Review On Digital Library Application Services Of Mobile Cloud Computing

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Abstract: - In the recent years growth of computer technology contribute to the progress towards the application of the cloud computing. Also the mobile related application, services and mobile device are growing day by day , the mobile devices can use clouds for data processing, storage and do some many thinks to any time any where. Cloud computing is expected to contribute an invention in the mobile cloud. In this paper, the basic concept of mobile cloud computing and its growth also as well as its mobile cloud architecture, and also deal with digital library services and synchronization with mobile cloud application.

Index Terms: - mobile cloud, digital library, services, cloud computing

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1 INTRODUCTION

Today world cloud computing is very vital role play in technology fields, we know the recent growth of cloud computing has expressed its existing in possibility to reshape the current information technology either field software and new deigned hardware. As we say that cloud computing is a technology that expends the internet and central remote servers holding data and application as well. So much benefits, cloud computing extends users a more flexible and easy way to find calculation and storage resources on the requirement. The Cloud computing have been also manifested by the emergence of Mobile cloud computing. We access any information from mobile ends. Mobile devices such as smart phone, tablet, etc. are more and more getting an essential role play in human life. Mobile users collect various services go through different mobile applications, like iPhone apps, google apps, game apps, etc.; those services run on devices. The rapid development of mobile computing gets a very powerful in the growth of IT technology as well as commerce and industry fields [1]. In current and future the mobile cloud computing will be a main division of the development of cloud computing. Mobile cloud computing trusts on a machine-to-machine computing model, mobile device contract work out their computing chores to the cloud [2]. Mobile user wants the internet without the limitation of fixed equipments. Mobile cloud computing offers 'any time anywhere' concept and provides mobility services to the user. The requirement for the mobile application services is also increasing day to day, which demand much more resources to be allowed in to make the user experience more improve and easily available services.

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Resource available on the cloud computing platform is Google, Amazon, Microsoft Azure, etc. Deployment of internet, wireless networks and greater extent smart phones, Users are utilizing mobile phones to access internet applications and services. Cloud computing is a power to perceive as the future of mobile [3]. The anchorages of today's world electronic technologies, mobile wireless devices have step by step become more and more popular and powerful in terms of processing, data storage, communication capacity and faster Inter- net access. Mobile cloud computing expresses possibility open the cloud computing business market that is current time period nearly exclusively covering business to users and they will gain significantly. Mobile cloud computing is a well compelling recognition concept that directs at using cloud computing techniques for storage and processing of data on mobile devices, thereby cutting their limitations [4]. The user use mobile device will finally be the benefactor of the mobile cloud computing, we see a great number of new features enhancing in a mobile phone today due to mobile cloud computing.

2 Related Work

Current growth and extension of cloud computing and mobile computing, mobile cloud computing as a new phrase has been invented since 2009. Recent past research has been brought into focus on Cloud computing for mobile devices [5]. Which changes active and running application among resource constrained devices and Internet based clouds. The basic problem of assuring the integrity of data stored in cloud computing [6] [7]. An economical cloud computing model is delivered to make up one's mind how to manage the computing tasks with a given shape of the cloud system [8]. Computation offloading is the to the highest degree widely used technique to figure out the resource poverty problem of mobile devices in mobile cloud computing environment [9] [10]. Karthik et. al [11] indicates that cloud computing could with a possibility of becoming actually save energy for mobile user, but not support all applications are energy effective when region to another cloud. It depends on the computation saved due to offloading outperforms the communication cost. Examine and note the similarities with offloading a whole application into the cloud, a partitioning scheme is able to achieve a fine granularity for computation offloading [12] [13].

3 Mobile cloud computing and Development

Today world they look like mobility so everyone wants to access information and application everywhere,   an incredible growth mobile device collecting information is very easy. Mobile cloud computing focused are most of the time accessed via a mobile web browser from a remote web server.   Those devices such as smatphone, PDA, laptop, GPS Navigation with a variety of mobile computing ETC. Those mobile devices have been consented by more and more people day by day. Mobile cloud computing it is described as a form of human-computer interaction by which a computer is expected to be transported during normal usage [14]. Mobile cloud computing need communication through wireless technology like WiMax, WIFI, Xbox Wireless Adapter, Linksys 802.11g Wireless Bridge Ad Hoc etc; also software and hardware. According to Google CEO Eric Schmidt In 2010, regarding mobile cloud computing define as " based on cloud computing services development, mobile phone will become increasingly complicated, and evolve to a portable super computer" [18]. And today will see an ever increasing people work on smart mobile phone day by day and manage data throw mobile device. The Android operating system will continue to be the leading smartphone in 2012, accounting for approximately 50% of worldwide market share, iPhone with 18%, Windows with 13% and blackberry with12% [19].   According to 'Visiongain' mobile cloud services to reach &45 billion in 2016. The one of the main sources of revenue shares will come from mobile cloud apps. Enhancing the smartphone, the growth of 3G network and also deployment of 4G/LTE services. Moreover, new technology enhancements such as BONDI, OneAPI and HTML5 will further enhance the development of cloud based mobile applications [19].
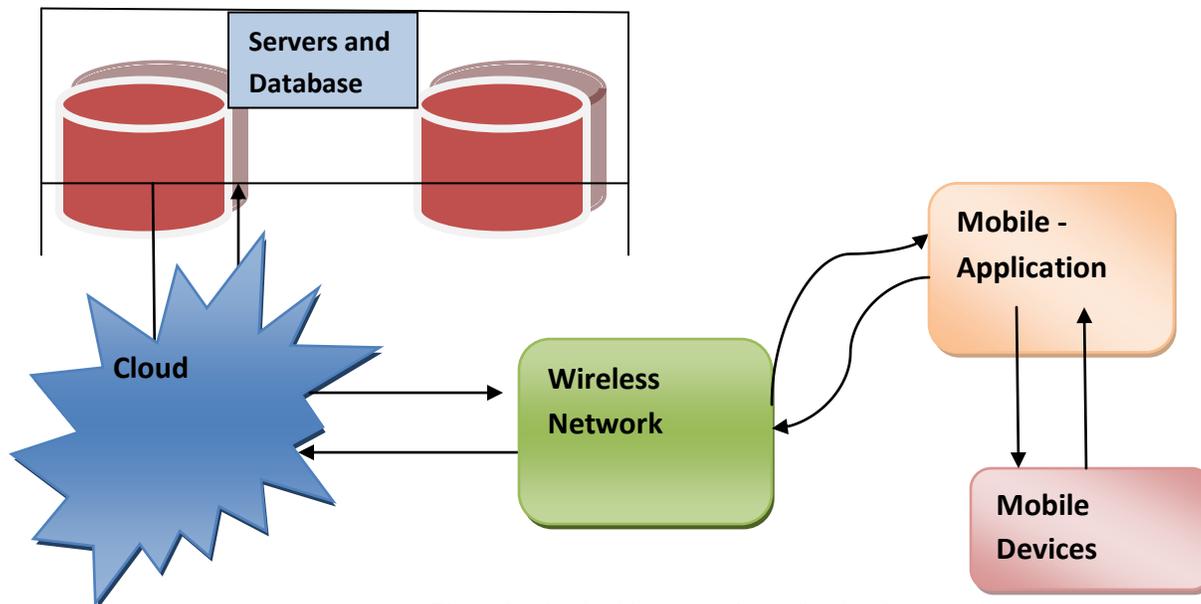

Fig.1 Basic Architecture of mobile cloud computing

4 Mobile application of digital cloud computing

The mobile cloud computing is very popular as a portable service design   day to day life , the mobile application exercise a very vital and adapted to afford protection role play in the cloud computing performance services . And those applications manage the digital libraries below the cloud networks. The mobile application is made into a whole as a comprehensive category of the resources of digital libraries, arriving at the transferred services to the users by the internet at any time any where, all of every services are working with mobile devices and the networks of wireless . Some role digital libraries and their function are listed below.

	Description
Processing	The digital libraries provide Facilities to transfer all king of information to the user.
Centralization	Digital libraries also help to allocate all information on one platform for easy to retrieve data.
Data protection	The data and all programs of a libraries run and store under the cloud, this resource manages all information in the cloud computing environment.
Virtual platform	Virtualization is a one of the main requirements of the cloud computing environment. Cloud computing technologies include the virtualization, distributed, parallel, WEB X.0 and other technologies [17].
Data Setting	The cloud computing environment should allow for a good data security mechanism . To protect the information all time through change the setting if user need.

Table 1. cloud digital Libraries

5 Mobile Cloud Applications libraries

Mobile cloud computing services are established on data synchronization, in the cloud computing domain many services available in each layer like IaaS, PaaS, and SaaS and change the mobiles for raising their functional capabilities. Cloud services can be obtained as SaaS using mobile devices, if the any vendor allows for a WAP subject for bearing the service via a web browser. Belonging to common mobile devices SaaS includes those services issued by vendors such as Google, Facebook, Apple, Amazon, etc. The growth of mobile application that calls for the use of cloud service in the basic structure degree is fixed in the set of tools allowed for for each specific cloud vendor. The Apple, Google, Amazon cloud is the most prominent cloud providers that change the consumption of cloud services from a mobile handset, those solutions are formed with their own mobile platforms like Android, IOS, Etc. In place of conformity open standards in cloud computing technologies, many open source communities have growing libraries that enables the communication with product clouds. These libraries are unsatisfactory documented and in some cases are not adapted for an occasion for spreading within the mobile platform. These are the some library services

Jets3t:- this is Java toolkit and application service, developed by James Murty for retrieving the simple storage service of Amazon [15]. New version of Jets3t also enables accessing the google storage services. It also allows for and support connecting S3 applying the android platform.

Amazon API:- Amazon native APIs that integrated with the Eclipse environments for the growth of applications. That type of tools allows for connectivity with services such as EC2, EBS, etc. those sets of library services exactly the API for accessing S3 application integration of the Android operating system.

Jclouds:- is also an open source library service, that directs to and affirm for accessing multiple clouds. The new version of Jclouds supports the Amazon, vCloud, Azure etc. one drawback of Jclouds library services is not compatible with every mobile operating system is only used for the growth of complete web applications.

Typica: This library service basically uses computational of Amazon EC2 and Eucalyptus, and Typica library use with Jes3t for developing rich application based on the uses of the cloud services. Because this service is not direct support for mobile operating system.

6 Synchronization in Mobile Cloud Services

The internet or cloud is expected to run on the mobile platform, and expectation concentrated in the data synchronization services. The main advantage of the synchronization of the cloud is data appropriating the centralization storage service , to the help this service is via synchronization markup language communications protocol in a way that authorizes the handling of real-time information from the mobile handset [16]. SyncML (Synchronization Markup Language) is a for a platform-independent information synchronization standard. SyncML is most usually thought of as a use to organize a systematic way to synchronize contact and calendar information among Mobile device and computer. The purpose of SyncML in mobile cloud computing is to alter and extending an open standard as a substitute. The first of a series of actions originally assemble to grow a uniform synchronization protocol controlling on any an instrumentality invented for a particular purpose over the

218

network and between the several vendors' products. That protocol was main aimed to allow for defend for a wide scope of curries and media types. Some of the more popular vendors those provide synchronization services are Memotoo, Funambol, Rseven .

Memotoo- With the help of mematoo synchronize data automatically with the web services like google, yahoo etc, and store, deal and share your personal information and access very easy manner of any mobile devices with internet connection. We can use these services with the Internet, either without deviation or through an any internet Service Provider.

Funambol- this is an open source framework for the synchronization of data between the mobile devices and a cloud computing. Funambol changes the synchronization of personal information. The funambol synchronization capable of serving a purpose well trusts on the framework layer since controls the synchronization engine completely with the implementation of synchronization markup language (SyncML) that alters the mobile devices linking to the any synchronization service.

Rseven- is providing mobile phone backup services. Through rseven archives all the data entered by our mobile phone devices into a any web page. And we can also communicate with people and share any information and store image, contact etc.

7 Conclusions

In this above analysis, we have presented a comprehensive overview of mobile cloud computing and basic structure, the growth of mobile cloud. And discuss all kinds of resources in the digital library services. Mobile cloud computing is growing very fast in recent years every vendor provides the best service to users. Android Smartphone are most popular operating system now days near about 50% of the market are covered . Mobile cloud computing will provide so many service's to the mobile users and application business ventures. The unique advantage of the digital libraries and their function in the aspects of the role is processing, Centralization, Data protection, Virtual platform and Data Setting.

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