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# Microsoft Azure and its Services

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**ABSTRACT:** Cloud computing is that the set of technologies and infrastructure capabilities being offered during a utility base consumption model. Microsoft's Azure is the Cloud Computing platform offering to help its customers realize the benefits of cloud computing. The main goal of this paper is to understand different cloud computing services provided by the Microsoft Azure in the best possible way in order to get the best performance in a cost-effective manner. Microsoft Windows azure has proved to be an asset in terms of providing good cloud computing services hence is in high demand. The paper provides a whole knowledge about Microsoft Azure and its services, and developing and deploying applications on Azure Cloud Using Different Services offered by it.

**KEYWORDS:** Microsoft Azure, cloud computing, Services.

## I. INTRODUCTION

Azure is a cloud computing platform with an ever-expanding set of services to assist you builds solutions to satisfy your business goals. Azure services include the simple web services for hosting your business presence within the cloud to running fully virtualized computers for you to run your custom software solutions. Azure provides lots of cloud-based services like computing, remote storage, database hosting, and centralized account management. Azure also offers new capabilities like Artificial intelligence and Internet of Things.

Microsoft Azure is that the Cloud Computing platform developed by Microsoft for building, testing, deploying, and managing applications and services through the info centres powered and managed by Microsoft. The major quite services provided by the platform as SaaS (Software as a service), PaaS (Platform as a Service), and IaaS (Infrastructure as a Service). Also, Provides supported environment for various programming languages, tools, and frameworks which are owned by Microsoft as well as third parties.

## II. EVALUATION OF MICROSOFT AZURE

Microsoft introduced Windows Azure in early October 2008 then it went to live after February 2010. Microsoft changed its name from Windows Azure to Microsoft Azure in 2014. Azure provided a service platform for Network, Database, Artificial intelligence and lots of Live Services. Many people were still very doubtful about "the cloud". As an IT industry, we are entering in a brave new world with many possibilities. Microsoft Azure is going to be bigger and better in coming days. More tools and more functionality are becoming added. It has two releases as of now Microsoft Azure v1 and later Microsoft Azure v2. Microsoft Azure v1 is more similar like JSON and the new version of Microsoft Azure v2, which has user friendly and interactive UI for simplification and easy learning. Microsoft Azure v2 remains within the preview version.

## III. WHAT IS MICROSOFT AZURE?

Microsoft Azure is a cloud computing platform that allows you to access and manage cloud services and resources provided by Microsoft. These services and resources include computing, storing data and transforming it depends on your requirements. To access these resources and services, all you need to have is a stable internet connection and the ability to connect to the Azure portal.

Things that you should know about Azure:

- It's free to start and it is a pay-per-use model. Which means you can pay only for the services you opt for.

- 80 percent of the Top 500 companies use Azure services for their cloud computing needs.
- It supports multiple programming languages, including C#, Java and Node Js.
- Benefit of Microsoft Azure is that it has the most number of data centers around the world. There are 42 Azure data centers spread all across the globe and which makes it highest number of data centers for any cloud platform. Azure is planning to acquire 12 more data centers, which will increase the total number of data centers from 42 to 54, shortly.

#### IV. HOW DOES IT WORKS?

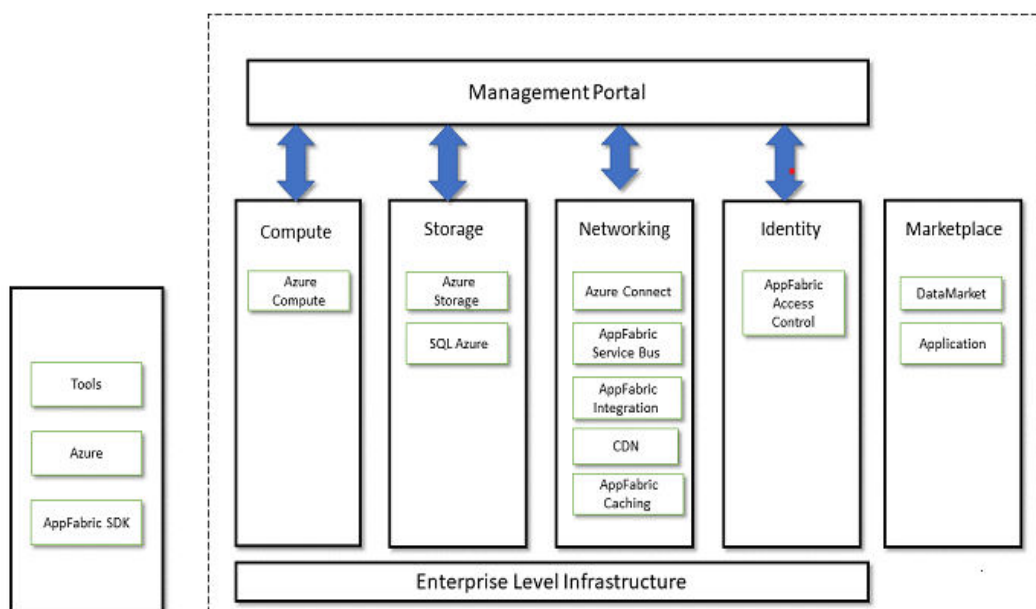


Fig.Microsoft Azure Architecture.

Let us try to understand, Microsoft Azure Architecture by the given diagram:

App Fabric is that the middleware which comprises of services like artificial intelligence, database, compute, storage, identity management and networking. Azure is hosted within Microsoft data centers. It is accessible from Microsoft Azure Management Portal. Next, let's mention the middleware intimately below, as services.

Let us now explore a number of the services that are provided by Microsoft Azure within the segment below.

#### V. MICROSOFT AZURE SERVICES

##### Azure AI

Microsoft Azure enables your AI teams to have quick access to AI services and helps you engage with customers, empower your employees, and optimize business processes across the organization. Your developers can create interactive applications on Azure's AI Platform which offers AI capabilities like NLP, speech recognition, voice synthesis, face detection, video indexing, and text analytics.

Further, Microsoft Azure Bot Service releases intelligent agents on different platforms (website, Facebook messenger, Skype, email, SMS, etc.) that can be used to create intelligent chat applications.



## Azure storage

Microsoft Azure's data storage service provides secure and scalable cloud storage for both, structured and unstructured data. By using Azure Storage, your data security experts can ensure safe integration of your data with the cloud data.

Azure Storage provides multiple storage options such as queue, file, blob, and NoSQL. There is no restriction on storing any size of data, from a small size blob to a large file, as per your business requirement without affecting the production environment.

## Database

This service includes Database as a Service (DBaaS) for SQL and NoSQL, also like other database instances such as Azure Cosmos DB and Azure Database for PostgreSQL. Microsoft Azure includes Azure SQL Data Warehouse support, caching and also hybrid database integration and migration features. Azure SQL is the main platform's database service. It is a electronic database that gives SQL functionality without the necessity for deploying a SQL server.

## Networking

Microsoft Azure network services provide you verity of options for how Windows Azure applications can be delivered to users and datacentres. Now Microsoft Azure offers two different network services:

- **Virtual Network:** This service allows you to treat the Windows Azure public cloud as if it is an extension of your on-premises datacentre.
- **Traffic Manager:** This service allows you to route application traffic for the user who is using the application to Windows Azure datacentres in three ways: for best performance and using an Active/Passive failover configuration, or in round robin fashion.

## VI. CONCLUSION

Microsoft Azure going to replaces or supplements your on-premise infrastructure. However, it provides verity of other services that improve the functioning and performance of several departments in your organization that help you resolve critical business problems.

These services are only a sight of what Azure can do for your business. Many enterprises all across the globe are utilizing the capabilities of Microsoft Azure applications to improve their business models as it transforms overall infrastructure and application performance.

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