

## 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?srsId=AfmBOopPkADf6idc0f-GxQkA8fExGP5HKggDo12BiPq5Ir6BdtHmkARh>

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>

Version	We strongly recommend using the latest releases available.
<a href="#">2024.2</a>	2023
<a href="#">2024.1</a>	<a href="#">2023.1</a>
<a href="#">2023.2</a>	<a href="#">2023.2</a>
<b>Vivado Archive</b>	2022
<a href="#">ISE Archive</a>	<a href="#">2022.2</a>
<a href="#">CAE Vendor Libraries Archive</a>	<a href="#">2022.1</a>
	2021
	<a href="#">2021.1</a>
	<a href="#">2021.2</a>
	2020
	<a href="#">2020.3</a>
	<a href="#">2020.2</a>
	<a href="#">2020.1</a>
	2019
	<a href="#">2019.2</a>
	<a href="#">2019.1</a>
	2018

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

## Vivado Lab Solutions - 2022.2

### Important Information

Vivado Lab Edition is a compact, and standalone product targeted for use in the lab environments. It provides for programming and logic/serial IO debug of all Vivado supported devices. Lab Edition requires no certificate or activation license key. Vivado Hardware Server enables Vivado™ Design tools to communicate with a remote target system.

Download Includes

Lab Tools: Standalone Installation

Download Type

Last Updated

Oct 19, 2022

📄 Vivado 2022.2: Lab Edition - Windows (TAR/GZIP - 1.54 GB)

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📄 Vivado 2022.2: Lab Edition - Linux (TAR/GZIP - 1.58 GB)

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Signature

Public Key

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?srsId=AfmBOoqOEggemXQy7bDv4DzrvGAKxqiXbyU7QBusVtqWhY0QjtSOF3oG>

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