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Cloud Service Providers: A Review of the Major Players in the Field

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ABSTRACT

Cloud computing is the delivery and management of computer services like data, storage, software, analytics with the help of Internet that is the cloud. Cloud computing enables faster innovation, flexible and vast resources and economies of scale. Cloud computing offers pay as you go system. This means that user only pays for the resources they use.
Cloud computing is a technology which offers a workspace or services to users which can work over internet. Here in this paper a basic comparison between all the top cloud service provider companies are given. This comparison is done so that it helps the customer to choose the cloud service provider easily and effectively according to its needs and specifications. The comparison is also paired with the explanation of all the cloud service provider services in detail following the leading cloud storage providers.
Keywords - Cloud Computing, Servers, Data, AWS, Microsoft Azure, Google Cloud

I. INTRODUCTION

Cloud computing is the delivery of computer services like data, storage, software, analytics over the Internet that is the cloud for faster innovation, flexible resources and economies of scale. Cloud computing offers pay as you go system. This means that user only pays for the resources they use. Cloud computing is a technology which offers a workspace or services to users which can work over internet. Cloud computer has proven to be a very beneficial when it comes to managing data and services. Instead of saving the data and managing it on a hard drive or storage hardware, it makes them possible to store and access it on a remote database. There are many cloud service providers in the market. The paper talks about each leading cloud service provider and the services its offers. This comparison makes easy for the customer to prefer from the cloud services provider according to its desired requirements.

II. CLOUD SERVICE PROVIDERS

A. Amazon Web Services

Amazon Web Services is the oldest service in the public cloud service market. It has the best computing power and provide database of the highest storage. It provides the best infrastructure. It holds highest market share for cloud IaaS. It is a feature rich-ready to provide cloud service provider. The Virtual Machine enables user to run small or big workloads. It has high configurations of Graphic

Processing Unit enabled VM types. These services make AWS an ideal system for Machine Learning and Artificial Intelligence [4].

B. Microsoft Azure

Microsoft Azure is a cloud computing service created by Microsoft. It is used for tasks like building, testing, deploying, and managing applications and services through data centers managed by Microsoft. It supports different programming language, tools and frameworks. It focused on the software and platform instead of infrastructure. The target customers where the developers specially app developers. It later expanded in IaaS. It computes and process at a high capacity. It efficiently run on high end HCP and SAP workloads. These properties of Azure make it ideal for Artificial Intelligence and Machine Learning. Following are the services provided:[1].

- Computer Services
- Mobile Services
- Storage Services
- Media Services
- Identity
- Data Management
- CDN
- Developer
- Azure AI
- Azure Blockchain Workbench
- Internet of Things (IoT)

C. Google Cloud Platform

Google App Engine is a platform as a Service and cloud computing platform for developing and hosting web applications data centers managed by Google. This app engine offers automatic scaling for web applications. The resources are allocated on demand basis. Google App Engine Python, Java, PHP Node JS etc. Fees are changed for additional storage, bandwidth, or instance hours required by the application. Google Cloud Platform is robust and ideal for Big data analytics and Machine Learning. It has significant load balancing and scaling. It came late into the market and has the lowest market share. Similar to Azure, It started with Platform as a Service. It has a relatively low pricing as compared to AWS and Azure. This is due to lack of features. The billing is done as per the memory used instead of the VMs used. This avoids wastage of memory. Another reason is because of the discounts offered for long term usage. It is ideal for mobile app development[3].

III. FREE CLOUD STORAGES

The following are the cloud storages which provides free data storages on cloud. They can be used individually or in a group. They provide services like data storage, data sharing and data synchronization.

A. Google Drive

Google drive is a service developed by Google in the year 2012.It is used for file storage and synchronization . It allows users to store the data on cloud. It also provides services like storing data, managing data, share and active synchronization of data. The data is stored on Google servers and they offer upto 15MB of free data storage.

B. Dropbox

Dropbox is a service developed by Dropbox Inc. It is an American Company having its headquarters in San Francisco, California. It was released in year 2008. It is used widely for file hosting. Dropbox offers only 2MB free storage. This storage can be increased by using the referral program upto 500MB.

C. Sugar Synch

Sugar Synch is a cloud service which is used for synchronization of files across computers and other devices for backup, access, synching and sharing from a variety of operating systems. It is developed by J2

Global and released in year 2009. It offers 5MB of free storage.

D. Spider Oak

Spider Oak collaboration tool which is an online file hosting tool that allows user to access, share , update and synchronize data using a cloud server. It was released in year 2007.It doesn't offer any free storage but gives free 21 days trail.

IV. BENEFITS OF CLOUD COMPUTING

Companies have big data centers. These on-site data centers require a large amount of hardware, cooling elements to maintain the temperature. Moreover, data recovery is very critical. If the data centers crashes then it is very time consuming to bring the data center on track. This require a lot of expenses which small companies can't afford. Hence, companies are switching on cloud because it offers virtual data centers. The main benefit of using cloud computing is that it the cloud service providers take care of data and the virtual data center. The service provider is responsible for the data loss if any.

Customer can use cloud services from anywhere in the world. The only thing required is a computer with active internet connection. This promotes remote work environment in a company. Thus making it cost effective.

Mostly, the cloud computing services are provided on demand of the customer. The services asked by the customer are therefore provided in minutes. This gives businesses and companies flexibility and requires no capacity planning.

Cloud computing makes data backup and disaster recovery easier and cost effective. Many cloud services provide a set of security policies which helps in strengthening the data and protect the system [2].

V. COMPARISON OF CLOUD SERVICE PROVIDERS

Following is the tabular representation of comparisons of all the leading cloud service providers with their services [5].

Features	AWS	Azure	Google Cloud Platform
Maximum Processors in VM	128	128	96
Maximum memory in VM	3904	3800	1433
SLA Availablity	99.95% Annual Uptime	99.90% Annual Uptime	99.95% Annual Uptime
Operating System Supported	Windows, SLES, Cent OS, Core OS, OpenSUSE, RHEL, Ubuntu, Oracle, Linux	Windows, SLES, Cent OS, Core OS, OpenSUSE, RHEL, Ubuntu, Oracle, Linux	Windows, SLES, CoreOS, CentOS, RHEL, Debian, Free BSD, Ubuntu
Marketplace	AWS Marketplace	Azure Marketplace	G Suite Marketplace
Cloud Services and its Protection	Sheild	DDoS Protection Service	

Backup	Object Storage, Cold Storage, Archive, SnowMobile	Backup	
Database Migration	Database Migration Service	Database Migration Service	
Dedicated Network Connection	Direct connect	Express Route	
Protection with Data Encryption	Key Management Service	Storage Service Encryption	
Developer Tools	Developer Tools	Developer Tools	
Firewall	Per hour	Per minute	Per minute
Usage	Best for launching Linux VM	Good for Mobile App development,Web Development and DevOps	DevOps compatible

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VI. REFERENCES

[1]. “https://en.wikipedia.org/wiki/Microsoft_Azure” , February 2021.
[2]. “https://en.wikipedia.org/wiki/Google_App_Engine”, February 2021.
[3]. ”https://en.wikipedia.org/wiki/Amazon_Elastic_Compute_Cloud,February 2021.
[4]. “https://azure.microsoft.com/en-in/overview/what-is-cloud-computing, February 2021
[5]. “https://www.mindbowser.com/aws-vs-azure-vs-google-cloud-platform/?utm_campaign=Quora&utm_content=aws-vs-azure-vs-google-cloud-platform”, February 2021.