

Azure Development Syllabus (AZ-204)**Cloud Computing Introduction**

- What is Cloud Computing
- Cloud Characteristics
- Cloud Computing Service Models
- Deployment Models in Cloud Computing
- Advantages and Disadvantages of Cloud Computing
- Cloud Computing Job Roles.
- Cloud Computing Platforms and Certifications.

Getting Starting with Azure

- Introduction to Azure
- Why, What and Benefits of Azure
- Azure Hosting Models
- Azure Services
- Subscribing to Microsoft Azure
- Azure Portals
- Azure Key Concepts
- Azure Resource Group
- Installing Microsoft Azure SDK

Azure Storage Service

- About Storage Service and Account
- Creating a Storage Account
- Working with Blob Storage
 - Types of Blobs (Block, Append, Page)
 - Container and Metadata
 - Soft Copy
 - Azure Storage Explorer
 - Transfer Data using AzCopy
 - Programming Blob Storage
 - Async Blob Copy
 - Configure Custom Domain
 - Scale Blob Storage
 - Storage Service Encryption
- Manage Access / Securing Storage

- Create and Manage Shared Access Signature
- Account SAS vs Service SAS
- Using Stored Access Policies
- Regenerating Keys
- Encrypt Keys using Azure Key Vault integration
- Programming in C#
- Working with Table Storage
 - Understanding NoSQL Database
 - Creating Table and Entities using Storage Explorer
 - Entities and Properties
 - Table storage vs COSMOS DB Table API
 - Programming Table Storage
- Azure Queues Storage
 - Understanding Async Communication using Queues
 - Comparing Azure Queues and Service Bus Queues
 - Programming Queues
- Azure SMB File Storage
 - Common usage of File Storage
 - Shares, Directory and File
 - Managing Using Azure Portal
 - Programming File Storage

Implement and Manage Application Services

- Introduction
- App Service - Application Types
- Deploy Web Apps
 - Deploying Web App directly from Visual Studio
 - Automate deployment from Dropbox and One Drive
 - Create, configure and deploy packages
 - Implement pre- and post-deployment actions;
- App Service plans;
 - Create App Service Plan
 - Migrate Web Apps between App Service plans;
 - Create a Web App within an App Service plan
- Configuring Web Apps
 - Application Settings Configuration,

- Database Connection Strings,
- Configuring Handlers and Virtual Directories,
- Manage App Services
 - Configure a custom domain name
 - Enable SSL for your custom domain
 - Understanding Deployment Slots and Roll back deployments;
 - App Service Protection
 - Manage Roles for an App service
- Configure Web Apps for scale and resilience
 - Horizontal and Vertical Scaling of a Web App
 - Configure auto-scale
 - Change the size of an instance
- Monitoring, Debugging and Diagnosis
 - Retrieve Diagnostics data
 - View Streaming Logs
 - Configure endpoint monitoring
 - Configuring Alerts
 - Configure diagnostics
 - Use remote debugging
 - Monitor Web App resources
- Azure Traffic Manager to Scale out Globally

Implement Azure Functions

- About Azure Functions.
- Azure Webjobs vs Azure Functions
- Create and Configure an Azure Function
- Create an event processing function
 - Timer Triggered Function
 - Blog Storage Triggered Function
- Implement an Azure-connected functions
 - Adding message to Storage Queue
 - Connecting to SQL Database
- Creating Azure Functions through Visual Studio
- Azure Durable Functions
- Walkthrough: Creating Image Thumbnail

Azure CosmosDB Service

- What is CosmosDB
- Global Replication and Consistency Levels
- Understanding SQL Model database Schema
- Creating and Saving Documents using Portal
- Programming Schema
- Adding / Editing / Deleting and Reading Documents

Azure App Service - Logic Apps

- Introduction
- Triggers and Actions
- Creating a Simple Logic App
- Handling array of Items using for-each and condition
- Logic App with Variables
- Add Custom Function with Azure Function
- Using Custom API App in Logic App
- Azure Functions vs Logic Apps

App Service - API Apps

- Introduction
- Creating an API App
- Deploying an API App
- Consuming an API App
- Authentication and Authorization in API App.
- Using API App in Logic App

API Management Service

- Overview of API Management
- Components of API Management System.
- API Apps vs API Management.
- Create managed APIs.
- Configure API management policies.
- Protect APIs with rate limits.
- Add caching to improve performance.

Azure Service Bus

- Service Bus Basics
- Hosting WCF Service in Azure
- Relayed Messaging
- Service Bus Queues
- Topics and Subscriptions
- Notification Hubs
- Monitoring Event Hubs
- Handling Sessions
- Handling Transactions

Key Vault

- Secrets vs Keys
- Accessing Keys and Secrets
- Use cases for Key Vault
- Use Azure Key Vault from a Web Application
- Using Key Vault with ARM Template
- Encrypt and Decrypt BLOBS in Azure Storage

Redis Caching

- Caching Overview
- What is Redis Cache
- Creating a Redis Cache
- Developing Redis Cache Client
- Controlling Expiration

Implement Azure Search within Solution

- About Search Service,
- Create Search Service,
- Create Index
- Import Data,
- Handle Search Results
- Programming Search in .NET using Azure Search SDK

Authentication and Authorization using Azure Active Directory

- Application Types Scenarios
- Multi-Tenant vs Single-Tenant

- Integrating ASP.NET MVC Applications with Azure AD
- Integrating ASP.NET Web API Applications with Azure AD
- Claims Based Authentication
- Role Based Authentication
- Implementing Azure AD B2C Collaboration
- Social Identity Provider Authentication
 - Username and Password
 - Microsoft Account
 - Facebook
 - Google
 - Twitter
- Microsoft Graph API

Docker Registry

- Azure Container Registry
- Azure Container Instance

Brief About Microservices and Kubernetes

- What is Monolithic Application
- What are Microservices
- Kubernetes Architecture
- Azure Kubernetes Service (AKS)
- Example