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A Structure of Adaptive Portable Video Streaming and Efficient Social Video Distribution in the Clouds

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Abstract

Recently there have been many studies on how to improve the service quality of mobile video streaming on cloud computing. Resilience against cloud provider failure and temporary unavailabilityUse multiple cloud providers to construct a reliable cloud storage service out of unreliable components.we need Efficient proofs of file availability by interacting with cloud providers but these systems are not sufficient for this type of environments. Use multiple cloud providers to construct a reliable cloud storage service out of unreliable components. High availability and tolerance to adversarial failures.In this paper we address the problems of adaptive cloud services. Our adversaries are the cloud service provider itself, its insiders, or any third party attacks who are able to view the target data, monitor query processing on the data, obtain or infer the data and queries. – have complete access to database server While we need to provide security and privacy against these adversaries, we cannot omit functionality and performance – the most important property for a data service.

Index Terms Scalable Video Coding, Adaptive Video Streaming, Computing.

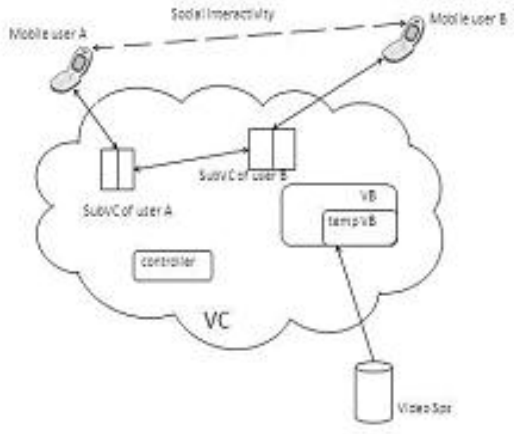
I. Introduction

Our focus in this area is protecting data confidentiality and access privacy during query processing. *cloud computing* at its simplest, refers to an infrastructure where both the data storage and data processing happen outside of the mobile device. cloud applications move the computing power and data storage away from the mobile devices and into powerful and centralized computing platforms located in clouds, which are then accessed over the wireless connection based on a thin native client, According to a recent study by ABI Research, more than 240 million business will use cloud services through mobile devices by 2015.That traction will push the revenue of cloud computing to $5.2 billion. cloud computing is a highly promising trend for the future of mobile computing.Mobile devices face many resource challenges (battery life, storage, bandwidth etc.)Cloud computing offers advantages to users by allowing them to use infrastructure, platforms and software by cloud

providers at low cost and elastically in an on-demand fashion.Mobile cloud computing provides mobile users with data storage and processing services in clouds, obviating the need to have a powerful device configuration (e.g. CPU speed, memory capacity etc), as all resource-intensive computing can be performed in the cloud.

Adaptability: Traditional video streaming techniques designed by considering relatively stable traffic links between servers and users, perform poorly in Portable environments [2]. Thus the fluctuating wireless link status should be properly dealt with to provide 'tolerable" video streaming services. To address this issue, we have to adjust the video bit rate adapting to the currently time-varying available link bandwidth of each Portable user. Such adaptive streaming techniques can effectively reduce packet losses and bandwidth waste.

RELATED WORK



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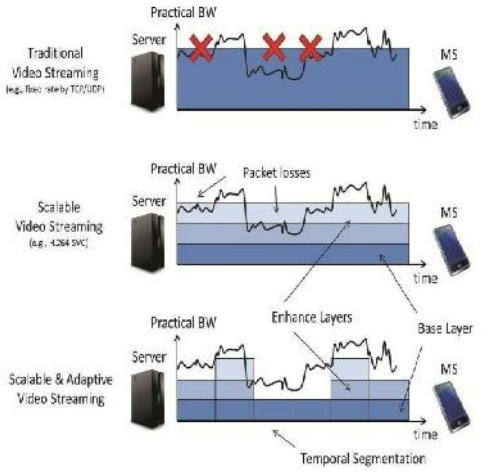

AMOV: Adaptive Portablevideo Streaming

A. SVC

As shown in Fig. 2, traditional video streams with fixed bit rates cannot adapt to the fluctuation of the link quality. For a particular bit rate, if the sustainable link bandwidth varies much, the video streaming can be frequently terminated due to the packet loss.

In SVC, a combination of the three lowest scalability is called the Base Layer (BL) while the enhanced combinations are called Enhancement Layers (ELs).

To this regard, if BL is guaranteed to be delivered, while more ELs can be also obtained when the link can afford, a better video quality can be expected.

By using SVC encoding techniques, the server doesn't need to concern the client side or the link quality. Even some packets are lost, the client still can decode the video and display. But this is still not bandwidth-efficient due to the unnecessary packet loss. So it is necessary to control the SVC-based video streaming at the server side with the rate adaptation method to efficiently utilize the bandwidth.

Conclusion

In this paper, we discussed our proposal of an adaptive Portable video streaming and Distribution Structure, called AMES-Cloud, which efficiently stores videos in the clouds (VC), and utilizes cloud computing to construct private agent (subVC) for each Portable user to try to offer "non-terminating" video streaming adapting to the fluctuation of link quality based on the Scalable Video Coding technique. Also AMES-Cloud can further seek to provide "nonbuffering" experience of video streaming by background pushing functions among the VB, subVBs and localVB of

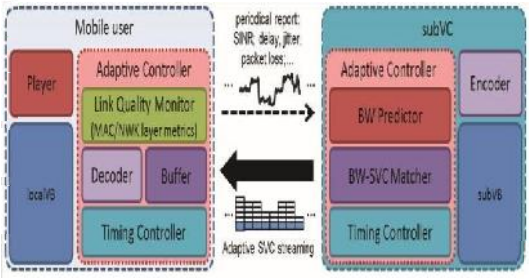

Fig. 3.Functional structure of the client and the subVC

Portable users. We evaluated the AMES-Cloud by prototype implementation and shows that the cloud computing technique brings significant improvement on the adaptivity of the Portable streaming.

The focus of this paper is to verify how cloud computing can improve the transmission adaptability and prefetching for Portable users. We ignored the cost of encoding workload in the cloud while implementing the prototype. As one important future work, we will carry out large-scale implementation and with serious consideration on energy and price cost. In the future, we will also try to improve the SNS-based prefetching, and security issues in the AMES-Cloud.

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