

LAB 05 – VFPGA Installation Guide

Before studying LAB, everyone (individually) MUST install VFPGA.

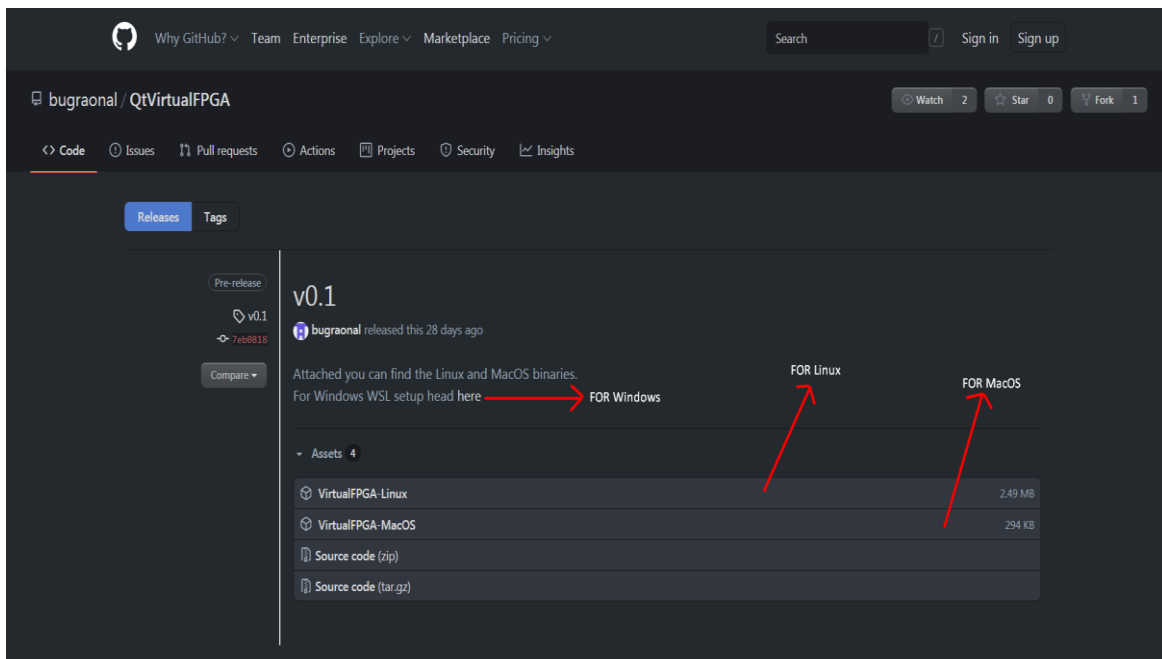
Part 1 – Windows Installation

0. Please install WSL2 on Windows 10 by following the manual installation steps in this link up to and including Step 5:

<https://docs.microsoft.com/en-us/windows/wsl/install-win10#manual-installation-steps>

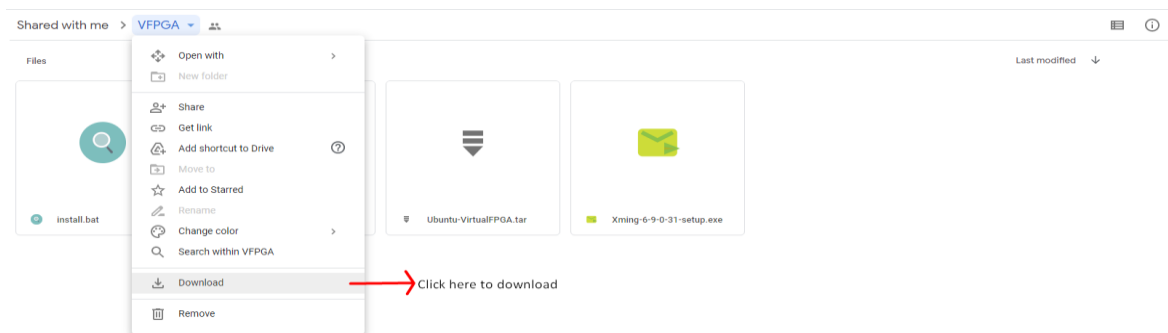
1. Please go to:

<https://github.com/bugraonal/QtVirtualFPGA/releases>



2. To download VFPGA installation files please click “here” on the Github page or go to:

https://drive.google.com/drive/folders/13xOeBhzMnmmwBU038_T3Gm71i3x7Z6pg



3. After downloading the drive, the name of “Ubuntu-VirtualFPGA.tar” can change sometimes. Make sure you change it back to “Ubuntu-VirtualFPGA.tar”.
4. Put all files into a folder and run install.bat
5. After it finishes, install Xming by running Xming-6-9-0-31-setup.exe and make sure it is installed in C:\Program Files\Xming
6. After installing Xming make sure you allow it through your firewall
7. Run VFPGA.bat

Part 2 – MacOS Installation

1. Install homebrew by running the following command on your terminal:

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```
2. Install verilator by running the following command on your terminal:

```
brew install verilator
```
3. Install cmake by running the following command on your terminal:

```
brew install cmake
```
4. Install boost by running the following command on your terminal:

```
brew install boost
```
5. Install qt by running the following command on your terminal:

```
brew install qt
```
6. Download the appropriate binary from:
<https://github.com/bugraonal/QtVirtualFPGA/releases>
7. Open the terminal and cd to where you downloaded the VFPGA executable
8. Run `chmod u+x VirtualFPGA-MacOS`
9. Run `./VirtualFPGA-MacOS`

Part 3 – Linux Installation

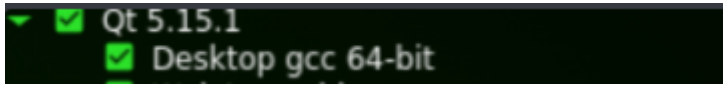
1. Install verilator by following the instructions at 2.3.Git:
<https://www.veripool.org/projects/verilator/wiki/Installing>
2. Install cmake by following these instructions:

```
wget https://github.com/Kitware/CMake/releases/download/v3.19.4/cmake-3.19.4.tar.gz  
tar -zxvf cmake-3.19.4.tar.gz  
cd cmake-3.19.4  
./bootstrap  
make  
sudo make install
```
3. Install boost by running the following command on your terminal:

```
sudo apt-get install libboost-all-dev
```

4. Download Qt 5.15.1 Installer by going to the following link:
<https://www.qt.io/download-thank-you?os=linux&hsLang=en>

5. Only install Qt 5.15.1 Desktop gcc 64-bit



6. Download the appropriate binary from:
<https://github.com/bugraonal/QtVirtualFPGA/releases>
7. Open the terminal and cd to where you downloaded the VFPGA executable
8. Run `chmod u+x VirtualFPGA-Linux`
9. Run `export LD_LIBRARY_PATH=<...>/Qt/5.15.1/gcc_x64/lib`
10. Run `./VirtualFPGA-Linux`

Part 4 – Usage

In order to add a Verilog project to the program do the following:

1. Click "File -> Open"
2. In the pop-up dialog add your Verilog files using the "Add" button.
3. Add wrapper top file by using the "Browse" button.
4. Press "Done"
5. In the main window press "Start"

The program will now start running you can interact with the buttons and the switches.

You can also configure various settings from "Options -> Settings"