

Fedora FFmpeg Compile Howto

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Distribution: Fedora 15

Scope

This guide explains how to download, compile and install the FFmpeg library for use with OpenCV. The FFmpeg project was forked into LibAV. The LibAV team added multi-processing features to ffmpeg. These changes have been merged back into FFmpeg, so the the projects should be equivalent, but nothing ever is simple or straight forward.

The problem that we are trying to solve here, is to provide H.264 (MPEG4 part 10 AVC) OpenCV support. By default, OpenCV is oblivious to FFmpeg and x264. It requires the x264 library, FFmpeg and OpenCV to be recompiled with support for each other enabled.

When you compile FFmpeg, you need to enable every possible feature, otherwise OpenCV will error out with an obscure error when it tries to link against the FFmpeg headers.

Before you compile FFmpeg, first download and compile the latest x264 CODEC from the VideoLAN project, as explained in another guide.

FourCC

The default FourCC for ffmpeg Xvid/DivX is 'FMP4'.

Available FFmpeg CODECs

The command:

```
$ ffmpeg -codecs  
will show which CODECs are available on a system
```

Download

It is important to use a version of FFmpeg that is compatible with OpenCV. Older versions of FFmpeg can be downloaded from here:

```
http://ffmpeg.org/download.html
```

FFmpeg 0.6.3 works with OpenCV 2.1 and 2.2:

```
http://ffmpeg.org/releases/ffmpeg-0.6.3.tar.gz
```

The ffmpeg download information page is over here:

```
http://www.ffmpeg.org/download.html
```

Make a working directory:

```
$ mkdir ffmpeg  
$ cd ffmpeg
```

The very latest version can be downloaded with git (but don't do this if you want to use OpenCV):

```
$ git clone git://git.videolan.org/ffmpeg.git ffmpeg
```

That should get about 158000 objects (about 50 MB) and will take a while.

Compile using default settings

Ensure that the rpmfusion repository is enabled.

First give it a try without changing anything:

```
$ cd ffmpeg
$ ./configure
yasm not found, use --disable-yasm for a crippled build
```

Using yum or the software installer, install a zoo of dependencies needed by FFmpeg and OpenCV:

```
# yum install yasm lame lame-devel texi2html faac faac-devel jack-audio-connection-kit
jack-audio-connection-kit-devel amrnb amrnb-tools amrnb-devel amrwb amrwb-tools
amrwb-devel libtheora libtheora-devel libva libvatoools libva-devel libvdpau libvdpau-
devel libvorbis libvorbis-devel libx11 libx11-common libx11-devel libXfixes libXfixes-
devel xvidcore xvidcore-devel zlib zlib-devel
```

Configure

The output of ./configure lists the enabled libraries. **Pretty much everything must be enabled, otherwise OpenCV will not build.**

Configure it as follows:

```
#!/bin/bash
./configure --prefix=/usr --enable-libx264 --enable-libmp3lame --enable-gpl \
--enable-shared --enable-nonfree --enable-libfaac --enable-libvorbis --enable-libtheora
--enable-libxvid --enable-version3
make
echo Now do 'su' and 'make install'.
```

If you get:

```
ERROR: libx264 version must be >= 0.115.
```

Get the latest x264 snapshot from the VideoLAN project, compile and install it as per another howto guide and try again. Do the same thing if you get other errors like this one.

Compile

Make it:

```
$ make
```

Obviously, there should not be any errors at this point.

Install

```
$ su  
# make install
```

Verify

and verify things:

```
$ /usr/bin/ffprobe
```

```
ffprobe version git-N-30739-g058d036, Copyright (c) 2007-2011 the FFmpeg developers  
built on Jun 16 2011 11:10:36 with gcc 4.6.0 20110509 (Red Hat 4.6.0-7)
```

```
configuration: --prefix=/usr --enable-libx264 --enable-libmp3lame --enable-gpl -enable-  
shared --enable-libopencv --enable-libx264
```

libavutil 51. 8. 0 / 51. 8. 0
libavcodec 53. 7. 0 / 53. 7. 0
libavformat 53. 3. 1 / 53. 3. 1
libavdevice 53. 1. 1 / 53. 1. 1
libavfilter 2. 18. 0 / 2. 18. 0
libswscale 0. 14. 1 / 0. 14. 1
libpostproc 51. 2. 0 / 51. 2. 0
Simple multimedia streams analyzer
usage: ffprobe [OPTIONS] [INPUT_FILE]
You have to specify one input file.
Use -h to get full help or, even better, run 'man ffprobe'.

Check whether H.264 (MPEG4 Part 10 AVC) can be both encoded and decoded:

```
$ ffprobe -codecs |grep 264  
ffprobe version git-N-30739-g058d036, Copyright (c) 2007-2011 the FFmpeg developers  
built on Jun 16 2011 11:10:36 with gcc 4.6.0 20110509 (Red Hat 4.6.0-7)  
configuration: --prefix=/usr --enable-libx264 --enable-libmp3lame --enable-gpl --enable-  
shared --enable-libopencv --enable-libx264  
libavutil 51. 8. 0 / 51. 8. 0  
libavcodec 53. 7. 0 / 53. 7. 0  
libavformat 53. 3. 1 / 53. 3. 1  
libavdevice 53. 1. 1 / 53. 1. 1  
libavfilter 2. 18. 0 / 2. 18. 0  
libswscale 0. 14. 1 / 0. 14. 1  
libpostproc 51. 2. 0 / 51. 2. 0  
D V D h264 H.264 / AVC / MPEG-4 AVC / MPEG-4 part 10  
EV libx264 libx264 H.264 / AVC / MPEG-4 AVC / MPEG-4 part 10
```

La voila!