

Installation Instructions

For Quartus Prime Lite version 18.1

ECE 2060 – Spring 2021

Dr. Gregg J. Chapman

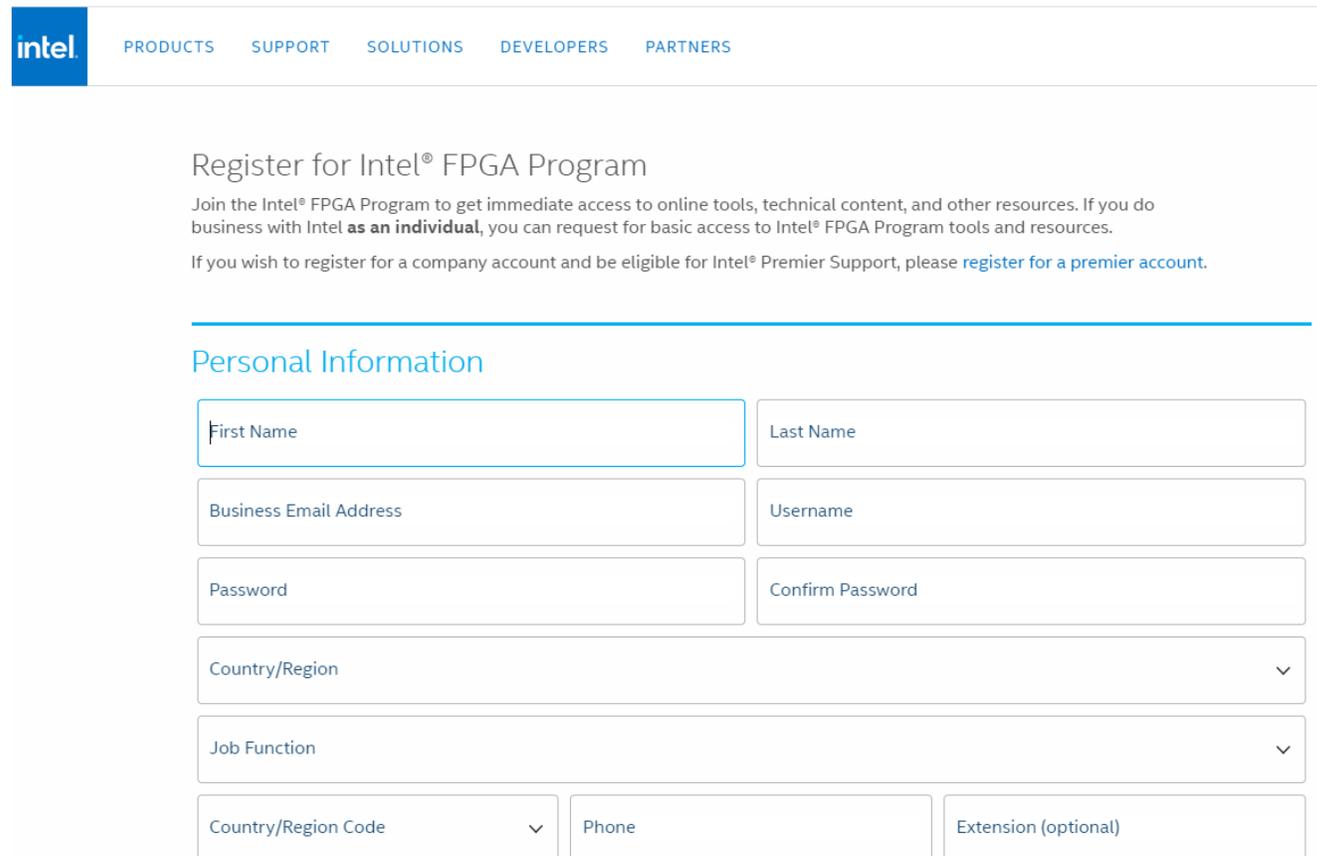
There are FOUR steps to the installation:

- I. Register for the Intel FPGA Program
- II. Download and Install Quartus Prime Lite, version 18.0 or 18.1 (Lab version is 18.0)
- III. Download and Install ModelSim
- IV. Enable the USB Blaster for Programming the DE2-115 FPGA Board

I. Register for the Intel FPGA Program

Click or copy the following link and register:

https://www.intel.com/content/www/us/en/forms/fpga/fpga-individual-registration.html?tgt=http%3A%2F%2Ffpgasoftware.intel.com%2Fsaml_login%2F%3Fsso2



The screenshot shows the Intel website's registration page for the Intel® FPGA Program. At the top, there is a navigation bar with the Intel logo and links for PRODUCTS, SUPPORT, SOLUTIONS, DEVELOPERS, and PARTNERS. Below the navigation bar, the page title is "Register for Intel® FPGA Program". A paragraph of text explains that users can request basic access to Intel® FPGA Program tools and resources if they do business with Intel as an individual, and provides a link to register for a premier account if they wish to register for a company account. Below this text is a section titled "Personal Information" which contains a registration form. The form consists of several input fields: First Name, Last Name, Business Email Address, Username, Password, and Confirm Password. There are also two dropdown menus for Country/Region and Job Function. At the bottom, there are three input fields: Country/Region Code, Phone, and Extension (optional).

intel PRODUCTS SUPPORT SOLUTIONS DEVELOPERS PARTNERS

Register for Intel® FPGA Program

Join the Intel® FPGA Program to get immediate access to online tools, technical content, and other resources. If you do business with Intel **as an individual**, you can request for basic access to Intel® FPGA Program tools and resources. If you wish to register for a company account and be eligible for Intel® Premier Support, please [register for a premier account](#).

Personal Information

First Name	Last Name		
Business Email Address	Username		
Password	Confirm Password		
Country/Region	▼		
Job Function	▼		
Country/Region Code	▼	Phone	Extension (optional)

II. Download and Install Quartus Prime Lite, version 18.1

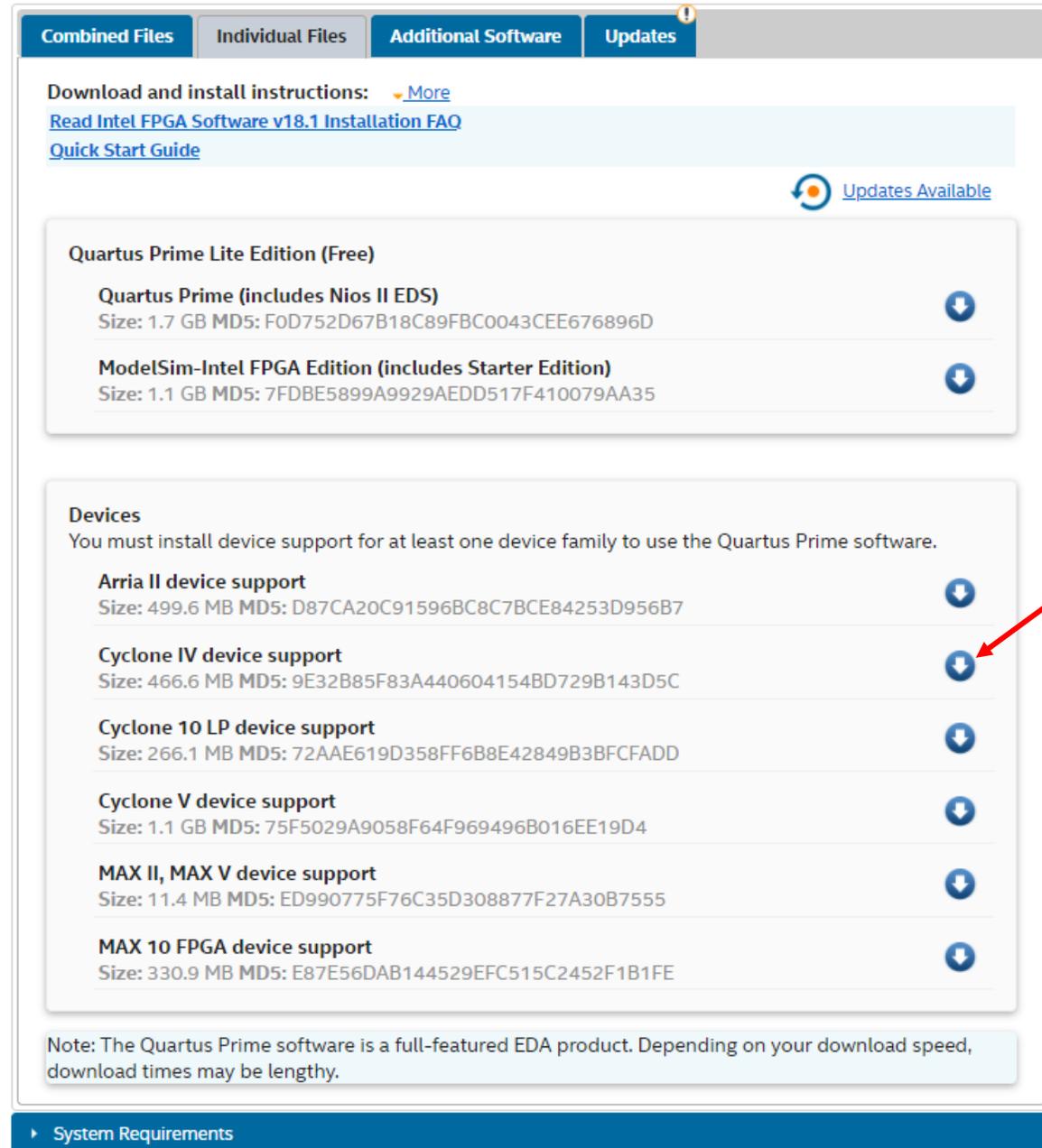
1) Once you have registered and received your password and verification, login and navigate to

<https://fpgasoftware.intel.com/?edition=lite>

2) Make sure to select Lite, and release 18.1 and download

The screenshot shows the Intel Quartus Prime Lite Edition download page. The browser address bar displays `fpgasoftware.intel.com/18.1/?edition=lite&platform=windows`. The page features a navigation menu with links for PRODUCTS, SUPPORT, SOLUTIONS, DEVELOPERS, and PARTNERS. A sidebar on the left lists various software categories, including Design Software, Embedded Software, Archives, Licensing, Programming Software, Drivers, Board System Design, Board Layout and Test, and Legacy Software. The main content area is titled "Download Center for FPGAs" and "Download Center for Quartus Prime Lite Edition". It displays the product name "Quartus Prime Lite Edition" with a release date of September, 2018 and the latest release version v20.1. There are two dropdown menus: "Select edition:" set to "Lite" and "Select release:" set to "18.1". A red arrow points to the "Lite" dropdown. Below these are radio buttons for "Operating System" with options for Windows and Linux. A yellow notification box contains three green checkmarks with text about updates and device support. At the bottom, there are tabs for "Combined Files", "Individual Files", "Additional Software", and "Updates", with a "Download and install instructions" link.

3) Scroll down in the Individual Files tab to DEVICES and make sure you select Cyclone IV. You will be asked for your login and password at this point.



Combined Files Individual Files Additional Software Updates

Download and install instructions: [More](#)
[Read Intel FPGA Software v18.1 Installation FAQ](#)
[Quick Start Guide](#)

 [Updates Available](#)

Quartus Prime Lite Edition (Free)

- Quartus Prime (includes Nios II EDS)**
Size: 1.7 GB MD5: F0D752D67B18C89FBC0043CEE676896D 
- ModelSim-Intel FPGA Edition (includes Starter Edition)**
Size: 1.1 GB MD5: 7FDBE5899A9929AEDD517F410079AA35 

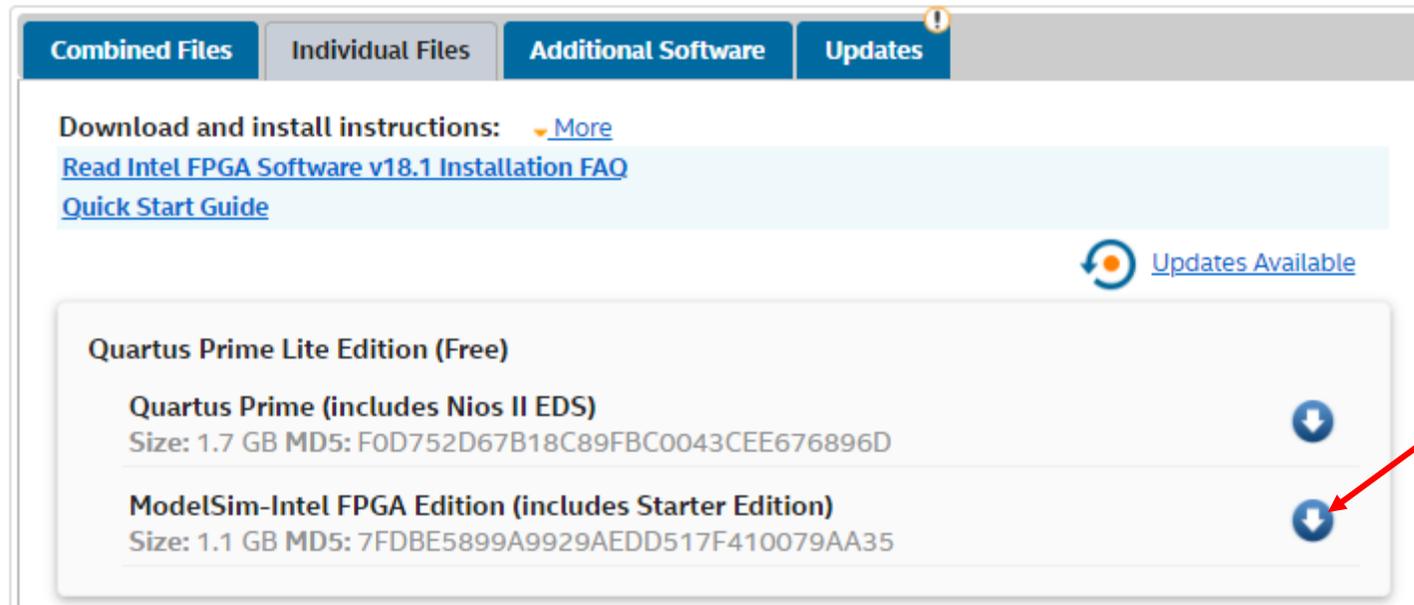
Devices
You must install device support for at least one device family to use the Quartus Prime software.

- Arria II device support**
Size: 499.6 MB MD5: D87CA20C91596BC8C7BCE84253D956B7 
- Cyclone IV device support**
Size: 466.6 MB MD5: 9E32B85F83A440604154BD729B143D5C  
- Cyclone 10 LP device support**
Size: 266.1 MB MD5: 72AAE619D358FF6B8E42849B3BFCFADD 
- Cyclone V device support**
Size: 1.1 GB MD5: 75F5029A9058F64F969496B016EE19D4 
- MAX II, MAX V device support**
Size: 11.4 MB MD5: ED990775F76C35D308877F27A30B7555 
- MAX 10 FPGA device support**
Size: 330.9 MB MD5: E87E56DAB144529EFC515C2452F1B1FE 

Note: The Quartus Prime software is a full-featured EDA product. Depending on your download speed, download times may be lengthy.

▸ System Requirements

4) Under the Individual Files tab , download ModelSim-Intel FPGA Edition



Combined Files Individual Files Additional Software Updates

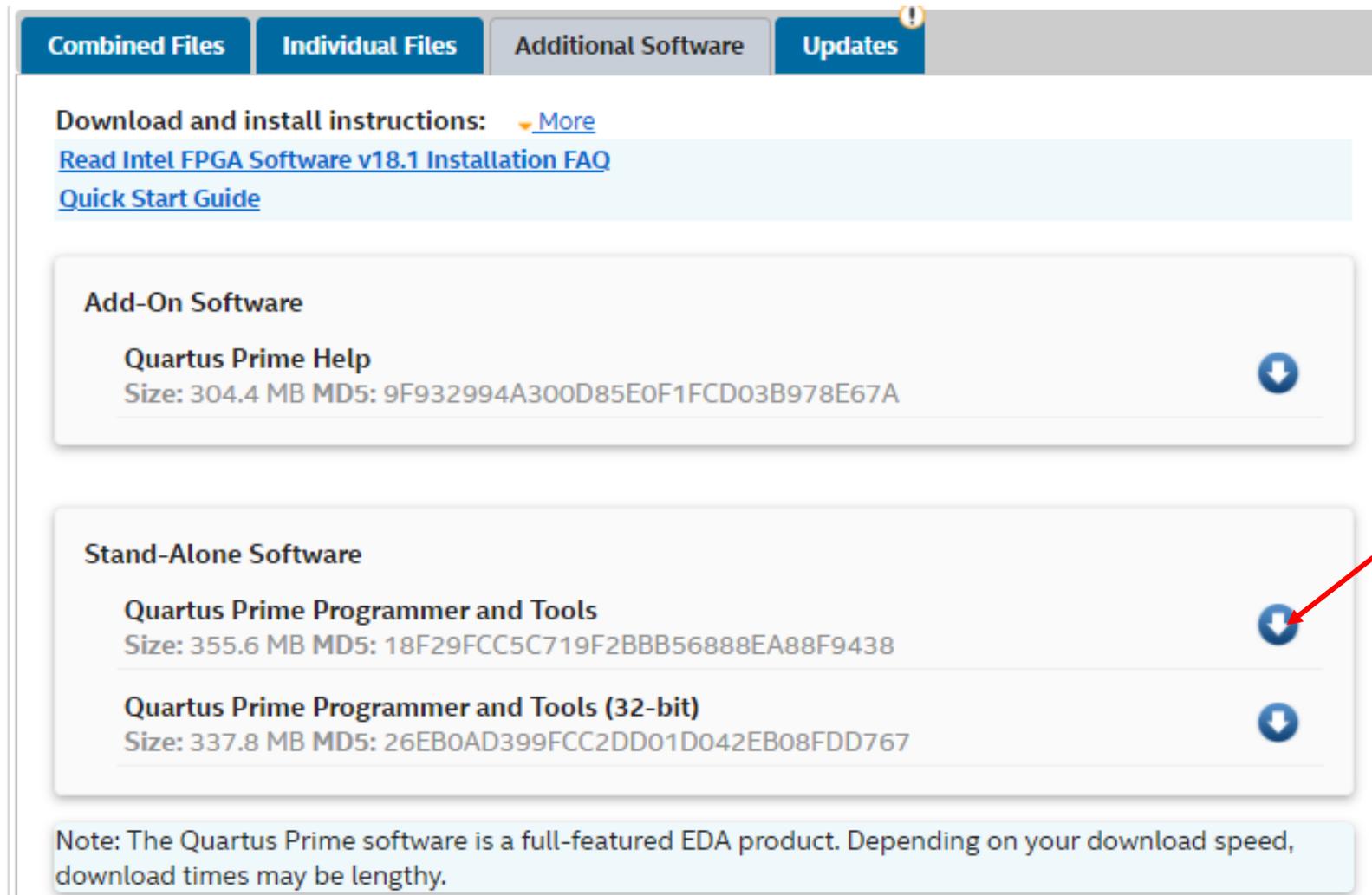
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Quartus Prime Lite Edition (Free)

Quartus Prime (includes Nios II EDS) Size: 1.7 GB MD5: F0D752D67B18C89FBC0043CEE676896D	
ModelSim-Intel FPGA Edition (includes Starter Edition) Size: 1.1 GB MD5: 7FDBE5899A9929AEDD517F410079AA35	

5) Under the Additional Software tab , download Quartus Prime Programmer and Tools



Combined Files Individual Files **Additional Software** Updates

Download and install instructions: [More](#)
[Read Intel FPGA Software v18.1 Installation FAQ](#)
[Quick Start Guide](#)

Add-On Software

Quartus Prime Help
Size: 304.4 MB MD5: 9F932994A300D85E0F1FCD03B978E67A

Stand-Alone Software

Quartus Prime Programmer and Tools
Size: 355.6 MB MD5: 18F29FCC5C719F2BBB56888EA88F9438

Quartus Prime Programmer and Tools (32-bit)
Size: 337.8 MB MD5: 26EB0AD399FCC2DD01D042EB08FDD767

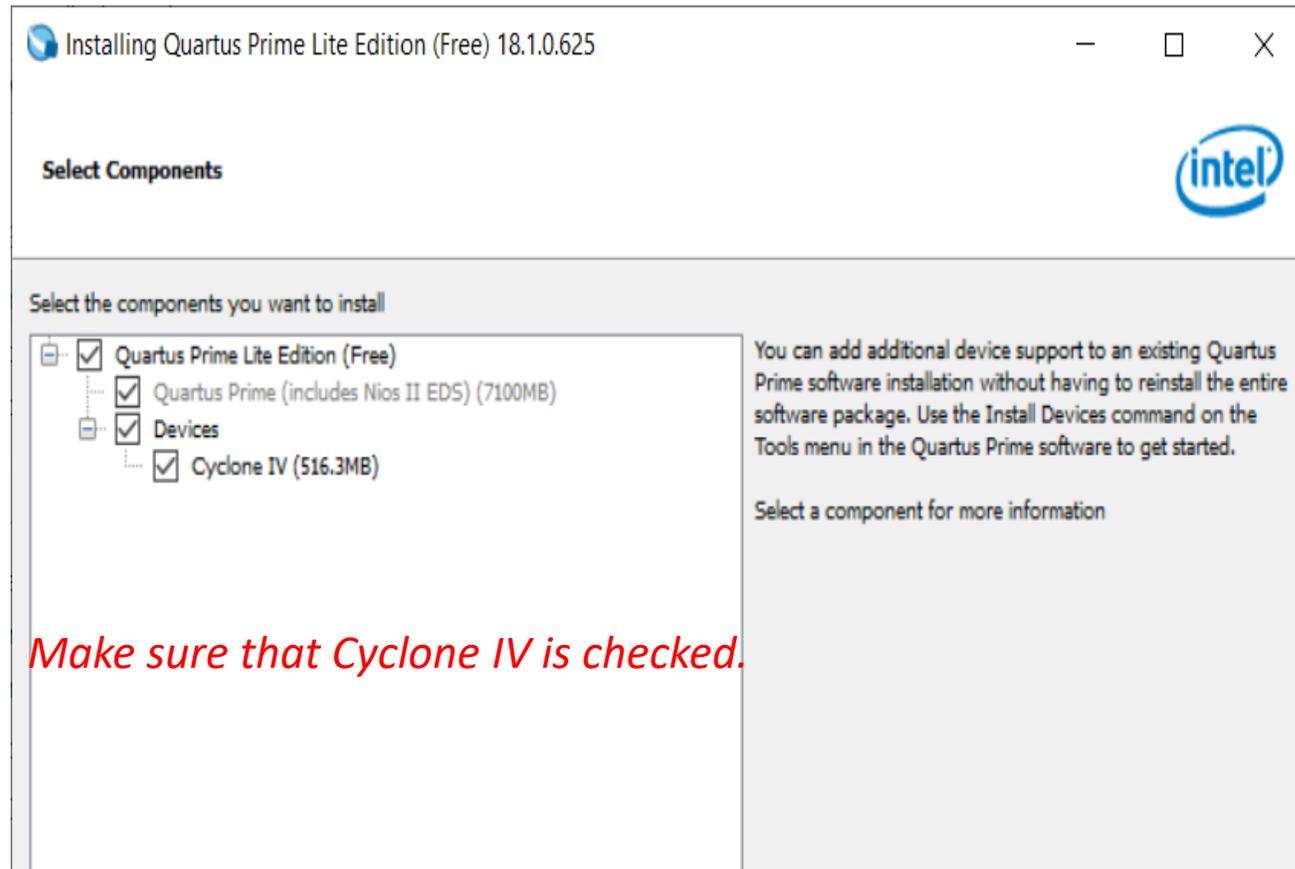
Note: The Quartus Prime software is a full-featured EDA product. Depending on your download speed, download times may be lengthy.

When you have downloaded correctly, you should have the following files in your Download folder:

- 
-  ModelSimSetup-18.1.0.625-windows
 -  QuartusProgrammerSetup-18.1.0.625-windows
 -  cyclone-18.1.0.625.qdz
 -  QuartusLiteSetup-18.1.0.625-windows

6) Run the QuartusLiteSetup first.

During the set-up you will be asked to select devices in the following window:



7) Run the ModelSimSetup.

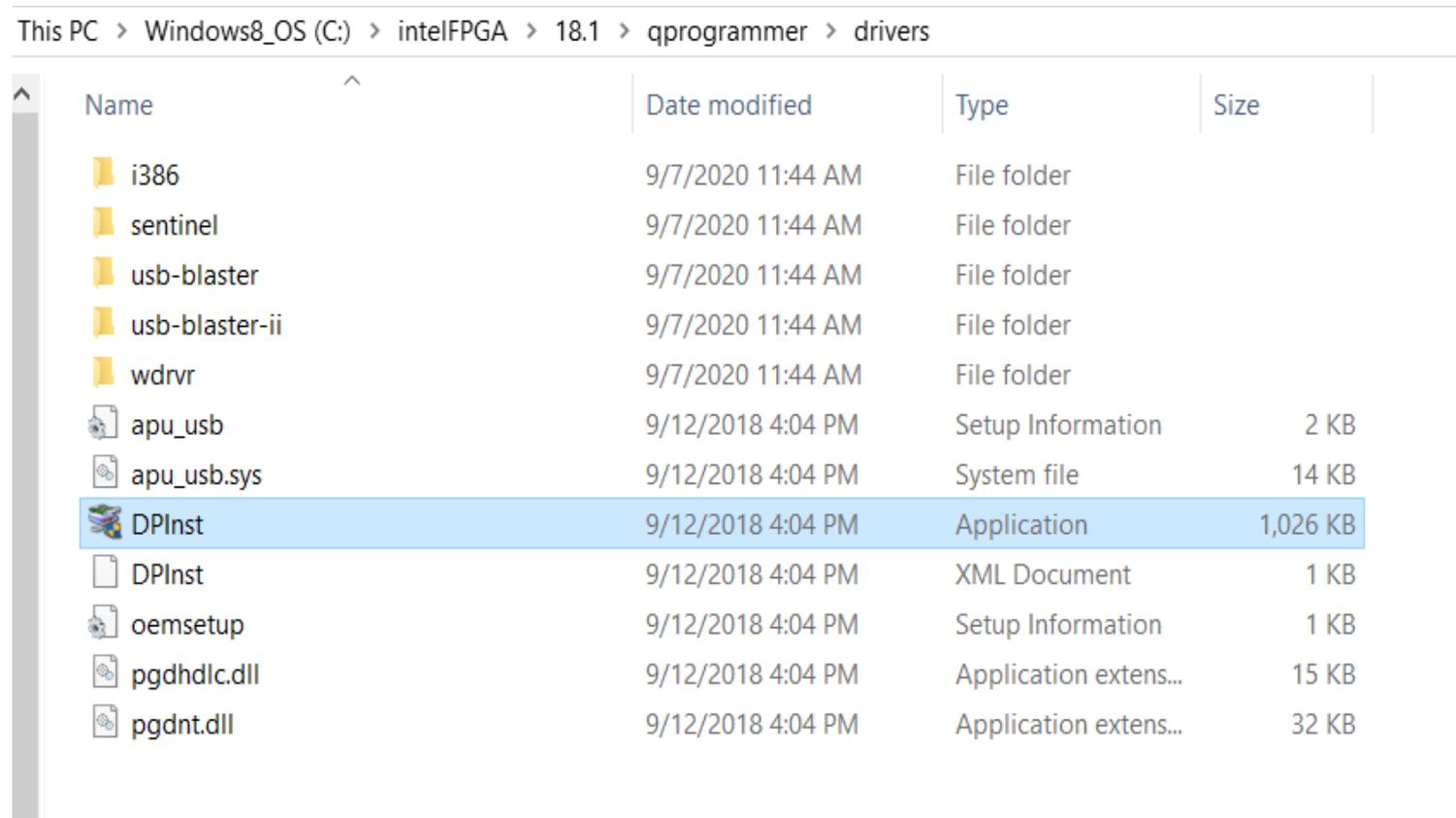
8) Run QuartusProgrammerSetup.

Citrix Instructions

- Go to:
<https://wiki.engineering.osu.edu/display/DOCS/College+of+Engineering+Citrix>
- Follow the directions. Pay careful attention to 3) Use apphub.coeit.osu.edu where it says Add Account.
- Then in Step 4) Use your OSU email address.
- Once done, Click on DESKTOP
- Click on COE
- Type Quartus in the Startmenu
- It should bring up Quartus Prime Lite v18.0
- Complete the Assignment.

III. Enable the USB Blaster for Programming the DE2-115 FPGA Board

1) Navigate to the following folder on your C: drive and run the DPInst application.



This PC > Windows8_OS (C:) > intelFPGA > 18.1 > qprogrammer > drivers

Name	Date modified	Type	Size
i386	9/7/2020 11:44 AM	File folder	
sentinel	9/7/2020 11:44 AM	File folder	
usb-blaster	9/7/2020 11:44 AM	File folder	
usb-blaster-ii	9/7/2020 11:44 AM	File folder	
wdrvr	9/7/2020 11:44 AM	File folder	
apu_usb	9/12/2018 4:04 PM	Setup Information	2 KB
apu_usb.sys	9/12/2018 4:04 PM	System file	14 KB
DPInst	9/12/2018 4:04 PM	Application	1,026 KB
DPInst	9/12/2018 4:04 PM	XML Document	1 KB
oemsetup	9/12/2018 4:04 PM	Setup Information	1 KB
pgdhdlc.dll	9/12/2018 4:04 PM	Application extens...	15 KB
pgdnt.dll	9/12/2018 4:04 PM	Application extens...	32 KB

Restart your computer. You should be all set.

To complete the assignment:

1. Watch the *DE2 Board* Video
2. Watch the *Quartus Prime* Video
3. Use *Quartus Prime Lite v18.1* to make a schematic of a two input OR gate.
 - a. Use SW[2] and SW[3] as inputs.
 - b. Connect the output to the green LED, LEDG[1].
4. Compile the OR gate schematic.
5. Use the snipping tool to capture 3 images:
 - a. The Hierarchy Tab, showing your OR gate at the top level
 - b. Your OR gate schematic
 - c. The PIN PLANNER showing your two inputs and your output.
6. Turn in your images (with a title sheet) in PDF format on Carmen.