Assignment-3
Dial-a-Song
Assignment Overview

- A SIP Client need to call a specific SIP user-id that would play a song at its terminal
- Can be considered as a **Music-On-Demand** service (assignment does not require video support, but if supported could also be considered a Video-On-Demand Service)
- Using SIP for On-Demand service seems an interesting idea.
- Components Involved:
  - A SIP softphone (Example: kphone, X-lite - Can be freely downloaded from Internet)
  - A RTSP server (already UP and running at Netlab)
    - rtsp://130.233.154.184:8554/song1.wav
  - A program (assignment program) that interacts with both these components
Program Requirements

- Must be able to handle requests from a chosen SIP client
  - Your program need to pose as a SIP server
  - SIP Clients support both signalling over TCP and UDP
  - Choose one, that you prefer to implement (TCP or UDP)
- Requests that need to be responded by the program are
  - REGISTER, INVITE, ACK and BYE
- Getting the media stream from the RTSP server. (would use the Assignment-2 RTSP Client)
Step-1 Overview (Assignment-2)

- **RTSP Signalling Over TCP**
- **RTP packets Over UDP**
- **RTCP packets Over UDP**

**Hints:**
1. **DESCRIBE Response** contains SDP description (SDP parameters carry media format details)
2. **SETUP Request and Response** carries address parameters
Step-2 Overview

- Program responds to SIP requests and establishes the session.

Hints: Media format in SIP response need to be based on what RTSP server could provide.
Delivering Media Data

- In Assignment-2, the media data was received by RTSP client.
- But in Assignment-3, the media data destination need to be redirected.
Program Execution Flow

➤ SIP client calls our Final Assignment-3 program.
  • SIP user-id sip://song1@address.com
➤ Extracts the user-id. (song1)
➤ Initiates RTSP session with the media server (but the media destination need to be modified)
  • rtsp://130.233.154.184:8554/song1.wav
➤ After receiving PLAY response from RTSP Server, send 200 OK to the SIP client.
➤ Now the media is played at the SIP Client