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INTRODUCTION

Introduction to Cloud Computing is delivery of computing services such as servers, database, storage network, intelligence and more over the internet. Cloud computing provides an alternative to the on premiers data-centre. Cloud computing can defined as a type of parallel and distributed system that consist a collection of interconnected and virtualized computer which are dynamically provisioned also presented as one or more unified computing resources. It also based on service level agreements that established through negotiation between the consumers and service providers. Cloud computing also means that instead of all the computer hardware and software we are using like desktop or somewhere inside your companys' network. It also provided for us service by another company and accessed over the cloud(internet).

Comparision Evaluation

The three cloud computing services compare differently under various factors. In terms of performance and scalability, Amazon EC2 has the best performance. One identifiable service is AWS Auto Scaling, a feature that allows users to create their scale automated plans regarding how various aspects respond to demand changes (Amazon, 2018). Microsoft Azure is considered a close competitor to AWS in performance with unique services as inbuilt ready to run server apps that it comes with (Petters, 2019). One of its significant features includes scalable data warehousing, which promotes scaling based on app usage. Google cloud platform falls behind Amazon EC2 and Azure when it comes to performance. Users utilizing Cloud Metrics here can perform scaling depending on their levels of operation.

According to Padghan (2020), pricing models of all the three platforms differ depending on the type of investments or size of the resources. Google Cloud offers the best prices when it comes to small-sized investments. For example, it will cost you $50-55 per month to access small-sized virtual operations with limited RAM and Virtual CPU requirements. The same service costs $69 every month on AWS and $70-75 per month on Microsoft Azure (Padghan, 2020). For large size investments, Amazon Web Services has the best pricing. For an operation with the requirement of 4TB of RAM and 128 Virtual CPUs, AWS charges $2700-3000 every month. Azure charges the same at $5000 per month, while Google Cloud's monthly fee stands at $3800-4000.

As Petters (2019) identified, AWS's primary tools include SageMaker, Lex, Machine Learning, Deep Lens, and Translate. Key tools for Azure include AI tools like Azure Bot Service, Cognitive Service, and Machine Learning. IoT tools comprise IoT Hub, IoT Edge, Stream Analytics, and Time Series Insights. For Google Cloud, major AI tools are Dialogflow Enterprise Edition, Cloud Speed API, Cloud Natural Language, etc. Its IoT is Cloud IoT core.

Aspect: service model

Microsoft Azure	Amazon EC2	Google Cloud Platform
SaaS: Application like SharePoint online, O365 PaaS: Operating system like Windows Azure, Database like SQL Azure, Development tools like NAPA	IaaS: -Amazon takes the responsibility of networking, storage, server and virtualization and user is responsible for managing the	IaaS: -offering that allows clients to run workloads on Google's physical hardware. It lets the user create and run virtual

IaaS: Windows Azure Virtual Machines and Network, Storage	Operating System, middleware, runtime, data and application	machines on Google infrastructure.

Aspect: Virtual machine instance type

Instance type	Amazon instances	Amazon RAM (Gb)	Microsoft Azure VMs	Microsoft Azure RAM (Gb)	Google Cloud Platform VMs	Google Cloud Computing RAM (Gb)
General purpose	m5.xlarge	16	B4MS	16	N1-standard-4	15
Compute optimized	c5.xlarge	8	F4s V2	8	N1-highcu-4	3.6
Memory optimized	r5.xlarge	32	E4 v3	32	N1-highmem-4	26
GPU instances	G3s.4xlarge	30.5	NC 6	56	NVIDIA@Tesla@P4	64

Source: Simform

Aspect: Storage

AMAZON EC2	GOOGLE CLOUD PLATFORM	MICROSOFT AZURE
SSS to EFS: -It includes its Simple Storage Service (S3) for object storage, Elastic Block Storage (EBS) for persistent block storage for use with EC2, and Elastic File System (EFS) for file storage.	Unified storage and more: -it has a growing menu of storage services available. Cloud Storage is its unified object storage service, and it also has a Persistent Disk option. It offers a Transfer Appliance like Amazon WS Snowball, as well as online transfer services.	Storage Services: -include Blob Storage for REST-based object storage of unstructured data, Queue Storage for large-volume workloads, File Storage and Disk Storage. It also has a Data Lake Store, which is useful for big data applications.

Aspect: OS environment

Cloud computing	Operating system
Microsoft Azure	Linux and Microsoft Windows
Amazon EC2	Linux
Google Cloud Computing	Debian-based Linux OS

Aspect: security

Amazon EC2	Google Cloud Platform	Microsoft Azure
Amazon EC2 is fine-tuned to prevent attacks, detect any suspicious activities, respond to incidents quickly and effectively and remediate Amazon environment.	Google Cloud offering the user to enable two factor authentication (2FA), it will provide the user with an additional layer of security so that even if a weak password is cracked, your system will not be exposed to hackers.	Microsoft Azure provide multi-layered security system, proving it to be one of their main priorities. User can encrypt all their data stored on the server side, which will prevent readable copies from being available if their profile is breached.

Aspect: Auto-Scaling/Elasticity

Amazon EC2	Microsoft azure	Google Cloud Platform
AWS auto scaling: allows user to create their scale automated plans regarding how various aspects respond to demand changes	Including scalable data warehousing, which promotes scaling based on app usage	Users utilizing Cloud Metrics here can perform scaling depending on their levels of operation.

Aspect: price

Amazon EC2	Microsoft azure	Google Cloud Platform
$69 per month	$70-75 per moth	$50-55 per month

Aspect: tools

Amazon EC2	Microsoft azure	Google Cloud Platform
SageMaker, Lex, Machine Learning, Deep Lens, and Translate	include AI tools like Azure Bot Service, Cognitive Service, and Machine Learning. IoT tools comprise IoT Hub, IoT Edge, Stream Analytics, and Time Series Insights	Dialogflow Enterprise Edition, Cloud Speed API, and Cloud Natural Language.

Advantages Cloud Computing Platforms:

Amazon EC2	Google Cloud Platform	Microsoft Azure
-Can Handle Massive Enterprise Demands -Its EC2 Compute Engine Is Customizable - Has great security features. -Allows for elasticity as user demands increase.	-Promotes business agility - Facilitates business collaboration. - Allows for data ownership even when one switches to a different device. - It can also be applied anywhere.	- Provide solutions to cloud storage among Windows users. - Increases business agility. - Supports integration of businesses. - Has a secure log-in system. -It can be deployed anywhere.

Disadvantages Cloud Computing platforms:

Amazon EC2	Google Cloud Platform	Microsoft Azure
-A fluctuating pricing structure which worries many of its users.	-Hefty Prices On Certain Services. -The GCP web interface may prove confusing to use for some people.	-Some of its enterprise-grade applications are flawed to execute business needs perfectly.

OPINIONS

Abdulaziz's opinion: cloud computing help me a lot, I always use it, it is one of the things that made up the world revolution even more developed. It is easy, clear, free, flexible and so helpful.

Abdullah's opinion: The whole concept of cloud computing was fascinating, but I was specifically thrilled by the security tools employed by cloud computing service providers to up their game. Specifically, I like the security steps that Google Cloud Platform has taken to keep user convenience. This is the two factor authentication system that ensures data security for its users.

Nur Syakirah's opinion: Microsoft azure very interesting service for users who need Microsoft integration. It really help because have variety of collection of cloud tools

Syahir's opinion: In my opinion, Microsoft Azure is the best choice for me because it easy to use and its high redundancy system guarantees minimal down time. Storage from Azure also offers easy and painless file access, reviews also report that setting up, modifying, and configuring VMs for the cloud property is simpler.

CONCLUSION

At the end there are many cloud companies which are providing the same services but with some slight differences for example in the price and capabilities. Some people used Azure and they give it Thumbs up and say it the best option to anyone want to have a virtual machine or clouding services, Others don't like it, and Amazon is the same. Thus, it is all about what the customer feels comfortable with and made him happy. In conclusion, cloud computing is a big field that needs from one several years to have a background about, it is an interesting field as well.

References

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