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Secure Cost Effectual Multi-Cloud Storage in Cloud Computing

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Abstract— **In recent days all devices are used in large amount which provides richer contents and social interactions among the users. These devices are having its own limitations like insufficient storage, battery lifetime etc. As the wireless network is inadequate there is no harmony between wireless link and traffic demands resulting into poor service quality. If there is any accidental damage chances of data loss will be more.**

The cloud computing technology gives the benefit of storing and accessing data and programs over the internet instead of your local storage. This technology offers live-streaming experience of video watching, good streaming quality and offloading task to the cloud. The technology uses HTTP live streaming which breaks the overall stream into a sequence of small based file downloads provides good streaming quality. SCEMS technology utilizes cloud services like platform-as-a-service PaaS and infrastructure-as-a-service IaaS to offer co-viewing experience of video watching and different applications. In this we employ RC6 (Rivest Cipher 6) algorithm which is one of the fully parameterized families of encryption algorithm used to increase security and improve performance. The technology implements H.264 / SVC (scalable video coding) algorithm which adapts the changing network conditions using scalable layers at different data rates. User can fetch on demand or live video to watch from video gallery and also can invite their friends to watch the video through web-enabled interface. It concerned with access control, data confidentiality and availability. In case of unintended damage all data shall be available from cloud. This application will be helpful to educational system.

Index Terms— **Rivest Cipher 6, Secure cost effectual multi-cloud storage in cloud computing.**

I. Introduction

Now a day's laptops, Notepad and Smartphone's are shipped with many microprocessor cores and GB's of RAM's; they have high computation power than Normal desktop computers of late 90's. The wide deployment of 3G, 4G broadband cellular infrastructures has further increased the use of digital devices by Common people. Every users need the fastest technologies like 3G, Wi-Fi for fast web access & chatting. These technologies focus more on the challenging scenarios such as real-time video streaming and online gaming, for social interacting, and exchanging emails. The cloud computing is increasing day by day as its advantages overcome the disadvantage of various early computing techniques. Cloud provides online data storage where data is stored. If in case, file deletion or if the cloud gets destroyed due to any reason the data stored at cloud gets lost. Hence to overcome this problem various data recovery techniques have been developed in cloud computing. In this literature paper, we explore some existing techniques that are previously implemented to tackle the problem. The objective of this paper is to give the brief explanation of the existing techniques. As Cloud Technology is involved the System will effectively use IAAS (Infrastructure as a Service), PAAS (Platform as a Service) and SAAS (Software as a Service) Cloud Services. In this paper, we propose and study the development of a H.264/SVC (Scalable Video Coding [1]) based video proxy situated between the users and media servers, that can adapt to changing network conditions using scalable layers at different data rates. The two major functions of this proxy are: (1) video transcoding from original formats to SVC, and (2) video streaming to different users under Internet dynamics. AMES-Cloud constructs a private agent for each mobile user in cloud computing environments, which is used. AMoV (adaptive mobile video streaming), and ESoV (Efficient social video sharing). AMoV offers the best conceivable spilling encounters by adaptively controlling the gushing bit rate depending on the change of the connection quality. AMoV conform the bit rate for every client utilizing.

II. EXISTING SYSTEM

A number of mobile TV systems have sprung up in recent years, driven by both hardware and software advances in all 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.

III. 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 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 users with time varying Wireless connectivity, we employ a surrogate for each user in the IaaS cloud for video downloading and data storage exchanges on behalf of the user.

FEATURES:

A. DATA RECOMMENDER:

System will notify user via email according to his/her interest. Let us suppose user search for particular data and it is not available at that time. If after sometime it becomes available on Server then System will send notification to the user about that data. Also User will receive notifications about all data according to his/her likes, daily visits, etc.

B. DATA INTEGRITY:

Presently there are some web sites that contain same data or videos but with different name. The System will implement Data Integrity so that there won't be same data with different name. Data Integrity is implemented by frame matching. Threshold Ratio of all data can be measured i.e how much percentage of data is same is measured and decision can be taken whether to upload or not upload the data.

C. DATA ACCESSING:

Server Administrator can set data accessibility. It includes Options like public and private. If data accessibility is public then anyone can see the data while private option is totally opposite to that of public that is only selected users can watch the video.

D. DATA SHARING:

Online user can suggest or recommend particular data to his/her friends who are online at that particular instant. Thus, Social Video Streaming on Linux Powered Smartphone's using Cloud Services provides social interaction with the data to the user.

IV. ARCHITECTURE:

Diagram gives overview of data accessing on Linux powered devices using cloud services. As you can see there will be Surrogate also known as Virtual Machine (VM) for each Online User. The Surrogate acts an intermediate between user and video source. There is a gateway server in Social Video Streaming on Linux Powered Smartphone's using Cloud Services keeps track of participating users and their VM surrogates, which implementation can be done by standalone server or VMs in the IaaS cloud**.**

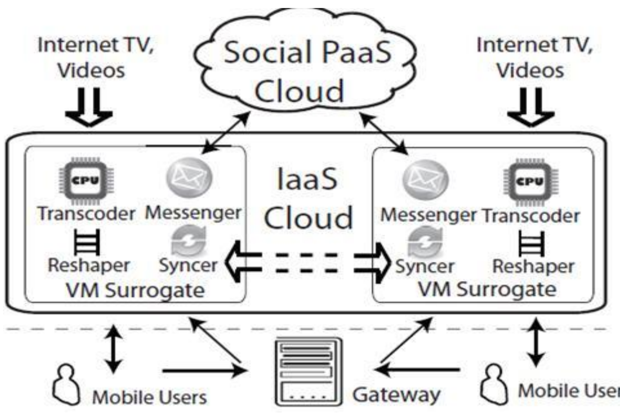

Fig 1.System Architecture of Cloud MoV

A. TRANCSCODER:

There will be Transcoder for each Surrogate. It takes Decision about encoding the data from source in correct format, bit rate and dimension. Before delivery to the user, the video stream is further compress into a proper transport stream.

B. RESHAPER:

The input to the Reshaper is the encoded transport stream from transcoder. It performs some task on that data like chops it into segments, and then sends each segment in a burst to the mobile device upon its request. By performing this best power efficiency of the device can be achieved. The burst size, i.e., the amount of data in each burst, is carefully decided according to the network speed and capability of device.

C. SOCIAL CLOUD:

It is useful to store all the social data in the system. These stored social data include the online statuses of all users, information of the current sessions, and messages in every session. The social cloud is queried from time to time by the VM surrogates.

D. MESSENGER:

It resides in each surrogate in the IaaS Cloud. It is the Client side Component of the Social Cloud. The Messenger periodically queries the social cloud for the social data on behalf of the mobile user and pre-processes the data into a light-weighted format (plain text files), at a much lower frequency. The plain text files in XML formats) are asynchronously delivered from the surrogate to the user in a traffic-friendly manner, i.e., little traffic is incurred. In the reverse direction, the messenger disseminates this user's messages (invitations and chat messages) to other users via the data store of the social cloud.

E. MOBILE CLIENT:

The Android Device should be compatible with HTML5 and supports the HTTP Live Streaming Protocol. These requirements are mostly satisfied by almost all Android Mobile phones.

V. ALGORITHMS:-

1. RC6:

In Cryptography, RC6 stands for Rivest Cipher 6 and it is a symmetric block Cipher. It is preceed by RC 5. The RC 6 was invented by Ron Rivest ,Matt Robshaw , Ray Sidney, and Yiqun Lisa Yin. It is designed to meet the requirements of the Advanced Encryption Standard (AES) Competition.. Basically RC 6 is an Encryption Algorithm. RC 6 in proper format has a block size 128 bits and support key sizes 128,192,256 bits. But as it is modified version of RC 5 it can be parameterised to support a wide variety of word-lengths, key sizes, and number of rounds.RC6 is similar to RC5 using data-dependent rotations, modular addition, and XOR operations. In RC6 does use an extra multiplication operation not present in RC5 in order to make the rotation dependent on every bit in a word, and not just the least significant few bits.

/ Encryption/Decryption with RC6-w/r/b
//
// Input: Plaintext stored in four w-bit input registers A, B, C & D
// r is the number of rounds
// w-bit round keys S[0, ... , 2r + 3]
//

```
// Output: Ciphertext stored in A, B, C, D
//
// '''Encryption Procedure:'''

B = B + S[0] D = D + S[1]
for i =1 to r do
{t =(B*(2B +1))<<< lg w
u =(D*(2D +1))<<< lg w
A =((A ⊕ t)<<< u)+ S[2i]
C =((C ⊕ u)<<< t)+ S[2i +1]
(A, B, C, D)=(B, C, D, A)}
A = A + S[2r +2]
C = C + S[2r +3]
// '''Decryption Procedure:'''
C = C - S[2r +3]
A = A - S[2r +2]
for i = r down to 1do
{(A, B, C, D)=(D, A, B, C)
u =(D*(2D +1))<<< lg w
t =(B*(2B +1))<<< lg w
C =((C - S[2i +1])>>> t)⊕ u
A =((A - S[2i])>>> u)⊕ t}
D = D - S[1]
B = B - S[0]
```

VI. ADVANTAGES OF PURPOSE 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. SCEMS 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 modes at the devices, in order to effectively increase the battery lifetime.

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

Portability:
A prototype SCEMS system is implemented following the philosophy of "Write Once, Run Anywhere" (WORA): both the frontend 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.

VII. CONCLUSION

The Project will go to implement highly social interactions. Users can interact with data as well as simultaneously they can chat with other user's who are online at that instant. Special Features like data integrity, data recommendatory etc are also provided in the system introduced in Project. It is potentially provide an ideal platform to support the desired mobile services. We conclude results prove the superior performance of SCEMS, in terms of transcoding efficiency, timely social interaction, and scalability. In SCEMS, users can import a live or on-demand video to watch from any video streaming site, invite their friends to watch the video or share data concurrently.

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