UNIVERSITY OF BRITISH COLUMBIA
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

EECE259 Instructions for Downloading and Installing Altera Software
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Overview

For the practical assignments, you need to install version 9.1sp2 of the Altera tools:

A. *Quartus II Software*
B. *Nios II Embedded Design Suite*
C. *Altera University Program IP Cores*
D. *Altera Monitor Program*
E. *USB-Blaster Driver (IMPORTANT: Windows 7 users need version 10.0 or greater)*

You must install the software in this order.

Before you begin, make sure you have about 10GB of free space for temporary storage. The finished installation requires about 3.5 to 6GB (depending on whether you uncheck options below).

You can download the software from http://www.altera.com. Altera uses a *download manager* that can resume an interrupted download. The total download is 1.7GB.

Do not install the software on the lab computers (we'll do that for you).

ALWAYS USE THE *DEFAULT* FOLDERS DURING INSTALLATION !!!!

A. Quartus II Web Edition

Download and install "Quartus II Web Edition v9.1 Service Pack 2":
https://www.altera.com/download/software/quartus-ii-we/9.1
You should install with the default options. However, to save disk space, choose "Custom" instead of "Complete" and *keep* "Cyclone II 62MB" but uncheck all others. After unchecking, the installer will say you need "2572MB" of space.

Note: you do not need to download the ModelSim software; we won't be using it.

B. Nios II Embedded Design Suite

Using the same link as step A, download and install "Nios II Embedded Design Suite". When you run the executable, it first will ask to unzip the files in a temporary location. To make it easy to remember this location, set it to **C:\Temp**

Again, to save disk space, choose "Custom" instead of "Complete" and *uncheck* "Verilog hardware design examples" and "VHDL hardware design examples". After unchecking, the installer will say you need "1658MB" of space.

After installation is complete, manually delete the files in **C:\Temp** to reclaim 613MB.

C. Altera University Program IP Cores and Altera Monitor Program

Download and run the Altera University Program Design Suite installer from:
ftp://ftp.altera.com/up/pub/Altera_Material/QII_9.1/altera_upds_setup_vhdl.exe

Installation instructions can be found in the following tutorial:
ftp://ftp.altera.com/up/pub/Altera_Material/9.1/Tutorials/Altera_Monitor_Program_Tutorial.pdf

You can also read the Nios II tutorial:
ftp://ftp.altera.com/up/pub/Tutorials/DE2/Computer_Organization/tut_nios2_introduction.pdf
Sections 6 and 7 of this tutorial provide a good overview of Nios II instructions and assembler directives. An example program is explained in section 8. You can also use this program to play around with the Monitor Program. However, the program in section 8 might generate an assembler error (there is a problem with the last "stw" instruction). You can use the following file instead:
http://courses.ece.ubc.ca/259/homework/files/nios_example.s

E. USB-Blaster Cable Device Driver

Windows 7 users, follow the link below to download a newer USB-Blaster driver (the version included in 9.1sp2 will not work with Windows 7)
http://www.altera.com/support/kdb/solutions/rd06212010_676.html

Using the USB cable, plug your DE1 board directly into your computer and turn it on (RED power switch). You do not need to use the AC adapter. (If you plug into a USB hub, the USB-Blaster may not be recognized.) Install the appropriate *USB-Blaster Cable* device driver using these instructions:
http://www.altera.com/support/software/drivers/dri-index.html
The instructions refer to a folder "*<Path to Quartus II installation>*" on your computer. If you used the defaults during installation, this will be **C:\altera\91sp2**