ISSN: 2277-9655
Impact Factor: 1.852

IJESRT

INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH TECHNOLOGY

Cloud based Mobile Streaming with Qos Approach

M.Sharmila[*1], P.Saranya[2], M.Tamilselvi[3]
[*1] Student, [2,3] Assistant Professor, Roever Engineering College, India
sharmipost@gmail.com

Abstract

Mobile streaming using cloud causes the problems of delay whereas downloading or streaming the transmission file from cloud area. The most conception of this paper is to investigate the sudden interruption of user device and automatic beginning from cloud. Transmission data may be accessed simply victimization mobile devices allowing pervasive network services. Considering the users device and network limitation, propose a system that ought to be network and device aware QoS methodology. The projected system reduces the delay and provides appropriate transmission information for the device from cloud area by interacting with user's device after they request for a selected transmission file. Implement this idea by doing the hardware feature experiment and video quality experiment. Cloud lets to store, convert and transfer.

Transmission files during a range of formats in order that transfer speed and quality are going to be increased.

Keywords: Transcode, Cloud Computing, SVC, Interactive Streaming.

Introduction

Internet access is booming as a artifact on mobile devices .With the sensible phones, sensible books, connected notebooks and laptops the mobile web is turning into vast. to fulfill the good opportunities and challenges returning in conjunction with media revolution [1] [2], the new technology and basic facilities with additional powerful capability became the foremost pressing demands. at the same time the changes of economic model and business strategy are mechanically necessary to adapt these changes. At a similar time mobile users expect high-quality video expertise in terms of video quality, start-up time, reactivity to user interaction, trick mode support etc., and therefore the whole system together with content suppliers ,device makers, network operators, content suppliers ought to guarantee these demands may be met. Reasonable and mature technologies are needed to satisfy the user's quality expectations. Cloud computing has become the event trend of the web. Large amounts of knowledge are calculated at the same time and user demands are met chop-chop, supported the design of cloud resource virtualization. The essential technique of cloud computing springs from distributed computing and grid computing [9]. Recently cloud based mostly streaming conception has been an apparent trend in transmission streaming service. Users will access contents within the cloud from any laptop or device connected to the web while not the necessity to save lots of files to their devices [10]. Since the looks of the cloud transmission conception, several studies are analyzed and researched cloud computing. several researchers target the look of ways for increasing effectivity per transmission content. These designed ways facilitate transmission information analysis victimization cloud computing, and transmission information search will enable users to quickly acquire desired files. but studies on analysis and search of transmission files scale back the number of calculation needed by users to investigate and search transmission files.

A.Related work

Connected WORK Media cloud [3] or transmission cloud [4] [5] herewith presents once media revolution meets the increase of cloud computing. The emergence of media cloud not solely has nice impact on the connected analysis and technologies like design of the cloud computing platform, media process, storing, delivery, and sharing, however conjointly has profound impact on the business model, industrial strategy, and even the society. Over the past decade, {increasingly progressively more and additional} more traffic is accounted by video streaming and downloading. especially, video streaming services over mobile networks became prevailing over the past few years. whereas the video streaming isn't therefore difficult in wired networks, mobile networks are laid low with

ISSN: 2277-9655
Impact Factor: 1.852

video traffic transmissions over scarce information measure of wireless links. Despite network operators desperate efforts to boost the wireless link information measure (e.g., 3G and LTE).Soaring video traffic demands from mobile users are chop-chop overwhelming the wireless link capacity[4][11]. Whereas receiving video streaming traffic via 3G/4G mobile networks, mobile users typically suffer from long buffering time and intermittent disruptions thanks to the restricted information measure and link condition fluctuation caused by multi-path weakening and user quality. Thus, it's crucial to enhance the service quality of mobile video streaming whereas victimization the networking and computing resources with efficiency. Regardless of what the service is users can continually expect powerful, sound and stable functions. For transmission videos stability is of the best importance. Therefore, a way to execute sleek playback with restricted information measure and therefore the completely different hardware specifications of mobile streaming is a remarkable challenge. H.264/SVC [6] is associate extended secret writing and coding design supported H.264/AVC. The advantage of H.264/SVC is that it will change the image quality dynamically, consequently to the information measure of the receiving finish. This analysis targets the characteristic of streaming protocols to record the present stream video content information measure state of the user whereas also analyzing the past information measure fluctuations to gauge and predict the potential information measure changes within the future whereas victimization the map scale back formula in cloud computing to instantly transfer the video cryptography to quickly transfer the foremost appropriate video format for the user.

Adaptive QOS

Adaptive QoS supports adjustive multipath routing with multiple QoS constraints in an advertisement ad-hoc network. It provides information on link performance for the QoS routing. It treats traffic distribution, wireless link characteristics, and node quality in an integrated fashion.

QOS Approaches

QoS approaches tend to target only one QoS parameter (e.g., packet loss, end-to-end delay, and bandwidth). Reducing packet loss by adding redundancy within the packet, they are doing this at the expense of end-to-end delay. As a result of packet loss and end-to-end delay area unit reciprocally connected, it satisfies the delay, packet loss, and information measure constraints.

Multimedia

Integration of animation, audio, graphics, text, and fullmotion video through component and software system for education, amusement, or coaching.

Transcoding

Transcoding is that the direct analog-to-analog or digital-to-digital conversion of 1 cryptography to a different, like for motion picture knowledge files or audio files. This is often typically worn out cases wherever a target device (or workflow) doesn't support the format or has restricted storage capability that mandates a reduced file size, or to convert incompatible or obsolete knowledge to a better-supported or trendy format. Within the analog video world, transcoding is that the method of changing PAL to SECAM or to NTSC or vice-versa. Transcoding will be performed simply whereas files area unit being searched, moreover as for presentation. as an example, Cineon and DPX files are wide used as a standard format for digital cinema, however the information size of a two-hour motion picture is regarding eight terabytes (TB).

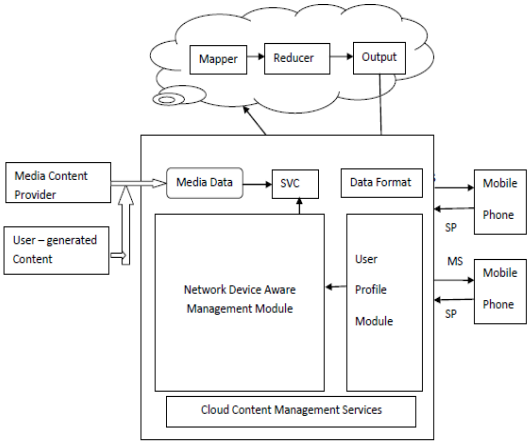
That enormous size will increase the value and problem of handling motion picture files. However, transcoding into a JPEG2000 lossless format has higher compression performance than different lossless cryptography technologies, and in several cases, JPEG2000 will compress pictures to small. Transcoding is usually a lossy method, introducing generation loss; but, transcoding will be lossless if the input is lossless compressed and also the output is either lossless compressed or uncompressed. the

ISSN: 2277-9655
Impact Factor: 1.852

method of loss-to-loss transcoding introduces varied degrees of generation loss. In different cases, the transcoding of loss to lossless or uncompressed is technically a lossless conversion as a result of no info is lost, but the method is irreversible and is a lot of befittingly called harmful.

Proposed System Structure

During this system once a user needs to transfer a selected transmission file from cloud server 1st they have to register their data (First Name, Last Name, Mail id) therewith cloud. If associate existing user their data are retrieved from cloud info otherwise the knowledge are going to be keep with cloud info. once registration the user device and network characteristics are going to be calculated then a user will choose needed transmission file from cloud area. supported the device and network characteristics appropriate media file are going to be transferred to the terminal device, here we have a tendency to use SVC for appropriate media file conversion for the top device.SVC plays a vital role that uses a pair of layers particularly base layer, enhance layer[7]. every media file has base layer for its basic image quality depends on the network fluctuations SVC adds range of enhance layer for its higher quality. If any interruption happens to interrupt the transfer operation, the projected system can resume this perform from problematic state. These recovery operations enforced in cloud area that supports the user will access a similar media file transfer from the interrupted state by victimization same device.



MS – transmission Stream SP – Schema Profile Fig one - projected System design benefits of projected system

- Reduced delay and quicker Access
- Resume from any device by victimization same id
- Cloud area utilization
- Effective resource utilization
- economical power management
- Clear Video quality management Improve overall System Performance
- System consistency

Implementation

The projected system has range of modules that are delineated below,

A. User Profile Authentication

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 iles, and its structure is extensible.

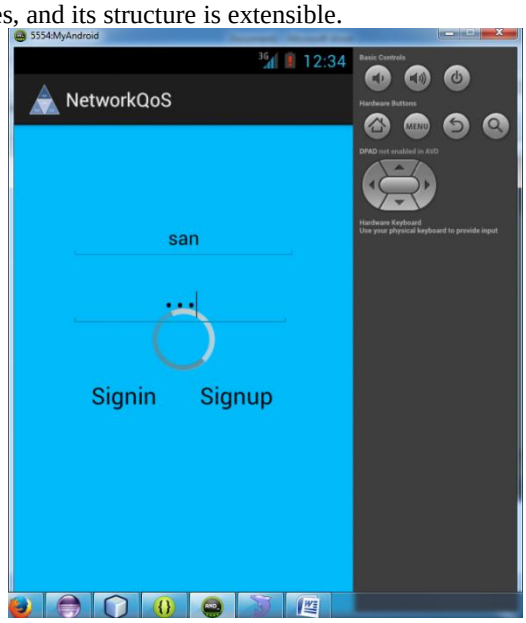


Fig1:user profile module

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 it 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. Network and Device Parameter calculation

Network and Device Parameter calculation Here we have a tendency to calculate band dimension, device model and network supplier, network kind and SIM state. If the device used already suggests that, we

ISSN: 2277-9655
Impact Factor: 1.852

will extract all details from info except the bit rate and band dimension. we have a tendency to use 3 style of band dimension particularly, tested exiting, Average out there and variance to calculate current information measure.

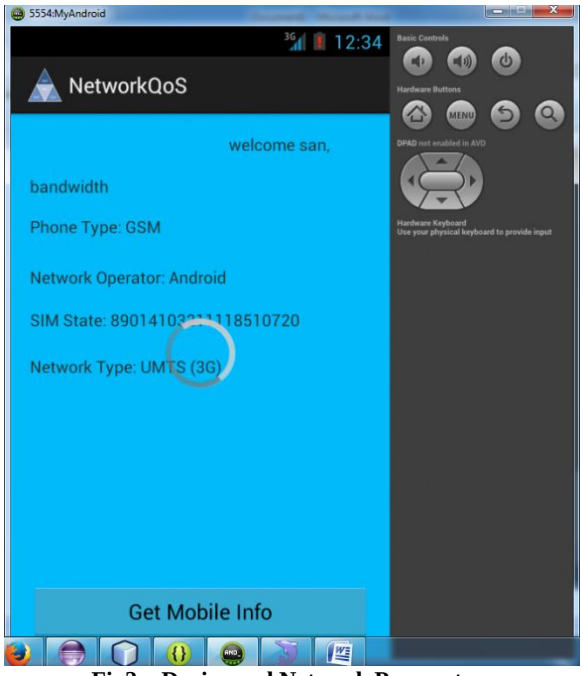


Fig2 – Device and Network Parameter

Once this parameter type is maintained, the parameters may be transmitted to the network estimation module and therefore the device-aware Bayesian prediction module for relevant prediction.

C. Cloud information storage

Cloud information storage during this module we have a tendency to keep differing types of videos and mobile data , as a result of the users will request any videos from completely different quite mobiles, therefore we want to store all videos in cloud, it provides an easy services interface that may be accustomed store and retrieve any quantity of knowledge, at any time, from anyplace on the server. It provides any developer access to a similar extremely scalable, reliable, secure, fast, cheap infrastructure that cloud uses to run its own world network.

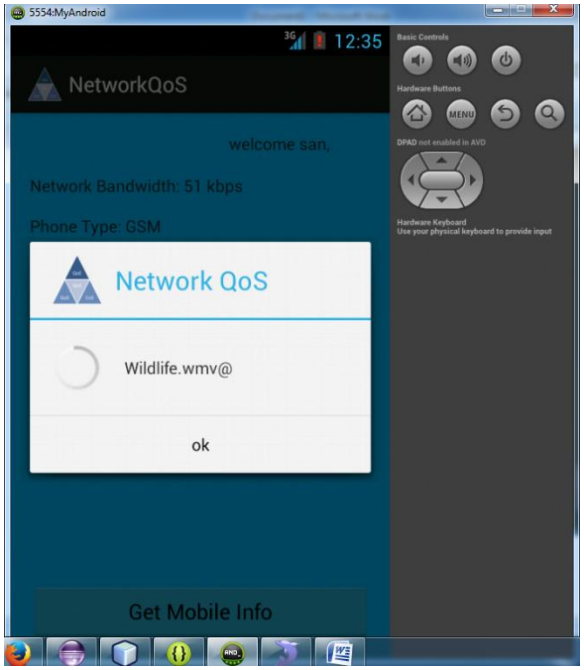


Fig3: video requirements

The service aims to maximize edges of scale and to pass those edges on to users. Once cloud user send video to cloud , that video keep below sorts bit rate , band width , width, height, variance, coding and cryptography. Once the prediction error is bigger than error boundary, the system shall scale back the burden modification of the expected difference; comparatively, once the prediction error is a smaller amount than error boundary, the system shall strengthen the burden modification of the expected distinction. Once the modified information measure of the system is bigger than the quality distinction, the expected weight can increase because the corrected price of the quality deviation is reduced.

D. Request and frequency setting

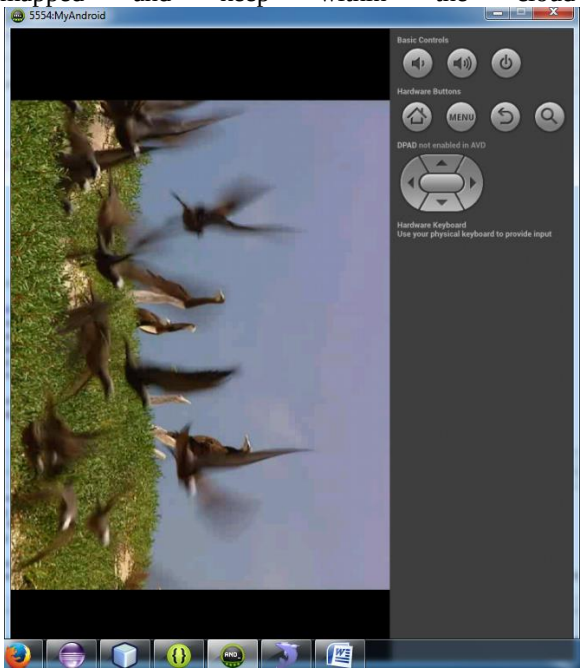
Request and frequency setting during this module we have a tendency to implement video analysis, as a result of this project contain retrieve video from cloud and compare device. Therefore during this cloud method we have a tendency to store video from 3 separate file. At first one video, features to seek out frame rate, bit rate and Resolutions. Secondly reasoning case, to seek out coding of video or cryptography of video, playback file completed or not. Ultimately Device feature, to seek out power consumption, device model, device network. Hereby, so as to adapt to the period needs of mobile transmission, this study adopted Bayesian theory to infer whether or not the video options conformed to the coding action. The reasoning module was supported the subsequent 2 conditions: The LCD brightness doesn't continually amendment this

ISSN: 2277-9655
Impact Factor: 1.852

hypothesis aims at a hardware energy analysis. The literature states that TFT LCD energy consumption accounts for concerning 20%–45% of the whole power consumption for various terminal hardware environments [8]. Though the general power may be reduced effectively by adjusting the LCD, with transmission services, users ar sensitive to brightness; they dislike video brightness that repeatedly changes. As dynamical the LCD brightness can influence the energy consumption analysis price, the LCD brightness of the mobile device is assumed to ineffectual to vary at can throughout transmission service. The energy of the mobile device shall be sufficient for taking part in a full transmission video full transmission service should be able to last till the user is happy reconciling communication.

E. Reconciling communication beginning

Multimedia information over the cloud may be kept in several formats which will or might not be compatible with the device. Transcoding operation is performed so as to modify all devices to access completely different formats of knowledge and convert that to a compatible format. We have a tendency to implement K-means clump formula for transmission noise removal. This formula partitions the cluster of knowledge into tiny clusters and reduces noise. Beginning whereas downloading a transmission file from cloud, once there happens associate emergency condition to prevent the method dead, it may be resumed from the purpose in cloud wherever it absolutely was stopped. The user profile being mapped and keep within the cloud



before a downloading method. Once there occurred associate unfortunate disconnection and therefore the transfer being interrupted, it may be resumed from the purpose at that it absolutely was interrupted. This can be achieved by keeping associate updated record of the transfer progress and mobile and device data that's used for mapping over the cloud. The user once revisit to the cloud the transfer standing the network and device profile that's keep within the cloud is employed to understand concerning the extent to that the transfer has progressed and it's resumed. If the user logs in to the cloud with a special device the transfer is initiated from the start.

Conclusion

For mobile transmission streaming services, a way to offer acceptable transmission files per the network and hardware devices is a remarkable subject. During this study, cloud based mostly interactive mobile streaming and automatic resume by checking cloud data relating to user request was projected. The Network and Device parameter calculation and cloud storage were used for the prediction of network and hardware options, and therefore the communication frequency and SVC transmission streaming files best suited for the device surroundings were determined per these 2 modules. Within the experiment, the general paradigm design was complete associated an experimental analysis was applied. Within the future work, we'll do large-scale implementation and with serious thought on energy and value. Cloud services could accelerate analysis on SVC secret writing within the future.

References

[1] *"Moving to the Media Cloud for information and Content Integration Management "- Zulfikhar Ahmad1, Ashis Kumar Mishra2,Asisha Kumar Jena3,Department of laptop Application, faculty of Engineering &Technology ,Bhubaneswar-751003, Odisha, India.*

[2] *M. F. Tan and X. Su, "Media cloud: once media revolution meets rise of cloud computing," in Proc. IEEE sixth Int. Symp. Service headed Syst. Eng., 2011, pp. 251–261.*

[3] *D. Diaz-Sanchez, F. Almenarez, A. Marin, D. Proserpio, and P. A.Cabarcos, "Media cloud: associate open cloud computing middleware for content management," IEEE Trans. Consum. Electron., vol. 57, pp.970–978, 2011.*

ISSN: 2277-9655
Impact Factor: 1.852

[4] *A. Khan and K. K. Ahirwar, "Mobile cloud computing as a way forward for mobile transmission info," Int. J. Comput. Sci. Commun., vol. 2, no. 1, pp. 219–221, 2011.*

[5] *S. M. Saranya and M. Vijayalakshmi, "Interactive mobile live video learning system in cloud surroundings," in Proc. Int. Conf. Recent Trends in Inf. Technol. (ICRTIT), 2011, pp. 673–677.*

[6] *P. Chen, X. Jeongyeon, L. B. Lee, M. Kim, S. Hahm, B. Kim, and K.L. Park, "A network-adaptive SVC streaming design," in Proc.Int. Conf. Advanced Commun. Technol., 2007, vol. 2, pp. 955–960.*

[7] *"AMES-Cloud: A Framework of reconciling Mobile Video Streaming and economical Social Video Sharing within the Clouds" Xiaofei Wang, Student Member, IEEE, Min Chen, Senior Member, IEEE, Ted "Taekyoung" Kwon, Senior Member, IEEE, Laurence T. Yang, Senior Member, IEEE, Victor C.M. Leung, Fellow, IEEE.*

[8] *Y. K. Lai, Y. F. Lai, and P. Y. Chen, "Content-based LCD backlight power reduction with image distinction improvement victimisation bar graph analysis," J. show Technol., vol. 7, no. 10, pp. 550–555, 2011.*

[9] *M. Armbrust, A. Fox, R. Griffith, A. D. Joseph,R.Katz, M. Zaharia, "A read of cloud computing," Commun. ACM, vol.53, p.508, Apr.2010.*

[10] *S. Y. Chang, C. F. Lai, and Y. M. Huang, "Dynamic adjustable transmission streaming service design over cloud computing," Comput. Commun. vol. 35, no. 15, pp. 1798–1808, Sep. 2012.*