

AMES - Effective Mobile Video Streaming and Sharing In the Social Network by Using Cloud Computing

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ABSTRACT:

While demands on video traffic over mobile networks have been soaring, the wireless link capacity cannot keep up with the traffic demand. The gap between the traffic demand and the link capacity, along with time-varying link conditions, results in poor service quality of video streaming over mobile networks such as long buffering time and intermittent disruptions. Leveraging the cloud computing technology, we propose a new mobile video streaming framework, dubbed AMES-Cloud, which has two main parts: AMoV (adaptive mobile video streaming) and ESoV (efficient social video sharing). AMoV and ESoV construct a private agent to provide video streaming services efficiently for each mobile user. For a given user, AMoV lets her private agent adaptively adjust her streaming flow with a scalable video coding technique based on the feedback of link quality. Likewise, ESoV monitors the social network interactions among mobile users, and their private agents try to prefetch video content in advance. We implement a prototype of the AMES-Cloud framework to demonstrate its performance. It is shown that the private agents in the clouds can effectively provide the adaptive streaming, and perform video sharing (i.e., prefetching) based on the social network analysis.

Index Terms:

Scalable Video Coding, Adaptive Video Streaming, Mobile Networks, Social Video Sharing, Cloud Computing.

1. INTRODUCTION:

In this paper, we have a tendency to style an adaptive video streaming and prefetching framework for mobile users with the on top of objectives in mind, dubbed AMES-Cloud. AMES-Cloud constructs a non-public agent for every mobile user in cloud computing environments, that is employed by its 2 main parts: (i) AMoV (adaptive mobile video streaming), and ESoV (efficient social video

sharing). The contributions of this paper will be summarized as follows: AMoV offers the most effective potential streaming experiences by adaptively dominant the streaming bit rate looking on the fluctuation of the link quality. AMoV adjusts the bit rate for every user investigating the scalable video writing. The personal agent of a user keeps track of the feedback data on the link standing. Personal agents of user's are dynamically initiated and optimized within the cloud computing platform.

Additionally the period SVC writing is completed on the cloud computing facet with efficiency. AMES-Cloud supports distributing video streams with efficiency by facilitating a 2-tier structure: the primary tier could be a content delivery network, and therefore the second tier could be information center. With this structure, video sharing will be optimized at intervals the cloud. Gratuitous redundant downloads of common videos will be prevented.

Supported the analysis of the SNS activities of mobile users, ESoV seeks to supply a user with instant taking part in of video clips by prefetching the video clips earlier from her personal agent to the native storage of her device. The strength of the social links between users and therefore the history of assorted social activities will probabilistically confirm what proportion and that video are prefetched.

2. EXISTING SYSTEM:

The existing system addresses the topic of specially designed remote police investigation cameras and residential appliances rather it doesn't focused on common or general appliances that square measure principally employed in today's world. And it conjointly ends up in our more study on the wireless fidelity direct and also the most prospects of its applications. As Bluetooth is one amongst the most important drawbacks of this technique.

3. AMES CLOUD FRAMEWORK:

AMES-Cloud framework includes the Adaptive Mobile Video streaming (AMoV) and the Efficient Social Video sharing (ESoV).

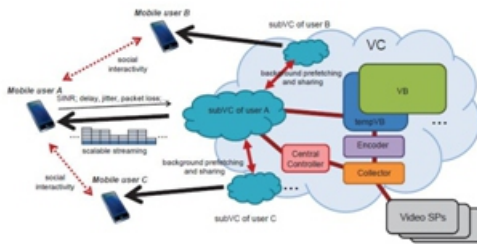


Fig1: AMES-Cloud framework

As shown in Fig. 1, the whole video storing and streaming system within the cloud is named the Video Cloud (VC) i.e., it's the cloud accelerate has been established with several parts operating along, just about to induce the initial video information from the VSP and supply the reliable service to the mobile user and it additionally provides accessibility of video and makes the sharing of these videos among the users a lot of easier. In the VC, there's a large-scale video base (VB), that stores the foremost of the popular video clips for the video service suppliers (VSPs). A temporal video base (tempVB) is employed to cache new candidates for the popular videos, whereas tempVB counts the access frequency of every video. The VC keeps running a collector to hunt videos that square measure already common in VSPs, and can re-encode the collected videos into SVC format and store into tempVB initial. By this 2-tier storage, the AMES-Cloud will keep serving most of common videos forever wherever the management work are going to be handled by the controller within the VC.

4. AMOV: ADAPTIVE MOBILE VIDEO STREAMING:

Using ascendible video secret writing as enabled by SVC, one stream will be accustomed serve all end-users. Adaptation will be performed at the server however additionally within the network so as to change the video stream per the usage requirements. Ability with observance on Link Quality we tend to styles the mobile shopper and also the subVC. The link quality monitor at mobile shopper keeps following on metrics likewise as signal strength, packet round-trip-time (RTT), and disturbance and packet loss

with a certain duty cycle and also the shopper can report back to the subVC every now and then. In SVC, a mixture of the 3 lowest quantifiability referred to as {isnamed|is termed} the bottom Layer (BL) whereas the improved mixtures square measure called improvement Layers (ELs). To the current read, if BL is absolute to be delivered, whereas additional ELs will be additionally obtained once the link will pay for, a higher video quality will be anticipated. The server ought not to concern the shopper facet or the link quality, by victimization SVC cryptography techniques. The shopper still will rewrite the video and show, even some packets square measure lost. However this can be still not information measure economical appropriate to the avertible packet loss. Therefore it's required to regulate the SVC-based video streaming at the server facet with the speed adaptation methodology to capably utilize the information measure. Once the subVC gets the data of the link quality, it'll perform a calculation and expect the potential information measure within the next time window.

5.ESOV (EFFICIENT SOCIAL VIDEO SHARING) CONTENTS:

In SNSs, users will register to associate well-known folks, friends, and specific content publishers; additionally there square measure differing kinds of social actions between users in SNSs. It's used for sharing of videos in SNSs, individual will able to post videos publicly, and they; one United Nations agency skills to directly recommend a video to specific friend(s); additionally one will often get detected by registered content publisher for accepted videos. The video will be announce by one user might watched by the user's United Nations agency square measure friends(to him/her United Nations agency shared), in order that sub VCs will bring out winningbackground prefetching at the sub VB and still might drive to users native VB.

once a video sharing action, there may be an exact quantity of delay that the recipient gets to be at home with the sharing, and initiates to observe videos. As an alternate, a user will able to click to envision the videos while not many buffering delay because the gap half or maybe the complete video is prefetching regionally in VB. The prefetching from VC to sub VC is just refers to the "connecting" action; the prefetching from sub VC to native VB depends on the strength of social activities, however additionally taking the wireless link standing.

Sharing publicly: The movement of watch or share a video by a user will be seen by their friends in their timeline. We expect this public sharing as a “weak” property between users, as many folks might not watch the video that one has watched or shared with any specific suggestion. Registration: kind of like the well-known RSS services, a user will register to AN interested video supported their wants. This can be property among the registered user and also the video publisher is take into account as “median”, as a result of the user not watch all signed videos. Direct suggestion: A user will directly recommend a video to friends by a brief message. The recipients of message might watch it high resolutions.

6. CONCLUSION:

Finally we have a tendency to conclude that this survey targeted on video knowledge streaming with effective frameworks, it works with success with restricted information measure. Once we share the information through social networks it additionally needs security, by these 2 were in secure cloud surroundings. Whereas streaming video knowledge user feels live expertise by implementing the layers of base, increased in sub video clouds. Knowledge area unit within the kind of encoded and elastic nature. Finally we have a tendency to focus value effective knowledge streaming with giant scale networks in cloud in future means optimum valuation in knowledge streaming for mobile users. During this paper, we have a tendency to mentioned our proposal of AN accommodative mobile video streaming and sharing framework, referred to as AMES-Cloud, that with efficiency stores videos within the clouds (VC), and utilizes cloud computing to construct non-public agent (subVC) for every mobile user to do to supply “non-terminating” video streaming adapting to the fluctuation of link quality supported the scalable Video writing technique. Additionally AMES-Cloud will more get to produce “nonbuffering” expertise of video streaming by background pushing functions among the VB, subVBs and localVB of mobile users.

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