

Quartus Installation Instructions (Last Updated for Quartus v19.1)

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)], 2) Cyclone V device support, 3) MAX II, MAX V device support, and 4) MAX 10 FPGA device support.

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

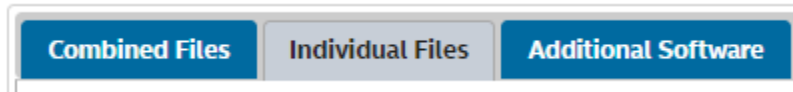
Cyclone V device support. (1434.3MB)
Size: 1.3 GB MD5: FF775862C7E1EB0F0083844DAE554079

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

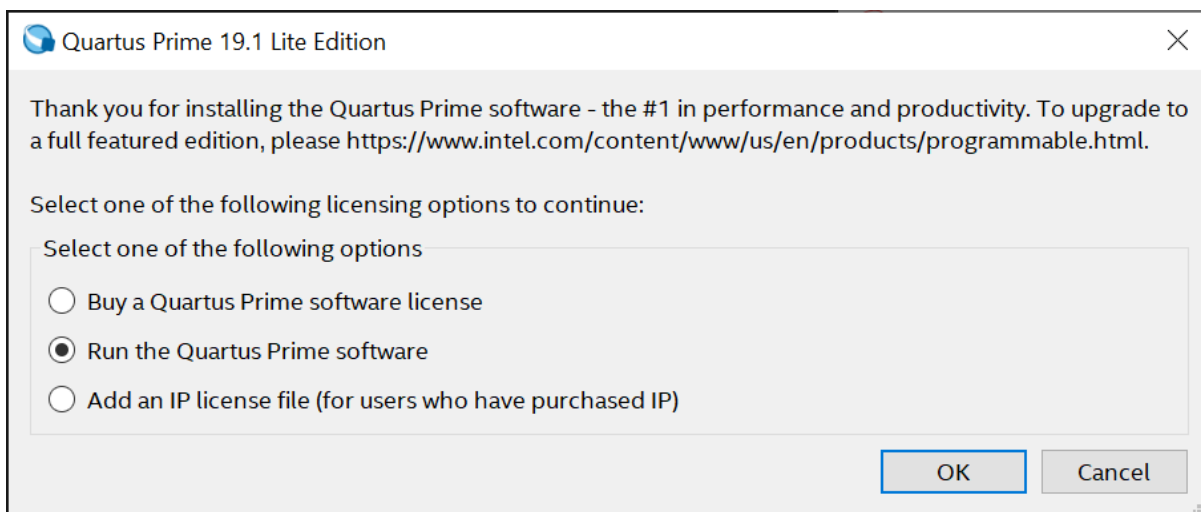
MAX 10 FPGA device support. (343.3MB)
Size: 332.8 MB MD5: C5D8FB781E2816D9433A0B64240233F5

- a) 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.

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- b) If you have not already done so, you will be asked to Sign In or Register at this point. See step 2 above.
 - c) 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. Download one of the files below, depending on your operating system. These will configure Quartus to utilize the OOTB PLD programmer to program your PLD. If your browser warns you about this download, you are safe to ignore the warning. You may need provide administrator permission to position to copy the file into the required folder.
- For 64-bit Windows computers, download [jtag_hw_mbftdi_blaster64.dll](#) and then move or copy it to the folder C:\intelFPGA_lite\19.1\quartus\bin64\.

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- For 32-bit Windows computers, download [jtag_hw_mbftdi_blasterXX.dll](#) and then move or copy it to the folder C:\intelFPGA_lite\19.1\quartus\??.
 - For Linux computers, download [libjtag_hw_mbftdi-blaster.so.txt](#) and then remove the .txt from the file name and copy it the folder ??.
9. Download and install the FTDI USB [device driver](#) to allow your USB port to communicate over JTAG. The main driver page can be found [here](#). Run this program to install the device driver.
 10. 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 (show 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 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.

A TA/PI said the following in slack: “The installation needs to be run within a Windows environment. For a step-by-step guide for Quartus on a Mac, see: <https://ezcontents.org/altera-quartus-mac-osx>. Note that you will need to have enough memory space remaining to set up the virtual machine.”