Vitis/Vivado 2020.2 Installation Guide
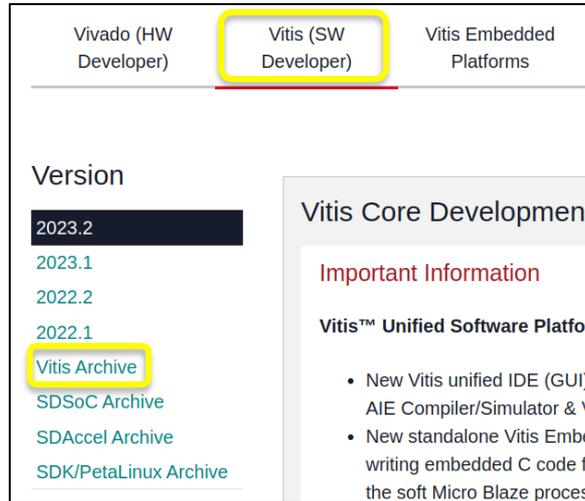
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Vitis 2020.2 Installation Guide (Ubuntu Linux)

- We will use Xilinx Vitis/Vivado (version 2020.2) as a design tool for our HW/SW codesigns. Visit to https://www.xilinx.com/support/download.html, click on Vitis (SW Developer) and then click on "*Vitis Archive*".

- This tutorial is prepared using Ubuntu 20.04.6 LTS. Some common problems:
  https://support.xilinx.com/s/question/0D52E00006hpQD0SAM/vitis-20202-install-with-ubuntu-2004lts-hangs-on-generating-installed-device-list?language=en_US
  https://www.fpgadeveloper.com/how-to-install-vitis-and-petalinux-2022.1/
  https://danielmangum.com/posts/vivado-2020-x-ubuntu-20-04/
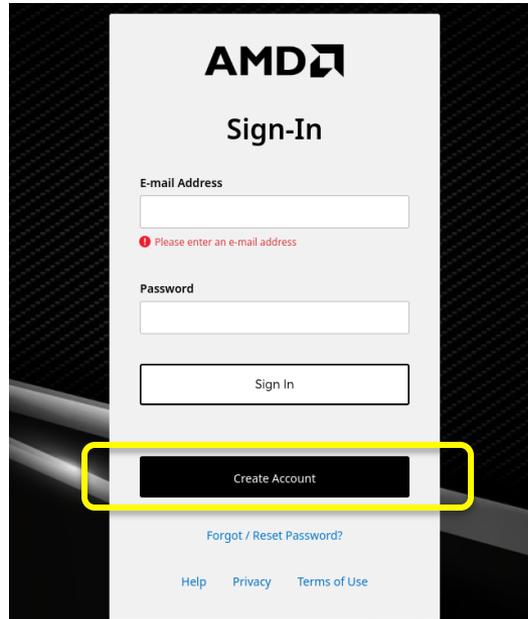
Vitis 2020.2 Installation Guide (Ubuntu Linux)

- Select 2020.2. Note that the example projects that we'll provide to you are generated using version 2020.2. Please install version 2020.2 to avoid possible incompatibility.
  - Choose the installation file depending on your OS (Linux Self Extracting for this tutorial) from Vitis Core Development Kit.

Vitis 2020.1 Installation Guide (Ubuntu Linux)

- You will be directed to AMD/Xilinx login page. You can create a free AMD/Xilinx account for downloading the installation file.
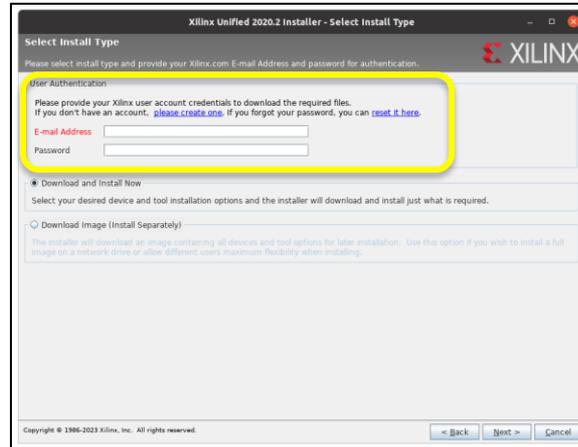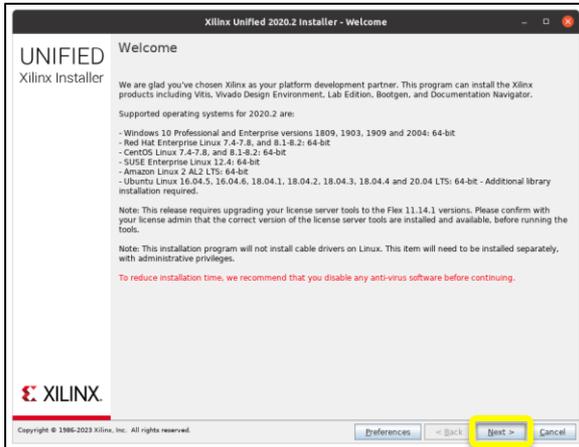
Vitis 2020.2 Installation Guide (Ubuntu Linux)

- Download the installation bin file, navigate to the download directory and then execute the following commands in terminal.
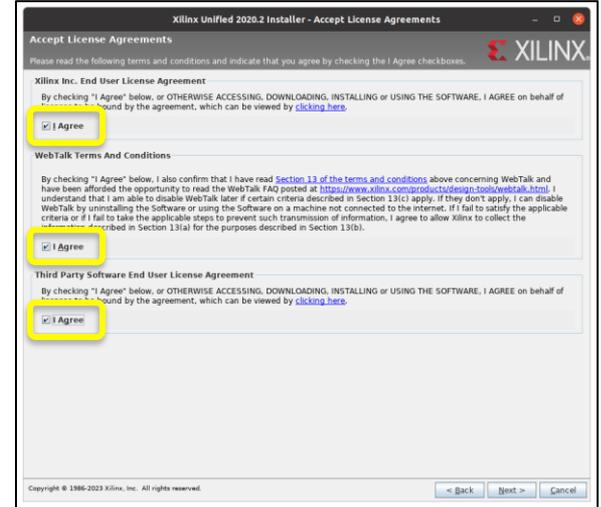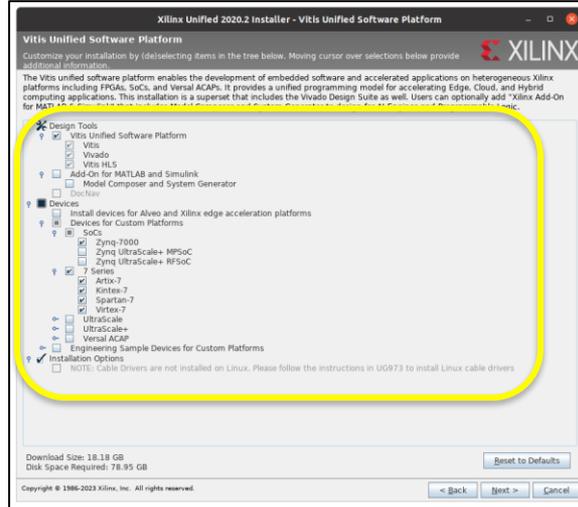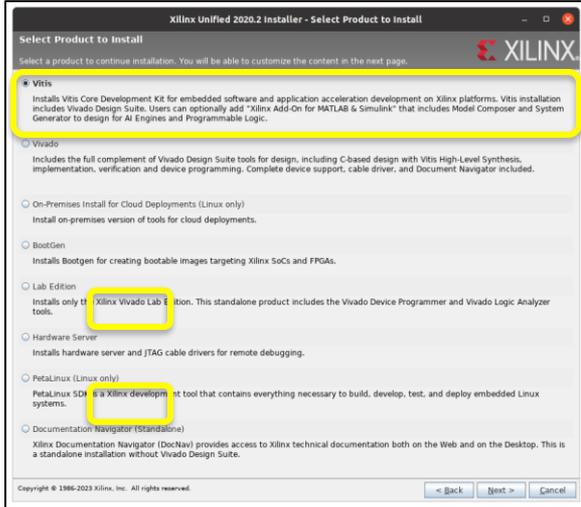
```
$: sudo chmod +x Xilinx_Unified_2020.2_1118_1232_Lin64.bin
$: ./Xilinx_Unified_2020.2_1118_1232_Lin64.bin
```

- The installer might ask you to download the latest version, ignore that. Click on "Next" and provide your AMD/Xilinx user credentials to the installer
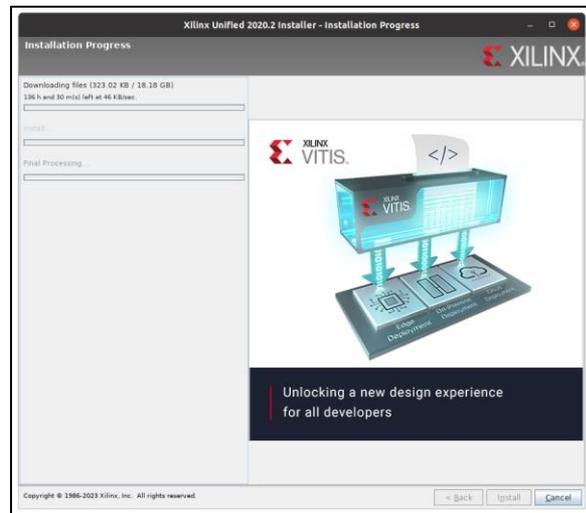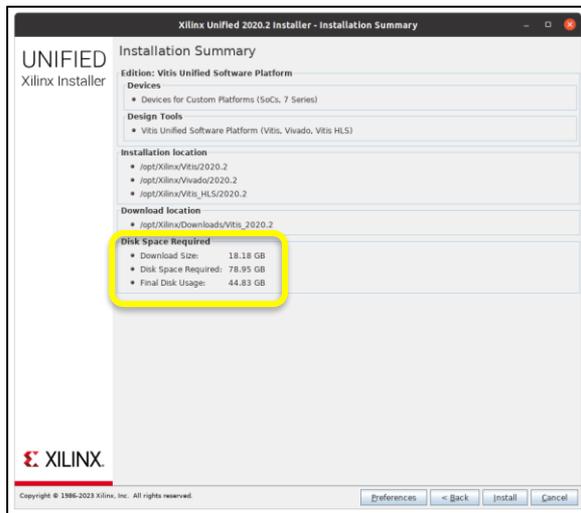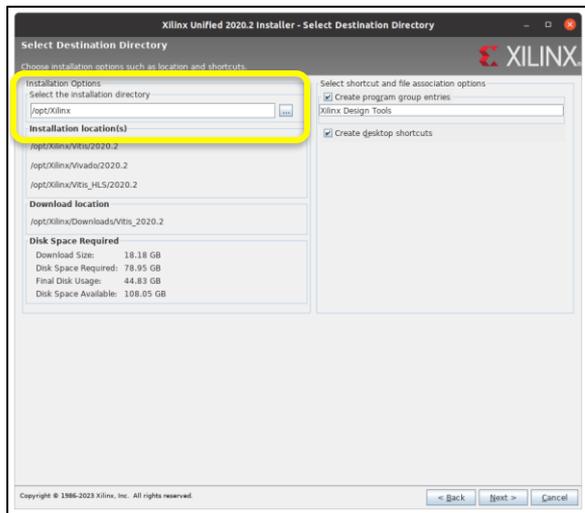
Vitis 2020.2 Installation Guide (Ubuntu Linux)

- Choose Vitis, devices and accept the license agreement.

Vitis 2020.2 Installation Guide (Ubuntu Linux)

- Set the installation directory as `/opt/Xilinx`. Then click on "Next" and the tool starts the download and installation. The final installation directory has a size of around 44 GB.

Vitis 2020.2 Installation Guide (Ubuntu Linux)

- After the installation, you also have to install cable drivers separately. First navigate to:

```
/opt/Xilinx/Vitis/2020.2/data/xicom/cable_drivers/lin64/install_script/install_drivers
```

- Then, run the command below (with super-user privileges).

```
sudo ./install_drivers
```

- Now, Vitis/Vivado is ready to be launched.
  - Use commands below to start Vivado.

```
source /opt/Xilinx/Vivado/2020.2/settings64.sh
vivado
```

  - Use commands below to start Vitis.

```
source /opt/Xilinx/Vitis/2020.2/settings64.sh
vitis
```

(This step is not needed for Windows OS)

PYNQ-Z2 Board Files

- We will use the PYNQ-Z2 FPGA board for implementing the cryptographic primitives. With Vitis/Vivado 2020.2, you also need to copy the PYNQ-Z2 board-specific files into the installation directory.

- Go to course website (https://www.iaik.tugraz.at/chw) and download board files. Copy the PYNQ-Z2 board files into the following directories.

```
/opt/Xilinx/Vitis/2020.2/data/boards/board_files/
/opt/Xilinx/Vivado/2020.2/data/boards/board_files/
```

(For Windows OS)

```
C:/Xilinx/Vitis/2020.2/data/boards/board_files/
C:/Xilinx/Vivado/2020.2/data/boards/board_files/
```