INTERNET VIDEO STREAMING SERVICE FOR SOCIAL NETWORK

R.PREETHI[1], K.AISHWARYA[2], V.SRAVYA[3], K.SUSHMITHA[4], P.SRIVARSHINI[5]

[1]Assistant Professor, Department of Information Technology, Panimalar Engineering College, Tamil Nadu, India.
[2]B.Tech, Department of Information Technology, Panimalar Engineering College, Tamil Nadu, India.
[3]B.Tech, Department of Information Technology, Panimalar Engineering College, Tamil Nadu, India.
[4]B.Tech, Department of Information Technology, Panimalar Engineering College, Tamil Nadu, India.
[5]B.Tech, Department of Information Technology, Panimalar Engineering College, Tamil Nadu, India.

---***---

Abstract - *Video streaming is before quality among mobile users. the newest mobile devices, like good phones and tablets, are well equipped with multiple wireless network devices. so as to continue video streaming quality whereas reducing the wireless service price, during this paper, the foremost favorable video streaming method with multiple links is developed as a Andrei Markov Decision Process (MDP). This perform is intended to boost the Quality of service (QoS) needs for video traffic, like the startup Latency, playback fluency, average playback quality, playback smoothness and wireless service price. To estimate the performance of the planned adaptation algorithmic rule, we tend to enforced a work victimization the humanoid movable and therefore the Scalable Video Coding(SVC)codec. The planned system provides associate economical interactive streaming service for varied mobile devices and dynamic network environment for video Streaming over multiple wireless access networks.*

Key Words: **Dynamic adaptive streaming over HTTP (DASH), Markov Decision Process (MDP), quality of service (QoS), Scalable Video Coding (SVC), Cloud Computing.**

1. INTRODUCTION

Video streaming is gaining quality among mobile users recently. Considering that the mobile devices have restricted procedure capability and energy provide, it's terribly difficult to produce top quality video streaming services for mobile users systematically. To overcome the on top of disadvantages of progressive transfer, Dynamic Adaptational streaming over hypertext transfer protocol (DASH) has been projected. In a DASH system, multiple copies of pre-compressed videos with totally different resolution and quality are hold on in segments.

1.1 Purpose of the System

The main aim is about Streaming data when the network bandwidth can be changed dynamically. This method could provide efficient self-adaptive multimedia streaming services and can save network bandwidth, cost.

1.2 Scope of the project

As intelligent mobile phones and wireless networks become a lot of and more well-liked, network services for users aren't any longer restricted to the house. Transmission data will be obtained simply mistreatment mobile devices; permitting users to relish all over network services. Considering the restricted information measure out there for mobile streaming and completely different device needs, this study given a network and device-aware Quality of Service (QoS) approach that gives transmission information appropriate for a digital computer unit surroundings via interactive mobile streaming services, additional considering the general network surroundings and adjusting the interactive transmission frequency and also the dynamic transmission transcoding, to avoid the waste of information measure and terminal power.

2. LITERATURE SURVEY

A literature survey shows the varied analyses and analysis created associated with the project and also the results already printed, taking into consideration the varied parameters of the project and also the extent of the project. It is the most important part of the report as it gives a direction in the area of research. The goal of the literature survey is to fully specify the technical details associated with the most project in an exceedingly compact and unambiguous manner.

2.1 On Monitoring and Controlling QoS Network Domains

Ahsan Habiby, Sonia Fahmy, Bharat Bhargava CERIAS and the Department of Computer Sciences Purdue University, WestLafayette,

IN47907–1398fhabib,fahmy,bbg@cs.purdue.edu

Media cloud provides a cost-effective and powerful solution for the coming tide of the media consumption. Based on previous summary of the recent work on media cloud research, in this section, we first make some

suggestions on how to build the media cloud, and then propose some potentially promising topics for future research.

2.2 Aggregated QoS Mapping Framework for Relative Service Differentiation-Aware Video Streaming.

Jitae Shin, Jin-Gyeong Kim, JongWon Kim, D. C. Lee, and C.-C. Jay Kuo Integrated Media Systems Center and Department of Electrical Engineering-Systems University of Southern.

E-mail:fjitaeshi,jingyeok,jongwon,cckuog@sipi.usc.edu, dclee@usc.edu

This article introduces the principal concepts of multimedia cloud computing and presents a novel framework. We address multimedia cloud computing from multimedia-aware cloud (media cloud) and cloud-aware multimedia (cloud media) perspectives. First, we present a multimedia-aware cloud, which addresses how a cloud can perform distributed multimedia processing and storage and provide quality of service (QoS) provisioning for multimedia services. To achieve a high QoS for multimedia services, we propose a media-edge cloud (MEC) architecture, in which storage, central processing unit (CPU), and graphics processing unit (GPU) clusters are presented at the edge to provide distributed parallel processing and QoS adaptation for various types of devices.

2.3 Behavior Signature for Fine-grained Traffic Identification

Mehdi Alasti and Behnam Neekzad, Clearwire\Jie Hui and Rath Vannithamby, Intel Labs

We are planning to carry out a validation and a thorough experimental assessment of the performance of our cross-layer architecture as soon as its development will be completed. In addition, we would like to extend our study on this class of architectures to investigate the impact of dependability issues, such as fault tolerance and security, on their design.

2.4 Distributed Scheduling Scheme for Video Streaming over Multi-Channel Multi-Radio Multi-Hop Wireless Networks

Sung-Ho Yoon, Jun-Sang Park and Myung-Sup Kim∗ Dept. of Computer and Information Science, Korea University, Korea Received: 6 Jun. 2014, Revised: 5 Aug. 2014, Accepted: 7 Aug. 2014

In this paper, we have developed fully distributed scheduling schemes that jointly solve the channel-assignment, rate allocation, routing and fairness problems for video streaming over multi-channel multi-radio networks. Unlike conventional scheduling schemes focus

on optimal system throughput or scheduling efficiency, our work aims at achieving minimal video distortion and certain fairness by jointly considering media-aware distribution and network resource allocation. Extensive simulation results are provided which demonstrate the effectiveness of our proposed schemes.

2.5 Measurement, Modeling, and Analysis of a Peer-to-Peer File-Sharing Workload.

Krishna P. Gummadi, Richard J. Dunn, Stefan Saroiu, StevenD.Gribble,HenryM.Levy,andJohnZahorjanChangsha, 410073,P.R.China peifan@nudt.edu.cn,jiwang@ios.ac.cn

In this paper, we propose a clustering-based cloud node selection approach for communication-intensive cloud applications. By taking advantage of the cluster analysis, our approach not only considers the QoS values of cloud nodes, but also considers the relationship (i.e., response time) between cloud nodes. Our approach systematically combines cluster analysis and ranking methods. The experimental results show that our approach outperforms the existing ranking approaches.

2.6 From QoS to QoE: A Tutorial on Video Quality Assessment

Yanjiao Chen, Student Member, IEEE, Kaishun Wu, Member, IEEE, and Qian Zhang, Fellow, IEEE

This paper proposed cross-layer playback-rate based streaming services, which can maintain network transmission quality and receive data before playback reliably in IMS networks with many users. The experimental results show that the services could reduce the overall network load without the occurrence of dropped packets.

3. SYSTEM DESIGN

System Architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architectural diagram is a formal description and representation of a system, organized in a way that supports reasoning about the structure and behaviours of the system. Figure 1 shows the architecture
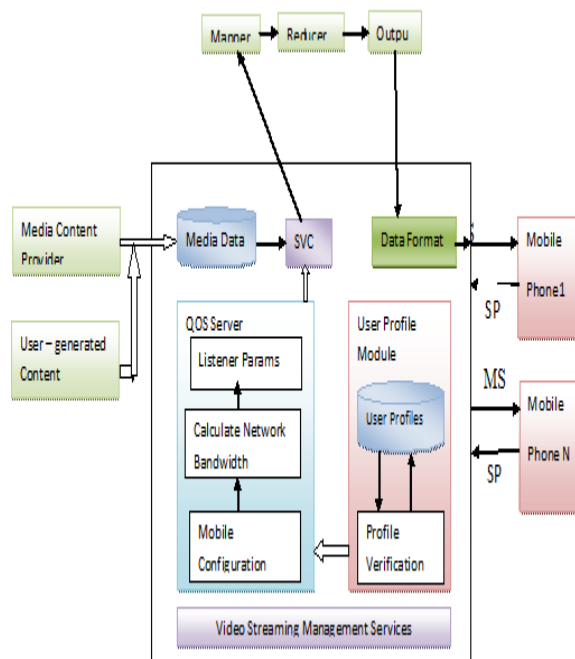
Fig -1: System Architecture

4. SYSTEM ANALYSIS

4.1 Existing System

In existing System progressive transfer, one in all the foremost widespread and wide deployed streaming techniques, buffers an outsized quantity of video knowledge to soak up the variations of information measure. Video knowledge are transmitted over HTTP protocols; the video streaming service will be deployed on any internet server.

In which sensible phones solely have restricted space for storing, it's impractical to keep up a really massive buffer size. The buffered unwatched video is also wasted if the user turns off the video player or switches to different videos.

4.2 Proposed System

To overcome the on top of disadvantages of progressive transfer, dynamic adaptive streaming over HTTP (DASH) has been planned. In planned system, multiple copies of pre-compressed videos with totally different resolution and quality are hold on in segments. For each phase, the consumer will request the suitable quality version supported its screen resolution, current obtainable information measure, and buffer occupancy standing. we formulate the multi-link video streaming method as a reinforcement learning task.

A finite state Andre Markov Decision Process (MDP) will be modelled for this reinforcement learning task. To solve the MDP in real time, we have a tendency to planned associate reconciling best-action search rule to get a sub-optimal answer.

5. MODULES

The proposed system consists of:

A. User Profile Module
B. Web service Connection
C. Bandwidth Estimation
D. Scalable Video Conversion
E. Mobile Streaming

A. User Profile Module:

The profile agent is used to receive the mobile hardware environment parameters and create a user profile. The mobile device transmits its hardware specifications in XML-schema format to the profile agent in the cloud server. The XML-schema is metadata, which is mainly semantic and assists in describing the data format of the file. The metadata enables non-owner users to see information about the files, and its structure is extensible. However, any mobile device that is using this cloud service for the first time will be unable to provide such a profile, so there shall be an additional profile examination to provide the test performance of the mobile device and sample relevant information. Through this function, the mobile device can generate an XML-schema profile and transmit to the profile agent. The profile agent determines the required parameters for the XML-schema and creates a user profile, and then transmits the profile to the DAMM for identification.

B. Web service Connection

When web methods are invoked from inside Android application, the application gets back the data from the server in the form of XML. The response which has been received can be parsed and rendered in the application as needed. SOAP is a protocol specification for exchanging structured information in the implementation of Web Services in computer networks.

C. Bandwidth Estimation

The NDAMM aims to determine the interactive communication frequency and the SVC multimedia file coding parameters according to the parameters of the mobile device. It hands these over to the STC for trans coding control, so as to reduce the communication bandwidth requirements and meet the mobile device user's demand for multimedia streaming. It

consists of a listen module, a parameter profile module, a network estimation module, a device-aware Bayesian prediction module, and adaptive multi-layer selection. The interactive multimedia streaming service must receive the user profile of the mobile device instantly through the listen module.

The parameter profile module records the user profile and determines the parameter This is provided to both the network estimation module and the device-aware Bayesian prediction module to predict the required numerical values. Rw and Rh represent the width and height of the supportable resolution for the device, CP avg and CP represent the present and average CPU operating speed. Db and Db rate represent the existing energy of the mobile device and energy consumption rate, and BW, BW avg, and BW std represent the existing, average and standard deviation values of the bandwidth. When this parameter form is maintained, the parameters can be transmitted to the network estimation module and the device-aware Bayesian prediction module for relevant prediction.

D.Scalable Video Conversion

The DNEM is mainly based on the measurement-based prediction concept; however, it further develops the Exponentially Weighted Moving Average (EWMA). The EWMA uses the weights of the historical data and the current observed value to calculate gentle and flexible network bandwidth data for the dynamic adjustment of weights. In order to determine the precise network bandwidth value, the EWMA filter estimates the network bandwidth value in which is the estimated bandwidth of the No.

The time interval, is the bandwidth of the No. time interval ,and is the estimation difference. For different mobile network estimations, this study considered the error correction of estimation and the overall standard difference and estimated the different bandwidths by adjusting the weights among which, is the moving average weight and is the standard deviation weight. When the prediction error is greater than,

The system shall reduce the weight modification of the predicted difference; relatively, when the prediction error is less than, the system shall strengthen the weight modification of the predicted difference. When the changed bandwidth of the system is greater than the standard difference, the predicted weight will increase as the corrected value of the standard deviation is reduced.

The predictor formula for the overall mobile network quality uses the standard normal state value range concept of plus-minus three standard deviations of statistics, referring to identify the stable or unstable state

of the current mobile network. If the present mobile network is in a stable state, it shall conform to the following equation among which, is the coefficient of the evaluated standard deviation. The value is almost 1.128. If the network bandwidth value of this time cycle is within plus-minus three standard deviations of the standard value, the present mobile network will be in a stable state; otherwise it will be in a fluctuating state.

E.Streaming

The SVC hierarchical structure provides scalability of the temporal, spatial and quality dimensions. It adjusts along with the FPS, resolution and video variations of a streaming bit rate: however, the question remains of how to choose an appropriate video format according to the available resources of various devices. Hereby, in order to conform to the real-time requirements of mobile multimedia, this study adopted Bayesian theory to infer whether the video features conformed to the decoding action. The inference module was based on the following two conditions.

• The LCD brightness does not always change This hypothesis aims at a hardware energy evaluation. The literature states that TFT LCD energy consumption accounts for about 20%–45% of the total power consumption for different terminal hardware environments. Although the overall power can be reduced effectively by adjusting the LCD, with multimedia services, users are sensitive to brightness; they dislike video brightness that repeatedly changes. As changing the LCD brightness will influence the energy consumption evaluation value, the LCD brightness of the mobile device is assumed to not able to change at will during multimedia service.

• The energy of the mobile device shall be sufficient for playing a full multimedia video Full multimedia service must be able to last until the user is satisfied. This assumed condition is also the next main decision rule.

As for the three video parameters of FPS, resolution and bit rate, the bit rate depends on the frame rate and resolution, so the Bayesian network adopts the frame rate and resolution as the video input features and uses the bit rate as parameter considered.

6. CONCLUSION

Thus the planned system has provided associate degree economical interactive streaming service for distributed mobile devices and dynamic network environments for video streaming over multiple wireless access networks. For mobile transmission streaming services, a way to give acceptable transmission files per the network and hardware devices is a remarkable

subject. during this study, a collection of adaptive networks and a tool aware QoS approach for interactive mobile streaming was planned. The DNEM and DBPM were used for the prediction of network and hardware options, and also the communication frequency and SVC transmission streaming files best suited for the device setting were determined per these 2 modules. within the experiment, the general example design was completed Associate an experimental analysis was meted out. The experimental knowledge tried that the tactic might maintain a particular level of transmission service quality for dynamic network environments and guarantee swish and complete multimedia streaming services. Cloud services could accelerate analysis on SVC committal to writing within the future. this study given a network and device-aware Quality of Service (QoS) approach that gives transmission knowledge appropriate for a terminal unit setting via interactive mobile streaming services, additional considering the general network setting and adjusting the interactive transmission frequency and also the dynamic transmission transcoding , to avoid the waste of information measure and terminal power. Finally, this study completed a example of this design to validate the feasibleness of the planned technique.

6. FUTURE ENHANCEMENT

In this work, we just consider a single flow scenario and ignore the interference from the other flows as well as the competitive bidding for spectrum usage from the other flows. In a CRN with multi flows, the CR source nodes need to develop sophisticated bidding strategies considering the competition from the peer flows, and the SSP should jointly consider the cross-layer factors and the bidding values to determine the sharing of the harvested spectrum.

REFERENCES

[1] [1]Kamal Gakhar, Mounir Achir, Annie Gravey. How many traffic classes dowe need in WiMAX[C]. IEEE Wireless Communications and NetworkingConference, Hong Kong, China, 2007, pp.3706–3711.

[2] [2] Wang Zai-jian, Yu-ning Dong, Xinheng Wang. A Dynamic Service ClassMapping Scheme for Different QoS Domains Using Flow Aggregation[J].

[3] IEEE Systems Journal, vol. PP, Issue. 99, pp.1-12, 2014.

[4] [3] Mehdi Alasti, Behnam Neekzad, Jie Hui, Rath Vannithamby. Quality of

[5] service in WiMAX and LTE networks[J]. IEEE Communications Magazine,

[6] vol.48, no.5, pp.104-111, 2010.

[7] [4] Sung-Ho Yoon, Jun-Sang Park, Myung-Sup Kim, ChaeTae Lim, JunHyung

[8] Cho. Behavior signature for big data traffic classification[J]. 2014 International

[9] Conference on Big Data and Smart Computing (BIGCOMP), Chatrium Hotel

[10] Riverside Bangkok, Thailand, pp.261-266, 2014.

[11] [5] Natalia M. Markovich, Udo R. Krieger. statistical analysis and modeling ofpeer-to-peer multimedia traffic[J]. Next Generation Internet, LNCS 5233,

[12] Springer-Verlag Berlin Heidelberg, pp.70-97, 2011.

[13]