



Quartus® II Installation & Licensing for Windows

Version 8.1



QUARTUS® II

Quartus® II

Installation & Licensing for Windows

Version 8.1



Altera Corporation
101 Innovation Drive
San Jose, CA 95134
(408) 544-7000
www.altera.com



QUARTUS® II

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Preface


The *Quartus® II Installation & Licensing for Windows* manual provides comprehensive information for installing and licensing the Quartus II and related software, and includes information about other related documentation and technical support.



Documentation Conventions

The *Quartus II Installation & Licensing for Windows* manual uses the following conventions to make it easy for you to find and interpret information.

Typographic Conventions

Quartus II software documentation uses the typographic conventions shown in the following table:

Visual Cue	Meaning
Bold Initial Capitals	Command names; dialog box, page, and tab titles; and button names are shown in bold, with initial capital letters. For example: Find Text command, Save As dialog box, and Start button.
bold	Directory, project, disk drive, file, software utility, and software executable names; software utility names; and options in dialog boxes are shown in bold. For example: quartus directory, d: drive, and license.dat file.
Initial Capitals	Keyboard keys, user-editable application window fields, windows, views, and menu names are shown with initial capital letters. For example: Delete key and the Options menu.
“Subheading Title”	Subheadings within a manual section are enclosed in quotation marks. In manuals, titles of Help topics are also shown in quotation marks. For example: For more information, see “Exporting and Importing Version-Compatible Database Files” in Quartus II Help.
<i>Italic Initial Capitals</i>	Help categories, manual titles, section titles in manuals, and application note and brief names are shown in italics with initial capital letters. For example: <i>Introduction to the Quartus II Software</i> manual.
<i>italics</i>	Variables are enclosed in angle brackets (<>) and shown in italics. For example: < <i>file name</i> > and < <i>DVD-ROM drive</i> >.
Courier font	Anything that must be typed exactly as it appears is shown in Courier. For example: <code>\quartus\bin\lmutil lmhostid</code> .
↵	Enter or return key.
■	Bullets are used in a list of items when the sequence of the items is not important.
✓	The checkmark indicates a procedure that is one step only.
	The hand points to information that requires special attention.

Visual Cue	Meaning
	The feet show you where to go for more information on a particular topic.
	The exclamation mark points to information or action that you take that can cause harm to your computer or cause you to lose data.

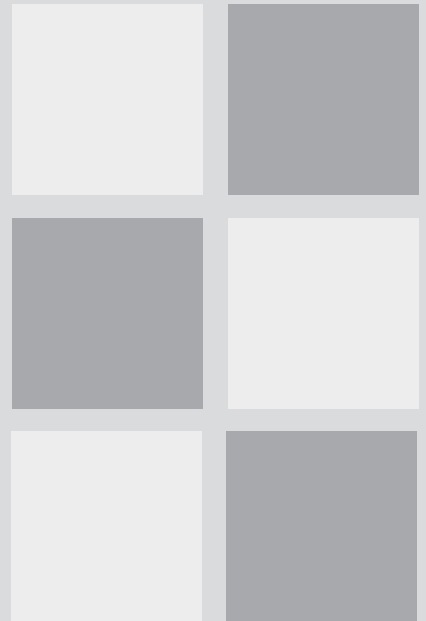
Terminology

The following table shows terminology that is used throughout the *Quartus II Installation & Licensing for Windows* manual:

Term	Meaning
click	Indicates a quick press and release of the left mouse button. It also indicates that you need to use a mouse or key combination to start an action.
double-click	Indicates two clicks in rapid succession.
select	Indicates that you need to highlight text and/or objects or an option in a dialog box with a key combination or the mouse. A selection does not start an action. For example: Select Chain Description File , and then click OK .
point	Indicates that you need to position the mouse pointer, without clicking, at an appropriate location on the screen, such as a menu or submenu. For example: On the Help menu, point to Alter a on the Web , and then click Quartus II Service Request .
turn on/turn off	Indicates that you must click a check box to turn a function on or off.

Chapter One

Installing the Quartus II Software



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1

Introduction

This chapter describes the requirements and procedures for installing the Quartus II software and related software, which is available from the Download Center of the Altera website, and the Altera Complete Design Suite for Windows, which is available by request on a DVD-ROM.

You can download the following software from the Download Center of the Altera website:

- Quartus II Subscription Edition Software v8.1 (includes IP Library) for Windows XP and Windows Vista (32-bit and 64-bit)
- Quartus II Web Edition Software v8.1 (includes IP Library) for Windows XP and Windows Vista (32-bit and 64-bit)
- ModelSim-Altera Edition Software v6.3g_p1 for Quartus II v8.1 for Windows XP
- ModelSim-Altera Web Edition Software v6.3g_p1 for Quartus II v8.1 for Windows XP
- Nios® II Embedded Design Suite for Windows XP and Windows Vista (32-bit)
- Quartus II Programmer v8.1 for Windows XP and Windows Vista (32-bit and 64-bit)
- DSP Builder v8.1 for Windows XP

The Altera Complete Design Suite for Windows Version 8.1 DVD-ROM includes all of the software in the preceding list.

Quartus II Software System Requirements

Your system must meet the following minimum requirements:

Hardware

- Intel Pentium III PC running at 866 MHz or faster (faster systems give better software performance) with 256 MB system memory.
- Adequate disk space, as described in the **readme.txt** file, which is located in the top-level directory of the Altera Complete Design Suite DVD-ROM. After installation, the **readme.txt** file is available from the Quartus II Help menu and in the Quartus II system directory.

- Microsoft Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit), must be installed.
 - PCs running Windows XP are capable of running the 32-bit version of the Quartus II software with access to virtual memory of up to 2 GB.
 - PCs running Windows XP Professional x64 Edition or Windows Vista are capable of running the 32-bit version of the Quartus II software with access to virtual memory of up to 4 GB and the 64-bit version of the Quartus II software with access to virtual memory of more than 4 GB.
- Microsoft Windows-compatible SVGA monitor.
- DVD-ROM drive (DVD-ROM installation only).

Cables and Ports

- Parallel port for connecting a ByteBlaster™ II or ByteBlasterMV™ parallel port download cable or Parallel Port Software Guard (Windows XP only)



Using a ByteBlaster cable with Windows Vista 32-bit

If you want to use a ByteBlaster cable on a system running Windows Vista 32-bit, you must first install the ByteBlaster cable driver manually.

- Serial port for connecting a MasterBlaster™ communications cable
- USB port for connecting a USB-Blaster™ download cable, a MasterBlaster communications cable, the Altera Programming Unit (APU), or a USB Software Guard (Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit) only))
- 10/100 Mb Ethernet connection for connecting a EthernetBlaster download cable

Software

- Microsoft .NET Framework version 2.0 redistributable package (x64) is required if you want to run the 64-bit version of the Quartus II software. You can download the Microsoft .NET Framework version 2.0 redistributable package (x64) at the Microsoft website at **www.microsoft.com**.
- A web browser with an Internet connection is required for using Quartus II software Internet resources. If you are using the Firefox browser, version 2.0 or later is required; if you are using Microsoft Internet Explorer browser, version 5.0 or later is required.



For Information About	Refer To
Specific disk space and memory requirements	The readme.txt file, which is located in the top-level directory of the Altera Complete Design Suite DVD-ROM. After installation, the readme.txt file is available from the Quartus II Help menu and in the Quartus II system directory
Updated information about system requirements and the most current version of this manual	<i>Quartus II Installation & Licensing for Windows</i> manual on the Altera website
Latest information on new features, EDA interface support, and known issues and workarounds for the Quartus II software	<i>Quartus II Software Release Notes</i> document on the Altera website
Latest information about device support for the Quartus II software	<i>Quartus II Device Support Release Notes</i> document on the Altera website
Quartus II software features and how they work with your design flow	<i>Introduction to Quartus II Software</i> manual on the Altera website and the Quartus II Interactive Tutorial. After installation, the Quartus II Interactive Tutorial is available from the Quartus II Help menu and in the Quartus II system directory
Altera programming hardware	<i>ByteBlaster II Download Cable User Guide</i> , <i>ByteBlasterMV Download Cable User Guide</i> , <i>EthernetBlaster Communications Cable User Guide</i> , <i>MasterBlaster Serial/USB Communications Cable User Guide</i> , and <i>USB-Blaster Download Cable User Guide</i> on the Altera website

Uninstalling or Modifying Previously Installed Versions of Altera Software

You can uninstall a previous version of the Quartus, Quartus II, or related software before installing the current version of the Quartus II software or related software. You can also modify versions of the Quartus II software or related software after installation.

Uninstalling Previously Installed Versions of Altera Software

To uninstall a previous version of the Quartus or Quartus II software, or related software, versions 6.0 or earlier:

- ✓ On the Windows Start menu, point to **All Programs**, point to **Altera**, and then click *<software name> <version number> Uninstall, Repair or Modify*.

To uninstall a previous version of the Quartus II software, or related software, versions 6.1 or later:

1. On the Windows Start menu, point to **All Programs**, point to **Altera**, point to *<software name> <version number>*, and then click *<software name> <version number> Uninstall, Repair or Modify*. The Quartus II Setup Maintenance program opens.
2. Select **Remove** to remove all installed features.
3. Click **Next**.

To uninstall a previous version of the Quartus II software, or related software, that was installed with the Altera Complete Design Suite DVD-ROM:

- ✓ On the Windows Start menu, point to **All Programs**, point to **Altera**, and then click **Uninstall Altera Design Suite** *<version number name>*.

Modifying Versions of the Quartus II Software or Related Software

You can modify currently installed versions of the Quartus II software, or related software, to add or remove software components such as specific device family support, SOPC Builder support, third-party EDA tool support, or tutorial files.

To modify an installed version of the Quartus II software, or related software, version 6.1 or later:

1. On the Windows Start menu, point to **All Programs**, point to **Altera**, point to *<software name> <version number>*, and then click *<software name> <version number> Uninstall, Repair or Modify*. The Quartus II Setup Maintenance program opens.
2. Select **Modify** to select new program features to add, or to select currently installed features to remove.
3. Click **Next**.
4. Select the features you want to install or deselect the features you want to uninstall.
5. Click **Next**.

Altera.com Download Center

You can download the following items from the Download Center of the Altera website at www.altera.com/download:

- Quartus II Web Edition Software
- Quartus II Subscription Edition Software
- Nios II Embedded Design Suite
- Altera Edition third-party software
- License daemons
- Intellectual property (IP) and tools
- Altera University Program software
- Altera Legacy Design software
- Programming software
- Altera board layout and test files

This section describes custom installation options for the Quartus II software and related software listed in [“Introduction” on page 2](#).

Quartus II Software

The Quartus II software uses a setup program that automatically starts once you begin the installation process. The Setup program allows you to select the software components that you want to install and automatically guides you through the installation process.

You can choose to perform a complete or custom installation. A complete installation installs the Quartus II software with all program features and default settings. A custom installation allows you to select specific program features.

If you select a custom installation, you can choose to install any combination of the following items:

- Quartus II software
- Quartus II software 64-bit support (Quartus II software Subscription Edition only)
- SOPC Builder support
- IP Library
- Device support
- Third-party EDA tool interfaces
- Quartus II Interactive Tutorial files

You must select **Quartus II software 64-bit components** during installation if you want to run the 64-bit version of the Quartus II software.

Nios II Embedded Design Suite

The Nios II Embedded Design Suite uses a setup program that automatically starts once you start the installation process. The setup program allows you to select the software components that you want to install and automatically guides you through the installation process.

You can choose to perform a complete or custom installation. A complete installation installs the Nios II Embedded Design Suite with all program features and default settings. A custom installation allows you to select specific program features.

If you select a custom installation, you can choose to install any combination of the following items:

- Nios II software development tools (includes SOPC Builder components)
- Verilog design examples
- VHDL design examples

ModelSim-Altera Software

The ModelSim-Altera software uses a setup program that automatically starts once you start the installation process. The setup program automatically guides you through the installation process.

Installing Downloaded Altera Software

You should be aware of the following information before you install downloaded Quartus II software and related software:

- You must have system administration (Administrator) privileges.

- You must have downloaded Altera software to perform the installation.
- By default, the Setup program installs Altera software in the `<drive>:\altera\<version number>` system directory, where `<version number>` is the number of the Quartus II software version; for example, the default directory for the Quartus II software version 8.1 is `<drive>:\altera\81`.
- You can install multiple copies of the same version of Altera software on the same PC. Subsequent installations of the software can have a user-defined name. By default, the Setup program uses the format “**Quartus II <version number> (Copy <number>)**” for multiple copies of the Quartus II software, where `<number>` is the number of Quartus II software installations that are installed on the PC; for example, the default name for a second copy of the Quartus II software version 8.1 is **Quartus II 8.1 (Copy 2)**. When you install a Quartus II service pack on a PC that has multiple copies of the same version of the Quartus II software installed, you can choose the copy of the Quartus II software that receives the service pack.
- If you want to preserve project compilation databases from an earlier version of the Quartus II software before installing a newer version, Altera recommends that you open the design in the earlier version of the software and export a version-compatible database for the design by clicking **Export Database** on the Project menu. After you have installed a newer version of the Quartus II software, you can import the database in the new version by clicking **Import Database** on the Project menu. For more information about importing and exporting version-compatible databases, refer to the *Managing Quartus II Projects* chapter in volume 2 of the *Quartus II Handbook*. Version-compatible database files are available in Quartus II software version 4.1 and later.

Follow these steps to run the Setup program on your PC:

1. Download the software listed in “[Introduction](#)” on page 2 from the Download Center of the Altera website.
2. Double-click the Altera software installation application to launch the Setup program.

Altera Complete Design Suite

The Altera Complete Design Suite for Windows includes an integrated software installation solution that allows you to install the Quartus II software and related software from one DVD-ROM, which is available by request.

The Altera Complete Design Suite for Windows uses a setup program that automatically starts once you start the installation process. The setup program allows you to select the software you want to install and guides you through the installation process.

You can choose to perform a recommended or custom installation. A recommended installation automatically installs the software that you specified in the beginning of the setup program using all program features and default settings. A custom installation allows you to customize options for each software installation.

Choosing a custom installation also allows you to select either a complete or custom installation for each software application. Custom installation options for each software are described in “[Altera.com Download Center](#)” on page 7.

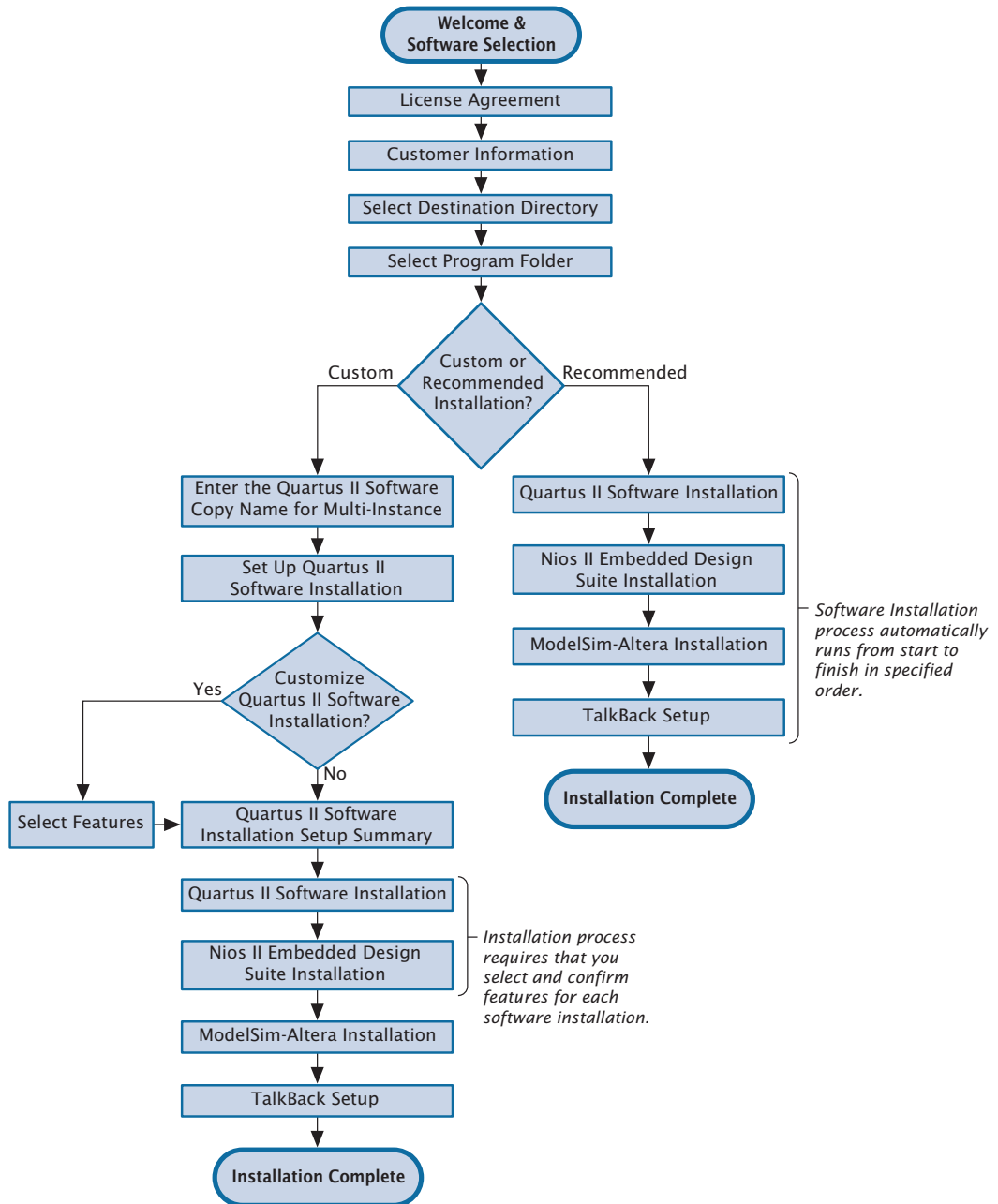


Accessing Educational and Reference Material

You can access educational and reference materials, such as software video demos and reference designs from the Altera Complete Design Suite for Windows.

The installation flow for the Altera Complete Design Suite for Windows is shown in [Figure 1](#).

Figure 1. Altera Complete Design Suite Installation Flow



Installing the Altera Complete Design Suite DVD-ROM

You should be aware of the preinstallation information described in “Installing Downloaded Altera Software” on page 8 before you install the software on the Altera Complete Design Suite for Windows version 8.1 DVD-ROM.

Follow these steps to run the Setup program on your PC:

1. Insert the Altera Complete Design Suite for Windows version 8.1 DVD-ROM into your DVD-ROM drive. The Altera Complete Design Suite v8.1 installation window appears automatically, offering several options, as shown in Figure 2.

If the Altera Complete Design Suite for Windows version 8.1 DVD-ROM is in the drive, and the Setup program is not already running, start the Setup program manually by performing the following steps:

- a. On the Windows Start menu, click **Run**.
- b. In the **Run** dialog box, type `<DVD-ROM drive>:\install`.
- c. Click **OK**.

Figure 2. Altera Complete Design Suite Installation Window



2. Click **Install subscription package** to install the Quartus II Subscription Edition software and related software or **Install free package** to install the Quartus II Web Edition software and related software. Installing the subscription package requires a paid subscription license.



Quartus II Web Edition Version 8.0 and earlier

The Quartus II Web Edition version 8.0 and earlier requires a license.

You can click **Help me choose** to access the **Help me choose** page, an HTML file located on the Altera Complete Design Suite for Windows version 8.1 DVD-ROM, which compares the features of the Quartus II Subscription Edition software with the Quartus II Web Edition software.

3. If you want to install DSP Builder, click **Install DSP Builder**. The setup program starts automatically and guides you through the installation process.
4. If you want to install the Stand-Alone Programmer and the Stand-Alone SignalTap® II Logic Analyzer, click **Install Quartus II software Stand-Alone Programmer**. The setup program starts automatically and guides you through the installation process.
5. If you will run the Quartus II software with a network (multiuser) license, and not a node-locked (single-user) license, click **Install FLEXlm Server** to install the FLEXlm License Manager software on the license server only. The setup program installs the FLEXlm License Manager version 9.5 on the user workstation.

The Quartus II software supports network license servers on PCs running Windows XP, Windows XP Professional x64 Edition or Windows Vista (32-bit and 64-bit), and on PCs running Linux (Red Hat Enterprise Linux 4.0 or 5.0 or SUSE Linux Enterprise Server 9). You do not have to install the FLEXlm License Manager software on network client PCs or on PCs running the Quartus II software using a node-locked (single-user) license. Refer to [“Upgrading or Setting Up a License Manager Server” on page 25](#) for more information about setting up the license manager server.

6. If you want, you can view education and reference materials by clicking the **View** button next to one of the following options under **View educational and reference materials** in the Altera Complete Design Suite Install Window:
 - **Literature /install manuals**— Accesses the **Literature** page, where you can access Quartus II software and related software reference literature located on the Altera Complete Design Suite for Windows version 8.1 DVD-ROM.
 - **Quartus II and Nios II video demos (Internet access required)** — Accesses the Demonstration Center of the Altera website, where you can access Quartus II software and Nios II Embedded Processors demonstrations.
 - **Reference designs (Internet access required)** — Accesses the **Reference Designs** page of the Altera website.
7. Select the software that you want to install under **Select the software you want to install**.

8. Select **Recommended install** or **Custom install** under **Select install type**. If you click **Custom install**, you can specify which software features you want to install. If you click **Recommended install**, all of the software that you selected under **Select the software you want to install** will automatically be installed with default settings.
9. You can turn on the TalkBack feature by turning on **Turn on the Quartus II software TalkBack feature** in the **TalkBack Options** dialog box, which appears at the end of the Altera Complete Design Suite installation process if the option is not already turned on. You can also turn the TalkBack feature on or off, once you have installed the Quartus II software, in the **TalkBack Options** dialog box from the **Internet Connectivity** page in the **Options** dialog box.

The TalkBack feature in the Quartus II software enables Altera to receive limited compilation design information, but not design logic, which helps Altera to understand how customers use the Quartus II software and devices, so that Altera can focus on improving features most important to users.

Installing the TCP/IP Protocol

If you do not already have the TCP/IP protocol installed on the PCs in your network, you must add it to your networking configuration.



For Information About

Installing the TCP/IP protocol on PCs running Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit)

Refer To

Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit) documentation or to the Microsoft website at **www.microsoft.com**

Setting up the Quartus II Software with a JTAG Server on a Network Drive

If you install the Quartus II software on a network drive and have a JTAG server, you must set the Quartus II software to allow the JTAG server to run JTAG services.

To set the Quartus II software to enable the JTAG server to run JTAG services:

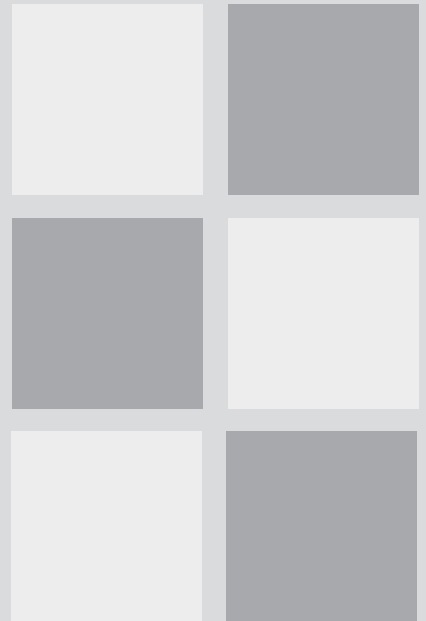
1. On Windows Start menu, click **Run**.
2. In the **Run** dialog box, type `<drive>:\<Quartus II software system directory path>\:jtagserver --install <username> <password>`. Where the `<username>` `<password>` are the username and password of the JTAG server.

or

Install the Quartus II software on a local drive.

Chapter Two

Licensing the Quartus II Software



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2

Introduction

This chapter describes how to license the Quartus II software and related software.



Using Automatic Web License Retrieval

If you are using a node-locked (FIXEDPC) license and are a new user or are upgrading to a new version of the Quartus II software, you can perform an automatic web license retrieval at startup, which allows you to upgrade your license file automatically. For more information on this option, go to [“Starting the Quartus II Software” on page 34](#).

To set up your license for the Quartus II software, you must perform the following steps, which are described in more detail in this chapter:

1. Obtain a license file. The Quartus II software requires a valid, unexpired **license.dat** license file for each server that supports a network (multiuser) license or for each node-locked (single-user) license. This same license file can also enable the additional Altera simulation tools included with Altera software subscriptions, as well as the MAX+PLUS II software.



Quartus II Web Edition Software Version 8.1 and later

The Quartus II Web Edition software version 8.1 and later does not require a license.



Using a Software Guard

You can use a software guard only if you are licensing a node-locked (FIXEDPC) version 7.2 or earlier of the Quartus II software.

2. If you are using a network license (FLOATALL or ADD-FLOATALL) or a node-locked (FIXEDPC) license with a Network Interface Card (NIC) number, modify the license file.
3. If you are using a network license, set up and configure the FLEXlm license manager server.
4. Start the Quartus II software.

5. Specify the location of the license file.
6. Register for an Altera.com account. (Optional)

Obtaining a License File

When you start the Quartus II software, if the software cannot detect a valid license file, you are asked whether you want to run in evaluation mode for 30 days, perform an automatic license retrieval from the Altera website, or specify the correct location of a valid license file.



Quartus II Web Edition Version 8.1 and later

The Quartus II Web Edition version 8.1 and later does not require a license file.

You can also obtain a license file, **license.dat**, from the Licensing section of the Altera website at www.altera.com/licensing if you have the following information:

- Your Altera ID, which is a six-digit number that is provided when you purchase the Quartus II software. If you requested the Altera Complete Design Suite for Windows Version 8.1 DVD-ROM, you can find this number on the packing list that is shipped with the software. You can also obtain your Altera ID from the mySupport website at www.altera.com/mysupport.
- Your Quartus II software serial number, which is a 15-character alphanumeric number beginning with the letter A. Your Quartus II software serial number is provided when you purchase the Quartus II software.



Licensing Your Copy of the Quartus II Software for the First Time

If you are using a node-locked (single-user)(FIXED PC) version of the Quartus II software for the first time, you must use your Quartus II software serial number to obtain a license file.

- Your Network Interface Card (NIC) number, if you have a node-locked (single-user) (FIXEDPC) or network (multiuser) (FLOATALL or ADD-FLOATALL) license version of the Quartus II software.

Your NIC number is a 12-digit hexadecimal number identifying the Windows workstation that serves Quartus II or MAX+PLUS II licenses.

- ✓ To find your Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit) server NIC number by using FLEXlm utilities, type the following command at a command prompt:

```
<drive>:<Quartus II system directory>\bin\lmutil lmhostid ←
```



Saving Previous license.dat Files

Altera recommends that you save any previous **license.dat** file in a temporary directory, in case you need to refer to it later.

- Your license server host ID, if you have a network (multiuser) (FLOATALL or ADD-FLOATALL) license version of the Quartus II software.

Your server host ID is an 8- or 12-digit hexadecimal number. This number identifies the Windows or Linux workstation that serves Quartus II or MAX+PLUS II licenses.

- If you are licensing version 7.2 or earlier of the Quartus II software, your software guard ID number, if you have a node-locked (single-user) (FIXEDPC) version of the Quartus II software. This number nine-character alphanumeric number beginning with the letter T.

To obtain a license file, follow these steps:

1. Start the Quartus II software as described in the “[Starting the Quartus II Software](#)” on page 34.
2. Select **Perform automatic web license retrieval** to request a valid license file automatically from the Altera website. If you are using a node-locked (FIXEDPC) license and the Quartus II software is able to retrieve a license file successfully from the website, you can skip the remaining steps of this procedure. If you are using a network (multiuser) license, or if the Quartus II software is not able to retrieve a license file, you are guided through the licensing procedure.

or

To request a license file at a later time, go to the Licensing section of the Altera website at www.altera.com/licensing.

3. If you are using a node-locked (single-user) license, type your Quartus II software serial number, NIC number, or software guard ID number into the **Get Subscription Licenses** box on the **Get My Altera License** page of the Licensing section of the Altera website.



Obtaining a Node-Locked (Single-User) License

If you are using a node-locked (single-user)(FIXED PC) version of the Quartus II software for the first time, you must use your Quartus II software serial number to obtain a license file.

Additionally, if you use the Quartus II software on more than one computer, you can request one companion license for each FIXEDPC license. To request a companion license, contact Altera Customer Service at www.altera.com/corporate/contact/con-index.html.

You can use a software guard If you are licensing a node-locked (FIXEDPC) only version 7.2 or earlier of the Quartus II software.

or

If you are using a network (multiuser) license, type your NIC number or license server host ID.

4. Specify the requested information.
5. You will receive an e-mail from Altera with the license file text and an attached **license.dat** file. Altera recommends using the attached license file if you are using a node-locked (single-user) license. If you are using a network (multiuser) license, you may either use the attached license file, or copy the lines from the attached license file to an existing license file. If you are using the **license.dat** file with both the Quartus II software and the MAX+PLUS II software, Altera recommends that you save the **license.dat** file in a top-level directory named `<drive>:\flexlm`.



For Information About

Refer To

Additional methods of finding your NIC number Altera website at www.altera.com

Figure 1 on page 22 shows a sample single-server network license file for a PC.

Figure 1. Sample Single-Server Network License File

<i>Server name</i>	<i>Server host ID name</i>	<i>Optional port number</i>	<i>Number of licenses requested</i>	<i>Authorization code</i>
SERVER	alice	00c04f6bead6	1800	
VENDOR	alterad "<drive>:\altera\81\quartus\bin\alterad.exe"			
USE_SERVER				
FEATURE	quartus	alterad	2008.12	permanent
	5	7A496D25A602	SIGN="1C66 DAC6 1DAB C886 \	
	727B 65DF FAC2 B479 3E3C 656D	3561 E5D0 BBA3 C45C 4DDC 0F2F 68F5 4DF1 6F63 \		
	7785 2F5D 1480 1B0A 70DE 2220	1952 DDCD 9F4D 6D61 A177"		
	<i>Feature name</i>	<i>Daemon name</i>	<i>Release date</i>	<i>Expiration date</i>

The FLEXlm licensing scheme allows you to set up three redundant license servers to serve a network (multiuser) license. You can request a license file for redundant servers from the Licensing section of the Altera website at www.altera.com/licensing. Figure 2 shows a sample redundant server license file.

Figure 2. Sample Redundant Server License File

<i>Server name</i>	<i>Server ID number</i>	<i>Optional port number</i>	<i>Number of licenses requested</i>	<i>Authorization code</i>
SERVER	alice	00c04f6bead6	1800	
SERVER	king	00c4fbbd170	1800	
SERVER	queen	00c4fbbd320	1800	
VENDOR	alterad "<drive>:\altera\81\quartus\bin\alterad.exe"			
USE_SERVER				
FEATURE	quartus	alterad	2008.12	permanent
	5	7A496D25A602	SIGN="1C66 DAC6 1DAB C886 \	
	727B 65DF FAC2 B479 3E3C 656D	3561 E5D0 BBA3 C45C 4DDC 0F2F 68F5 4DF1 6F63 \		
	7785 2F5D 1480 1B0A 70DE 2220	1952 DDCD 9F4D 6D61 A177"		
	<i>Feature name</i>	<i>Daemon name</i>	<i>Release date</i>	<i>Expiration date</i>

Figure 3 shows the Quartus II FEATURE line of a sample license file for a node-locked (single-user) license that uses a software guard.



If You have a Software Guard

You can use a software guard to license only version 7.2 or earlier of the Quartus II software.

If you are using the Quartus II software with a node-locked (single-user) license and a software guard, skip to “Installing a Sentinel Software Guard” on page 31.

Figure 3. Sample Node-Locked (Single-User) License File

<i>Feature name</i>	<i>Daemon name</i>	<i>Release date</i>	<i>Expiration date</i>	<i>Number of licenses requested</i>	<i>Authorization code</i>
FEATURE quartus	alterad	2008.12	permanent	uncounted	2BC9FE52E0F3 \
	HOSTID=00c04f6bead6	SIGN="1C66	DAC6	1DAB	C886 727B 65DF FAC2 B479 3E3C \ 656D
	3561 E5D0 BBA3 C45C 4DDC 0F2F 68F5 4DF1 6F63 7785 2F5D 1480 1B0A 70DE \ 2220				1952 DDCD 9F4D 6D61 A177"

Modifying the License File

If you have a network (multiuser) or node-locked (single-user) license, the **license.dat** file must be modified before it can be used by the license server. See *AN 340: Altera Software Licensing*, which is available from the Literature section of the Altera website at www.altera.com/literature, 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 <host name> <8- or 12-character host or NIC ID> <port number>
VENDOR alterad "<path to daemon executable>"
```

VENDOR mgcld "<path to daemon executable>"

To modify the license file, follow these steps:

1. In the **license.dat** file, type the variables that are described in [Table 1](#). The host or NIC ID will already be entered in the license file.

Table 1. Variables to Modify in the License File (license.dat)

Variable Name	Description	Directory
<host name>	The host name of the server; for example, my_server.	
<port number> (1)	The port number for the license manager service on the server; for example, 1800. The port number is optional and should be different from the port number for any other service on the machine.	
alterad "<path to daemon executable>" (2)	Path to the Altera vendor daemon executable alterad.	\<Quartus II system directory>\bin\alterad.exe
mgcld "<path to daemon executable>" (2)(3)(4)	Path to the Mentor Graphics vendor daemon executable mgcld.	\<ModelSim-Altera system directory>\win32aolem\mgcld.exe

Notes:

- (1) If you do not specify a port number in the license file, the FLEXlm License Manager automatically chooses a free port between 27000 and 27009. However, to prevent port number conflicts, you can specify a port number. If three redundant servers are being used, you must specify a port number. For PC-based license servers, Altera recommends that you specify a port number of 1800. However, you can use any unused port number between 0 and 64000.
- (2) In some network environments, the license server does not have an installation of the software tool(s) that provides the necessary vendor daemon (**alterad** or **mgcld**). 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.
- (3) If the path to the server has spaces in it, enclose the full path in quotation marks.
- (4) If you are not using a license file for the ModelSim-Altera software, you may delete this line.

2. Make sure the license file meets these guidelines:

- The license file name must have a **.dat** extension. If your text editor adds **.txt** or another extension to the file name, such as **license.dat.txt**, you must rename the file to have only a **.dat** extension.

- The license file must have a carriage return at the end of the last FEATURE line.
- Any FEATURE line that wraps to a second or third line outside the VENDOR_STRING specification must contain a backslash (\) at the end of each line to indicate that it continues. Inside the double quotes of the VENDOR_STRING, backslashes should not be used.



For Information About

Refer To

Modifying the license file for the Quartus II and MAX+PLUS II software and for other EDA tools

AN 340: Altera Software Licensing on the Altera website

Upgrading or Setting Up a License Manager Server

This section provides instructions for upgrading or setting up the FLEXlm License Manager server software on a PC running Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit). A system administrator should perform these steps to configure license servers after the Quartus II software is installed.

Upgrading the FLEXlm License Server Software

To support network licensing, the Quartus II software requires the FLEXlm License Manager software version 8.0 or later. The Quartus II Setup program installs version 9.5 of the FLEXlm License Manager server software on Windows 32-bit systems or version 11.1.1 of the FLEXlm License Manager server software on Windows XP Professional x64 Edition and Windows Vista (64-bit) systems on your user workstation, but you should also verify that the version of the FLEXlm License Manager software or the license server is 8.0 or later. Go to [“Installing the Altera Complete Design Suite DVD-ROM” on page 12](#) for more information on installing the FLEXlm License Manager server software. If the FLEXlm License Manager software is version 8.0 or later, skip to [“Rereading an Existing License File” on page 27](#).

To determine which version of the FLEXlm License Manager server software you are using:

- ✓ On the computer running the FLEXlm License Manager server software, type the following commands at a command prompt:

```
<drive>:\<FLEXlm system directory path>\lmgrd -v ↵  
<drive>:\<FLEXlm system directory path>\alterad -v ↵
```

If the **lmgrd** or **alterad** daemons are not from the FLEXlm software version 8.0 or later, you must upgrade both daemons with the versions provided in the installation of the Quartus II software.

To upgrade an older version of the FLEXlm License Manager server software, follow these steps:

1. Make a backup copy of the **lmgrd** and **alterad** daemons you are currently using.
2. To overwrite or replace the daemons you are currently using, copy the new versions of the files to the computer running the license server. You may have to shut down the license server software to complete this step.

If you used the Quartus II Setup program to install the FLEXlm License Manager server software, the current version of the **lmgrd** and **alterad** daemons are located in the following directories:

```
<drive>:\<Quartus II system directory>\bin\alterad  
<drive>:\<Quartus II system directory>\bin\lmgrd
```

3. Copy the FLEXlm software **lmutil** utility from the Quartus II system directory to the license server.
4. Restart the FLEXlm license server by typing the following commands at a command prompt:

```
<drive>:\<FLEXlm system directory path>\lmutil -c lmdown  
<license file path> ↵  
<drive>:\<FLEXlm system directory path>\lmgrd -c <license file path>  
[-l <optional log path>] ↵
```

Rereading an Existing License File

The Quartus II software uses the FLEXlm software to administer licensing for single users or for multiple users in a network installation. If you have an existing FLEXlm license server with an existing license file for the MAX+PLUS II software or software from another vendor, and the FLEXlm license server is version 8.0 or later, you can add, by copying and pasting, the Altera FEATURE lines from your Quartus II **license.dat** file into your existing license file. Paste the Quartus II FEATURE line as shown in the sample license file in [Figure 3 on page 23](#). Make sure you have also modified the license file according to the guidelines in [“Modifying the License File” on page 23](#).

If you make these changes to your license file, you must reread the license file or restart the license server before you can run the Quartus II software for the first time.

Refer to [“Upgrading or Setting Up a License Manager Server” on page 25](#) to verify that you are using the latest supported version of the FLEXlm License Server software, or if you need to upgrade an older version of the FLEXlm License Server software.



Configuring a New License Server

If you do not have an existing FLEXlm license server, and you need to configure a new license server, skip to [“Configuring a New License Server” on page 28](#).

To reread your license file on a license server:

- ✓ Type the following command at a command prompt:

```
<drive>:\<Quartus II system directory>\bin\lmutil lmreread ␣
```

or

Restart the license server.

Configuring a New License Server

The Quartus II software uses the FLEXlm software to administer licensing for single users or for multiple users in a network installation. If you do not have an existing FLEXlm license server, you must configure a license server before starting the Quartus II software for the first time.



Before You Configure a New License Server

You should be aware of the following information before you configure a new license server:

- You must have system administration (Administrator) privileges.
- If you have an existing FLEXlm license server, refer to [“Rereading an Existing License File” on page 27](#).
- Make sure you have obtained a valid license file according to the guidelines in [“Obtaining a License File” on page 19](#), and that you have modified the license file according to the guidelines in [“Modifying the License File” on page 23](#).
- These instructions assume that you have installed the **license.dat** file in the **<drive>:\flexlm** directory. If you have installed the license file in a different directory, substitute the appropriate path name for that directory.

To launch a new license server:

- ✓ Type the following command at a command prompt:

```
<drive>:\<Quartus II system directory>\bin\lmgrd -c  
<license file path>\license.dat ↵
```

To configure a new license server as a Windows service, follow these steps:

1. Type the following command at a command prompt:

```
lmtools ↵
```

2. In the LMTOOLS dialog box, click **Configuration using Services**.
3. Click the **Config Services** tab.
4. In the **Service Name** box, type `Flexlm License Server`

5. In the **Path to the lmgrd.exe file** box, type the location of your **lmgrd** file, usually the `<drive>:\<Quartus II system directory>\bin` directory.
6. In the **Path to the license file** box, type the location of your **license.dat** file, usually the `<drive>:\flexlm` directory.
7. In the **Path to the debug log file** box, type the location of your debug log file, usually the `<drive>:\flexlm\debug.log` directory.
8. Click **Save Service**.

Starting and Stopping the License Server

When configuring the license server, you can start and stop the license server with the **LMTOOLS** dialog box. Before you start or stop the license, you must configure a new license server as a Windows service. Refer to [“Configuring a New License Server” on page 28](#) for more information.

To start or stop the license server with the **LMTOOLS** dialog box, follow these steps:

1. Type the following command at a command prompt:

```
<drive>:\<Quartus II system directory>\bin\lmtools ↵
```
2. In the **LMTOOLS** dialog box, click **Configuration using Services**.
3. Select the name of the license server, usually **Flexlm License Server**.
4. Click the **Start/Stop/Reread** tab.
5. To start the server, click **Start Server**.

or

To stop the server, click **Stop Server**.

Starting the License Server Automatically at Startup

When configuring the license server, you can setup the license server to start automatically at startup with the **LMTOOLS** dialog box. Before you setup the license server to start automatically at startup, you must configure a new license server as a Windows service. Refer to “[Configuring a New License Server](#)” on page 28 for more information.

To start the license server automatically at startup with the **LMTOOLS** dialog box, follow these steps:

1. Type the following command at a command prompt:

```
<drive>:\<Quartus II system directory>\bin\lmtools ↵
```
2. In the **LMTOOLS** dialog box, click **Configuration using Services**.
3. Select the name of the license server, usually **Flexlm License Server**.
4. Click the **Config Services** tab.
5. Turn on **Use Services**.
6. Turn on **Start Server at Power Up**.

Installing the FLEXlm Software on Another License Server

You can install the FLEXlm software on an additional license server by performing the following steps:

1. Create a directory named `<drive>:\<Quartus II system directory>\bin` on the additional license server.
2. Copy the following files from the `<drive>:\<Quartus II system directory>\bin` directory of your original Quartus II software into the new directory:
 - **lmgrd**
 - **lmutil**

- alterad
- lmttools

You can also install the FLEXlm software on another license server with the **Install FLEXlm Server** button in the Setup program. Refer to [“Installing the Altera Complete Design Suite DVD-ROM” on page 12](#) for more information.

Installing a Sentinel Software Guard

If your Quartus II development system uses a node-locked license and includes a Sentinel software guard, you must make sure the Sentinel driver is installed and then install the software guard before you can specify a license file.



Before You Install the Sentinel Software Guard

You should be aware of the following information before you install a Sentinel software guard:

- You can use a software guard if you are licensing the Quartus II software only version 7.2 or earlier. If you are licensing version 8.0 or later of a node-locked (single-user) (FIXEDPC) version of the Quartus II software, you must modify your license file using your NIC ID. Refer to [“Modifying the License File” on page 23](#).
- If you have a network (multiuser) license, you can skip this section and go to [“Starting the Quartus II Software” on page 34](#).
- The Quartus II software version 7.2 or earlier of the single-user licenses packages provide USB software guards only. Parallel Port software guards are no longer provided in Quartus II software packages; however, they are still supported for backward compatibility. Parallel Port software guards are not supported on 64-bit systems.

Installing the Sentinel Driver

The Sentinel driver is required for all Quartus II software systems running on Windows XP Professional x64 Edition or Windows Vista (32-bit and 64-bit) that use a USB software guard. The Sentinel driver is installed automatically with the Quartus II software.



Sentinel Driver Installation Requirement

Installing the Sentinel driver requires that you have system administration (Administrator) privileges.

If necessary, you can install the Sentinel driver on Windows XP or Windows Vista (32-bit) systems by following these steps:

1. On the Windows Start menu, click **Run**.
2. Type the following command in the **Run** dialog box:

```
<drive>:\<Quartus II system directory>\drivers\sentinel\  
setup.exe /usb /q3 ↵
```

3. In the Sentinel Driver Setup Program window, on the Functions menu, click **Install Sentinel Driver**.
4. In the **Sentinel Install** dialog box, click **OK**.
5. Restart your computer at the prompt.

If necessary, you can install the Sentinel driver on Windows XP Professional x64 Edition or Windows Vista (64-bit) systems by following these steps:

1. On the Windows Start menu, click **Run**.
2. Type the following command in the **Run** dialog box:

```
<drive>:\<Quartus II system directory>\drivers\sentinel\  
win_xp64\sentinst71xp64.exe /S /v"/qn" ↵
```

Setting Up USB Software Guard Support for Remote Desktop

If you want to use a USB software guard with the 64-bit version of the Quartus II software, and you want to run the Quartus II software with Remote Desktop, you must set up the software guard with the following procedure.



Before You Install the USB Software Guard for Remote Desktop Support

You should be aware of the following information before you install the USB software guard:

- You must have system administration (Administrator) privileges.
- You must have the USB software guard installed on the client machine.

To set up USB software guard support, follow these steps:

1. If the 64-bit version of the Quartus II software is not already installed on a local drive, copy the following executable to the local drive:

```
<drive>:\<Quartus II system directory>\drivers\sentinel\  
win_xp64\sentprotserv64xp64.exe
```

2. On the Windows Start menu, click **Run**.
3. Type the following command in the **Run** dialog box:

```
<drive>:\<Quartus II system directory>\drivers\sentinel\  
win_xp64\sentprotserv64xp64.exe -i
```

Installing the USB Software Guard



Software Guard Operating System Compatibility

The USB software guard is supported only on PCs running Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit).

To install the USB software guard on a PC running Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit) follow these steps:

1. Locate an unused USB port on the computer.
2. Insert the USB software guard into the USB port.

Starting the Quartus II Software

You can start the Quartus II software after installation is complete. In order to enable Quartus II features, however, you must specify the license file, either within or outside the Quartus II software. For information about how to specify your license file, refer to the next section, “[Specifying the License File](#).”

You can start either the 32-bit or 64-bit version of the Quartus II software, if you have installed the Quartus II software 64-bit components and if your system is capable of running the 64-bit version of the Quartus II software. Refer to “[Quartus II Software System Requirements](#)” on page 2 for system requirements. The 64-bit version of the Quartus II software is also installed automatically during a recommended Quartus II software installation.

To start the Quartus II software, follow these steps:

- ✓ On the Windows Start menu, point to **All Programs**, point to **Altera**, point to **Quartus II <Quartus II software version>**, and then point to **Quartus II <Quartus II software version> (32-bit)** or **Quartus II <Quartus II software version> (64-bit)**.

or

Open a new command prompt window and type the following command:

```
<drive> : \<Quartus II system directory>\bin\quartus ←
```

When you start the Quartus II software, if the software cannot detect a valid license file, you will see a prompt with the following options:

- **Start the 30-day evaluation period with no license file (no device programming file support)**—This option allows you to continue to use the Quartus II software for 30 days without programming file support. After 30 days, you must have a valid license file in order to use the software.
- **Perform automatic web license retrieval**—If you are using a node-locked (FIXEDPC) license, this option allows the Quartus II software to automatically retrieve the license file from the website. If you are using a network (multiuser) license, or if the Quartus II software is not able to retrieve a license file, you are guided through the licensing procedure. See “[Obtaining a License File](#)” on page 19 for more information.

- If you have a valid license file, specify the location of your license file—This option displays the **License Setup** page of the **Options** dialog box, which allows you to specify the location of your license file. See the next section, “[Specifying the License File](#),” for more information.



Quartus II Web Edition Version 8.1 and later

The Quartus II Web Edition version 8.1 and later does not require a license.

Specifying the License File

Once you have obtained a license file and set up a network license server (for multiuser licenses), you must specify the location of the license file for each user (client). You can specify the license file with one of the following methods, which are described in more detail in this section:

- Specify the license file with the Quartus II software.
- Specify the license file with the Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit) **System Control Panel**.



Specifying the License File for the ModelSim-Altera Software

If you are using the ModelSim-Altera simulation software, which is included with Altera software subscriptions, and/or you are using the MAX+PLUS II software, you must specify the license file with the **System Control Panel**.

Specifying the License File within the Quartus II Software

You can specify the location of your license file from within the Quartus II software.



Specifying the License File from within the Quartus II Software

Specifying the license file from within the Quartus II software does not require system administration (Administrator) privileges.

To specify your license file within the Quartus II software, follow these steps:

1. Start the Quartus II software as described in the “Starting the Quartus II Software” on page 34.

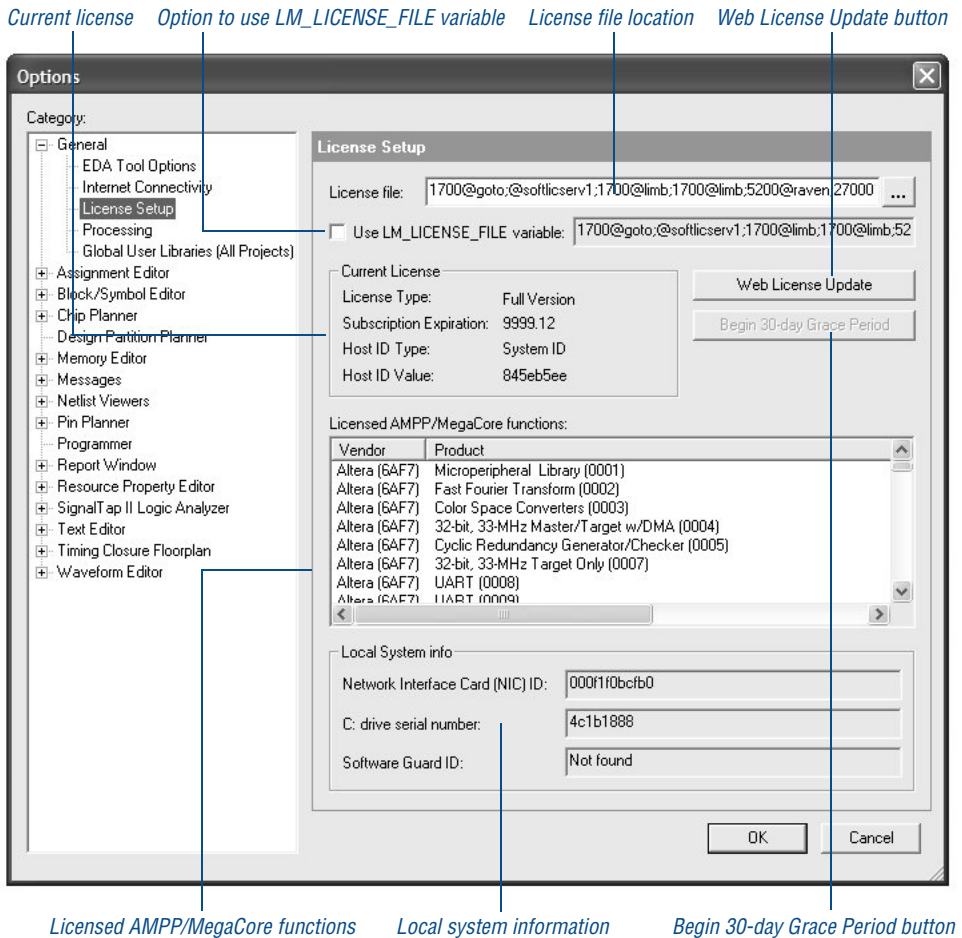


Starting the Quartus II Software for the First Time

When you start the Quartus II software, if the software cannot detect a valid license file, you are asked whether you want to run in evaluation mode for 30 days, request a valid license file automatically from the Altera website, or specify the correct location of a valid license file.

2. Select **Specify valid license file** to specify the name of the license file. The **License Setup** page (Figure 4) of the **Options** dialog box appears.

Figure 4. License Setup Page of the Options Dialog Box



3. In the **License file** box, specify the full path name of your **license.dat** file. You can browse to locate your **license.dat** file. Altera recommends that you store the **license.dat** file in a directory named **c:\licenses\flexlm**.

You can also specify the location of the license server by typing a name of the format *<port>@<host>* instead of a license file path name, where *<host>* is the name of the machine running the license server and *<port>* is the port listed in the **license.dat** file. Refer to [Figure 1 on page 22](#) for a sample network license file to determine your port and

server name, and see [Table 1 on page 24](#) for more information about port numbers. If there is no port listed in the `license.dat` file, you can simply specify `@<host>`.

or

If you want to use the current `LM_LICENSE_FILE` value specified in the **System** Control Panel, turn on **Use LM_LICENSE_FILE variable**.

4. If you want the Quartus II software to check the Altera website for license file updates, click **Web License Update**.
5. If you want the Quartus II software to automatically check the Altera website for license file updates upon startup, turn on **Check the Altera web site for license updates at startup** in the **Internet Connectivity** page of the **Options** dialog box.
6. If you want to use the Quartus II software in the “Subscription Expiration” grace period and did not already specify that option at startup, click **Begin 30-day Grace Period**. The “Subscription Expiration” grace period allows you to use the Quartus II software with programming file support for 30 days. When the grace period expires, you must obtain an updated license file at the Altera website to continue using the Quartus II software with programming file support.
7. Click **OK**. The **Licensed AMPP/MegaCore functions** list of the **License Setup** page lists all of the AMPP and MegaCore functions that are available for the license.



Specifying Multiple License Files

If you have more than one license file or server, separate the port and host specifications with semicolons (;), with no spaces between the names and numbers.

Specifying the License File with the Windows System Control Panel

You can specify the location of your license file from outside the Quartus II software by setting system variables in the Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit) **System** Control Panel.



Specifying the License File in System Control Panel

Specifying the license file in the **System** Control Panel requires that you have system administration (Administrator) privileges.

To specify the license file in the Windows XP, Windows XP Professional x64 Edition, or Windows Vista (32-bit and 64-bit) **System** Control Panel, follow these steps:

1. On the Windows Start menu, click **Control Panel**.
2. Double-click the **System** icon in the Control Panel window.
3. In the **System Properties** dialog box, click the **Advanced** tab.
4. In the **Advanced** tab, click **Environment Variables**.
5. Under **System Variables**, click **New**. The **New System Variable** dialog box appears.
6. In the **Variable Name** box, type `LM_LICENSE_FILE`.
7. In the **Variable Value** box, type either `<drive>:\flexlm\license.dat` or a name of the format `<port>@<host>`, where `<host>` is the name of the server and `<port>` is the port listed in the `license.dat` file. Refer to [Figure 1 on page 22](#) for a sample network license file to help you determine your port and server name. Refer also to [Table 1 on page 24](#) for more information about port numbers. If there is no port listed in the `license.dat` file, you can simply specify `@<host>`.



Specifying Multiple License Files and/or Servers

If you have more than one license file or server, separate the port and host specifications with semicolons (;), with no spaces between the names and numbers.

8. Click **OK**.

If you want the Quartus II software to use the `LM_LICENSE_FILE` setting from your System Control Panel rather than from another license file setting, make sure **Use LM_LICENSE_FILE variable** is turned on in the **License Setup** page in the **Options** dialog box.

Registering for an Altera.com Account

Your copy of the Quartus II software is registered at the time of purchase; however, in order to use the mySupport website to view and submit service requests, you must also register for an Altera.com account and an Altera user name. You can use your Altera user name to access your Altera.com account. Although use of the mySupport website requires you to have an Altera.com account, this account also makes it easier to use many other Altera website features, such as the Download Center, Licensing Center, Altera Technical Training online class registration, or Buy On-Line-Altera eStore features.

To register for an Altera.com account, follow these steps:

1. Go to the mySupport website:

To start your web browser and connect to the mySupport website while running the Quartus II software, on the Help menu, point to **Altera on the Web**, and then click **Quartus II Service Request**.

or

Point your web browser to the mySupport website at

www.altera.com/mysupport.

2. Follow the instructions on the mySupport website to register for an Altera.com account.

If you are not a current Altera subscription user, you can still register for an Altera.com account and an Altera user name.

Licensing Related Software

In addition to licensing the Quartus II software, you must also license any other related Altera software you install. This section contains licensing procedures for the MegaCore IP Library, Nios II Embedded Design Suite, and the ModelSim-Altera software.

MegaCore IP Library

Once you purchase a license for any of the IP cores, you can request a license file from the Licensing section of the Altera website at www.altera.com/licensing and install it on your computer.

If you have already installed a license for an IP core, and then you receive a new license file for a new IP MegaCore function, you can either append the license file to your existing **license.dat** file, or you can specify the MegaCore function's **license.dat** file in the Quartus II software.

Nios II Embedded Design Suite

You can create, compile, and generate time-limited FPGA programming files for Nios II hardware systems without obtaining a license file. To generate non-time-limited FPGA programming files and flash programming files, you must obtain a license for the Nios II processor core in addition to the license for the Quartus II software. You do not need a license to develop software using the Nios II IDE.

ModelSim-Altera

You can request a ModelSim-Altera license file from the Licensing section of the Altera website at www.altera.com/licensing and install it on your computer.



ModelSim-Altera Web Edition Version 8.1 and later

ModelSim-Altera Web Edition version 8.1 and later does not require a license.

The ModelSim-Altera software supports licenses using the Mentor Graphics license daemon **mgcld**. The **mgcld** daemon is located in the *<ModelSim-Altera system directory>\win32aloem* directory.

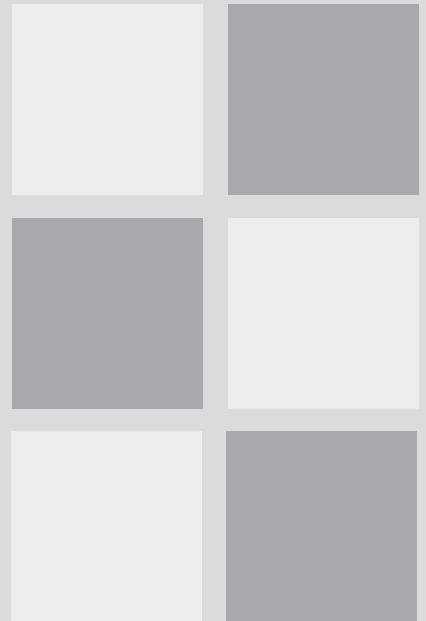
Before starting the ModelSim-Altera software, you must set your `LM_LICENSE_FILE` environment variable to the location and file name of the ModelSim-Altera license file. For example, the `LM_LICENSE_FILE` environment variable should be set to the location and file name of your license file (*<ModelSim-Altera system directory>\licenses\eda\license.dat*) or with the port@host notation (**1900@set**).

To set your `LM_LICENSE_FILE` environment variable to the location and file name of the ModelSim-Altera license file, follow these steps:

- 1.** On the Windows Start menu, click **Control Panel**. The **Control Panel** appears.
- 2.** Double-click **System**. The **System Properties** dialog box appears.
- 3.** On the **Advanced** tab of the **System Properties** dialog box, click **Environment Variables**.
- 4.** Under **System Variables**, select `LM_LICENSE_FILE`.
- 5.** Click **Edit**. The **Edit System Variable** dialog box appears.
- 6.** In the **Variable value** box, type the location of your license file.
- 7.** In the **Edit System Variable** dialog box, click **OK**.
- 8.** In the **Environment Variables** dialog box, click **OK**.
- 9.** In the **System Properties** dialog box, click **Apply**.

Chapter Three

Documentation and Technical Support



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3

Starting the Quartus II Interactive Tutorial

The Quartus II software includes the Flash-based Quartus II Interactive Tutorial. The modules of this tutorial teach you how to use the basic features of the Quartus II design software, including design entry, compilation, timing analysis, simulation, programming, and advanced topics.

This tutorial includes audio and Flash animation components. For best results, use the tutorial on a system that includes a sound card, speakers, and at least 1024x768 display resolution.

To start the Quartus II Interactive Tutorial after you have successfully installed the Quartus II software:

- ✓ On the Help menu, click **Tutorial**.

Once you start the tutorial, you can jump immediately to any tutorial module by clicking **Contents**. Once you select a tutorial module, you can click **ShowMe**, **GuideMe**, or **TestMe** at any time to jump directly to the tutorial mode that best suits your learning style.

Your system must meet the requirements described in the “[Quartus II Software System Requirements](#)” on page 2 to run the tutorial.

Using Quartus II Help

The Quartus II software includes a platform-independent Help system that provides comprehensive documentation for the Quartus II software and more details about the specific messages generated by the Quartus II software. To access Quartus Help, the Quartus II software must be installed on your local drive. You cannot access Quartus II Help over a network. You can view Help in one of the following ways:

- Press F1 from a highlighted menu command or active dialog box for context-sensitive Help.
- Click the **Help** button when available in an active dialog box.
- On the Help menu, click any of the following commands:
 - **Index**: The Index lets you search for and display all Help topics related to a keyword or phrase.

- **Search:** The Search finds a maximum of 500 topics containing the search keyword.
- **Contents:** The Contents outlines the design flow and groups related topics into folders, but does not list all the topics in Quartus II Help.
- **Messages:** The Messages list provides an alphabetical list of all messages and offers detailed Help on each message. To view Help on an individual message, in the Messages window, right-click the message on which you want to receive Help, and then click **Help**.
- **Glossary:** The Glossary list provides definitions to key terminology in the Quartus II software.



For Information About

Refer To

Using Quartus II Help

“Help Menu Commands” in Quartus II Help

“Using Quartus II Help Effectively” in Quartus II Help

Contacting Altera

You can contact Altera for technical support and product information.

Table 1. Quartus II Technical Support Resources

Resource	Description
Altera website:	www.altera.com
mySupport website:	www.altera.com/mysupport
	Or, on the Help menu, point to Altera on the Web , and then click Quartus II Service Request in the Quartus II software. This website allows you to submit, view, and update technical support service requests.
Telephone:	(800) 800-EPLD (7:00 a.m. to 5:00 p.m. Pacific time, M–F) You must have your 6-digit Altera ID to access the hotline.
	(408) 544-8767 (7:00 a.m. to 5:00 p.m. Pacific time, M–F)



Registering for an Altera.com Account

In order to use the mySupport website to view and submit service requests, you must also register for an Altera.com account. An Altera.com account is required only to use the mySupport website; however, having an Altera.com account will also make it easier to use many other Altera website features, such as the Download Center, Licensing Center, Altera Technical Training online class registration, or Buy On-Line-Altera eStore features. For more information, refer to “[Registering for an Altera.com Account](#)” on page 40 in Chapter 2, “[Licensing the Quartus II Software.](#)”

Product Information

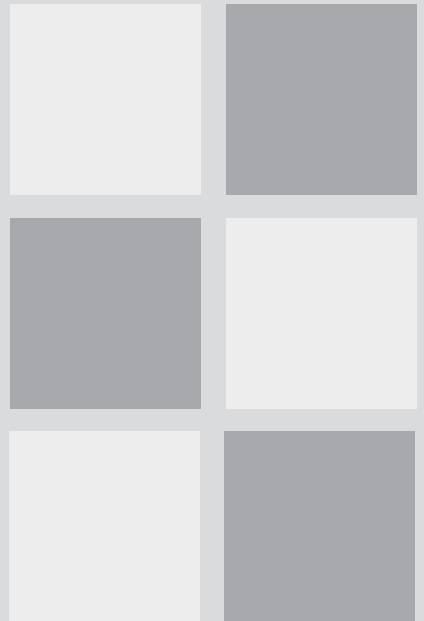
If you need the latest Altera product information or literature, go to the Literature section of the Altera website at www.altera.com/literature.



For Information About	Refer To
Altera technical support services	The Contact Altera section of the Altera website

Appendix A

Quartus II Software File Organization



A

What's in Appendix A:

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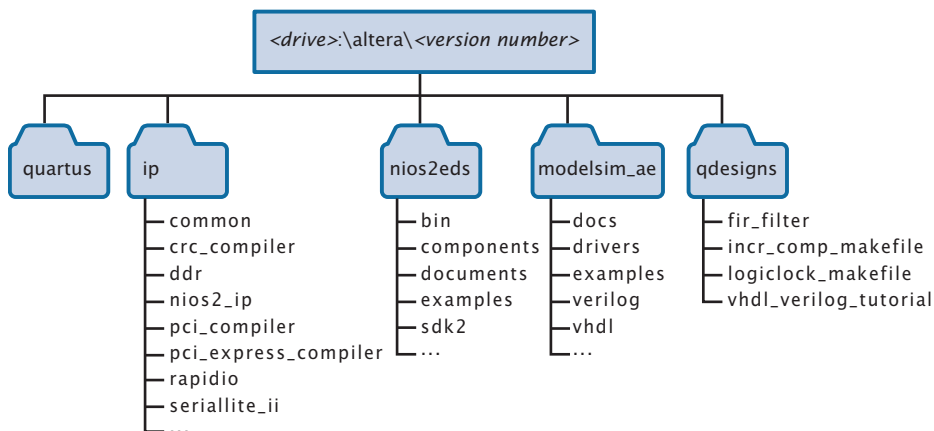
Quartus II Software and Related Software File Organization

During the Quartus II software and related software installation, one top-level directory is created:

The `\altera\<version number>` directory contains system software and data files and includes the subdirectories shown in Figures 1 and 2.

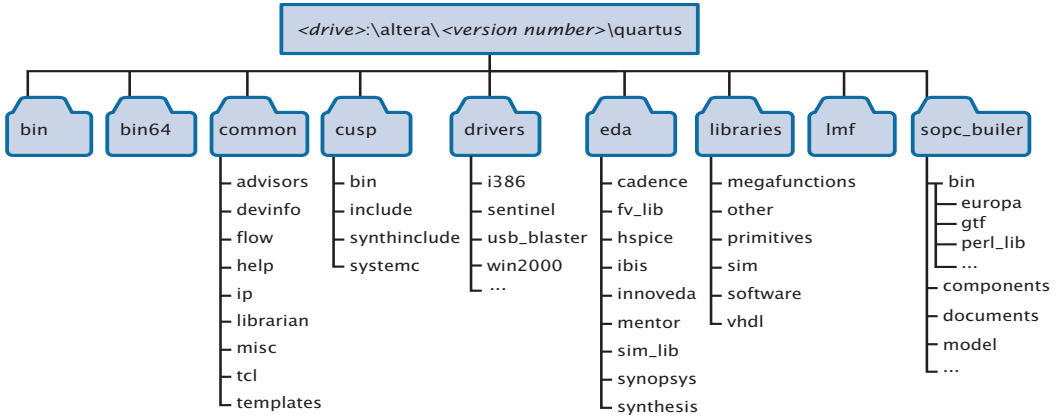
The main `\altera\<version number>` directory includes the subdirectories shown in Figure 1.

Figure 1. Altera Software System Directory (<drive>:\altera \<version number>)



The `\altera\<version number>\quartus` directory includes the subdirectories shown in [Figure 2](#).

Figure 2. Quartus II Software System Directory (*<drive>*:\altera*<version number>*\quartus)



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Altera Corporation
101 Innovation Drive
San Jose, California 95134 USA
www.altera.com
www.altera.com/mysupport

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