

## Quartus Installation and Configuration

This document will guide you through the installation of the Quartus Prime environment. Quartus Prime is a Computer-aided design (CAD) software from Intel that includes everything needed to design for Intel FPGAs, SoCs, and complex programmable logic device (CPLD) such as the MAX10 development Board used in this class.

**Note:** The following instructions assume that Windows 10 is used.

The student version of the Quartus software can be obtained directly from the Intel Download Center for FPGAs (<https://fpgasoftware.intel.com/>). The process for successfully installing Quartus is performed in the following manner:

1. Go to <https://fpgasoftware.intel.com/>. Note that you need the Quartus **Prime Lite Edition**, v19.1, i.e., select the `Lite` edition and release `19.1`. (If you already have a version of 18.1 or higher, it is probably okay to use that version.)
2. If you are not already signed-in, you will eventually be asked to sign in or to make an account. Select icon of the person near the top middle of the page.
  - a) If creating a new account, after verifying your account repeat step 1. (If the download is blocked by your firewall or your browser settings, you will be taken back to the screen in step 2. Remove the block and repeat the previous step. I suggest that you “always allow pop-ups from this site.”)
  - b) Some students have reported having issues with Intel’s website. Some potential solutions:
    - i) Try using a different browser.
    - ii) On repeated failed login request, the site locks the user from further requests or retrieving usernames and/or passwords. There is no indication about this (other than in the FAQs). If the website is unresponsive, wait 10 minutes before attempting to again access your account.
3. After you log in, make sure that you select edition “`Lite`” and release `19.1`. After I logged in, it changed my previous selections.
4. You only need to download, the following, as shown with arrows on the right: 1)  
Quartus Prime Lite Edition
  - a) (Quartus Prime (includes Nios II EDS) and
  - b) ModelSim-Intel FPGA Edition (includes Starter Edition) ],

- c) Cyclone V device support,
- d) MAX II, MAX V device support, and
- e) MAX 10 FPGA device support.

Select what you need by selecting Individual Files. If you select Combined Files, it will take much longer and you will get devices that you won't need.

**Quartus Prime Lite Edition (Free)**

**Quartus Prime (includes Nios II EDS)**  
 Size: 1.5 GB MD5: C64B01C9F5DE3E14724F0CA046E56A3E  
 \*\* Nios II EDS on Windows requires Ubuntu 18.04 LTS on Windows Subsystem for Linux (WSL), which requires a manual installation.  
 \*\* Nios II EDS requires you to install an Eclipse IDE manually.

**ModelSim-Intel FPGA Edition (includes Starter Edition)**  
 Size: 968.2 MB MD5: C094C7B72139545F77D93DB0F750594C

**Devices**  
 You must install device support for at least one device family to use the Quartus Prime software.

**Arria II device support. (536.5MB)**  
 Size: 499.1 MB MD5: B9D8043A8978EA0C60D841C3B61DB43B

**Cyclone IV device support. (516.3MB)**  
 Size: 466.0 MB MD5: 421FCBB5BCD5C66AF026EB693FCCA7EF

**Cyclone 10 LP device support. (293.5MB)**  
 Size: 265.7 MB MD5: 09CC8E9314101A1224F4364950D97431

**Cyclone V device support. (1434.3MB)**  
 Size: 1.3 GB MD5: FF775862C7E1EB0F0083844DAE554079

**MAX II, MAX V device support. (13.1MB)**  
 Size: 11.4 MB MD5: 8D4FB07A55F9894C53695808F9779D44

**MAX 10 FPGA device support. (343.3MB)**  
 Size: 332.8 MB MD5: C5D8FB781E2816D9433A0B64240233F5

## Quartus Installation Instructions

(Last Updated for Quartus v19.1)

If you have not already done so, you will be asked to Sign In or Register at this point. See step 2 above.

Select each of the files specified above for download. The total download required files is about 5.8 GB. Depending on your connection speed, downloading these files may take anywhere from 4 minutes (it took and 12 minutes at my home) to an hour.

5. If the download is successful, close the download window and then go back to the Altera window.

6. After the Quartus software has finished downloading, run the below installation file to install the Quartus software. `QuartusLiteSetup-19.1.0.670-windows.exe`

Note that the numbers after the 19 might change as new versions become available. (Do **NOT** run `ModelSimSetup-19.1.0.670-windows.exe`; this file will **automatically** run as part of the previous setup file.) The default location of Quartus **must NOT have any spaces or special characters**. I suggest that you use all the default responses. The installation may take **OVER AN HOUR** (although it took me less than 25 minutes).

a) Windows may tell you that it is not safe to run this program with something like Window protected your PC. Ignore this message. Select More info or something similar to get Windows to continue and then select Run anyway.

b) When prompted, allow this program to continue running.

c) Select all default and Next each time it is necessary.

d) When the Finish option is presented, de-select Launch USB Blaster II drive installation and then select Finish.

7. When a Quartus Prime 19.1 Lite Edition window appears (see below), select the second option (as shown), i.e., Run the Quartus Prime software and then select OK.

8. When the installation is done, run the Quartus software. You can run Quartus by selecting the second option, i.e., Run the Quartus Prime software, shown above. Other ways to run Quartus is to either select your desktop icon (shown on the right) or, if you used default settings, Quartus should be available in the Program Menu under Intel FPGA 19.1.0.670 Lite Edition | Quartus (Quartus Prime 19.1).

I suggest that you drag the Quartus desktop icon into your Taskbar for easiest access.

**Note for Mac computer users:** If you have a Mac (i.e., a Macintosh computer from Apple), you will need to install a windows virtual machine in order to install and run Quartus. We suggest that you install *Boot Camp* (free and the best); *Parallels* (not free) or possibly *VMware* (free for students) may also work. UF offers free copies of Windows 10 Software. We do **not** recommend *Virtual Box*. (Note: My best students use *Boot Camp*!) If you are having problems installing this software, the UF help desk ([www.helpdesk.ufl.edu](http://www.helpdesk.ufl.edu) and 352-392-HELP [4357]); you can visit them at the HUB Mon-Thur from 7:30am-10pm, Fri from 7:30am-5:00, and Sat-Sun from noon-6:00pm.



Quartus Prime 19.1 Lite Edition



Thank you for installing the Quartus Prime software - the #1 in performance and productivity. To upgrade to a full featured edition, please <https://www.intel.com/content/www/us/en/products/programmable.html>.

Select one of the following licensing options to continue:

Select one of the following options

- ☐ Buy a Quartus Prime software license
- ☒ Run the Quartus Prime software
- ☐ Add an IP license file (for users who have purchased IP)

OK

Cancel