



Online Video Streaming System

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Abstract- Today multimedia with its wide variety of applications has become a part of human life. The buffering time required is more. The proposed system eliminates this drawback of all the existing video streamers. They all require proxy Server and work as single centralized server. The proposed approach implements a video Streaming System which will host on a particular site. The proposed Audio/Video streaming system provides a platform independent, secure and low bandwidth solution.

Keywords- Buffer, Multimedia, Streaming, RTSP, RTP, RTMP Video, OVSS (Online Video Streaming System)

I. INTRODUCTION

According to its name, multimedia is the integration of multiple forms of media. This includes text, graphics, audio, video, etc. viz., a presentation involving audio and video clips would be considered as "multimedia presentation". Multimedia Software is an educational software that involves animations, sound, and text.

Today audio/video has become an inseparable part of our life. It is used for entertainment, informational as well as for educational purposes. Hence, it has become most important to provide good streaming speed on the internet. It is almost impossible to play the video continuously until it is of a poor quality. It is possible to minimize the buffering time to provide a better streaming speed. Section II includes the literature survey. We propose some future enhancement in this area in section III. Section IV concludes this paper.

II. LITERATURE SURVEY

A. Streaming:

Streaming [5] is a technology for playing audio and video files from a Web page. There are various users over the internet that wish to play an audio or video file. It is necessary to download the video file when it is played over a network. A user, however, can view the video or audio files directly from the Web server for immediate playback. This avoids time consuming downloads of large files. When an audio/video file is streamed it does not play continuously. Streaming is a process where the file is downloaded from the network into the system buffer which is a time consuming process.

When audio or video is streamed, a small buffer space is created on the user's computer, and data starts downloading into it. As soon as the buffer is full, the file starts to play and it uses information in the buffer, but while it is playing, more data is being downloaded. As long as the data can be

downloaded as fast as it is used up in playback, the file will play smoothly.

B. RTSP Protocol:

A single or several time-synchronized streams of continuous media such as audio and video are established and controlled by the Real-Time Streaming Protocol (RTSP) [1]. It does not typically deliver the continuous streams itself, although interleaving of the continuous media stream with the control stream is possible. In other words, for multimedia servers, RTSP [1] acts as a "network remote control". So that the extension mechanisms to HTTP can in most cases also be added to RTSP, the RTSP protocol is intentionally similar in syntax and operation to HTTP/1.1 [2].

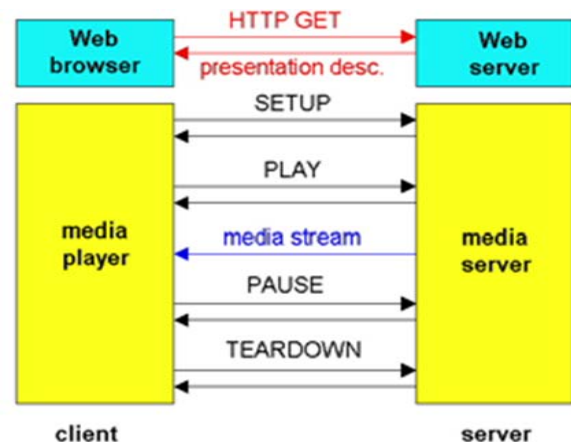


Figure 1 : RTSP Operation[1]

Fig1 shows the working of RTSP Operation. Metafile communicated to web browser
Browser launches player.
Player sets up an RTSP control connection,
Data connection to streaming server.

a. Advantages

- (a). Retrieval of media from media server
- (b). Invitation of a media server to a conference
- (c). Addition of media to an existing media file.

b. Properties [3]:

(a). Extendable:

New methods and parameters can be easily incorporated to RTSP.

(a). Easy to parse:

It is easy to parse RTSP by standard HTTP or MIME parsers.

(a). Secure:

RTSP makes re-use of web security mechanisms. All HTTP authentication mechanisms such as basic and digest authentication can be directly applied. Transport or network layer security mechanisms may also be reused.

(a). Transport-independent:

RTSP may use either an unreliable datagram protocol (UDP), a reliable datagram protocol that is not widely used or a reliable stream protocol such as TCP since it implements application-level reliability.

(a). Multi-server capable:

Each media stream can reside on a different server within a presentation. Several concurrent control sessions are automatically established by the client with the different media servers. Media synchronization is performed at the transport level.

(a). Control of recording devices:

Both recording and playback devices and also devices that can alternate between the two modes can be controlled by the protocol.

(a). Separation of stream control and conference initiation:

Stream control is divorced from inviting a media server to a conference. The sole requirement is that the conference initiation protocol can either provide or can be used to create a unique conference identifier.

III. PROPOSED WORK

From the literature survey it is concluded that the current system uses RTSP protocol for streaming the video files which is very time consuming process. To overcome this drawback of time consumption, the proposed method is very useful. This method reduces the buffering time during streaming.

Objectives

- a. To reduce the buffering time during video streaming.
- b. To reduce the users efforts;
- c. To handle the multiple requests at the same time and play the same video smoothly.
- d. To provide access to any user from any place.

A. Implementation of Player GUI:

In this method the player on which the video is going to be played has been designed and all the basic features like play, pause, replay and so on have been incorporated into it. The player will be able to play mp4 and flv video formats.

B. RTSP Design:

The RTSP protocol [1] will work as shown in figure (1).The RTSP protocol creates a virtual server for every request sent by client to the server thus eliminating the drawback of centralized approach.

It will handle the multiple requests simultaneously and will be able to play the video smoothly on client machine.

C. Streaming:

Streaming [5, 6] servers typically deliver files with a little help from a web server. All of this data reaches its intended destination because of certain sets of rules, known as protocols, which govern the way data flows from one place to another. A protocol called HTTP, which is very much known to most of us, deals with Web pages or hypertext documents. With streaming media [8], it is required that the data arrives quickly and with all the pieces (of data) in the right order. This is the reason why streaming video and audio requires protocols that allow real time data transfer. They break files into small chunks and send them to a specific location in a specific order as per the requirement. These protocols include:

- a. Real-time transfer protocol (RTP)
- b. Real-time streaming protocol (RTSP)
- c. Real-time transport control protocol (RTCP)

These protocols are necessary to govern Web traffic by acting like an added layer of protocols. So, during the streaming of data by the real-time protocols, working in the background is being carried on by the other web protocols.

IV. EXPERIMENTAL RESULTS

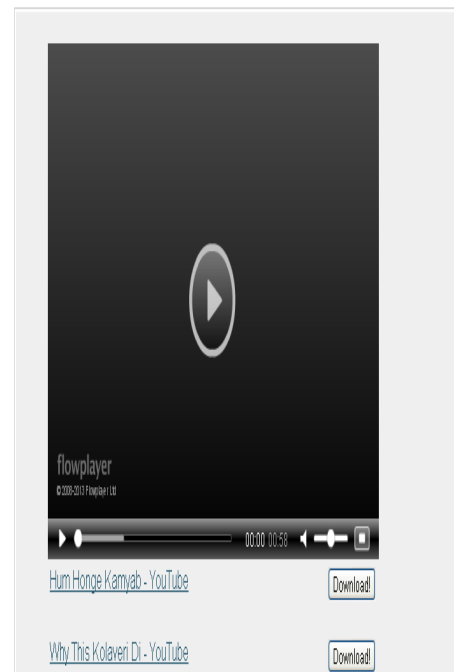
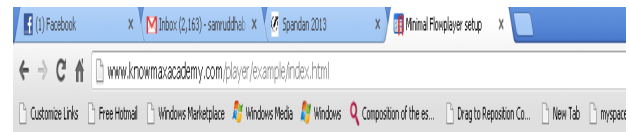


Figure 2:GUI of player



Figure 3: Video being played

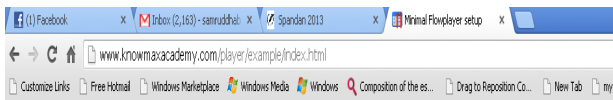


Figure 4: Video ended

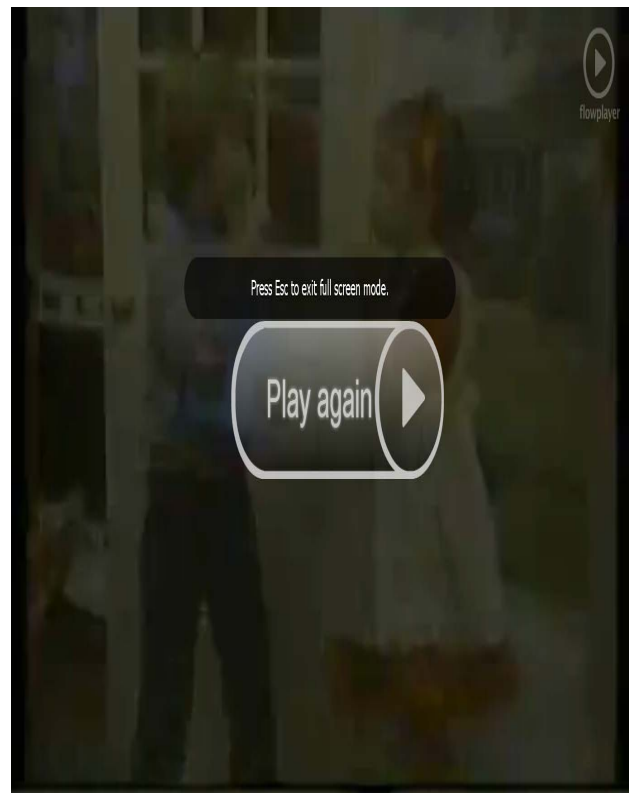


Figure 5: Full screen

V. CONCLUSION

In this paper the problems in video streaming are considered and an efficient approach is presented using the RTSP protocol concepts which is useful to overcome the complexities in centralized server. From the Literature survey it is concluded that all the available methods for streaming are time consuming. The proposed method eliminates this drawback of time consumption. So, the proposed method is efficient than the available methods. This method also reduces the buffering time required by the media file.

VI. REFERENCES

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- [5] <http://computer.howstuffworks.com/internet/basics/streaming-video-and-audio3.htm>
- [6] <http://www.videodesk.net/Streaming.aspx>