A REVIEW OF ENERGY EFFICIENT NETWORK MODEL

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Abstract: in research paper, Mobile Cloud Computing and energy efficient model has been discussed. Mobile Cloud Computing work as a fuels convergence of mobile networks and cloud computing, solutions. It is giving power to users fore cast its mobile networks. It is offering on expect facilities. It has added mobile network operators and brilliant profits. Such solutions are supporting organizations as well as enterprise. It is enabling website and mobile developers. It is to comprehend applications with support of mobile networks. There are several researches in this field of mobile cloud computing that are also considered here. Proposed work does not focus only on boosting of network lifetime & growing packet delivery ratio, it also consider reduction of packet size proposed system is more secure as compared to traditional. Probability of congestion is less as compared to traditional. Overall performance gets boosted in case of proposed work at sender & receiver end. System would be beneficial for data transmission in military organization.
Keywords: Mobile cloud computing, Fiber Optics, Attenuation, IP filter

[1] INTRODUCTION
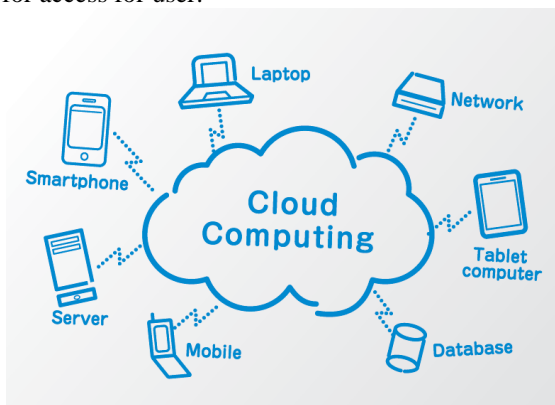
Cloud may be internet or network. It gives services over network which may be public or private. Cloud is available at remote location. They have been utilized in wide area network as well as in local area network. It may be used in virtual private network too. Lot of application such as email & web dependent conferencing usually implemented over cloud. Cloud computing has offered Platform independency due to here is not necessity of set particular software on computer.
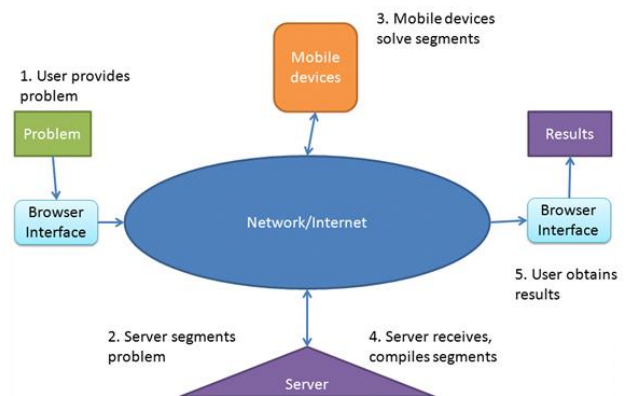
Thus that could be said; today's business software is mobile and collaborative because of cloud computing. Here are several services that are creating cloud computing most feasible and easy for access for user.

Fig 1.2 Mobile Cloud Computing

The most wished feature of this type of systems is longer battery lifetime. Several studies have identified that offload is a manner to improve application performance& enhance reliability of servers and security. Some Few offload *growths* efficiency of few by alleviating which are required for applications of web server to client resources.

[3]ADVANTAGE OF MOBILE CLOUD COMPUTING

Mobile Cloud Computing is providing us software system. It work as a fuels convergence of mobile networks and cloud computing, solutions. It is also required for all types of web as well as mobile applications. It is opening new opportunities in information technology sector & markets. Benefits have been given as follow:

Network Operator

It is giving power to users to cast its mobile networks. It supports prices through giving full

Fig 1.1 Cloud Computing

[2]MOBILE CLOUD COMPUTING

The smart phone has become main computing platform for more clients [2].

done for profit solution. This is happen for services related to connection.

Mobile Cloud Providers
It is offering on expect facilities. It has added mobile network operators and brilliant profits. That has given power to make recent B2B solutions.

Enterprise Solution Providers
Such solutions are supporting organizations as well as enterprise. They support to increase employee collaborations. It is enhancing business processes and improves customer service.

Web & Mobile Application Developers
It is enabling website and mobile developers. It is to comprehend applications with support of mobile networks. It allows them to get good potential customer base. Such solution makes it simple for developers enhance different applications.

[4]DESIGN GOAL OF CLOUD COMPUTING MCC

The following is design aims of their proposed exact and tradeoff decision making system, for code offloading in MCC: –

Performance improvement: MCC should be aim to enhance on both aspects of computational performance and energy efficiency of mobile equipment via using power of cloud servers. When enhancement is possible only for one aspect, system looks for an acceptable compromise in between computation time and energy expenditures.

Adaptation to dynamic network changes: Mobile network is expended to transfer remote implementation request to cloud server and rapid and dynamic modify is one of main property of mobile network.

Adaption to dynamic computation load of cloud server: cloud server response time for a concept is affected through current computation load on a cloud server. less load of cloud server, better is response time. Thus, offloading decision could be made more effectively through considering dynamic load of cloud server.

Enhancing QoE: Quality of Experience (QoE) of a mobile software user could be improved via utilizing power of mobile cloud computing. Response time of an software could be enhanced dramatically via offloading a heavy computation concept to a fast cloud server, which in turn enhances QoE. Extremely, saving power via implementing a concept in cloud server enables us to extend battery life of mobile equipment. That's day of Smartphone users suffer nearby from poor battery lifetime. By using battery lifetime of

Mobile devices a better QoE for mobile software users could be achieved.

[5]LITERATURE REVIEW
In 2002 AleksiPenttinen[1] wrote research on current activity & future directions of ad hoc networking. They classified upcoming research & outline major problems should be solved before widespread deployment of this technology is possible. Widespread deployment of ad hoc networks is far away. researches in field of AD hoc Network would continue.

In 2006 Yih-Chun Hu, et al[2] wrote on Wormhole Attacks within Wireless Networks. They introduced wormhole attack that is considered a severe attack in ad hoc networks. It is known as big challenge to defend against. Wormhole attack is also possible when attacker is not compromising any hosts. Attack is possible even if communication is authentic and confidential. In case of wormhole attack attacker captures packets at a place in network. Wormhole attack is able to raise a threat in wireless networks. special case is when it is against several ad hoc based wireless networks.

In 2002, Robert J. Boncella [3] provided an overview of wireless security. Wireless Local Area Networks are considered as economical & desirable gateways to mobile based computing. Such systems allow computers to be mobile and wireless. There speed is close to speeds of wired LANs. This research represents and summarizes such security concerns with solutions. Security concerns in wireless area network world have been classified as physical & logical. This research reviews both physical & logical Wire less Area Network security issues and technologies used to solve them. This research has addressed logical security attacks such as man in middle attack as well as Denial of Service attacks

In 2017, Yang et al [4] proposed on Security and Privacy in Emerging Wireless Networks Security and Communication Network. IN wrote article on security & privacy in emerging wireless networks. Wireless communication is consistently making inroads into several facets of society. It is also ubiquitous. In past wireless communication was limited to first & last transmission hops but now wireless networks starts to offer purely wireless. It is usually mobile and connected operation. Objective of this article was to check security & privacy issues in modern wireless networks. This research is an attempt to identify directions for future research.

In 2011 AndriyPanchenko et al [5] wrote on Lightweight Hidden Services Hidden services could be called mechanisms that has been designed to give service to network. In this paper author has proposed a novel approach for hidden services.

2010, Ferdous, Raihana et al [6] stated Trust Management Scheme for Mobile Ad-Hoc Networks. 896 - 901. 10.1109/CIT..167.

A Trustful Routing Protocol for Ad-hoc Network Global Mobile Ad-hoc Network. This research is considered as wireless system which is consisting mobile nodes. Self configurability along with easy deployment characterstics of MANET has been used in numerous applications. Its routing protocol is considered capable to handle challenges that a MANET raises. challenges are mobility of nodes, maintenance of security and quality of service. Other limitations are limited bandwidth having limited power supply. Such challenges has set further demands on MANET based routing protocols. With rapid increase in interest of MANETs, there is a major target on securing such networks.

In 2010, Ma,et al[7] wrote on security & privacy in emerging wireless networks article. Wireless communication is continuing to make inroads into several facets of society & is gradually becoming more & more ubiquitous. While within past wireless communication (as well as mobility) was largely limited to first & last transmission hops, today's wireless networks are starting to offer purely wireless, often mobile, & even opportunistically connected operation. In research work security and privacy challenges are considered. Some new and emerging types of wireless networks and attempts have been considered here. It has been done to identify directions for future research.

In 2005 Lee et al [8] showed that Hsu et al.'s authenticated key agreement scheme has been vulnerable to modification attack & then proposed another technique to overcome this problem. Assume that two communication parties, called & B, use same password P before scheme begins, & that n & g are system parameters, where n has been large prime &g has been generator.

In 2000, David Pointcheval [9] did research on within previous papers. Authenticated Key Exchange (AKE) protocols in which two parties could communicate each other by sharing key by cryptographic over insecure channel using various authentication methods, such as private & public keys.

David proposed some modification to overcome limitation of previous method; no extra feature has been required; only human memorable password has been required for sharing key. Bellowing &Merritt have done several efforts & this has been found that this overcome could be solved easily. For that purpose several symbols & security notions have been defined, & several protocols have been proposed. In cryptography, two users could communicate or they could say authenticate to each other by sharing session key over insure medium by using any cryptographic approach. This has been basic fundamental approach of cryptography. In brute-force method, all possible combinations of passwords are used to crack password. But this has been very time consuming process. It takes lots of time to find password. & another attack has been on-line dictionary attack & has been unavoidable. In this attack, if lots of attempts are used to crack passwords are failed, & then this could block use of password. For Example, If user try PIN more than three times within ATM, then ATM card has been blocked for that day.

In 2015, Dr. Mahesh Kumar et al [10] TCP & UDP packets analysis using wire shark. As they know that TCP and UDP are internet protocols which are used for communication through internet. Transmission is performed through TCP and UDP with use of packets. Purpose of research work is to evaluate packets of TCP and UDP. It has been done at time of sending E-mail. For this purpose tool named Wireshark has been used. It is available without any cost. Ti has been known as an open-source packet analyzer.

In 2015, Kiranjit Kauret al [11] discussed the energy efficient WSNs related clustering mechanisms. In Wireless Sensor Networks, Energy has been known as a scarcest resource of sensor nodes. It has considered lifetime of sensor nodes. These are battery powered sensor nodes. These small batteries have limited power and also may not easily rechargeable or removable. Long communication distance between sensors and a sink could greatly drain energy of sensors and reduce lifetime of a network. In WSNs, energy is a big element that has been considered in the research. Several techniques have been applied in order to optimize the energy level of sensor nodes of WSN. The researches have provided a review of some of such WSNs technique. These mechanisms are used recently. These are very helpful to improve the energy efficiency of wireless sensor nodes

In 2015, Al-Quzweeni, et al[12] explained the Energy Efficient Network Function Virtualization in 5G Networks. A number of merits could be brought by network function virtualization (NFV) such as scalability, on demand allocation of resources, and efficient utilization of network resources. In this paper, they introduce a

framework for designing an energy efficient architecture for 5G mobile network function virtualization. In proposed architecture, main functionalities of mobile core network which include packet gateway (P-GW), serving gateway (S-GW), mobility management entity (MME), policy control and charging role function, and home subscriber server (HSS) functions are virtualized and provisioned on demand. They also virtualized the functions of base band unit of evolved node B and offload them from mobile radio side. They influence the capabilities of gigabit passive optical networks (GPON) as radio access technology. It has been done to connect remote radio head (RRH) to new virtualized BBUs. They consider IP/WDM backbone network and GPON based access network as hosts of virtual machines (VMs) where network functions will be implemented. Two cases were investigated; in first case, they considered virtualization in IP/WDM network only (since core network is specially location that supports virtualization) and in second case they considered virtualization in both IP/WDM and GPON access network. Their results indicated that they could achieve energy savings of twenty two on average with virtualization in both IP/WDM network and GPON access network compared to case where virtualization has been made in IP/WDM network.

In 2016, YousefEmami, et al [13] discussed An Energy-efficient Data Transmission Scheme in Underwater Wireless Sensor Networks. Energy is a precious resource in underwater wireless sensor networks (UWSNs). In these networks, number of data transmissions between sensor nodes dominates energy consumption. Complex signal processing mechanisms also increase energy consumption. In this paper an energy-efficient data transmission scheme based on bloom filters is proposed. Extensive simulation has been carried out to demonstrate effectiveness of proposed method. Simulation results indicate that proposed scheme outperforms primary technique in terms of energy efficiency, lifetime, and load and loss rate. Results of this research suggest that exploiting bloom filters is a viable solution for reducing number of transmissions in UWSNs.

In 2017, Khandelwal et al [14] reviewed on underwater Wireless Sensor Network. The paper has presented a review of Underwater Wireless Sensor network as it is emerging to be a promising technology in unveiling mysteries of marine life and other underwater applications. Taking that into account, they study existing and best possible technologies for underwater nodes to communicate in a network. Details about underwater channel have been mentioned with focus on both acoustic and optical type communication. Furthermore,

channel modulation and coding mechanisms have been discussed. Subsequently, mechanisms for node localization and corresponding Routing protocols which could be applied to type of communication desired have been briefly presented.

In 2016, Stefano Buzzi, et al [15] provided a survey of Energy-Efficient mechanisms for 5G Networks and Challenges Ahead. After about a decade of intense research, spurred by both economic and operational considerations, and by environmental concerns, energy efficiency has now become a key pillar in design of communication networks. With advent of fifth generation of wireless networks, with millions more base stations and billions of connected devices, need for energy-efficient system design and operation will be even more compelling. This survey provides an overview of energy-efficient wireless communications; reviews seminal and recent contribution to state-of-the-art, including papers published in this special issue, and discusses most relevant research challenges to be addressed in future.

[6] PROBLEM FORMULATION

A lot of issues are there that are faced because of attenuation in fiber optics. There is requirement of repeater to regenerate signals. Attenuation in fiber optics is effected with the increment of in distance, number of joints and number of connectors. However there are several other factors that results in attenuation but their research focus on three factors

Therefore the many researches are there that have been made on fiber optic performance. But simulation of attenuation in different circumstances is major concern of this research.

Presently 1310 nm region is famous due to minimized loss and lower dispersion. 1550 nm region might be used that could avoid requirement for repeaters. Generally the performance and cost get increase when wavelength increases. Multimode and single-mode fibers are with the use of several fiber types or sizes. For example, single-mode fiber uses 9/125 um and multimode uses 62.5/125 or 50/125. Different size fibers have different optical loss dB/km values. Fiber loss depends on heavily operating wavelength. Practical fibers are having minimum loss at 1550 nm and highest loss at 780 nm with all physical fiber sizes.

[7]CONCLUSION

Proposed work has minimized of packet size to minimize probability of congestion. Proposed work does not focus only on boosting of network lifetime & growing packet delivery ratio. This one has also focuses on reduction of packet size. In Proposed work due to reduced sized packet there is

less probability of congestion & it reduces transmission delay. Other benefit is that packet is not transmitted as it is so there is more security too. As energy is disseminated symmetric & traffic load is distributed over network so these are need to put minimum load on network during packet transmission. System is more secure as compared to traditional. Probability of congestion is less as compared to traditional. Overall performance gets boosted in case of proposed work at sender & receiver end. Queuing delay gets reduced in case of proposed work. Clustering allows grouping of packet so these are transmitted according to condition. Pre-processing time is considered before grouping information. If pre-processing time is more than there is no need to swap packet information.

[8]FUTURE SCOPE

Such research would be beneficial in cloud environment where huge size packets are transferred over network. This implementation would reduce energy consumption. life of packet is more as probability of packet loss decreases. As packet loss decreases packet delivery ratio is far better than traditional work. As size of Packet reduces load on network gets decreased. Transmission of packet increases due to reduced size. More over size of packet reduced would reduce probability of network congestion. packets are encrypted too. This ensures security of packets. Again encrypted and spitted information is of no use to hacker or crackers. system would be beneficial for data transmission in military organization.

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