CSC258 – Quartus Installation Advice

Starting from lab 2, you will need to use two new tools, **Quartus** and **Modelsim**, to complete your prelab. Quartus is the main software tool you will be using to program the FPGA hardware, while Modelsim is the simulator you will use to test the functionality of your hardware design and debug your circuit before programming the board.

Please see below for a list of different ways you can get access to these tools:

1. Both Quartus Prime Lite version 17.0 and ModelSim are available in the Computer Science Teaching Laboratories (former CDF). You can launch them from a terminal by using the **`quartus`** and **`vsim`** commands respectively.

   If you are connecting to the CDF server remotely (via `ssh`) you need to have X forwarding enabled as both these tools have a graphical interface. You can do this as follows:

   ```
   ssh -Y your_username@teach.cs.utoronto.ca
   ```

   Note that the student usernames on CDF have recently changed to be your UTORids. For more remote access options, please see:

   `http://www.cdf.toronto.edu/using_cdf/remote_access_server. html`

2. You are also welcome and encouraged to install the free version of Quartus, Quartus Prime Lite Edition, on your own laptop/desktop. Before you start, please check the system/memory requirements here:

   `http://dl.altera.com/requirements/17.0/`

   Make sure to read the caveats below.

   Here are the steps to install Quartus:

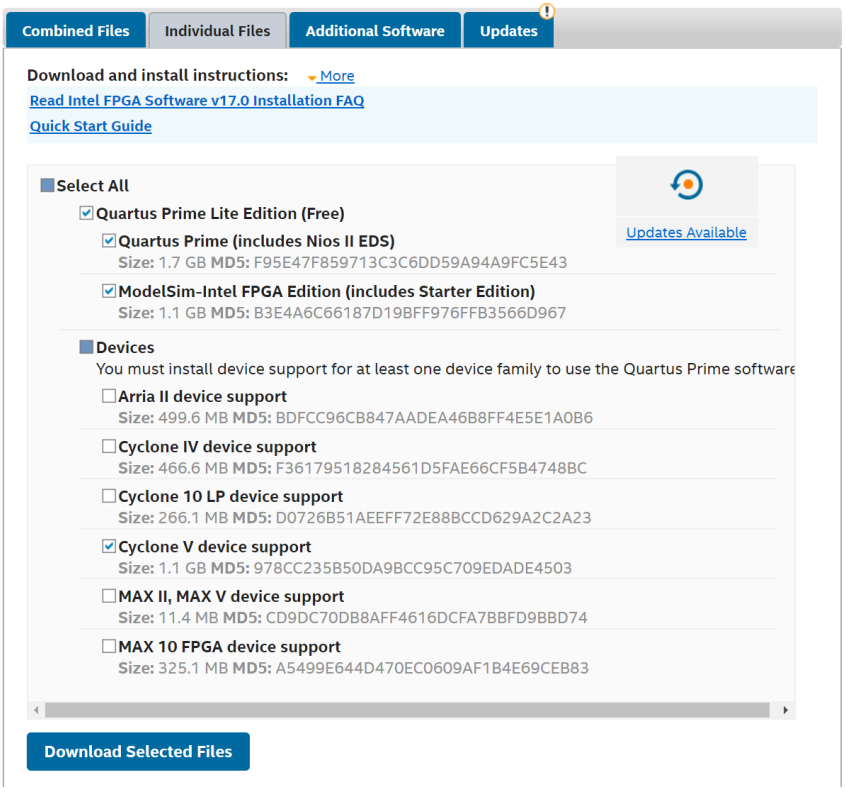
   a. You first need to create a myAltera account here:
   `https://www.altera.com/myaltera/mal-index.jsp`

      If you don't want to use your own address, you can use: **University of Toronto** as the company, and **10 King's College Rd., Toronto, Ontario, Canada, M5S 3G4** as the address.

   b. Once you have created your free myAltera account, you can download **Quartus Prime Lite Edition 17.0** via the following link:
   `http://dl.altera.com/17.0/?edition=lite`.

      This download includes **Modelsim-Altera**.

      Downloading the combined version of the files is easier, but if you want to go the "Individual Files" route and you want to save some disk space, you can uncheck all the device families **except** Cyclone V; see image below:



Caveats

Quartus is currently supported on Windows and Linux. If you have a Mac, you would need to install and run Quartus on a virtual machine. Here are some pointers, if you want to do that:

- Before you start, make sure you have enough disk space. The Quartus installation requires ~13GB of storage, so you'd probably need your virtual disk to have 30-35GB of storage or so.
- Install VirtualBox from here: `https://www.virtualbox.org`. It is free.
- If you are considering running Windows on a virtual machine on your Mac, you can download a Windows iso image for free here, which you could then use on VirtualBox: `http://e5.onthehub.com/WebStore/ProductsByMajorVersionList.aspx?ws=30b88fca-b08b-e011-969d-0030487d8897&vsro= 8`. This is a program "only available for students in Computer Science, Engineering and iSchool and ONLY when attending classes". The "How do I get access?" link explains what you need to do to get an account.
- Install Quartus on your virtual machine.

FAQ

Lastly, if any of you are thinking of buying a DE1-SoC board (please note that this is not required), then you could get one from Terasic with a UofT discount. You can find more details here: `http://www-ug.eecg. toronto.edu/desl/handouts/buying_de1.html`