SCALABLE VIDEO STREAMING USING WIRELESS ACCESS NETWORKS

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ABSTRACT

Cloud multimedia services provide a capable, flexible, and scalable data processing method and offer a elucidation for the user demands of high quality and diversify multimedia. Generally speaking, accessing multimedia video app services through networks is no longer a problem. The major video platforms, such as Youtube and Amazon, have good management styles and provide users to share multimedia videos easily with diversified services. No matter what the service is, users will always expect powerful, sound and stable functions. For multimedia videos, stability is of the greatest importance. To develop multimedia services provide a capable, flexible, and scalable data processing method and offer a elucidation for the user demands of high quality and diversify multimedia. As intelligent mobile phones and wireless networks become more and more popular, network services for users are no longer limited to the home. Multimedia information can be obtained easily using mobile devices, allowing users to enjoy everywhere network services.

As intelligent mobile phones and wireless networks become more and more popular, network services for users are no longer limited to the home. Multimedia information can be obtained easily using mobile devices; allowing users to enjoy everywhere network services. Considering the limited bandwidth available for mobile streaming and different device desires, this study presented a network and device-aware Quality of Service (QoS) approach that provides multimedia data suitable for a workstation unit environment via interactive mobile streaming services, further considering the overall network environment and adjusting the interactive transmission frequency and the dynamic multimedia transcoding, to avoid the waste of bandwidth

Keyword: - *multimedia, cloud, network, qos, transmission*

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1. INTRODUCTION

One fundamental problem in the encoder design is the selection of coding parameters to maximize visual quality under constraints imposed by the computational complexity, delay, bandwidth and/or loss factors. For a buffer-constrained CBR coding, the optimal encoder bit allocation problem was studied in [l] with a forward dynamical programming technique known as the Viterbi Algorithm (VA) over a discrete set of quantizers. Instead of optimizing bit allocation among frames, bit allocation can also be optimized among macro-blocks by selecting different quantization steps and/or coding modes for the P frame coding in the H.263 standard [2, 4, 51. Wiegand et al. [4] proposed a method to select one from four possible modes, i.e. intra, inter and inter-4V (Inter MB with four motion vectors), for the coding of MBs in a P frame to optimize the R-D tradeoff. A joint coding-mode and quantization-step selection method was considered in [2, 5] to encode the P frame with the R-D optimization. To reduce the computational complexity, Mukherjee et al. [2] proposed the M-best search scheme, in which the M least-cost paths are retained as survivors at each state in a trellis and carried over to the next step. Schuster et al. [5] restricted the range of quantization parameters to be between 8 and 12 for a speedup.

2. EASE OF USE

In the previous service, the mobile device side exchanges information with the cloud environment, so as to determine an optimum multimedia video. Scholars have done numerous researches toward conventional platform (CDN) to store different movie formats in a multimedia server, to choose the right video stream according to the current network situation or the hardware calculation capabilities. In existing system video streaming quality while reducing the wireless service cost, in existing paper, the most favorable video streaming process with multiple links is formulated as a Markov Decision Process (MDP). This function is designed to improve the quality of service (QoS) requirements for video traffic, such as the startup Latency, playback fluency, average playback quality, playback smoothness and wireless service cost.

3. PROPOSED SYSTEM

The proposed system provided an efficient interactive streaming service for diversified mobile devices and dynamic network environments.
When a mobile device requests a multimedia streaming service, it transmits its hardware and network environment parameters to the profile agent in the cloud environment, which records the mobile device codes and determines the required parameters.
Then transmits them to the Video Streaming Server (VSS). The VSS determines the most suitable SVC code for the device according to the parameters, and then the SVC Trans coding Controller (STC) hands over the Trans coding work via map-reduce to the server, in order to increase the Trans coding rate.
The multimedia video file is transmitted to the mobile device through the service.

4. SYSTEM ARCHITECTURE

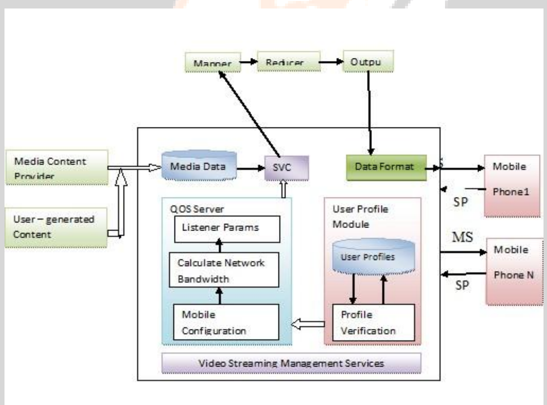

Fig - 4.1 : architecture diagram of video transmission

5. REQUIREMENTS

5.1 Hardware Requirements

- 1 GB RAM
- 80 GB Hard Disk
- Intel Processor
- Data Card
- Internet Connection

5.2 Software Requirements

- JDK 1.7
- Glass Fish Server
- Net bean IDE
- Eclipse with android plug-in

6. LITERATURE SURVEY

6.1 On Monitoring and Controlling QoS Network Domains

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.

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

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.

6.3 Behavior Signature for Fine-grained Traffic Identification

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.

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

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.

7. MODULE IDENTIFICATION

7.1 User Profile Module

The Profile agent is used to receive the mobile hardware allocation. Extensive simulation results are provided which demonstrate the effectiveness of our proposed schemes. environment parameters and create a user profile. The mobile device transmits its hardware specifications in XMLschema 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.

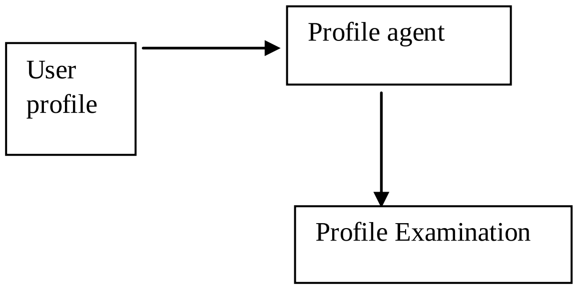

Fig -7.1 : User Profile module

7.2 Network device aware multilayer management

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 transcoding 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

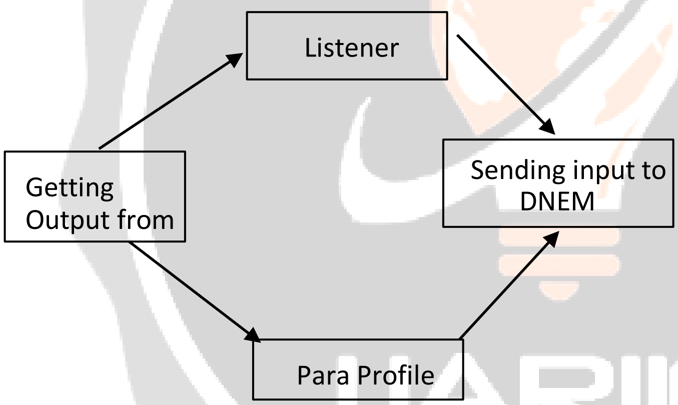

Fig -7.2 : NDAMM structure

7.3 Network and Device-Aware Bayesian Prediction Module (NDBPM)

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 bitrate: 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 literature states that TFT LCD energy consumption

8. DATA FLOW DIAGRAM

8.1 Level 1

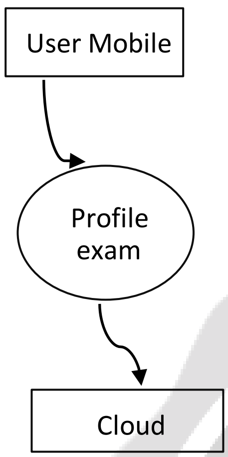

Fig -8.1: relationship between user and cloud

8.2 Level 2

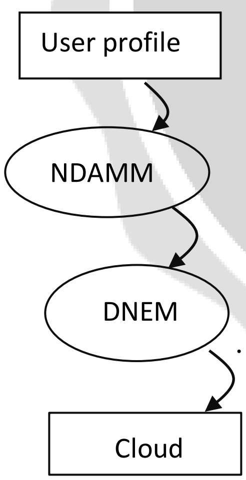

Fig -8.2: second level relationship between the database

8.3 Level 3

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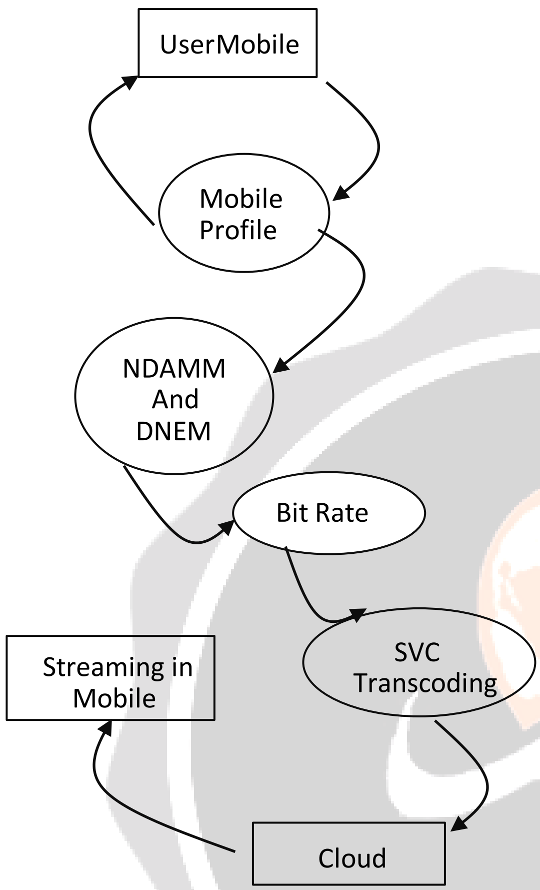

Fig -8.3: representation of video streaming in device using svc transcoding

9. REFERENCES

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