

E-ISSN: 2707-6644
 P-ISSN: 2707-6636
 IJCPDM 2022; 3(1): 30-36
 Received: 13-11-2021
 Accepted: 18-12-2021

Affum Quaye Mark
 Borsah Library Complex, Cape
 Coast Technical University,
 Cape Coast, Ghana

An assessment of audio file from library system (social networks) using cloud computing

Affum Quaye Mark

DOI: <https://doi.org/10.33545/27076636.2022.v3.i1.a.37>

Abstract

Accessing data from social networks using cloud computing has been adopted by many IT enthusiasts. It allows easy access to data and easy sending of data for communication purposes. For many social network users, cloud computing can simplify processes and save time and money. This article defines cloud computing and shows how one can quickly, safely and easily access data. It also discusses how cloud computing solutions could be beneficial to libraries in these basic areas: technology and acquisition.

Today's more libraries and social networks are joining the cloud. But despite the numerous social networks and data acquisition sites demand for data are still escalating-as they always will. To be able to access data conveniently today's data competitiveness users of search engines must carefully scrutinize various libraries as well as social media to ensure that they match key data and communication needs and deliver intended results in the most efficient and cost-effective way. To meet these challenges, IT organizations are increasingly moving away from a device-centric view of IT, to a view that is application-, information- and people-centric. Cloud computing aligns with this new world view. Cloud computing technology is enabling IT to do more with the infrastructure that already exists, as well as adding new ways to expand capacity quickly and economically by using external cloud computing resources. This technology is enabling IT managers to treat infrastructure as a common substrate on which they can provision services to users faster in a much more flexible and cost-effective way –without having to re-design or add to the underlying infrastructure. Given the benefits of cloud computing, its broad appeal is not surprising. However, this new approach does raise some concerns. Chief among them is securing data in the cloud. This white paper will briefly review the basic fundamentals of cloud computing and describe how virtualization are enabling enterprises to move toward a flexible, federated computing model with a cohesive mix of private external and internal cloud environments. It then discusses the security implications of cloud computing and provides insights into addressing them, and offers a view of security best practices to adopt when considering cloud services.

Cloud computing has become an increasingly popular means of delivering valuable, IT-enabled business services. Adopting cloud technology can be an affordable way to get access to a dynamically scalable, virtualized computing environment. Optimal IT hardware, software, expertise and infrastructure management resources that may not otherwise be available from a cost perspective can be rapidly deployed and easily scaled. Processes, applications and services can be available on demand, regard-less of the user location or device. The cloud provider is responsible for the environment, so organizations can make use of resources for short periods of time without having to maintain the environment when it is not being used. While cloud computing models are attractive because of their flexibility and cost effectiveness, certain challenges must be addressed in order to provide a viable option to traditional data services. First and foremost is the issue of security. The externalized aspect of outsourcing can make it harder to maintain data integrity and privacy, support data and service availability, demonstrate compliance, and secure highly available access to applications and information. In short, cloud computing can present an added level of risk. Organizations must therefore establish trust relationships with their cloud computing providers and understand risk in terms of how these providers implement, deploy, and manage security on their behalf. Whether delivered as part of the service or as specific components added in, your cloud provider should address the fundamentals of security and risk management through a comprehensive approach.

Keywords: Audio file, digital library, information technology, personal computer, operating expenditures, application programming interface, software development kit, standard generalized mark-up language, flexible extensible cloud object and repository architecture

Introduction

There also concerns about the security and data protection risks (Mircea & Andreescu, 2010) [5]. In addition, a commitment to this model fundamentally and radically changes the modus operandi of IT groups on college and university campuses, their power and influence, and their function and perception of value within the institution, which consequently would have serious implications for personnel and allocation of resources in these areas.

Corresponding Author:
Affum Quaye Mark
 Borsah Library Complex, Cape
 Coast Technical University,
 Cape Coast, Ghana

Cloud computing is a computing paradigm, where a large pool of systems are connected in private or public networks, to provide dynamically scalable infrastructure for application, data and file storage. With the advent of this technology, the cost of computation, application hosting, content storage and delivery is reduced significantly. The idea of cloud computing is based on a very fundamental principal of reusability of IT capabilities. The difference that cloud computing brings compared to traditional concepts of “grid computing”, “distributed computing”, “utility computing”, or “autonomic computing” is to broaden horizons across organizational boundaries (Goyal, Jatav, 2012, 9).

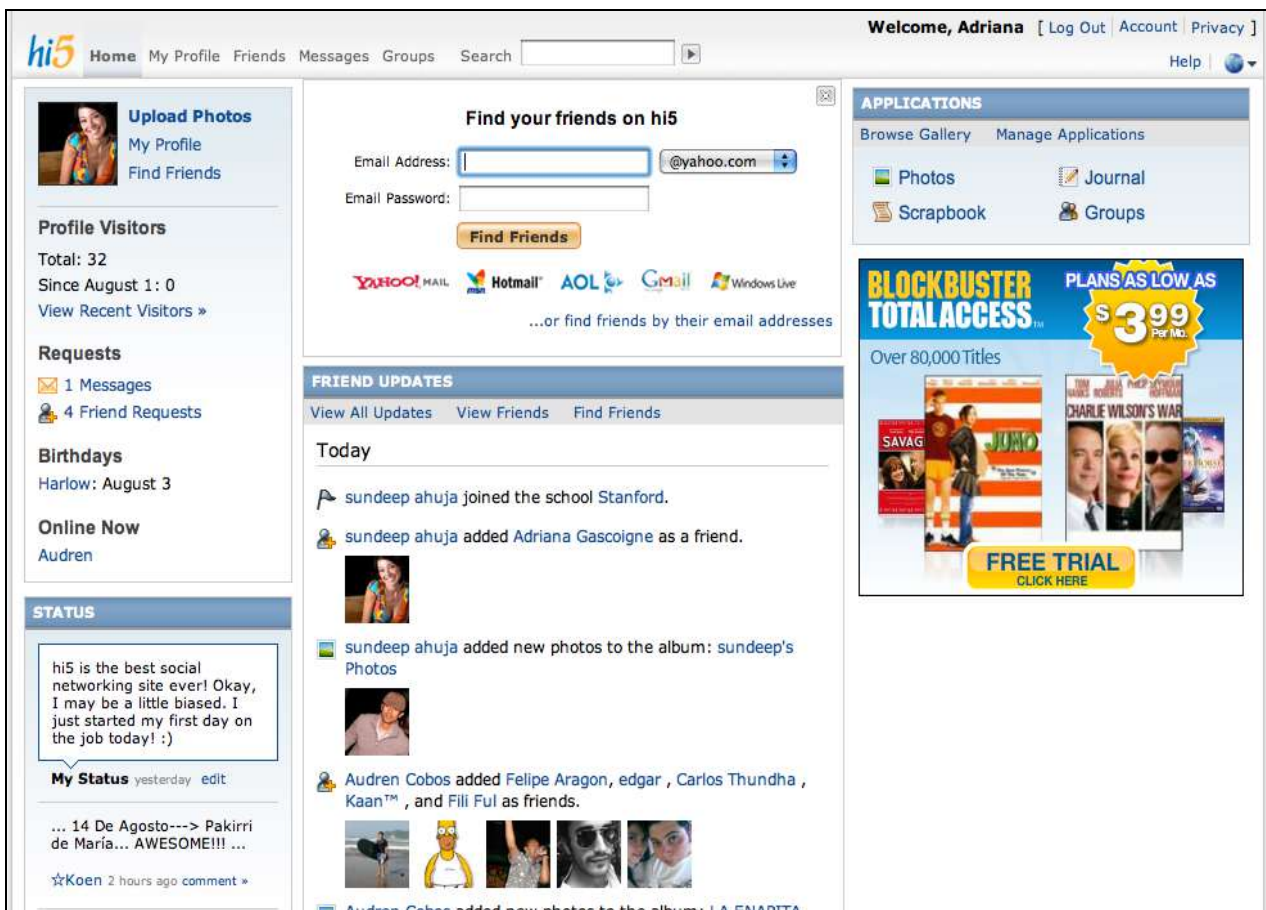
Hi5

Hi5 is a social networking site based in San Francisco, California. The company was founded in 2004 by Ramu Yalamanchi. By 2004, comScore reported that Hi5 had become the third most popular social networking site in terms of monthly unique visitors. The social networking site, Tagged, purchased Hi5 in December 2011, for an undisclosed sum.

Hi5 has many features common to social networking sites, such as friend networks, photo sharing, user groups, and status updates. Since the site’s redesign in 2009, Hi5 has added a number of features oriented toward gaming and entertainment. The site features over 200 games in a variety of genres, and has been adding games at a rate of 2-3 per week.

Literature review

Features of Hi5



Source: Features of Hi5, 2009, pp 1

Fig 1: Illustration of Hi5 profile environment

Factors affecting upload and download speed

Issues in the network between you and Wiredrive are the most common causes of poor application performance. Even if you can still access other websites, the specific route your ISP uses to connect you to Wiredrive may have ineffective components along the way. Follow our instructions for diagnosing slow upload and download problems to determine if a problem exists.

How network peering affects uploading and downloading

As your data travels through the Internet, different network hosts hand it off to the next host in a process called peering.

Satisfactory peering from one ISP’s network to another is what makes systems such as Wiredrive possible.

Occasionally, networks will experience a delay when sending a piece of data to the next destination. When latency occurs, it can cause peering issues. As a result, people using certain ISPs may have trouble accessing data from sites such as Wiredrive.

You can follow our instructions for diagnosing slow upload and download problems to determine if there are latency issues in your network. You can also monitor network peering and latency at internetpulse.net, which has up to-the-hour Internet health reports. Akamai’s Real-time Web Monitor also tracks latency for many major cities. If you do

not know which ISP a website is using, you can use the Whois by IP Address tool.

Consider the upload speed offered by your ISP

Many ISPs gloss over their uploading speeds because most common high-speed technology has uneven or asymmetrical uploading/downloading (sometimes called upstream/downstream) speeds.

Cable internet, for example, is one of the most widely used internet connection types. Downloading is usually very fast at around 10 megabits per second (Mbps). Uploading speed, however, is typically limited to around 1 Mbps. Your specific speed will vary depending on your network, but you can expect about a 10:1 download/upload ratio.

If you are unsatisfied with the performance of your Wiredrive system after you've considered file sizes and your uploading speed, contact your ISP to find out what other types of internet connections they offer.

How your location affects your file-viewing experience

Our content delivery network (CDN) is a network of media servers spread around the world that server files locally in order to make viewing and downloading faster. Wherever you or your client is, a CDN server should be relatively close to serve files quickly. You also upload files to the same global locations.

How file size affects your experience

How fast you can upload depends as much on the size of the files as it does on your ISP.

The problem with wireless

Wireless networking speeds vary based on the number and types of devices connected. A lot of devices advertise high networking speed, but those figures refer to devices talking to each other, not necessarily how fast it can send and receive data through the Internet. Some devices, such as 4G phones, connect at only 9.5Mbps which will slow down the entire network to 9.5Mbps.

Additionally, your bandwidth may become constrained if multiple users in your office are also uploading large files at the same time (Wiredrive Support December 15, 2014, pp. 1)

Objectives

Audio files are shared on social media applications that bring smiles in the faces of friends and loved ones. Some of these cloud libraries in the social networks share the activities of friends e.g. birthdays, funerals, marriage events, etc.

Data about a particular user or person one may want to access is also made available through these media.

There has not been enough information on data and its properties with regards to the speed and usage of modems from different communication networks use to access data from libraries and other social networks.

Methodology

Different internet service providers (telecommunication networks (Mtn, Vodafone, Tigo)) were used to assess various times that each particular network made available information. Distances were also measured from each network base (networks microwave) from 500meters, 1000meters and 2000meters. Based on this I was able to find out the quality of service provided by each telecommunication network. The laptop downloads different file size ranging from 4KB to 12.3MB. Based on the analysis and result, I will conclude which social network is better to use in accessing data based on different platform.

In another simulation, the researcher placed two computer gadgets (windows 7 laptop computer and Huawei touch screen smartphone) on a computer desk where the test was conducted. The size of both the laptop and the smartphone screen was measured in inches using a ruler. The windows 7 laptop screen size was 7 inches while the screen of the smartphone was 2 inches.

Facebook social network was launched on both gadgets (windows 7 laptop computer and Huawei touch screen smartphone) It is evident from facebook users that, a profile of a Facebook user can be accessed on two computer gadgets at the same time if only one is a phone and the other a personal computer.

Data collection

Data was collected from Facebook, twitter and Hi5. Also microwave station of Vodafone was another source of data. The IBM ThinkPad Intel Centrino laptop, Huawei touch screen smart phone and HP laptop was another source of data. Modem from various telecommunication networks (MTN, VODAFONE, TIGO) also offered other sources of data collection. I also gathered data from the operating systems of the laptop computers and the smart phone.

Cloud librarians strive to add value to the collections they create and maintain. One way is through selectivity: a carefully chosen set of authoritative documents in a particular topic area is far more useful to those working in the area than a huge, unfocused collection (like the web). Another is by augmenting the collection with high-quality metadata, which supports activities of searching and browsing in a uniform and useful way. A third way, and our topic here, is to enrich the documents by examining their content, extracting information, and using it to enhance the ways they can be located and presented.

Research findings and discussion

Graph of Audio size against Time (twitter)

A graph showing time taken when a user download audio file from the cloud (twitter) using Vodafone network with bandwidth of 2GB on a windows 7 Ultimate xp 1 laptop with 2.0 GHz CPU and 2 GB (RAM), an internal memory of 232Gigerbyt (GB), processor: Intel core(TM)2 Duo CPU with Model 766312U and a 13-bit.

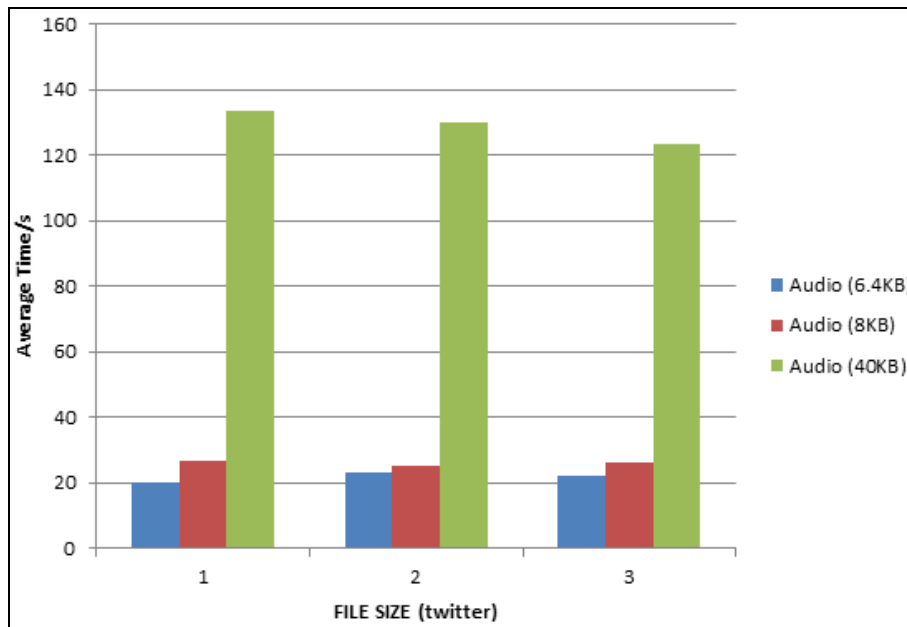


Fig 2: Graph

In Figure 2. one can deduce that audio file of size 40KB took the longest time to access followed by audio file of 8KB before the audio file size of 6.4KB which has the fastest download speed.

Graph of Audio size against Time (Facebook)

Graph showing time taken when a user download audio file from the cloud (Facebook) using Vodafone network with bandwidth of 2GB on a windows 7 Ultimate xp 1 laptop with 2.0 GHz CPU and 2 GB (RAM), an internal memory of 232Gigerbyt (GB), processor: Intel core(TM)2 Duo CPU with Model 766312Uand a 13-bit.

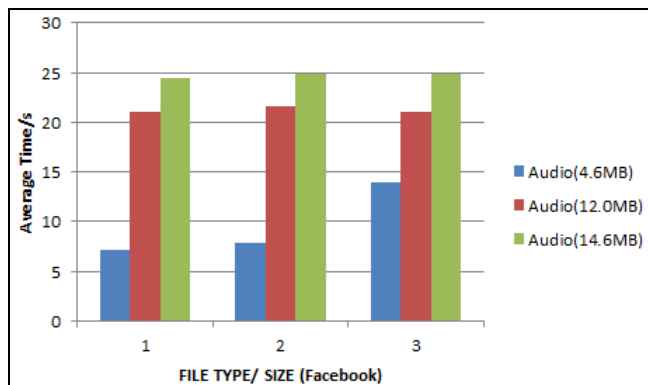


Fig 3: Graph

In the graph of Figure 3. above, it can be observed that in all, the files that downloaded fastest is the audio file of size 4.6MB followed by the file size of 12.0MB before the audio file size of 14.6MB. It means the smaller the audio file; the faster is it to access and vice versa. But it can also be observed from the graph that on Facebook application its takes quite a longer time to download an audio file as compared to twitter application.

Graph of Computer against Time (Facebook)

A graph showing time taken when a user access data from the cloud using different operating systems and a Vodafone network with bandwidth of 2GB

To find the fastest of the three operating systems and how fast it takes to access data from them, the average times of each operating system was calculated and found out the one with the fastest time it takes to access data from each one.

For windows 7 operating system
 $0.41+0.29+0.33= 1.03/3 =0.34\text{sec}$

For Windows XP
 $0.40+0.70+0.52= 1.62/3=0.54\text{sec}$ and

For Android operating system
 $0.12+0.27+0.39= 0.78/3= 0.26\text{sec}$

From the calculations made above it is obvious to note that Android operating system allows fastest data access followed by windows 7 operating system before Windows XP.

It can be deduced from the above that the newer the version of the operating system, the faster it is to access data from it. Looking at the download time of the various files from the different social media it's was found out from the experiment that the size of the various social networks also contributed to its download time.

This can be evident when download the software of a particular social network. For example downloading Facebook application for moboginei a platform that allows the download of applications take quite a long time as compared to other social networks like the twitter rand Hi5. This is because the size of Facebook is bigger than the other two which is twitter and Hi5 therefore taking a long time for the application to be downloaded and also consuming more bandwidth.

On the other hand the features of these social networks also contribute to its size and the time it take to download a particular file from it.

Facebook for example has a lot of features.

All these features are exclusive to Facebook and it contributes to the size of the application.

The features of twitter are not as numerous as Facebook. This has contributed to the popularity of Facebook than the twitter and Hi5.

The few feature of twitter and Hi5 has contributed to its limited size and easy and fast download time.

Hi5 is older than both Facebook and twitter, yet it's the smallest of the three in terms of size. It may be because the developer of this application had not found much uses for it or the basic reason for its development was not that much. Twitter on the other shows news feeds of topical issues on the globe. Graph For Table 3.14

A graph of time as against the operating system of a windows 7 ultimate xp 1 laptop with 2.0 GHz CPU and 2 GB (ram), an internal memory of 232gigerbyt (GB), processor: intel core(tm)2 duo CPU with model 766312uand a 13-bit, a windows xp, 256ghz CPU and internal memory of 256megabyt(MB) and a Huawei android version 2.3.6 smart phone all using VODAFONE network with bandwidth of 20GB.

Graph of OS against Time (Facebook)

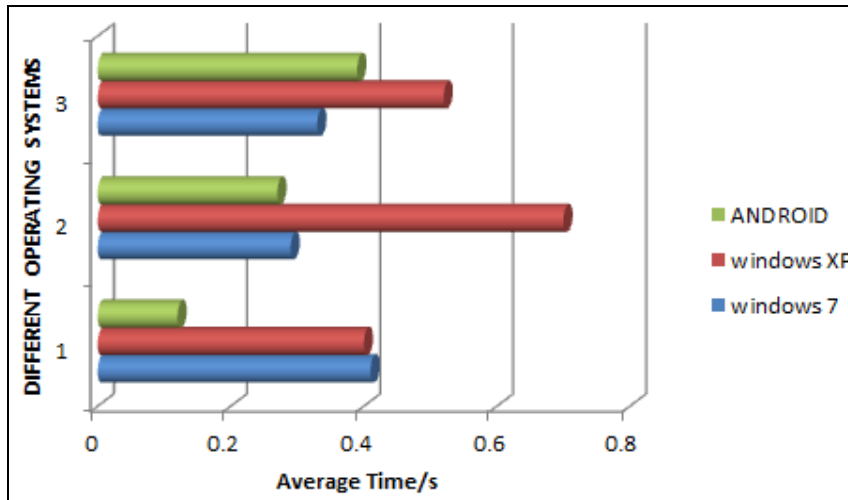


Fig 4: Time as against operating system measures

Looking at the graph above in Figure 4. The smart phone is faster to browse with. It is as result of it small interface and environment thereby taking small amount of data pixels thus reducing the time frame for accessing data from an android operating system phone. Windows XP is slowest in accessing data. It is an older version of windows operating system and therefore it does not support these new social networks very much. It even takes a longer time to lunch as an operating system compared to android and windows 7. Looking at the graph, the time it takes to access data file form a computer with widows 7 as its operating system is

faster than that of windows XP. Windows 7 is quit a current operating system, therefore a possess most of the files necessary to access data for these new social networks.

Graph of Computer Gadgets against Time (Facebook)

A graph of time as against the operating system of a windows 7 ultimate xp 1 laptop with 2.0 GHz CPU and 2 GB (ram), an internal memory of 232gigerbyt (GB), processor: intel core(tm)2 duo CPU with model 766312uand a 13-bit and a Huawei android version 2.3.6 smart phone all using VODAFONE network with bandwidth of 20GB.

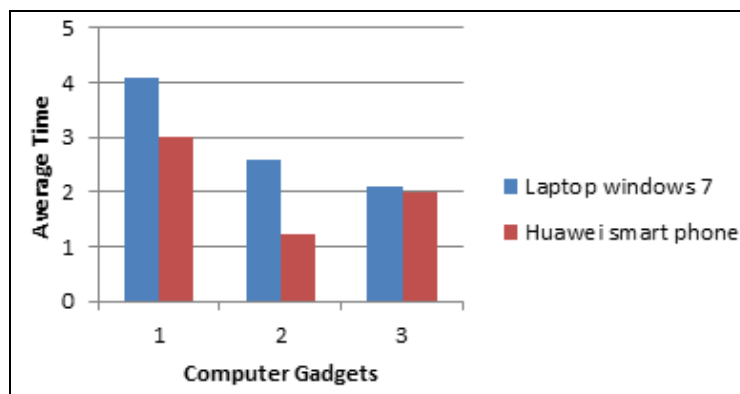


Fig 5: Computer Gadgets against Time

Numion Download Time Calculator

This is particular software for calculating timeframe for a data download. After the size of the file available has been recorded, it is then copied and placed into the space provided in the software which has been labeled filled size. Options are available for the size of the file. Whether bytes, kilobytes, megabytes, gigabytes etc. After that, the calculate button is pressed for the application to calculate the speed

and time which will take for the file in question to be downloaded. The speed is arranged in default starting from 9.6kbps in that order.

An illustration of the Numion Download Time Calculator is shown below in Figure. 5.

This software was also used to calculate the time it took for different files to be downloaded from different computers using different bandwidths.

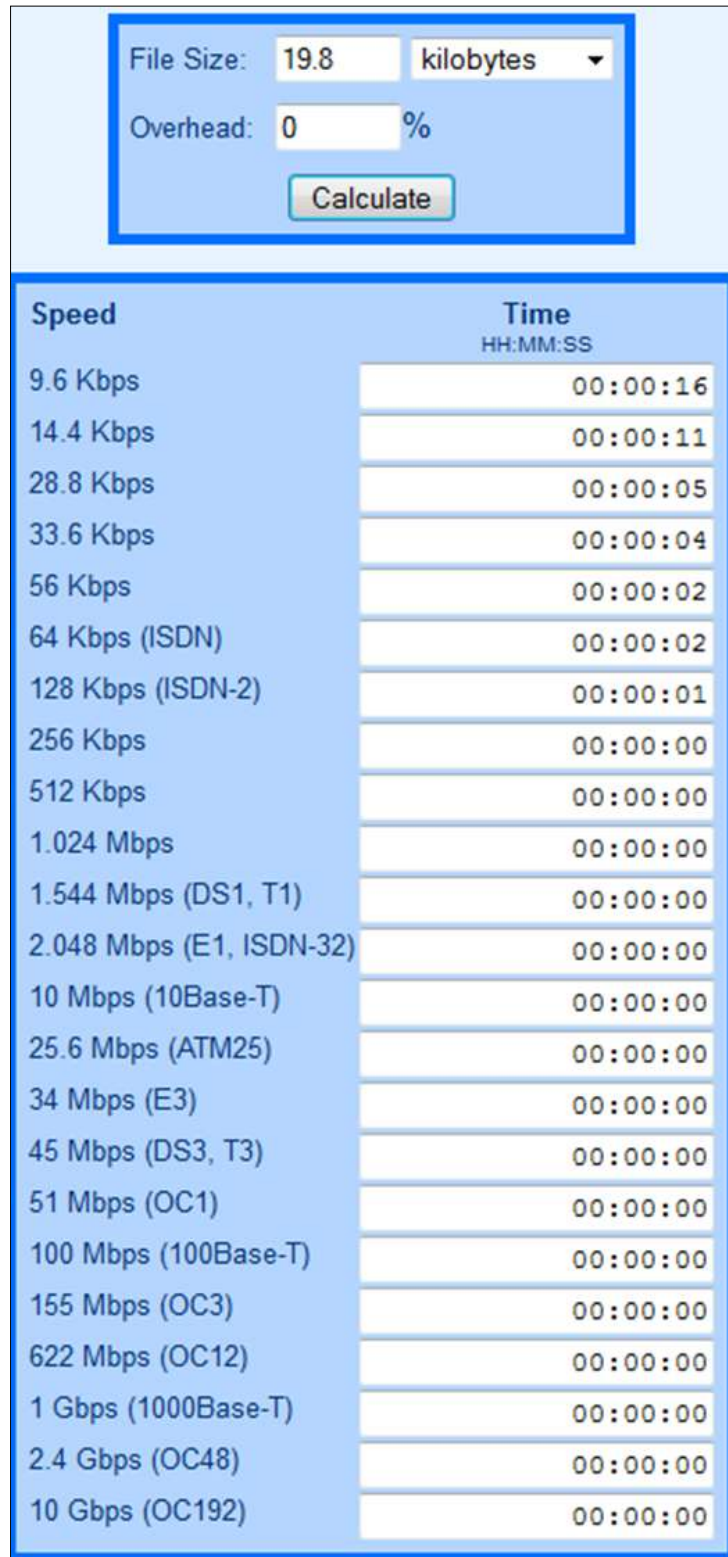


Fig 5: An illustration of Numion download time calculator which calculate the total time and size or bandwidth of an uploaded and downloaded file.

Digital Stopclock

The digital stop clock in Figure 4.16 is the apparatus used to calculate the time it takes to access a particular file audio

from the cloud using Vodafone network and microwave station at some specified distances.



Fig 6: An illustration of a digital stop clock

Conclusions and Recommendations

Cloud computing can bring several benefits for libraries and give them a different future. With cloud computing, a lot of things (platform, software upgrading, and security measures) are taken care of transparently for the library and user.

Recommendations

I recommend the use of Vodafone for browsing as per the simulation done above. It has proved to be the fastest telecommunication network of all.

Current operating system has always proved to be faster than obsolete ones. I therefore recommend the use of the most up to date operating system.

Preferably, a tablet, phablet or smart phone can be used to accessed data as per its interface and web page size, it is faster than computers with large monitors and screens.

Users of social networks and other cloud applications should edit files (audio) they upload or reduce the files they upload onto the cloud to enable faster and easier download.

There is no better time to start than now and no better place to start than with our own valuable collections.

Strong signal strength is needed. It's not easy acquiring a strong signal. Looking at our local signals, a user may have to acquire access to service from an international market which is more reliable.

Additionally a library will need a very powerful and large capacity server and should provide a larger bandwidth to support and carry large files. Hardware needed for this project should be of high specifications, example, the computer hardware must be of an original make and memory not less than 2 gigabytes, a dual core processor at a speed of 2.80 gigahertz and a 32-bit operating system type and a local disk space of not less than 300 gigabytes for computer and 100MB for the smart phone.

References

1. Gosavi N, Shinde S, Dhakulkar B, Patil YD. Use of Cloud Computing In Library And Information Science Field, Pp.52.

2. Greer M, Singh G, McDonald J, Wohl A, Meegan J, Russell D, *et al.* Practical Guide to Cloud Computing, 2011, 5-7.
3. Madden M, Lenhart A, Duggan M, Cortesi S, Gasser U. Teens and Technology, 2013, 13. <http://www.pewinternet.org/Reports/2013/Teens-and-Tech.aspx>
4. Matt, Goldner M. Winds of Change: Libraries and Cloud Computing Product and Technology Advocate, 2010, 5.
5. Mircea M, Ioana Andreescu A. Using Cloud Computing in Higher Education: A Strategy to Improve Agility in the Current Financial Crisis, 2011, 2.
6. Moylan M. Libraries turn to cloud for e-book lending, January 25, 2012, 1.
7. Raice S. Facebook, 2011, 1-5. <http://blogs.wsj.com/digits/2011/12/14/tagged-acquires-Facebook-competitor-hi5/>