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ABOUT

From all the experiences that we can feel, in my opinion, nothing overcomes that feeling of having learned something at the end of the day! As Albert Einstein once said: “Any fool can know. The point is to understand.”

Installing OpenCV 3.0.0 on Ubuntu 14.04 (http://rodrigoberriel.com/2014/10/installing-opencv-3-0-0-on-ubuntu-14-04/)

Posted in October 15, 2014

In this article, we’ll see how to install the computer vision library OpenCV 3.0.0 alpha (http://opencv.org/downloads.html), latest release, released two months ago (Ago 21, 2014) , on Ubuntu 14.04 LTS (Trusty Tahr) 64 bits (http://www.ubuntu.com/desktop). For those who already have installed previous releases, you’ll see that, basically, nothing has changed and it’s as easy as always. Watch the **demonstration video** to see how it works.

Notes:
-- Tested on Ubuntu 12.04, 14.04 LTS 64 bits and 32 bits, 14.10, 15.04 (http://rodrigoberriel.com/2014/10/installing-opencv-3-0-0-on-ubuntu-14-04/#comment-2151140428), 16.04 (http://rodrigoberriel.com/2014/10/installing-opencv-3-0-0-on-ubuntu-14-04/#comment-2703941125) Amazon EC2 Ubuntu 14.04 (http://rodrigoberriel.com/2014/10/installing-opencv-3-0-0-on-ubuntu-14-04/#comment-2279110041);
-- *Thanks to all users that tested this script on their system and gave me a feedback! Really thanks!*
-- Tested on release 3.0.0 **alpha, beta** and **gold** of OpenCV;
-- A Dockerfile (https://github.com/borromeotlhs/node-opencv/commit/77e72273608387957340abe1f6a1a4608173fed1) is also provided by TJ Borromeo (*Thanks!*) used in OpenCV bindings for node.js (https://github.com/peterbraden/node-opencv)

Pre-requirements:
-- Ubuntu 14.04 LTS 64 bits or 32 bits installed and updated;

Lets get it started!

As I wrote in the pre-requirements, is always nice to have your OS updated. Then, run apt-get update and apt-get upgrade before we really start. For those who already have it done, skip this and don’t forget to comment these lines from the script if you choose to use it.

1st step: Install the Dependencies

To install the dependencies required from OpenCV, just run the following commands:

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```
sudo apt-get -y install libopencv-dev build-essential cmake git libgtk2.0-dev pkg-config
python-dev python-numpy libdc1394-22 libdc1394-22-dev libjpeg-dev libpng12-dev libtiff4-dev
libjasper-dev libavcodec-dev libavformat-dev libswscale-dev libxine-dev libgstreamer0.10-dev
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libopencore-amrnb-dev libopencore-amrwb-dev libtheora-dev libvorbis-dev libxvidcore-dev x264
v4l-utils unzip
```

2nd step: Download OpenCV 3.0.0 alpha

You can download manually or run the commands below to get OpenCV:

```
mkdir opencv
cd opencv
wget https://github.com/Itseez/opencv/archive/3.0.0-alpha.zip -O opencv-3.0.0-alpha.zip
unzip opencv-3.0.0-alpha.zip
```

3rd step: Install OpenCV

Now, we'll install OpenCV. Cmake command has a lot of options: choose those that better suit your needs and run the commands below. If you're planning to use **Qt 5.x, don't use -D WITH_QT=ON**. Learn how to use OpenCV 3 with Qt Creator 3.2 (Qt 5.3) (http://bit.ly/1wqwUe7). [Update] According to one of the users that tested it on **Ubuntu 14.10**, you'll need to use WITH_FFMPEG=OFF.
[Update] ~~BUILD_NEW_PYTHON_SUPPORT~~ is no longer used.

```
cd opencv-3.0.0-alpha
mkdir build
cd build
cmake -D CMAKE_BUILD_TYPE=RELEASE -D CMAKE_INSTALL_PREFIX=/usr/local -D WITH_TBB=ON -D
WITH_V4L=ON -D WITH_QT=ON -D WITH_OPENGL=ON ..
make -j $(nproc)
sudo make install
```

4rd step: Finishing installation

To get OpenCV working properly, we need to tell Ubuntu:

```
sudo /bin/bash -c 'echo "/usr/local/lib" > /etc/ld.so.conf.d/opencv.conf'
sudo ldconfig
```

After all is done I recommend rebooting your system. Done!
Then, you might be wondering: "So, that's it?" Yes!

If you prefer, you can download the script below. If you do so, you'll see that in addition to installing OpenCV, the script will generate a log for you, to know how long did it take. At the end of this post you'll see a **demonstration video of the installation and test**.

Script - Install OpenCV 3.0.0 (21494 downloads) (http://rodrigoberriel.com/download/script-install-opencv-3-0-0/)

Lets test it!

We will test to check if everything is working properly. Doesn't matter if I say you should do this way if it doesn't work, right? Come on! I'm assuming you just restart your computer after you have performed the above steps or the given script.

1st test: Running an OpenCV sample

First of all, we need to compile the samples. Worth saying that the commands below can be avoided by adding the options to build samples on the 3rd step of installation.

```
cd opencv/opencv-3.0.0-alpha/samples/
sudo cmake .
sudo make -j $(nproc)
```

Now you can run a sample. I chose two, but feel free to run any other. The goal here is to prove that our OpenCV installation was a success. The samples we're going to run are the FaceDetect and HoughtLines developed in C++.

```
cd cpp/
./cpp-example-facedetect lena.jpg // (../data/lena.jpg) OpenCV 3.0 beta
./cpp-example-houghlines pic1.png  // (../data/pic1.jpg) OpenCV 3.0 beta
```

Note 1: If you're using **OpenCV 3.0 beta**, both images are inside "../data/" directory;
Note 2: To close the window with Lenna (http://en.wikipedia.org/wiki/Lenna), just press ENTER. The same to finish HoughLines. Go on and run other samples;

2nd test: Running our own program

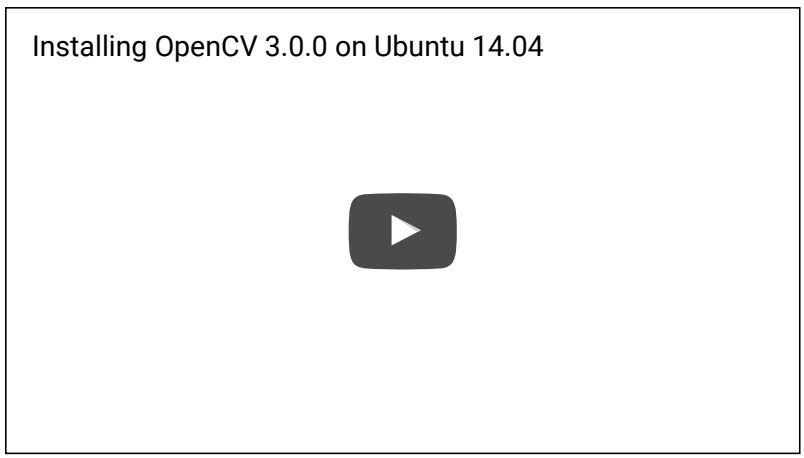
What about compiling something we made? Just below I am providing a simple program whose purpose is to display an image. Unzip it and run the commands below inside the folder you just created.

```
sudo cmake .
sudo make
./DisplayImage lena.jpg
```

If everything went right, you'll see Lenna (http://en.wikipedia.org/wiki/Lenna). Press ENTER to close.

OpenCV - DisplayImage Sample (6853 downloads) (http://rodrigoberriel.com/download/opencv-displayimage-sample/)

Watch the demonstration video to see how it worked on my computer. I chose to run the script.



We did it! OpenCV installed and tested.

Questions? Leave your comment or get in touch by email.

Test setup:
-- Intel Core i5 2.6GHz
-- 4GB of RAM
-- 160GB of hard disk

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- *Saurabh Marpadge*