

# **Privacy and Data Storage Processing In Mobile Cloud Computing**

Abraham Biable,

Dean of Engineering and Technology , Bule Hora University,Bule Hora,Ethiopia ,Africa, abrham.biable@gmail.com

# Abstract

Mobile cloud computing (MCC) is a technology which produced to architect application design, privacy content presentation and storage cover without the use of mobile operating system. They are performed through the internet. Before the arrival of mobile computing -smart phones are not act as his specified name. Because lot of storage issues, privacy problems, most importantly data's are hacked by the hackers through the mobile applications. This problems are overcame by the MCC as one of the part of cloud computing. Most important thing is they are wireless connected networks. The advantage of using MCC is they are developing the user friendly mobile applications. In this article we are discussing about how the data's and files are firmly secure in the mobile cloud computing.

Keywords: Mobile Cloud Computing, User friendly, operating system, Internet.

# **1. Introduction**

Smart phones are handmade computer of the human beings. It is the phenomenal one to artificial Intelligence (AI).But the problems in smart phone devices are privacy and store the large amount of data. The Reason was mostly all the smart phones are in secured one, because every smart phone had a private mobile application. In that application ethical hacking concept plays a gamble with mobile devices. This may cost the loss of privacy from the user. Mobile cloud is the only available option for the user to avoid hacking privacy. The Mobile Cloud Computing (MCC) service is made up of three categories .It is Smart Mobile Devices (SMD), Internet Wireless Technologies and Computational cloud. SMD prefers wireless network technology such as 4g, LTE or any other networks to manage the uses of computational cloud in mobile surroundings. Screens are placed in bigger and more attractive features. Functionality performance is raised through the number of network interfaces by using mobile cloud applications. Most of the smart phones had no long last more than 13 hrs without getting charged. Then several of these issues would be resolved by the hardware to the help of some powerful batteries. So there is need of some software like smart sensor by the preference of network connection to resolve those issues. If mobile malware hadn't displayed too many titles, with clear that of most applications are deployed. Therefore the mobile applications would be theft by the hackers. In recent years the development of SMD is overcame from the group of net



books, note books and desktop. More often business like smart phones buying and trading is growing faster than before. The platform of mobile application in MCC is also popular among the users. Everyone wants the smart phones are worked with MCC, because most of the problems are solved by this network. Nevertheless the demand of mobile computing is rapidly raised in the market. Every mobile user's have a unique problem of storing large amount of data's and information in privacy mode. At that time cloud computing announces a model of mobile cloud computing had overcame the problems for Smart Mobile Devices. Designing a application, implementing a process of developing application is the some of the biggest strength in mobile cloud computing. Internet is the interaction between MCC and SMD.

Some of the big advantages of mobile computing are

- Solving big storage problem
- Protecting your data from hackers
- Also secure your applications effectively

# 2. Literature Survey

In [1] it implementing an integrity checking by the way of third person auditions. This paper proposes the support of CBC, PHC and Homomorphism way of checking for data integration. No more data structures are not needed for cloud service provider to supports data operations. Finally the experiment limited up to (1TB) is act on the service and accessed with the frequency of (95HZ).In [2] point out the first K-Out-of-n framework enables the energy reliability and fault tolerance problems. System processing of the solution on the hardware was settled. Extensive simulating process in large scale networks provides the efficient of the solution.

In [3] proposed system targets the lowest overhead for consumers with secure the relevant public integration checking issues. In this process, the issue of public verification in cloud storage is exposed and data verification by the preference of TPA is secured under trusted domain.

In[4] this paper describes the evolution of smart phones, compact design, wireless networks of SMD and costlier local services for shared applications deployed in Mobile cloud computing. In [5] GPMCC system is developed with the reference of cloud services to implement mobile cloud platforms. It is used to develop and manage secured data's form mobile applications. In[6] This paper proposes the implementation of designing apps in Mobile cloud computing and also resolve the problems of storage and privacy issues in smart mobile devices(SMD).In mobile cloud computing data security and data storage is so effective while controlling problems. In [7] the integration of HWN and P2P signals are makes the huge difference in mobile cloud computing.



Using this module information's and data's are most often stored in the cloud services. In [8] In Business cloud computing marketing growth has rapidly increased day by day. By the process of mobile cloud computing, it delivers a some impact services to Smart Mobile Devices(SMD).In[9] The International Data Corporation(IDC) testing the process of SMD consumers as they do searching the engine query, then using the social media for developing the culture of mobile computing.

In [10] the proposed system of this paper is using the J2ME equipment and JINI technology. It is used to protect the network and secure the data's from entrusted client authority. Mobile server is raised the technology of JINI which process is to store dynamic data's. In [11] Encryption process is available for this paper due to the reason of security issues. The proposed system is to develop a properly efficient SSA model. The main algorithm for SSA model is the important one to securing data's and structure. In [12] the Lab Ware based android devices developing is the proposed system in this concept. The target of Lab Ware is motivated about CS tutorials and also willing to make student learning. In [13] the services of mobile computing process are more talk about this concept. The way of synchronization act in this process is remarkable. In [14] this paper is talk about the concept of mobile application with MCC in E-Learning environment. It works on the range of maximum priority to the Smart Mobile devices. In [15] research of cloud computing and mobile computing is the proposed process in this paper. It talks about the value of CC and MC in other countries. Virtualization concept also belongs to this proposed model.

# 3. Proposed method

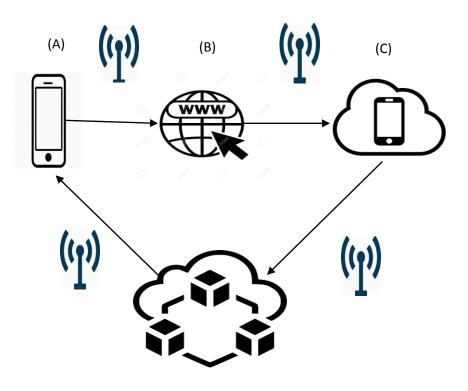
Mobile cloud computing (MCC) has done the remarkable job of making the smart phones are secured one. The architecture of mobile cloud computing to smart phone devices through the network has shown in the below figure 1.1. Mobile computing can be classified in to five modules. It is mobile cloud module, privacy module, storage module, virtualization module and data's & information module.

# 4. Implementation Steps

### 4.1 Mobile cloud

The ultimate target of mobile cloud is performing the mobile as rich and secure. It has done the fabulous job of making mobile as the likes of super computers. The job of super computer is working as the platform of big data's storage. Super computers are used in spaces and military services .If the big data's needed, then super computers come to overfill the problems of large data storage.





(D) Figure 1 Architecture of Mobile cloud computing

where A-Smart mobile devices

**B-Internet** Connection

C-Mobile Cloud Computing

D-Cloud data storage

(1) -Wireless network.

#### 4.2 Privacy

When comes to smart mobile devices (SMD), the mobile applications are made a problems with user. One of the important problems is privacy. Every user needed a privacy of own files or data's. In normal mobile devices problems are come from the mobile application, because in every mobile application had a cookies, it is easily extract your files to the admin of that application. So privacy is the very important one to the Smart phone devices.

#### 4.3 Storage



Smart Mobile devices are so familiar in recent times. At that period its job is trying to overcome the drawbacks of storage problems. In every smart phone users have bigger concern in storage issues? They want to store a large amount of information's and data's in the smart phones. Mobile cloud is the only way to overcome these issues. Because in mobile cloud, storage availability is so efficient while compared to other networks.

#### 4.4 Virtualization

In cloud computing, virtualization is the most searchable technique searched by the users. Because it is worked on share or receive data's without the help of the operating system. By the use of internet virtualization is possible way to transfer your data to worldwide users. In Business point of view virtualization concept is very important one to the global users.

#### 4.5 Data's and information

In Mobile cloud computing, data's and information's are the important services to the Smart Mobile Devices (SMD). The connection between SMD and MCC over the internet is the relevant one to the interest of users. Sometimes users wants cloud service providers to brought a service on authentication based environment, because in that environment data's and file's transaction is so secured and protected. The connection between Cloud Service Provides (CSP) and cloud users are makes a powerful surrounding to the clouds nature.

#### 5. Result and discussion

Comparatively Mobile cloud computing (MCC) are the best possible way for Smart Mobile Devices (SMD) to deals with it. Because composure in cloud computing is remarkable one for smart phones. Talk about the alignment of phones, designing process, development process, and secures mobile applications are run through the mobile application efficiently. Drawbacks of mobile computing are lesser than the benefits of Mobile cloud computing. The biggest advantage of Mobile computing is user friendly development service. As discussing about the process of cloud computing, is it has auto replication model. Then there is no interruption in work. Then it is shutdowns the process of free maintenance of cloud. Talk about the cloud computing, web hosting is the one of the service provided by Cloud Service Providers. Hosting refers to the process of moving some documents for public figure in the internet. It also refers to moving ERP applications to internet for distributed branch operations access from anywhere in the world. It includes multi-device capability likes personal computers, tablets and smart phones. Before the arrival of cloud computing web hosting process is so difficult for developers. Lot of steps is path to host a websites in internet. The following steps are first to buy a server, then maintaining a traffic control and monitor checking. Then gives a security options and you have to wait for updating your websites every week or every month provided by the developer. Software services are also the important features of cloud computing. For an example user wants to buy an original version of the software (Photoshop) for the need of designing



process. The paid cost of that software was too high, but in cloud computing the amount of cost in buy software was lesser than the other networks. The difference between Traditional data center and cloud data center as show in the figure.2

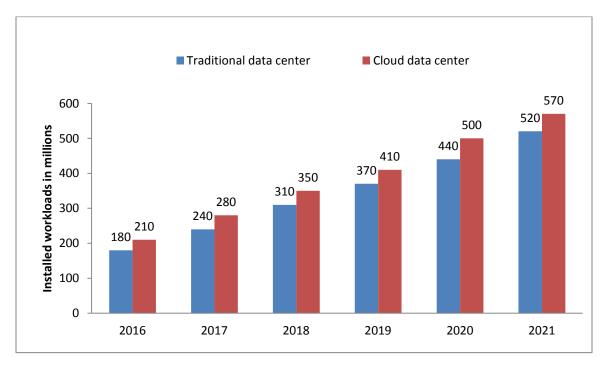


Figure 2: Difference between Traditional Data center and Cloud Data center

# 6. Conclusion

Living in the age of computer science, Mobile Cloud computing has the vital role for Smart Phone devices to perform as a rich and secured device. As a unit of cloud computing storage problem solving is the important one for the client authority. Because modern day period, data's and file's are stored in large size-so lot of super computers had needed at that time Cloud Service Providers make a right call to solve this problem efficiently. In this paper, talk about the concept of mobile cloud computing also a needed way of approaching a smart phones are so smart about the mobile applications noted on high.

# References



- [1] Krithikashree, L., Manisha, S. and Sujithra, M., "Audit Cloud: Ensuring Data Integrity for Mobile Devices in Cloud Storage," in 2018 9th International Conference on Computing, Communication and Networking Technologies (ICCCNT)July.2018, pp. 1-5.
- [2] Chen, C.A., Won, M., Stoleru, R. and Xie, G.G., "Energy-efficient fault-tolerant data storage and processing in mobile cloud" in IEEE Transactions on cloud computing, 3(1), 2014, pp. 28-41.
- [3] Suguna, M. and Shalinie, S.M.,, "Privacy preserving data auditing protocol for secure storage in mobile cloud computing", International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET), pp. 2725-2729, Mar. 2017.
- [4] Shiraz, M., Gani, A., Khokhar, R.H. and Buyya, "A review on distributed application processing frameworks in smart mobile devices for mobile cloud computing." in IEEE Communications Surveys & Tutorials, 15(3), 2012, pp. 1294-1313.
- [5] Shravanthi, C. and Guruprasad, H.S.,, " Mobile Cloud Computing as future for mobile applications" in . International Journal of Research in Engineering and Technology, 3(5),, 2014, pp. 2319-2322.
- [6] Bahrami, M.,, ". Cloud Computing for Emerging Mobile Cloud Apps", 3rd IEEE International Conference on Mobile Cloud Computing, Services, and Engineering, 2015,pp. 4-5.
- [7] Larosa, Y.T., Chen, J.L., Deng, D.J. and Chao, H.C., "Mobile cloud computing service based on heterogeneous wireless and mobile P2P networks", 7th International Wireless Communications and Mobile Computing Conference, 2011, pp. 661-665.
- [8] Hlatshwayo, C.M. and Zuva, T., "Mobile public cloud computing, merits and open issues", International Conference on Advances in Computing and Communication Engineering (ICACCE), pp. 128-132, 2016.
- [9] Mascolo, C., "The power of mobile computing in a social era", IEEE Internet Computing, (6),pp. 76-79, 2010.
- [10] Hu, W.B. and Meng, B., "Mobile server: an efficient mobile computing platform based on mobile agent", Proceedings. 2005 International Conference on Wireless Communications, Networking and Mobile Computing, 2005,pp. 1339-1342.
- [11] Hani, Q.B. and Dichter, J.P.,, "Secure and strong mobile cloud authentication.", SAI Computing Conference (SAI) ,2016,pp. 562-565.



- [12] You, W., Qian, K., Lo, D.C.T., Bhattacharya, P., Chen, W., Rogers, T., Chern, J.C. and Yao, J., "Promoting mobile computing and security learning using mobile devices.", IEEE Integrated STEM Education Conference,2015,pp. 205-209.
- [13] He, W., Li, H., Cui, L. and Lu, S., "Maximizing the Availability of Process Services in Mobile Computing Environments", 2016 IEEE International Conference on Services Computing (SCC),2016,pp. 483-490.
- [14] El-Sofany, H.F. and El-Seoud, S.A., "Studying the effectiveness of using mobile cloud computing applications in learning", International Conference on Interactive Mobile Communication, Technologies and Learning (IMCL), 2016, pp. 17-23.
- [15] Qi, H. and Gani, A., "Research on mobile cloud computing: Review, trend and perspectives", Second International Conference on Digital Information and Communication Technology and it's Applications (DICTAP) 2012, pp. 195-202.