CSE 40373: Home Work Project 1

Late submissions will not be accepted

Group effort

Goal:

The primary goal of this project is to familiarize your self with popular multimedia technologies. We will capture a video, transcode and upload them to youtube, watch them and measure the packets that are transmitted while watching the video. I will describe a basic plan that is heavily centered around using Apple Mac OSX system. For this project, we can use the iMac in the department conference room (Fitz 384). Login as the Multimedia Systems account with a password of _____. Apple makes it especially easy to operate on Multimedia objects. Note that you are not required to follow these steps. If you know of other ways to achieve the same goals, go for it. This especially applies if you want to choose other platforms such as Windows or Linux to create the video. Do consult with me before taking alternative routes.

Plan:

1. **Capture video:** You can borrow the HD camcorder or you can use the iSight web cams that are available on the iMac for this experiment. You can also use any other camera. You will capture any video event for a reasonable duration (minutes).
2. **Download the video from the camcorder/webcam**: Use the iMovie tool to download the video. iMovie is an easy to use NLE (non linear editing tool). iMovie lets you create simple special effects also. Once you have the right video sequence, use the "Expert setting" to transcode the video into the formats that you want. The system will let you choose a myriad of compression parameters. Choose parameters that are compatible with youtube.
3. **Upload the video to youtube.com:** You may have to create an account. You could use a gmail account. If you upload a HD video, you can watch your movie using HD or normal. Otherwise, you may be able to watch them in high quality and normal.
4. **Watch the video and capture the packets**: Next, watch the video using a browser. You can watch the video on the iMac. You can also use the linux machines expsys-desktop1 through expsys-desktop6 in Cushing 208 room. Each of you have an account in these Linux machines – use your ND id and password. You have admin privileges in all these machines. To capture the packets, use network tools such as tcpdump (use the manual pages on how to use tcpdump). Watch the video using two variants (normal/high quality) and or different scenarios (the iMac is wireless, the Linux machines are wired).

Report:

For your experiment, you are free to use your own machines at home/lab etc. Write a succinct report which describes your setup and observation regarding the network packets. For example, you can plot a graph of received packet size in y-axis with time on x-axis. You might also plot the number of packets received in the last second. Your grades entirely depend on what I can discern from your report.