

Allocation of Resources through Online Mobile-Edge Cloud Computing

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Abstract

Cloud Computing is on-demand availability of computer resources, especially storage and computing power. Mobile cloud computing is the combination of cloud computing, mobile computing and wireless networks to bring computational resources to the mobile users. Mobile-edge cloud computing is an advanced technique which can contribute all the cloud computing capabilities within the edge by the help of radio access network. The main focus of this paper is on the mobile edge cloud computing. In the earlier works they developed a framework which consists of two mechanisms, one is efficient resources computational offload mechanism for user and another one is joint communication and computation (JCC) mechanism for network operators. By considering the mobile users, in this paper we proposed a schema in which services are provided efficiently with the help of mobile edge cloud computing. As the mobile users dynamically moves from one place to another place. Resources will be allocated through the nearby mobile edge cloud, where the mobiles are connected to them with networks. Thus allocation of resources will be done through online mobile edge cloud computing by satisfying the QOS constraints.

Keywords: Cloud Computing, Mobile Cloud Computing, Mobile-edge Cloud Computing, Resources Allocation, Time Complexity.

I. Introduction

As the smart phones are growing more and more new technologies are introduced. The new mobile applications are emerging and attracting great attention. The applications like face, recognition, interactive gaming and natural language processing are developing. This type of application are commonly resource hungry, real time responsiveness, and demands intensive computation. The devices are in resources for computation. The comparison between the application with resource hungry and mobiles of resources constrained leads a challenge the development of new mobile platforms. Mobile cloud computing is the best approach for addressing such challenges, This can be done by offloading task to resource efficient clouds through the wireless access currently common approach of mobile cloud computing is to offload computation- concentrated tasks to remote public cloud

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infrastructures in order to use the processing capabilities and powerful computation through the public clouds mobile users take long time for data transferring with private cloud through WAN wide area network this leads for obstruction for real time interactive response. To satisfy the above impediment a tale Mobile cloud computing paradigm is proposed called Mobile-Edge Cloud computing the mobile edge cloud computing by connecting to radio access network provide computing capabilities close to mobile users by this process we can achieve the fast interaction will low latency connections to computing rich resource infrastructure in the previous paper, a framework is developed which provides rich flexibility on achieving the user demands. As a result, they proposed a framework includes a efficient resource computational offload mechanism for device users and a Allocation of resources by both communication and computation mechanism for network operators by this they solved the offloading problem and also designed a pricing schema for allocation of resources in this paper we mainly focus on the mobility of users. As the users connect to the cloud for the usage of resources the user may dynamically move from one place to another place. The allocation of resources to the mobile edge cloud which is will in the close range. To the user, by this the user can achieve the computation offloading will low latency and will irrelevant and independent of the allocated the resource through the online with mobile edge clouds.

II. Literature Survey

1. Y. wen, W. zhang, and H.luo[5]

proposed a cloud computing to tame resource poor mobile devices. Specifically, applications that execute in mobile called mobile execution, application that execute by offloading to the cloud called cloud execution. This process solves two problems one is how to optimize the clock frequency to complete CPU cycles for mobile execution how to schedule the data transformation for the cloud execution.

2. L.yang, J.cao,Y.yuan, and A.clan.[6]

focused on mobile data streaming application. The computation partitioning will partition the data application between mobile and clouds. Which the application has maximum throughput proposed a framework give on time support for executing and partitioning the applications. If not only allows the partition of one user but also support the sharing of the computational instances among the multiple users in the clouds.

3. X.clan , L.jion, W.li and X.fu[7]

focused on the multi-user computational offloading problems within the Mobile-edge clouds in the wireless environment. They shown that NP-hard to compute the optimal solution centralized and hence take a game theoretical computing offloading decision making problem can be formulate as the multi user computational

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offloading game. They designed a distributed computation offload algorithms. It numerically results that the algorithms can achieve computation higher offloading performance and scale.

4. Y.H .kao and B.krishnamachari[9]

focused on the minimizing the limit resources on mobile devices like storage, etc., recent works formulated decision problem, as the binary integer programming or graph partitioning problems. They provided an algorithm DTP (Deterministic delay constrained Task Partition) for solving the offloading problem with late constraints. This algorithm gives near optimal solution and run in polynomial time. Further, they provided another algorithm PTP (Probabilistic delay constraints Task Portioning).

III. Xu Chen, W. LI, and Xiaoming Fu

The authors in the previous paper focused on a new paradigm called Mobile Edge Cloud computing for providing the computing capabilities at edge of prevalent radio networks. They proposed a framework containing of efficient resource computational offload mechanism for the users and a resource allocation mechanism for both Communication and computation (JCC) for network operators. They solved the offloaded problem for user individually and find demanding resource profile, which meanwhile satisfy the delay constraints and minimize the occupancy of resources. For JCC resource allocation they approach admission controlled problem and developed an approximate solution of complexity.

IV. Proposed System:

The Mobile-Edge Cloud computing can dispense all the computing capabilities within the edge of the users. The users can allocate resources through the mobile edge cloud. The users can wish to change their location. As the users are moving from one place to another place, they are connected to the nearby mobile edge cloud and allocation of resources will be attained by the nearby mobile edge clouds. This approach can reduces the time complexity for the allocation of resources and also the allocation will be done efficiently by the clouds. The mobile devices can allocate resources through mobile edge cloud computing. The user can change from one place to another place and they can allocate resources easily by connecting to the edge clouds. As a result we can reduce the time for resource allocation and resources will be allocated at anywhere and anytime.

V. Architecture:

The mobile devices are connected to the clouds for utilizing the computing capabilities and resources. As shown in the above figure the allocation of resources will be done to the mobiles with the neighbor mobile edge

cloud while the mobile devices move from one location to another. As we developed a new approach Mobile-Edge Cloud computing, mobiles are connected to the clouds by the radio access networks.

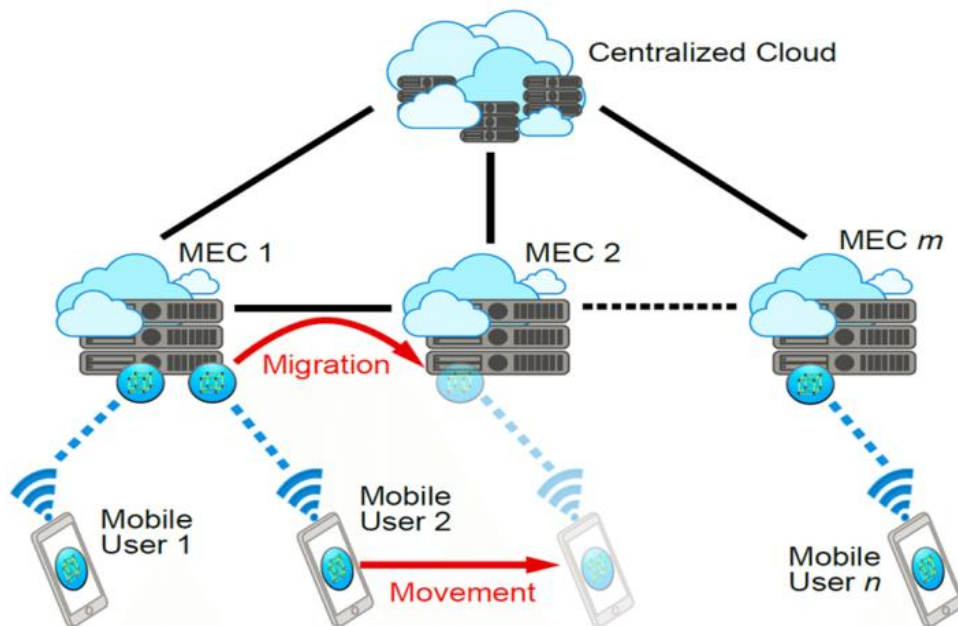


Fig: online mobile edge cloud computing

The proposed approach is shown in figure that the devices are connected to the mobile edge clouds. The allocation will be attained by the mobile edge clouds. The user moves from one to another location and connects to the neighbor mobile edge clouds

VI. Performance Analysis:

The Mobile-edge cloud computing provides all the computing resources to the mobile users. By this approach mobile can utilize the resources within a short time as the resources are provide within the cloud. The users travel from place to place the resources should be allocated to them. The allocation of resources will be done by connecting to the nearby Mobile-edge cloud while moving. The results shows that by the Mobile-edge Cloud computing, the allocation of the resources will be performed by reducing the time

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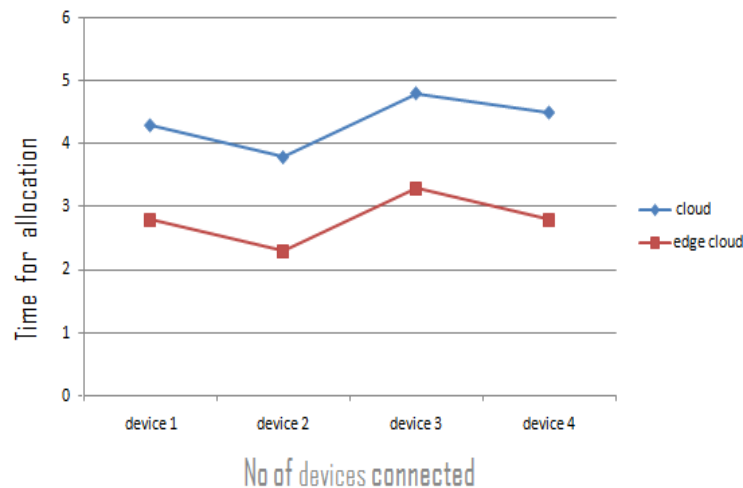
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1. Time complexity:

The mobiles are connected the mobile edge clouds at edge with Radio Access networks. The allocation of resources will be done with the Mobile Edge clouds. As the user is moving dynamically the mobiles will be connects to the nearby Mobile-Edge clouds and resources will be allocated with that neighbor mobile edge computing. By this approach the time taken for allocation of resources will be reduced.



The above graph results shows that how the allocation of resources are attained to mobile devices with less time complexity by the mobile edge clouds.

VII. CONCLUSION:

The Mobile-edge Cloud computing is a advanced technique developed to supply all the resources and computing capabilities to the mobile devices at the Edge. The users may dynamically change from one place to another place as per their requirements. The users are connected to mobile edge clouds. As they move from one place to another place they are connects to the neighbor Mobile-edge Cloud computing and the allocation of resources will be done through the mobile edge clouds. By this approach we can reduce the time for resources allocation. The Allocation of resources will be done through the online Mobile-Edge Clouds Computing. As the future work, we develop Mobile edge cloud computing to perform the tasks offloaded by the users efficiently by using scheduling algorithms.

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