**Assignment 9**

**IT 520-A – Enterprise Infrastructure & Networks**

**Due Date: April 24th, 2018**

**Michael Weiler**

1. **Streaming video systems can be classified into three categories. Name and briefly describe each of these categories.**

UDP streaming - UDP streaming, the server transmits video at a rate that matches the client’s video consumption rate by clocking out the video chunks over UDP at a steady rate.

HTTP streaming - video is simply stored in an HTTP server as an ordinary file

with a specific URL. When a user wants to see the video, the client establishes a

TCP connection with the server and issues an HTTP GET request for that URL.

Adaptive HTTP streaming - Dynamic Adaptive Streaming over HTTP (DASH). The video is encoded into several different versions, with each version having a different bit rate and, correspondingly, a

different quality level. The client dynamically requests chunks of video segments of a few seconds in length from the different versions.

1. **List three disadvantages of UDP streaming**

UDP streaming (constant-rate) may not provide continuous playout because of an unpredictable and varying amount of available bandwidth between server and client.

UDP requires a media control server to process client-to-server interactivity requests and to track client state. This adds complexity and costs.

Many firewalls are configured to block UDP traffic, preventing the users from receiving UDP video.

1. **What is a packet that is received after its scheduled playout time considered lost?**

A packet that arrives after it scheduled playout time cannot be played out due to the real-time constraint of the applications. As far as the application is concerned, the packet is lost.

1. **How are different RTP streams in different sessions identified by a receiver? How are different streams from with the same session identified?**

Different Sessions – There are different mlticast addresses

Same Session – Checking the SSRC field, and RTP packets are distinguished from RTCP packets by using distinct port numbers.

1. **What is the role of a SIP registrar? How is the role of SIP registrar different from that of a home agent in Mobile IP?**

The SIP registrar translates fixed human identifiers (for example, bob@domain.com) to dynamic IP

Addresses.

Every SIP user has an associated registrar. Whenever a user launches an SIP application on a device, the application sends an SIP register message to the registrar, informing the registrar of its current IP address

Mobile IP defines the protocols used by the mobile node and/or the foreign agent to register the COPAs with a mobile nodes home agent.