

## Installing Opencv on Kali linux (C++ and Python)

**Caution! Read entire document before installation**

1. Install cmake
  - i. Download cmake from the following link <https://cmake.org/download/> [linux - [cmake-3.13.0-rc1.tar.gz](#) ( this was the latest version while preparing this document) ]
  - ii. Open the terminal in the downloaded directory
  - iii. Issue the following command **tar xzf cmake-3.13.0-rc1.tar.gz**
  - iv. Move to extracted directory from terminal by issuing the following command **cd cmake-3.13.0-rc1**
  - v. Configure the cmake by issuing the following command **./bootstrap --system-curl**
  - vi. Compile the source by issuing the following command **sudo make**
  - vii. Install the cmake by issuing the following command **sudo make install**
2. Install ffmpeg
  - a. Issue the following command in terminal **cd ~**
  - b. Run this command **sudo apt-get update**
  - c. Run this command **sudo apt-get install ffmpeg**
3. linking Python3.x ( x - replace with new version. I have used python 3.6) to Opencv
  - a. Issue the following command on same terminal **sudo apt-get install python3.\*-dev ( \* - replace with new version)**  
**or**  
**sudo apt-get install python3.6-dev**
  - b. Issue the following command **sudo cp /usr/include/x86\_64-linux-gnu/python3.\*m/pyconfig.h /usr/include/python3.\*m/ ( \* - replace with new version)**  
**or**  
**sudo cp /usr/include/x86\_64-linux-gnu/python3.6m/pyconfig.h /usr/include/python3.6m/**
4. Installing required packages
  - a. If some libraries are failed to install from step vii, skip those libraries.
  - b. Run the following commands with sudo privilege in same terminal.
    - i. **sudo -i**
    - ii. **GTK+2.x or higher, including headers (libgtk2.0-dev) [ x - replace with new version]**
    - iii. **apt-get install pkg-config**
    - iv. **Python 2.6 or later and Numpy 1.5 or later with developer packages (python-dev, python-numpy)**
    - v. **apt-get install libtbb2 libtbb-dev**
    - vi. **apt-get install libdc1394 2.x [ x - replace with new version]**

- vii. **libjpeg-dev, libpng-dev, libtiff-dev, libjasper-dev, libdc1394-22-dev**
- viii. **apt-get install build-essential**
- ix. **apt-get install cmake git libgtk2.0-dev pkg-config libavcodec-dev libavformat-dev libswscale-dev**
- x. **apt-get install python-dev python-numpy libtbb2 libtbb-dev libjpeg-dev libpng-dev libtiff-dev libjasper-dev libdc1394-22-dev**

#### 5. Installing OpenCV

- a. Create new directory called **opencv\_files** on desktop.
- b. Move to **opencv\_files** directory by issuing the following command  
**cd opencv\_files**
- c. Download the OpenCV files from the following link
  - i. <https://github.com/opencv/opencv>
  - or**
  - Open the terminal on **opencv\_files** directory and run this command  
**git clone https://github.com/opencv/opencv.git**
- d. Download opencv\_contrib from the following link
  - i. [https://github.com/opencv/opencv\\_contrib](https://github.com/opencv/opencv_contrib)
  - or**
  - Open the terminal inside **opencv\_files** directory and run this command  
**git clone https://github.com/opencv/opencv\_contrib.git**
- e. Move to opencv directory by issuing the following command **cd opencv**
- f. Run this command **mkdir build**
- g. Run this command **cd build**
- h. Issue the following command
  - i. **cmake -D WITH\_FFMPEG=ON -D WITH\_GTK=ON -D WITH\_GTK3=ON -D WITH\_LIBV4L=ON -D CMAKE\_BUILD\_TYPE=RELEASE -D CMAKE\_INSTALL\_PREFIX=/usr/local -D FORCE\_VTK=ON -D WITH\_OPENGL=ON -D WITH\_TBB=ON -D WITH\_V4L=ON -D WITH\_QT=ON -D WITH\_OPENGL=ON -D WITH\_GDAL=ON -D WITH\_XINE=ON -D BUILD\_EXAMPLES=ON -D OPENCV\_EXTRA\_MODULES\_PATH=../../opencv\_contrib/modules ..**
- i. Run this command **nproc** to check how many parallel job can be run on the cpu
- j. Run this command **make -j4 [ substitute 4 with nproc ]**
- k. Run this command **sudo make install**

#### Check installation

Open python terminal then copy and paste this code

```
import cv2
print cv2.__version__
```

#### Reference [ use vpn if link is unreachable ]

- 1. [https://docs.opencv.org/3.4/d7/d9f/tutorial\\_linux\\_install.html](https://docs.opencv.org/3.4/d7/d9f/tutorial_linux_install.html)
- 2. <http://cyaninfinite.com/tutorials/installing-opencv-in-ubuntu-for-python-3/>

3. <https://stackoverflow.com/questions/29816529/unsupported-protocol-while-downloading-tar-gz-package>
4. <https://www.learnopencv.com/install-opencv3-on-ubuntu/>

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