

# Lab Software Installation (Linux)

**Lab Software Installation (Linux)**..... 1

  Installing Quartus Prime Lite Edition v24.1..... 1

  Installing ModelSim v20.1.1..... 3

  Installing Logisim Evolution v3.9.0..... 4

  Installing WaveForms..... 5

  FAQ..... 5

This installation guide will walk you through installing **Quartus Prime Lite Edition v24.1** and **ModelSim v20.1.1** on Linux. You will be using this software in various other courses, such as *Digital Design* (EEL4712C), and *Microprocessor Applications* (EEL4744C).

## Installing Quartus Prime Lite Edition v24.1

Prerequisites: If you can, use a supported distribution of Linux:

Red Hat* Enterprise Linux* 8.6	Red Hat* Enterprise Linux* 8.7	Red Hat* Enterprise Linux* 9.0	Red Hat* Enterprise Linux* 9.1	SUSE* SLE 12.5	SUSE* SLE 15.3	SUSE* SLE 15.4	Ubuntu* 18.04 LTS	Ubuntu* 20.04 LTS	Ubuntu* 22.04 LTS
--------------------------------------	--------------------------------------	--------------------------------------	--------------------------------------	----------------------	----------------------	-------------------	-------------------------	-------------------------	-------------------------

The instructions will probably work if you don't, but we can't guarantee...Sorry NixOS users!

1. Navigate to the [Quartus 24.1 Installer](#) page.
2. Download the **Intel Quartus Prime Lite Edition Installer (SFX):**

[Installer \(Recommended\)](#)   
 [Individual Files](#)   
 [Copyleft Licensed Source](#)

Intel® Quartus® Prime Installer (Recommended)

Intel® Quartus® Prime Lite Edition Installer (SFX)

Download

qinst-lite-linux-24.1std-1077.run

Size: 62.3 MB

SHA1: 9c7029ba55a24c14d4643c4e26c9e42056d1cd0d

If any problems occur, you can still download the necessary files and install them manually.

[View Intel® Quartus® Prime Installer Quick Video](#)

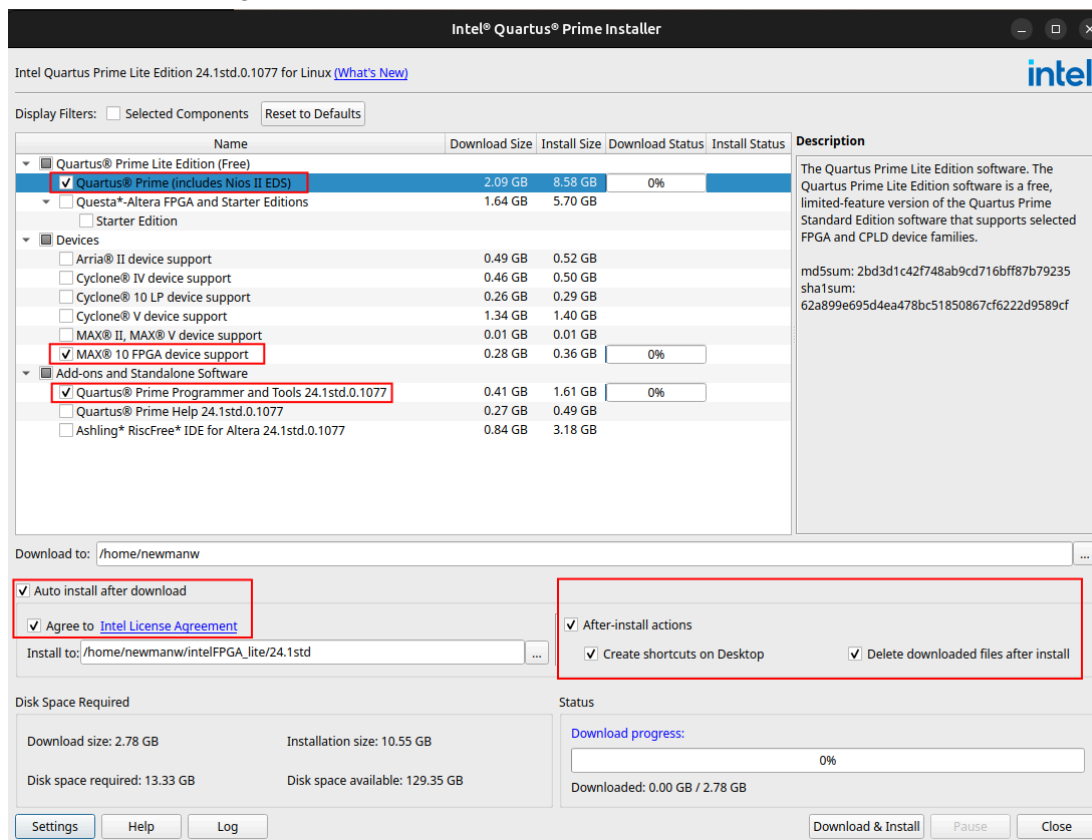
3. Navigate to your Downloads folder and make the downloaded file executable by running `chmod +x qinst-lite-linux-24.1std-1077.run`
4. Execute it: `./qinst-lite-linux-24.1std-1077.run`

5. Make sure that the following items are checked off before installing:

- Quartus Prime
- MAX 10 FPGA device support
- Quartus Prime Programmer and Tools
- After-install actions
- Agree to Intel License Agreement

Look at the image below to ensure that you have checked off everything you need to install the software:

**Note:** Change the install location to /home/{username}/ by clicking the triple dots next to the “install to” line, and selecting your home directory (~). It will give an installation path similar to the one in the image below.



6. Click **Download and Install** at the bottom. This will take some time!

7. Set up USB driver permissions (copy this into your terminal):

```
echo SUBSYSTEM=="usb", ATTRS{idVendor}=="09fb", ATTRS{idProduct}=="6001",
GROUP="plugdev", MODE="0660" | sudo tee
/etc/udev/rules.d/51-usbblaster.rules
```

8. Restart your machine, and you should be done.

## Installing ModelSim v20.1.1

1. Install **ModelSim 20.1.1** from the [Installer Page](#).

### Downloads

Multiple Download   Individual Files   Additional Software   Copyleft Licensed Source

---

Intel® Quartus® Software

<b>ModelSim-Intel® FPGA Edition (includes Starter Edition)</b>	
<a href="#">Download</a> ModelSimSetup-20.1.1.720-linux.run	Size: 1.4 GB SHA1: c50f51479de963f4e79a8115dc9200e744b3ab3d
<b>Intel® Quartus® Prime (includes Nios® II EDS)</b>	
<a href="#">Download</a> QuartusLiteSetup-20.1.1.720-linux.run	Size: 1.9 GB SHA1: 49012e487889041962575c1cde81863457c105f5

\*\* Nios® II EDS requires you to install an Eclipse IDE manually.

2. After the ModelSim software has finished downloading, run the following commands:  
`chmod +x ModelSimSetup-20.1.1.720-linux.run`  
`./ModelSimSetup-20.1.1.720-linux.run`
3. Click **Next** until it prompts you with the edition you would like to install. Select the default "**ModelSim- Intel FPGA Starter Edition**", where a license is not required. Click **Next**.

Select the ModelSim edition you like to install

**ModelSim - Intel FPGA Starter Edition**  
- License is not required.

**ModelSim - Intel FPGA Edition**  
- License is required.

4. Accept the license agreement, then press **Next**.
5. Leave the installation directory as the default: "`/home/{username}/intelFPGA/20.1`" then click **Next** twice to finish installing the software.

## Installing Logisim Evolution v3.9.0

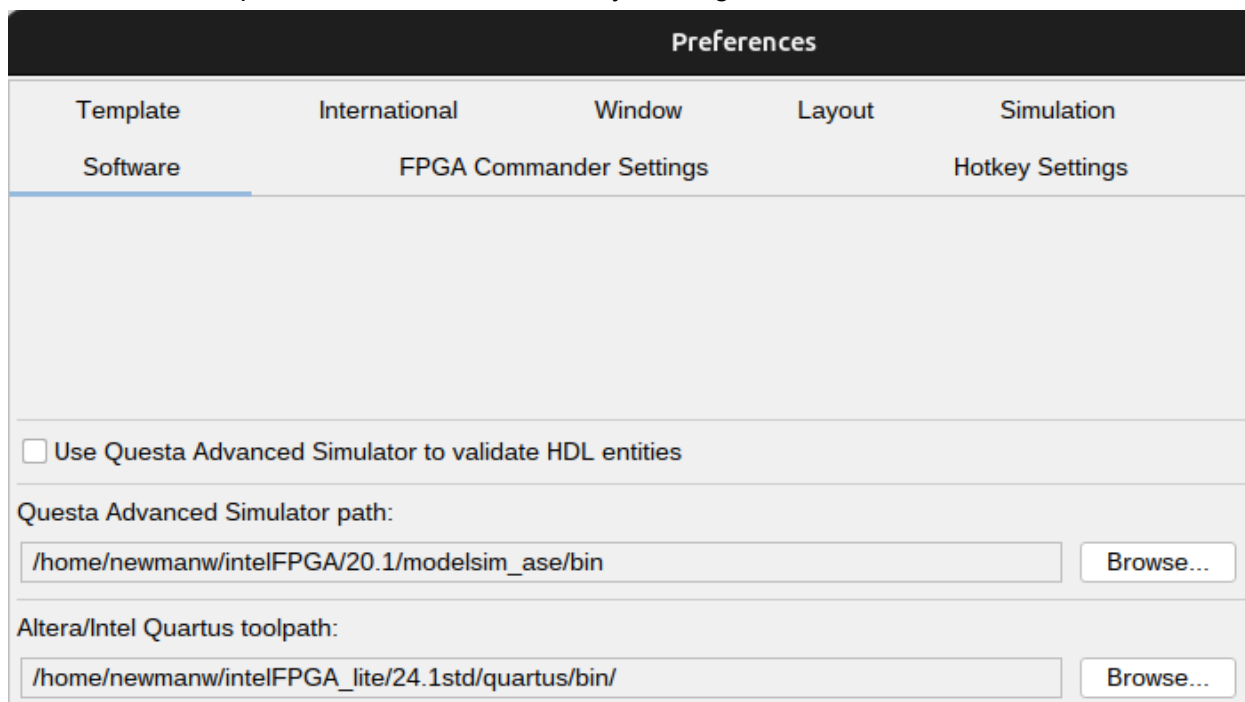
1. Navigate to the [Logisim Evolution v3.9.0 release page](#).
2. Install the version based on what type of processor you have.

### Finding your version:

Since you're using Linux, you probably know what version you need.

### Integrating Logisim with Quartus and ModelSim

1. Open up Logisim and navigate to **File > Preferences**
2. Add these paths to the **'Software'** tab by clicking Browse:



*Questa Advanced Simulator path (ModelSim 20.1.1):*

**“~/intelFPGA/20.1/modelsim\_ase/bin”**

*Altera/Intel Quartus toolpath (Quartus 24.1):*

**“~/intelFPGA\_lite/24.1std/quartus/bin/”**

These are the executable paths that allow Logisim to use the power of these 3rd-party softwares to simulate complex circuits, as well as program the DE10-Lite board you will be using in the labs.

## Installing WaveForms

You can find WaveForms for all major operating systems [here](#).

## FAQ

### **1. Where should I set up my Quartus and Modelsim Projects?**

You should create a folder within your home directory. **DO NOT** put spaces or special characters other than underscores in your file or directory names.