Youtube-dl Tutorial With Examples For Beginners

Installing Youtube-dl

The easiest and officially recommended way to install Youtube-dl is just download it, save it in your PATH, make it executable and start using it right away.

```
$ sudo curl -L https://yt-dl.org/downloads/latest/youtube-dl -o
/usr/local/bin/youtube-dl
```

If you don't have curl, use **wget** instead:

```
$ sudo wget https://yt-dl.org/downloads/latest/youtube-dl -O
/usr/local/bin/youtube-dl

$ sudo chmod a+rx /usr/local/bin/youtube-dl
```

Alternatively, you can install it using **Pip** as shown below.

```
$ sudo -H pip install --upgrade youtube-dl
```

Youtube-dl is also available in the official repositories of some Linux distributions. For example, you can install it in Arch Linux using command:

```
$ sudo pacman -S youtube-dl
```

On Debian, Ubuntu, Linux mint:

```
$ sudo apt install youtube-dl
```

On Fedora:

```
$ sudo dnf install youtube-dl
```

FFmpeg is also required to download 720p videos from YouTube and convert videos to other formats. To install FFmpeg, refer the following guide.

- **How to install FFmpeg on Linux**

Update Youtube-dl

If you've manually installed Youtube-dl using curl or wget, run the following command to update it:

```
$ sudo youtube-dl -U
```

If you installed it using pip, do:

```
$ sudo pip install -U youtube-dl
```

Those who installed Youtube-dl using the distribution's package manager, just use the appropriate update command. For example, on Arch Linux, you can update Youtube-dl by simply running the following command:

```
$ sudo pacman -Syu
```

On Debian, Ubuntu:

```
$ sudo apt update
```

Now, let us see some examples to learn to use Youtube-dl.

Youtube-dl Tutorial With Examples

Here, I have compiled most commonly used Youtube-dl commands to download a video or playlist from youtube.

1. Download video or playlist

To download a video or the entire playlist from Youtube, just mention the URL like below:

```
$ youtube-dl https://www.youtube.com/watch?v=7E-cwdnsiow
```

If you want to download video or playlist with a custom name of your choice, the command would be:

```
$ youtube-dl -o 'abdul kalam inspirational speech'
https://www.youtube.com/watch?v=7E-cwdnsiow
```

Replace "abdul kalam inspirational speech" with your own name.

Do you want to save the video in some other location? Here you go!

```
$ youtube-dl -o '~/Downloads/abdul kalam speech'
https://www.youtube.com/watch?v=7E-cwdnsiow
```

Here I am downloading the video in my **Downloads** directory.

```
[youtube] 7E-cwdnsiow: Downloading webpage

[download] Destination: /home/sk/Downloads/abdul kalam speech.f271

[download] 100% of 111.86MiB in 01:00

[download] Destination: /home/sk/Downloads/abdul kalam speech.f251

[download] 100% of 6.12MiB in 00:03

[ffmpeg] Merging formats into "/home/sk/Downloads/abdul kalam
speech.webm"
Deleting original file /home/sk/Downloads/abdul kalam speech.f271 (pass -k to keep)
Deleting original file /home/sk/Downloads/abdul kalam speech.f251 (pass -k to keep)
```

You can also include additional details, such as the title, the uploader name (channel name) and upload date etc., in the file name by using the following command:

```
$ youtube-dl -o '%(title)s by %(uploader)s on %(upload_date)s in %(playlist)s.%(ext)s'
https://www.youtube.com/watch?v=7E-cwdnsiow
```

2. Download multiple videos

Sometimes, you might want to download multiple videos from or any other site. If so, just mention the URL of the videos with space-separated like below:

```
$ youtube-dl <url1> <url2>
```

Alternatively, you can put them all in a text file and pass it to Youtube-dl as an argument like below.

```
$ youtube-dl -a url.txt
```

This command will download all videos mentioned in the url.txt file.

3. Download audio-only from a video

Youtube-dl allows us to download audio only from a Youtube video. If you ever been in a situation to download only the audio, run:

```
$ youtube-dl -x https://www.youtube.com/watch?v=7E-cwdnsiow
```

By default, Youtube-dl will save the audio in **Ogg** (opus) format.
If you prefer to download any other formats, for example **mp3**, run:

```
$ youtube-dl -x --audio-format mp3 https://www.youtube.com/watch?v=7E-
cwdnsiow
```

This command will download the audio from the given video/playlist, convert it to an MP3 and save it in the current directory. Please note that you should install either **ffmpeg** or **avconv** to convert the file to mp3 format.

4. Download video with description, metadata, annotations, subtitles and thumbnail

To download a video along with its other details such as description, metadata, annotations, subtitles, and thumbnail etc., use the following command:

```
$ youtube-dl --write-description --write-info-json --write-annotations --write-sub --
write-thumbnail https://www.youtube.com/watch?v=7E-cwdnsiow
```

Suggested read:

- **Download YouTube Videos With Subtitles Using Youtube-dl**

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5. List all available formats of video or playlist

To list all available formats that a video or playlist is available in, use the following command:

```
$ youtube-dl --list-formats https://www.youtube.com/watch?v=7E-cwdnsiow
```

Or

```
$ youtube-dl -F https://www.youtube.com/watch?v=7E-cwdnsiow
```

Sample output:

```
>_   sk@sk:~      +

[sk@sk]: ~>$ youtube-dl -F https://www.youtube.com/watch?v=7
[youtube] 7E-cwdnsiow: Downloading webpage
[youtube] 7E-cwdnsiow: Downloading video info webpage
[info] Available formats for 7E-cwdnsiow:
format code  extension  resolution note
249          webm       audio only DASH audio    51k , opus @
250          webm       audio only DASH audio    68k , opus @
171          webm       audio only DASH audio   115k , vorbis
140          m4a        audio only DASH audio   128k , m4a_da
251          webm       audio only DASH audio   137k , opus @
160          mp4        192x144     144p    52k , avc1.4d400c,
278          webm       192x144     144p    73k , webm contain
133          mp4        320x240     240p    89k , avc1.4d400d,
242          webm       320x240     240p   135k , vp9, 30fps,
134          mp4        480x360     360p   215k , avc1.4d401e,
243          webm       480x360     360p   242k , vp9, 30fps,
135          mp4        640x480     480p   382k , avc1.4d401e,
244          webm       640x480     480p   390k , vp9, 30fps,
136          mp4        960x720     720p   737k , avc1.4d401f,
247          webm       960x720     720p   770k , vp9, 30fps,
137          mp4        1440x1080   1080p 1391k , avc1.640028
248          webm       1440x1080   1080p 1421k , vp9, 30fps,
271          webm       1920x1440   1440p 3462k , vp9, 30fps,
18           mp4        480x360     medium , avc1.42001E, mp4
43           webm       640x360     medium , vp8.0, vorbis@12
22           mp4        960x720     hd720 , avc1.64001F, mp4a
[sk@sk]: ~>$ █
```

List all available formats of a youtube video using youtube-dl

As you can see in the above screenshot, Youtube-dl lists all available formats
of the given video. From left to right, it displays the video format code,

extension and resolution note of the respective video. This can be helpful when you want to download a video at a specific quality or format.

6. Display the size of Youtube videos

To retrieve the file size of a video, use **-F** flag.

```
$ youtube-dl -F https://www.youtube.com/watch?v=7E-cwdnsiow
```

You will see the file size at the end of each file.

Sample output:

```
[youtube] 7E-cwdnsiow: Downloading webpage

[info] Available formats for 7E-cwdnsiow:

format code  extension  resolution note

249      webm     audio only tiny  51k , opus @ 50k (48000Hz), 2.56MiB

250      webm     audio only tiny  68k , opus @ 70k (48000Hz), 3.23MiB

140      m4a      audio only tiny  128k , m4a_dash container, mp4a.40.2@128k (44100Hz), 7.59MiB

251      webm     audio only tiny  137k , opus @160k (48000Hz), 6.12MiB

160      mp4      192x144   144p  52k , avc1.4d400c, 30fps, video only, 1.71MiB

278      webm     192x144   144p  73k , webm container, vp9, 30fps, video only, 3.73MiB
```

```
133      mp4     320x240   240p  89k , avc1.4d400d, 30fps, video only, 3.12MiB

242      webm     320x240   240p  135k , vp9, 30fps, video only, 6.06MiB

134      mp4     480x360   360p  215k , avc1.4d401e, 30fps, video only, 7.53MiB

243      webm     480x360   360p  242k , vp9, 30fps, video only, 10.39MiB

135      mp4     640x480   480p  382k , avc1.4d401e, 30fps, video only, 14.13MiB

244      webm     640x480   480p  390k , vp9, 30fps, video only, 16.44MiB

136      mp4     960x720   720p  737k , avc1.4d401f, 30fps, video only, 26.99MiB

247      webm     960x720   720p  770k , vp9, 30fps, video only, 31.12MiB

137      mp4     1440x1080  1080p 1391k , avc1.640028, 30fps, video only,
46.50MiB

248      webm     1440x1080  1080p 1421k , vp9, 30fps, video only, 52.19MiB

271      webm     1920x1440  1440p 3462k , vp9, 30fps, video only, 111.86MiB

18       mp4     480x360   360p  360k , avc1.42001E, mp4a.40.2@ 96k (44100Hz),
21.55MiB

22       mp4     960x720   720p  578k , avc1.64001F, mp4a.40.2@192k (44100Hz)
(best)
```

7. Download videos in certain quality and/or format

By default, Youtube-dl will download the best available quality video. However, it is also possible to download a video or playlist at a specific quality or format.

Youtube is capable of downloading videos in the following qualities:

- **best** – Select the best quality format of the given file with video and audio.
- **worst** – Select the worst quality format (both video and audio).
- **bestvideo** – Select the best quality video-only format (e.g. DASH video). Please note that it may not be available.
- **worstvideo** – Select the worst quality video-only format. May not be available.
- **bestaudio** – Select the best quality audio only-format. May not be available.
- **worstaudio** – Select the worst quality audio only-format. May not be available.

For example, if you want to download **best quality** format (both audio and video), just use the following command:

```
$ youtube-dl -f best https://www.youtube.com/watch?v=7E-cwdnsiow
```

Similarly, to download audio-only with best quality:

```
$ youtube-dl -f bestaudio https://www.youtube.com/watch?v=7E-cwdnsiow
```

To download worst quality video-only format, use the following command:

```
$ youtube-dl -f worstvideo https://www.youtube.com/watch?v=7E-cwdnsiow
```

You also combine different format options like below.

```
$ youtube-dl -f bestvideo+bestaudio https://www.youtube.com/watch?v=7E-cwdnsiow
```

The above command will download best quality video-only and best quality audio-only formats and merge them together with ffmpeg or avconv. Make sure you have installed any one of these tools on your system.

If you don't want to merge, replace **+**(plus) operator with **,**(comma) like below:

```
$ youtube-dl -f 'bestvideo,bestaudio' https://www.youtube.com/watch?v=7E-cwdnsiow -o '%(title)s.f%(format_id)s.%(ext)s'
```

This command will download best quality video and best quality audio and **will not mix them**. In this case, you will get two files, one is audio and another is video. In this example, an output template (**-o** option) is recommended as bestvideo and bestaudio may have the same file name. We can even download a video or playlist at a specific quality with **specific resolution**.
For instance, the following command will download the **best quality** video in **480 pixel resolution** (less than or equal to 480p).

```
$ youtube-dl -f "best[height<=480]" https://www.youtube.com/watch?v=7E-cwdnsiow
```

Like already said, we can group the format selectors to get a specific quality video. The following command will download best format available(both audio and video) but **no better than 480p**.

```
$ youtube-dl -f 'bestvideo[height<=480]+bestaudio/best[height<=480]'
https://www.youtube.com/watch?v=7E-cwdnsiow
```

8. Download videos using format code

All videos have format codes which we can use to download a video at
specific quality. To find the format code, just list the available formats using
any one of the following commands:

```
$ youtube-dl --list-formats https://www.youtube.com/watch?v=7E-cwdnsiow
```

Or

```
$ youtube-dl -F https://www.youtube.com/watch?v=7E-cwdnsiow
```

```
[sk@sk]: ~>$ youtube-dl -F https://www.youtube.com/watch?v=7
[youtube] 7E-cwdnsiow: Downloading webpage
[youtube] 7E-cwdnsiow: Downloading video info webpage
[info] Available formats for 7E-cwdnsiow:
format code    extension    resolution   note
249            webm         audio only   DASH audio    51k , opus @
250            webm         audio only   DASH audio    68k , opus @
140            m4a          audio only   DASH audio   128k , m4a_da
251            webm         audio only   DASH audio   137k , opus @
160            mp4          192x144      144p    52k , avc1.4d400c,
278            webm         192x144      144p    73k , webm contain
133            mp4          320x240      240p    89k , avc1.4d400d,
242            webm         320x240      240p   135k , vp9, 30fps,
134            mp4          480x360      360p   215k , avc1.4d401e,
243            webm         480x360      360p   242k , vp9, 30fps,
135            mp4          640x480      480p   382k , avc1.4d401e,
244            webm         640x480      480p   390k , vp9, 30fps,
136            mp4          960x720      720p   737k , avc1.4d401f,
247            webm         960x720      720p   770k , vp9, 30fps,
137            mp4          1440x1080    1080p 1391k , avc1.640028
248            webm         1440x1080    1080p 1421k , vp9, 30fps,
271            webm         1920x1440    1440p 3462k , vp9, 30fps,
18             mp4          480x360      medium , avc1.42001E, mp4
43             webm         640x360      medium , vp8.0, vorbis@12
22             mp4          960x720      hd720 , avc1.64001F, mp4a
[sk@sk]: ~>$
```

As you can see in the above screenshot, all format codes of the given video are listed in the first column. The best quality format is given at the end (the format code is **22**). So, the command to download best quality format is:

```
$ youtube-dl -f 22 https://www.youtube.com/watch?v=7E-cwdnsiow
```

Some videos may not have the same formats available while you download videos from playlist. In such cases, you can specify multiple format codes in any preferred order of your choice. Take a look at the following example:

```
$ youtube-dl -f 22/17/18 <playlist_url>
```

As per the above example, Youtube-dl will download the videos in format 22 if it is available. If the format 22 is not available, it will then download format 17 if it is available. If both 22 and 17 formats are not available, it will finally try to download format 18. If none of the specified formats are available, Youtube-dl will complain that no suitable formats are available for download.

Please note that that slash is left-associative, i.e. formats on the left hand side are preferred.

9. Download videos by file extension

Download video(s) in your preferred format, say for example MP4, just run:

```
$ youtube-dl --format mp4 https://www.youtube.com/watch?v=7E-cwdnsiow
```

Or,

```
$ youtube-dl -f mp4 https://www.youtube.com/watch?v=7E-cwdnsiow
```

Like I already mentioned in the previous section, some videos may not available in your preferred formats. In such cases, Youtube-dl will download any other best available formats. For instance, this command will download best quality MP4 format file. If MP4 format is not available, then it will download any other best available format.

```
$ youtube-dl -f 'bestvideo[ext=mp4]+bestaudio[ext=m4a]/best[ext=mp4]/best'
https://www.youtube.com/watch?v=7E-cwdnsiow
```

If you want to download them with custom filename, do:

```
$ youtube-dl -f mp4 -o '%(title)s.f%(format_id)s.%(ext)s'
https://www.youtube.com/watch?v=7E-cwdnsiow
```

10. Set size limit for videos

When you download multiple videos from a playlist, you might want to download videos within a certain size only.

For example, this command will not download any videos smaller than the given size, say **100MB**:

```
$ youtube-dl --min-filesize 100M <playlist_url>
```

If you don't want to download videos larger than the given size, do:

```
$ youtube-dl --max-filesize 100M <playlist_url>
```

We can also combine format selection operators to download certain size videos.

The following command will download best video-only format but **not bigger than 100 MB**.

```
$ youtube-dl -f 'best[filesize<100M]' https://www.youtube.com/watch?v=7E-cwdnsiow
```

11. Download videos by date-wise

Youtube-dl allows us to filter and download video or playlist by their upload date. This will be very helpful when you want to download videos from a playlist that contains 100s of videos.

For instance, to download videos uploaded at an exact date, for example October 01, 2018, the command would be:

```
$ youtube-dl --date 20181001 <URL>
```

Download videos uploaded on or before a specific date:

```
$ youtube-dl --datebefore 20180101 <URL>
```

Download videos uploaded on or after a specific date:

```
$ youtube-dl --dateafter 20180101 <URL>
```

Download only the videos uploaded in the last 6 months:

```
$ youtube-dl --dateafter now-6months <URL>
```

To download videos between a specific date, for example January 01, 2018 to January 01, 2019, use the following command:

```
$ youtube-dl --dateafter 20180101 --datebefore 20190101 <URL>
```

Suggested read:
- **20+ FFmpeg Commands For Beginners**

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12. Download specific videos from playlist

This is yet another useful feature of Youtube-dl. It allows us to download a specific song(s) from a playlist that contains 100s of songs.

For example, to download the 10th file from a playlist, run:

```
$ youtube-dl --playlist-items 10 <playlist_url>
```

Similarly, to download multiple random files, just specify indices of the videos in the playlist separated by commas like below::

```
$ youtube-dl --playlist-items 2,3,7,10 <playlist_url>
```

You can also specify the range of songs. To download a video playlist starting from a certain video, say 10, to end:

```
$ youtube-dl --playlist-start 10 <playlist_url>
```

To download only the files starting from 2nd to 5th in a playlist, use:

```
$ youtube-dl --playlist-start 2 --playlist-end 5 <playlist_url>
```

13. Download only videos suitable for specific age

This is another notable feature of Youtube-dl. It allows us to download only videos suitable for the given age.

Say for example, to download all "Let's Play" videos that aren't marked "NSFW" or age-restricted for 7 year-olds from a playlist, run:

```
$ youtube-dl --match-title "let's play" --age-limit 7 --reject-title "nsfw" <playlist_url>
```

14. Set download speed limit

You can use **-r** option to limit the speed. For example, the following command will limit the speed to **50K**.

```
$ youtube-dl -r 50K <URL>
```

Note that speed is specified in bytes per second.

15. Resume downloads

By default, youtube-dl will automatically resume the download where you left it off. If it is doesn't resume the download for any reason, just force the resume of partially downloaded files with -c (–continue) flag:

```
$ youtube-dl  -c <URL>
```

Getting help

Youtube-dl has a lot more options. I guess these 14 examples are just enough to use Youtube-dl to download videos from online. For more details, refer Youtube-dl help section.

```
$ youtube-dl --help
```

Youtube-dl Troubleshooting

When downloading videos from YouTube, sometimes you will get an error like below.

ERROR: unable to download video data: HTTP Error 403: Forbidden