



# MOBILE CLOUD COMPUTING AND ITS ARCHITECTURE

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## Abstract :

Mobile cloud computing makes it possible to access apps, services, and data from anywhere at any time via smart phones, tablets, and other tablet devices. Mobile cloud computing enables users to create applications for mobile users by using cloud computing technologies and a mobile device. Using a case study approach, this article examines how mobile users interact with a cloud-based applications and discusses its benefits.

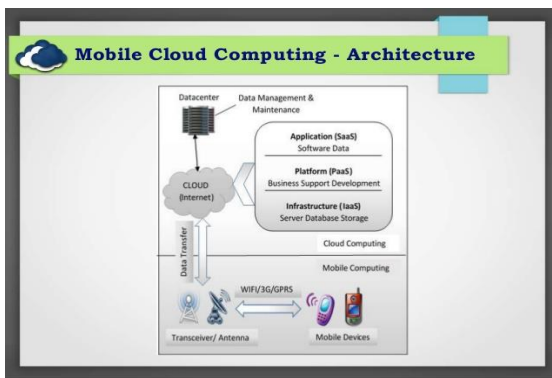
## Keywords:

Mobile cloud computing, Internet, Cloud Computing, Mobile users

## Introduction:

Cellular cloud computing, also known as mobile cloud computing, is the combination of mobile network with cloud computing[1,2]. When it comes to mobile cloud computing, there are no complicated setup requirements and all data is processed on the cloud[3]. A number of different mobile networks provider were launched. Cloud computing services are given by service providers such as Vodafone and other large corporations. Cloud computing, Wireless technology and

Mobile device are the different components of mobile computing. Mobile devices are limited in terms of their resources, including their hardware, operating system, and user interface. WLAN, WiMax, and GPRS are examples of wireless communication access technologies that are available. Security is one of the most pressing concerns when it comes to cloud computing. Effortlessly addressing the security problems associated with mobile and cloud computing is essential[4]. Mobile computing makes advantage of the virtualization of resources in dispersed computers to enable mobility. Google Maps, Gmail, and the Mobile Navigation System are just a few of the mobile computing services available. Mobile Cloud computing offers users with the most efficient services possible. According to [5, 6, 7], data processing is controlled outside of the mobile device in Mobile Cloud Computing (MCC).

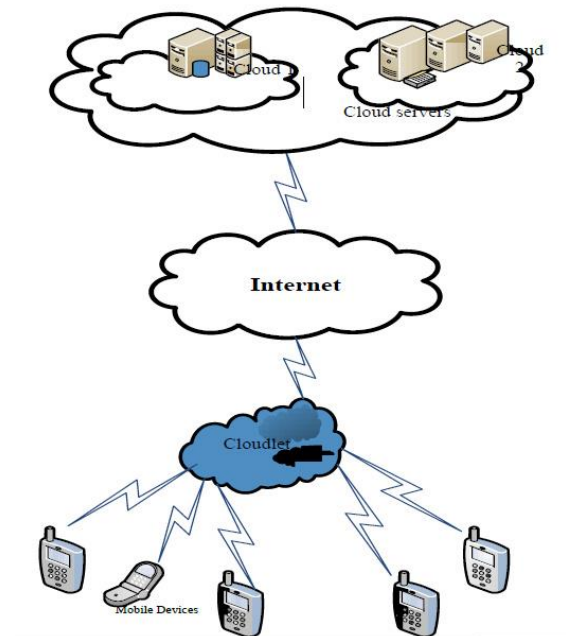


**Fig 1: Mobile Cloud Computing Architecture**

The mobile network service providers transport the requests from the mobile strategies to the cloud through the internet, which is managed by the cloud computing platform. The request is handled by cloud controllers, and the answer is sent to the mobile users. [8,9,10,11] Various layered architectures are presented in order to construct applications, to enable APIs, the multiprogramming notion, and to support business services. Mobile Cloud Computing is separated into four layers: the data centre layer, substructure as a service (IaaS), stage as a service (PaaS), and software as a service (SaaS). Data centres are the foundation of mobile cloud computing (SaaS).

### Cloudlet Architecture:

Cloudlet is a group of computers that may be made accessible to mobile devices in the immediate vicinity. Cloudlet eliminates the problems associated with poor bandwidth and latency. When using a non-cloudlet architecture, the mobile device communicates with the cloud directly rather than via cloudlets. It is made up of three parts: the cloud, the transmission channel, and the mobile client. Cloudlet design is able to overcome the shortcomings of non-cloudlet architecture in terms of latency and bandwidth. Data is duplicated in cloudlet architecture, which is simple to set up and maintain.



**Fig 2: Cloudlet Architecture**

### Advantages of Mobile Cloud Computing(MCC):

MCC extends battery life time, enhances treating power, improves scalability and consistency, is simple to integrate, and provides multitenant support, among other benefits. It enables the mobile user to admission data from the cloud at a lower charge than previously possible. It allows for lively on-demand reserve provisioning.

### Applications:

M-Learning enables user to quickly acquire new skills and get access to more resources[12].

It is possible to use MCC in M-Healthcare, which allows anyone to get patient health records in a timely manner[13]. It is possible to use M-Commerce in the business world, which integrates mobile devices with cloud computing technology[14]. Game players can save energy by using M-Game, which allows them to play games[15,16,17].

MCC has a number of issues to deal with:

One of the most serious problems in MCC is a lack of available bandwidth.

The difficulties of scalability and availability are the two major concerns with MCC.

## Conclusion

This study proposes an architecture for Mobile Cloud Computing, which is a hybrid of mobile computing and cloud computing that integrates the two technologies. A discussion has also taken place on the many services offered by MCC. A discussion of the merits and cons of MCC and its application has also taken place.

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