Secured Technique of AMOV and ESOV in the Clouds

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Abstract**—**The available hardware and technology for consumers and service providers today allow for advanced multimedia services over IP-based networks. Hence, the popularity of video and audio streaming services such as Video-on-Demand (VoD),The user demand for videos over the mobile devices through wireless links this wireless links capacity cannot be corporate with the traffic demand. As delay between traffic demand and link capacity, with link conditions, low ouput quality of service and sending data on this media result in buffering time . in this paper we propose a new secure mobile video streaming framework AMoV (adaptive mobile video streaming) and ESoV(efficient social video sharing) are the terms which are currently gaining the attention of variety of computer users and researchers. While enjoying the multimedia services like videos and images, the basic quandary faced by any individual is the progressive downloading or the buffering of the videos. As the researches are focusing on various technologies in said issue, very least focus is given on to the security issues present in these technologies. The basic idea behind this paper is to study and to survey the literature and to propose the security aspects in related field.

Keywords**—***AMoV, ESoV, social video sharing, cloud computing , security.*

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1. INTRODUCTION

In a current studies huge requirement of video data by video streaming and downloading increased. presently available video branch services over mobile networks have produced to be well-known. On the contrarily, wireless system is revolving much more to the researchers. The existing traditional way has been changed in the era of Mobile Cloud Computing (MCC) which is efficiently used by the mobile users. Accessible mobile users left from-predictable applications by supporting hardware,3D virtual surroundings, and huge storage capacity; also users share the cloud communications to their friends. MCC put the cloud computing into the mobile atmosphere and over comes barriers linked to performance (e.g. battery living, bandwidth, service delay and storage), surroundings (e.g.scalability, heterogeneity, availability) and security(e.g. reliability and privacy). Thanks to the raise of grand video compression method such as H.264and MPEG-4, it is currently achievable to join audio, video and data in the same signal and transmit it over packet based wireless arrangement[2].In this technology can propose these hardware resources reasonably. Many of authors have developed the techniques related to storing the data and also for maintaining the data and for security issues related to the cloud[2].

The quality of service on mobile video is based on two factors:

1. **Scalability:** Mobile video streaming services should support a different variety of mobile devices. The mobile devices have different video resolutions, different computing powers, different wireless links like 2G,3G,4G and so on. The strength of signal of mobile devices may vary over time and space. For different mobile devices facing the problem of traffic in same or different cell and link of difference condition. For storing various versions of similar video having different bit rates may obtain high transparency of storing and communication. Scalability refers to different mobile devices have support different wide range of transforming video.

2. Adaptability: Established video streaming method planed by considering comparatively constant traffic links between client-server model. In client-server model or links between servers and users uses wire connection are good. but Inthe mobile environment carry out irregular. Thus the irregular wireless link condition should be properly contract with available supportable video streaming services. To perform this task, we have to regulate the video bit rate adapting to the currently time-varying available link bandwidth of each mobile user. Such adaptive streaming techniques can effectively reduce packet losses properly adaptive video streaming remove the variation in the video having time-varying link bandwidth for mobile users.

2. RELATED WORK

2.1 Adaptive Video Streaming Techniques

In the adaptive streaming, the video traffic rate is adjusted on the fly so that a user can experience the maximum possible video quality based on his or her link's time-varying bandwidth capacity.There are mainly two types of adaptive streaming techniques, depending on whether the adaptivity is controlled by the client or the server. The Microsoft's Smooth Streaming is a live adaptive streaming service which can switch among different bit rate segments encoded with configurable bit rates and video resolutions at servers, while clients dynamically request videos based on local monitoring of link quality. [28], [29], Regarding rate adaptation controlling techniques, TCP friendly rate control methods for streaming services over mobile networks are proposed, where TCP throughput of a flow is predicted as a function of packet loss rate, round trip time, and packet size. Considering the estimated throughput, the bit rate of the streaming traffic can be adjusted. A rate adaptation algorithm for conversational 3G video streaming is introduced by. Then, a few cross-layer adaptation techniques are discussed, which can acquire more accurate information of link quality so that the rate adaptation can be more accurately made. However, the servers have to always control and thus suffer from large workload. Recently the H.264 Scalable Video Coding (SVC) technique has gained a momentum. An adaptive video streaming system based on SVC is deployed in , which studies the Real-time SVC decoding and encoding at PC servers. [9], [12].

2.2 MOBILE CLOUD COMPUTING TECHNIQUES:

The cloud computing has been well positioned to provide video streaming services, especially in the wired Internet Because of its scalability and capability[13]. For example, the quality-assured bandwidth auto-scaling for VoD streaming based on the cloud computing is proposed , and the CALMS [33] framework is a cloud-assisted live media streaming service for globally distributed users.However, extending the cloud computing-based services to mobile environments requires more factors to consider: wireless link dynamics, user mobility, and the limited capability of mobile devices.

3. Existing System

In the existing system The cloud framework includes two parts: Adaptive Mobile Video streaming and Efficient Social Video sharing. The framework is as shown in Fig. 1

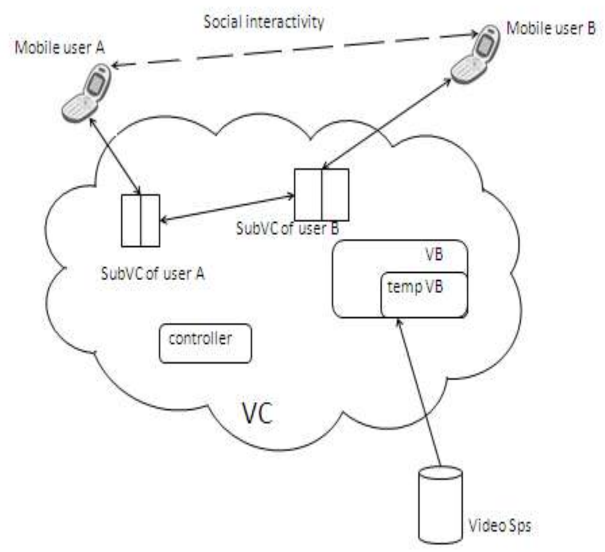

Fig 1.VC Architecture

the architecture of the adaptive and efficient way of enhancing the video streaming and sharing of video to the mobile users. The architecture was constructed based on the video service provided in cloud called as AMES. The architecture contains

A. *Video service provider (VSP) :* The originated place of actual video data. It used the traditional video service provider. VSP can handle multiple request at the same time, while coming to the QoS with the mobile users , the VSP does not provide service up to the mark.

B. Video cloud (VC): the cloud step up has been established with many components working together ,virtually to get the original video data from the VSP and provide the reliable service to the mobile user and it also provides availability of video and makes the sharing of those videos among the users much easier.

C. Video base (VB): Video base consists of the video data that are provided as the service to the mobile users in cloud.

D. Temp video base(TVB): it contains the most recently accessed video data and it also contains most frequently accessed video data.

E. Vagent: it is an agent created for every mobile user who requests for the video service to the video cloud.

F. Mobile users: the users who are mobile and providing the availability of the service to their location is difficult.

The video cloud provides services under two main methodologies adaptive mobile video streaming and efficient mobile video sharing. The video streaming and video sharing plays the vital role in providing the reliable service to the customers. The rate in which frames of the videos are streams determines the quality and availability of the video service. Video data are most commonly shared among the users in the network. Mobile users are most commonly found to use social networking sites more offently[1].

Advantages of Existing system

(I)User will see the same quality always which is available on server.

(II)Server monitors the constant bandwidth throughout the stream.

(III)maximum utilization of bandwidth.

(IV)User never gets paused while watching video.

Disadvantages of Existing system

(I)It always uses the maximum link capacity for video streaming.

(II)Cannot control the resolution.In case of weak signal user gets paused on the screen till video streams.

(III)Unnecessary traffic increase for the bandwidth.

(IV)Cannot maintain constancy of the video streaming.

(V)Resolution of the same video will keep on changing throughout the streaming.

(VI)There is no Security in Video Streaming.

(VII)Video can be modified.

4. PROPOSED SYSTEM

We have proposed a system in that will reduce the Traffic, the maximum utilization of the bandwidth capacity. and will provide security to the video data that are used in the network .because up till technique only provide streaming and Effective sharing of data but not consider the security of video data. which is shown in figure 2.

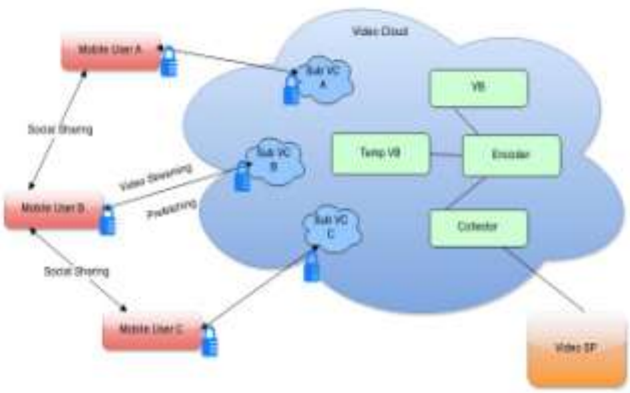

Fig 2. Secured VC Architecture

In this proposed system we will introduced security to protect from unauthorized authentication. reduce the traffic and will provide the maximum utilization of the bandwidth capacity. As per the design we have proposed an algorithmic approach i.e AES for video format conversion from one format to other. depending upon the strength of the signal received from mobile. In this algorithm video is encrypted at the time of uploading. Video is store in the cloud in the encrypted form which is fixed. user only view the video but not change the content of video.In many time if it is not encrypted then content of video change during uploading or download. So in this proposed system we used AES encryption algorithm to encrypt video so that nobody can change original video.

5 IMPLEMENTATION

The flowchart of streaming video using AMOV and EMOS is given in below figure. To exchange the videos among the localVBs, subVBs, tempVB and the VB, a video map (VMAP) is used to refer the requested segments

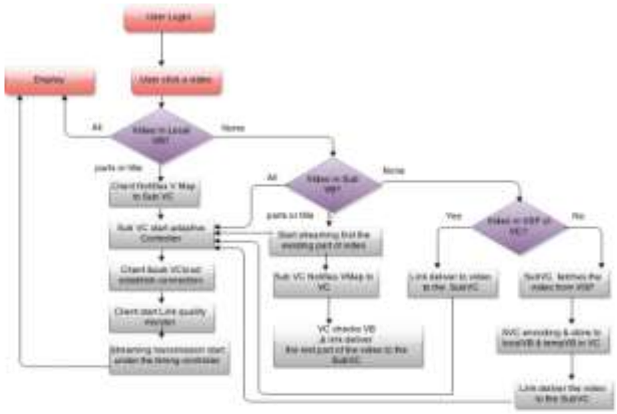

Fig 3. Working flow of video streaming in VC and subVC

Once a mobile user starts to watch a video, the localVB will be checked first for prefetched segments of video to display .If there is none or some parts, the client will report to subVC using VMap. If subVC has parts in subVB, the subVC will transmit the segments. But if there is also none in subVB, the tempVB and VB in center VC will be checked. If there is no video in VC, the collector in VC will fetch from external sources and re-encode video into SVC format, then subVC will transfer to the user. If video is shared among subVCs at predefined frequency threshold (e.g., 10 times per day), it will be loaded to the tempVB of VC so that it can be shared at higher frequency (e.g., 100 times per day). In such a way, the subVB and VB store fresh and popular videos for re-usage.

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6. COMPARISON GRAPH

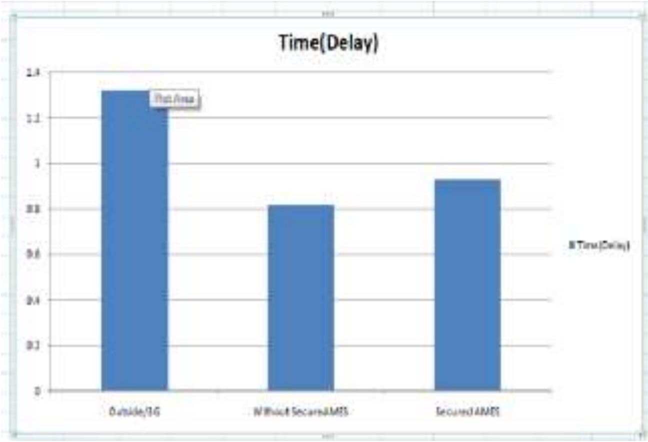

Fig 4. video Comparison Graph

The above graph shows the comparison of video stream outside the AMES and within AMES based on delay graph. Above we provide two types of graph. First short video comparison graph and long video comparison graph.This two graphs show delay between outside/3G the AMES and within AMES i.e our project. It is observed that the time taken by short video comparison graph from outside/3G the AMES for uploaded delay is 0.57 seconds and same video streaming time inside the network is 0.47.It also observed that the time taken by long video comparison graph from outside/3G the AMES for uploaded delay is 0.86 seconds and same video streaming time inside the network is 0.63

CONCLUSION

From the above comparative study of AMES cloud and the methods used to developed it shows that video streaming is consider by most of the authors. But the major factor not consider which is reliable video sharing and integrity of data over cloud computing environment.

It also observe that streaming of video get improved and effective sharing is also consider in last few years.the future work which can be done on AMES cloud which is providing security and integrity to video by using some standard cryptography algorithms like RSA,AES and other. The focus of this paper is to authenticate how cloud computing can get better the transmission adaptability and prefetching mobile users. In addition, we will also try to improve the SNS-based prefetching, and security issues in the AMES-Cloud.

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