AZ-203: DEVELOPING SOLUTIONS FOR MICROSOFT AZURE

WHY AZURE?

Whether it is a Simple Website or Ecommerce Portal or CRM or Office Automation tools or DevOps tools or anything which needs Server Infrastructure - all are now finding their space in Cloud. Every organization, small, medium or large is now moving towards cloud computing platforms.

Microsoft Azure is the fastest growing platform in today's date. It's a perfect blend of all the tree major cloud computing service models – IAAS, PAAS and SAAS.

Azure is available in **150 countries**, including China, and supports 10 languages and 24 currencies, all backed by Microsoft's **$15 billion** (USD) investment in global datacenter infrastructure.

Azure is currently available in 54 regions around the world.

95% of Fortune 500 companies use Azure

120,000 new Azure customer subscriptions per month

COURSE OVERVIEW

This course teaches software developers on how they can leverage the cloud Platform as a Service (PaaS) solutions for building enterprise scale applications. This course will cover all the course objectives of Azure Certification exam AZ-200 Microsoft Azure Developer Core Solutions like elect the appropriate cloud technology solution, develop for cloud storage, Create Platform as a Service Solutions and Secure cloud solutions.

 This, Microsoft Azure training is targeted for ANYONE who wants to move their current skillset to Microsoft Azure cloud, taking the benefit of unlimited computing, storing and networking power, for the unlimited personal career growth.

WHY ONE SHOULD LEARN AZURE?

Are you moving with the pace of the industry?

Are you not getting the sense of being outdated?

Is stagnation not bother you?

Is your Job Secured?

Actually, you don't have choice!!!

For every IT professional, it has now become **MANDATORY** to have **KNOWLEDGE OF CLOUD COMPUTING**.

You can choose: Microsoft Azure OR Amazon AWS OR Google Cloud?

But anyone is must…Then why not choose the one with is **FASTEST growing…**

For Years to come...Azure will stay...

Align to technology growth?

Remain Updated...Learn Azure...

-Sandeep Soni.

PREREQUISITES:

These courses are for experienced programmers who want to develop and host solutions in Azure. Learners should

be able to program in at least one Azure-supported language

Applicable careers include

- C# Developers.

- Solution Architects / Enterprise Architects / Team Leads

- DevOps Engineers / Application Engineers / QA Engineers / Identity Engineers

WHAT YOU'LL LEARN / COURSE OBJECTIVE

- Configuring Virtual Machines

- Executing Batch Jobs

- Containerization of Application.

- Connect to storage in Azure

- Design and implement policies to Tables

- Create, read, update, and delete tables by using code

- Develop for Azure Redis cache and content delivery networks

- Develop solutions that use blob storage

- Create an Azure app service web app by using Azure CLI, PowerShell, and other tools

- Create documentation for the API by using open source and other tools

- Add push notifications and enable offline sync for mobile apps

- Develop stateful and stateless apps on Service Fabric

- Create Azure functions including bindings and triggers

- Define and run scheduled bulk operations

- Learn about the different authentication options, including multi-factor, available in Azure and how they operate

- Learn about implementing access control in your solution including claims- and role-based authorization

- Implement secure data solutions by using encryption, Azure confidential computing, and SSL/TLS communications

- Manage cryptographic keys in Azure Key Vault

- Learn to develop for asynchronous processing and how to implement the appropriate asynchronous compute model.

- Implement autoscaling in your solution and implement code that addresses transient state.

- Discover how to implement large-scale, parallel and high-performance apps by using batches.

- Learn to implement, and manage, distributed transactions.

- Configure instrumentation in an app or service by using Application Insights and other tools.

- Manage APIs by using API Management (APIM)

- Create an APIM instance, configure authentication for APIs, create an API gateway, and define policies for APIs

- Configure a message-based integration architecture by using the services included in Azure.

- Configure an app or service to send email

- Develop an application message model including message schema and message exchange.

- Create an event model, topics, and subscriptions

- Use speech services and natural language processing in your app.

- Create and manage dictionaries for FAQ generation by using QnA maker.

- Leverage Bing Search in your application.

CERTIFICATION

Part of requirements for: Azure Developer

With Microsoft Certification, technology professionals are more likely to get hired, demonstrate clear business impact, and advance their careers.

ABOUT THE CERTIFICATION

OUR TRAINING METHODOLOGY?

Our **star trainer Mr. Sandeep Soni** having 22 years of experience in IT industry has compiled these courses and he will be himself delivering it.

Teaching methodology of Mr. Sandeep Soni, is very **simple but comprehensive**, every topic begins with concepts, to position the candidate in a comfortable state about what is being talked about, followed by that **practical demos** as in real-time on every topic is taken explaining how the feature can be incorporated in real-time situations.

Our course will enable you to design, build, maintain and monitor robust and scalable cloud solutions and most important you will **start thinking BIG**. This course also focuses on the architectural considerations and decisions necessary when building a highly available solution in the cloud.

WHAT WILL YOU GET?

- Exhaustive training by Microsoft Certified Trainer, **Mr. Sandeep Soni** having **22 years** of experience.

- You will get in-detailed and **Complete Courseware** prepared by Mr. Sandeep Soni himself and same can be used as for practice and reference.

- FREE **Microsoft Official Courseware** (MOC) for any one course, AZ-100 or AZ-101 or AZ-200 or AZ-201. Thich will also help you to prepare for Azure Certification.

- Guidance and support towards **Microsoft Certification Exams** will be provided by Mr. Sandeep Soni himself.

- You can buy **Certification Voucher** at discounted price.

- **Placement assistance** will be provided to **deserving** candidates.

SPECIAL OFFER for LIMITED PERIOD

- Azure Pass for practicing Lab exercise worth $100/- (or one month) will provided absolutely free.

- 2-Months Access to online video Azure course on http://www.bestdotnettraining.com so that participants can revise the topic.

- **Most important of all: NO EXTRA FEES WILL BE CHARGED FOR REVISION UP TO 3 TIMES WITHIN A YEAR**

COURSE SYLLABUS

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

Develop Azure Infrastructure as a Service Compute Solutions (10-15%)

Azure Virtual Machine

- Introduction

- About Virtual Machine Workloads

- Comparing VM with Web Apps and Cloud Services

- Create a Windows Virtual Machine using Portal / PowerShell / ARM Templates

- Deploy popular application frameworks by using Azure Resource Manager templates

- Understand and Capture VM Images

- Upload an on-premise VHD to Storage Account

- Deploy a New VM from the Captured Image

- Manage ARM VM availability

- Virtual Machine Scale Sets

- Virtual Machine Disk Types and Disk Caching

- VM Storage

Implement batch jobs by using Azure Batch Services

- Manage batch jobs by using Batch Service API

- Run a batch job by using Azure CLI, Azure portal, and other tools

- Write code to run an Azure Batch Services batch job

Create containerized solutions

- Create an Azure Managed Kubernetes Service (AKS) cluster

- Create container images for solutions

- Publish an image to the Azure Container Registry

- Run containers by using Azure Container Instance or AKS

Develop for Azure storage (15-20%)

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
    - Programming Blob Storage
    - Async Blob Copy
    - Access blobs securely
    - Configure CDN
    - Configure Custom Domain
    - Scale Blob Storage
- Working with Table Storage
    - Understanding NoSQL Database
    - Creating Table and Entities using Storage Explorer
    - Programming Table Storage
    - Entities and Properties
- 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
- Manage access
    - Create and Manage Shared Access Signature
    - Account SAS vs Service SAS
    - Using Stored Access Policies
    - Regnerating Keys
    - Encrypt Keys using Azure Key Vault integration
    - Programming in C#
- Configure diagnostics, monitoring and analytics
    - Capturing Metrics Data
    - Analyzing Diagnostic Data
    - Capturing Logs
    - Retention Policies and Logging Levels

- o   Analyze Logs

- o   Enabling Monitoring

- o   Enabling Alerts

- Storage Service Encryption

Azure CosmosDB Service

- What is CosmosDB

- Understanding DocumentDB database Schema

- Creating and Saving Documents using Portal

- Programming Schema

- Adding / Editing / Deleting and Reading Documents

Managing Data in Azure SQL Database

- Introduction/Overview of SQL Database.

- Comparing SQL Azure Database to Azure / On-Premise SQL Server.

- Creating and Using SQL Server and SQL Database Services.

- Azure SQL Database Tools.

- Migrating on premise database to SQL Azure.

- Planning the Deployment of an Azure SQL Database

- Elastic Pools.

- Monitoring Azure SQL Database

- Configure SQL Database Auditing

- Manage Business Continuity

- Export and Import of Database

- Backup and Recovery options in SQL Database

- Active GEO-Replication

- Long Term Backup Retention

Develop Azure Platform as a Service Compute Solutions (20-25%)

Azure App Services - Web Apps

- Introduction

- App Service - Application Types

- Deploy Web Apps

    - o   Deploying Web App directly from Visual Studio

    - o   Automate deployment from Dropbox and One Drive

    - o   Create, configure and deploy packages

- o   Implement pre- and post-deployment actions;
- App Service plans
    - o   Create App Service Plan
    - o   Migrate Web Apps between App Service plans;
    - o   Create a Web App within an App Service plan
- Configuring Web Apps
    - o   Application Settings Configuration,
    - o   Database Connection Strings,
    - o   Configuring Handlers and Virtual Directories,
- Configure a custom domain name
- Enable SSL for your custom domain
- Understanding Deployment Slots and Roll back deployments;
- Configure Web Apps for scale and resilience
    - o   Horizontal and Vertical Scaling of a Web App
    - o   Configure auto-scale
    - o   Change the size of an instance
- Azure Traffic Manager to Scale out Globally
- Monitoring, Debugging and Diagnosis
    - o   Retrieve Diagnostics data
    - o   View Streaming Logs
    - o   Configure endpoint monitoring
    - o   Configuring Alerts
    - o   Configure diagnostics
    - o   Use remote debugging
    - o   Monitor Web App resources

Azure Web Jobs

- Introduction
- Developing and Hosting Web Jobs Application
- Azure WebJobs SDK
- Sample Application including WebApps and WebJobs.

Implement Azure Functions

- About Azure Functions.
- Azure Webjobs vs Azure Functions
- Create an Azure Function

- Create an event processing function

    o Timer Triggered Function,

    o GitHub Webhook Triggered Function.

    o Blog Storage Triggered Function

- Implement an Azure-connected functions

    o Adding message to Storage Queue

    o Connecting to SQL Database

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

App Service - Mobile Apps

- Mobile Apps Introduction

- Creating Server Service and Client Application

- Working with Easy tables using Azure Portal

- Developing Windows 8.1 Client Application

- Mobile App Authentication

    o Facebook Authentication

    o Azure Active Directory Authentication

- Enabling Offline Sync

- Implementing Push Notification

Connect to and Consume Azure Services and Third-party Services (20-25%)

Azure App Service - Logic Apps

- Introduction

- Creating a Simple Logic App

- Handling array of Items using for-each and condition

- Understanding Triggers and Actions

- Using Custom API App in Logic App

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

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

Develop event-based solutions

- Implement solutions that use Azure Event Grid

- Implement solutions that use Azure Notification Hubs

- Implement solutions that use Azure Event Hub

Implement Azure security (10-15%)

Implement authentication

- Implement authentication by using certificates, forms-based authentication, or tokens

- Implement multi-factor or Windows authentication by using Azure AD

- Implement OAuth2 authentication
- Implement Managed Service Identity (MSI)/Service Principal authentication

Implement access control

- Implement CBAC (Claims-Based Access Control) authorization
- Implement RBAC (Role-Based Access Control) authorization
- Create shared access signatures

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

Monitor, troubleshoot, and optimize Azure solutions (15-20%)

Develop code to support scalability of apps and services

- Implement autoscaling rules and patterns
- Implement code that handles transient faults

Integrate caching and content delivery within solutions

- Store and retrieve data in Azure Redis cache
- Develop code to implement CDNs in solutions
- Invalidate cache content (CDN or Redis)

Redis Caching

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

Instrument solutions to support monitoring and logging

- Configure instrumentation in an app or service by using Application Insights
- Analyze and troubleshoot solutions by using Azure Monitor

- Implement Application Insights Web Test and Alerts