

Cloud Computing & Azure Fundamentals

- Cloud Computing & Microsoft Azure Fundamentals
- Microsoft Azure Portal Overview (Utilization, Cost)
- Overview of Cloud Computing (Benefit, Capex/Opex)
- Overview of Public and Private Cloud & Hybrid
- Core Azure Service
- Availability Zones, Availability Set, Resource Groups, Azure Resource Manager
- Security & Governance Overview
- Identity, Azure Active Directory, Users & Groups
- Subscriptions and Accounts, Azure Policy, Role-based Access Control (RBAC)
- Azure Portal and Cloud Shell & Azure PowerShell and CLI

Cloud Networking & Storage

- Azure Virtual Machine
- Create Virtual Machine
- Manage Virtual Machine
- Create/Manage Disks
- Create VM images
- Create Scale Set
- Load Balance VMs

Virtual Network

- Create Virtual Network (Portal, PowerShell & CLI)
- Add, Change or Delete a Subnet
- Connect Virtual Networks
 - Virtual Network Peering
- Filter Network Traffic
- Route Network Traffic
 - Route Table
- Restrict Virtual Network
- Secure Network Traffic
 - Network Security Groups
 - Application Security Groups
 - Virtual Network Service End Points
- Monitor Virtual Networks
 - Virtual Network Terminal Access Point (TAP)

Azure Load Balancer

- Load Balancer Algorithm
- Load Balancer Components
- Create Public & Internal Load Balancer
- Standard Load Balancer & Availability Zones

VPN Gateway, Azure Application Gateway

- Create & Manage VPN Gateway
- Create Site to Site VPN Connection
- Gateway Configuration Settings

- Create Application Gateway
- Support High Traffic Volumes
- Autoscaling and Zone-redundant Application Gateways

Azure CDN

- Create an Azure CDN Profile and endpoint
- Monitor health of Azure CDN Resources
- Azure Diagnostic Logs
- Azure CDN Usage Patterns

Azure Traffic Manager

- Create Traffic Manager Profile
- Traffic Manager Routing Methods
- Traffic Manager Endpoints
- Enable Resource Logging

Azure Storage Services

- Core Storage Services
 - Azure Blobs
 - Azure Files
 - Azure Queues
 - Azure Tables
 - Azure Disks
- Creating Storage Account
- Azure Blob Storage
 - Work with blobs
 - Upload, download & list blobs
 - Encrypt & Decrypt blobs using Azure Key Vault
- Introduction to Azure Data Lake Storage
- Authorize access to Azure Storage
- Choosing Data Storage Technology in Azure
- Structured Data, Semi Structure Data, Unstructured Data
- Accessing Azure Storage using Azure SDK & C#.NET

Azure API Management

- API Management Features
- Create an Instance
- Manage API Management
 - Import and Publish First API
 - Mock API response
 - Monitor Published APIs
- Self-Hosted Gateway Overview
- Overview of Products
- Creating and Publishing Products
 - Add an API tan existing Product

Azure PaaS Services

Azure Web App

- What is App Service
- App Service Plan and Comparison between them
- App Service Environments
- Creating ASP.NET Web APP
- Deploying App Using Visual Studio & Kudu
- Run App in Staged Environments using deployment slots
- Working with Configurations
- Accessing Configuration using ASP.NET Application
- Host API with CORS
- Creating and Using Web Jobs

Azure Function App

- Overview of Serverless Computing & Benefits
- Create Function App using C# in Azure Portal
- Deploying Function App using Visual Studio
- Bindings & Triggers and their Types
- Implementing Various Triggers
- Accessing Functions using Keys
- Durable Functions
- Serverless Comparison
- Hosting Plan

Azure Service Bus

- Service Bus Messaging
- Queues, Topics and Subscriptions
- Create Service Bus Queue
- Create Service Bus Topics & Subscriptions
- Send and Receive Messages – Queues
- Accessing Service Bus using C#.NET Azure SDK
- Handle Service Bus Events via Event Grid
- Publish and Subscribe for Messages
- Monitor Service Bus using Azure Monitor

Azure Logic App

- Introduction to Logic App
- Single-tenant versus multi-Tenant
- Creating Logic App
- Schedule Based Workflows
- Approval Based Workflows
- Creating Azure Storage and Azure Function Work Flow
- Deploy Logic Apps
- Automated Logic App Deployment

Azure Data Factory

- Pipelines and activities in Azure Data Factory
- Azure Data Factory UI
- Create Azure Data Factory UI
- Create Data Flow
- Copy and Ingest Data
- Transform Data with Mapping Data Flows
- ETL Mapping

Overview of Azure Analysis Service

- Create Server-Portal
- Adding Model, Configure Server Administrator and User Roles
- Authentication and User Permissions
- Service Principles

Azure Database Services & Azure SQL

- Database Workloads in Azure
- OLAP in Azure Introduction
- Non-Relational Databases in Azure
- Azure SQL Introduction
- Migrate to Azure SQL
- SQL Managed Instances
- Elastic Pools
- Instance Pools
- Create SQL Database
- Configure Firewall
- Configuring Security
- Logins, user accounts, roles, and permissions

Cosmos DB

- Introduction to Azure Cosmos DB
- NoSQL Vs Relational Databases
- Cosmos DB Resource Model
- Global Distribution
- Partitioning and horizontal scaling
- Create an Azure Cosmos Account
- Build a .NET Web APP to Manage Data
- Query Data with SQL Queries
- Introduction to the Azure Cosmos DB Cassandra API
- Types of Consistencies in Cosmos DB

Containers, ACR & ACI

- Introduction to Containerization of Web Apps
- Comparing On-Premises, Virtual Machines & Containerized deployments
- Introduction to ACI & Features
- Docker Hub Vs ACR

- Comparing Various Options to Deploy Containerized Apps in Azure (Highlight benefits & Limitation)
 - Azure App Service
 - Azure Container Instances
 - Azure Kubernetes Service
 - Azure Functions
- Create ASP.NET Core Web Application with Docker Support (MVC / Web API)
- Creating Tags for Versioning App
- Pushing Containerized App on Azure Container Registry
- Create ACI Service Instance
- Deploy App on ACI by pulling image from ACR
- Environments, Containers & Revisions
- Application Lifecycle Management