

# Intel FPGA Software Installation and Licensing Quick Start



Subscribe



Send Feedback

**MNL-1087**  
2018.04.16

101 Innovation Drive  
San Jose, CA 95134  
[www.altera.com](http://www.altera.com)

**ALTERA**  
now part of Intel

# Contents

<b>Intel<sup>®</sup> FPGA Software Installation and Licensing Quick Start.....</b>	<b>1-1</b>
Downloading and Installing Quick Start.....	1-1
Windows Download Manager.....	1-1
Downloading and Installing with .tar Files.....	1-2
Installing Programming Cable Drivers.....	1-2
Configuring the Linux User Environment.....	1-3
Starting the Quartus Prime Software on Linux.....	1-3
Licensing Quick Start.....	1-4
Licensing the Quartus Prime Software for a Single User, Single Computer.....	1-4
Setting Up a Fixed License.....	1-5
Document Revision History for Intel FPGA Software Installation and Licensing Quick Start.....	1-6

2018.04.16

MNL-1087



Subscribe



Send Feedback

## Downloading and Installing Quick Start

This quick start provides streamlined instructions for downloading, installing, and licensing Intel® FPGA software. These instructions assume that you are a single user of the software, and are using Windows or Linux.

You download software from the Download Center on [www.altera.com](http://www.altera.com). Use one of the following methods:

- Download a bundled set of software and device files, in `.tar` format
- Download individual executable files for customized download and installation

The method you choose depends on your download speed, design requirements, and method of installation. If you want the complete FPGA software package and device support for all supported families, use the `.tar` format. If you want to download select elements of the software, additional software, or additional device support, use the individual executable files.

**Note:** If you use a 64-bit Linux operating system, you must install certain 32-bit libraries to run the ModelSim - Intel FPGA Edition software. Refer to the software prerequisites for complete details.

This quick start describes how to download software using the `.tar` format. To download using other methods, refer to the detailed download and installation instructions in the *Intel FPGA Software Installation and Licensing Manual*.

### Related Information

- [Intel FPGA Software Installation and Licensing Manual](#)
- [Download and Installation Prerequisites](#)

## Windows Download Manager

If you are using the Windows operating system, the Akamai DLM3 Download Manager should automatically download and install on your local machine. The download manager controls the download of the files you select and allows you to pause and restart the download at any time.

**Note:** If you are on the Linux operating system or if the download manager does not work on your computer, you must individually download all the files.

Intel Corporation. All rights reserved. Intel, the Intel logo, Altera, Arria, Cyclone, Enpirion, MAX, Nios, Quartus and Stratix words and logos are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. Intel warrants performance of its FPGA and semiconductor products to current specifications in accordance with Intel's standard warranty, but reserves the right to make changes to any products and services at any time without notice. Intel assumes no responsibility or liability arising out of the application or use of any information, product, or service described herein except as expressly agreed to in writing by Intel. Intel customers are advised to obtain the latest version of device specifications before relying on any published information and before placing orders for products or services.

\*Other names and brands may be claimed as the property of others.

ISO  
9001:2008  
Registered

**ALTERA**  
now part of Intel

## Downloading and Installing with .tar Files

Follow these steps to download and install FPGA software with .tar files:

1. On the Download Center page of [www.altera.com](http://www.altera.com), choose whether you want to download and install the Quartus® Prime Lite, Standard, or Pro Edition Software.
2. Verify that your operating system (OS) is correct, or select a different OS.
3. Verify that you have sufficient free disk space to contain copies of uncompressed versions of the software files.
4. On the version-specific download page, click **Combined Files**.
5. Choose which files to download:
  - Single, complete .tar file.
  - Quartus Prime Standard or Pro Edition .tar file and one or more device-specific .tar files.
  - Quartus Prime Lite Edition, which includes device files.

To verify the software and device support included in each file, view the file contents by hovering your mouse over the information icon.

6. Download using one of the following methods:
  - Windows: Select the files and click the **Download Selected Files** button.
  - Linux: Click the download button next to each file name.

**Wait for all of the files to download completely before beginning installation.**

7. Extract the file(s) into the same directory. If you extract the files to different directories, the installer does not install all of the components. The **components** subdirectory stores software and device installation files.

Windows: You must unzip the .tar files to extract the installation files. WinZip, 7-Zip, and WinRAR are examples of unzipping tools. You must unzip the files to the same directory. In WinZip, click the Unzip button and then click **Unzip to a selected folder**. Do not use unzip program shortcuts, such as **1-Click Unzip**.

8. Run one of the following files to begin installation. The installation wizard guides you through installation.
  - setup.bat (Windows) or setup.sh (Linux) script (Lite and Standard Editions)
  - setup\_pro.bat (Windows) or setup\_pro.sh (Linux) script (Pro Edition)

## Installing Programming Cable Drivers

You must install the appropriate programming cable drivers before you can use a download cable or programming unit to program devices with the Quartus Prime software.

The programming cable drivers are located in the following directories:

- Windows: <drive>:\<edition>\<version number>\quartus\drivers
- Linux: <home directory>/<edition>/<version number>/quartus/drivers

### Related Information

#### [Cable and Adapter Drivers Information](#)

## Configuring the Linux User Environment

Before starting the Quartus Prime software for Linux for the first time, you must set up the Linux user environment.

1. Update each user's `PATH` environment variable in the `.cshrc` file or `.bashrc` file, which is located in the home directory, to include the Quartus Prime `bin` directory. The `bin` directory is usually located at `<home directory>/<edition>/<version number>/quartus/bin` directory, where `<home directory>` is the default directory of your Linux workstation or as set by your system administrator. To update the `PATH` environment variable, type the following command at a command prompt:

- C shell:

```
setenv PATH ${PATH}:/<Quartus Prime system directory>/bin
```

- Bash shell:

```
export PATH=${PATH}:/<Quartus Prime system directory>/bin
```

If you run the Quartus Prime software for Linux with a script, you can run the latest installed version of the Quartus Prime software with the `quartus` (Lite and Standard Editions) or `qpro` (Pro Edition) executable either by specifying the latest version of the Quartus Prime software, or the full path for the `quartus` or `qpro` executable in the `PATH` environment variable.

2. Review (and update as appropriate), each user's `QUARTUS_ROOTDIR_OVERRIDE` environment variable, which specifies the name of the Quartus Prime system directory, and each user's Quartus Prime general environment variables.
3. Optional: If you are using the `LM_LICENSE_FILE` or `ALTERAD_LICENSE_FILE` environment variable to specify your license file or license server address, modify the value of `LM_LICENSE_FILE` or `ALTERAD_LICENSE_FILE` to point to your `license.dat` file.

Versions of FPGA software that you purchase require a license; you can specify the license using the `LM_LICENSE_FILE` or `ALTERAD_LICENSE_FILE` environment variable or from within the software. Refer to the licensing instructions for more information.

4. Save the changes to the `.cshrc` file or `.bashrc` file, and then type the following at a command prompt:

- C shell:

```
cd  
source .cshrc
```

- Bash shell:

```
cd  
. ~/ .bashrc
```

## Starting the Quartus Prime Software on Linux

To start the Quartus Prime software, type one of the following commands at the command prompt:

- **Quartus Prime Lite or Standard Edition:** `<path to quartus installation>\quartus\bin\quartus`
- **Quartus Prime Pro Edition:** `<path to quartus installation>\quartus\bin\qpro`

**Note:** Make sure you do not run the `quartus` or `qpro` command in the `/<Quartus Prime system directory>/linux64` directory. If you start the Quartus Prime software in a platform-specific directory, the software may not function correctly.

## Licensing Quick Start

Versions of Intel FPGA software that you purchase require a license.

The license enables the software version that you purchase, as well as all previous versions, and all versions that are within one year of the purchase date. A license for the Quartus Prime software also enables the IP library. The license does not expire; you can use these products indefinitely.

The ModelSim - Intel FPGA Edition software requires a valid license. This license expires 12 months after the date of purchase. Every 12 months you must regenerate your license file in the Self-Service Licensing Center to renew your license for the specific ModelSim - Intel FPGA Edition software version that you purchase.

**Note:** The Quartus Prime Lite Edition and ModelSim - Intel FPGA Starter Edition Software do **NOT** require a license. If you are using this software, you can skip the licensing step and begin using the software.

This quick start describes how to license the Quartus Prime Standard and Pro Edition software for a *single user on one computer*. For other licensing options, refer to the detailed licensing instructions.

**Note:** Development kits that include the Quartus Prime software include instructions for obtaining a license for that software.

### Licensing the Quartus Prime Software for a Single User, Single Computer

To license the Quartus Prime software, you can direct the software to retrieve a license file automatically, or you can manually request a license file from the Self-Service Licensing Center of [www.altera.com](http://www.altera.com) and install it.

To obtain a license file, follow these steps:

1. Start the Quartus Prime software. If the software does not detect a license, you are prompted to evaluate, license, or buy the software.
2. Request a license file using one of the following methods:
  - Select **Perform automatic web license retrieval**. The software attempts to retrieve the license automatically from [www.altera.com](http://www.altera.com).
  - Manually request a license file using the Self-Service Licensing Center.

**Note:** You need to know your computer's network interface card (NIC) ID number to manually request a license.

If the Quartus Prime software is able to retrieve a fixed license file successfully, you can skip the remaining licensing steps and begin using the software.

3. If you requested a license file manually, Intel emails you the license file text and an attached file. Use the attached license file to set up a fixed license.

If you do not receive your license email within 12 hours of requesting a license, or if you do not know all the required information to complete the process, file a service request at the mySupport section of [www.altera.com](http://www.altera.com).

## Identifying Your NIC ID

A network interface card (NIC) ID is a 12-digit hexadecimal string embedded in the network card that uniquely identifies the PC where the software or license server is installed.

You can find the NIC ID by running a command-line utility on your computer.

**Note:** If you purchase a floating license and are setting up a license manager server, you can use the FLEXlm licensing scheme to configure up to 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 from Self-Service Licensing Center.

### Find Your Windows NIC ID

- Type the following command at a command prompt:

```
ipconfig /all
```

In the output of the command, the NIC ID is the physical address without the dashes. If your PC has more than one network card, you can use the NIC ID of any network card connected to the computer that is turned on when the Quartus Prime software is in use.

### Find Your Linux NIC ID

- Type the following command at a command prompt:

```
/sbin/ifconfig eth0
```

In the output of the command, the NIC ID is the ID to the right of **HWaddr**, without the colons.

### Find Your NIC ID If the Quartus Prime Software Is Installed

- Your NIC ID appears under **Local System info** in the **Network Interface Card (NIC) ID** field.

## Setting Up a Fixed License

To set up a fixed license file (single user, single computer), follow these steps:

- Make a backup copy of any existing `license.dat` file for reference.
- Save the `license.dat` file (that was attached to the licensing email you received) on your local hard drive.

Store the `license.dat` file in a directory named `C:\licenses\flexlm` (Windows) or `/usr/local/flexlm/licenses` (Linux).

When you specify the license file location, use only alphanumeric characters and do not type any special characters or symbols, such as `!$%^&*<>`, empty spaces, or non-English characters in the license file directory name. Special characters may invalidate the license file location.

- Use one of the following methods to specify your license:
  - Specify the license within the Quartus Prime software.
  - Specify the license file using an environment variable.

If you are using the legacy Quartus II software version 7.2 or earlier, you must also use a software guard. Attach the software guard to a parallel or USB port on your computer.

### Specifying the License File within the Quartus Prime Software

You can specify a fixed or floating license file within the Quartus Prime software.

**Environment Variable**

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

1. Start the Quartus Prime software. If the Quartus Prime software cannot detect a valid license file, you are prompted to license, evaluate, or buy the software.
2. Select **Specify valid license file**. The **License Setup** page on the **Options** dialog box appears.
3. In the **License file** box, specify the full path name of the **license.dat** file.
4. Click **OK**.

After you specify the location of the license file, you can begin using the software.

## Specifying the License File with the `LM_LICENSE_FILE` or `ALTERAD_LICENSE_FILE` Environment Variable

You can specify the Quartus Prime software license location with the `LM_LICENSE_FILE` or `ALTERAD_LICENSE_FILE` environment variable.

To specify the license file:

1. Close the software if it is open.
2. Set the `LM_LICENSE_FILE` or `ALTERAD_LICENSE_FILE` environment variable using the Control Panel (Windows) or by editing your `.cshrc` or `.bashrc` file (Linux).

**Note:** Linux: You must source your `.cshrc` or `.bashrc` file before restarting the Quartus Prime software. See the topic on setting up the Linux environment for more details.

3. Start the Quartus Prime software.

**Note:** The license file setting in the **License Setup** dialog box supersedes the `LM_LICENSE_FILE` or `ALTERAD_LICENSE_FILE` environment variable setting.

### Setting Windows Environment Variables

To set environment variables in Windows, follow these steps:

1. Click **Windows Start menu** > **Control Panel** or open the Control Panel app.
2. Click **System and Security**.
3. Click **System**.
4. Click **Advanced system settings**.
5. Click the **Advanced** tab in the **System Properties** dialog box.
6. Click **Environment Variables**.
7. Select a variable in the **Environment Variables** dialog box.
8. Click **Edit**.
9. Type a value in the **Variable value** box in the **Edit Variable** dialog box.

## Document Revision History for Intel FPGA Software Installation and Licensing Quick Start

Date	Version	Changes
2018.04.16	17.1.0	Updated licensing information for ModelSim* - Intel FPGA Edition software

Date	Version	Changes
2017.03.03	16.1.0	Initial release.