Azure Services Training (Developer)

Program Duration - 40 Hours (4 Hours Per Day)

Course Outline

Day 1 & Day 2

1) Starting with Azure

- Tour of the Azure Portal

- Resources and Resource Groups

- Creating resources

- Monitoring your costs in Azure

- The Azure command line interface

- Setting up PowerShell

2) Develop Azure compute solutions

- The Virtual Machine Service

- Deploying a virtual machine

- Connecting to the Virtual Machine

- Azure Resource Manager Templates

- Primer on Docker Containers

- Understanding on how we deployed the Docker container

- Deploying a .Net core application onto a Linux VM

- Containerizing a .Net app

- Azure Container Registry

- Azure Container Instances

- What is Kubernetes and Azure Kubernetes?

- Creating a Kubernetes cluster

- Understanding of application deployment to a Kubernetes cluster

- Deploying nginx on the Kubernetes cluster

- What is a service principal

- Azure Kubernetes and Azure Container registry

3) Azure CDN

- What is a content delivery network on Azure?

- Create an Azure CDN profile and endpoint

- Add Azure CDN to an Azure App Service web app

- Add a custom domain to your endpoint

- Set Azure CDN caching rules

Day 3 & Day 4

4) Develop Azure compute solutions

- Azure Web App Service

- Azure App Service Plan

- Azure Web App - Linux App Service Plan

- Azure Web App - Docker container

- Azure Web Apps - App Service Logs

- Azure Web App - Publishing from GitHub

- Azure Web App - Custom domains

- Azure Web App - SSL

- Azure Web App - CORS

- Azure Web Apps - Deployment Slots

- Azure App Service Plan - Linux

- What are Azure Functions?

- Creating a Function App

- Understanding the Azure Function code

- The use of Azure Functions

- Azure Functions - Using normal classes

- Azure Functions - Timer trigger

- Azure Durable Functions

5) Develop for Azure Storage

- What are storage accounts

- Azure storage accounts - service types

- Creating a storage account

- Working with the BLOB service

- Using Azure Storage Explorer

- Using Access Keys

- Azure Storage Accounts - Azure CLI

- AzCopy tool

- Azure Blob storage - .Net

- Azure Blob properties and metadata

- Shared Access Signatures

- Storage Accounts - Access tiers

- Storage Accounts - Blob snapshots

- Blob lease

- Storage Accounts - Soft Delete

Day 5 & Day 6

- ARM Templates - Storage Accounts

- Azure Table Storage

- Azure Table Storage - Partition and Row Key

- Azure Storage queue

- Azure Functions - Queue binding

- Azure Functions - Queue and Table binding

- Azure Functions - Multiple Output bindings

- Introduction to Azure SQL Database

- Azure Web App - Azure SQL Database

- Using Azure Web App - Connecting strings

- Azure Functions - Azure SQL Database

- Azure Container Instances - Container Groups

- Azure Container Instances - Container Groups - Container Registry

- Azure Container Instances - Working with secrets

- Quick primer on NoSQL Databases

- Introduction to Cosmos DB

- Azure Cosmos DB - SQL API

- Partitioning in Azure Cosmos DB

- Understanding the Item id property

- More on querying data in Cosmos DB

- Azure Cosmos DB - Embedding data

- Azure Cosmos DB - Referencing data

- Introduction to Change Feed, Stored Procedures, Triggers

- Azure Cosmos DB - Change Feed

- Azure Cosmos DB - Stored Procedures

- Azure Cosmos DB - Triggers

- Azure Cosmos DB - Local Emulator

- Azure Cosmos DB - Synthetic Partition Key

- Azure Cosmos DB - Time to Live

- Azure Cosmos DB - Indexing

- Use case scenario - Sending data to Cosmos DB

- Diagnostics Data

- Replicating data globally

- Consistency Levels

- Consistency Level - Setting the level

- Azure CLI commands for Azure Cosmos DB

- Azure Cosmos DB - Table API

Day 7 & Day 8

6) Implement Azure Security

- What is Azure AD

- Quick look at Azure AD users

- Role Based Access Control

- Primer to OAuth and OpenID Connect - History of Authentication

- Primer to OAuth and OpenID Connect - Identity Provider

- What is OAuth?

- OAuth 2.0 Authorization Code Flow

- OAuth 2.0 Implicit Flow

- OAuth 2.0 - Overview

- OAuth with Azure AD - Overview

- Quick Look into OAuth when logging into Azure

- OAuth 2.0 for ASP.Net Core

- The Access Tokens

- OAuth 2.0 - Accessing Blob storage

- Azure AD - Multi-Factor Authentication

- OpenID Connect

- Getting group claims

- Azure Web Apps - Azure AD Authentication

- What is the Azure Key Vault Service

- Azure Key Vault

- What is a service principal

- Azure Key vault - Secrets

- Azure Key vault - Encryption keys

- Azure VM Disk Encryption

- Managed Service Identity

7) Monitor, troubleshoot, and optimize solutions

- Azure Monitor

- Azure Monitor - Azure CLI

- Auto-scaling Azure Web Apps

- Auto scaling a web app

- Auto scaling a web app based on Queue storage

- What is Application Insights

- Application Setup for Application Insights

- Application Insights - Metrics and Performance

- Application Insights - Other features

- Application Insights - Availability Tests

- Application Insights - Tracking User Id

- What is Azure Cache for Redis

- Azure Cache for Redis

- Azure Cache for Redis - ASP.Net Core

- Azure Redis Cache - Data Invalidation

- Azure Redis Cache - StackExchange package

- Azure Content Delivery Network - Introduction

- Azure Content Delivery Network Cache

- Azure Content Delivery Network caching - Query strings

- Azure Front Door Service

- Transient faults

Day 9 & Day 10

8) Connect to and consume Azure and third-party services

- What is the Azure Service Bus

- Azure Service Bus

- Azure Service Bus - Queue - .Net

- Azure Service Bus - Queue Properties

- Azure Service Bus - Message Properties

- Azure Service Bus - Message properties - .Net

- Azure Service Bus Queue - Receive and Delete Mode

- Azure Service Bus - Topics

- Azure Service Bus topic - filters

- Azure Service Bus - Dead letter queues

- Azure Service Bus - Duplicate Detection

- Azure Service Bus - Correlation Id

- Azure Service Bus - Best Practices

- Azure Service Bus - Creating a queue - .Net

- Azure Service Bus - Azure CLI

- What is the Azure Event Grid Service

- Azure Event Grid - Azure Functions

- Azure Event Grid Schema

- Azure Event Grid - Service Bus Handler

- Azure Event Grid - Webhook

- What are Azure Event Hubs?

- Azure Event Hubs Architecture

- Azure Event Hubs

- Azure Event Hub Components

- Azure Event Hub - Working with Partitions - .Net

- Azure Event Hub - Reading from an Offset

- Azure Event Hub - Event Processor

- Azure API Management - The purpose of the service

- Azure API Management - Setting up the API

- Azure API Management - Deployment

- Azure API Management - Policies

- Azure API Management - Policy - Rewrite URL's

- Azure API Management - Policies - Conditions

- Azure API Management - Policy - Outbound Rule

- Azure API Management - OpenAPI Specification

- Azure API Management Overview

- Azure Logic Apps

- Azure Logic Apps - Azure Functions

- Azure Logic Apps - Azure Blob Storage

- Azure Notification Hubs

9) Azure Service Fabric

- Overview

- Service Fabric managed clusters

- Deploy a Service Fabric managed cluster

- Scale out a Service Fabric managed cluster

- Add and remove node types from a Service Fabric managed cluster

- Deploy an app to a Service Fabric managed cluster

Methodology:

- Instructor Led **Online (Virtual)** Training

- Complete Hands-on Practical Session, Exercises and Assignments

- Q&A, Live Problem Solutions (If any) and Case Discussions