

DAY 18

NAME: ANNIE JOHN

USER ID:27739

Batch: 25VID0885_DC_Batch4

TITLE: MICROSOFT AZURE

➤ **What is Microsoft Azure?**

Microsoft Azure is a **cloud computing platform** and service created by Microsoft. It offers a wide range of **services** (over 200) that include computing, storage, databases, networking, AI, and more. Azure helps organizations build, deploy, and manage applications through Microsoft-managed data centres.

➤ **Different Domains in Azure**

Azure services are organized into various **domains or categories**, each focused on a specific type of solution:

Domain	Description
Compute	Run applications using virtual machines, containers, functions, etc.
Networking	Connect and secure services across the cloud and on-premises.
Storage	Store and access data securely and efficiently.
Databases	Use managed SQL, NoSQL, and open-source databases.
AI & Machine Learning	Build intelligent apps with AI and ML models.
DevOps	Tools for CI/CD, version control, and monitoring.
Security & Identity	Identity access management (IAM), threat protection, and compliance.
IoT	Connect, monitor, and manage IoT devices.
Migration	Move on-premises workloads to Azure.
Analytics	Real-time and batch data analysis services.

➤ Azure Compute Services (Compute Domain)

These services provide **computing power** to run applications and services:

Service	Description
Azure Virtual Machines (VMs)	Create and manage Windows or Linux VMs in the cloud.
Azure App Services	Host web apps, REST APIs, and mobile backends without managing infrastructure.
Azure Functions	Run small pieces of code (serverless) on demand.
Azure Kubernetes Service (AKS)	Deploy and manage containerized apps using Kubernetes.
Azure Batch	Run large-scale parallel and high-performance computing (HPC) jobs.
Azure Container Instances	Run containers without managing servers or clusters.

➤ Azure Networking Domain

Azure Networking services help **connect, secure, and deliver** applications across cloud and hybrid environments:

Service	Description
Azure Virtual Network (VNet)	Isolated network for resources like VMs and databases.
Azure Load Balancer	Distributes traffic across multiple services to ensure reliability.
Azure VPN Gateway	Securely connects on-premises networks to Azure via VPN.
Azure ExpressRoute	Private, fast, and secure connections to Azure from on-premises.
Azure Application Gateway	Web traffic load balancer with application-level routing and security (includes WAF).
Azure DNS	Host and manage your domain name system records in Azure.
Azure Firewall	A managed, cloud-based network security service to protect Azure resources.

➤ Azure Storage Domain

The **Azure Storage domain** provides **scalable, secure, and durable cloud storage solutions** for all types of data—structured, unstructured, or semi-structured. It supports storing files, blobs, queues, tables, and more.

➤ Key Azure Storage Services:

Service	Description
Azure Blob Storage	Stores unstructured data like images, videos, documents, and backups. Ideal for cloud-native apps.
Azure File Storage	Managed file shares accessible via SMB or NFS. Can be mounted on Windows, Linux, or macOS.
Azure Queue Storage	A message queuing service for asynchronous communication between components.
Azure Table Storage	NoSQL key-value store for semi-structured data, useful for logs or user data.
Azure Disk Storage	High-performance block storage for Azure VMs (like hard drives for cloud servers).
Azure Archive Storage	Low-cost, long-term storage for rarely accessed data (e.g., backups, archives).
Azure Data Lake Storage	Optimized for big data analytics workloads; supports HDFS and massive scalability.