

A Research Paper on Cloud Computing With The Integration of IOT

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Abstract- Internet Of Things and Cloud computing are the different technologies in our life. Cloud Computing is also called as On-demand computing, it is a similar to internet based computing which provides data to the computers and any others devices. Cloud computing has two basic factors those are reliability and security. Reliability will increase the use of multiple sites of redundancy. whereas security is used to improve the centralization of data. The purpose of iot is uses to enable the different paradigm to develop various technologies. to iot is used for identification and tracking of different wire and wireless sensor. Iot must give the results of different activities conducted in knowledge, telecommunications, electronics etc. whereas cloud computing is concerns about loss of persists control over some of the sensitive data, security for any stored kernels.

Keywords- Cloud Computing, Internet of Things

I. INTRODUCTION

The IOT defines about various differentiable objects and their structure representation. In an Internet-like virtual representation[2]. Internet of Things refer to day to day objects, which can be readable, recognizable, locatable, and controllable through the Internet using wireless LAN, wide-area network etc. These objects will not include the everyday electronic devices or the products of other higher technological, such as vehicles, and also include things like clothing, food, and shelter, parts along with commodities and luxury items, boundaries, and monuments.

The IOT is an intelligent self configuring nodes which are inter connected to each other. Dynamically It represents the most variety of technologies and different computer sensors. The IoT is used to exchange the useful information between different embedded systems and real world devices. These systems are sensed by different types of sensors devices which are used for decision making and used for decision making, according to system performance.

The Iot is connects all the users globally and interact with the different systems but mostly the structure of the

system and their networks get changed. All of us use laptops, tablets, etc to communicate with are friends, the most information is been exchanged between the different servers through any website or e-mail.

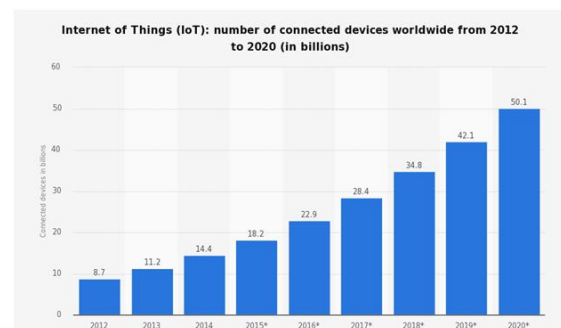


Fig 1: Iot connected devices by 2020

In other words iot is a embedded of physical objects in which sensors are connected to each other to expose different services by exchanging their operators. Iot can transfer their communications not with sensors but also there cloud services[6] and this cloud can connect with different sensor devices, the data can be transferred through Bluetooth, wi-fi etc.

Cloud service is a type of paradigm, where a number of system are connected. Through public and private networks. Dynamically the different infrastructure for different applications are used to store the data in large file storage. With the use of technology the cost of various computation is reduced frequently, It is a practical approach for various cost benefits to transform the different data center from priced variable computing.



Fig 2: Cloud Computing

The main point of cloud service is defined on a principal of reusability of different capabilities' of IT services. The main difference is that cloud computing is compared concept of “grid computing”, “utility computing” “distributed computing” “autonomic computing” is broadcast into different horizons among different organizational boundaries

II. THE COMBINATION OF CLOUD AND IOT

As we all know the facial expression of human face has two sides at the me time both happy and sad expressions has two different evolution at the time both cloud and iot has two different evolution.Both of them have many advantages such as iot is bentifit for unitization of virtually capability of resoures. usually cloud is used to implement the effective solution of iot services. Their are many characteristics of both cloud and iot they both are used for different purposes such as inspiring the cloudIot in literature and cloud acts as middle layer between the application things[8]. cloud also helps to hides the complexity functionalities,which are usefully to implement new challenges in multi cloud services.

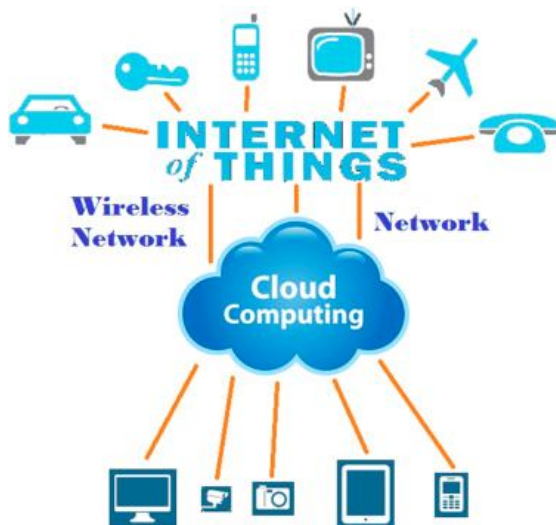


Fig 3:Integration if iot with Cloud Computing

Features of the Cloud Computing is to relate the characteristics of both Internet of Things are: (a) Storage over Internet, (b) Service over Internet, (c) Applications through internet, (d) Efficiency in energy (e) capable od commutation.

III. RECONZIATION OF SENSORS AND ITS SENSING OBJECTS

A **sensor** is a device which is used is to detect the changes in the environment and sends the information to any other devices. The sensors in iot can even convert the physical limitation such as temeperature, blood,speed etc,these parameters are converted into single measured sensors which are the part of IT resources such as cpu,hard disk which are often used by end users. This end users can automatically control or monitor the sensors..

The challenging sensing services of cloud are:

A)Profile of cloud services- cloud sensor users will collect many shares from large sensors for different objects for the collection of many decisions in support system. Large amount of sensors are resources are flexible for specialization of processing of task.

B.Research services of sensor cloud- sensor cloud challenges are relevance of real time sensor to different applications[9]. Real time processing are classified into videos, mails etc for relevant call services large computing applications are data sets for multiple sensors[3] which are directed into different locations.

C.CDAC Cloud for IOT-Hpc allows different scientist to solve many large problems of any business applications which require high battery power and low latency networks which are used for storage purpose. These applications has to wait for long queues to access the huge clusters for applications for complex environment.CDac scientific cloud is an effort on demand of hpc resources. The IOT produce many devices to support elasticity and scalability

D.Storage capacity of cloud-storage service supply data storage capacity over internet.CDAC promotes the contribution of open resources software .sensor networks produce petabytes of data that needs to be supported. The storage software provides research partners with a affordable way to store the data and to archive the data.

IV. TECHNOLOGIES USED

The objects can be easily identified and there are able to think and interact with other devices to collect the information through bases of requirement of automations for the effective use of integration and various technologies in which system are uniquely identified.

V. NETWORK SENSORS

Network sensor is directional connected sensor which is connected to different nodes in which each node is scattered to other sensors which collects the data like temperature ,speed and other equipment. The networks nodes communicate and transfer antenna into different sensors. WISP is a other type sensor network for built in light in many different sensors. Network has a low communication .

The different technologies for integration of iot has different solutions including 6LOWPAN standard which are travelled through networks .Network Sensors is also one of the measure to understand the environmental issues through urban and ecological environments. These technologies are low cost, less efficient and low power devices. Cloud provides the integration for sensing the data at a large area including privacy security.IOT devices introduce new smart phones as well as electronic devices to solve this challenge.

The new challenge is that Iot has very good heat reorganization power including new protocols. Moreover scalability, efficiency is very difficult to maintain.

The capability of cloud to solve this problem is to introduce new paradigm. Such as CloudIot paradigm which enables new smart devices based on cloud extension.

1. SaaS (Sensing as a Service]provides accessing of data sensor which controls different logics implemented through cloud.
2. (Sensor Event as a Service) is used for disparting of messages.
3. DBaaS (Database as a Service) , enables database management system.
4. IPMaaS (Identity and Policy Management as a Service) is used to access policy and other functional management services.

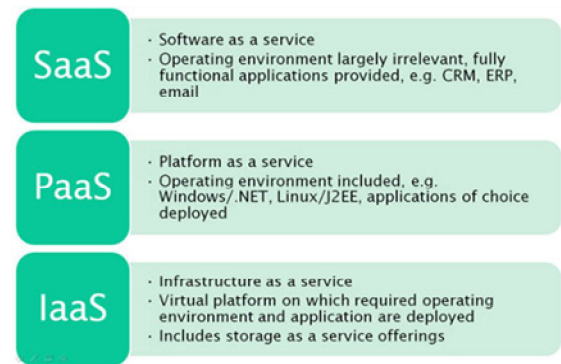


Fig 4: Services Of Cloud

VI. ISSUES AND DIRECTIONS OF CLOUD IOT

Security issues in IoT and Cloud Computing integration there is a huge and different evolution of the two words of IoT and Cloud Computing. With, the unlimited capabilities and different resources of Cloud Computing in order to contract the technological constrains, such as processing, communication and storage, could be a important for the Internet of Things technology. Also, the Internet of things technology enlarge its deal with world of things in a scope of dynamic, distributed manner and by innovating new services in a huge number of life scenarios, might it be beneficial for the use of Cloud technologies. In different cases, Cloud computing can provide the middle layer between the things and the applications.

- a. The standards: although the communication give contributions of Iot and cloud paradigms the necessary of scientific API are been demanded through the interconnection of smart objects.
- b. Energy sensing: Typically WSN are of low cost, low-power, and energy- sensors. The inner connection of smart node is a normal issue and energy efficient management is more desirable.
- c. Fog Computing. Fog computing is a classical fog computing edge of a network It is used to design IOT applications for the requirements of mobility.
- d. Capabilities of cloud: It concerns every edge network of society, is a problem for Cloud IoT. usually both IoT and cloud consists of many number of attacks. The data can be encrypted ,authenticate

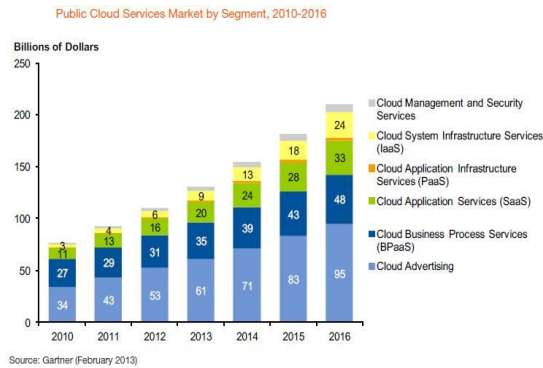


Fig 5:Issues of cloud

VII. SPACE OF THINGS IN CLOUD

The features of cloud storage is that cloud stores all information in the server or any other devices. By choosing your own cloud you can store your data on your personal cloud and delete the necessary information from miscellaneous cloud storage.

VIII. APPLICATIONS

Daily applications are normally seen by smart devices which are problem to communicate with one another but also share useful information with many applications. For example a self driven vehicles the real time traffic and whether conditions with the help of iot concepts such as

- A. Traffic System. Traffic is the most important part of the society in which all related problems are classified into iot
- B. Environment issues. Identifying the natural calamities such as floods, fire etc. are been predicted by the technologies used in IOT.
- C. Agriculture. Applications of iot will monitor the problems of soil erosion, humidity and adjust the temperature to minimize the problems.

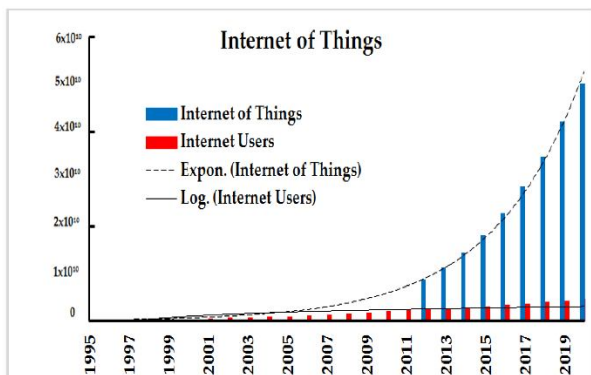


Fig 6: Number of users using Iot devices

IX. CONCLUSION

With the emerging technologies of iot soon there will be developed on a large scale with the influence of smart health, smart city, and environment monitoring by implementing intelligence of objects around the environment[10]. Iot provides confidentiality of both private and secure services and the deployment of iot requires security and privacy threats.

The Iot claims various project which are related to increase of more companies to implement communication through internet. The whole world interact with smart objects through server or web to implement the goals of computing. Cloud objects describes the machine digital data and to communicate with each other.

REFERENCES

- [1] L. Atzori et al., The IOT: A survey, Computer. Networks..
- [2] Bolivar Torres et.al., Integration of an reader of wireless sensor network and it is used to identify all the individual carrying rfid tags, International Journals of Ad hoc, Sensor & Ubiquitous Computing (IJASUC) Vol.1, No.4, December 2010.
- [3] B. P. Rao, P. Saluia, N. Sharma, A. Mittal, and S. V. Sharma. Internet of Things and Cloud computing through are sensing based applications. In Sensing Technology (ICST), 2012 Sixth International Conference on, IEEE, 2012.
- [4] S. K. Dash, S. Mohapatra, and P. K. Pattnaik. A Survey on Application of Wireless Sensor Network Using Cloud Computing. International Journal of Computer science & Engineering Technologies
- [5] Zaslavsky, C. Perera, and D. Georgakopoulos. <https://sites.google.com/site/opensourceiotcloud>
- [6] <http://www.openiot.eu/>.
- [7] <http://iot-toolkit.com/>.
- [8] Y. Simmhan, A. G. Kumbhare, B. Cao, and V. Prasanna. An analyst of privacy, security and issues in grid software architectures on clouds. In Cloud Computing (CLOUD), 2011 IEEE International Conference on. IEEE, 2011.
- [9] J. Gubbi, R. Buyya, S. Marusic, and M. Palaniswami. Internet of Things (IoT): A, architectural things and future directions. Future versions Computer Systems, 29(7):1645–1660, 2013.