RTMP SERVER IN VIDEO CONFERENCING FOR OPTIMIZING THE QUALITY OF EXPERIENCE. – REVIEW PAPER

Ass. Prof Rubana khan, Deepali Bhoyar, Deepali Mahajan, Raghav Agasti, Mohammed zafir.

Abstract: This review paper gives the qualitative review on the RTMP server in video conferencing for optimizing the quality of Experience. RTMP is one of the most important part of online streaming. The huge demand of online video streaming enables network operators to estimate QoE in their network and then optimize it so that they can provide smooth service to the user.

Keywords: QoE, RTMP, Streaming.

OBJECTIVE

Choosing a streaming protocol is a difficult task that depends on the type of information to be shared. Communication must be made using a protocol formed by a group of rules defining how data are transmitted over the network and divided into different parts, such as headers, data, authentication and error handling. Thus, a streaming protocol may be viewed as a communication protocol where the transmitted data are media data. In this study, the main objective is to share audio and video media. For this reason, the most important point is the guarantee of a low latency and efficient transmissions with occasional packet losses. A media streaming protocol is defined, taking into account the structure of the packets and the algorithms used to send real-time media on a network. Different media streaming protocols are available today, which differ in a few implementation details.

The main objective of this review paper is to analyzes the study and working of RTMP an how this study can be used to optimize the QoE of the application. The QoE of users degrades due to defective encoding, bottlenecks, channel change time too long, excessive compression, order failure for VoD, Transmission Unavailable, audio-video out of sync. RTMP is used as real-time internet class room for web based collaborative work between teachers and students to interact over exchanging messages such as flash data, audio, video. RTMP is basically a TCP/IP based protocol which delivers flash content. RTMP allows you to integrate a variety of media types into one cohesive package, seamlessly blending audio, video, and text. Additionally, you can have multiple variations of media channels, such as streaming both MP3 and AAC audio streams or streaming MP4, FLV, and F4V videos.

RTMP sits on the top of the Transmission Control Protocol, it uses a three-way handshake when transporting data. The initiator asks the accepter to start a connection; the accepter responds; the initiator acknowledges the response and maintain a session between either end. So Rtmp is quite reliable.

METHODOLOGY

In this part of review paper which literature was used and how it was analyzed and summarized. In the early stage of this review paper we did the review of the video streaming protocols RTMP and QoE, standard. Quality of Experience is has become the most prominent issue for delivering services and applications. A number of research
paper has been published in the last 3-4 years giving lots of overview of QoE. The requirements of the RTMP stream differs depending upon the volume of content that is sent on the stream, the media servers is accessed by how many users, and the encoding required by each user for accessing the stream.

There are many factors that effects the latency of the RTMP stream like network connectivity, video resolution, audio layers, speed of transcoding server and playback device download speed. RTMP should always deliver the smooth playback experience along with parallel audio and video streaming regardless of total time delay. Developers will sometimes assign different priority levels to different message classes so that in the event of a poor connection the most important pieces of the stream still come through. RTMP is still widely used for the first leg of a piece of content’s streaming journey (Step 3 above), to transmit content from a source to a server. But it’s no longer considered secure or efficient for last-mile delivery of that same content to the user (Steps 5 & 6 above). We sometimes refer to the front part of the pipeline, where RTMP still plays a major role, as the ingest stage, and the delivery portion, where RTMP has effectively reached its EOL.

RTMP still finds several use-cases in the modern video streaming pipeline, especially at the ingest and egress from transcoders. And this is owing to the low-latency, real-time streaming nature of RTMP. Most of the industry-standard encoders (encoding.com, Bitmovin, Harmonic, AWS Elemental, etc.) can produce RTMP output feeds. Similarly, streaming services like Twitch, YouTube, Facebook Live, and other live streaming platforms such as Dacast, Ant Media, Wowza can ingest RTMP feeds.

**IMPORTANT DIAGRAMS**

RTMP streaming involving client and server
Reference


PMCID: PMC5424723