



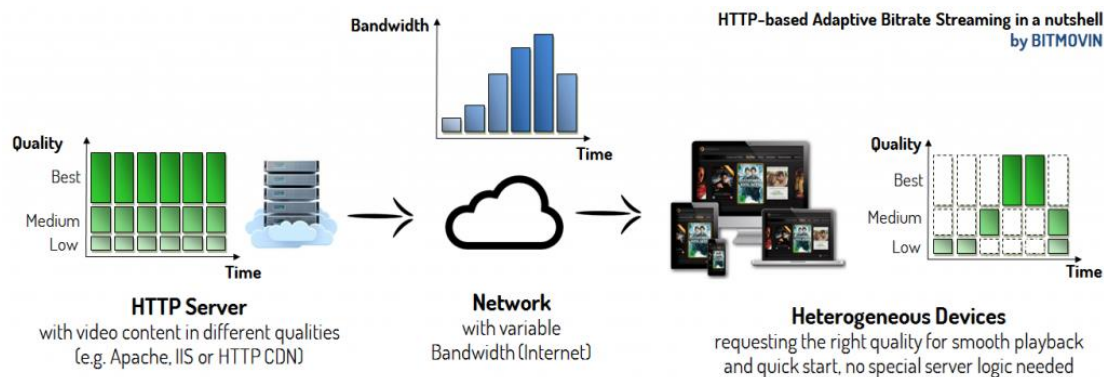
MPEG-DASH Live Streaming in Unstable Environment

Abstract:

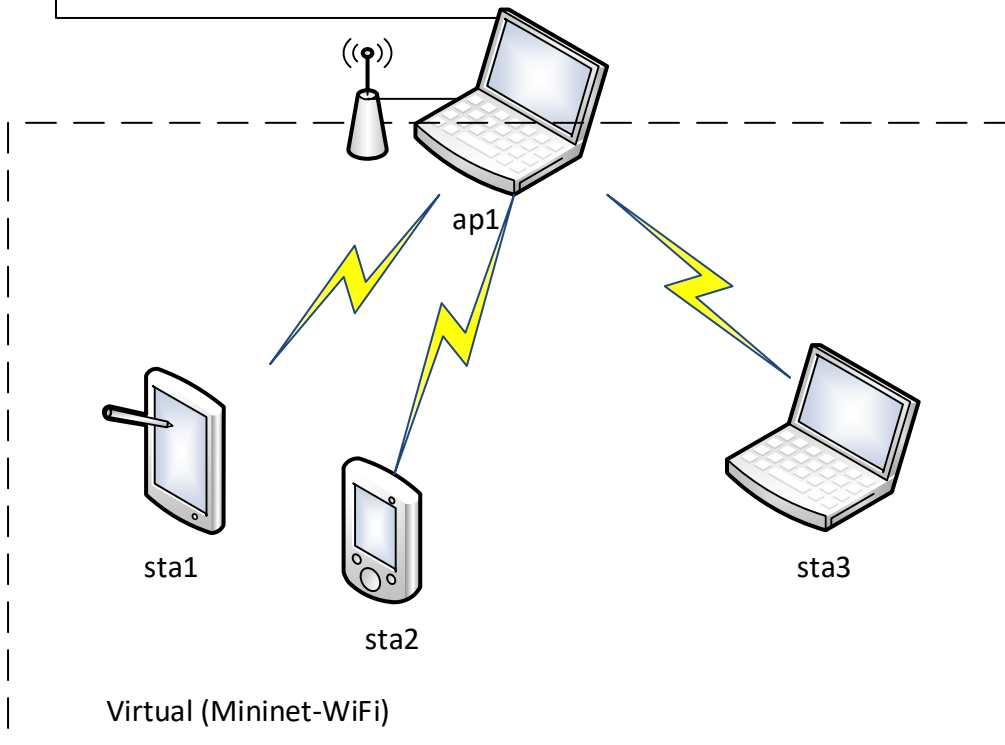
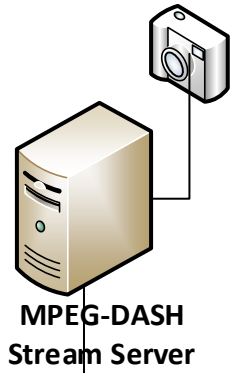
MPEG-DASH (*Moving Picture Experts Group - Dynamic Adaptive Streaming over HTTP*) is a vendor independent, international standard ratified in 2012. One of the main benefits of MPEG-DASH is reduction of startup delays and buffering/stalls during the video and continued adaptation to the bandwidth situation of the client.

Today, MPEG-DASH is gaining more and more deployments, accelerated by services such as Netflix or Google, which recently switched to this new standard. With these two major sources of internet traffic, 50% of total internet traffic is already MPEG-DASH.

The basic idea of MPEG-DASH is as follows: chop the media file into different bitrates or spatial resolutions encoded segments. The segments are provided on a Web server and can be downloaded through HTTP standard compliant GET requests where the HTTP Server serves different qualities, chopped into segments of equal length. Since the client knows its capabilities, received throughput and the context of the user best - the adaptation to the best bitrate or resolution is done on the client side for each segment.



In previous semester, we managed to achieve MPEG-DASH live streaming (sub 2 second delay) in an un-stable environment by improving the client's rate adaptation algorithm. The traffic instability was simulated by Netem tool. In this project we will use MiniNet-WiFi that will emulate WiFi mobile clients and will research the MPEG-DASH client rate adaption in various mobility models.





Goals:

1. Refer to projects from last semester:
<https://gitlab.cs.technion.ac.il/lccn/w2019-mpeg-dash-livestreaming-unstable-env>
2. Raise the environment in Mininet-WiFi and run the advanced client on each of the WiFi stations.
3. Research the MPEG-DASH client rate adaption in various mobility models.

Requirements:

Introduction to Networking (Must), Internet Networking (Optional)

Programming Language:

Python , Java Script

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