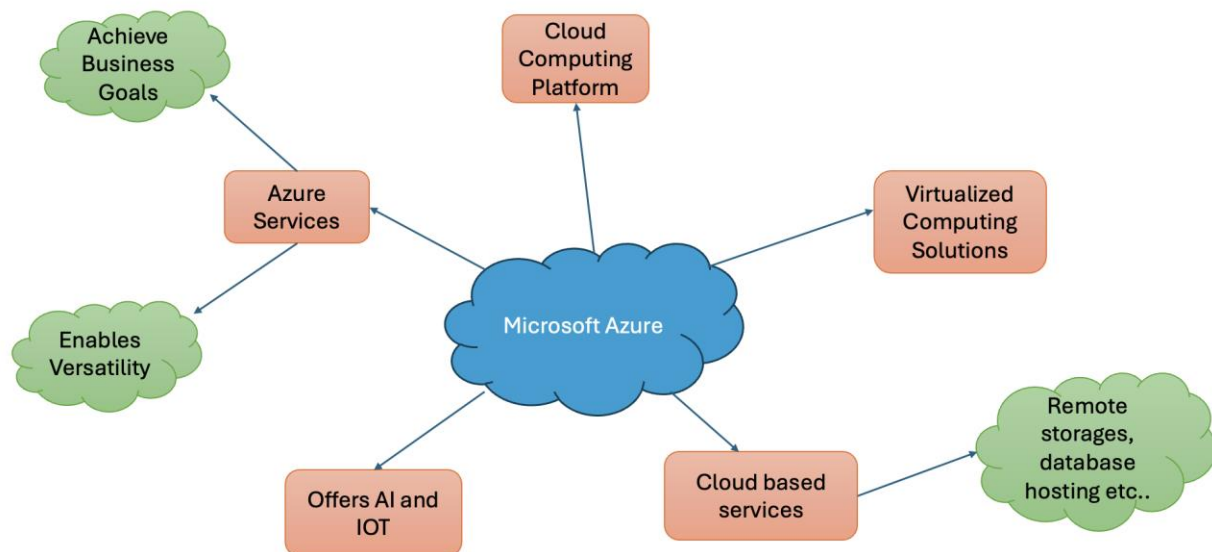


Introduction to Microsoft Azure Fundamentals.



Let's embark on a deep dive into Microsoft Azure using our 3W's concept:

What is Microsoft Azure?

- Azure is a public cloud platform.
- Developed and operated by Microsoft.
- It provides wide range of services to build, deploy and manage applications across the global networks.

Why is Azure important?

- Cloud Platform: Offers computing resources like servers, storage, databases over the internet.
- Virtual Access: Manage resources virtually, no physical hardware needed.
- Scalability: Easily adjust resource usage based on your needs.
- High Availability: Designed for reliability and minimal downtime.
- Pay-as-you-go: Only pay for the resources you use.
- Open & Flexible: Supports various operating systems, languages, and frameworks.

where Azure plays a role?

- Web and Mobile App Development
- Data Storage and Analytics
- Machine Learning and Artificial Intelligence
- Software Development and Testing
- High-Performance Computing (HPC)
- Backup and Disaster Recovery
- Gaming Industry

What is cloud Computing?

Cloud computing refers to accessing services such as virtual machines, storage, and databases etc. which are stored in data centers via the internet.

Why is cloud computing important?

- No need to own anything
- Pay only for what you use
- Easy to scale
- Access from anywhere

For instance, when affordability and maintenance of high-end computers or laptops become challenging for our applications, cloud computing steps in as a crucial solution. By renting computing resources, we can effortlessly build and deploy applications without the added tasks of managing upgrades, patching, or storage, ensuring streamlined operations and cost-effectiveness.

Where is cloud computing used?

- Email services
- Streaming services
- Social Media
- Online gaming

*At the heart of every cloud platform lies a powerful duo: **computing muscle and spacious storage.***

Personal Computer – Owned

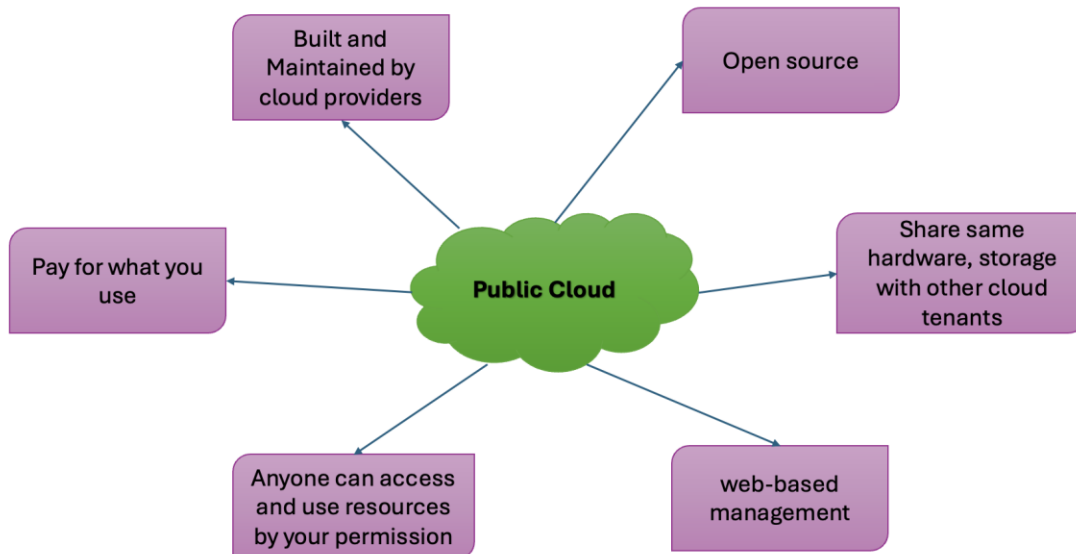


Cloud Computer – Datacenter



Cloud Models - Deployment Options?

Public Cloud



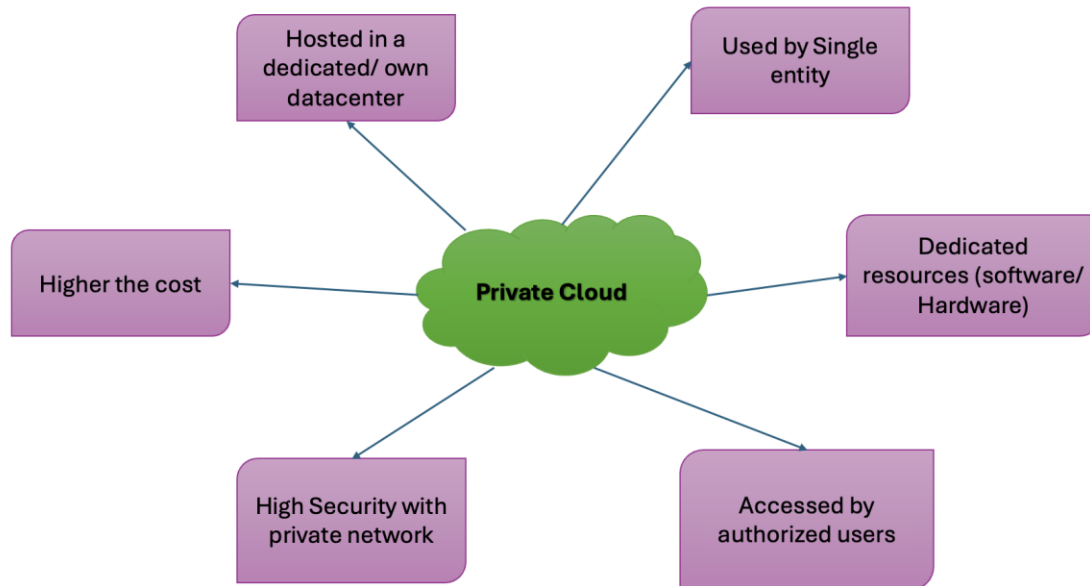
Advantages of Public Cloud:-

- Cost-efficient

- Lower Maintenance
- High scalability

Public clouds are used by web-based emails, non-profitable organizations, small and medium businesses.

Private Cloud

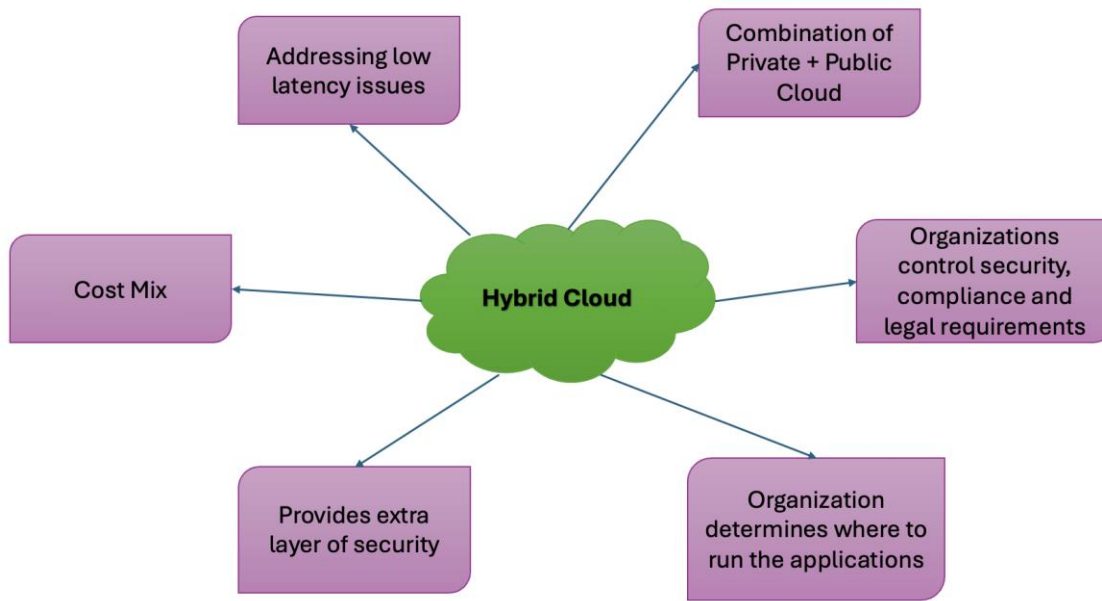


Advantages of Private Cloud:-

- High availability
- High of security and privacy
- More control and flexibility

Private clouds are used by Government agencies, financial institutes, Healthcare, organizations with specific compliance needs.

Hybrid Cloud



Advantages of Hybrid Cloud:-

- High Security
- Cost effectiveness and Ease of usage
- High flexibility and control

Hybrid clouds are used by companies like – Netflix, Airbnb, Uber, Large retail chains, Manufacturing Units etc.

Multi-cloud

An organization used the cloud computing services from two or more different cloud providers. This can be a combination of public cloud, private cloud or a hybrid cloud.

Flexibility, cost optimization and innovation

Shared Responsibility Model

It is a security framework that divides the responsibility between a cloud service provider and its customer for securing the cloud environment.

This provides a clear picture of who oversees safeguarding various parts of the cloud infrastructure and the data that is kept there.

Cloud service provider responsibility

In-charge of providing infrastructure security

- Physical Security, Power, cooling and network connectivity.
- Patching and updates for the infrastructure.

Customer responsibility

In-charge of their own Data and Applications security.

- Data and information stored in the cloud.
- Managing Access control.
- Security for their own data.
- Patching and updates for their own infrastructure

You oversee everything if you operate your own on-site datacenter. When using cloud computing, these duties are divided.

Consumption-Based Model: Understanding CapEx and OpEx

Capital Expenditure (CapEx)

Capital expenditure involves a one-time investment to acquire or secure tangible resources. Examples include building a data center or purchasing 100 laptops.

When building a data center, the investment is substantial. It encompasses acquiring all necessary hardware, networking equipment, cooling systems, and security measures. This process is both time-consuming and costly, delaying the commencement of your application.

Operational Expenditure (OpEx)

Operational expenditure, on the other hand, refers to spending on services or products over a specific period. Examples include renting a hall or leasing a vehicle.

For application development, OpEx allows you to pay for services as you use them, with no concerns about infrastructure maintenance, as it is managed by the cloud provider. Scaling up virtual machines can be done in minutes, and you only pay for what you use.

Cloud Computing and OpEx

Cloud computing falls under OpEx, where expenses are incurred only for the IT resources utilized. This model eliminates the need for physical infrastructure costs, electricity, and other data center maintenance expenses.

Advantages with OpEx

- Flexibility, scalability, and cost-efficiency
- Innovation and growth

Cloud Pricing Models

In the cloud, you only pay for what you use. This means you are billed solely for the services you consume, allowing for cost-effective and flexible resource management.

- Plan and maintain accordingly
- Run efficiently
- Scale it up as your business requirements