Remote Social TV Using Cloud Computing

Komal Wankhede(34), Srushti Lade(15)

Guided by: - Prof. Vaishali Surjuse

ABSTRACT:-

The rapidly increasing power of personal mobile devices is providing much richer contents and social interactions to users on the move. This trend however is throttled by the limited battery lifetime of mobile devices and unstable wireless connectivity, making the highest possible quality of service experienced by mobile users not feasible. The recent cloud computing technology, with its rich resources to compensate for the limitations of mobile devices and connections, can potentially provide an ideal platform to support the desired mobile services. Tough challenges arise on how to effectively exploit cloud resources to facilitate mobile services, especially those with stringent interaction delay requirements. In this paper, we propose the design of a Cloud-based, novel Mobile social TV system.

INTRODUCTION:-

. In this paper, we propose the design of a Cloud-based, novel Mobile social TV system (CloudMoV). The system effectively utilizes both PaaS (Platform-as-a-Service) and IaaS (Infrastructure-as-a- Service) cloud services to offer the living-room experience of video watching to a group of disparate mobile users who can interact socially while sharing the video. To guarantee good streaming quality as experienced by the mobile users with time varying wireless connectivity, we employ a surrogate for each user in the IaaS cloud for video downloading and social exchanges on behalf of the user. The surrogate performs efficient stream transcoding that matches the current connectivity quality of the mobile user. Given the battery life as a key performance bottleneck, we advocate the use of burst transmission from the surrogates to the mobile users, and carefully decide the burst size which can lead to high energy efficiency and streaming quality. Social interactions among the users, in terms of spontaneous textual exchanges, are effectively achieved by efficient designs of data storage with Big Table and dynamic handling of large volumes of concurrent messages in a typical PaaS cloud. These various designs for flexible transcoding capabilities, battery efficiency of mobile devices and spontaneous social interactivity together provide an ideal platform for mobile social TV services. We have implemented CloudMoV on Amazon EC2 and Google App Engine and verified its superior performance based on real world experiments.

EXISTING SYSTEM:-

A number of mobile TV systems have sprung up in recent years, driven by both hardware and software advances in mobile devices. Some early systems bring the living room experience to small screens on the move. But they focus more on barrier clearance in order to realize the convergence of the television network and the mobile network, than exploring the demand of "social" interactions among mobile users.

DISADVANTAGES OF EXISTING SYSTEM:

Although many mobile social or media applications have emerged, truly killer ones gaining mass acceptance are still impeded by the limitations of the current mobile and wireless technologies, among which battery lifetime and unstable connection bandwidth are the most difficult ones.

PROPOSED SYSTEM

We propose the design of a Cloud-based, novel Mobile social TV system. The system effectively utilizes both PaaS (Platform-as-a-Service) and IaaS (Infrastructure-asa- Service) cloud services to offer

the living-room experience of video watching to a group of disparate mobile users who can interact socially while sharing the video. To guarantee good streaming quality as experienced by the mobile users with time varying wireless connectivity, we employ a surrogate for each user in the IaaS cloud for video downloading and social exchanges on behalf of the user.

ADVANTAGES OF PROPOSED SYSTEM:

➢ Encoding flexibility: Different mobile devices have differently sized displays, customized playback hardware's, and various codec's. Traditional solutions would adopt a few encoding formats ahead of the release of a video program. But even the most generous content providers would not be able to attend to all possible mobile platforms, if not only to the current hottest models. CloudMoV customizes the streams for different devices at real time, by offloading the transcoding tasks to an IaaS cloud.

➢ Battery efficiency: The burst transmission mechanism makes careful decisions on burst sizes and opportunistic transitions among high/low power consumption modesat the devices, in order to effectively increase the battery lifetime.

➢ Spontaneous social interactivity: Multiple mechanisms are included in the design of CloudMoV to enable spontaneous social, co-viewing experience.

➢ Portability: A prototype CloudMov system is implemented following the philosophy of

"Write Once, Run Anywhere" (WORA): both the front-end mobile modules and the backend server modules are platforms implemented in "100% Pure Java" Our prototype can be readily migrated to various cloud and mobile with little effort
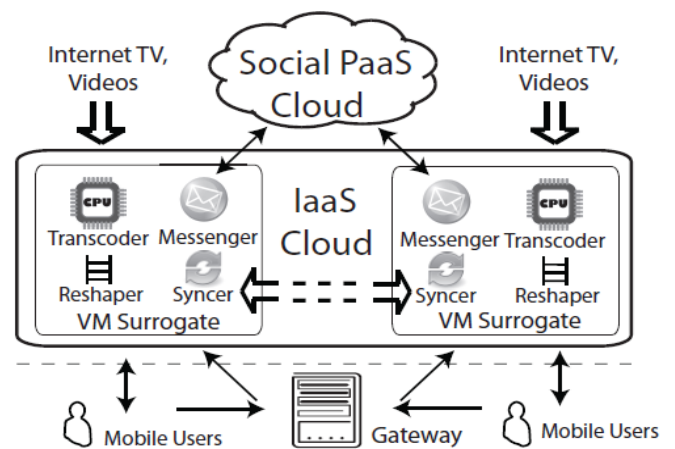
SYSTEM ARCHITECTURE:

Fig. 1. The architecture of CloudMoV.

Social TV:-

Social cloud computing, also peer-to-peer social cloud computing, is an area of computer science that generalizes cloud computing to include the sharing, bartering and renting of computing resources across peers whose owners and operators are verified through a social network or reputation system. It expands cloud computing past the confines of formal commercial data centers operated by cloud providers to include anyone interested in participating within thecloud services sharing economy. This in turn leads to more options, greater economies of scale, while bearing additional advantages for hosting data and computingservices closer to the edge where they may be needed most.Peer-to-peer (P2P) computing and networking to enable decentralized cloud computing has been an area of research for

sometime. Social cloud computing intersects peer-to-peer cloud computing with social computing to verify peer and peer owner reputation thus providing security and quality of service assurances to users. On demand computing environments may be constructed and altered statically or dynamically across peers on the Internet based on their available resources and verified reputation to provide such assurances.

IaaS Cloud:-

Infrastructure as a Service(IaaS) is the foundation of cloud computing. Rather than purchasing or leasing space in an expensive datacenter, labor, real estate, and all of the utilities to maintain and deploy computer servers, cloud networks and storage, Cloud buyers rent space in a virtual data center from an IaaS provider. They have access to the virtual data center via the Internet. This type of cloud computing provides the "raw materials" for IT, and users usually only pay for the resources they consume, including (but not limited to) CPU cores, RAM, hard disk or storage space, and data transfer – examples IaaS providers include ProfitBricks, and other Cloud Computing IaaS providers. All true Cloud providers allow users to "rent" virtual servers and storage while creating networks to tie them all together. When renting from a cloud IaaS provider, users are renting the hardware and the provisioning software that automates it.

PaaS Cloud:- Platform as a Service, often simply referred to as PaaS, is a category of cloud computing that provides a platform and environment to allow developers to build applications and services over the internet. PaaS services are hosted in the cloud and accessed by users simply via their web browser. Platform as a Service allows users to create software applications using tools supplied by the provider. PaaS services can consist of preconfigured features that customers can subscribe to; they can choose to include the features that meet their requirements while discarding those that do not. Consequently, packages can vary from offering simple point-and-click frameworks where no client side hosting expertise is required to supplying the infrastructure options for advanced development. The infrastructure and applications are managed for customers and support is available. Services are constantly updated, with existing features upgraded and additional features added. PaaS providers can assist developers from the conception of their original ideas to the creation of applications, and through to testing and deployment. This is all achieved in a managed mechanism.As with most cloud offerings, PaaS services are generally paid for on a subscription basis with clients ultimately paying just for what they use. Clients also benefit from the economies of scale that arise from the sharing of the underlying physical infrastructure between users, and that results in lower costs.

MODULE DESCRIPTION:

1. Registration
2. Log-In
3. Transcoder
4. Social Cloud
5. Gateway
6. Subscribe

Registration

Registering a username is optional, but encouraged. You do not need to give your name or any personal details to register. Everyone can contribute to Wikipedia, regardless of whether they choose to register. However, there are several benefits to registering a username, including The ability to create new articles, Having an account gives you many extra features, including more editing options and user preferences. One handy feature is the watchlist, which makes it easier for you to track changes to pages you are interested in. Another is the ability to move or rename a page. (Do not move pages simply through copying and pasting as the

edit history is not preserved that way. Instead, ask at the Village pump for a registered user's help.)
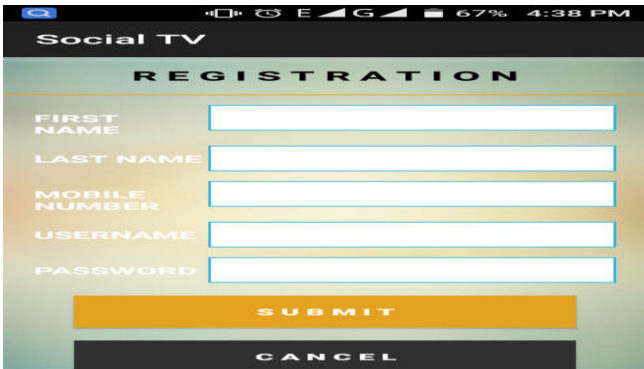
Log-IN

In computer security, logging in, (or logging on or signing in or signing on), is the process by which an individual gains access to a computer system by identifying and authenticating themselves. The user credentials are typically some form of "username" and a matching "password",[1] and these credentials themselves are sometimes referred to as a login, (or a logon or a sign in or a sign on).[2][1] In practice, modern secure systems also often require a second factor for extra security. When access is no longer needed, the user can log out (log off, sign out or sign off).
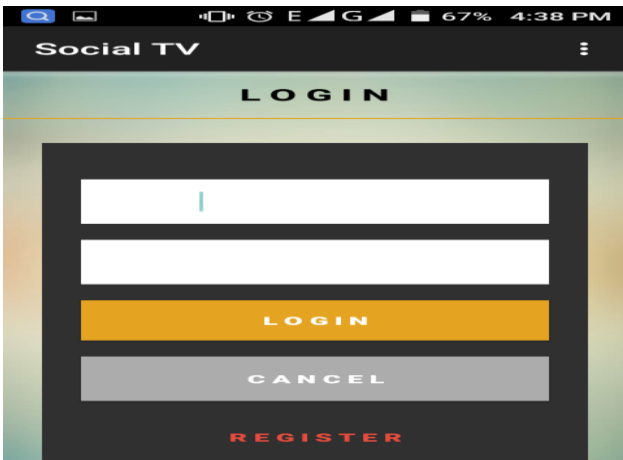
Transcoder

It resides in each surrogate, and is responsible for dynamically deciding how to encode the video stream from the video source in the appropriate format, dimension, and bit rate. Before delivery to the user, the video stream is further encapsulated into a proper transport stream. Each video is exported as MPEG-2 transport streams, which is the de facto standard nowadays to deliver digital video and audio streams over lossy medium

Social Cloud

Social network is a dynamic virtual organization with inherent trust relationships between friends. This dynamic virtual organization can be created since these social networks reflect real world relationships. It allows users to interact, form connections and share information with one another. This trust can be used as a foundation for information, hardware and services sharing in a Social Cloud.

Gateway

The gateway provides authentication services for users to log in to the CloudMoV system, and stores users' credentials in a permanent table of a MySQL database it has installed. It also stores information of the pool of currently available VMs in the IaaS cloud in another in-memory table. After a user successfully logs in to the system, a VM surrogate will be assigned from the pool to the user. The in-memory table is used to guarantee small query latencies, since the VM pool is updated frequently as the gateway reserves and destroys VM instances according to the current workload. In addition, the gateway also stores each user's friend list in a plain text file (in XML formats), which is immediately uploaded to the surrogate after it is assigned to the user.

Subscribe

In this module user can download the video. Subscribe module download video in high speed and clear video streaming. Authorized user every one download and watch the videos.

TRANSCODINGMECHANISM:-

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- Only one high quality compressed video is stored

- No/Much less computations on motion estimation

- Can produce comparable video quality with direct encoding

FUTURE ENHANCEMENT:-

In the current prototype, we do not enable sharing of encoded streams (in the same format/bit rate) among surrogates of different users. In our future work, such sharing can be enabled and carried out in a peer-to-peer fashion, e.g., the surrogate of a newly joined user may fetch the transcoded streams directly from other surrogates, if they are encoded in the format/bit rate that the new user wants.

SYSTEM CONFIGURATION:-

H/W SYSTEM CONFIGURATION:-

Processor	-	Pentium –III
Speed	-	1.1 GHz
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Floppy Drive	-	1.44 MB
Key Board	-	Standard Windows Keyboard

Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

S/W SYSTEM CONFIGURATION:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X
Front End	:	HTML, Java, Jsp
Scripts	:	JavaScript.
Server side Script	:	Java Server Pages.
Database	:	My sql
Database Connectivity	:	JDBC.

CONCLUSION

We conclude results prove the superior performance of CloudMoV, in terms of transcoding efficiency, timely social interaction, and scalability. In CloudMoV, mobile users can import a live or on-demand video to watch from any video streaming site, invite their friends to watch the video concurrently, and chat with their friends while enjoying the video.

REFERENCE:

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• Gupta, Minaxi; Judge, Paul; Ammar, Mostafa (1 January 2003). "A Reputation System for Peer-to-peer Networks". Proceedings of the 13th

International Workshop on Network and Operating Systems Support for Digital Audio and Video.

•Balguruswami, 4th Edition For the JAVA coding used in the project.

•Tutorial videos from the website.