Browser Friendly Media Integration of Adaptive Real-Time HTTP Media Streaming

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***Abstract*— Presently, Video plays an important role in websites like youtube, netflix, hulu etc. Millions of users consuming their media content everyday. However, these media access mainly uses media players based on proprietary browser plugins like Adobe Flash, ActiveX and do not leverage adaptive streaming systems over HTTP. In this paper, adoptation of a new web integration system by using HTML5 video element, a streamless real time video by DASH-Dynamic Adaptive Streaming system over HTTP without using plugins. This adopts the media source API (Application Programming Interface) of Google chrome browser to present a flexible and potentially independent DASH client browser.**

***Keywords*—Plug-ins, HTML5, HTTP-DASH, API, Browser.**

I.INTRODUCTION

Commonly web interface requires different framework implemented on system and proprietary browser plugins like ActiveX which does not leverage adaptive streaming systems and no bandwidth algorithm. This paper concentrate on the streamless web integration of the multimedia application like videos, audios, instant messages. Therefore, this paper is on DASHJS, a java script-based VP8-DASH client which adopts the media sources API of Google's chrome browser to present a flexible and potentially browser independent DASH client.

II.ORGANIZATION

The first section consists of introduction. Second section consists of flow of the paper. Third section consists of related works. Fourth section consists of proposed work Fifth section consists of results and conclusion.

III.RELATED WORKS

The multimedia applications are the popular browser friendly application. The high performance of the video quality is delivered using video codecs. For example [4] with help of video codecs the quality of video is delivered but the large amount of video data generates burst of packet loss in wlan. In [5] the significant performance improvements over both the PSNR and SNR. In [6] the video quality for the low bitrate using H.264 video codec over UMTS networks. In [8] the resource distribution, scheduling and streaming to increase compatability. In [9] the utilization of peers is maximized and the fraction of the rejected request in the system but it is also not proposed for the large areas. In [11] here, introduces the intermediate called Intermedia it consist of multiple level video signal components for quickly and easily generates the stream the video with very low complexity. In [12] the energy consumption is improvedand the media devices or servers are cannot provide sufficient processing power for transcoding operation. In [14] the websockets protocol establishes a bidirectional connection server. It enables the live video streaming to all connected users and the web chat between two users.

IV.PROPOSED WORK

In order to adopt the streamless integration in multimedia applications the recent standard VP8 over HTTP(DASH) in the web using HTML5 video element. The integration WebM based media segments in DASH giving a detailed description of the used container format structure and a corresponding media presentation description(MPD). Based on this technique browser does not require plugins like ActiveX. It will directly supports the browser to access the multimedia application without the requirement of seperate web interface framework.

A.HTML5

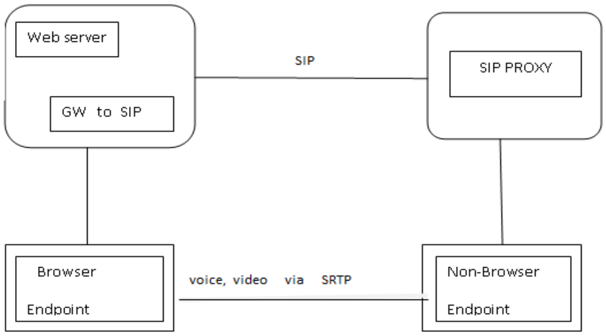
Web RTC is a part of HTML5. HTML5 almost looks like HTML4 and its backward compatible. HTML5 supports desktop applications as well as web applications and also adds databases, 3D graphics and real time collaboration communication. It’s not just used to display a web page but it’s not just used to display a web page but it’s used for interactive real time communication.

HTML5 Web Real Time Communication (WebRTC) standard plays an key role in browser to browser communication. The WebRTC standard enables real-time communication and also introduces UDP based communication to web browsers to complement the normally used TCP communication with HTTP.

B.WEB RTC

Web RTC is a web based real time communication using the web browser is directly between the browsers it is called real time because its interactive nature. This is mainly developed for interactive voice, video, data communication. Unlike youtube which allows us watch video but web RTC allows us to communicate video(videochat) with no latency. It is interoperable with existing voice and video systems.

In any communication system where lots of people are involved, the value of the new system depends on how many people can be readed and its interoperability with the existing VOIP,predominantly SIP based system, if not it would be much harder and slower to deploy.



C.WEBSOCKET

Websockets allow a client-server application to create a full-duplex communication channel on a single TCP connection. This helps us to get near-realtime communication between our central server and all other peers and it is used to exchange the data needed to bootstrap the webRTC connections between peers.

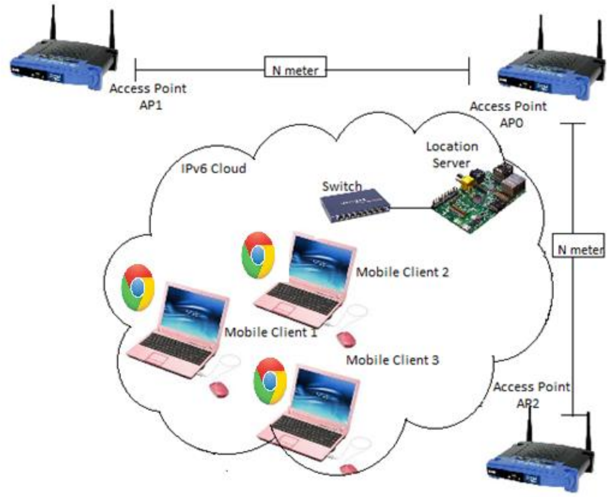
D.VP8

VP8 is an open source video codec developed by On2 Technologies and released by Google. VP8 is the video codec used in HTML5, supported by Firefox and Chrome for streaming video in the web browser. After the introduction of WebM by Google, VP8 became the centre of attraction because of its support to WebM.

Video codec could be either software or hardware based it is used to process any digital video signal. The goal of video compression is to deliver a video with high accuracy that closely resembles the input, simultaneously compressing it into a smallest file possible. Supported video codecs are H.261, H.263,H.264,VP8. The most preferred and used video codec for Web RTC is VP8.

V.REAL-TIME SYSTEM ARCHITECTURE

Raspberry Pi is used as the server in this project. The laptops with Web RTC enabled browsers (Chrome or Firefox) are used as the mobile clients. The IPV6 cloud is generated by connecting the server to switch. The server and the three clients are in the same IPV6 network. The server computes the distance of each mobile node and stores it in the SQLite database for reference purposes (transferring calls to the nearest neighbouingnode). In this project, Rpi works as the server, SIP server and web server and the laptops with browsers running Web RTC are the SIP clients.



VI.CONCLUSION

The public internet is completely based on IPv4 and almost all the existing networks are based on IPv4 and moreover they not compatible with IPv6. IPv6 is backward compatible but the existing systems are not compatible with IPv6. For this different two approaches are used to make different networks compatible. They are Dual-stack approach and Tunneling. IPv4 is completely implemented on an IPv6 node and this type of a node is called IPv4/IPv6 node. It is capable of handling both types of datagram. Making Raspberry Pi the server used here is cost-effective solution with maximum benefits. Data traffic load on the network can be reduced. Over loading of the server with numerous requests can be avoided.

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