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Mobile Cloud Computing and Issues and Solution

Sneha Rajbahadur Pal

Department of MCA SEM IV, ASM IMCOST College, Near Mulund Check Naka,Thanewest,opp.Aplab,Mumbai, Maharashtra 400604.

ABSTRACT:

In the previous couple of years, mobile devices support differing kinds of applications, several of that need high computing power. This can be thought about a haul since mobile devices give restricted computing power, storage, and energy. Fortunately, cloud computing (CC) is speedily changing into referred to as the computing world's latest technology. CC permits users to use unlimited dynamic resources once required. Mobile Cloud Computing (MCC) integrates the idea of cloud computing at intervals the mobile environment, which removes barriers related to mobile devices' performance. These edges of MCC aren't utterly problem-free.However there are still many challenges facing MCC that has to be addressed in order to alter omnipresent readying and adoption. Cloud computing is one among the rising technology during this fashionable era. Some years back, this idea was involving solely easy desktop computers or personal computers and static information centers then on however currently analysis goes on to implement this concept to mobiles also. So, in this paper, the concept of cloud computing as a general is given, followed by concept of mobile computing in conjunction with the overall problems and resolution that are making hindrances in finishing this technology.

Keywords —Mobile cloud computing, computation offloading, energy consumption, heterogeneity, bandwidth, security, privacy ,solution.

Introduction:

The use of mobile devices has big globally, and it became a necessary a part of our lives. The amount of users across the planet for mobile devices comparable to smartphones reached up to 3.2 billion **so** on. Nowadays, users will edit their documents, do searching and social networking while not mistreatment computers. Not like computers, mobile devices have limitations like restricted battery life, very little bandwidth, less storage capacity, and restricted processing. As an answer for these limitations, Mobile Cloud Computing (MCC) was introduced. MCC is "a made mobile computing technology that leverages unified elastic resources of various clouds and network technologies toward unrestricted functionality, storage, and quality to serve a mess of mobile devices anywhere, anytime through the channel of LAN or the net no matter heterogeneous environments and platforms supported the pay-as-you-use principle." Besides, MCC has different blessings as flexibility, multiple platform support, knowledge availability, price efficiency, data backup and recovery. For instance, mobile apps like Amazon, Facebook, Gmail, and Uber, store and method user data and other data by hiring cupboard space and platform from cloud service suppliers.

Background of Mobile Cloud Computing

MCC design as well as 3 layers: mobile user, network, and repair provider. Outline the foremost common service models that are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and computer code as a Service (SaaS). Then, illustrates the advantages of MCC. A. MCC design the overall architecture of MCC shown in Figure 1. It includes **3** main layers: mobile user layer, mobile network layer and cloud service supplier layer. Every layer illustrated as following:

•**Mobile User Layer**. This layer consists of cloud service users. Users use mobile devices comparable to smartphones, tablets, and laptops to attach to Mobile Network Layer via Wireless Access Points (WAPs), Base Transceiver Station (BTS), or satellite.

•**Mobile Network Layer.** This layer handles mobile users' requests and information by mobile network operators. oncereceiving the users' request, the mobile network operator provides services comparable to authentication, authorization, Associate in nursing accounting (AAA) supported the house agent (HA) and users' data keep in databases. If authentication and authorization succeed, the mobile network operator delivers the mobile users' requests to the cloud through the Internet.

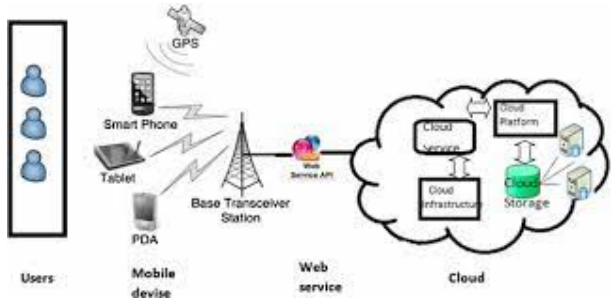

Fig.1. Mobile Cloud Computing

•**Cloud Service Provider layer**. This layer consists of multiple cloud service suppliers that method the users' requests to prodeuce the corresponding cloud services. Cloud services provided to users embrace IaaS, PaaS, and SaaS.

MCC Service Model: The most common mobile cloud service models are IaaS, PaaS, and SaaS. Each model offers different services:

•**IaaS**. This model offers an infrastructure to users comparable tostorage, servers, and networking **elements** and delivers it as a service over the network. Amazon Elastic could be an example of IaaS.

•**PaaS**. This model offers a sophisticated integrated atmosphere for users to build, test, and deploy their applications. Some samples ofPaaS are Google App Engine and Microsoft Azure.

•**SaaS.**This model provides applications to multiple users as a service on-demand. Examples are Google Apps such as email and word processing.

MCC Benefits

MCC is a term that rise exponentially within the last ten years, mobile cloud applications move the computing power and data storage from mobile phones into the cloud, that open new way to service and application on mobile devices. MCC could be a important technology since it combines the benefits of each mobile technology and cloud computing, to be able toprovid the simplest services to mobile user, MCC support reached a good vary of applications as in mobile commerce, mobile banking, andaid and areas. During this we will enlist a number of the advantages in having MCC.

• Overcome the constraints of mobile devices above all of the process power and data storage.

• extend the battery life and process power of mobile devices.

Issues and Solution of MCC

MCC Issues	**Solution**	**Objectives**
Computation offloading	1Service work flow in mobile cloud computing	offloading strategy for interdependence services with respect to user quality and fault tolerance to attenuate execution time and energy consumption
	2.A context sensitive	Algorithm to create appropriate offloading choices supported network
	3. offloading scheme for mobile cloud computing service	condition, device information, and therefore the availableness of cloud resources to minimize the execution time and energy.
Bandwidth	1.Information measure power assisted P2P media streaming for bandwidth unnatural mobile subscribers	The planned design permits mobile users settled within the same location to share the restricted information measure between them.

	2.Dealingproblems with Mobile Cloud Computing victimisation 5G Technology	Provide protocol supported based on 5G technology to extend bandwidth in heterogeousness in mobile devices.
Energy consumption	A quick-reaction framework for multi-person computation offloading in mobile cloud computing	Framework that uses agent between mobile devices and therefore the cloud to retrieve the offloading decision and results quickly minimize energy consumption, and scale back communication burden.
Privacy	1.A Light- Weight Permutation primarily based totally Method for Data Privacy in Mobile Cloud Computing, in Mobile Cloud Computing Services	A light-weight data privacy protective method, the answer centered on data security, using a pseudo-random permutation method.
Security	1.A New Secure Mobile Cloud Design	An architecture planned put in elements on each aspect the cloud the mobile to ensure the integrity of application and communication.
	2.On cloud safety attacks: a taxonomy and intrusion detection and hindrance as a service.	Presented a cloud computing model with various choices to include intrusion detection techniques in numerous layers.

Conclusion:

Mobile cloud computing is one of the new and major rising technology during this space of recent scientific age because it provides several services like saas, iaas,pass in terribly simple and economical very easy and efficient way to mobile users. However, so as to create this underneath method technology good and complete foremost necessary problems relating to its security, implementation, providing quality of service should be self-addressed and resolved once for all as nobody will compromise with these basic services of his/her data. Although, researches are happening within the same domain it wants additional efforts. During this paper, conception of mobile cloud computing and major problem in implementing this technology is addressed there's heap of future work to be tired this tired this terribly domain. Initial stress are often ordered to boost process performance and battery performance whereas capital punishment massive and memory intense applications. There is lot of future work to be done in this very domain. Initial emphasis can be laid to improve processing performance and battery performance while executing large and memory consuming applications.

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