Vivado Installation:

For the FPGA-related labs, we shall be working with Xilinx's (now AMD) FPGAs, in particular the "Basys3" board. A detailed documentation regarding this board is available at

https://digilent.com/reference/programmable-logic/basys-3/start?srsltid=AfmBOopPkADf6idc0f-GxQkA8fExGP5HKggDo12BiPg5Ir6BdtHmkARh

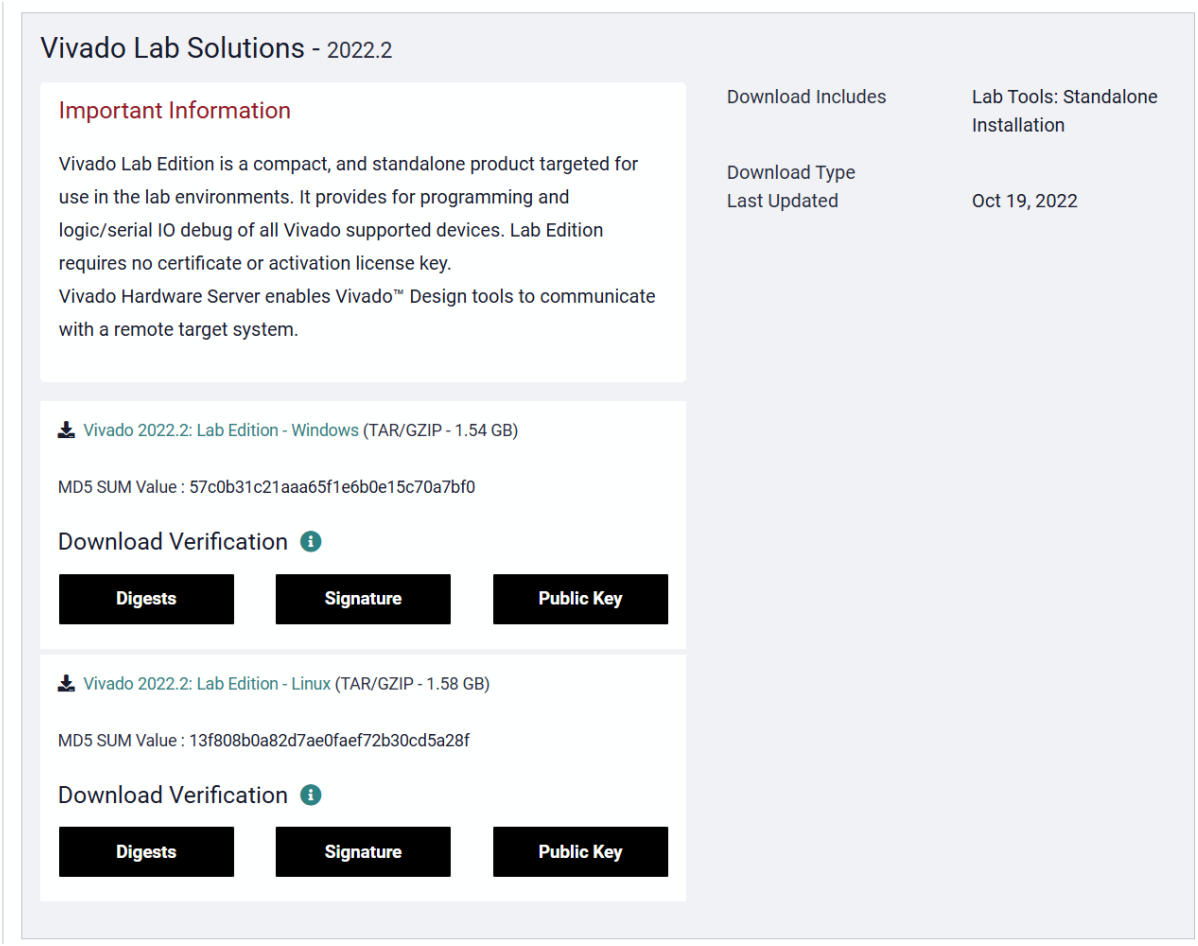
To work with this FPGA board, we need to install Vivado, which supports both Windows and Linux. We prefer that you have a Linux (Ubuntu) or any of the other supported Linux distributions mentioned below:

- Red Hat Enterprise Workstation/Server 7.4, 7.5, 7.6, 7.7, 7.9, 8.2, 8.3, 8.4, 8.5, and 8.6 (64-bit), English/Japanese
- CentOS 7.4, 7.5, 7.6, 7.7, and 7.9 (64-bit), English/Japanese
- SUSE Linux Enterprise 12 SP and 15 SP2 (64-bit), English/Japanese
- Ubuntu Linux 18.04.1 LTS; 18.04.2 LTS, 18.04.3 LTS; 18.04.4 LTS; 18.04.5 LTS; 18.04.6 LTS; and 20.04 LTS, 20.04.1 LTS, 20.04.2 LTS, 20.04.3 LTS, 20.04.4 LTS; 22.04 LTS (64-bit), English/Japanese

1. To avoid issues with the latest versions, we shall use the Vivado 2022.2 version. Go to the following link to download it:

https://www.xilinx.com/support/download/index.html/content/xilinx/en/downloadNav/vivado-design-tools/archive.html

2. Click on "2022.2" and go to "Vivado Lab Solutions-2022.2" and install the software.



3. To work with our particular FPGA board, we should install the board files in one of the Vivado's installed directories. Please follow the instructions mentioned in the link below to install the board files related to "Digilent". Basys3 is manufactured by Digilent.

https://digilent.com/reference/programmable-logic/guides/install-board-files?srsltid=AfmBOoqOEqgemXQy7bDv4DzrvGAkxqjXbyU7QBusVtqWhY0QjtSOF3oG

4. While porting the designs onto FPGA, we need ".xdc" file for Basys3, please download it from the following link and save it locally somewhere.

https://github.com/Digilent/Basys3/blob/master/Projects/GPIO/src/constraints/Basys3_Master.xdc