A STUDY ON CLOUD COMPUTING AS AN EMERGING TREND IN INFORMATION TECHNOLOGY BASED ON ITS APPLICATIONS

Priya.B.R

Reasearch Scholar, Vivekananda College of Arts and Science for Women[Autonomous]
Thiruchengode, Namakkal Dist, Tamil Nadu

Dr.S. Dhanalakshmi

Professor, MCA Department
Vivekananda College of Arts and Science for Women[Autonomous]
Thiruchengode, Namakkal Dist, Tamil Nadu

Abstract

Cloud can be considered as one of the important emerging trends in the field of information technology. Now a days cloud computing is used in many online business services. Many small sized companies are now using cloud environment for the data storage and backup. Cloud technology is used in houses for doing the day to day activities. Cloud provides platform independency as the software required for the working of cloud need not to be installed in client's computer. This helps many firms to establish their business very easily. Cloud computing is used in almost all fields like healthcare, education, mobiles, big data etc. Cloud computing offers many advantages to large number of users. This paper deals with the cloud computing architecture along with the advantages and disadvantages. A study on various applications which uses cloud computing is also performed.

Keywords: Cloud computing, architecture, advantages, disadvantages, applications

Introduction

Cloud computing allows the clients to access the files and features without storing the bulk of data in our own computer. We can store large amount of data in cloud data centre and can access it from any part of the world at any time. Cloud computing is a widespread concept of providing internet services using the virtualization paradigm. It helps the users to pay for exactly what they use. The resources can be shared among large number of users. The scaling of resources is very easy as the demand increases or decreases. The users are not burdened with the technical knowledge for using cloud environment. They become more flexible when the load increases using very efficient load balancing algorithms.

Cloud Computing Architecture

The architecture of cloud computing is divided into following sections
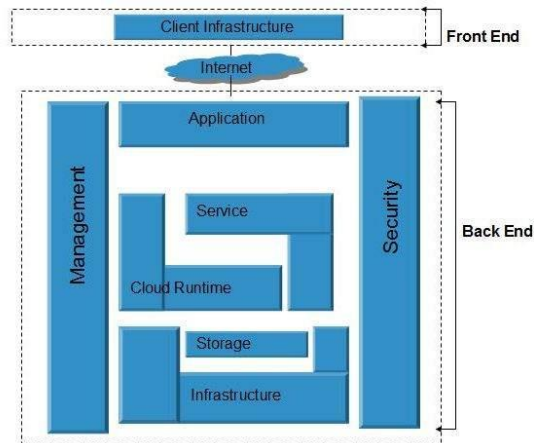
1. The Front end application
2. The Back end application

The Front end application

The front end of cloud is the client side. It includes a computer and the application software which helps the client to access the client very smoothly.

The Back end application

It is the cloud service provider's side. It includes computer servers, data centres and programs to make them work together. It is the server that controls the traffic and fulfils the demands of the clients. It follows a set of rules called protocols and a special kind of software called middleware [1] which allows the computer to communicate with each other. The cloud service providers keep different copies of the same data in different locations so that the data can be retrieved very easily.

Cloud Architecture [2]

Advantages of cloud computing

There are so many advantages or benefits for cloud computing. Some of them are discussed here

1. **Cost saving**: The cost of using cloud is very less compared to many other storage technologies. This helps many small companies use this emerging technology for the data storage. All the resource expenses are managed by the service providers which is helpful to the users.
2. **Availability**: The resources that are stored in cloud is available to the users at anytime and anywhere regardless of the machine.
3. **Flexibility**: It is very flexible for the users to use cloud environment. It eliminates the need for IT infrastructure updates and maintenance since the service provider ensures guaranteed delivery of services [3].
4. **High speed**: The resources are available to the customers within few minutes.
5. **Strategic Edge:[4]** The customers are eager to catch up with the latest applications. Cloud computing lets the users to access the latest apps and infrastructure to create, develop and enhance their deliverables.

Disadvantages of cloud Computing

Apart from the above mentioned advantages, there are some disadvantages for the cloud environment. They are:

1. **Internet connection**: Since all the transfer and updates in the cloud environment are done online, internet connection is essential for cloud. A consistent and high speed internet connection with good bandwidth is required to get the benefits of the cloud.
2. **Security issues**: The data stored in cloud is not completely safe. Since the data in stored in remote servers there are chances of data theft by the hackers. This is very easily done if it is a multi-tenant cloud server. So it is not a good practice to store confidential data in cloud even though the providers give high level security to the resources.
3. **Download Time**: This is one of the major drawback of cloud computing. When the server gets overloaded with the request of many customers or due to lack of slow internet connection or when the server undergoes maintenance work leads to temporary downtime on the cloud services.
4. **Vendor Lock in:[5]** When the users migrate from one service provider or vendor to other many issues may arise due to the difference between vendor platforms. The data may left vulnerable to security attacks due to the compromises that we have made during migrations.
5. **Limited control**: The customers who are the actual owners of the data have only limited control over the data. The service providers keep the control over the data and all the application services associated with the data.

Different applications which uses cloud computing

The applications of cloud computing is growing to higher area. Almost all the fields are using cloud computing in one way or another. Here we are going to discuss some of the applications of cloud computing

1. **Business Application[6]**
    Many business firms are using cloud infrastructure foe elaborating their business sphere. Some examples are:
    - **Mailchimp** - It is a very popular email marketing web based app. It is very simpler and cheaper. It is widely employed by the business to design and send their email campaigns

- **Chatter** – This is an app that can be used in companies which helps the employees to share important information about the company.
- **Zoho** – It is an app which is used to perform customer relationship management enterprise planning,
- **Google apps for business** – This app is provided by the google for creating text documents, spreadsheets etc on google docs.
- **Hyper office** – It is an app which offers many services like email, calendars, contact management etc through mobile.
- **Quickbooks** – It is an online accounting app which is used for many accounting services like cash flow, vat returns etc.

2. **Data storage and Backup Applications**

These are some of the applications which are used to store data in cloud and to back up the data.

- **Box.com** – It is an app which is used to store the data. The data can be dropped into a box and can be retrieved whenever we want
- **Mozy** – It a back up app used to prevent data loss.
- **Dropbox [7]** – It is used for back up purpose. The files we drag into the dropbox folder is automatically sync online to any other computers or mobile devices linked to our account.
- **Google Drive** – It is used to store files on the servers. They can be synchronized among different devices and shared.
- **Amazon S3 [8]**- Amazon S3 provides a simple web services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web.

3. **Management Applications**

Some of the management applications are:

- **Toggl** – It is used to track the time period of a particular project.

- **Evernote** – These are sticky notes which helps the user to locate the notes easily.

- **Outright** – It is an accounting app which is used to calculate the income and expenses.

- **Multcloud[9]** – It is web based app that allows multiple cloud users to manage all the online files from one interface

- **Rightscale [9]**– It is a cloud management solution designed to manage all the services across all clouds from a single console.

4. **Social Applications**

The major social applications which uses cloud computing are

- **Facebook** – The major social networking app which is used to communicate with friends and relatives, to search for people, upload photos etc

- **Twitter** – Application which is used to interact with the public. We can follow the updates posted by celebrities and officials.

- **Myspace** – It is also an interactive social networking app to create blogs, upload photos etc.

5. **Entertainment Applications**

The field of media and entertainment also uses cloud computing in many apps.

- **Audiobox.fm** – It is an audio online streaming app which is used to retrieve music from cloud and play

- **Youtube** – It is the most popular entertainment app used for watching movies, games, news etc.

- **Netflix [10]**- It is the world's leading subscription service for watching TV episodes and movies on our phone

6. **Art Applications**

Many applications are used for designing and coloring purposes

- **Moo** – It is a special art application used for creating and designing business cards, post cards etc.

- **Colorzilla[11]** – It is used by we developers and graphic designers with color related tasks.

Conclusion

Cloud computing is considered as emerging trend in the field of information technology. One should know the structure of cloud and how data is stored in the cloud. This article helps you to understand the advantages and disadvantages of cloud computing before being a user of it. We are unaware that some of the apps that we use daily in our mobile phones and computers uses the concept of cloud computing

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