

Understanding Cloud Computing and Its Architecture

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ABSTRACT

Cloud computing is a fast growing technology in which everyone can use the resources from anywhere and anytime. Pool of resources can be stored in cloud environment, which can be accessed by the user so that time can be less consumed. In this paper we outlined the different definition about cloud computing. Cloud computing advantages and its disadvantages were clearly explained in this paper. This paper gives a better understanding the cloud architecture and its functions.

Keywords: Cloud Computing, distributed computing, grid computing, Pay as you Use, Virtualisation.

1. INTRODUCTION

Cloud computing is one of the promising computing technology in which almost all the applications are handled by sharing the resources in contrast with local servers or idiomatic devices. The cloud computing is a progressive computing technology emerged from parallel computing, distributed computing, grid computing etc.

Cloud computing is completely a pay and use mode which can easily ingress some IT resources through information superhighway. The term “cloud” refers to composite of storage, hardware, networks and coalition to deliver a service. Some of the IT resources which can be used are network, software, storage, service etc. These resources can be established quickly and easily. Interaction with the service providers and managing the resources are also an effortless one. IT companies like Amazon, Microsoft Azure, Abobe cloud, VM ware, Rack space, Oracle Cloud deliver cloud services to the user. In cloud environment user need not aware of where the data stored, hardware, software etc.^{6,7}

2. BASICS OF CLOUD COMPUTING

a Definitions of cloud computing

- The cloud computing applies a virtualized platform with elastic resources on demand by provisioning hardware, software and data sets dynamically.⁵
- Cloud computing is a potential solution, due to the capability to support real-time data sharing regardless of geographical locations.²
- According to cloud service providers cloud computing is mainly for resource consolidation, uniform management and cost-effective operations.¹⁰
- Cloud computing is about leveraging data from centralized computing and storage. In this paper the author clearly states that the cloud traffic will increase in future.³
- The cloud computing is introduced to reduce the high cost of memory devices, personal management and equipment maintenance.⁴
- Cloud computing is recently emerged as new paradigm for hosting and delivering services over the internet. It represents the fundamental change in IT services.⁸
- Cloud computing can be implemented various architecture and services with other technologies with various software design approach.¹

Cloud computing refers to the sharing of computer resources such as storage environment, network, processing power and application over the internet. Cloud is the best environment to preserve all the worthwhile data.⁹

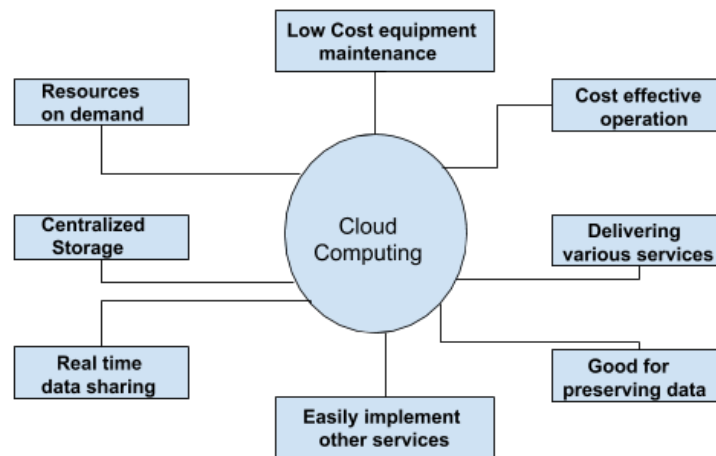


Fig 1. Shows various cloud computing definitions

b Cloud Computing advantages

Cloud computing put forward the following advantages:

- Any time availability: Most of the service providers like Amazon, Microsoft Azure, Abobe cloud etc provide their service reliable and keep up an uptime of 99.9%.
- Pay as you Use: In cloud computing the cost for hardware is low. You need to pay based on how much you used.

- Access easily: Providing security is one of the major concerns for cloud computing. Since data is stored in cloud, we can easily retrieve the data even though the local system fails.
- Less waste of resource and energy: Since cloud computing is using the resource when they are needed. So the wastage of resource is low comparing to other systems.
- Easy to manage documents: Early day's datas are stored in files and it is very difficult for the user to send files to others. But in cloud computing all the documents are stored in a central storage or cloud.
- Software Updation: In Cloud software updation is carried out automatically by removing the user burden to waste their crucial time for updating.

c. Cloud computing disadvantages

Cloud computing put forward the following disadvantages:

- Low bandwidth: As many users access the cloud at same time there is a possibility of the bandwidth to go down.
- Flexibility issues: Since the cloud services runs on remote servers, it is very difficult for the companies to control the hardware and software.
- Usability: Always be careful when you drag and drop the document to the cloud server. Because it will Permanently go to cloud storage. It is better to keep a copy in your local system.
- Accessibility: Since it is fully online, we need internet to access our data.
- Limited Control: Data can be accessed by the user as per the privilege given by the administrator.
- Vulnerability to attack: Since it is online the possibility of attack is high.
- Costs: Using a cloud environment for short term also cost high.

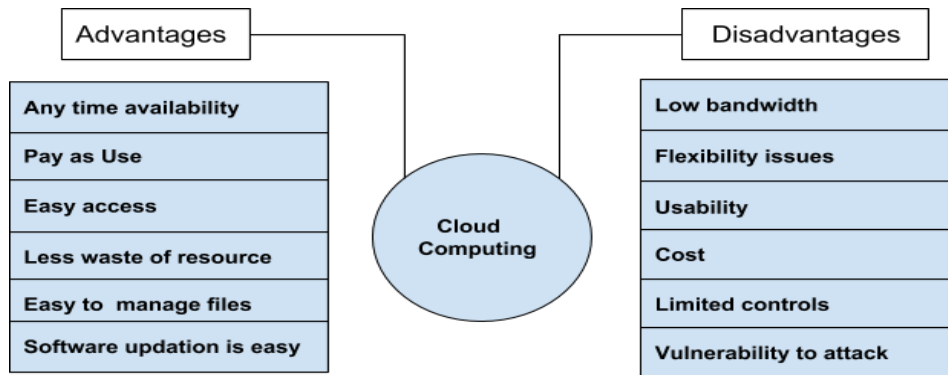


Fig 2. Advantages and disadvantages of Cloud

3. CLOUD COMPUTING ARCHITECTURE

The cloud architecture cites to different components and subcomponents which required for cloud Computing. It mainly consists of components like client, mobile device,

thin client which are generally said as front end and components like servers and storage called as back end. Cloud computing can be access using some interfaces and applications which are usually stored in front end. The cloud computing services are provided by some resources which are usually seen in back end. The front end and backend are connected through a network called internet.

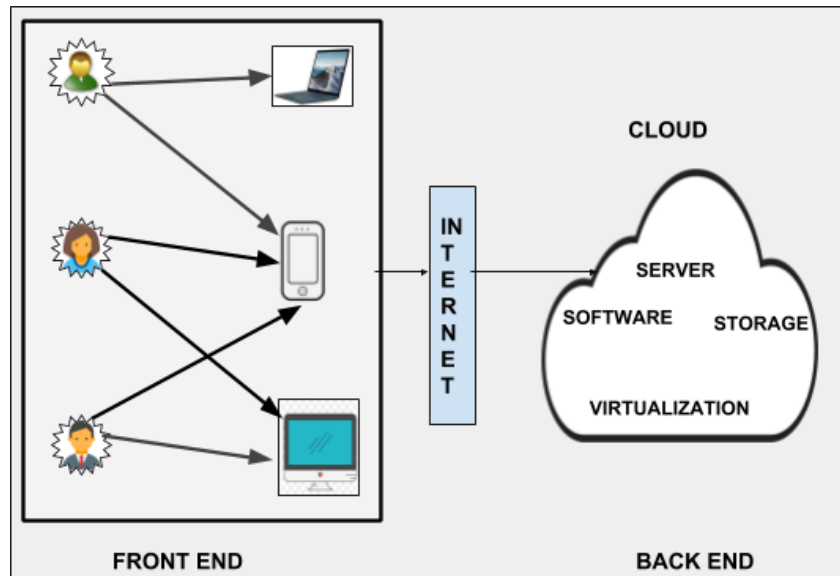


Fig 3. Cloud architecture

4. CONCLUSIONS

Cloud computing can be benefitted for almost all applications. In future years the cloud computing is going to be rule the research field. It's a vast area where lot of research is going on. Security is one of the main issues. In this paper we just explained about the clout computing definitions, its architecture, advantages and disadvantages.

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