**Lab 9**

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

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

**Solution:**

1. HTTP streaming
2. UDP streaming
3. Adaptive HTTP streaming

**1. HTTP streaming:**HTTP means Hyper Text Transfer Protocol. It is used to store videos in the server as a file. This server provides the URL of the file. This URL link is used by users to connect the server and receive video information.

2. **UDP streaming:** UDP means User Datagram Protocol. It is used to stream the video by the connect of server.

**3. Adaptive HTTP streaming:** It provides the band width of video stream. It is used to streams the data as per the client’s bandwidth.

1. List three disadvantages of UDP streaming

**Solution:**

1. Many firewalls block UDP
2. Due to the unpredictable and varying amount of available bandwidth between server and client, constant-rate UDP streaming can fail to provide continuous playout.
3. It requires a media control server, such as an RTSP server, to process client-to-server interactivity requests and to track client state (e.g., the client’s playout point in the video, whether the video is being paused or player, and so on) for each ongoing client session.

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

**Solution:**

A packet that arrives after its scheduled play out time cannot be played out. Therefore, from the perspective of the application, the packet has been lost.

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

**Solution:**

RTP streams in different sessions: different multicast addresses; RTP streams in the same session: SSRC field; 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?

**Solution:**

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

The role of a SIP registrar is to keep track of the user and their corresponding IP addresses which they are currently using. Each SIP registrar keeps track of the users that belong to its domain. IT also forwards INVITE messages (for users in its domain) to the IP address which the user is currently using. In this regard, its role is similar to that of an authoritative name server in DNS.

Bob’s registrar keeps track of Bob’s current IP address. Whenever Bob switches to a new SIP device, the new device sends a new register message, indicating the new IP address.