



Introduction

This document describes options for licensing Altera® software and the three steps required to license it: obtain a license file, set it up, and specify the license location. This document also includes tips to troubleshoot licensing problems, answers to common questions about licensing, and detailed information about the format of Altera license files.

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Licensing Options

Altera provides a number of licensing options to customers. The type of license determines which Altera software is enabled.

An Altera software subscription enables the following software:

- Altera Quartus® II software (includes Altera SOPC Builder software)
- Altera MAX+PLUS® II software
- ModelSim®-Altera Subscription Edition software
- IP Base Suite

Altera offers the following types of software subscriptions:

- FIXEDPC, a stand-alone PC license tied to a software guard (T-guard or "dongle")
- FLOATALL, a floating network license for users running the Quartus II software on Microsoft Windows or Solaris or RedHat Linux



Beginning with the Quartus II software version 6.1, floating network license subscribers are issued a FLOATALL license with OS support as described above. If you are a Quartus II version 6.0 or earlier subscriber, Altera continues to support FLOATPC, FLOATNET and FLOATLNX with the following OS support:

- FLOATPC, a floating network license for users running the Quartus II software on Microsoft Windows
- FLOATNET, a floating network license for users running the Quartus II software on Windows or Solaris
- FLOATLNX, a floating network license for running the Quartus II software on Windows or RedHat Linux

A new FLOATALL license is issued when you increase the number of seats for your existing FLOATPC, FLOATNET or FLOATLNX license.

Altera UNIX applications are supported for the Sun Microsystems Solaris operating system. Altera Linux applications are supported for the RedHat Linux operating system.

Where the Quartus II software is used, the license server for the FLOATALL, FLOATNET and FLOATLNX software subscription products does not have to be running the same operating system as client computers.

Development kits that contain the Quartus II software for the PC include instructions on how to obtain a license for that software.

For PCs, Altera also offers the following no-cost entry-level software available at www.altera.com:

- Quartus II Web Edition software: a downloadable version of the Quartus II design software that supports selected devices
- MAX+PLUS II BASELINE software: Altera design software that supports certain low-density devices
- ModelSim-Altera Web Edition: a downloadable version of ModelSim-Altera Subscription Edition that supports selected devices

The Altera University Program offers participating schools access to Altera software, licensed in one of the following ways:

- Fixed (software guard) or floating (network) licenses for universities and colleges that have applied to become members of the Altera University Program. The licensing process for these University Program licenses is the same as for regular Altera software subscriptions.
- MAX+PLUS II Student Edition: no-cost PC software for students.



For more information on the University Program see the Altera web site at www.altera.com.

Table 1 summarizes the software that is enabled by each of the license types described in this section.

Table 1. Supported Software for Each License Type <i>Note (1)</i>					
License Type	Quartus II	SOPC Builder (2)	ModelSim- Altera (3)	MAX+PLUS II	IP Base Suite
FIXEDPC License	✓	✓	✓	✓	✓
FLOATALL License	✓	✓	✓	✓	✓
FLOATPC License(4)	✓	✓	✓	✓	✓
FLOATNET License(4)	✓	✓	✓	✓	✓
FLOATLNX License(4)	✓	✓	✓	✓(5)	✓
Quartus II (1-year license) (6)	✓	✓			
Quartus II Web Edition	Web Edition	✓	Web Edition	Web Edition	
MAX+PLUS II BASELINE					✓ BASELINE
MAX+PLUS II Student Edition					✓ Student Edition

Notes to Table 1:

- (1) Altera does not generate licenses for the LeonardoSpectrum™-Altera software. Contact Mentor Graphics® for information on obtaining additional licenses and support for the LeonardoSpectrum-Altera software. The Quartus II and Quartus II Web Edition software includes integrated VHDL and Verilog HDL synthesis capabilities. MAX+PLUS II users can download the MAX+PLUS II Advanced Synthesis software from the Altera web site.
 - (2) The SOPC Builder software is automatically installed with the Quartus II software beginning with version 5.1 and does not require a separate license.
 - (3) The ModelSim-Altera tool is available for either VHDL or Verilog HDL simulation. Floating licenses may have their licenses split between VHDL and Verilog HDL in any ratio.
 - (4) These licenses are only available for releases prior to Quartus II, version 6.1 (versions 6.0 and earlier).
 - (5) These licenses are available only for PC installations of these tools.
 - (6) Some Altera development kits include a license to use the Quartus II software. Development kit users are given instructions on how to obtain a license for the software. After you obtain the license, the rest of the licensing process is the same as the process for the PC evaluation software outlined in “Licenses for No-Cost Evaluation PC Software” on page 19.
-

You can obtain or purchase Intellectual Property (IP) and Development Kit licenses from the Altera IP MegaStore™ web site at www.altera.com/ipmegastore, or through your local Altera sales office or distributor.



For more information on the OpenCore® and OpenCore Plus IP evaluation programs, including licensing information, see *AN 320: OpenCore Plus Evaluation of Megafunctions* and *AN 343: OpenCore Evaluation of AMPP Megafunctions*.

When you order a development kit, make sure that the network card ID provided with the order is for the computer on which the development kit software is to be installed. If you do not provide the correct network card ID, you cannot automatically download your development kit software license from Altera’s web site because your network card ID is not in the licensing database. For instructions on how to provide an updated network card ID for your license file, see “[How to Change Your License Information](#)” on page 48.

Information Required to Get a License File

This section describes how to find the information required to obtain an Altera license file. Not all of this information is required for every license request. See [Table 2](#).

License Type	Licensing Method & Requirements
FIXEDPC License	Altera ID, software guard ID
FLOATALL, FLOATPC, FLOATNET, or FLOATLNX License	Altera ID, NIC ID for Windows NT (4), Windows 2000, Windows XP, or RedHat Linux license servers (2) Altera ID, host ID for UNIX license server (2)
Quartus II Web Edition	NIC ID
MAX+PLUS II BASELINE	NIC ID Hard-disk serial number (3)
MAX+PLUS II Student Edition	Hard-disk serial number (3)
Intellectual Property (IP) and Development Kit License	NIC ID

Notes to [Table 2](#):

- (1) The licensing web pages on www.altera.com include definitions and instructions on how to obtain the Altera ID, software guard ID, host ID, network interface card (NIC) ID, or hard-disk serial number.
- (2) The FLEXlm License Manager allows up to three redundant license servers to serve a network license. The first server specified is the master; use the master's NIC ID or Host ID when obtaining a license.
- (3) If the PC has more than one hard disk, select the hard disk where the Windows operating system is installed.
- (4) The Quartus II software versions 6.0 and later do not support Windows NT operating systems. Refer to http://www.altera.com/support/software/os_support/oss-index.html for updated operating system support.

Altera ID

Your Altera ID number is assigned by Altera. This 6-digit number allows Altera to identify customers when they purchase an Altera product or request technical support. For new Quartus II or MAX+PLUS II software users, the Altera ID number is printed on the software's shipping label or packing slip. The number is also on some correspondence received from Altera.

If you are not the original purchaser of the license, register as a secondary user of the software on Altera's mySupport web site, www.altera.com/mysupport. If the Altera ID used for the license is unknown, use six zeros (000000) to request a license file.

Software Guard ID

The software guard ID is a 10-character ID. Guards that connect to the parallel port or USB port have an ID that begins with a "T" followed by 9 numbers, which are displayed when you install the software. You can obtain the ID using one of the following methods:

- Read it from the printed label on the guard
- If the Quartus II software has been installed, when the guard is attached, choose **License Setup** (Tools menu, shown in [Figure 1](#))
- If the MAX+PLUS II software has been installed, when the guard is attached, choose **License Setup** (Options menu, shown in [Figure 2](#)) and click **System Info** (shown in [Figure 3](#))



USB software guards are supported only for the Quartus II software on Windows XP and Windows 2000.

Figure 1. Quartus II License Setup, Tools Menu



Figure 2. MAX+PLUS II License Setup, Tools Menu

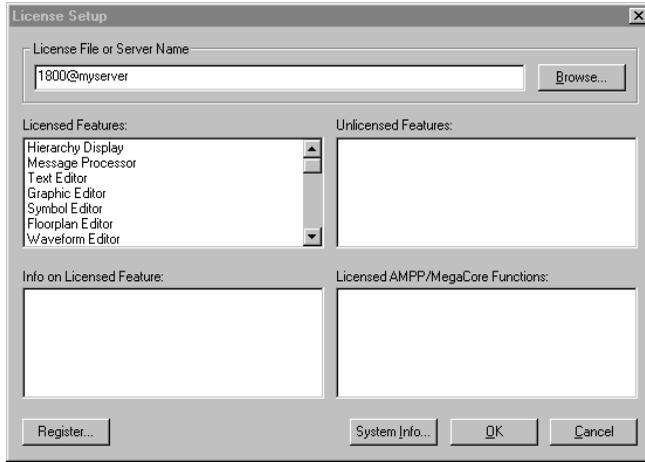
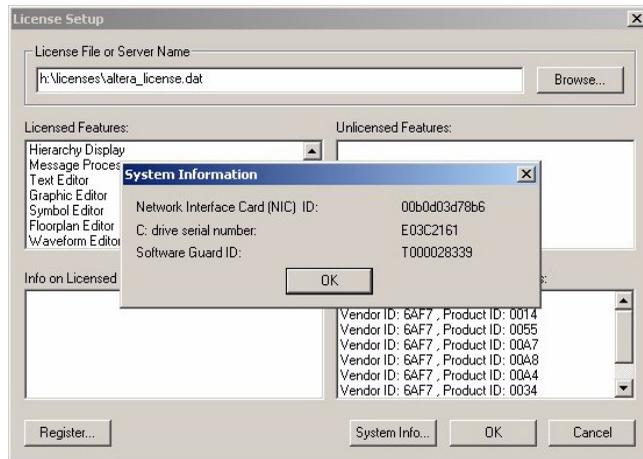


Figure 3. MAX+PLUS II System Info



Host ID

The server host ID is an 8-character hexadecimal string that identifies the UNIX workstation that serves Altera licenses.

Contact the server system or network administrator to obtain this ID, or use one of the following methods to determine the server host ID:

- Sun Solaris: Type `hostid` ↵ at the command prompt
- HP-UX: Type `uname -i` ↵ at the command prompt and convert the resulting decimal value into hexadecimal format. Use that value as the host ID.
- If the FLEXlm software has been installed, type `lmutil lmhostid` ↵ at the command prompt to determine the ID.



You can use the FLEXlm licensing scheme to configure as many as three redundant license servers. The first server specified is the master; use the master server's NIC ID or host ID when obtaining a license.



The Quartus II software versions 5.0 and later do not support the HP-UX OS platform. Refer to http://www.altera.com/support/software/os_support/oss-index.html for updated operating system support.

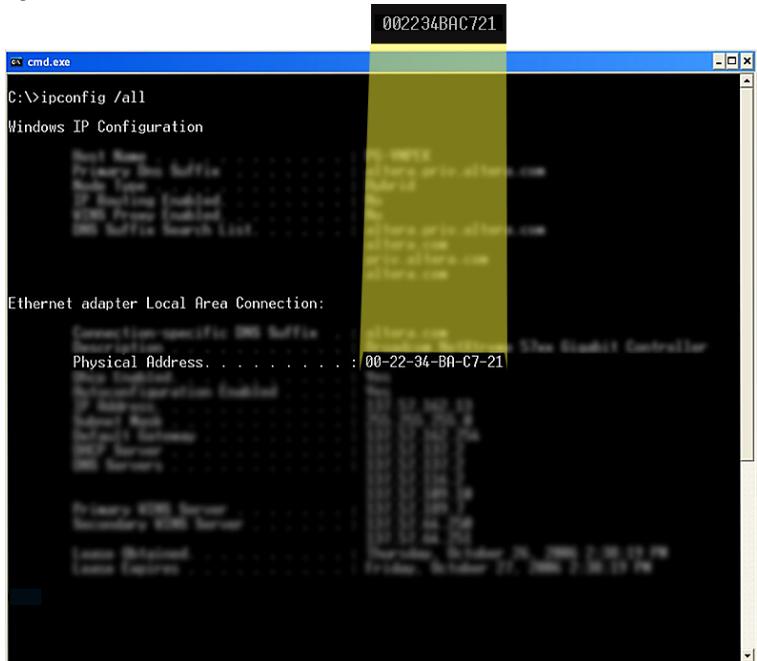
NIC ID

The NIC ID is a 12-character hexadecimal string embedded in the network interface card that Altera uses to uniquely identify the PC where the software is installed.

The NIC ID is required for network licenses when the license server machine is a PC. It is also required for PC software provided for evaluation. Find the NIC ID by one of the following methods:

- Microsoft Windows: Type `ipconfig /all` ↵ at a command prompt. The NIC ID is the physical address without the dashes. If your PC has more than one network card, you can use any of the cards' NIC IDs as long as the selected network card is always connected to the computer. See [Figure 4](#).

Figure 4. Windows NIC ID

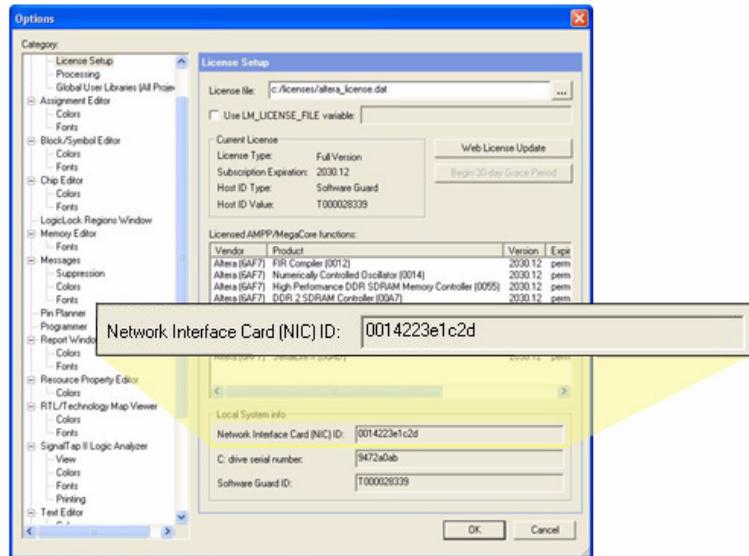


- for Linux, at a command prompt type: `/sbin/ifconfig eth0`. The NIC ID is the ID to the right of HWaddr, without the colons. For example, 2234BAC721. See [Figure 5](#).

Figure 5. Linux NIC ID

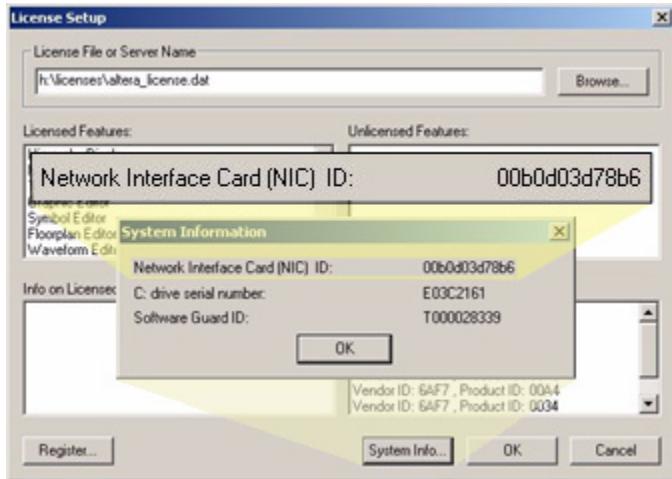


- If the Quartus II software is installed, on the **Tools** menu choose **License Setup**. See [Figure 6](#).

Figure 6. Quartus II License NIC ID

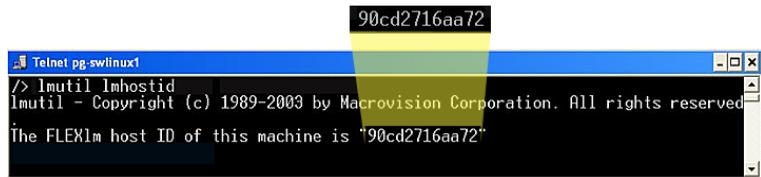
- If the MAX+PLUS II software is installed, on the **Options** menu choose **License Setup**, then click **System Info**. See [Figure 7](#).

Figure 7. MAX+PLUS II NIC ID



- If the FLEXlm software is installed, type the following at a command prompt to determine the ID: `lmutil lmhostid` ← (shown in Figure 8).

Figure 8. FLEXlm NIC ID



Use the FLEXlm licensing scheme to configure as many as three redundant license servers. The first server specified is the master; use the master server's NIC ID or host ID when obtaining a license.

Note: If you are running the `lmutil lmhostid` command on a Solaris platform, an 8-digit System ID will be displayed. Otherwise, for all other platforms, a 12-digit NIC ID will be displayed.

Hard-Disk Serial Number

The hard-disk serial number is an 8-character hexadecimal ID that identifies the PC with the Altera license. Find the hard-disk serial number for the PC by any of the following methods. Ensure that the ID is 8 characters long: include a leading zero if necessary.

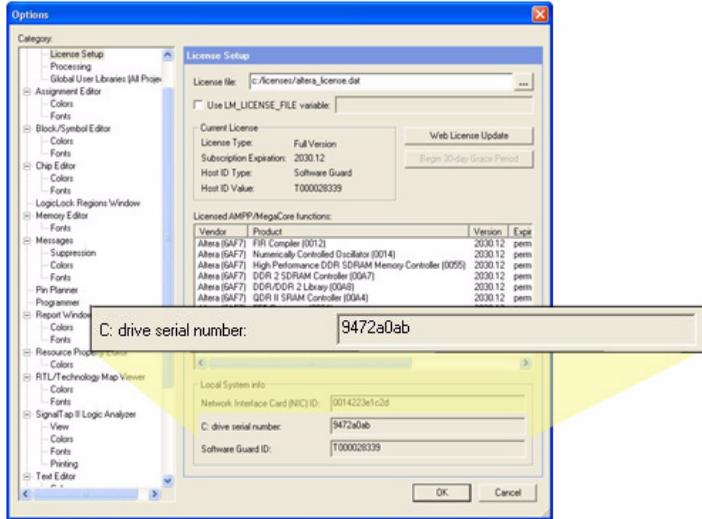
- For PCs running the Microsoft Windows operating system, type `vol` at a command prompt at `C:\` regardless of where the Windows operating system is installed. The ID is the serial number for `C:\`. See [Figure 9](#).

Figure 9. Windows Volume Serial Number



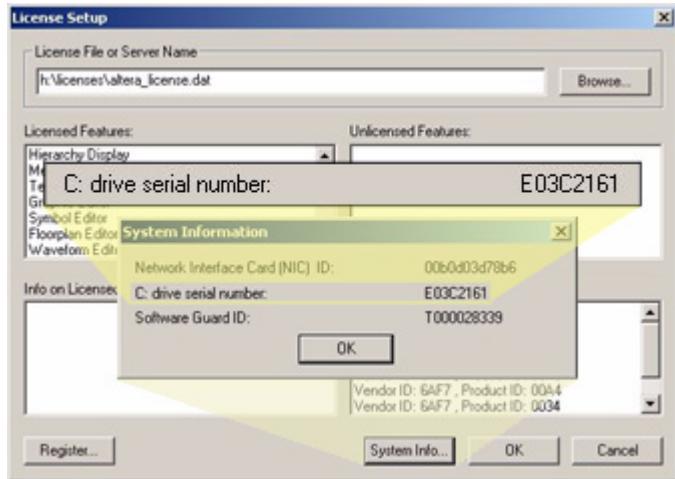
- If the Quartus II software is installed, on the **Tools** menu choose **License Setup**. This method ensures use of the correct hard-disk serial number if multiple hard drives are in use. See [Figure 10](#).

Figure 10. HDD License Setup



- If the MAX+PLUS II software has been installed, on the **Options** menu choose **License Setup**, then click **System Info**. This method ensures use of the correct hard-disk serial number if multiple hard drives are in use.

Figure 11. MAX+PLUS II License Setup



Get an Altera License File

You can request a license file automatically with some Altera software. You can also manually request a license file from the License Center on Altera’s web site. The license file is sent to you as an email attachment. When you receive the attachment, set it up by following the steps described in “Set Up the License” on page 16.

To view information about software licensed to you and request license files, you can log onto the mySupport section of the Altera web site at www.altera.com/mysupport.

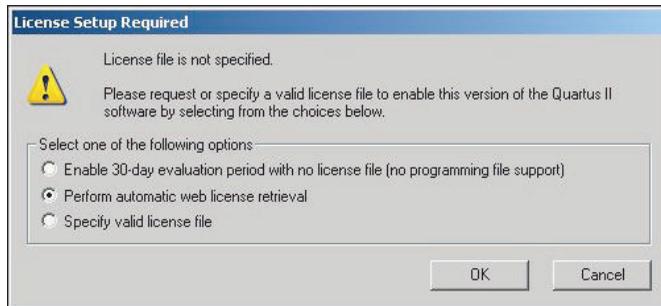
Automatic License File Request

You can request a license file automatically with the latest versions of the Quartus II and Quartus II Web Edition software.



If you have a floating license, you must manually request a license file from the License Center on Altera’s web site. Follow the instructions in “Manual License File Request” in the next section.

1. When you start the software, select **Perform automatic web license retrieval**. See Figure 12.

Figure 12. Quartus II License Setup

2. Follow the instructions on-screen to receive your license file by email.
3. When you receive the license, follow the steps in [“Set Up the License” on page 16](#).

Manual License File Request

To manually request a license file, use the following procedure:

1. Browse to www.altera.com and click the Licensing icon.
2. Click the link for the appropriate license type. [Table 1 on page 3](#) describes some of the available choices.
3. Follow the instructions on the screen and enter the required information to receive your license file by email. The required information varies for each license.



[Table 2](#) describes the required information for various licenses. For more information about gathering any required information, refer to the section [“Information Required to Get a License File” on page 5](#).

4. An email is sent to the address that you specified in the on-line form. Network congestion can cause delays in email delivery. If you do not receive an email from Altera within 12 hours of your license request, or if you don't know all the required information to complete the process, file a service request using mySupport at www.altera.com/mysupport.

- When you receive the license, follow the steps described in the following section “Set Up the License” on page 16.

Set Up the License

After you receive your license file by email, you must set it up. To begin setting up your license, skip to the section corresponding to your license type or product.

- Quartus II Web Edition with ModelSim-Altera Web Edition on page 19
- Quartus II with ModelSim-Altera Subscription Edition on page 20
- Quartus II only:
 - FIXEDPC on page 17
 - FLOATALL or FLOATPC/FLOATNET/FLOATLNX on page 18
- MAX+PLUS II with ModelSim-Altera Subscription Edition on page 20
- MAX+PLUS II only:
 - FIXEDPC on page 17
 - FLOATALL or FLOATPC/FLOATNET/FLOATLNX on page 18
- Intellectual Property (IP) Cores on page 23
- DSP Builder on page 24
- Intellectual Property (IP) and Development Kits on page 25

When you request or purchase an Altera IP core or development kit that requires a license, licensing information is provided. Use the following procedure to add a new license feature to an existing Altera license file:

- Close any software programs provided by Altera.
- Open the new IP or development kit license file in a text editor. The file should contain one or more lines starting with the keyword `FEATURE` or `INCREMENT`.
- Open the existing Altera **license.dat** file in a text editor.
- Copy the `FEATURE` or `INCREMENT` line(s) from the IP or development kit license file and paste the text into the existing Altera **license.dat** file. Do not delete any `FEATURE` or `INCREMENT` lines from the existing Altera license file.
- Save the Altera **license.dat** file.



Ensure that the text editor does not append `.txt` (or any other extension) to the filename, such as **license.dat.txt**. If in doubt, verify the file name at a command prompt.

- Go to “Set Up the License” on page 16 for instructions on how to set up the Altera license.

FIXEDPC (Software Guard) License

To set up a FIXEDPC license, perform the following steps:

- Make a backup copy of any existing **license.dat** file in case you need it for reference.
- Save the new **license.dat** file on your computer's hard drive. Altera recommends saving and using the **license.dat** file attached to the email. If you cannot receive email attachments, the email includes instructions on how to create a **license.dat** file.
- Attach the software guard to a parallel or USB port on the PC.

The Sentinel driver for software guard-based licensing is installed automatically with the Quartus II and MAX+PLUS II software. Windows XP, Windows NT, and Windows 2000 PCs that use a software guard require the Sentinel driver.



The Quartus II software versions 6.0 and later do not support Windows NT operating system. Refer to http://www.altera.com/support/software/os_support/oss-index.html for updated operating system support.

Installing the Sentinel driver requires administrator privileges. If you are not logged on as an administrator, or if you do not have administrator privileges when the Quartus II or MAX+PLUS II software is installed, you must manually install the Sentinel drivers once you are logged into the PC as an administrator or granted similar permissions. At the command prompt, type the appropriate command:

- For Quartus II software version 4.1 and later:
`<Quartus II installation path>\drivers\sentinel\setup.exe ←`
- For Quartus II software version 4.0 and earlier:
`<Quartus II installation path>\drivers\setupx86.exe ←`
- For MAX PLUS II software:
`<MAX+PLUS II installation path>\drivers\setupx86.exe ←`



Refer to the *Quartus II Installation & Licensing for PCs* manual available on the Altera web site for more information.

Do not connect disk drives or any devices that use the parallel port, other than a printer or Altera parallel port download cable, to either end of the software guard. Disk drives can destroy a software guard by drawing more power than the guard is capable of handling.

Disconnect the software guard before using the parallel port to transfer data between computers using a data-transfer program. Failure to do so can cause damage to the software guard.

4. Specify the license location. The license location is *<path to license file>\license.dat*, where *<path to license file>* is the full directory path to the license file, starting with the drive letter. For example, **D:\flexlm\license.dat**.
5. The license is now setup and you can begin using the software.

Floating Network Licenses (FLOATALL, FLOATPC, FLOATNET, FLOATLNX)

This section describes how to determine the license file location for a floating license. For instructions on how to set up a floating license server (typically performed by a system administrator), refer to [“Set up the Network Licenses” on page 26](#).

If individual users have not set up the network license server, complete the following steps before proceeding.

1. Get the port number and host name from the network or system administrator. This information can also be found in the license file line beginning with the word SERVER.

Example SERVER line:

```
SERVER <hostname> <8 or 12 character host or NIC ID> <port>
```

For example:

```
SERVER myserver 00B0D0ABEAEC 1800
```

The license location for the user is *<port>@<hostname>*.

For example:

```
1800@myserver.
```

If a port is not listed in the **license.dat** file, specify *<port>@<hostname>*.

2. Proceed to [“Using LM_LICENSE_FILE System Environment Variable” on page 20](#).

Licenses for No-Cost Evaluation PC Software

Altera offers no-cost evaluation PC software that includes the Quartus II Web Edition software, ModelSim-Altera Web Edition, and MAX+PLUS II BASELINE.

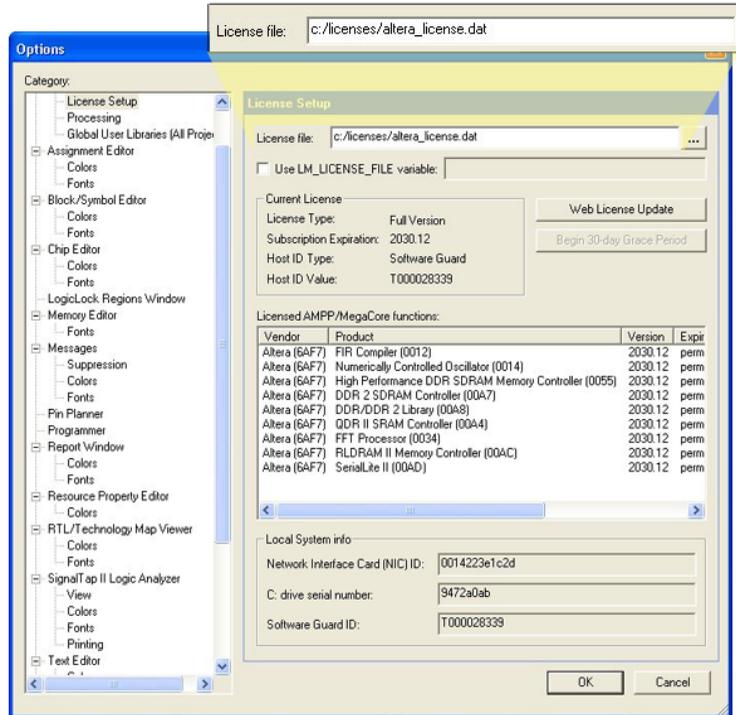


Refer to “[Licensing Options](#)” on page 1 for more information.

To set up a no-cost evaluation PC software license, perform the following steps:

1. Make a backup copy of any existing **license.dat** file in case you need it for reference.
2. Save the new **license.dat** file on your computer’s hard drive. Altera recommends saving and using the **license.dat** file attached to the email. If you cannot receive email attachments, the email includes instructions on how to create a **license.dat** file.
3. Specify the license location. The license location is *<path to license file>\license.dat*, where *<path to license file>* is the full directory path to the license file, starting with the drive letter. [Figure 13](#) shows an example of specifying `C:\licenses\altera_license.dat` as the license path and filename.

Figure 13. Quartus II License Path & Filename



- The license is now setup and you can begin using the software.

Using LM_LICENSE_FILE System Environment Variable

Third-party tools provided by Altera require that you specify the license location in the `LM_LICENSE_FILE` environment variable. This variable also sets Quartus II and MAX+PLUS II software licenses. Altera recommends using this method for specifying the license location.



The license file specification in the Quartus II or MAX+PLUS II **License Setup** dialog box takes precedence over the `LM_LICENSE_FILE` environment variable setting for that particular software.

Windows NT

The Quartus II software versions 6.0 and later do not support the Windows NT operating system. Refer to http://www.altera.com/support/software/os_support/oss-index.html for updated operating system support.

To set the `LM_LICENSE_FILE` environment variable in the Windows NT system control panel, perform the following steps:

1. In the Windows Start menu, choose **Settings > Control Panel** (Windows Start menu).
2. Double-click the **System** icon in the Control Panel window.
3. Click the **Environment** tab in the **System Properties** dialog box.
4. Click the **System Variable** list to highlight it.
5. Type `LM_LICENSE_FILE` in the **Variable** box.
6. Type `<path to license file>\license.dat` or `<port>@<hostname>` in the **Value** box.
7. Click **Set**, and then **OK**.

If you need to specify more than one license location with the `LM_LICENSE_FILE` environment variable, modify the existing `LM_LICENSE_FILE` environment variable and separate the different paths with semicolons (;), as shown in the following example:

```
c:\flexlm\license.dat;1800@myserver
```

8. The license is now setup and you can begin using the software.

Windows 2000 or Windows XP Classic Control Panel View

To set the `LM_LICENSE_FILE` environment variable through the Windows 2000 system control panel, perform the following steps:

1. Choose **Settings > Control Panel** (Windows Start menu).
2. Double-click the **System** icon in the Control Panel window.
3. Click the **Advanced** tab in the **System Properties** dialog box.
4. Click **Environment Variables**.

5. Click the **System Variable** list to highlight it.
6. If the license file `LM_LICENSE_FILE` exists, select it, then select **Edit**. If it does not exist, select **New** and type the filename `LM_LICENSE_FILE`.
7. Type `<path to license file>\license.dat` or `<port>@<hostname>` in the **Value** box.
8. Click **OK**.

If you need to specify more than one license location with the `LM_LICENSE_FILE` environment variable, modify the existing `LM_LICENSE_FILE` environment variable and separate the different paths with semicolons (;), as shown in the following example:

```
c:\flexlm\license.dat;1800@myserver
```

9. The license is now setup and you can begin using the software.

UNIX Workstation

The following is an example of the steps required for a C shell resource file (`.cshrc`). Edit this file for each user. To set the `LM_LICENSE_FILE` environment variable in the login initialization file, such as `.cshrc`, located in the home directory, perform the following steps:

1. Type the following environment variable on a separate line in the login initialization file to specify the license location:

```
setenv LM_LICENSE_FILE <port>@<hostname>
```

2. Save the `.cshrc` file.
3. Type the following commands at the command prompt:

```
cd ←  
source .cshrc ←
```

If you need to specify more than one license location with the `LM_LICENSE_FILE` environment variable, modify the existing `LM_LICENSE_FILE` environment variable and separate the different paths with colons (:), as shown in the following example:

```
/usr/licenses/license.dat:1800@myserver
```

4. The license is now setup and you can begin using the software.

Specify the License for Intellectual Property (IP) Cores

If you have installed and set up your license for the Quartus II software, modify the **license.dat** file to add a new license feature.



If you have not installed and set up your license for the Quartus II software, follow the instructions in the section [“Set Up the License” on page 16](#), then return to this section to add IP Cores to your license file.

Perform the following steps to add a new license feature to an existing Altera license file:

1. Open the license email you received from Altera. The license email contains the FEATURE lines required to license the IP Cores.

Example: FEATURE line:

```
FEATURE 6AF7_0012 alterad 2030.12 permanent uncounted D4D1A3EA3A4E \
VENDOR_STRING="iiiiiihdLkhIIIIIIImPDuiaaaaaaaaaaP1X38DDDDDDDDmjz5cdddddd
dd4mGzGJJJJJJJJiqlh0uuuuuuuuucYYwiVVVVVVVVVcp0FVHHHHHHHHHPUEakfffffR2FFRk
kkkkkkkqL$84" HOSTID=GUARD_ID=T000028339 SIGN="186C 431D CF96 15C8 \
48DE 34E8 07EA AB4C 7B2A 3E6C C4D5 268A 3E75 D81A 9C91 180B 31FA C2D5 \
EFC9 5483 04BF E859 DE46 2D36 B879 929D 2100 0E0A CE32 B05F"
```

2. Open your Quartus II **license.dat** file in a text editor.
3. Copy the FEATURE lines from the email content and paste it at the end of your Quartus II license file.



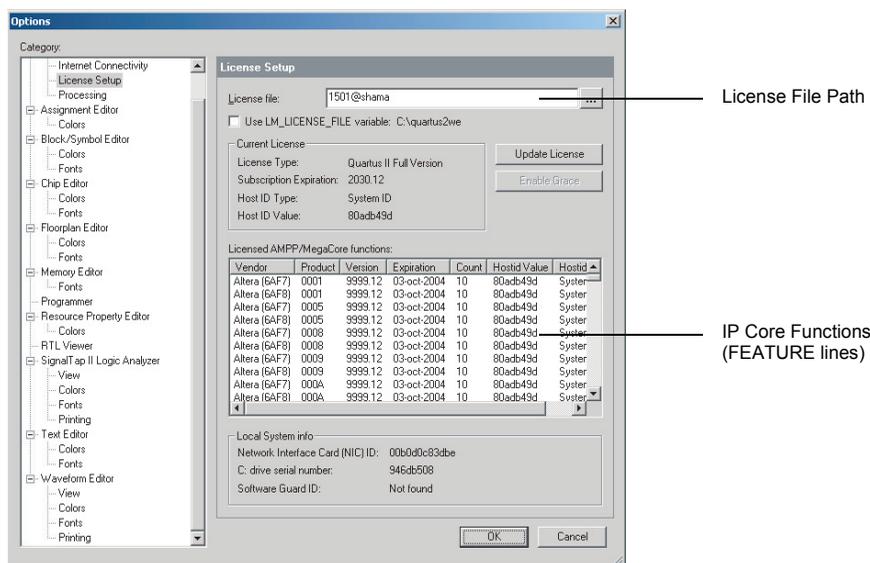
Do not delete any FEATURE lines from the Quartus II license file.

4. Save the license file and check the following:
 - The text editor does not append **.txt** or other file extension to the filename. For example, **license.dat.txt**. If in doubt, verify the filename at a command prompt.
 - A carriage return (new line) is present at the end of the last FEATURE line.
 - Ensure that any FEATURE line that wraps to a second or third line contains a backslash (\) at the end of each line to indicate that it continues.
 - Ensure that there is no backslash (\) at the end of the lines if the VENDOR_STRING line wraps to multiple lines. This is different from FEATURE line. The backslash (\) should only be added outside of the line where the double quotes (") are located. Refer to the "Example of FEATURE line" above.
 - If you are using a 64-bit version of the Quartus II software, ensure that you manually add a space between the closing

double quote (") and backslash (\) at the end of the FEATURE and INCREMENT lines.

5. Start the Quartus II software and on the **Tools** menu, choose **License Setup**.
6. Confirm that the path to your Quartus II license file appears in the License File dialog box, as shown in [Figure 14](#).

Figure 14. Quartus II License File Dialog Box



7. The license is now setup and you can begin using the software.



For information on how to license AMPP Megafunctions, refer to *AN 343: OpenCore Evaluation of AMPP Megafunctions*.

Specify the License for DSP Builder

If you have installed and set up your license for Quartus II software, you need to modify the **license.dat** file to include licensing information for DSP Builder.



If you have not installed and set up your license for the Quartus II software, follow the instructions in the section “[Set Up the License](#)” on [page 16](#), then return to this section to add DSP Builder to your license file.

Perform the following steps to add a new DSP Builder license feature to an existing Altera license file:

1. Open the license email you received from Altera.

The license email contains the FEATURE line required to license the DSP Builder. For DSP Builder, the required FEATURE line begins with C4D5_512A.

2. Open your Quartus II **license.dat** file in a text editor.
3. Copy the FEATURE line from the email content and paste it at the end of your Quartus II license file.



Do not delete any FEATURE lines from the Quartus II license file.

4. Once the modifications are complete, save the license file and check the following:
 - The text editor does not append **.txt** or other extension to the filename. For example, **license.dat.txt**. If in doubt, verify the filename at a command prompt.
 - A carriage return (new line) is present at the end of the last FEATURE line.
 - Ensure that any FEATURE line that wraps to a second or third line contains a backslash (\) at the end of each line to indicate that it continues.
5. The license is now setup and you can begin using the software.

Specify the License for Intellectual Property (IP) and Development Kits

If you have installed and set up your license for Quartus II software, you need to modify the **license.dat** file to include licensing information for Intellectual Property and Development Kits.



If you have not installed and set up your license for the Quartus II software, follow the instructions in the section “[Set Up the License](#)” on [page 16](#), then return to this section to add Intellectual Property and Development Kits to your license file.

Perform the following steps to add a new Intellectual Property and Development Kits license feature to an existing Altera license file:

1. Open the license email you received from Altera. The license email contains the FEATURE line required to license the Intellectual Property and Development Kit.
2. Open your Quartus II **license.dat** file in a text editor.
3. Copy the FEATURE line from the email content and paste the text into the existing Altera **license.dat** file. Warning: Do not delete any FEATURE lines from the Quartus II license file.
4. Once the modifications are complete, save the license file and check the following:
 - The text editor does not append **.txt** or other extension to the filename. For example, **license.dat.txt**. If in doubt, verify the filename at a command prompt.
 - There is a carriage return (new line) at the end of the last FEATURE line.
 - Any FEATURE line that wraps to a second or third line contains a backslash (\) at the end of each line to indicate that it continues.
 - Ensure that there is no backslash (\) at the end of the lines if the **VENDOR_STRING** line wraps to multiple lines. This is different from FEATURE line. The backslash (\) should only be added outside of the line where the double quotes (") are located. Refer to [Example of FEATURE line on page 23](#).
 - If you are using a 64-bit version of the Quartus II software, ensure that you manually add a space between the closing double quote (") and backslash (\) at the end of the FEATURE and INCREMENT line.
5. The license is now setup and you can begin using the software.

Set up the Network Licenses

To set up an Altera floating network license on a Windows, Solaris, HP-UX, or Linux license server using the FLEXlm License Manager provided by Altera, perform the following steps:



The Quartus II software versions 5.0 and above do not support the HP-UX operating system. For versions 6.0 and above, the Quartus II software does not support the Windows NT operating system. Refer to http://www.altera.com/support/software/os_support/oss-index.html for updated operating system support.

1. Make a backup copy of any existing **license.dat** file, in case it is needed later for reference.
2. Modify the **license.dat** file obtained from Altera (as described in “[Modifying the Network License File](#)” on page 29) and save it to the hard drive. The license email from Altera includes the recommended default directory location.

The files required for the FLEXlm license manager are installed with the Quartus II and MAX+PLUS II software. On Windows, the FLEXlm files are in the `<Quartus II installation directory>\bin` directory or the `<MAX+PLUS II installation directory>\adm` directory. On UNIX and Linux, the FLEXlm files are in the `<Quartus II installation directory>/<solaris | linux>` or `<MAX+PLUS II installation path>/adm` directory.



If the Quartus II or MAX+PLUS II software is already installed on the license server, go to step 6. To install the FLEXlm software separately on the license server machine, continue with step 3.

3. Create a directory on the license server to contain the FLEXlm files. If it is a Windows license server, Altera recommends that you create a `C:\flexlm` directory for the files. Some daemons for floating licenses may not run unless the `C:\flexlm` directory exists.
4. Copy the following files from the appropriate directory listed above into the new directory:

- **lmgrd**
- **lmutil**
- **alterad**

5. Type the following at a command prompt to start the license server:

```
<FLEXlm location>/lmgrd -c <license location>/license.dat \
[-l <log file name>]
```



Altera recommends that you specify a log file when you run a floating license server. If you experience errors with the license server, a log file makes it easier to debug the problem.

6. Type the following at a command prompt to verify the license server is running:

```
lmutil lmstat -a -c <port>@<hostname>
```

Where, *<port>* is the license port number and *<hostname>* is the server's host name as defined in the "Modifying the Network License File" on page 29.

7. If you receive an error message, review the previous steps to ensure that everything is correct.
8. After you have set up the license manager server, you must specify the license for each client or user. Proceed to "Floating Network Licenses (FLOATALL, FLOATPC, FLOATNET, FLOATLNK)" on page 18.



For complete information about using the FLEXlm utilities to administer the FLEXlm License Manager software, refer to the *FLEXlm End User's Guide* available at:

www.macrovision.com/services/support/software_licensing.shtml.



Type `lmgrd -help` at a command prompt to see a list and description of the available FLEXlm options.



To copy the new Altera license to an existing FLEXlm license server, refer to the *Configuring an Existing UNIX Workstation License Server* section of the *Quartus II Software Installation & Licensing for UNIX & Linux Workstations Manual* available on the Altera web site.

The FLEXlm software can work with internet firewalls that require port numbers to be specified. You must specify a port number on the `SERVER` line in the license file. You must also specify different port numbers on each `VENDOR` or `DAEMON` line with the `PORT=<number>` syntax. Additionally, you must allow firewall access to those port numbers. The following example shows how to specify port numbers in a floating license file. To provide access through a firewall for this example, specify ports 1800, 1801, and 1802.

```
SERVER my_server 00B0D0ABCCBA 1800
VENDOR alterad D:\quartus\bin\alterad.exe PORT=1801
VENDOR mgcld D:\modelsim\win32aloem\mgcld.exe PORT=1802
```

Altera software uses the FLEXlm software to administer licensing for single or multiple users in a network installation. Follow the directions below to modify the license file and then set up and start the FLEXlm License Manager.

Modifying the Network License File

The **license.dat** file must be modified before it can be used by the license server. See [“License File Format” on page 42](#) for a detailed description of the license file. The first few lines of the license file are shown in the following example (your license file may not contain all the **VENDOR** entries, depending on which software you have enabled):

```
SERVER <hostname> <8 or 12 character host or NIC ID> <port>
VENDOR alterad "<path to daemon executable>"
VENDOR mgcld "<path to daemon executable>"
VENDOR armlmd "<path to daemon executable>"
```

To modify and save the license file, perform the following steps:

1. Modify the entries in the **license.dat** file by typing in the variables as described in [Table 3](#) (variables are enclosed in angle brackets). The host or NIC ID is already entered in the license file.

Variable Name	Description		
<hostname>	The hostname of the server, e.g., my_server.		
<port >	The port number for the license manager service on the server, e.g., 1800. The port number is recommended and should be different from the port number for any other service on the machine.		
alterad "<path to daemon executable>" (3), (4)	PC	<MAX+PLUS II install>\alterad.exe or <Quartus II install>\win\alterad.exe(1) <Quartus II install>\bin\alterad.exe(2)	
	Solaris	<MAX+PLUS II install>/adm/alterad (5) or <Quartus II install>/solaris/alterad	
	HP-UX 10.2(7)	<MAX+PLUS II install>/adm/alterad (5)	
	HP-UX 11.0(7)	<MAX+PLUS II install>/adm/alterad (5)	
	Linux	<Quartus II install>/linux/alterad	

Table 3. Network license.dat File (Part 2 of 2)

Variable Name	Description		
mgcld "<path to daemon executable>" (3), (4), (6)	Path to the Mentor Graphics vendor daemon executable mgcld .	PC	<ModelSim-Altera install>\win32aloem\mgcld.exe
		Solaris	<ModelSim-Altera Install>/sunos5aloem/mgls/lib/mgcld
		HP-UX(7)	<ModelSim-Altera Install>/hp700aloem/mgls/lib/mgcld
		Linux	<ModelSim-Altera Install>/linuxaloem/mgls/lib/mgcld

Notes to Table 3:

- (1) Applicable only for the Quartus II software versions 6.0 and earlier.
- (2) Applicable only for the Quartus II software version 6.1 or later.
- (3) In some network system environments, the license server does not have an installation of the software tool(s) that provides the necessary vendor daemon (**alterad**, **mgcld**, or **armlmd**). In this case, copy the required daemon from another machine that does have an installation of the software. Find the file in the directory location specified. Save the file in a similarly named directory or any other location on the license server. Specify the daemon location on the license server in the license file.
- (4) If the path name has spaces in it, enclose the full path in quotation marks.
- (5) The MAX+PLUS II software installs FLEXlm in the **/adm** directory for either Solaris or HP-UX, depending on what the user specified during installation.
- (6) You may delete this line if you are not using a license for the ModelSim-Altera Subscription or Web Edition software.
- (7) The Quartus II software versions 5.0 and above does not support the HP-UX operating system. Refer to http://www.altera.com/support/software/os_support/oss-index.html for updated operating system support.

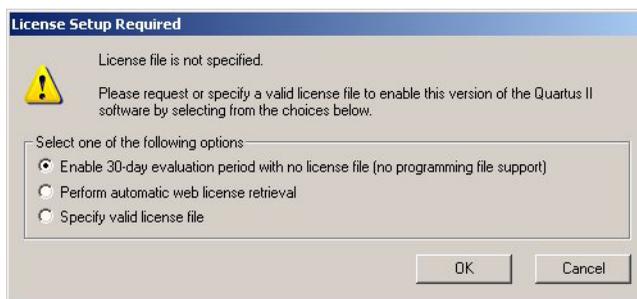
2. Once the modifications are complete, save the license file with a **.dat** extension (for example, **license.dat**) and check the following:
 - Ensure that the text editor does not append **.txt** or other extension to the filename, such as **license.dat.txt**. If in doubt, verify the filename at a command prompt.
 - Ensure that there is a carriage return (new line) at the end of the last **FEATURE** line.
 - Ensure that any **FEATURE** line that wraps to a second or third line contains a backslash (****) at the end to indicate that it continues.

Quartus II Software Grace Period

The Quartus II software includes a 30-day licensing grace period. When you upgrade the version of your Quartus II software, you are allowed up to 30 days to install the updated license file. You can use the grace period

by choosing **Enable 30-day evaluation period with no license file (no programming file support)** and checking **OK** in the License Setup Required dialog box when you start the software, as shown in [Figure 15](#).

Figure 15. 30-day Evaluation Period



After you install an updated license file (see [“Set Up the License” on page 16](#) for more information), the Quartus II software automatically ends the 30-day grace period.

Tips for Resolving Licensing Problems

This section provides tips to follow when troubleshooting Altera software licensing problems. For more information, use the Licensing Troubleshooter available in the support center at the Altera web site, or use the **Find Answers** utility on the Altera website.

LM_LICENSE_FILE Environment Variable

Multiple software tools on a system can use the `LM_LICENSE_FILE` environment variable to specify the license locations. Use a semicolon (;) on the PC and a colon (:) on UNIX or Linux systems to separate multiple locations in the variable. For example, full versions of the LeonardoSpectrum™ and ModelSim software use the same license variable. When modifying the variable to add the Altera license location, do not remove any existing license locations required for software from other vendors.

license.dat File

See the section “[License File Format](#)” on page 42 for details about each entry in the `license.dat` file. If you are experiencing problems with the license, verify that the following conditions are true:

- No features are expired.
- Any `FEATURE` line that wraps over to a second or third line contains a backslash (\) at the end of each line to indicate that the line continues.
- The text editor has not appended `.txt` or other extension to the filename, such as `license.dat.txt`. If in doubt, verify the filename at a command prompt.
- No “hidden” control characters exist in the license file.
 - If the license file was opened from any program that is not a plain text editor, hidden characters may be added to the license file. For example, Microsoft Excel, Word and WordPad may insert special control characters such as tab and carriage return. If this information is copied directly from the program and pasted into another text document, the license file can be corrupted by these characters that are not always visible in a plain text editor.
 - If the license file is edited in UNIX and then copied to a PC or vice versa, unwanted control characters may be inserted into the file, if the correct file conversion procedure was not followed.
- In network licenses, a carriage return (new line) is entered at the end of the last `FEATURE` line.

- In network licenses, all paths to license daemons are correct. If the path name has spaces in it, enclose the full path in quotation marks, not Microsoft “smart” quotation marks.

Quartus II Software

- If the **license.dat** file contains an error in the license server name, or if the path to the **license.dat** file is incorrect, the Quartus II user interface may run more slowly while the computer searches the network for the non-existent license. If this problem occurs, edit the license file to correct the error or specify the correct pathname for the **license.dat** file.
- You can click **Web License Update** in the **License Setup** page of the **Options** dialog box (Tools menu) to make the Quartus II software check the Altera website for an updated license file. If an updated license file exists, the Quartus II software automatically downloads and installs the correct license.



The automatic update feature is only enabled for FIXEDPC licenses and the Quartus II web edition software.



For further information on the Quartus II software, refer to the *Quartus II Installation and Licensing* manuals on the Altera web site.

MAX+PLUS II Software

- If the **license.dat** file contains an error in the license server name, or if the path to the **license.dat** file is incorrect, the computer may appear to freeze while it searches the network for the non-existent license. If this problem occurs, use **End Task** in the Windows Task Manager or the **kill** command in UNIX to close the MAX+PLUS II software. Or you can wait until the software opens, then edit the license file to correct the error or specify the correct pathname for the **license.dat** file.
- You can also edit the `LM_LICENSE_FILE` variable for MAX+PLUS II software in the **maxplus2.ini** file located in the MAX+PLUS II installation directory. This variable is the same as that shown in the software’s graphical user interface (GUI), but editing the **maxplus2.ini** text file does not require that the MAX+PLUS II software be open. This entry takes precedence over the `LM_LICENSE_FILE` environment variable. With the MAX+PLUS II application closed, open the **maxplus2.ini** file in a text editor and type or edit the following line:

```
LM_LICENSE_FILE=<path to file>\license.dat
```



For further information on the MAX+PLUS II software, refer to the *MAX+PLUS II Getting Started* manual on the Altera web site.

ModelSim-Altera Software

ModelSim-Altera Software refers to both ModelSim-Altera and ModelSim-Altera Web Edition unless otherwise stated. ModelSim-Altera software has similar license setup methods, which include:

- If you license the ModelSim-Altera Subscription Edition software with a floating license running on a Windows license server, you may receive an error message that the server cannot start mgcld because there may be another copy of mgcld running. To resolve this problem, create a directory called **c:\flexlm** on the license server, and place the license file in this directory.
- The ModelSim-Altera software requires that the `LM_LICENSE_FILE` variable is set correctly to the location of the license file. This software tool from Mentor Graphics can also be affected by a `MGLS_LICENSE_FILE` environment variable.
- For Mentor Graphics applications, including ModelSim-Altera, the locations of license files and servers can be specified in five places. If multiple values are set, only the first one found is used. The following search order is used:

1. `MGLS_LICENSE_FILE` set in the environment

2. `MGLS_LICENSE_FILE` set in the registry

3. `LM_LICENSE_FILE` set in the environment

4. `LM_LICENSE_FILE` set in the registry

5. **c:\flexlm\license.dat** (FLEXlm default license file location)

- If the Mentor Graphics license is installed on a PC, the `MGLS_LICENSE_FILE` takes precedence over `LM_LICENSE_FILE` settings. If both are set, only the `MGLS_LICENSE_FILE` should point to the license server for LeonardoSpectrum. Also, the ModelSim license server and LeonardoSpectrum license server should be on the same machine. If not, change the `MGLS_LICENSE_FILE` setting before running the application.
- If you can open the ModelSim-Altera software, but a licensing error occurs when trying to load or compile a design, the OEM software tool may be licensed for either VHDL or Verilog HDL, but not both. The Quartus II software issues an error message when trying to compile a Verilog HDL design if the license file is enabled for VHDL support only, or vice versa.

Special Licensing Procedures for the ModelSim-Altera Subscription Edition Software on a PC for Versions Prior to 5.5b

The ModelSim-Altera Subscription Edition software for versions earlier than 5.5b requires some additional steps for a PC license. These extra steps are not required for UNIX workstations or versions 5.5b and later because the `LM_LICENSE_FILE` setting is sufficient to license the ModelSim-Altera Subscription Edition software for the latest versions.

In the applicable software versions, the PCLS utility runs during the software installation and allows you to specify the license file for the ModelSim software. If the license file was not set up when the software was first installed, or the incorrect license location was specified, run the PCLS utility after installation to correctly specify the license file. To run the PCLS utility after software installation run the `setup.exe` file (double-click the filename in Windows Explorer) located in the `<ModelSim installation directory>\drivers\pcls` directory.

To use the PCLS utility to set up the license file, when the PCLS utility runs automatically during installation or manually after installation, perform the following steps:

1. In the Mentor Graphics licensing window, click **Next** to transfer the required files to the computer.
2. In the Configure Licensing window, click **Custom**.
3. In the Select configuration options window, turn on only **3. Define product license locations**. This option is turned on by default.
4. Click **Next**.
5. In one of the following forms, type in the location of the license file in the window that appears (See [“Quartus II Software Grace Period” on page 30](#)):

`<path to license file>\license.dat`

or

`<port>@<hostname>`

6. Click **Next**, then **Finish**.
7. Restart the PC.

Network License Port

When the network or system administrator modifies the floating network **license.dat** file, the port number entry is optional. Generally, using the **PORT** number is faster than **auto port**, which is used when no port number is specified. If a port is specified, ensure that it is a unique port number on that machine to avoid port conflicts with other applications. If the port appears in the **license.dat** file, specify the port in the `<port>@<hostname>` format or the license will not work.

Network License Debug Log

FLEXlm has an optional log file. If you encounter problems, go back to the license setup and specify a log file. Attempt to start the license service again and look in the log file for applicable error messages.



See the section “[Set up the Network Licenses](#)” on page 26 for information on enabling the debug log.

Network License Daemons

In some network system environments the license server computer does not have an installation of the software tools that provide the necessary vendor daemons (**alterad**, **mgcld**, or **armlmd**). In this case, copy the required daemon from another computer that does have an installation of the software. You can find the file in the directory location specified in [Table 3 on page 29](#). Save the file in a similarly named directory or any other location on the license server — the correct daemon location on the license server must be specified in the license file.

Be careful when transferring these files between computers. If you are using FTP to transfer the daemons from one computer to another, be sure to specify the “binary” transfer mode.

To determine the version number of a license daemon, run it at a command prompt with the **-v** option.

If you need to debug a problem with a floating license server, use the following command to report the status of a floating license on a license server, including whether the license is up and how many seats are available: `lmutil lmstat -a -c <port>@<host>` ←

Frequently Asked Questions

This section contains frequently asked questions relating to Altera software licensing.

Q: I just upgraded to the latest version of the Quartus II software. Now my Altera software says the license is not valid, but I know I have purchased an Altera software subscription. What should I do?

A: You can click **Web License Update** in the **License Setup** page of the **Options** dialog box (Tools menu) to make the Quartus II software check the Altera website for an updated license file. If an updated license file exists, the Quartus II software automatically downloads and installs the correct license.



The automatic update feature is only enabled for FIXEDPC licenses and the Quartus II Web Edition software.

Alternately, go to the Altera web site and request a new license file as described in the instructions in [“Information Required to Get a License File” on page 5](#). If your license file expires and you renew your subscription, you must get a new license file with the new expiration date.

Q: Can I use a Novell Netware server as the license server for the floating-node version of the Quartus II or MAX+PLUS II software with Windows 98 or Windows NT clients?

A: No. To run the floating-node license version of the Quartus II or MAX+PLUS II software, the license server must reside on either a Windows XP, Windows NT, Windows 2000, UNIX, or Linux server using the TCP/IP protocol.



The Quartus II software versions 6.0 and later do not support the Windows NT operating system.

Q: Can I combine my Altera network license with other software tool licenses so that I only need one license file?

A: Altera recommends using a separate license file for Altera software to avoid possible problems and confusion. You can start multiple services for **lmgrd** using different port numbers.

If desired, you can combine the Altera license with other licenses if the other software tools use the same version of **lmgrd**. You should always use the latest version of **lmgrd**, typically the version shipped with the latest version of the Quartus II or MAX+PLUS II software.

If the license server is on a UNIX system, use the **lmver** *<file name>* utility to check the versions of **lmgrd** and **alterad**. The default file names are **lmgrd** and **alterad**.

If the license server is on a PC system, the version of **lmgrd** is the same as the FLEXlm License Manager version installed with the Quartus II or MAX+PLUS II software. To verify the version of **lmgrd**, type `lmgrd -v` at a command prompt.

If you have an **lmgrd** version conflict between Altera software and another software tool, you must use a separate Altera **license.dat** file.

Q: Why is my NIC ID reported as all zeros (000000000000) when using the Netbios NET CONFIG command?

A: If Quartus II software is not installed, you can use the `ipconfig /all` command to obtain the physical address of the NIC. If you have installed Quartus II software, use the **lmutil lmhostid** command as described in [“Information Required to Get a License File” on page 5](#). If you are currently using the Netbios protocol for a LAN rather than TCP/IP, this command returns 000000000000 as the physical address of all NICs.



You must be running the TCP/IP protocol to use Altera floating licenses. This license does not work with any other protocols, such as IPX or Netbios.

Q: Why does the Quartus II software report my NIC ID as FFFF00000000 in Windows 2000?

A: This problem may occur if you are using the Quartus II software version 2.2 or earlier, a license file that is tied to your NIC ID, and you are not connected to a network.

To resolve this issue, set a variable in the Windows registry by performing the following steps:



Using the Registry Editor incorrectly can cause serious problems that may require you to reinstall your operating system. Use the Registry Editor at your own risk.

1. Back up the registry before editing it. If the system is running Windows NT or Windows 2000, also update the emergency repair disk (ERD).



The Quartus II software versions 6.0 and later do not support the Windows NT operating system.

2. Go to the command prompt or select **Run** from the Start menu and then type `regedit` to open the Registry Editor.
3. Browse to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\`
4. Right-click on the **Parameters** folder, select **New**, and then select the **DWORD Value**.
5. Set the **Name** field to **DisableDHCPMediaSense**.
6. Double-click on the **DisableDHCPMediaSense** field that you just created and set the **Value Data** field to 1.
7. Close the Registry Editor.

Q: Why do I get an NIC or host id of `FFFFFFFFFFFFFF` when I use the FLEXlm utilities?

A: You may see a NIC or host id of `FFFFFFFFFFFFFF` when running the FLEXlm utilities if the IPX/SPX driver is not loaded on your machine.

To install the IPX/SPX driver in systems running the Windows 98 operating system, perform the following steps:

1. Open the Control Panel.
2. Double-click on the **Network** icon and select the **Configuration** tab.
3. Click **Add**. A dialog box prompts you to confirm the configuration type.
4. Turn on the **Protocol** option, and confirm by clicking **Add**. The available protocols appear.
5. Turn on the **Microsoft** option under the manufacturer heading, and then turn on the **IPX/SPX-compatible Protocol** option. Accept the selection by clicking **OK**. If the necessary files are not on the hard drive, insert the Microsoft Windows 98 CD-ROM to install the driver.
6. When the driver is installed, close all the open dialog boxes and restart the computer.

To install the IPX/SPX driver in systems running the Windows NT operating system, perform the following steps:

1. Open the Control Panel.
2. Double-click on the **Network** icon and select the **Protocols** tab.
3. Click **Add**. The available protocols appear.
4. Turn on the **NWLink IPX/SPX Compatible Transport** protocol option and accept the selection by clicking **OK**. If the necessary files are not on the hard drive, insert the Microsoft Windows NT CD-ROM to install the driver.



The Quartus II software versions 6.0 and above do not support the Windows NT operating system.

5. After the driver is installed, close all the open dialog boxes and restart the computer.



You must have Administrator privileges to install the IPX/SPX protocol on a Windows NT machine.

Q: How can I check if the Quartus II software recognizes my software guard (T-guard), NIC ID, or hard disk serial number?

A: Select **License Setup** (Tools menu) and look in the **System info** section for the Network Interface Card (NIC) ID, **C:** drive serial number, and Software Guard ID.

Q: Why does the Quartus II System info section indicate “Not found” for the Software Guard ID?

A: For a software guard, the Quartus II software can indicate “Not found” if there are communication problems with the parallel port. Try rebooting your machine with the software guard attached to make sure that your PC recognizes the software guard.

Q: What is the difference between FLOATALL, FLOATPC, FLOATNET and FLOATLNK?

A: Currently, Altera offers the FLOATALL floating network license only, which provides the license to all operating systems supported by Altera software.

However, Altera continues to support existing FLOATPC, FLOATNET and FLOATLNK subscribers. No changes are needed to the operating systems supported by these licenses respectively.



Refer to “[Licensing Options](#)” on page 1 for information regarding the floating network licenses.

As a legacy user (FLOATPC/FLOATNET/FLOATLNX), when you add new seats, your license file will contain an INCREMENT line which signifies the same support as FLOATALL floating network license. If you only renew an existing license (FLOATPC/FLOATNET/FLOATLNX), your license support remains the same.

Messages

This section describes actions to take when you receive errors that may be related to licensing.

Error: “System clock has been set back” in the MAX+PLUS II software.

You receive this error message if the vendor daemon has detected one or more system files dated in the future compared to the system clock.

One possible solution is to locate the files that have an invalid date stamp and to open each file and then save it so that it has the correct date/time stamp. The vendor daemon primarily looks at system files in the following directories:

- C:\ (The root directory)
- The directory where your Microsoft Windows files are installed (for example, C:\WINNT)
- Your MAX+PLUS II software directory (for example C:\MAXPLUS2)

One way to find the affected files is to use the Windows **Find** utility. Search by **date** and specify files with a date later than today’s date. Some files may be hidden, so make sure that the **Find** utility is configured to display all files.

If your MAX+PLUS II software was installed with an incorrect system clock, you may need to perform the following steps:

1. Uninstall the MAX+PLUS II software.
2. Set the system clock to the current time and date.
3. Restart the PC.
4. Reinstall the MAX+PLUS II software in a different directory.

Message “Current license file support does not include ‘Graphic Editor’ application or feature in the MAX+PLUS II Software”.

Because all Altera licenses include support of the graphic editor, this error means that the MAX+PLUS II software cannot find your license file. Follow the directions in [“Licensing Options” on page 1](#) to obtain, set up, and specify your license.

License File Format

This section describes in detail the lines in the Altera license file and shows example Altera license files.

SERVER, VENDOR & USE_SERVER Lines

A floating node network license file starts with `SERVER`, `VENDOR`, and `USE_SERVER` lines to describe the license server. Fixed PC (software guard or no-cost network interface card (NIC)/hard-disk) license files do not contain these entries. These license lines for floating node network licenses are structured as shown in the following example:

```
SERVER <hostname> <8 or 12 character host or NIC ID> <port>
VENDOR <daemon> "<path>"
USE_SERVER
```

The `USE_SERVER` line designates the license file as a floating license.

[Table 4](#) lists the elements of the `SERVER` and `VENDOR` license lines.

You can use the FLEXlm licensing scheme to configure as many as three redundant network license servers. In this case, there are three `SERVER` lines, one for each license server machine. The first server specified is the master.

Typically a license file contains multiple `VENDOR` lines, one for each required license vendor daemon. Some other kinds of license files may use the `DAEMON` keyword instead of `VENDOR`.

Table 4. Elements of SERVER & VENDOR Lines for Floating Licenses (Part 1 of 2)

Element Name	Description
hostname	The host name of the server. This entry in the license.dat file must be edited.
8- or 12-character host or NIC ID	The PC NIC or UNIX Host ID of the server. The user supplies this ID to Altera when purchasing the license. Do not modify this ID in the <code>license.dat</code> file.
port	The port number. See “Network License Port” on page 36 .

Table 4. Elements of SERVER & VENDOR Lines for Floating Licenses (Part 2 of 2)

Element Name	Description
daemon	The vendor daemon name (do not edit). The Altera daemon for all versions of the Altera Quartus II and MAX+PLUS II software is called alterad . The Mentor Graphics daemon (used for the ModelSim-Altera software) is called mgcld . The ARM daemon for the ARM features of the ARM Development Suite (ADS) is called armlmd .
path	The path to the vendor daemon on the server. You must edit this entry. See “Network License Daemons” on page 36.

FEATURE & INCREMENT Lines

All Altera licenses contain FEATURE and possibly INCREMENT lines to describe the software features that are licensed by the **license.dat** file. The FEATURE line, shown in the example below, is structured as follows:

```
FEATURE <name> <daemon> <version> <expiration> <# of licenses>
<authcode> [<vendor_string>] [<hostid_lock>] [SIGN] [SUPERSEDE]
[<issuer>]
```



Certain features use the term INCREMENT; these lines are structured in the same way as FEATURE lines.

The backslash (\) character indicates that the FEATURE or INCREMENT line continues on the next line in the text file; any lines that wrap to a new line should end with the \ character. The last line of each FEATURE does not require the backslash. The elements in brackets [] are only present in some license features or increments. The following is an example of a FEATURE line, followed by an INCREMENT line.

```
FEATURE quartus alterad 2010.12 permanent uncounted \
13CZ72D78404 HOSTID=GUARD_ID=T000012345 SIGN="059E 8AE8 BAE9 \
8385 7087 D587 A894 8C27 0342 DB15 6D60 F43C 5F21 9ABB 30090916
88BF 96CE 6F22 552E 3690 C02D FF5F 705E 17AD 30C6 4EEF 29FA \
E1D2 5868

INCREMENT leospecls1vhd1 mgcld 2010.12 10-jan-2004 uncounted \
FC7DF29B5682D1F9B412 VENDOR_STRING=F5730874 HOSTID=GUARD_
ID=T00001234 SUPERSEDE ISSUER=ALTERAV2.0
```

Table 5 explains the different elements of the FEATURE and INCREMENT lines.

Table 5. Elements of the FEATURE & INCREMENT Code Lines	
Element Names	Description
name	The feature name.
daemon	The name of the vendor daemon that manages the feature. This name corresponds to a VENDOR line in Network/Server licenses.
version	Any version of software released up to and including this date is licensed. Software with a later version date does not function using this license file.
expiration	The date after which the software cannot be used. Applies to trial licenses. For Altera license subscriptions, the entry is "permanent".
# of licenses	The number of concurrent users that can run each feature. For some license types, the entry is "uncounted".
authcode	An authorization code generated by Altera.
vendor_string	Specified for certain third-party license features.
hostid_lock	Specified if a feature is node-locked to a software guard, NIC ID, or hard-disk serial number. Intellectual property (IP) MegaCore functions often contain node-locked feature lines in floating-node licenses. Software guard: HOSTID=GUARD_ID=<Software guard number> Network interface card (NIC): HOSTID=<NIC ID> Hard-disk serial number: HOSTID=DISK_SERIAL_NUM=<Hard-disk ID>
issuer	The date after which the software cannot be used. Applies to trial licenses. For Altera license subscriptions, the entry is "permanent".
sign	An authorization code generated by Altera.

Table 6 shows the available Altera license features.

Feature Name	Description
quartus	Quartus II software
quartus_lite	The downloadable no-cost Quartus II Web Edition software
maxplus2	MAX+PLUS II software
maxplus2web	The downloadable no-cost MAX+PLUS II BASELINE (and Student Edition) software
maxplus2vhdl	VHDL support in the MAX+PLUS II software (2)
maxplus2verilog	Verilog HDL support in the MAX+PLUS II software (2)
alteramtiwe	The downloadable no-cost ModelSim-Altera Web Edition software
alteramtivlog	ModelSim-Altera Verilog HDL Simulator (3)
alteramtivsim	ModelSim-Altera VHDL Simulator (3)
altera_mainwin	Quartus II software component for UNIX workstations(4)
altera_mainwin_lnx	Quartus II software component for Linux workstations(4)

Notes to Table 6:

- (1) This table does not include license features for any intellectual property (IP), development kits, or special license codes used for the Quartus II Limited Edition software.
- (2) VHDL and Verilog HDL support is included only with certain MAX+PLUS II licenses.
- (3) Each Altera fixed PC license subscription or no-cost license includes either VHDL or Verilog HDL, but not both. For floating license subscriptions, you may have any quantity and ratio of VHDL and/or Verilog HDL support licenses that does not exceed the total number of licenses purchased.
- (4) This license feature is not required for the Quartus II software version 6.1 or later.

Example license.dat Files

This section includes the text from several example **license.dat** files. License files vary, depending on the type of licenses and the software that is enabled.



These examples should only be used for references. They can be used only on the specified system.

Example of Fixed PC Software Guard License

The following example shows a **license.dat** file that contains a license for the Quartus II and MAX+PLUS II software, as well as the ModelSim-Altera simulation tool for Verilog HDL designs. This license file works on a PC that has the software guard number T000012345 is attached to its parallel port.

```

FEATURE maxplus2 alterad 2010.12 permanent uncounted \
  4829CFB30DEC HOSTID=GUARD_ID=T000012345 SIGN="0344 7F0B \
  9CF61C6C B5F3 329F A899 D921 135A B794 AB2B 2EA9 A1F4 \
  4CC9 680D 1A39 8E4B 8D43 B029 2986 7D42 6FED BEC7 978A \
  86FF343C 9C32 B3A3 41CC 36D6"

FEATURE quartus alterad 2010.12 permanent \uncounted \
  13CA72D78404 HOSTID=GUARD_ID=T000012345 SIGN="059E 8AE8 \
  BAT9 8385 7087 D587 A814 8C27 03B2 DB15 6D60 F47C 5F21 \
  9FAB 3009 0916 88BF 96CE 6F22 552E 3680 C02D FF5F 705E \
  17AD 30C6 4EEF 29FA E1D2 5868"

FEATURE maxplus2_verilog alterad 2010.12 permanent uncounted \
  02B2E4EA9120 HOSTID=GUARD_ID=T000012345 SIGN="103A FFFF \
  5E88 2800 50BF A482 B7B6 53DB 720F 481E 54B0 7F40 3F18 \
  3B73 62AA 0DB4 509A BAF7 FA34 5311 0EF2 0640 4DEC 19E9 \
  6A22 5B7E 9CA5 902D 4EB4 AB8D"

FEATURE maxplus2_vhdl alterad 2010.12 permanent uncounted \
  1D2254DCA885 HOSTID=GUARD_ID=T000012345 SIGN="0FE9 20AF \
  5084 EDAC F2FF B4AA 9B64 0E6D BBAD 5CD9 B298 A1A3 4F9A \
  9B5F 060A 1F02 38D4 D556 2A5F 976A EA3C 64BD 59FA F438 \
  206E FF3E 4C08 EE4C 5DC6 7AF6"

INCREMENT alteramtivlog mgcld 2010.12 11-jan-2004 uncounted \
  DC9DF27B2139C33D34A6 VENDOR_STRING=ADOC0611 \
  HOSTID=GUARD_ID=T000012345 SUPERSEDE ISSUER=Alterav2.0

INCREMENT alteramtivsim mgcld 2010.12 11-jan-2004 uncounted \
  CCDD223B5A03E5D367A8 VENDOR_STRING=DF4DC208
  HOSTID=GUARD_ID=T000012345 SUPERSEDE ISSUER=Alterav2.0

```

Example of Floating Node Network License for a PC Server

The following example shows a **license.dat** file that contains a license for the Quartus II and MAX+PLUS II software, as well as the ModelSim-Altera simulation tool and the ARM Development Suite. This license specifies that two users can run the software simultaneously.

This license file works when the PC with NIC ID 00B0D0ABCCBA is set up as a license server and the users point to the license location. The lines before the **USE_SERVER** line reflect the license setup for the software used in this example.

```

SERVER my_server 00B0D0ABCCBA 1800
VENDOR alterad D:\quartus\bin\alterad.exe
VENDOR mgcld D:\exemplar\leospec\license\win32\mgcld.exe
USE_SERVER

FEATURE maxplus2 alterad 2002.11 17-nov-2002 2 BEA74BD15BB0 \
  SIGN="03FC DC78 1118 C0C1 B593 5E1E 0832 11D8 7428 F4F3 230C \
  C3AF AFC0 9AE4 7E9B 070F A19A D4CD 44D0 299B D465 5862 6CEC \
  8BB3 9D93 B824 4BE2 FB99 D705 8DDB"

```

```

FEATURE quartus alterad 2002.11 17-nov-2002 2 A11BC4A526B2 \
SIGN="15A6 HF26C F1A4 A440 F429 3E8F AC6D 0FFF 78FC F445 \
FD28 942B BC11H 010B 69B1 1853 941D 175F 7CAC 4A06 BD64 \
E7DA AF76 3E67 8719 E8E6 0BBD A73B DCOA FB6D"

FEATURE maxplus2verilog alterad 2002.11 17-nov-2002 2 \
08614200CEAA H SIGN="1DFC 7B75 B194 81D2 928C ED60 7A7A \
B34D E3AD 3F1E 4732 2DC9 4F94 5064 D896 1960 A3A3 1925 \
283F 89B5 0912 4664 0843 26C9 6D7A 33D2 708D C486 A3A3 E017"

FEATURE maxplus2vhdl alterad 2002.11 17-nov-2002 2 6B9C4626696C \
SIGN="08F4 D975 CA4E 5746 C624 03ED B78C FBD9 FA0B C849 98AC \
A1DC DE61 7159 8BF2 04F2 F426 1E00 C88D 7261 FD83 127F CCD1 \
A3FE 4DFE 4EE6 B29E A542 F04E 2D86"

INCREMENT alteramtivlog mgcld 2002.11 17-nov-2002 1 \
CC2D93913206DA20BE61 VENDOR_STRING=A93AB626 \
SUPERSEDE ISSUER=Alterav2.0

FEATURE altera_mainwin alterad 2002.11 17-nov-2002 1 \
AF891F2969BC SIGN="19E0 545D 4FAC 830E EA16 EB3A FCAD DF79 \
0761 869D F861 6313 C630 77AA 3AD6 11F0 69FD FCBF E8D8 \
2088 D19A 5682 27D3 6A80 4CB9 EAB4 CE2B 78A3 C6DB 00FE"

FEATURE altera_mainwin_lnx alterad 2002.11 17-nov-2002 1 \
83900F81977F SIGN="1A19 14F4 11F1 7FED C73E 78BF CC89 \
09D7 B469 AF59 B85A ABAB 854A 35E5 115E 1F6E 35BF 7B9C \
BB8B A4AF 8D61 46B0 1902 8B18 4C3D 581D 064C 4146 0843 BBA8"

```

Example of Quartus II Web Edition License

The following example shows a **license.dat** file that contains a license for the Quartus II Web Edition software. It works on the PC with NIC ID 00b0d0abccba.

```

FEATURE quartus_lite alterad 2003.03 15-mar-2003 uncounted \
860F4C77B168 HOSTID=00b0d0abccba SIGN="05AD 617C 99A4 C946 \
858F 6F57 822A F677 0E8D FE69 84D5 3E24 4CC8 68C4 F819 1809 \
1A27 604B CB26 5E2D D5F0 C0AF CEDA 4B34 D438 C0A4 E767 8274 \
B64A A791"

```

Example of Quartus II Web Edition with ModelSim-Altera Web Edition License

```

INCREMENT alteramtivlog mgcld 2027.12 30-jun-2007 uncounted \
7D54953E093C1FB9E2E1 VENDOR_STRING=70A341C5 \
HOSTID=GUARD_ID=T100000008 SUPERSEDE ISSUER=Alterav3.3

INCREMENT alteramtivsim mgcld 2027.12 30-jun-2007 uncounted \
2DA4456E27B2FC49FDF9 VENDOR_STRING=C6F6FA63 \
HOSTID=GUARD_ID=T100000008 SUPERSEDE ISSUER=Alterav3.3

```

```
INCREMENT alteramtiwe mgcld 2027.12 30-jun-2007 uncounted \  
0D44E55E614282A9F102 VENDOR_STRING=264E905C \  
HOSTID=GUARD_ID=T100000008 SUPERSEDE ISSUER=Alterav3.3
```

Example of Hard-Disk-Based MAX+PLUS II BASELINE License

The following example shows a **license.dat** file that contains a license for the MAX+PLUS II BASELINE software. It works on the PC with hard-disk serial number 07d00123. The leading zero does not appear in the license file but is required when requesting a license.

```
FEATURE maxplus2web alterad 2002.11 17-nov-2002 uncounted \  
368EC33D9680 HOSTID=DISK_SERIAL_NUM=7d00123 SIGN="01A0 \  
D1B3 F570 2FA5 2EF1 7EA1 B4B1 3738 5BDF 8106 2933 5021 \  
8CA3 4B07 02E1 0E24 85A8 97E7 538B EC86 660B 3813 A0CF \  
8335 69F4 0657 529B 4CAE 48E7 7D53"
```

How to Change Your License Information

If you need to transfer your license to another computer, Altera can update your license information for the new computer. You can request this by filing a service request on Altera's mySupport web site, **www.altera.com/mysupport**. You can also file a service request to transfer your software license to a coworker.

Conclusion

This document describes the techniques and procedures for obtaining and setting up licenses for Altera-provided software. If you are unable to access the software after reading this document, refer to the License Troubleshooter or the Find Answers utility on the Altera web site at **www.altera.com** for more information.