CASE STUDY

Practical No :1

Assignment: Case study on Microsoft azure to learn about Microsoft Azure is a cloud computing platform and infrastructure, created by Microsoft, for building, deploying and managing applications and services through a global network of Microsoft-managed data centers.

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Abstract

Cloud ?

The cloud refers to software and services that run on the Internet, instead of locally on your computer. Most cloud services can be accessed through a Web browser like Firefox or Google Chrome, and some companies offer dedicated mobile apps.Some examples of cloud services include Google Drive, Apple iCloud, Netflix, Yahoo Mail, Dropbox and Microsoft OneDrive. (There are also many, many business applications for cloud computing, but for the purpose of this post, I'll deal with consumer solutions.)The advantage of the cloud is that you can access your information on any device with an Internet connection. It's what allows you to make edits to a file in Google Docs on your home computer, and then pick up where you left off when you get to the office. Colleagues can even collaborate on the same document.

Services provided by the Microsoft azure cloud computing platform :

- Storage
- Web + Mobile
- Databases
- Compute
- Networking
- Data + Analytics
- Internet of Things
- AI + Cognitive Services
- DevOps.
- Security.

Introduction :

Microsoft Azure is a platform that enables users to engage in agile cloud computing, and is designed for creating and managing apps through Microsoft's data centres.There is a myriad of tools within the platform that you can use to excel your IT performance dramatically. As a consequence of its flexibility, even official guidelines about Azure can be confusing and difficult to understand. As a basic definition, Azure (formerly Windows Azure) is Microsoft's operating system for cloud computing. The operating system was released commercially just a few years ago, on the 1st of February 2010. It was designed to minimise any ongoing expenses and simplify any IT management processes, and has certainly made an impact on the market .Popularly termed as "Pay As You Go", which means how much you use, pay only for that. Microsoft unveiled Windows Azure in early October 2008 but it went to live after February 2010. Later in 2014, Microsoft changed its name from Windows Azure to Microsoft Azure. Azure provided a service platform for .NET services, SQL Services, and many Live Services. Many people were still very skeptical about "the cloud". As an industry, we were entering a brave new world with many possibilities. Microsoft Azure is getting bigger and better in coming days. More tools and more functionalities are getting added. It has two releases as of now. It's famous version Micorosft Azure v1 and later Microsoft Azure v2. Microsoft Azure v1 was more like JSON script driven then the new version v2, which has interactive UI for simplification and easy learning. Microsoft Azure v2 is still in the preview version.

Azure can help in business in the following ways-

Easy to implement:

It is very easy to implement your business models in Azure. With a couple of on-click activities, you are good to go. Even there are several tutorials to make you learn and deploy faster.

Better Security:

Azure provides more security than local servers. Be carefree about your critical data and business applications. As it stays safe in the Azure Cloud. Even, in natural disasters, where the resources can be harmed, Azure is a rescue. The cloud is always on.

Work from anywhere:

Azure gives you the freedom to work from anywhere and everywhere. It just requires a network connection and credentials. And with most serious Azure cloud services offering mobile apps, you're not restricted to which device you've got to hand.

Capitaless:

We don't have to worry about the capital as Azure cuts out the high cost of hardware. You simply pay as you go and enjoy a subscription-based model that's kind to your cash flow. Also,to set up an Azure account is very easy. You simply register in Azure Portal and select your required subscription and get going.

Less Operational Cost:

Azure has low operational cost because it runs on its own servers whose only job is to make the cloud functional and bug-free, it's usually a whole lot more reliable than your own, on-location

server.

Cost Effective:

If we set up a server on our own, we need to hire a tech support team to monitor them and make sure things are working fine. Also, there might be a situation where the tech support team is taking too much time to solve the issue incurred in the server. So, in this regard is way too pocket-friendly.

Easy Back Up and Recovery options:

Azure keep backups of all your valuable data. In disaster situations, you can recover all your data in a single click without your business getting affected. Cloud-based backup and recoverysolutions save time, avoid large up-front investment and roll up third-party expertise as part ofthe deal.

Increased collaboration:

With Azure, teams can access, edit and share documents anytime, from anywhere. They can work and achieve future goals hand in hand. Another advantage of the Azure is that it preserves records of activity and data. Timestamps are one example of the Azure's record keeping.Timestamps improve team collaboration by establishing transparency and increasing accountability.

Difference between AWS (Amazon Web Services), Google Cloud and Azure :

Parameter	AWS	Azure	Google Cloud Platform
App Testing	It uses device farm	It uses DevTest labs	It uses Cloud Test labs.
API Management	Amazon API gateway	Azure API gateway	Cloud endpoints.
Kubernetes	EKS	Kubernetes service	Kubernetes engine
Git Repositories	AWS source	Azure source	Cloud source
Data warehouse	Redshift	SQL warehouse	Big Query
Object Storage	S3	Block Blobs and files	Google cloud storage.
Relational DB	RDS	Relational DBs	Google Cloud SQL
Block Storage	EBS	Page Blobs	Persistent disks

Marketplace	AWS	Azure	G suite
File Storage	EFS	Azure Files	ZFS and Avere
Media Services	Amazon Elastic transcoder	Azure media services	Cloud video intelligence API
Virtual network	VPC	VNet	Subnet
Pricing	Per hour	Per minute	Per minute

Study :

Microsoft sorts Azure cloud services into nearly two dozen categories, including:

Internet of things.

These services help users capture, monitor and analyze IoT data from sensors and other devices. Services include notifications, analytics, monitoring and support for coding and execution.

DevOps.

This group provides project and collaboration tools, such as Azure DevOps -- formerly Visual Studio Team Services -- that facilitate DevOps software development processes. It also offers features for application diagnostics, DevOps tool integrations and test labs for build tests and experimentation.

Development.

These services help application developers share code, test applications and track potential issues. Azure supports a range of application programming languages, including JavaScript, Python, .NET and Node.js. Tools in this category also include support for Azure DevOps, software development kits (SDKs) and blockchain.

Security.

These products provide capabilities to identify and respond to cloud security threats, as well as manage encryption keys and other sensitive assets.

Artificial intelligence (AI) and machine learning.

This is a wide range of services that a developer can use to infuse artificial intelligence, machine learning and cognitive computing capabilities into applications and data sets.

Compute.

These services enable a user to deploy and manage VMs, containers and batch jobs, as well as

support remote application access. Compute resources created within the Azure cloud can be configured with either public IP addresses or private IP addresses, depending on whether the resource needs to be accessible to the outside world.

Mobile.

These products help developers build cloud applications for mobile devices, providing notification services, support for back-end tasks, tools for building application program interfaces (APIs) and the ability to couple geospatial context with data.

Web.

These services support the development and deployment of web applications. They also offer features for search, content delivery, API management, notification and reporting.

Storage.

This category of services provides scalable cloud storage for structured and unstructured data. It also supports big data projects, persistent storage and archival storage.

Analytics.

These services provide distributed analytics and storage, as well as features for real-time analytics, big data analytics, data lakes, machine learning (ML), business intelligence (BI),internet of things (IoT) data streams and data warehousing.

Networking.

This group includes virtual networks, dedicated connections and gateways, as well as services for traffic management and diagnostics, load balancing, DNS hosting and network protection against distributed denial-of-service (DDoS) attacks.

Media and content delivery network (CDN).

These CDN services include on-demand streaming, digital rights protection, encoding and media playback and indexing.

Integration.

These are services for server backup, site recovery and connecting private and public clouds.

Identity.

These offerings ensure only authorized users can access Azure services and help protect encryption keys and other sensitive information in the cloud. Services include support for Azure Active Directory and multifactor authentication (MFA).

Conclusion and Recommendation

Microsoft Azure provides Networking , Storage , Databases , Internet of Things these cloud

services which is used in various sectors such as financial , government and Business also it provides data security and improved Scalability , business sustainability Using these services one can perform their task more efficiently and in short period of time .

References

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