

# Vitis AI Prepare Development Environment 2021.2

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The presented extendible platform has been created on: Windows 10 Pro, ver. 21H2 OS build 19044.1889, VMware Workstation 16 Player (Version 16.2.4 build-20089737), Ubuntu 20.04 LTS Desktop 64-bit PC (AMD64).  
<https://linuxconfig.org/Ubuntu-20-04-download>



Vitis/Vivado 2021.2 and creation of the extendible platform from ZIP archive has been also tested on:  
Windows 11 Pro PC (upgrade from Windows 10 Pro, ver. 21H2 OS build 19044.1889)  
VMware Workstation 16 Player (Version 16.2.4 build-20089737),  
Ubuntu 20.04 LTS Desktop 64-bit PC (AMD64).  
<https://linuxconfig.org/Ubuntu-20-04-download>

## Linux OS

Only supported OS are selected Linux distributions. You will need either native or virtual PC with Linux distribution.

Create new VM with Linux OS supported by Vitis 2021.2 tools.

Use English as OS language for your Linux System. Keyboard language can be any language. Other languages may cause errors in PetaLinux build process.

## Set Language

In Ubuntu 20.04, open terminal and type command:

```
$ locale
```

Language is OK, if the command response starts with:

```
LANG=en_US.UTF-8
```

## Set Bash as Terminal in Ubuntu

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In Ubuntu, set bash as terminal.

```
$ sudo dpkg-reconfigure dash shell
```

select: no

Use of bash shell is required by Xilinx tools.



The Ubuntu 20.04 LTS terminal (selected as default installation) is dash.

## Install OpenCL Client Drivers

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On Ubuntu, install OpenCL Installable Client Driver Loader by executing:

```
$ sudo apt-get install ocl-icd-libopencl1
$ sudo apt-get install opencl-headers
$ sudo apt-get install ocl-icd-opencl-dev
```

## Software Installation

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### Vitis 2021.2

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Download Vitis

Download the Vitis Tools installer from the link below <https://www.xilinx.com/support/download.html>

Install Vitis

If Vitis 2021.2 is not installed, follow installation steps described in:

<https://docs.xilinx.com/r/en-US/ug1393-vitis-application-acceleration/Vitis-Software-Platform-Installation>

After a successful installation of the Vitis 2021.2 and Vivado 2021.2 in /tools directory, a confirmation message is displayed, with a prompt to run the installLibs.sh script.

Script location:

/tools/Vitis/2021.2/scripts/installLibs.sh

In Ubuntu terminal, change directory to /tools/Vitis/2021.2/script and run the script using sudo privileges:

```
$ sudo installLibs.sh
```

The command installs a number of necessary packages for the Vitis 2021.2 tools based on the actual OS version of your Ubuntu system.

Install y2k22\_patch-1.2 to Vitis

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If not applied before, apply the Xilinx y2k22\_patch-1.2 to Vitis 2021.2 [https://support.xilinx.com/s/article/76960?language=en\\_US](https://support.xilinx.com/s/article/76960?language=en_US)

## Install License Supporting Vivado

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In Ubuntu terminal, source paths to Vivado tools by executing

```
$ source /tools/Xilinx/Vitis/2021.2/settings64.sh
```

Execute Vivado License Manager:

```
$ vlm
```

From vlm, login to your Xilinx account by an www browser.

In www browser, specify Vitis 2021.2 license. Select Linux target.

Download xilinx license file and copy it into the directory of your choice.  
~/License/vitis\_2021\_2/Xilinx.lic

In vlm, select Load License -> Copy License

## Putty

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The putty terminal can be used for Ethernet connected terminal. Putty supports keyboard, mouse and forwarding of X11 for Zynq Ultrascale+ applications designed for X11 desktop GUI.

In Ubuntu terminal, execute:

```
$ sudo apt install putty
```

To test the installation, execute putty application from Ubuntu terminal by:

```
$ putty &
```

Exit from putty.

## Petalinux 2021.2

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### Download Petalinux

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Download the PetaLinux Tools installer from the link below <https://www.xilinx.com/support/download/index.html/content/xilinx/en/downloadNav/embedded-design-tools.html>

### Install Required Libraries

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Install Petalinux 2021.2. Follow guideline described in:  
<https://wiki.trenz-electronic.de/display/PD/PetaLinux+KICKstart#PetaLinuxKICKstart-PetaLinux2021.2>

Before PetaLinux installation, check UG1144 chapter "PetaLinux Tools Installation Requirements" and install missing tool/libraries with help of script plnx-env-setup.sh attached to the Xilinx Answer Record 73296 - PetaLinux: How to install the required packages for the PetaLinux Build Host?  
<https://www.xilinx.com/support/answers/73296.html>

Use this page to download script: plnx-env-setup.sh

The script detects whether the Host OS is a Ubuntu, RHEL, or CentOS Linux distribution and then automatically installs all of the required packages for the PetaLinux Build Host.

The script requires root privileges. The script does not install the PetaLinux Tools. Command to run the script:

```
$ sudo ./plnx-env-setup.sh
```

Perform update of your PetaLinux and additional installation libraries.

```
$ sudo apt-get update
$ sudo apt-get install iproute2 gawk python3 python build-essential gcc
git make net-tools libncurses5-dev tftpd zlib1g-dev libssl-dev flex bison
libselinux1 gnupg wget git-core diffstat chrpath socat xterm autoconf
libtool tar unzip texinfo zlib1g-dev gcc-multilib automake zlib1g:i386
screen pax gzip cpio python3-pip python3-pexpect xz-utils debianutils
iputils-ping python3-git python3-jinja2 libegl1-mesa libsdl1.2-dev pylint3
-y
```

## Install PetaLinux

and follow the directions in the "Installing the PetaLinux Tool" section of (UG1144).  
[https://www.xilinx.com/support/documentation/sw\\_manuals/xilinx2020\\_1/ug1144-petalinux-tools-reference-guide.pdf](https://www.xilinx.com/support/documentation/sw_manuals/xilinx2020_1/ug1144-petalinux-tools-reference-guide.pdf)

To install petalinux do not start from shared folder, copy installer into your home directory.

```
$ mkdir -p ~/petalinux/2021.2
```

Copy petalinux-v2021.2-final-installer.run into ~/petalinux/2021.2

```
$ ./petalinux-v2020.2-final-installer.run
```

## Source environment

```
$ source ~/petalinux/2021.2/settings.sh
```