



# Multimedia Project Commands

## FFMPEG

```
./ffmpeg -i input.mp4 -c:v libx264 -keyint_min X -g X -an -vf scale=1920:1080 -b:v 3000k -qp 10 video_1080.mp4
```

معناها اقل اشئ للكي فريم **keyint\_min**

X —> frame rate

fps \* #seconds : based on the length of the video and its resolution

-an : skip the sound feature

-g : **GOP** :Group of picture

-vf scale : for resolution

**encoder bitrate** : -b: v —> specifies the target (average) bit rate for the encoder to use

qp : I have took [5, 15, 25, 35, 45] values for each resolution

**Resolutions** : —> depends on Width: Height

1920:1080 --> 1080p

1280:720 --> 720p

640:480 --> 480p or 854:480

480:360 --> 360p

426:240 --> 240p

256:144 --> 144p

**For BitRate :**

**1080p – 3000kbps**

**720p – 1600 kbps**

**480p - 700kbps**

**360p – 460 Kbps**

240p-350kbps  
144p- 90kbps

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## For audio file —> .m4a

**`./ffmpeg -i unforgivable.mp4 -vn -acodec aac unforgivable.m4a`**

Augmentative and Alternative Communication

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## MP4Box

The output of this step will be the input to **MP4Box** : which will do the segmentation for the videos then i'll get the manifest file .mpd

```
./MP4Box -dash 1000 -frag 1000 -rap -fps 25 IOrigis.mp4#video  
video4_5_240.mp4#video video4_5_360.mp4#video video4_5_480.mp4#video  
video4_15_144.mp4#video video4_15_240.mp4#video video4_15_360.mp4#video  
video4_15_480.mp4#video video4_25_144.mp4#video video4_25_240.mp4#video  
video4_25_360.mp4#video video4_25_480.mp4#video video4_35_144.mp4#video  
video4_35_240.mp4#video video4_35_360.mp4#video video4_35_480.mp4#video  
video4_45_144.mp4#video video4_45_240.mp4#video video4_45_360.mp4#video  
video4_45_480.mp4#video:role=main audio.acc#audio:role=main -out  
/Manifest/Manifest.mpd
```

**`-dash` → كم ثانية 1000=1 ثانية , حسب ما تم تقسيم كل فيديو**

**`-frag` → نفس الفكرة fragment بتعمل**

**`-segment-name 'segment_RepresentationID$'` → m4s بقسم السيجمنت عشان  
يحولهم**

**لان بدونها بطلع عنا فيديوهات بصيغة mp4**

**`-fps` : the number of frames rate for the original video**

**`#audio:id=Sound` → for the audio file**

**`role=main` → for the videos and give it the priority**

**`-out /Manifest/Manifest.mpd` → output's the manifest file**

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```
./MP4Box -dash 3000 -frag 3000 -rap -segment-name 'segment$RepresentationID$' -  
fps 25 Unforgivable_5_144.mp4#video:id=5_144p
```

Unforgivable\_15\_144.mp4#video:id=15\_144p  
Unforgivable\_25\_144.mp4#video:id=25\_144p  
Unforgivable\_35\_144.mp4#video:id=35\_144p  
Unforgivable\_45\_144.mp4#video:id=45\_144p  
Unforgivable\_5\_240.mp4#video:id=5\_240p  
Unforgivable\_15\_240.mp4#video:id=15\_240p  
Unforgivable\_25\_240.mp4#video:id=25\_240p  
Unforgivable\_35\_240.mp4#video:id=35\_240p  
Unforgivable\_45\_240.mp4#video:id=45\_240p  
Unforgivable\_5\_360.mp4#video:id=5\_360p  
Unforgivable\_15\_360.mp4#video:id=15\_360p  
Unforgivable\_25\_360.mp4#video:id=25\_360p  
Unforgivable\_35\_360.mp4#video:id=35\_360p  
Unforgivable\_45\_360.mp4#video:id=45\_360p  
Unforgivable\_5\_480.mp4#video:id=5\_480p  
Unforgivable\_15\_480.mp4#video:id=15\_480p  
Unforgivable\_25\_480.mp4#video:id=25\_480p  
Unforgivable\_35\_480.mp4#video:id=35\_480p  
Unforgivable\_45\_480.mp4#video:id=45\_480p  
Unforgivable\_5\_720.mp4#video:id=5\_720p  
Unforgivable\_15\_720.mp4#video:id=15\_720p  
Unforgivable\_25\_720.mp4#video:id=25\_720p  
Unforgivable\_35\_720.mp4#video:id=35\_720p  
Unforgivable\_45\_720.mp4#video:id=45\_720p  
Unforgivable.m4a#audio:id=Sound:role=main -out  
manifest\_Unforgivable/manifest\_Unforgivable.

### For testing the Manifest and the sound

```
<!DOCTYPE html>
<html>
<body>
<script src="http://cdn.dashjs.org/latest/dash.all.min.js" ></script>
<video data-dashjs-player src="Manifest/manifest.mpd" controls></video>
</body>
</html>
```

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### LAST STEP :

zip the following files : Manifest + html + css + audio “.m4s”

then add to archive —> Archive format is **zip**

`./pscp -P 22 manifest_movies.zip`

`ns1171123@176.119.254.185:/home/ns1171123/website/`

**-P —> port 22 on Putty**

**unzip manifest\_movies.zip**

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### For the discussion of Project#1 you must prepare the following:

[https://birzeit-edu.zoom.us/j/85926391746?](https://birzeit-edu.zoom.us/j/85926391746?pwd=bG5aNEZYVkJNSUIZuK3NMOXcyRUJwUT09)

[pwd=bG5aNEZYVkJNSUIZuK3NMOXcyRUJwUT09](https://birzeit-edu.zoom.us/j/85926391746?pwd=bG5aNEZYVkJNSUIZuK3NMOXcyRUJwUT09)

1. List of all commands you used to do the project such as the:
  - a. Commands to connect to the server → <http://176.119.254.185:8029/>
  - b. Commands to prepare the docker container → `docker run -dit --name encs5398-ns1171123 -p 8029:80 -v /home/ns1171123/website:/usr/local/apache2/htdocs/ httpd:2.4`
  - c. Commands to prepare the webserver
  - d. Commands to prepare the video files
  - e. Commands to prepare the Manifest and DASH video files
2. Under Developers tools in your browser, prepare six Network Throttling Profiles (do not set latency):
  - a. Profile Name: BW1K, BW (upload and download ) = 1 kb/s
  - b. Profile Name: BW10K, BW (upload and download ) = 10 kb/s
  - c. Profile Name: BW100K, BW (upload and download ) = 100 kb/s
  - d. Profile Name: BW1M, BW (upload and download ) = 1000 kb/s
  - e. Profile Name: BW5M, BW (upload and download ) = 5000 kb/s
  - f. Profile Name: BW10M, BW (upload and download ) = 10000 kb/s

Network Throttling Profiles			
Add custom profile...			
network1	3.0 Mbit/s	2.0 Mbit/s	2 ms
BW1K	1 kbit/s	1 kbit/s	0 ms
BW10K	10 kbit/s	10 kbit/s	0 ms
BW100K	100 kbit/s	100 kbit/s	0 ms
BW1M	1.0 Mbit/s	1.0 Mbit/s	0 ms
BW5M	5.0 Mbit/s	5.0 Mbit/s	0 ms
BW10M	10 Mbit/s	10 Mbit/s	0 ms

3. Test the webserver is working before the discussion time and any edits in the index will appear in the browser.