

Downloading and performance analyzing of WMV and MPEG files in Cloud Computing.

Manoj Kumar Tiwari

Abstract: Video Streaming has become a major application in today's IT enabled society by many users. WMV and MPEG are the formats which are used in real time streaming in Cloud Computing. In this paper I analyze the performance of WMV and MPEG video format streaming using Java Tool and Video Inspector Tool.

Keywords: Cloud, MPEG, JFree Chart, WMV, Java application, Video Streaming, Java.

I. VIDEO STREAMING

A video streaming is the simultaneous transfer of digital media files such as video, audio and data through a server application that can be displayed in real-time by client application.

II. CLOUD COMPUTING

The term “**cloud**” is used as a metaphor for the Internet. The cloud makes for us to access our information from anywhere at any time Cloud computing is a subscription-based service where you can obtain networked storage space and computer resources

a. **Types of clouds:** There are different types of clouds that you can subscribe to depending on your needs. As a home user or small business owner, you will most likely use public cloud services.

1). **Public Cloud** - A public cloud can be accessed by any subscriber with an internet connection and access to the cloud space.

2). **Private Cloud** - A private cloud is established for a specific group or organization and limits access to just that group.

3). **Community Cloud** - A community cloud is shared among two or more organizations that have similar cloud requirements.

4). **Hybrid Cloud** - A hybrid cloud is essentially a combination of at least two clouds, where the clouds included are a mixture of public, private, or community

III. VIDEO FILE FORMATS

This section provides us an detailed overview of the digital video file formats: what they are, the difference between them, and how best to use them.

There are different video formats viz. WMV(Window Media Video) and MPEG (Moving Picture experts Group).

Video files are combination of significantly more complex still image files. There are lots of different kinds of internal information, but a video file structure is more "mix and match." One can tell a lot about a still image file extensions, but not about the video. File type (such as WMV and MPEG) is a container that can be filled with real low-quality video, or it might have high-quality 3-D theater-quality video and five-channel audio.

IV. WMV FORMAT OF VIDEO

Windows Media Video (WMV) is a compressed video compression format developed by Microsoft for several proprietary codecs. WMV file type is primarily with “Window Media File” by Microsoft Corporation.

V. MPEG FORMAT OF VIDEO

MPEG is an acronym for Moving Picture Experts Group that was formed by ISO and IEC. It sets the standard for audio and video compression and its transmission. MPEG algorithms compress data to form small bits, one can easily send and decompress it. MPEG uses Lossy compression type where some data is deleted, but the loss of data is not visible to the human eyes.

VI. JAVA

Java is a programming Language and computing platform released by Sun Microsystems in 1995. Java is an object-oriented language similar to C++, but simplified to eliminate language features that cause common programming errors. Java is a general purpose programming language with a number of features that make the language well suited for use on the World Wide Web.

VII. JFree Chart.

JFreechart is a free 100% java chart library that makes it easy for developers to display professional quality charts in their applications. The JFreechart project was founded fourteen years back in February 2000, JFreechart is the most widely used chart library for Java.

VIII. Scenarios

In this experiment, I am trying to analyze performance of WMV and MPEG video stream requested by various users of a cloud. All the access is done individually. Every user is having different environmental conditions some of them are having dynamic IP address, some are using Wired Connectivity, or some of them are having Wireless connectivity. This has been ensured that the entire machines login into Windows Server to access or request a certain video stored in their respective servers.

Results have been taken on the below given tool in Java and by using Video Quality Inspector.

IX. Analysis Tools

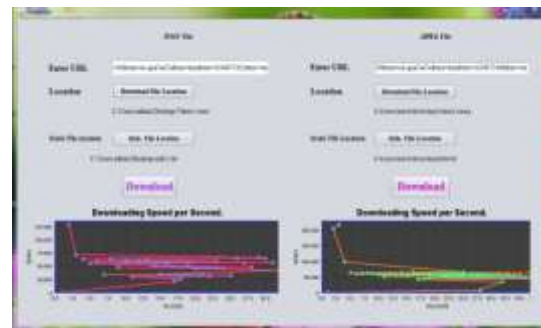
10.2 Scenario 2: In this scenario two files MPEG and WMV with Internet connectivity tries to access the videos simultaneously. The results for the same are as follows:

Video Quality Inspector Tool is an automated Perceptual Video Quality Testing Tool. VQMg (Video Quality Metrics – General Model) and VQGD (Video Quality Glitch Detection) are two components of Video Quality Inspector.

X. RESULTS

Cloud computing is Internet ("cloud") based development and use of computer technology ("computing"). It is a style of computing in which dynamically scalable and often virtualized resources are provided as a service over the Internet. Users need not have knowledge of, expertise in, or control over the technology infrastructure "in the cloud".

10.1 Scenario 1: In this scenario a single desktop machine with an Internet connectivity tries to access the MPEG video, single user access only. The results for the same are as follows:



10.3 Scenario 3: In this scenario we find two files MPEG

and WMV with an Internet connectivity tries to access the videos.. The results for the same are noted on Video Quality Inspector as follows:



XI. CONCLUSION

In this work, we have analyzed WMV and MPEG codec formats of video in real time streaming scenario with various environment conditions on various quality parameters.

Above analysis has been done for 3 different scenarios of single users in different environments.

From the above results following can be easily concluded:

1. The performance of WMV streaming is better in comparison to MPEG.
2. Graph given in Scenario 3 of video quality for each frame proves that MPEG accesses have the worst quality of delivery while WMV access has better quality on delivery.

XII. FUTURE WORK

Cloud is the latest technology available in the present era to ensure availability of resources online. Video streaming has been used by many organizations to conduct various meetings or lecture deliveries in their cloud.

The quality of video helps in easy understanding of the message communicated over the stream.

Though this work surround around some environments, In future analysis can be done for other video formats also; results of two or more video formats may be compared to find out the quality of delivery in a cloud computing environment.

XIII. REFERENCE

- Aman Gupta(2013), Performance Analysis of Various Video Compression Techniques, International Journal of Science and Research (IJSR)
- Dinesh Goyal et al(2013), Performance Analysis of WMV Video Streaming in a Cloud, International Journal of Computer & Organization Trends –Volume 3 Issue8
- Manas Arora, Neha Maurya(2013), Audio Compression in MPEG technologies, International Journal of Scientific and Research Publications, Volume 3, Issue 12,
- Shobha. D Jalikoppa(2014), AMES-Cloud: A Framework of Adaptive Mobile Video Streaming and Efficient Social Video Sharing in the Clouds, International Journal of Scientific Engineering and Research (IJSER)
- <http://www.jfree.org>
- <http://www.tutorialspoint.com/>
- <https://www.java.com>
- <http://www.webopedia.com/>

XIV. AUTHOR'S PROFILE.



MANOJ KUMAR TIWARI

