

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

Note that **v22.1** has a new simulator that is very different from what we are using in v19.1. Using this version, as well as v20 and v21, will require the installation of the Questa simulator, since the ModelSim simulation is no longer included in the newer versions of Quartus. Use this version at your own risk; you are still required to get the same simulation outputs as those using v19.1.

Note that if you do chose to install Quartus v22 (or v20 or v21), for **EVERY PROJECT**, before you run a simulation, you will have to go to the simulation's settings (Simulation->Simulation Settings) and change the first argument of the vsim command from **-novopt** to **-voptargs="+acc"**. You will also need to get a Quest a license (which is a pretty complicated process). More info is available at the following locations: https://mil.ufl.edu/3701/docs/quartus/QuestaSim_with_Quartus21.pdf.

If you find a way to get Questa to work without the constant need to change the simulation settings above, please let me know. Similarly, if you find a more straightforward way to get a Questa license, please let me know.

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Windows



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://www.intel.com/content/www/us/en/software-kit/664527/intel-quartus-prime-lite-edition-design-software-version-19-1-for-windows.html> and select the “Individual Files” tab of the website, as shown in the red rectangle. (Note that other versions, including version 22.1 is available, but should **NOT** be installed.)
2. You only need to download, the following, as shown with arrows on the left:
 - a) ModelSim-Intel FPGA Edition (includes Starter Edition)
 - b) Intel Quartus Prime (includes Nios II EDS)
 - c) Intel MAX 10 Device Support
 - d) Intel MAX II, Intel MAX V Device Support
 - e) Intel Cyclone V Device Support

Downloads



Multiple Download **Individual Files** Additional Software Copyleft Licensed Source

Intel® Quartus® Software

	Download ModelSimSetup-19.1.0.670-windows.exe	Size: 968.2 MB SHA1: e3ebbf01c653892decd7f718c2a3862ccc36954
	Download QuartusLiteSetup-19.1.0.670-windows.exe	Size: 1.5 GB SHA1: f3de26a3a6288b6258aeb7d89a406ba22330684

** 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.

Devices

	Download arria_lite-19.1.0.670.qdz	Size: 499.1 MB SHA1: 602527e267e23673abacac6926bc2081b485d0a8
	Download max10-19.1.0.670.qdz	Size: 332.8 MB SHA1: cd99cd6e153867499e6a460d89661940f59ac60a
	Download max-19.1.0.670.qdz	Size: 11.4 MB SHA1: 90a3be6febda19ef0c4140b0ecec0798b1f38a5
	Download cyclone-19.1.0.670.qdz	Size: 466 MB SHA1: 8ec1a1aff0374be90371121eff351ca4ec17ea3c
	Download cyclone10lp-19.1.0.670.qdz	Size: 265.7 MB SHA1: b2622b757b842d83890a7e1c1fee65448cc76d8f
	Download cyclonev-19.1.0.670.qdz	Size: 1.3 GB SHA1: a618a94985875978f5b19aad64cfa78c60c33370

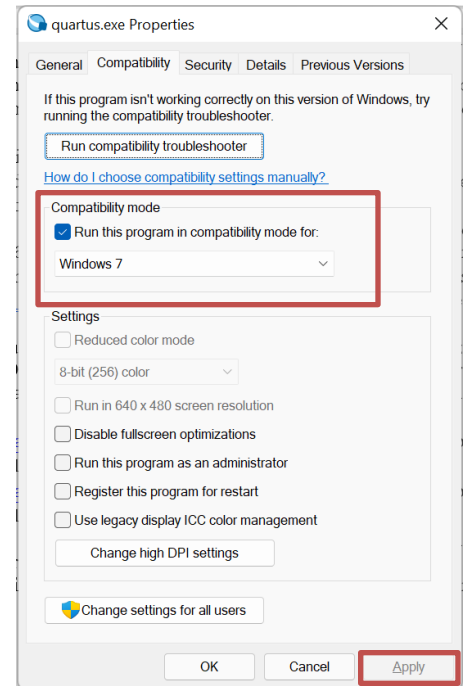
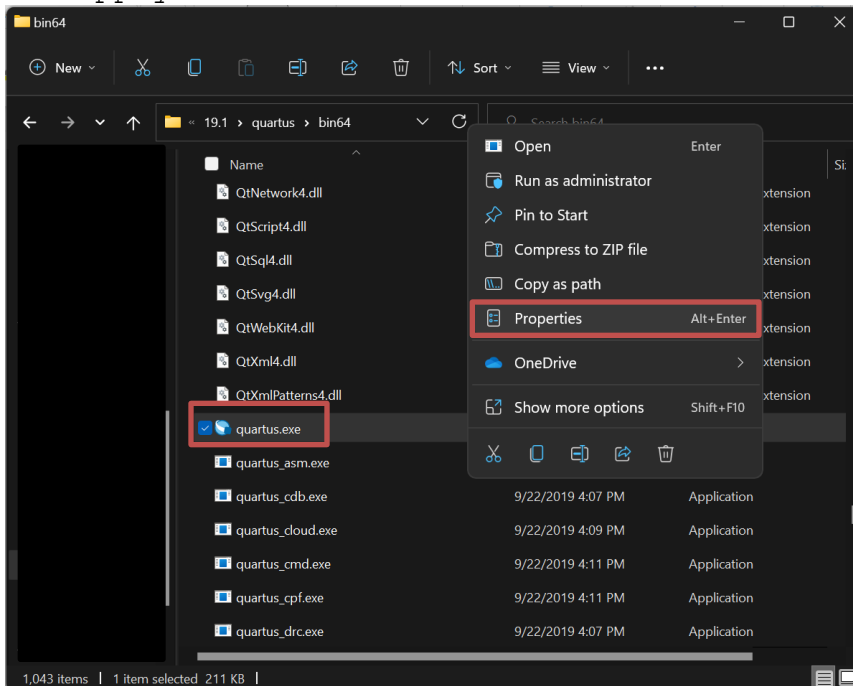
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3. Select each of the files specified above for download. The total download required files is about 4.1 GB.
4. After the Quartus software has finished downloading, run the below installation file to install the Quartus software.

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. When default locations were not used, problems have occurred. The installation may take **OVER AN HOUR** (although it took me less than 25 minutes).

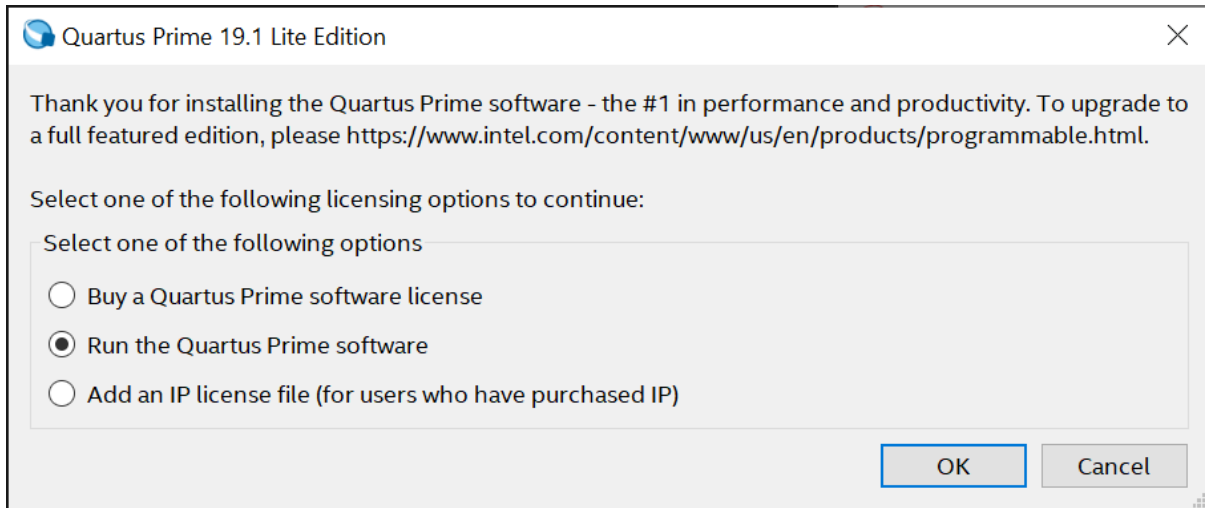
- a) Windows may tell you that it is not safe to run this program with something like Windows protected your PC. Ignore this message. Select More info or something similar to get Windows to continue and then select Run anyway.
 - b) Leave all default options in the installer and select Next each time it is necessary.
 - c) When the Finish option is presented, de-select Launch USB Blaster II drive installation and Run the Quartus Prime Software and then select Finish.
5. Quartus has not been updated to work on Windows 11 and requires a compatibility mode to run. Navigate to C:\intelFPGA_lite\19.1\quartus\bin64 and find quartus.exe. Right click on quartus.exe and choose Properties. Click on the Compatibility Tab, check the box next to Run this program in compatibility mode for:, and choose Windows 7 from the dropdown menu. Finally, click Apply. See the below screenshots.



6. 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\.
7. 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.

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8. When the installation is done, run the Quartus software from the Start menu or the desktop shortcut. 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. I suggest that you drag the Quartus desktop icon into your Taskbar for easiest access.



Notes for students running Windows 11: Run Quartus in “Windows 7 compatibility mode”. This seems to work. See item 5 above for more info.

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.”