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JavaCV Installation

Prerequisites

- Java Installation
- OpenCV Installation

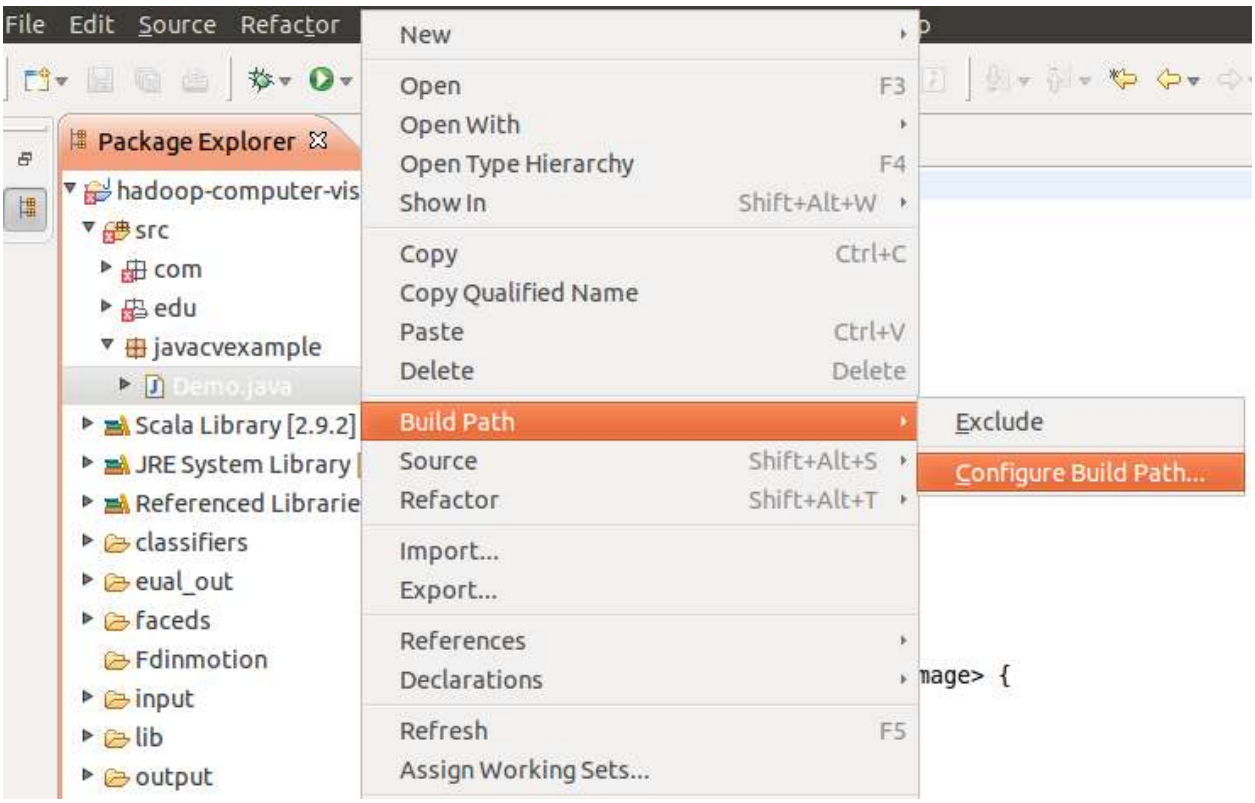
Installation Steps

Step 1: Download the JavaCV-bin from here

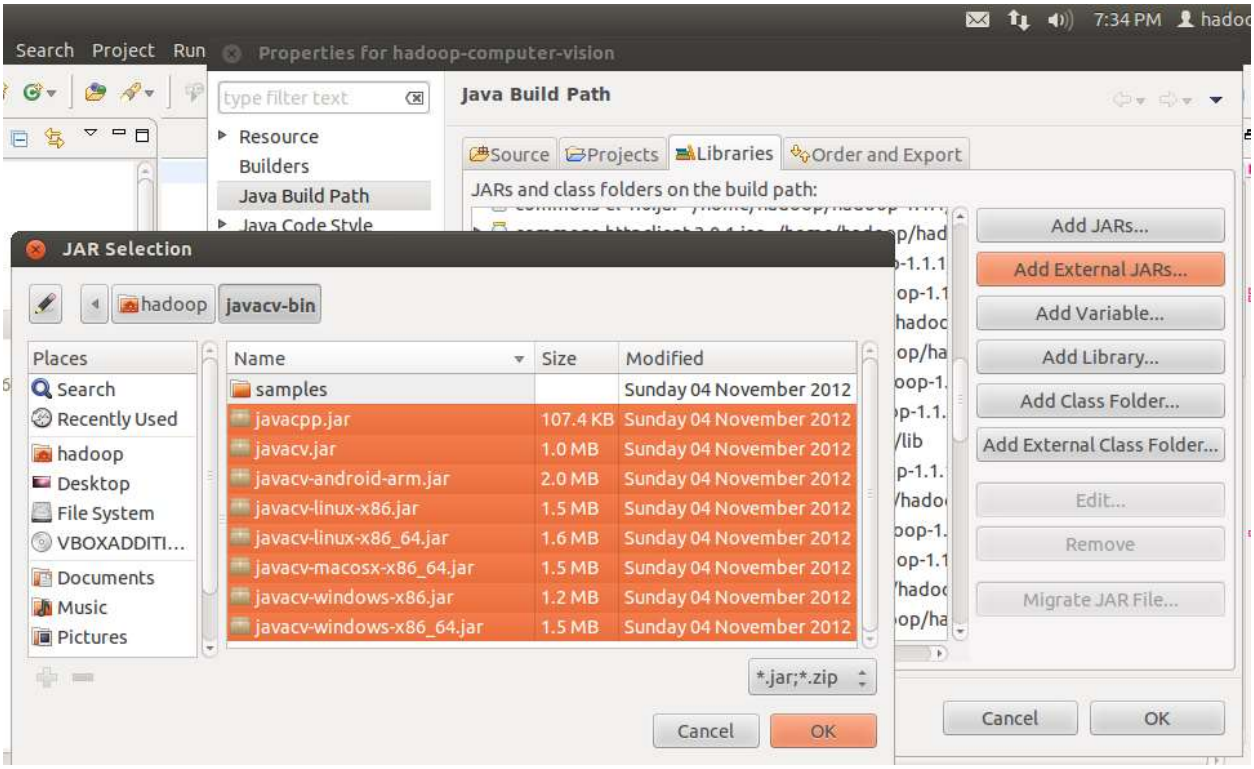
Step 2: Unzip the JavaCV-0.5-bin.zip file.

Step 3: Add the javacv jar file into your project. Right click on your program,

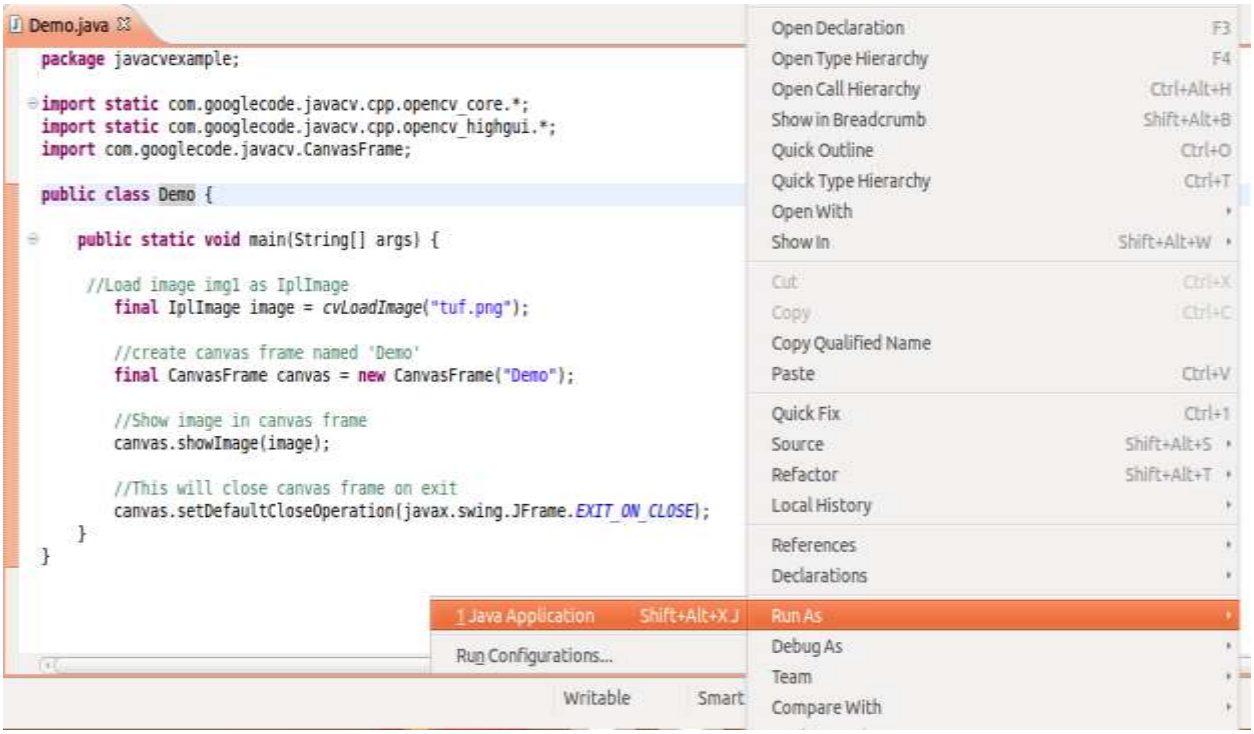
Go to Build Path→ Configure Build Path



Go to libraries→ Add External Jar → Select all the javacv jar files.



Step 5: Run the sample JavaCV code.



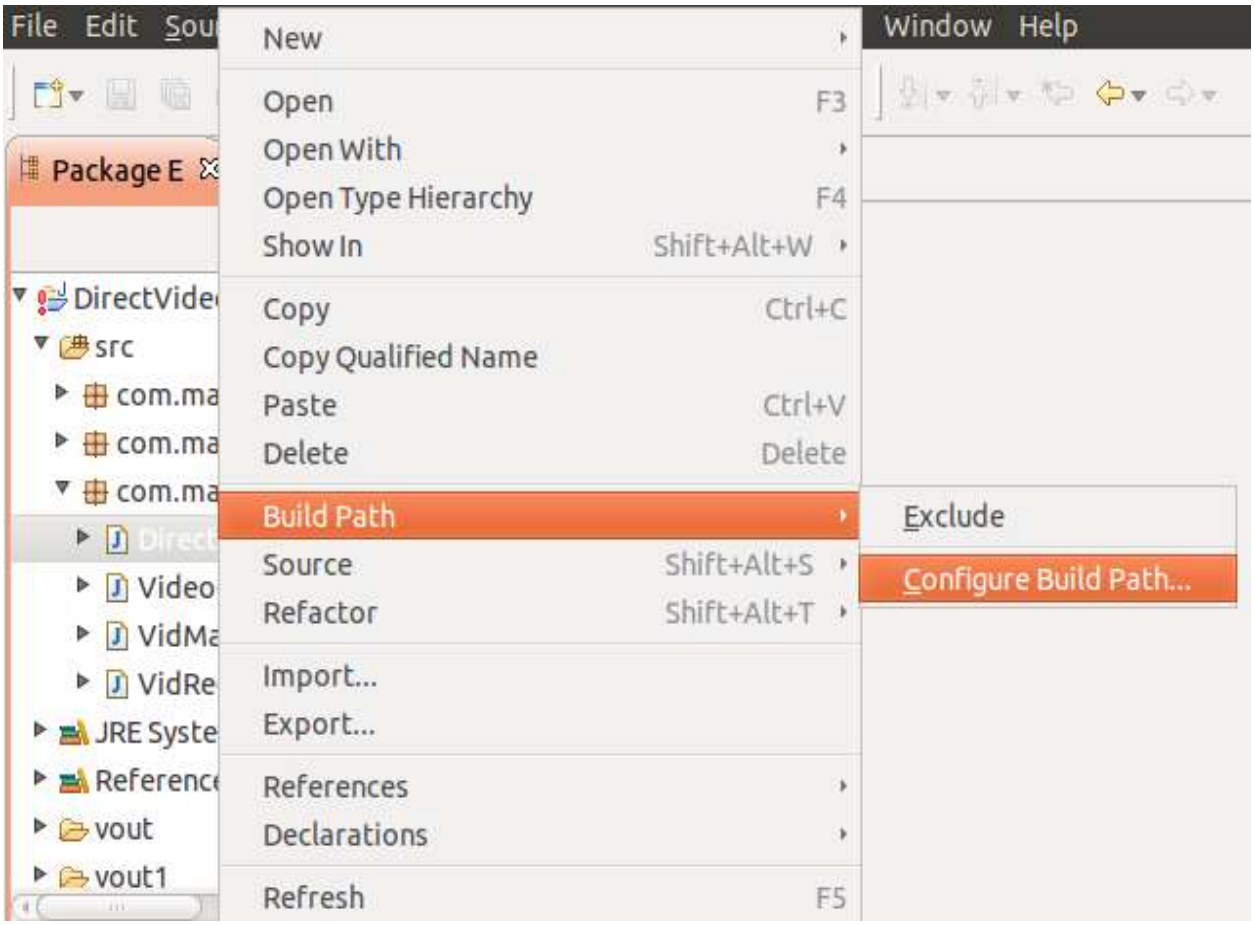
Xuggler Installation

Xuggler is a free open-source library for Java developers which can be used to uncompress, manipulate, and compress recorded or live video. It is an easy way to modify media files (or media streams) using Java.

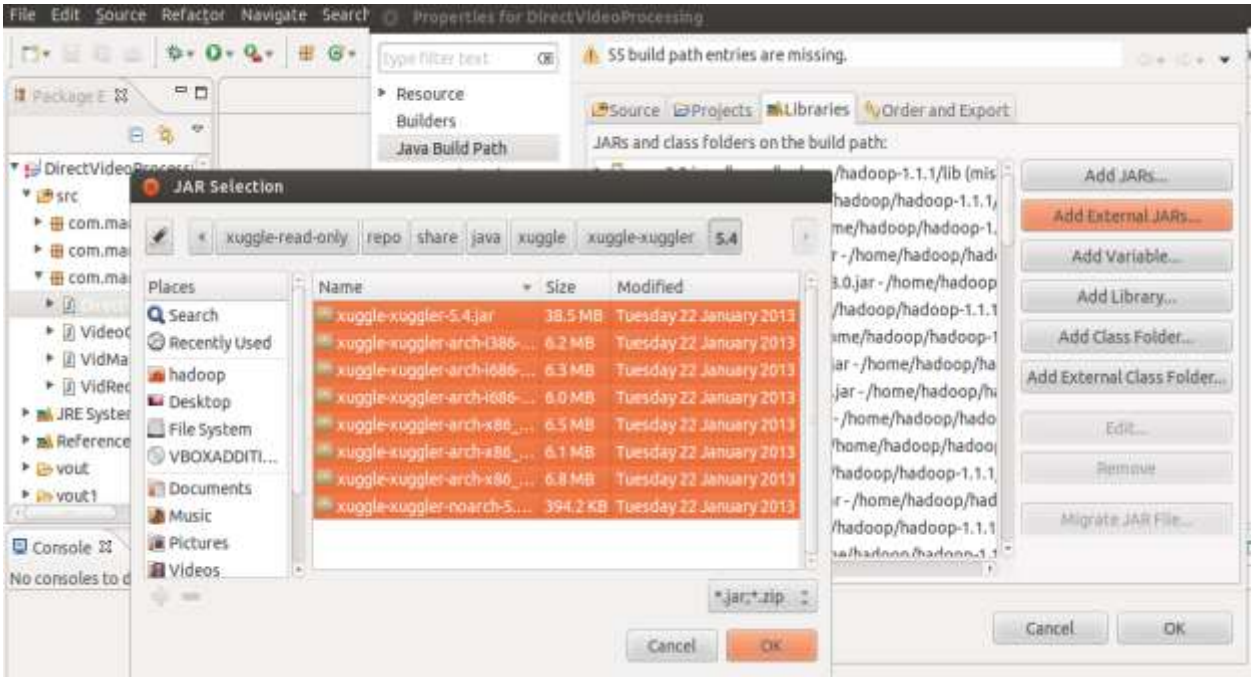
Step 1: Download the Xuggler jar file from here

Step 2: Configure the jar file using the following steps

Go to Build Path→ Configure Build Path



Go to libraries→Add External Jar→Select the all xuggler jar files. Click Ok and run your project.



FFMPEG

FFmpeg is a free software project that provides libraries and programs for manipulating multimedia data. The most notable parts of FFmpeg are libavcodec, an audio/video codec library used by several other projects, libavformat, an audio/video container mux and demux library, and the ffmpeg command line program for transcoding multimedia files.

Preparation

Remove any existing packages:

```
sudo apt-get remove ffmpeg x264 libav-tools libvpx-dev libx264-dev yasm
```

Get the dependencies:

```
sudo apt-get update

sudo apt-get -y install autoconf automake build-essential checkinstall git
libass-dev libfaac-dev \

  libgpac-dev libjack-jackd2-dev libmp3lame-dev libopencore-amrnb-dev
  libopencore-amrwb-dev \

  librtmp-dev libsdl1.2-dev libspeex-dev libtheora-dev libtool libva-dev
  libvdpau-dev libvorbis-dev \

  libx11-dev libxext-dev libxfixes-dev pkg-config texi2html zlib1g-dev
```

Installation

Yasm is an assembler and is recommended for x264 and FFmpeg.

```
cd ~

wget http://www.tortall.net/projects/yasm/releases/yasm-1.2.0.tar.gz

tar xzvf yasm-1.2.0.tar.gz

cd yasm-1.2.0

./configure

make

sudo checkinstall --pkgname=yasm --pkgversion="1.2.0" --backup=no \

  --deldoc=yes --fstrans=no –default
```

The following commands will get the current source files, compile, and install x264.

```
cd ~

git clone --depth 1 git://git.videolan.org/x264.git

cd x264

./configure --enable-static

make

sudo checkinstall --pkgname=x264 --pkgversion="3:$(./version.sh | \

  awk -F'[" ]' '/POINT/{print $4"+git"$5}')" --backup=no --deldoc=yes \

  --fstrans=no –default
```

The following command will get the AAC audio encoder.

```
cd ~

git clone --depth 1 git://github.com/mstorsjo/fdk-aac.git

cd fdk-aac

autoreconf –fiv

./configure --disable-shared

make

sudo checkinstall --pkgname=fdk-aac --pkgversion="$(date +%Y%m%d%H%M)-git" --
backup=no \

  --deldoc=yes --fstrans=no –default
```

The following command will get the VP8 video encoder and decoder.

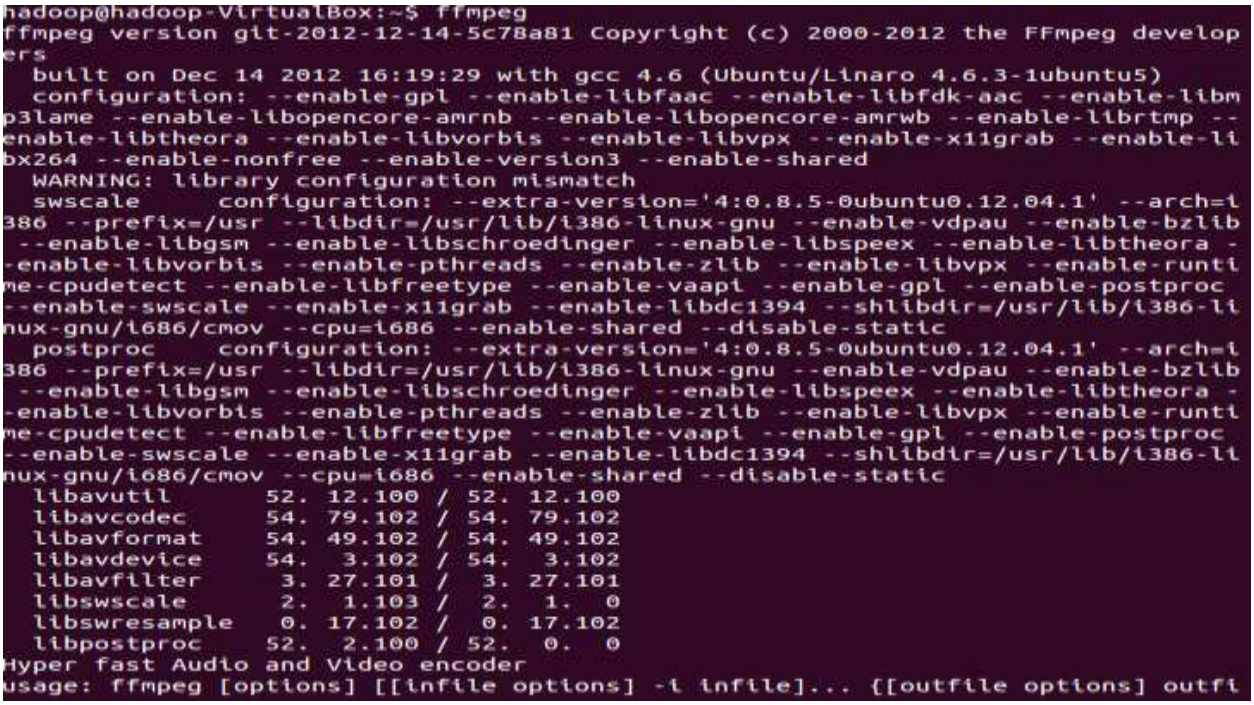
```
cd ~

git clone --depth 1 http://git.chromium.org/webm/libvpx.git

cd libvpx

./configure --disable-examples --disable-unit-tests

make

sudo checkinstall --pkgname=libvpx --pkgversion="1:$(date +%Y%m%d%H%M)-git" -
-backup=no \
```

```
  --deldoc=yes --fstrans=no –default
```

The following command will install the ffmpeg package.

```
cd ~

git clone --depth 1 git://source.ffmpeg.org/ffmpeg

cd ffmpeg

./configure --enable-gpl --enable-libass --enable-libfaac --enable-libfdk-aac
--enable-libmp3lame \

  --enable-libopencore-amrnb --enable-libopencore-amrwb --enable-libspeex --
enable-librtmp --enable-libtheora \

  --enable-libvorbis --enable-libvpx --enable-x11grab --enable-libx264 --
enable-nonfree --enable-version3

make

sudo checkinstall --pkgname=ffmpeg --pkgversion="7:$(date +%Y%m%d%H%M)-git" -
-backup=no \

  --deldoc=yes --fstrans=no –default

hash –r
```

Installation is now complete and FFmpeg is now ready for use.



Note: Test FFMPEG for splitting a video into 2 segments, using the following commands:

```
ffmpeg -i Test1.mpg -ss 00:00:00 -t 0:0:32 -vcodec copy -acodec copy
Test1_1.mpg
```

```
hadoop@hadoop-VirtualBox:~/hadoop-computer-vision-read-only/video$ ls
Test1.mpg  Test2.mpg  Test3.mpg
hadoop@hadoop-VirtualBox:~/hadoop-computer-vision-read-only/video$ ffmpeg -i Test1.mpg -ss 00:00:00 -t 0:0:32 -vcodec copy -acodec cop
y Test1_1.mpg
ffmpeg version git-2012-12-14-5c78a81 Copyright (c) 2000-2012 the FFmpeg developers
  built on Dec 14 2012 16:19:29 with gcc 4.6 (Ubuntu/Linaro 4.6.3-1ubuntu5)
  configuration: --enable-gpl --enable-libfaac --enable-libfdk-aac --enable-libmp3lame --enable-libopencore-amrnb --enable-libopencore
-amrwb --enable-librtmp --enable-libtheora --enable-libvorbis --enable-libvpx --enable-x11grab --enable-libx264 --enable-nonfree --ena
ble-version3 --enable-shared
  WARNING: library configuration mismatch
  swscale     configuration: --extra-version='4:0.8.5-0ubuntu0.12.04.1' --arch=i386 --prefix=/usr --libdir=/usr/lib/i386-linux-gnu --e
nable-vdpau --enable-bzlib --enable-libgsm --enable-libschroedinger --enable-libspeex --enable-libtheora --enable-libvorbis --enable-p
threads --enable-zlib --enable-libvpx --enable-runtime-cpudetect --enable-libfreetype --enable-vaapi --enable-gpl --enable-postproc --
enable-swscale --enable-x11grab --enable-libdc1394 --shlibdir=/usr/lib/i386-linux-gnu/i686/cmov --cpu=i686 --enable-shared --disable-s
tatic
  postproc    configuration: --extra-version='4:0.8.5-0ubuntu0.12.04.1' --arch=i386 --prefix=/usr --libdir=/usr/lib/i386-linux-gnu --e
nable-vdpau --enable-bzlib --enable-libgsm --enable-libschroedinger --enable-libspeex --enable-libtheora --enable-libvorbis --enable-p
threads --enable-zlib --enable-libvpx --enable-runtime-cpudetect --enable-libfreetype --enable-vaapi --enable-gpl --enable-postproc --
enable-swscale --enable-x11grab --enable-libdc1394 --shlibdir=/usr/lib/i386-linux-gnu/i686/cmov --cpu=i686 --enable-shared --disable-s
tatic
  libavutil      52. 12.100 / 52. 12.100
  libavcodec     54. 79.102 / 54. 79.102
  libavformat    54. 49.102 / 54. 49.102
  libavdevice    54.  3.102 / 54.  3.102
  libavfilter     3. 27.101 /  3. 27.101
  libswscale      2.  1.103 /  2.  1.  0
  libswresample   0. 17.102 /  0. 17.102
  libpostproc    52.  2.100 / 52.  0.  0
[mpegvideo @ 0x9c18400] max_analyze_duration 5000000 reached at 5000000
[mpegvideo @ 0x9c18400] Estimating duration from bitrate, this may be inaccurate
Input #0, mpegvideo, from 'Test1.mpg':
```

```
ffmpeg -i Test1.mpg -ss 00:00:32 -t 0:1:05 -vcodec copy -acodec copy
Test1_2.mpg
```

```
hadoop@hadoop-VirtualBox:~/hadoop-computer-vision-read-only/video$ ffmpeg -i Test1.mpg -ss 00:00:32 -t 0:1:05 -vcodec copy -acodec cop
y Test1_2.mpg
ffmpeg version git-2012-12-14-5c78a81 Copyright (c) 2000-2012 the FFmpeg developers
  built on Dec 14 2012 16:19:29 with gcc 4.6 (Ubuntu/Linaro 4.6.3-1ubuntu5)
  configuration: --enable-gpl --enable-libfaac --enable-libfdk-aac --enable-libmp3lame --enable-libopencore-amrnb --enable-libopencore
-amrwb --enable-librtmp --enable-libtheora --enable-libvorbis --enable-libvpx --enable-x11grab --enable-libx264 --enable-nonfree --ena
ble-version3 --enable-shared
  WARNING: library configuration mismatch
  swscale     configuration: --extra-version='4:0.8.5-0ubuntu0.12.04.1' --arch=i386 --prefix=/usr --libdir=/usr/lib/i386-linux-gnu --e
nable-vdpau --enable-bzlib --enable-libgsm --enable-libschroedinger --enable-libspeex --enable-libtheora --enable-libvorbis --enable-p
threads --enable-zlib --enable-libvpx --enable-runtime-cpudetect --enable-libfreetype --enable-vaapi --enable-gpl --enable-postproc --
enable-swscale --enable-x11grab --enable-libdc1394 --shlibdir=/usr/lib/i386-linux-gnu/i686/cmov --cpu=i686 --enable-shared --disable-s
tatic
  postproc    configuration: --extra-version='4:0.8.5-0ubuntu0.12.04.1' --arch=i386 --prefix=/usr --libdir=/usr/lib/i386-linux-gnu --e
nable-vdpau --enable-bzlib --enable-libgsm --enable-libschroedinger --enable-libspeex --enable-libtheora --enable-libvorbis --enable-p
threads --enable-zlib --enable-libvpx --enable-runtime-cpudetect --enable-libfreetype --enable-vaapi --enable-gpl --enable-postproc --
enable-swscale --enable-x11grab --enable-libdc1394 --shlibdir=/usr/lib/i386-linux-gnu/i686/cmov --cpu=i686 --enable-shared --disable-s
tatic
  libavutil      52. 12.100 / 52. 12.100
  libavcodec     54. 79.102 / 54. 79.102
  libavformat    54. 49.102 / 54. 49.102
  libavdevice    54.  3.102 / 54.  3.102
  libavfilter     3. 27.101 /  3. 27.101
  libswscale      2.  1.103 /  2.  1.  0
  libswresample   0. 17.102 /  0. 17.102
  libpostproc    52.  2.100 / 52.  0.  0
[mpegvideo @ 0x98e1400] max_analyze_duration 5000000 reached at 5000000
[mpegvideo @ 0x98e1400] Estimating duration from bitrate, this may be inaccurate
Input #0, mpegvideo, from 'Test1.mpg':
  Duration: 00:00:00.70, bitrate: 104857 kb/s
    Stream #0:0: Video: mpeg1video, yuv420p, 384x288 [SAR 1:1 DAR 4:3], 104857 kb/s, 25 fps, 25 tbr, 1200k tbn, 25 tbc
Output #0, mpeg, to 'Test1_2.mpg':
  Metadata:
```

The video Test1 has been split into two segments.