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A Review on: Video Streaming using Cloud Computing Based on Android Application

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ABSTRACT

In real life there is need to capture and share all special event. If there is multi attendee then the existing have some problem .The proposed system which collects individual video streams captured from same event and they combine into multi view videos. In this approach viewers can watch the one event from various angels; this is called as Cloud based Multi View Crowdsource Streaming (CMVCS). This approach focus on resource allocation of CMVCS system. Capture the video from one side and simultaneously access that video from anywhere. In this approach the system gives high bandwidth capability for decreasing the delay time.

Keywords: *crowd source; resource allocation; bandwidth capabilities; multi attendee.*

I. Introduction

One increasingly popular type of video streaming is live streaming services that enable clients (i.e., video publishers) to use a camera and broadcast videos via the Internet. For instance, using Livestream3, viewers are able to watch the contents being captured by video publishers on their smart phone, laptop, and TV. To provide a high-quality live video streaming service on a variety of viewers' devices, the video contents need to be transcoded (i.e., converted) based on the characteristics of the viewers' devices (e.g. Spatial resolution, network bandwidth, and supported codec). Currently, to support a high-quality live stream on different display devices, video publishers have to generate multiple versions (i.e., formats) of the same video (e.g. multiple video encodings) at their own end. However, this approach suffers from hardware limitations and network bandwidth bottleneck. In addition, this approach is not aware of the viewers' demands. That is, it can potentially generate versions that are not requested by viewers. Thus, this approach has remained cost prohibitive and inefficient. Video transcoding is a computationally heavy and time consuming process, it requires huge storage and computing infrastructures. In-house provisioning and upgrading of such infrastructures to meet the fast-growing global demands of video transcoding is cost-prohibitive. Therefore, making use of cloud services is becoming a common practice amongst streaming service providers [3]

Now a day's crowdsourced media generation increase using the media devices and wireless networks. Cellular phones are commonly used to capture and upload various events for viewers. Various popular media websites such as YouTube Live and Twitch which supports live video streaming. Attendee can capture an event using various mobile applications, such as Meerkat, Periscope, and YouNow. Viewers gets one view of video from just one angle but using multi view videos viewers get the various angle. Multi view video setups are very limited so we propose crowdsourced videos. In real time viewers watch the event from multiple angles using live crowdsourced multi-view streaming. The system called Cloud based Multi-View Crowdsourced Streaming (CMVCS) in which multiple contributors watching an event capture the event from different angles.

There are many new technology, the current trends are the development in Android Phone's which are used by many people in day to day life. Also there is development in Cloud Computing. Cloud gives a big storage rather than Traditional Hard-Disk. Cloud is not only providing storage but also provide the many different services. So now a day's everything is dependent on Cloud and Smart phone. Together with an explosive growth of the mobile applications and emerging of cloud computing concept, mobile cloud computing (MCC) has been introduced to be a potential technology for mobile services. MCC integrates the cloud computing into the mobile environment and overcomes obstacles related to the performance (e.g., battery life, storage, and bandwidth), environment (e.g., heterogeneity, scalability, and availability), and security (e.g., reliability and privacy). This project concentrate on the main domain's such as designing the private cloud, deployment of private cloud, designing android application. This private cloud provides the services like video Streaming. Here user gets the different services by using SAAS.

II. LITERATURE REVIEW

"**Crowdsourced Multi-View Live Video Streaming using Cloud Computing", Kashif Bilal, AimanErbad, Mohamed Hefeeda[1]** In this paper they propose a novel system to collect individual video streams (views) captured for the same event by multiple attendees, and combine them into multi-view videos, where viewers can watch the event from various angles, taking crowdsourced media streaming to a new immersive level. The system is called Cloud based Multi-View Crowdsourced Streaming (CMVCS), and it delivers multiple views of an event to viewers at the best possible video representation based on each viewer's available bandwidth.

"Towards hybrid cloud-assisted crowdsourced live streaming: measurement and analysis" Cong Zhang, Jiangchuan Liu ,Haiyang Wang[2] In this paper, they closely examine the challenge of handling unpopular live-broadcasting channels in Crowdsourced Live Streaming (CLS) systems and present a comprehensive solution for service partitioning on hybrid cloud. The trace-driven evaluation shows that our hybrid cloud-assisted design can smartly assign ingesting and transcoding tasks to the elastic cloud virtual machines, providing flexible system deployment cost-effectively.

"**On crowdsourced interactive live streaming: a Twitch.tv-based measurement study**", **Cong Zhang, Jiangchuan Liu [3]**In this paper**,** they presents an initial investigation on the modern crowdsourced live streaming systems. Taking Twitch as a representative, they outline their inside architecture using both crawled data and captured traffic of local broadcasters/viewers. Closely examining the access data collected in a two-month period, they reveal that the view patterns are determined by both events and broadcasters' sources.

"Crowdsourced Live Streaming with Aggregated Edge Networks", Chenglei Wu, Zhi Wang, Jiangchuan Liu, Shiqiang Yang [4] Have propose a method to let broadcasters (i.e., users who generate the video) upload crowdsourced video streams using aggregated network resources from multiple edge networks. There are several challenges first, how to design a framework that aggregates bandwidth from multiple edge networks? Second, how to make this framework transparent to today's crowdsourced live stream- ing services? Third, how to maximize the streaming quality for the whole system? a multi-objective and deployable bandwidth aggregation system BASS is design to address the above mentioned challenges.

"Maximizing User Utility in Video Streaming Applications" Carlos E. Luna and Aggelos K. Katsaggelos [5] They study the design tradeoffs involved in video streaming in networks with QoS guarantees. They approach this problem by using a utility function to quantify the benefit a user derives from the received video sequence. This benefit is expressed as a function of the total distortion. In addition, they also consider the cost, in network resources, of a video streaming system. The goal of the network user is then to obtain the most benefit for the smallest cost. They formulate this utility maximization problem as a joint constrained optimization problem.

"Interactive Multiview Video System With Low Complexity 2D Look Around at Decoder", Thomas Maugey, Pascal Frossard [6] They propose a new approach that shifts most of the burden due to interactivity from the decoder to the encoder, by anticipating the navigation of the decoder and sending auxiliary information that guarantees temporal and interview consistency. Framework of Representation Learning for Aspect Category Detection in Online Reviews which focus to

automatically learn useful features for aspect category detection.

"User-Action-Driven View and Rate Scalable Multiview Video Coding", Jacob Chakareski, VladanVelisavljevi´c, and Vladimir Stankovi´c

In this paper,they construct the view and rate embedded bit stream such that it delivers optimal performance simultaneously over a discrete set of transmission rates. In conjunction, they develop a user interaction model that characterizes the view selection actions of the client as a Markov chain over a discrete state-space. They exploit the model within the context of our optimization to compute user-action-driven coding strategies that aim at enhancing the client's performance in terms of latency and video quality.

"Transmission Policy Selection for Multi-View Content Delivery over Bandwidth Constrained Channels" Jacob Chakareski [8] In this paper they formulate an optimization framework for computing the transmission actions of streaming multi-view video content over bandwidth constrained channels. The optimization finds the schedule for sending the packetized data that maximizes the reconstruction quality of the content, for the given network bandwidth. Two prospective multi-view content representation formats are considered: 1) MVC and 2) video plus depth.

III. PROBLEM STATEMENT

Smartphones enable a new, rich user experience in pervasive computing. The major problem with Smartphone is that hardware resources such as CPUs, memory and batteries are still limited. To solve this resource problem, many researchers have proposed architectures to use server resources in the cloud for mobile devices. This paper proposes a conceptual architecture where Mobile application platform share the software as a service among multiple users on cloud server via network.

IV. TOPIC INITIATIVES

This paper proposes Android as a Server Platform that enables many users to use resources on remote cloud servers and multi-tenant architecture of Android on cloud server. Multi-tenancy, this is defined as a feature where the software running on a server that provides services to many users likes video Streaming. It is one of the important features for cloud computing. From the viewpoint of both economy and ecology, it is beneficial to share hardware resources among users. Using a mobile OS would be more effective than using a desktop OS because the resource requirements of mobile OSs are smaller.

- To study the application to share hardware resource.
- To analyze the high degree of configuration of software.
- To design architecture which is cost effective and scalable.
- To focus on viewers view switching and also minimize the view switching delay.

V. OUTLINE OF PROPOSED WORK

SAAS (Software as a service) is a cloud software distribution model, which is basically Designed for web applications in which user can unfold and avenue internet hosting. The Providers of SAAS are required to build information for operating system platform, hardware infrastructure and software. SAAS is also authoritative to implement services like post maintenance and some other services. SAAS not only pauperize the cost of software license also impoverish the demand of network security devices, software maintenance and software upgrade. The user only need to have an Internet connection and personal computer to use the required service and software. Some of the examples are CRM financial planning, human resources, word processing, commercial services, email cloud etc. CRM is an example of SAAS provider.

In the functional overview of the architecture two new functions are defined for enabling multi-tenant for Android. The first function is the multiple application controller installed in an Android OS, and the second is the user area manager located in a host OS. The multiple application controller enables running of multiple applications as if each application is running on independent physical Smartphone. It is important requirement to decrease implementation cost for Android OS because of maintenance about OS version up problem. The user area manager controls server resources and act as an interface between a terminal and the multiple application controllers.

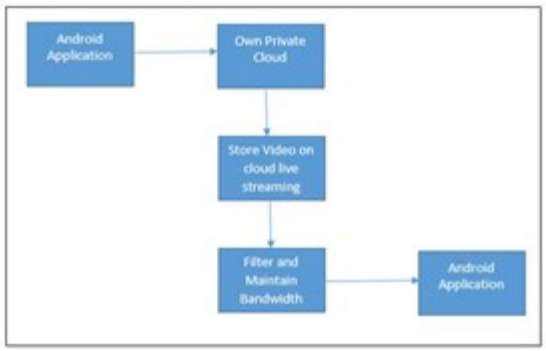

Fig. System Architecture

Modules:-

The proposed system will be consisting of three modules which are as follows:

1. Login module:

Login module is android application where user can login. If user is new user then it's necessary to register the new user and get username and password for login cratentional. After logging the user android application provide the different types of set of services.

2. Bandwidth manager:

Bandwidth manager is deployed on the private cloud and it's receiving video streaming from android application and it's arranging the all video stream according to its bandwidth. This all stream store on the private cloud.

3. Filtered Data format:

In the filtered data format we filtered all video stream data and make in one standard format means one high resolution data format and store again on cloud for ready to deliver the client.

VI. CONCLUSION

The issue of previous system is multiple views are generated from non-professional crowdsourcers instead of professionally calibrated settings and expensive equipment. Cloud based Multi View Crowdsource Streaming (CMVCS) is practical idea presented in this system. And also they focused on scheduling and resource allocation. The main aim of proposed system is to minimize the view switching delay by using prediction based view delivery. And also Android application is used rather than expensive equipment.

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