_1d_sun.exe`
HP-UX 10.20/11.00	`/cdrom/unix/ls2001_1d_hp.exe`

9. Set the EXEMPLAR and PATH environment variables

   ```
   % setenv EXEMPLAR <pathname specified in Step 7>

   % setenv PATH $PATH':'$EXEMPLAR/bin
   ```

10. Modify the font cache variable `MWFONT_CACHE_DIR` in `$EXEMPLAR/bin/xmplr.init` to a global accessible directory. Refer to the next section for more details.

UNIX Platforms - Font Cache Policy

Font generation is necessary for LeonardoSpectrum to run on UNIX platforms due to MainWin applications. Font generation effectively maps Windows fonts to X Server fonts.

Font generation can take a considerable amount of time at startup. In order to avoid font generation at startup, LeonardoSpectrum takes advantage of font caching. Effectively, generated fonts are stored in a file which LeonardoSpectrum can later access during subsequent invocations. The name of the cache file is derived from the version of the X server, `$DISPLAY` variable, and the font path name.

LeonardoSpectrum defaults to creating a font cache directory on a per user basis in the `~/.leonardo_spectrum` directory. The system administrator can change the font cache directory by modifying the variable: `$MWFONT_CACHE_DIR` in `$EXEMPLAR/bin/xmplr.init` file.

Setting Environment Variables for All UNIX Users

As shown in the following example, set your `EXEMPLAR` and path environment variables to point to your installation directory. This is where you install LeonardoSpectrum. For example, if you installed the LeonardoSpectrum software in `/usr/local/exemplar`, you enter:

```
setenv EXEMPLAR /usr/local/exemplar
set path=($EXEMPLAR/bin $path)
```

Invoking the LeonardoSpectrum GUI from Unix

When you invoke LeonardoSpectrum with the *leonardo* command, the tool comes up with the Graphical User Interface (GUI). Type the following from a Unix shell:

```
% leonardo
```

You can customize the leonardo invocation with optional command switches. Refer to the leonardo command in the LeonardoSpectrum Reference Manual for details.

Running LeonardoSpectrum in Batch Mode from Unix

When you use the *spectrum* command, the tool comes up with a command line interface and it can be driven in batch mode. For example:

```
% spectrum [<options>]
```

Refer the topic Batch Mode Operations in the LeonardoSpectrum Reference Manual.

Operating System Patches

Starting with Release 2001.1b, LeonardoSpectrum supports MainWin 3.4 software running on the Solaris 7/8 and HP-UX 10.20/11.00 operating systems. MainWin 3.4 requires certain patches in order to run properly. You may install operating system patches before or after you install LeonardoSpectrum.

The paragraphs that follow outline the required patches for each operating system.

Sun Microsystems Patches

Detecting the Graphics Card

On Solaris systems, a patch is sometimes required that is specific for the installed graphics card. Use the instructions that follow to determine which graphics card is installed on your system.

To verify that an FFB accelerator is installed on the system (Creator 3D), enter

```
% dmesg | grep ffb
```

The output should be:

```
SUNW,ffb0 at root: UPA 0x1e 0x0
SUNW,ffb0 is /SUNW,ffb@1e,0
stdout is (/SUNW,ffb@1e,0) major (53) minor (0)
```

To verify that an AFB accelerator is installed on the system (Elite 3D), enter

```
% dmesg | grep afb
```

The output should be:

```
SUNW,afb0 at root: UPA 0x1e 0x0
SUNW,afb0 is /SUNW,afb@1e,0
stdout is major <79> minor <0>
```

To detect graphics cards (alternate method), enter

```
% ls /dev/fbs/*
```

You can tell which graphic card is present by the output from the command; refer to Table 1-1.

Table 1-1. Detecting a Graphics Card

Output	Graphics Card
/dev/fbs/m640	PGX graphics card
/dev/fbs/afb*	Elite3D graphics card
/dev/fbs/ffb*	Creator/Creator3D graphics card
/dev/fbs/gfxp*	PGX32 (Raptor GFX) graphics card
/dev/fbs/cgsix*	GX graphics card
/dev/fbs/leo*	ZX graphics card
/dev/fbs/sx*	SX graphics card
/dev/fbs/tcx*	TCX graphics card

Solaris 8 Patches

The following tables describe the required patches for Solaris 8 operating systems. Patches are available for download at the following Sun web site: `http://sunsolve.sun.com`

Table 1-2. Patches for All Solaris 8 systems

Patch	Description	Notes
108434-01	Shared library fix for C++ run-time.	Shared library fix for C++ run-time.

Solaris 7 Patches

The following tables describe the required patches for Solaris 7 operating systems. Patches are available for download at the following Sun web site: http://sunsolve.sun.com

Table 1-3. Patches for All Solaris 7 systems

Patch	Description	Notes
106300-07	Sun OS 5.7 Shared library patch for C++.	Required for Mentor Graphics D.2 environment.
106327-06	Sun OS 5.7 Shared library patch for C++.	Required for Mentor Graphics D.2 environment.
106725-02		Required for Mentor Graphics D.2 environment.
106748-04		Required for Mentor Graphics D.2 environment.
107200-11		Required for Mentor Graphics D.2 environment.
12/8/99 Recommended Patch Cluster		Required for Mentor Graphics D.2 environment

Table 1-4. Configuration-Specific Patches for Solaris 7 systems

Patch	Description	Notes
107851-11 (or later)	Patch for PGX32 (Raptor GFX) graphics card	PGX32 2.1 graphics patch
106146-16 (or later)	M64 graphics card	For PGX (M64 graphics card)
106145-17 (or later)	Creator 7 FFB graphics card	Patch for Creator graphics card
106144-21 (or later)	Elite3D graphics card	For Elite3D AFB graphics patch
106147-06 (or later)	Supplemental patch for Elite 3D and Creator graphics cards	VIS/XIL graphics patch
106148-12 (or later)	Required patch for Elite 3D and Creator graphics cards	XF8 graphics patch

HP-UX 10.20 and HP-UX 11.00 Patches

The following patches are required on the HP-UX 10.20 and HP-UX 11.00 operating system to allow LeonardoSpectrum with MainWin 3.4 to run appropriately.

Patches are available on the following HP WEB sites:

```
http://us-support.external.hp.com
http://europe-support.external.hp.com
```

Table 1-5. Patches for All HP-UX 10.20 systems

Patch	Description	Notes
PHSS_19739	s700_800 10.20 HP DCE/9000 1.5 cumulative patch	Fixes problems with threads.
PHSS_19434	s700_800 10.20 csh(1) cumulative patch	Fixes crash of csh exit of Mainwin.
PHSS_17872	HP aC++ runtime libraries (ACC A.01.21)	
PHSS_17159	s700_800 10.20 Xserver cumulative patch	Fixes X server crach with multiple-rectangle

Table 1-6. Patches for All HP-UX 11.00 systems

Patch	Description	Notes
PHSS_19866	s700_800 11.00 X/Motif2.1 Dev Kit Mar99 Periodic Patch	X patch.
PHSS_17327	s700_800 11.00 ld(1) and linker tools cumulative patch	Linker patch.

UNIX Environments

The most common UNIX environments are supported:

- Common Desktop Environment (CDE)
- OpenWindows
- HP View

UNIX - Color Flashing

If you have several color intensive applications running, you may experience color flashing. You should avoid invoking multiple color intensive applications simultaneously. You can also help reduce color flashing by invoking LeonardoSpectrum before invoking other multiple color intensive applications.

Hardware and Software Requirements - PC and UNIX

Basic Requirements

Type of PC:

An IBM compatible PC with a Pentium or Pentium-Pro CPU is recommended.

Operating System:

PC: LeonardoSpectrum requires Windows 98/2000/NT.

UNIX: Solaris 7/8; HP-UX 10.20/11.00

Disk Space:

LeonardoSpectrum requires approximately **80 MBytes** of disk space for programs and data files. Plan for an additional **50 MBytes** for your design and intermediate files.

System Memory (RAM) Requirements

Table 1-7 shows the recommended memory for the proper operation of LeonardoSpectrum. The actual requirements may vary, depending on your design and coding style. A system with less than the recommended memory may run slower due to memory swapping.

Table 1-7. System Memory Requirements

Design Size			RAM (MB)
Number of Gates	**Look Up Tables (LUTs)**	**Flip-Flops**	
up to 15,000	up to 1100	500	64
15,000 to 75,000	1100 to 5000	3000	128
75,000 and up	5000 and up	5000	256

Setting Recommendation for an 800x600 Display:

Optimum productivity will be achieved on displays greater than 800x600. However, if you require an 800x600 setting, you should make the following changes:

1. Set the Windows display to enable 800x600 displays:

   ```
   StartMenu -> Settings -> Control Panel
   ```

2. Click on Display icon and choose the **Settings** tab. Change the font size to **Small Fonts** and click OK.

3. First time LeonardoSpectrum is invoked, click the right mouse button (RMB) over FlowTabs and choose "Flow Tabs on Left".

Video DEMO Requirements:

The LeonardoSpectrum video demo requires a display of at least 1024x768.

Licensing LeonardoSpectrum - PC and UNIX

LeonardoSpectrum requires an authorization code (license). LeonardoSpectrum supports Exemplar Logic, Model Technology (MTI), and Mentor Graphics (MGLS) licensing for node locked and floating licensing styles.

Step 1: Determine Your hostid

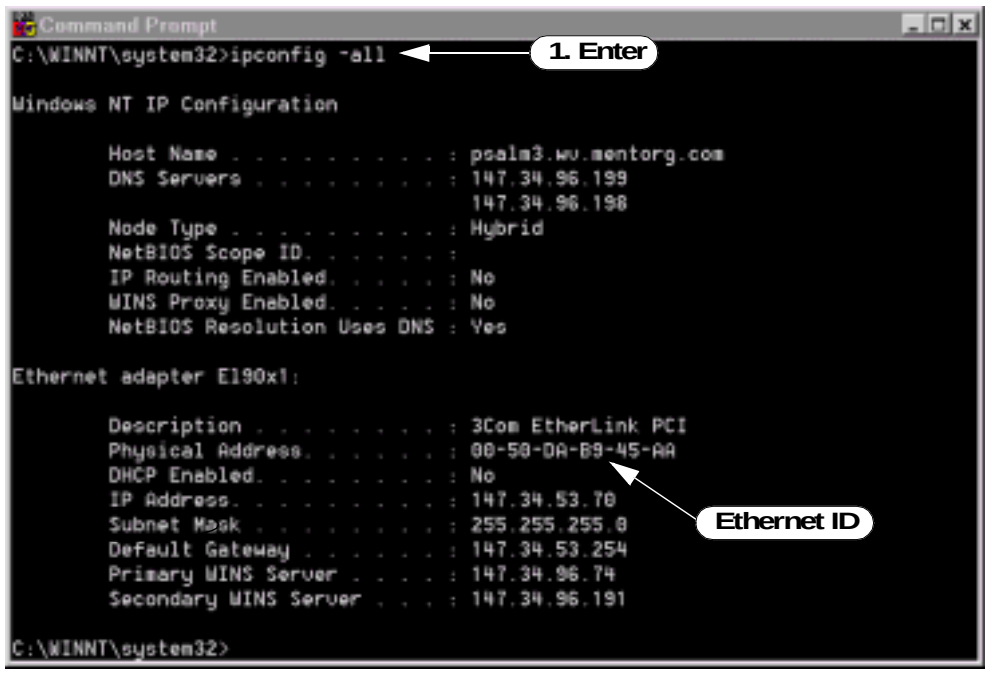
Finding You hostid on a PC

Your PC hostid can be a dongle ID number (usually printed on the outside of the dongle) or an Ethernet ID number. The Ethernet ID is a 12 digit hexidecimal number. The following are methods for finding the Ethernet ID on various platforms:

From the Windows NT Command Prompt

1. Open a Command Prompt and move to the directory `C:\winnt\system32`

2. Enter the command `ipconfig -all`



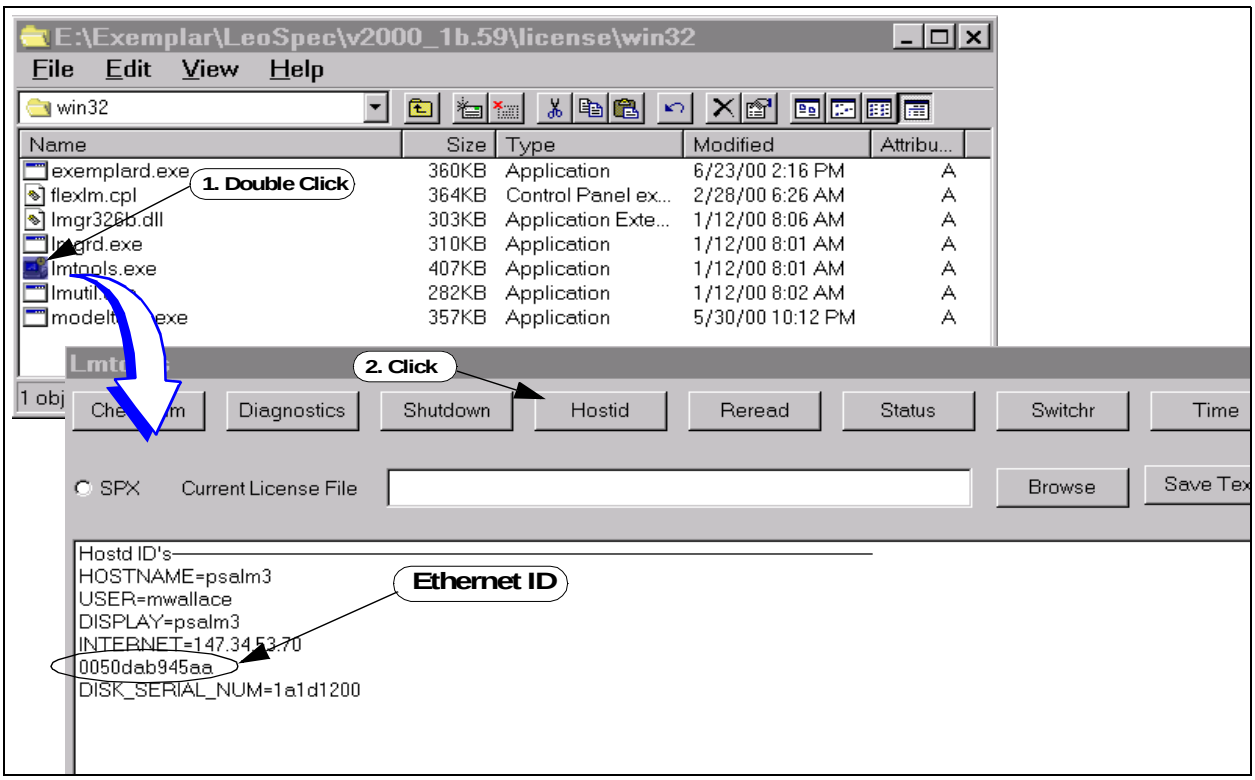
An example of a 12 digit hexidecimal Ethernet ID is shown above.

From the Windows 98/2000 Command Prompt

1. Run `C:\windows\winipcfg.exe`
2. Select the Ethernet Card Adapter (or other suitable adapther such as Firewire Adapter)
3. Read the address. The 12 digit hexidecimal number for “Adapter Address” is the Ethernet ID.

Finding Your PC hostid with LeonardoSpectrum software

If you have already installed LeonardoSpectrum, you can determine your hostid by running the FLEXlm License Administration Utility (`lmtools`) from the Exemplar program group. Click on the **Hostid** button as shown below:



Finding Your hostid on a UNIX platform

On a Sun Platform

Type the following command:

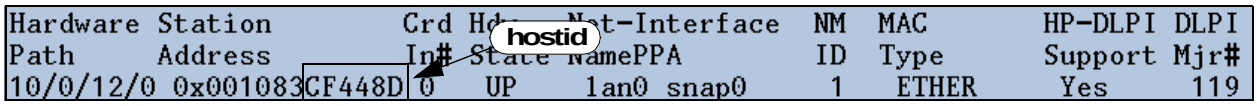
```
% hostid
```

On an HP Platform

Type the following:

```
% /etc/lanscan
```

The last six numbers of the “Station Address” is the hostid, as shown below:



Finding Your UNIX hostid with LeonardoSpectrum Already Installed

The FLEXlm utility `lmhostid` may be used to determine the hostid on a UNIX platform. The FLEXlm utility is in the directory: `$EXEMPLAR/license/<platform>`. For example:

```
% $EXEMPLAR/license/HPUX-10/lmhostid
```

Step 2: Contact Exemplar Logic to Obtain Your Authorization Codes:

Email license@exemplar.com

Web `http://www.exemplar.com`

Please provide your hostid, name, address, email, and phone. In addition, please provide your type of platform, fax number, and if a floating or node-locked license is required.

Step 3: Install Your Licence File in the Default Location:

PC `C:\FLEXLM\LICENSE.DAT`

UNIX `$EXEMPLAR/license/license.dat`

If you install the license anywhere except the PC default location, then you must set your environment variable to point to the license file.

License Daemons

LeonardoSpectrum supports three licenses and corresponding license daemons:

- Exemplar License - **exemplard daemon**
- Model Technology License - **modeltech daemon**
- Mentor Graphics License - **mgcld daemon**.

Note: All three styles of licensing are identical - only the daemons differ.

Special Note for Installing Mentor Graphics Licensing

PC: Run `setup.exe` from the `pcls` directory on the LeonardoSpectrum CD-ROM.

UNIX: Copy either the file:
`MGLS_SS5_TAR.Z` (Solaris) or
`MGLS_HPU_TAR.Z` (HP-UX)
from the Unix directory on the LeonardoSpectrum CD-ROM to your Exemplar installation directory. Next, uncompress and untar the file.

Example: uncompress `MGLS_HPU_TAR.Z`

```
tar xvf MGLS_HPU_TAR
```

Note: The **mgcld** daemon is located one of these directories:
`mgls.ss5/lib` (Solaris) or
`mgls.hpu/lib` (HP-UX)

Chapter 2
Windows PC Installation

Hardware and Software Requirements

Refer to Hardware and Software Requirements - PC and UNIX on page 1-11.

Installing LeonardoSpectrum from a CD-ROM

Refer to Installing from a CD-ROM on page page 1-2.

Installing a Dongle Driver

Refer to Dongle (Hardware Security Key) Instructions for PC for a description of the Dongles.

One of the following drivers may be needed if you receive a new dongle.

- Rainbow Device Driver - Windows NT
- Dallas Semiconductor Device Driver - Windows 98/NT

Rainbow Device Driver - Windows NT 4.0

Note: This Rainbow device driver is not needed for Windows 98/2000.

You can determine if the Rainbow device driver is needed by attaching the dongle to the parallel port of the machine you want to license and then do the following:

- Exemplar old-style Rainbow dongles: Run the `pchostid` program:

  ```
  c:\exemplar\LeoSpec\license\win32\pchostid.exe
  ```

  If the pchostid is 0, then install the new device driver.

- GLOBEtrotter Rainbow dongles: To determine your disk serial number, run License Administration Utilities (`lmtools`) from the Exemplar program group and click on the **Hostid** button.

- If you do not see an entry for `FLEXID=7`, then install the new device driver.

  To install the Rainbow device driver, log on to the system as Administrator and double click on the self-extracting executable, `Sentinel.exe,` from the LeonardoSpectrum

CD-ROM. **Note:** GLOBEtrotter dongles starting with `FLEXID=7-36C7` are not currently supported.

Dallas Semiconductor Device Driver - Windows 98/NT

You can determine if the Dallas Semiconductor device driver is needed by attaching the dongle to the parallel port of the machine you want to license and then doing the following:

- Run License Administration Utilities (`lmtools`) from the Exemplar program group and click on the **Hostid** button.
- If you do not see an entry for `FLEXID=8`, then install the device driver.

To install the Dallas device driver, log on to the system as Administrator (NT only) and double-click on the self-extracting executable `dallas.exe` from the LeonardoSpectrum CD-ROM.

Note: The Dallas device driver requires Service Pack 2 on NT.

Setting Up Your Environment

Adding LeonardoSpectrum to your PATH variable

Optional: Add Exemplar's `bin\win32` directory to your path. This command may be used for running LeonardoSpectrum from a DOS command prompt or a batch file.

```
path=c:\exemplar\leospec\bin\win32;%PATH%
```

Setting Environment Variables on Windows NT

The examples in this section are for setting the environment variables using the `set` and `path` commands in a command window. Under normal circumstances, the Installation program handles the setting of these environment variables for you. To set or modify them manually on Windows NT, you should use the System dialog box in the Control Panel on your PC (see following instructions);

1. Bring up the System Properties dialog

   a. Right click on the **My Computer** icon and select **Properties**

   or

   b. From the Task bar select:

   `Start > Settings > Control Panel > Systems`

2. Click on the **Environment** tab.

3. If you want these changes to apply to all users of the system, modify the System Environment Variables according to the following instructions. If you want these changes to apply only to the current user, modify the User Environment Variables:

   - Select the variable from the appropriate list (System or User) if it already exists, or select another variable from that list and change the **Variable** name to the one you are setting (`EXEMPLAR`, `Path` or `LM_LICENSE_FILE`).

   - Enter the value of the variable in the **Value** field. If you are setting the Path environment variable, you do not need to enter `%PATH%`; also, if you are modifying the User Environment Path, you do not need to repeat the System Environment Path setting. This variable is automatically concatenated and includes both the System and the User values.

   - Click on the **Set** button to add your new setting to the appropriate listbox (System or User).

4. Click on **OK** to apply your changes.

Setting Environment Variables on Windows 98

On Windows 98/2000, the method for setting environment variables is to enter the setting in in the **autoexe.bat** file which is usually located on the C: drive. Use a common ASCII text editor and use the following as an example of command syntax:

```
EXEMPLAR=c:\exemplar\leospec\bin\win32
path=c:\exemplar\leospec\bin\win32;%PATH%
QUARTUS_ROOTDIR=D:Quartus\bin
XILINX=E:\Xilinx\bin\nt
```

Refer to the documentation that accompanies your operating system or contact your system administrator for more complete instructions.

Licensing

Licensing for LeonardoSpectrum can be either a floating license, where a specific number of licenses are available to any system on the network, or a node-locked license, which can only be used by one machine.

You are required to run a License Manager if your license file has SERVER and DAEMON lines. LeonardoSpectrum uses the FLEXlm License Manager. Refer to Running the License Manager (FLEXlm) section in this chapter. Also refer to “FLEXlm License Administration” on page 4-1 for more information on running FLEXlm.

If you have a node-locked license which does not require a License Manager (no SERVER or DAEMON lines in the license file), ensure that your license file can be located either in the default location or by setting your LM_LICENSE_FILE environment variable. You do not need to run a License Manager.

Steps for Setting Up a Node-Locked License

If you have a node-locked license without SERVER or DAEMON lines, here are the steps to complete the setup of your licensing:

1. Determine your hostid and request a license. Refer to “Step 1: Determine Your hostid” on page 1-13.

2. Create or edit your license file with the FEATURE lines given to you by Exemplar Logic. Refer to “Editing the License File” on page 2-6.

3. Copy or move your license file to `C:\flexlm\license.dat`, and/or set your `LM_LICENSE_FILE` environment variable to point to the license file. Refer to "Location of the License File" on page 2-9.

Steps for Setting Up a Floating License

If you purchased a floating license, use these steps to complete the setup of your licensing:

1. Determine the hostid of the (UNIX or NT) license server, and obtain your license from Exemplar Logic. Refer to "Step 1: Determine Your hostid" on page 1-13.

2. Create or edit your license file with the `SERVER`, `DAEMON` and `FEATURE` lines given to you by Exemplar Logic. Refer to "Editing the License File" on page 2-6

3. Copy or move your license file to `C:\flexlm\license.dat` (if using an NT license server) or to `$EXEMPLAR/license/license.dat` (if using a UNIX license server), and/or set your `LM_LICENSE_FILE` environment variable. Refer to "Location of the License File" on page 2-9.

4. Start the License Manager on the License Server. Refer to "Running the License Manager (FLEXlm)" on page 2-10.

Editing the License File

There are three possible formats for a floating license file:

1. This is an example of a floating license file using the **exemplard** daemon:

```
SERVER server-name FLEXID=8-5E70000E100F 1700
DAEMON exemplard <installation directory>\license\win32\exemplard.exe
FEATURE feature exemplard version expiration date # users password
ck=checksum
```

2. This is an example of a floating license file using the **modeltech** daemon:

```
SERVER server-name FLEXID=8-5E70000E100F 1650
DAEMON modeltech installation directory\license\win32\modeltech.exe
FEATURE feature modeltech version expiration date # users password
ck=checksum
```

3. This is an example of a floating license file using the Mentor Graphics (**mgcld**) daemon.

```
SERVER server-name FLEXID=8-5E70000E100F 1700
DAEMON mgcld installation
directory\MentorGraphics\licensing\win32\mgcld.exe
FEATURE feature mgcld version expiration date # users password
ck=checksum
```

Node-locked license files do not require the SERVER line and the DAEMON line. Node-locked FEATURE lines have the following format for each of the daemons:

1. This is an example of a node-locked FEATURE line using the **exemplard** daemon:

```
FEATURE feature exemplard version expiration date # users password \
      HOSTID=FLEXID=8-5E70000E100F ck=checksum
```

2. This is an example of a node-locked FEATURE line using the **modeltech** daemon:

```
FEATURE feature modeltech version expiration date # users password \
      HOSTID=FLEXID=8-5E70000E100F ck=checksum
```

3. This is an example of a node-locked FEATURE line using the **mgcld** daemon:

```
FEATURE feature mgcld version expiration date # users password \
      HOSTID=FLEXID=8-5E70000E100F ck=checksum
```

All feature lines must be entered on a single line. The back slash (\) can be used as a continuation character to split FEATURE lines if desired. If used, the back slash (\) must come after the password field, and be the last character on the line.

Use any text editor (Notepad) to make the following changes to the license file you receive from Exemplar Logic:

1. If your license has a SERVER line, edit the SERVER line by entering the name of the system used as the license server and the hostid. 1700 is the default port number. Contact your System Administrator to change the port number, if necessary.

2. If your license has a DAEMON line, edit the DAEMON line by entering the LeonardoSpectrum installation directory.

   Warning: If your installation directory has spaces in the pathname, you must copy the appropriate daemon files (modeltech.exe, exemplard.exe, or mgcld.exe) and lmgr325a.dll (exemplard.exe only) to a directory without spaces, and edit the DAEMON line to point to the daemon file in this directory.

3. Make certain each FEATURE line is on a single line (or uses the back slash continuation character at the end of the first line to break a FEATURE line into multiple parts). If you are typing these lines, make sure they are entered exactly as you received them. **All entries are case sensitive**.


Note

The authorization codes (passwords) and the host IDs are in hexadecimal format (digits 0-9 and lowercase letters a-f or uppercase letters A-F). Enter the number 0 and not the letter O; enter the number 1 and not the lower case letter l.

4. The following example shows a typical floating license file using the **exemplard** daemon:

```
SERVER mycomputer FLEXID=8-5E70000E100F 1700
DAEMON exemplard c:\exemplar\leospec\v1999.1\license\win32\exemplard
FEATURE ls3 exemplard 1999.050 10-dec-99 1 3B3C20D1CF558A20A1CB ck=14
FEATURE ls3_fpga exemplard 1999.050 10-dec-99 1 3B2C80D1997F6C55C444 \
        ck=249
FEATURE ls3_vhdl exemplard 1999.050 10-dec-99 1 BBFC60919808E526D6D3 \
        ck=9
```

5. The following example shows a typical node-locked license file using the **exemplard** daemon:

```
FEATURE ls2 exemplard 1999.050 10-dec-99 0 6B9CC051E0642CF72114 \
    HOSTID=FLEXID=8-5E70000E100F ck=215
FEATURE ls2_FPGA exemplard 1999.050 10-dec-99 0 AB7C40C1F16A268F0598 \
    HOSTID=FLEXID=8-5E70000E100F ck=223
FEATURE ls2_verilog exemplard 1999.050 10-dec-99 0 2BAC00C13A557952AB31
\
    HOSTID=FLEXID=8-5E70000E100F ck=220
```

6. If you have any problems with your license file, recheck to make sure that:

- There are no typos in the FEATURE lines.
- The case (uppercase vs. lowercase) exactly matches what was sent to you.
- Your hostid and Authorization Codes contain the number 0 and not the letter O; and contain the number 1 and not the lowercase letter l.
- Each feature line is on a single line (or use the back slash character at the end of one line to break it into multiple lines, as shown in the two examples above).

Location of the License File

The FLEXlm license manager (`lmgrd.exe`) and the LeonardoSpectrum software both look for the license file in the following default location:

```
c:\flexlm\license.dat
```

Recommended: install (move or copy) your license file into the default location. If you choose to use a different location, you must set the environment variable `LM_LICENSE_FILE` to include the full pathname (including file name) of your license file. For example:

```
set LM_LICENSE_FILE=c:\admin\licenses\leonardo.dat
```

For more than one license file, type:

```
set LM_LICENSE_FILE=file1;file2;...;filen
```

FLEXlm sometimes has significant delays finding the license file in the default location if the environment variable `LM_LICENSE_FILE` is not set. You can solve this problem by setting the environment variable `LM_LICENSE_FILE` when the license file is in the default directory.


Note

The example given above shows how to set your `LM_LICENSE_FILE` environment variable using the `set` command in a command window. Under normal circumstances, the Installation program handles the setting of this environment variable for you. For information on how to set environment variables, refer to "Setting Environment Variables on Windows NT" on page 2-4 or "Setting Environment Variables on Windows 98" on page 2-5.

Running the License Manager (FLEXlm)

The FLEXlm executable files are located in Exemplar's `license\win32` directory.

Node-locked License

Verify that the license is located in the default location `c:\flexlm\license.dat` or that the environment variable `LM_LICENSE_FILE` is set to the full license file pathname.

Floating License

As a Client

If you have a floating license, then do the following on each machine where you want to run LeonardoSpectrum.

Set the environment variable `LM_LICENSE_FILE` to:

```
server port@server hostname
```

For example, if the license server hostname is `master` and uses port 1700 for the license manager daemon, type:

```
set LM_LICENSE_FILE=1700@master
```

If you prefer, or if you have problems accessing your license server from a client machine, you can copy the license file from the license server to the default location `c:\flexlm\license.dat` or to the location specified by the environment variable `LM_LICENSE_FILE`.

As a License Server

If you have a floating license, then do the following on the license server:

1. Bring up the FLEXlm License Manager applet from the LeonardoSpectrum Program Group by running `flexlm.cpl` f rom Windows Explorer in Exemplar's `license\win32` directory.
   Warning: Your `LM_LICENSE_FILE` variable must be already set before starting this applet.

2. On the FLEXlm License Manager, click on the Setup tab and enter the following information:

Note: These steps assume that LeonardoSpectrum is installed in the directory: `c:\exemplar\LeoSpec`, and your license file is installed in `c:\flexlm`. You should change the pathnames accordingly if your installation is different.

lmgrd.exe:	C:\exemplar\LeoSpec\license\win32\lmgrd.exe
License File:	C:\flexlm\license.dat
Debug File:	C:\flexlm\debug.log

3. On the FLEXlm License Manager dialog, click on the Control tab and then click on the Start button to turn on your license server. Be sure to save your changes when you are prompted.

4. If you want lmgrd.exe to start automatically, click on the Setup tab and then select the "Use NT Services" box. This choice installs `lmgrd.exe` as an NT service. Now you can use the Services control panel to adjust the start/stop behavior of `lmgrd.exe`. Multiple instances of `lmgrd.exe` can be run as services provided each occurrence has a different service name.

The `lmgrd.log` file is located in your Windows System32 directory.

Note: You can **manually** run lmgrd as an application instead of a service on Windows NT. If the license file is in the default location: `c:\flexlm\license.dat`, do the following:

1. Change directories to the LeonardoSpectrum license\win32 directory.

2. Type the following from a DOS command prompt:

```
lmgrd -app
```

If the license file is in another location, type:

```
lmgrd -app -c <license filename pathname>
```

If you have not set up lmgrd as a service, then you must repeat this procedure **every time** you boot up under Windows NT.

Invoking the LeonardoSpectrum GUI from a PC

When you invoke LeonardoSpectrum with the *leonardo* command, the tool comes up with the Graphical User Interface (GUI). Double-click on the LeonardoSpectrum Windows Shortcut or type the following from a Windows Command Prompt:

```
C:\> leonardo
```

You can customize the leonardo invocation with optional command switches. Refer to the leonardo command in the LeonardoSpectrum Reference Manual for details.

Invoking LeonardoSpectrum in Batch Mode from a PC

When you use the *spectrum* command, the tool comes up with a command line interface and it can be driven in batch mode. From a Windows Command Prompt type:

```
C:\> spectrum [<options>]
```

Refer the topic Batch Mode Operations in the LeonardoSpectrum Reference Manual.

Chapter 3
UNIX Work Station Installation

Hardware and Software Requirements

Refer to "Hardware and Software Requirements - PC and UNIX" on page 1-11.

Installation Procedures

Refer to "UNIX Workstations" on page 1-4.

Setting Up Your Environment

Set the EXEMPLAR environment variable to the name of the directory where LeonardoSpectrum is installed (e.g., /usr/local/exemplar). The EXEMPLAR environment variable is used by LeonardoSpectrum to locate parameter and library files. Add installation_directory/bin (e.g., /usr/local/exemplar/bin) to your UNIX search path. This enables you to run

LeonardoSpectrum programs from any other directory. For example, type the following commands in a C shell, and then add the commands to your `.cshrc` startup file:

```
setenv EXEMPLAR /usr/local/exemplar
set path=($path $EXEMPLAR/bin)
```

The new path does not take effect until the `rehash` command is executed.

Licensing

Licensing for LeonardoSpectrum is always a floating license, where a specific number of licenses are available to any system on the network.

LeonardoSpectrum uses the FLEXlm License Manager. Refer to "Installing the License Manager" on page 3-4. Refer also to "FLEXlm License Administration" on page 4-1 for more information on running FLEXlm.

Authorization Codes

To run LeonardoSpectrum, you must obtain authorization codes for each feature purchased. Refer to "Licensing LeonardoSpectrum - PC and UNIX" on page 1-13.

Use the SunOS command `hostid` or the FLEXlm utility `lmhostid` to determine the correct hostid. For example:

```
$EXEMPLAR/license/<platform>/lmhostid
```

where *platform* is either `SunOS5` or `HP-UX10`. If you are using backup (redundant) servers, go to the Backup (Redundant) Servers section in the FLEXlm License Administration chapter for more details.

Editing the License File

Note: The sample license file, `license.default`, is located in the `$EXEMPLAR/license` directory. There are three possible formats for a floating license file:

1. This is an example of a floating license file using the **exemplard** daemon:

```
SERVER server-name 80925a96 1700
DAEMON exemplard installation
directory/license/platform/exemplard
FEATURE feature exemplard version expiration date # users
password “”\
ck=checksum
```

2. This is an example of a floating license file using the **modeltech** daemon:

```
SERVER server-name 80925a96 1650
DAEMON modeltech installation
directory/license/platform/modeltech
FEATURE feature modeltech version expiration date # users
password “” \
ck=checksum
```

3. This is an example of a floating license file using the Mentor Graphics (**mgcld**) daemon.

```
SERVER server-name 80925a96 1700
DAEMON mgcld installation directory/mgls.ss5/lib/mgcld
FEATURE feature mgcld version expiration date # users password “” \
ck=checksum
```

All feature lines must be entered on a single line. The backslash (\) can be used as a continuation character to split `FEATURE` lines if desired. If used, the backslash (\) must come after the password field, and be the last character on the line.

This is the standard format of a license file. Use any text editor to make the following changes to your license file:

1. Edit the `SERVER` line by entering the server name and hostid that were used to obtain your authorization codes.

2. Edit the `DAEMON` line by entering the pathname to the daemon (e.g. `/usr/local/exemplar/license/sunOS5`).

3. Make certain each `FEATURE` line is on a single line (or use the backslash continuation character at the end of the first line to break a `FEATURE` line into two parts). If you are typing these lines, make sure they are entered exactly as you received them.

   All entries are case sensitive.

NOTE: The authorization codes (passwords) and the hostid are in hexadecimal format (digits 0-9, and the lowercase letters a-f or uppercase letters A-F). Enter the number 0 and not the letter O; enter the number 1 and not the lower case letter l.

4. To check the integrity of the license file, type:

```
$EXEMPLAR/license/<platform>/lmutil lmcksum -c license_file
```

If this utility displays any "BAD" FEATURE lines, check the following:

- There are no typos in these `FEATURE` lines.
- The upper case and/or lower case exactly matches what was sent to you.
- Your hostid and authorization codes contain the number 0 and not the letter O; and contain the number 1 and not the lowercase letter l.
- Each feature line is on a single line (or use the backslash character at the end of one line to break it into multiple lines, as shown in the sample above).

5. Name the license file `license.dat`.

Location of the License File

The default location of the license file is `$EXEMPLAR/license/license.dat` (or `/usr/local/exemplar/license/license.dat` if the EXEMPLAR environment variable is not set). If this location is changed, you must set the environment variable `LM_LICENSE_FILE` to include the new pathname.

Note: you may concatenate the new pathname to an existing pathname if more than one license file is being used. Refer to "Multiple License Files" on page 3-5.

Installing the License Manager

Install the license manager before using LeonardoSpectrum. Start the license manager daemon by typing the following commands (all on one line)

```
$EXEMPLAR/license/platform/lmgrd -c $EXEMPLAR/license/license.dat >
$EXEMPLAR/license/license.log &
```

Redirecting of output to a log file is helpful when debugging licensing problems. *Platform* is `SunOS5` or `HP-UX10.`

If you already have a license manager daemon running, refer to "Multiple License Files" on page 3-5 for further information.

Starting the License Manager Automatically at Boot Time

- You may want to copy or link the license manager daemon `lmgrd`, the license daemon (`modeltech`, `exemplard`, or `mgcld`), and/or the license file to a local directory, such as `/etc`. Make sure that you change the pathname accordingly.
- Under Solaris, create a shell script containing the same command, name it `S99license.serv` (or similar) and install in it the directory `/etc/rc2.d`. The license manager daemon will start automatically when you boot at `runlevel 2` or higher.
- Under HP-UX 10.20/11.00, you can add the same command that starts the license manager daemon `lmgrd` to the file `/etc/rc` on the license server.

Multiple License Files

If you are already running the FLEXlm License Manager daemon `lmgrd`, you can choose to merge the Exemplar license file into the current license file, or to use separate license files.

Merging License Files

You can merge the Exemplar license file into an existing license file by copying the edited `DAEMON` and `FEATURE` lines from the Exemplar `license.dat` file into the existing license file. In addition, the existing server name and hostid must be the same as those used to obtain the Exemplar passwords. (The last number on the `SERVER` line in the existing file can be different from that on the list of authorization codes you received; the default is `1700`).

The environment variable `LM_LICENSE_FILE` must be set to the complete pathname of the merged license file, or a link must be created from `$EXEMPLAR/license/license.dat` to the merged license file.

Separate License Files

To use separate license files, either the LeonardoSpectrum license file must be in the default location `$EXEMPLAR/license/license.dat`, or the `LM_LICENSE_FILE` environment variable must be set to include both locations. For example:

```
setenv LM_LICENSE_FILE license_file_1:license_file_2
```

where *license_file_1* is the full pathname of the first license file, and *license_file_2* is the full pathname of the second license file. **Note:** The order is not significant.

lmgrd needs to be run explicitly on each license file by specifying the location of the correct version of lmgrd and license file. For example:

```
/usr/local/exemplar/license/platform/lmgrd -c license_file_1 >
   /usr/local/license1.log &
/usr/local/old_flexlm/lmgrd -c license_file_2 >
   /usr/local/license2.log &
```

Each lmgrd command, together with options, and the redirect goes on a single line. If different license managers are run on the same server machine, you must change the port number on the server line of at least one of the license files (the default is 1700, change to 1701 or any other unused port).

Stopping and Starting FLEXlm

For a merged license file, if the license manager daemon is already running, you must stop and restart the license manager. Check to see if the daemon is running by typing:

```
ps -ef| grep lmgrd | grep -v grep
```

If lmgrd is running, stop the daemon by using the lmdown utility as follows:

```
lmdown -c <license file pathname>
```

You can also kill the process identified by the ps ax command:

```
kill pid
```

However, this method is not recommended because it does not shut down any vendor daemons already running, causing problems when you try to restart the license manager. Once the shutdown is complete, restart the daemon as shown above using the lmgrd command.

Invoking the LeonardoSpectrum GUI from Unix

When you invoke LeonardoSpectrum with the *leonardo* command, the tool comes up with the Graphical User Interface (GUI). Type the following from a Unix shell:

```
% leonardo
```

You can customize the leonardo invocation with optional command switches. Refer to the leonardo command in the LeonardoSpectrum Reference Manual for details.

Running LeonardoSpectrum in Batch Mode from Unix

When you use the *spectrum* command, the tool comes up with a command line interface and it can be driven in batch mode. For example:

```
% spectrum [<options>]
```

Refer the topic Batch Mode Operations in the LeonardoSpectrum Reference Manual.

Running a Standard Version and an OEM Version of LeonardoSpectrum on the Same Unix Platform

Some users have experienced difficulty when they invoke a standard version of LeonardoSpectrum on a Unix platform and then try to invoke an OEM version (like LeonardoSpectrum for Altera) on the same platform. The reason is that the OEM version might be picking up incorrect data from a directory that was first created by the standard version of LeonardoSpectrum.

Solution: If your Unix platform is configured to run both a standard version and an OEM version of LeonardoSpectrum, then it is a good practice to always delete the `$HOME/.leonardo_spectrum` directory before invoking either version of the tool. The correct command is as follows:

```
$ rm -rf $HOME/.leonardo_spectrum
```

Chapter 4
FLEXlm License Administration

Version Compatibility in FLEXlm

NOTE: The following infomation is for current users of LeonardoSpectrum

Overview

Prior to LeonardoSpectrum version 1999.1j, the LeonardoSpectrum's licensing system was based on FlexLM version 5.12. Starting with LeonardoSpectrum version 1999.1j, the licensing system was upgraded to version 6.1.The old licensing daemon, however, was not forward compatible with the new version and the old daemon needs to be replaced. If you are running a version of LeonardoSpectrum such as 2000.1b with an old daemon, you can expect some very random behavior. If you are running LeonardoSpectrum version 2001.1a, the system will not run if the old daemon is detected.

What you need to do to check you license server

Step 1- Determine if you are running an exemplard-based floating license server

First, you need to make sure your licensing server is up to date if either of the following conditions exists:

a. You use, or have used exemplard-based floating licenses. You can check this, by looking at your the license file. If there is a SERVER line, and a "DAEMON exemplard" line, you are using floating licenses.

b. You have previously installed a LeonardoSpectrum version 1999.1i or earlier. This includes all versions of Galileo and Leonardo.

Step 2- Determine the Version Numbers on Server Files

If the three files listed below are not up the version numbers shown, you need to upgrade the files.

File	Windows	HP-UX	Solaris	Version
Exemplar licensing daemon	exemplard.exe	exemplard	exemplard	6.1e
FlexLM licensing server	lmgrd.exe	lmgrd	lmgrd	6.1e
FlexLM GUI licensing system	flexlm.cpl	NA	NA	6.1
Note: These files are located in you $EXEMPLAR/license/$OS installation directories				

You can get the version of **`exemplard`** and **`lmgrd`** from the command line. You must, however, run these commands from the machine that is your licensing server. The license daemon is NOT run on your client machine (the machine running LeonardoSpectrum itself), therefore, if you run these commands from the client machine, all will look fine. However, your server could very well be running an old daemon.

In order to verify the version of **`exemplard`**, you must use the executable file that your "DAEMON exemplard" line in your license file is pointing to. In all cases, you should remove extraneous copies of exemplard.

Example 1- Checking the version of exemplard

```
C:\Exemplar\LeoSpec\v19991i\license\win32> exemplard
16:09:24 (exemplard) Vendor daemons must be run by lmgrd
```

No Version Number, Replace the File

In this case, no version is given, and exemplard must be replaced! If any version other then 6.1e is reported, replace the executable.

Example 2- Checking the version of exemplard

```
C:\Exemplar\LeoSpec\v19991j\license\win32> exemplard
14:53:32 (exemplard) FLEXlm version 6.1e
14:53:32 (exemplard) Vendor daemons must be run by lmgrd
```

Version Number OK

In this case, the version number 6.1e is OK.

Example 3- Checking the version of lmgrd

```
C:\Exemplar\LeoSpec\v19991j\license\win32> Imgrd -v
lmgrd v6.1c - Copyright 1988-1998, Globetrotter Software, Inc.
```

Out of date, Replace the File

In this case, version 6.1c is out of date. The `Imgrd` executable must be replaced!

Example 4- Checking the version of lmgrd

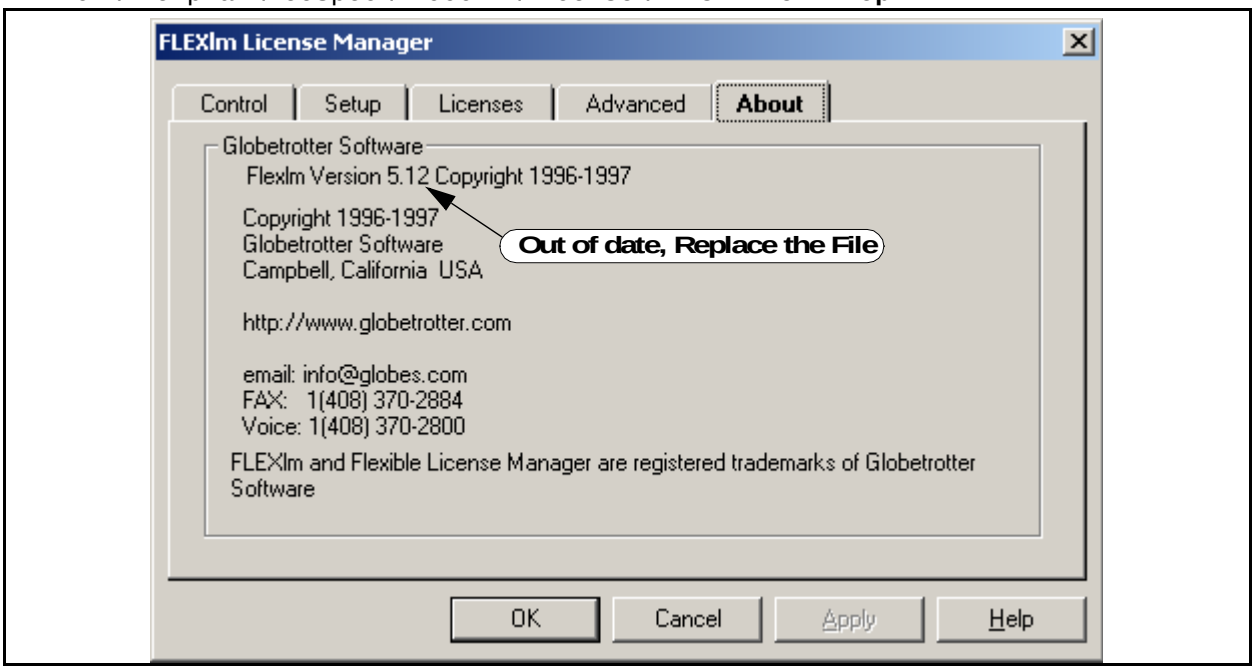
```
C:\Exemplar\LeoSpec\v19991j\license\win32> Imgrd -v
lmgrd v6.1e - Copyright 1988-1998, Globetrotter Software, Inc.
```

Version Number OK

In this case, the version number 6.1e is OK.

Example 5- Checking the version of flexlm.cpl

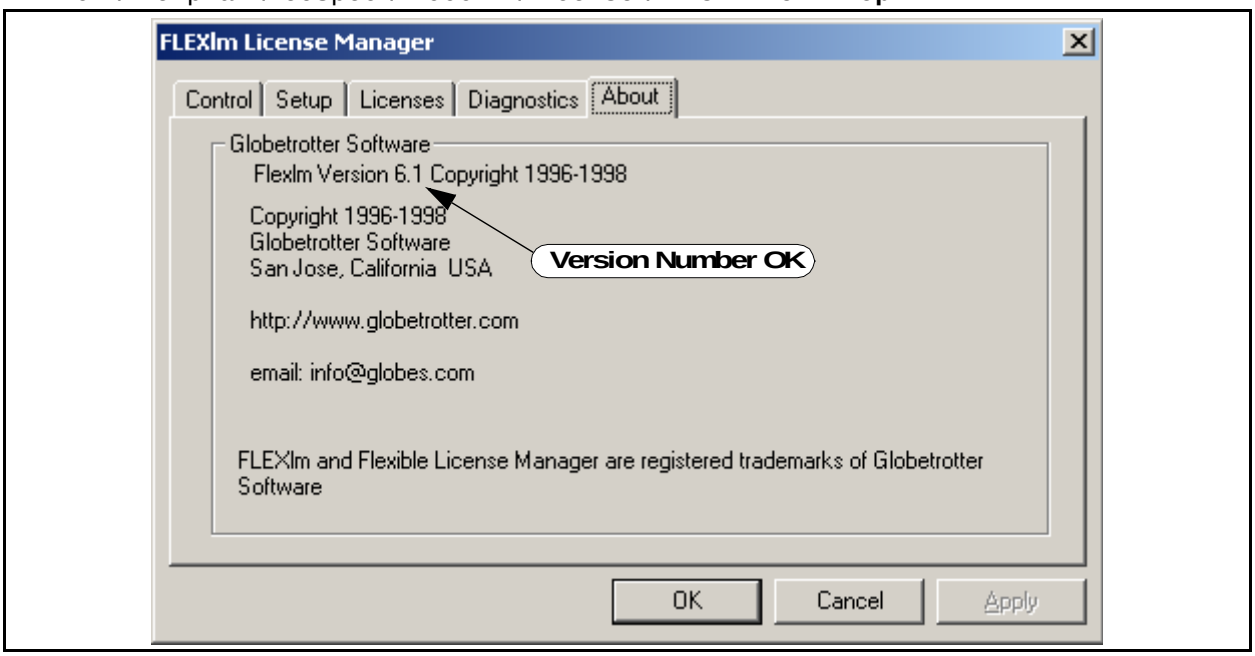
```
C:\Exemplar\LeoSpec\v19991i\license\win32>flexlm.cpl
```



In this case, the version 5.12, is out of date and must be replaced!

Example 6- Checking the version of flexlm.cpl

```
C:\Exemplar\LeoSpec\v19991i\license\win32>flexlm.cpl
```



Step 3- Upgrade the Server Files

If you determine that you need to upgrade your server's licensing system, here is what you should do. Execute the following steps on your licensing server:.

1. If you are on a PC, and **`flexlm.cpl`** is not currently running, remove the old version and install the new version
2. Shut down your licensing system. You can do this on PCs via the **`flexlm.cpl`** application. On Unix platforms, you can use **`lmgrd -lmdown`**
3. Verify all **`exemplard`** processes are stopped. If any are still running, stop them manually
4. Remove the old version of **`exemplard`** and **`lmgrd`**
5. Place the new versions of these files in the old locations
6. Restart the licensing system

User Options

You can customize the FLEXlm license manager daemon by using a daemon options file. The following is a list of file keywords:

`RESERVE`	Reserve a license for a specific user.
`INCLUDE`	Allow a user to use a feature.
`INCLUDEALL`	Allow a user to use all features served by this vendor daemon.
`EXCLUDE`	Deny a user access to a feature.
`EXCLUDEALL`	Deny a user access to all features served by this vendor daemon.
`GROUP`	Define a group of users for use with other commands.
`TIMEOUT`	Allows licenses that are idle to be returned after a specific time.
`NOLOG`	Turn off logging certain items.

You should edit the DAEMON line of the license file and add the full pathname of the options file to the end of the line as an argument. For example, all on one line:

```
DAEMON exemplard /usr/local/exemplar/license/platform/exemplard
/usr/local/exemplar/license/license.options
```

For more information on the options file, see the FLEXlm End User Manual, available online at:

http://www.Globetrotter.com/manual.htm

License Administration Tools

The following license administration utilities are included in the $EXEMPLAR/license/<platform> directory:

- `lmutil lmdown` Allows for shutdown of all license daemons (both `lmgrd` and all vendor daemons).
- `lmutil lmremove` Allows the system administrator to remove a single user's license for a specified feature.
- `lmutil lmreread` Causes the license daemon to reread the license file and start any new vendor daemons that have been added. In addition, all pre-existing daemons will re-read the license file for changes in feature licensing information.
- `lmutil lmstat` Monitors license activities, including daemons running and users of individual features (see options below).

All of the above accept the `-c <license file pathname>` option that is used to ensure the correct license file is being read. For usage notes on these tools, see the following sections. Usage of `lmdown` and `lmremove` should be restricted, as these utilities can severely disrupt application program usage.

Use the following utilities for information:

- `lmutil lmhostid` Reports the exact hostid that the license manager expects to use on any given machine.
- `lmutil lmver <filename>` Reports the license manager version of the license manager daemon (`lmgrd`) or vendor daemon (`modeltech`, `exemplard`, or `mgcld`).

On Windows, these utilities may also be run from the lmtools program, called License Administration Utilities, in your Exemplar Program Group. For more information on these utilities, refer to the FLEXlm End User Manual at

http://www.Globetrotter.com/manual.htm

or contact Globetrotter Software at

info@globetrotter.com.

Backup (Redundant) Servers

If the LeonardoSpectrum software is located on a single file server, only a single license server should be used. If the software is installed on two or more servers and if you want to continue to work when one of the servers goes off-line, you may want to use backup license servers. Only in very volatile situations or in very large networks should more than three servers be required, because the system remains fully functional as long as a simple majority of the servers are running.

To use backup license servers, a copy of the license file must be located on each server. In addition, the `lmgrd` and license daemons (`modeltech`, `exemplard`, or `mgcld`) must be copied to each system. The license manager daemon must be running on each system.

Common Licensing Questions and Problems

Q. Why do I have to use `-c <license file pathname>`?

A. The `-c <license file pathname>` option must be used to locate the `license` file if it is not in the FLEXlm default location:

Under UNIX: `/usr/local/flexlm/licenses/license.dat`

Under Windows: `c:\flexlm\license.dat`

This option is used when starting the license manager daemon `lmgrd` and when using the FLEXlm license utilities `lmutil lmdown`, `lmreread`, `lmstat` and `lmremove`. Note that this may not be required if your `LM_LICENSE_FILE` variable is set to the appropriate location, but it is still recommended for consistency and validation.

The pathname specified must include the name of the file (e.g., license.dat) as well as the directory where this file resides.

Q. What if I don't have a `C:\flexlm` directory on my Windows PC?

A. Create the directory using the `mkdir` command, as follows

```
mkdir c:\flexlm
```

Q. Do I have to set my `LM_LICENSE_FILE` environment variable?

A. You must set the `LM_LICENSE_FILE` environment variable to run the LeonardoSpectrum software if the license file resides anywhere except the LeonardoSpectrum default location `$EXEMPLAR/license/license.dat` (under UNIX), or `c:\flexlm\license.dat` (under Windows).

For the UNIX platform, this is true even if you are using the FLEXlm default location `/usr/local/flexlm/licenses/license.dat`. This requirement can be avoided by creating a link from the Exemplar default to the actual location of the license file, as follows:

```
ln -s <license file pathname> $EXEMPLAR/license/license.dat
```

Under Windows, there may be a significant delay for `lmgrd` to recognize the license file in the default location if the environment variable `LM_LICENSE_FILE` is not set. It is therefore recommended to set the environment variable `LM_LICENSE_FILE` even when the license file is in the default location `c:\flexlm\license.dat`

Q. What if I have two different license files?

A. You may set your `LM_LICENSE_FILE` environment variable to a concatenated pathname, as follows:

Under UNIX: `setenv LM_LICENSE_FILE license file 1:license file 2`
Under Windows: `set LM_LICENSE_FILE=license file 1;license file 2`

Q. How can I see the status of my license file?

A. Run the `lmutil lmstat` utility (in `$EXEMPLAR/license/<platform>`) on the license server, as follows:

```
lmutil lmstat -c license file pathname -a
```

This gives you the current status of all licenses in the named license file. If you see any problems, look at the log file into which you redirected your output when you started the license manager daemon.

Q. What if I don't have a log file?

A. If you are having problems with your license manager, and you do not have a log file, bring the license manager daemon down and back up, this time with a log file. The log file is the quickest and easiest method for determining what is causing problems with a license file. To bring the current license manager daemon down, do the following (you should be logged in as root or the same user who started `lmgrd`):

```
lmutil lmdown -c <license file pathnam>
```

Then restart the license manager daemon as directed:

```
lmgrd -c <license file pathname> > license file logname &
```

You can then review the log file to determine what is causing your problems. For windows, if you run `lmgrd` as a service, the log file is `c:\windows\system32\lmgrd.log`.

Q. When I bring down the license manager daemon, will this kill any programs currently using the license manager?

A. Most FLEXlm programs will attempt to reconnect to a vendor daemon if that connection is lost. The default of FLEXlm is to check the connection every 30 seconds; if a lost connection is discovered, the default is to recheck five times at one minute intervals. Although all of this may differ from one program to another, most programs do not have a problem when a connection is lost as long as the connection is reestablished - usually within **five** minutes.

Q. Why do I have to bring the license manager down and back up, instead of just using `lmutil lmreread`?

A. There is a known problem with `lmutil lmreread` involving timing, particularly if your license file is large: the request to restart one or more vendor daemons may be processed before the request to shut them down has finished. The net result is that the vendor daemon is shut down, but not restarted. It is safer to use `lmutil lmdown`, followed by `lmgrd`.

Q. How do I know if it is OK to merge my license files?

A. You may merge all license files that run on the same server and have the same hostid specified on the `SERVER` line (if multiple `SERVER` lines are used, all must match). Note that it does not matter if the port number on the `SERVER` line does not match because this is user specified (the default is `1700`).

Q. Why do I have to use `lmutil lmdown`, instead of just killing the `lmgrd` process?

A. When you kill the `lmgrd` process, the vendor daemons continue to run. Then, when you restart the `lmgrd`, the restart of the vendor daemons will fail, and you will see messages like the following in your log file:

```
MULTIPLE xxx servers running.
Please kill, and restart license daemon
```

If you see such messages, you should kill all `xxx` daemon processes and restart the license manager.

Q. Do I have to restart the license manager when I just change expiration dates and passwords?

A. It may not be necessary to stop and restart the license manager when a `DAEMON` or `FEATURE` line is added or changed. Instead, you may use the `lmutil lmreread` utility, as follows:

```
lmutil lmreread -c <license file pathname>
```

NOTE: `lmutil lmreread` may not be used to change the server hostname or port number, the path to the license file, or to have a vendor daemon reread its `option` file. In these cases, or if `lmutil lmreread` fails for any other reason (see above), you should stop and restart the license manager daemon as directed.

Q. Can a mixed network of Sun, HP and PC machines have a single license server?

A. Yes, a single license server running on the network can service Sun, HP and PC machines with floating licenses.

Q. Does the license server for a mixed network have to be a Sun?

A. No, the server can be a Sun or an HP (or even a PC, if the UNIX machines can access it) as long as you have purchased software for that platform. The server software comes with LeonardoSpectrum for that platform.

Under Windows, if you want to use a UNIX license server, copy the license file from the license server to the default location (`c:\flexlm\license.dat`) or to the directory determined by the environment variable `LM_LICENSE_FILE`, after starting the license manager on the license server. Alternatively, on the client machine you can set the environment variable `LM_LICENSE_FILE` to:

`license server port@server <hostname>`

For example, if the license server hostname is `master` and it uses port number `1700` for the license manager daemon, type:

```
set LM_LICENSE_FILE=1700@master
```

Q. Do I need a new license for my Sun to add an HP or a PC?

A. No, if you have an existing Sun license server, you can put the HP or PC on the network. The HP or PC can use the same `LM_LICENSE_FILE` as the Sun.

Q. I edited the license file, how do I make sure I did not accidentally corrupt it?

A. A quick way to check the integrity of the license files is:

```
lmutil lmcksum -c license_file
```

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