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Performance of Adaptive Video Streaming System

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ABSTRACT: Adaptive video streaming is a related expansion with respect to common progressive download streaming. we present a model of the regular video stream switching in use one of these most important video streaming services beside with a description of the client-side statement and control procedure. From the control architecture point of view, the regular adaptation is achieved by means of two interacting control loops having the controllers at the client and the actuators at the server: one loop is the buffer regulator, which aims at routing the client playout buffer to a target length by regulating the server sending rate; the other one implements the stream switching controller and aims at selecting the video level.

KEYWORDS:Adaptive video streaming, stream-switching, performance evaluation.

I. INTRODUCTION

The video streaming should enhance good quality of video to be viewed in the streaming services. Today, the satisfied manufacturer has to accept the challenging task of providing the user with a unspoiled multimedia experience at the maximum obtainable Quality of Experience (QoE) given the user device heterogeneity. To this purpose, multimedia content is required to be adaptive in order to match a wide set of variables such as customer screen motion, CPU load, network available bandwidth, power consumption. Adaptive video streaming represents a key advance common progressive download streaming. In fact, with progressive streaming, the video is encoded at a constant quality or bit-rate and it is delivered as any other file over HTTP.

The arriving video is momentarily stored in a play out buffer before the playing is started so that the short-term mismatches between the video bitrates and the available bandwidth can be immersed and video interruption can be mitigated. Nonetheless, in the case of a constant mismatch, the buffer could finally get empty with the consequence of playback interruptions and the need of re-buffering. On the other hand, with adaptive streaming the video bitrates is throttled on-the-fly in order to match the time varying available bandwidth and get the best video quality while minimizing start-up latency and avoiding video playback interruptions. The leading approach for implementing adaptively is the stream-switching (or multi bit-rate): the server encodes the video content at different bit-rate levels and an adaptation algorithm selects the video level to be served based on measurements such as the available bandwidth and the player buffer length.

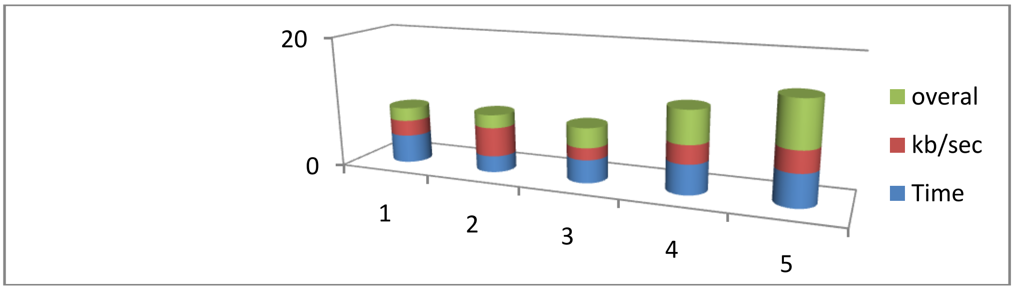

Fig: increase overall speed

II. ARCHITECTURE OF VIDEO STREAMING

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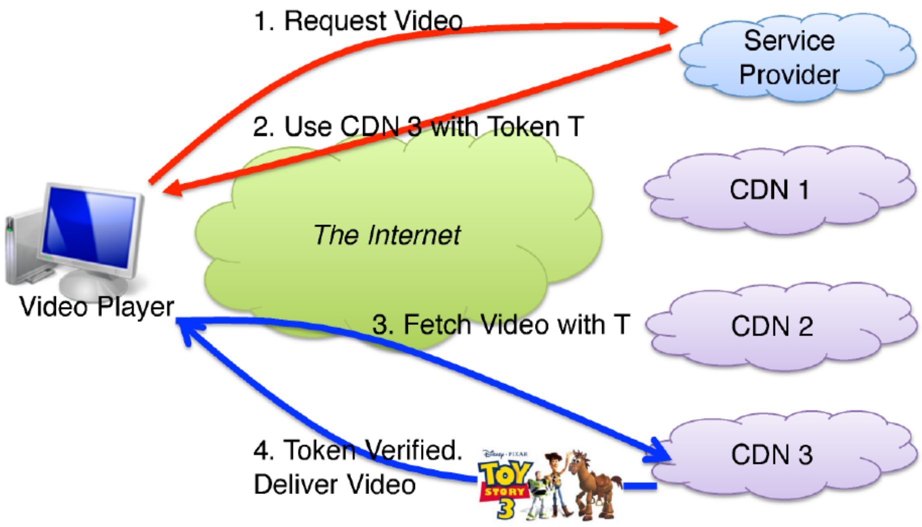

Fig: architecture of video streaming

A.Features of video streaming services

1.Video content is streamed over http from third party CDN providers.
2.video server runs on several different clients.
3.watching video has two phases .having authenticaticaton and streaming.
4.when a client request the video, the service provider authenticate the use account and direct to the client to CDN hosting the video.
5.The client pick up the video and request the video by presenting tocken to the designated CDN .
6.Picking a Video Rate the client start up with preconfigured starting video rate.
The client and server communicate over the network through the command .command has two one is control socket another one is data socket.control socket send the request message to server throuth the internet.server response to the client request message to the data socket.data socket send the data from server to client.

III. STREAM SWITCHING TECHNIQUE

Server run with default port number as ‘N’. Server initialize the client to connect and the server assigns the port number for each client.. First client establish connection to server with default port number as‘N’. Next Server assigns port number as ‘N+1’ and populates the response to the Client. Client select one from the list and again establish connection with port number assigned by Server. Now Server streams the Video with help of ‘N+1’ port Number. For next Client, Server assigns port number as ‘N+2’, after client establish connection with default port number and sends response.

IV. EXPERIMENTAL RESULT

The experimental result should be implemented in web application

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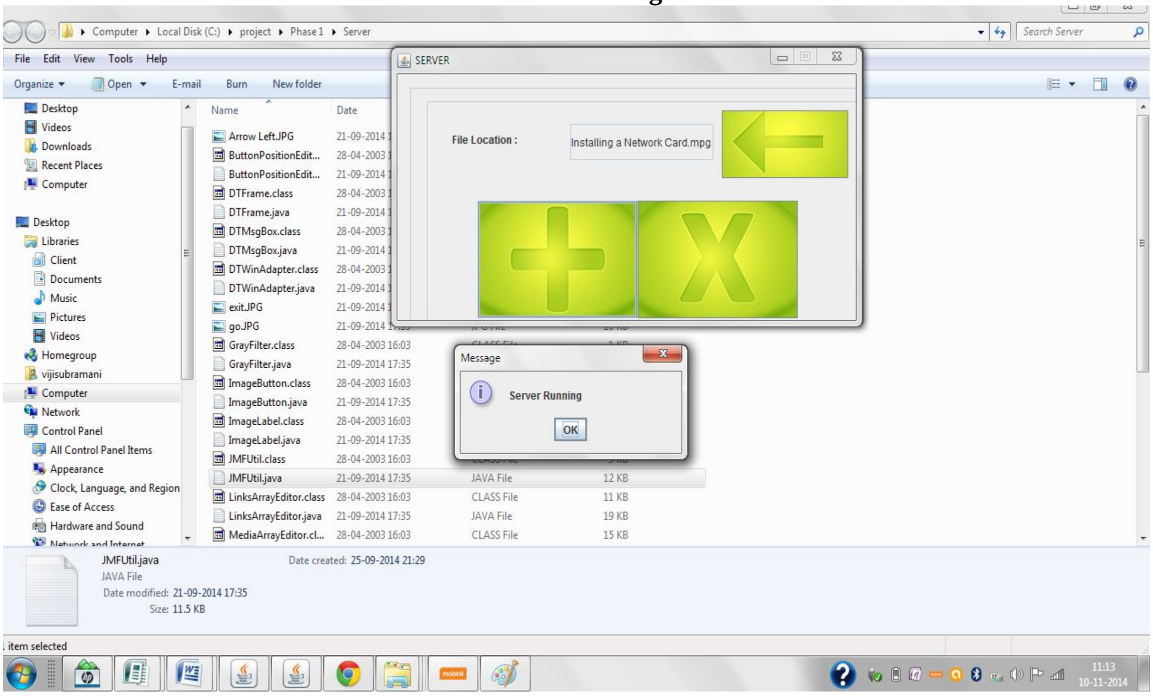
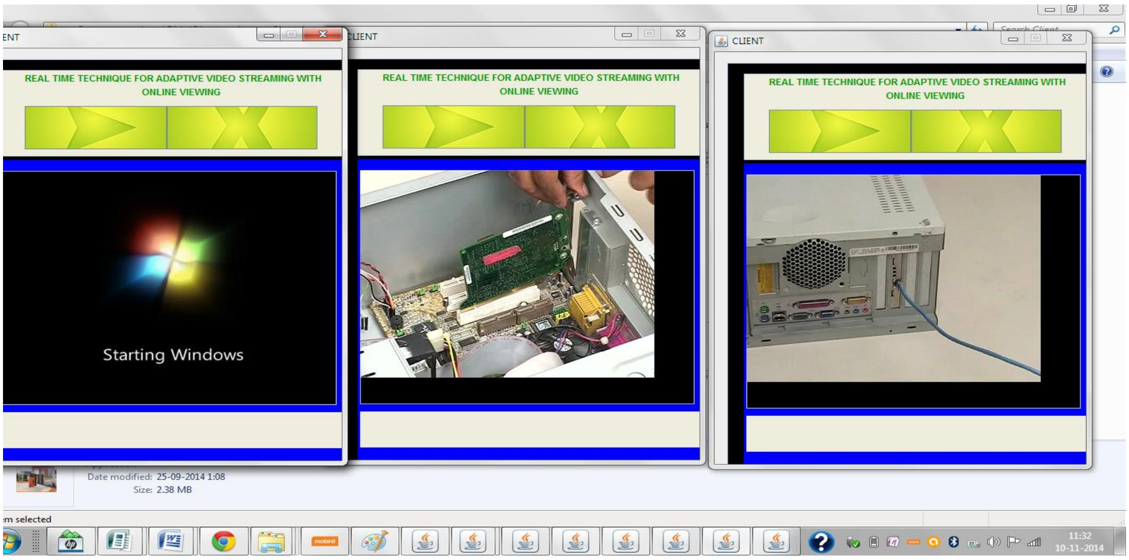
Server running



The video server receives the ACK packets from multi-client, completely grasps the network congestion state and every client buffer state, and carries on resource scheduling and multi-client balance. The server continues to detect the arrived ACK packets, obtain the evaluated sending rates, client buffer free degrees, buffer warning bounds in the feedback packets, and carry on the weighted processing to the evaluated sending rates based on the client buffers' state. On the basis of the TCP- The video server receives the ACK packets from multi-client. It carries on resource scheduling and multi-client balance. The server continues to detect the arrived ACK packets, obtain the evaluated sending rates, buffer warning bounds in the feedback packets. It carry on the weighted processing to the evaluated sending rates based on the client buffers' state. The arrived packets, calculate RTT using the information in data header. It evaluate the sending rate based on the calculated RTT. Detect the buffer changes and calculate the bounds. If the condition matches, send the evaluation rate, and the warning bounds back to the video server.

Multiple client view the video



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V.CONCLUSION

We have implemented the automatic adaptive video streaming proposed work builds the same video without any interruption occurs A video flow takes 21s on average to change between two adjacent video levels in response to a bandwidth increase; Due to the conservativeness of the stream switching algorithm, a low bandwidth utilization may be obtained When the offered bandwidth suddenly decreases interruptions of the video playback may occur due to a large actuation delay. and the multiple client view the proposed approach guarantees and the video streaming flow. They are running the video and view the multiple client and do not occur the buffering from client side .The Web Tier Application. Multiple client view the different videos with same time. Simultaneously access all videos no interruption occur.

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