

# AZURE CLOUD and AZURE DEVOPS

## Realtime Training

**Course Details:** In this course, you will get a good understanding on how to use the Azure DevOps tools to implement Continuous Integration and Continuous Delivery in Azure DevOps Services. This course also covers few of the Microsoft Azure Cloud services such as ARM, VMs, App Services, Storage Accounts etc., which we will make use of during the implementation of DevOps Pipelines.

By the end of this course you will have a clear understanding of what Azure DevOps tools are capable of and how you can use them to implement DevOps pipelines in your organization.

**Course Duration:** 30 hours (40 days)

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### Azure Cloud Section:

#### Module 1: Introduction to Azure Resource Management

- Azure Resource Manager
- Azure Portal and Cloud Shell
- Azure PowerShell and CLI
- ARM Templates

#### Module 2: Virtual Networking

- Virtual Networks
- IP Addressing
- Network Security groups
- Azure Firewall
- Azure DNS

#### Module 3: Azure Storage

- Create Azure storage accounts.
- Configure blob containers.
- Secure Azure storage.
- Configure Azure files shares and file sync.
- Manage storage with tools such as Storage Explorer.

#### Module 4: Azure Virtual Machines

- Plan for virtual machine implementations.
- Create virtual machines.
- Configure virtual machine availability, including scale sets.
- Use virtual machine extensions.

#### Module 5: Serverless Computing

- Create an app service plan.
- Create a web app.

## Azure DevOps Section

### Introduction: Azure DevOps Fundamentals

- Compare and contrast Azure DevOps Offerings
- Core Azure DevOps Service Features
- Understanding Collection, Organisation and Project in Azure DevOps

### Module 1: Source Code Management

- Understanding the importance of SCM
- Version controlling mechanism using Azure Repos
- Branching and Merging strategy
- Import existing repos from Github, bitbucket etc

### Module 2: Continuous Integration (CI)

- Continuous Integration using Azure Pipelines
- Pipeline creation
- Tasks
- Workflows
- Gated Builds
- Create a pipeline using YAML

### Module 3: Continuous Deployment (CD)

- Working with Deployment Pipelines
- Automated workflows for Deployments
- Using Gated Deployments
- Integration with Artifact management
- Deployment Roll-backs
- Creating one-click deployments
- Blue-green and canary deployments

### Module 4: Managing Artifacts

- Artifact Dependency Management using Azure Artifacts
- Deployments with Azure Artifacts

### Module 5: Infrastructure As A Code (IaC)

- Understanding IaC
- Understanding Azure Resource Manager (ARM) Templates
- IaC in an automated release
- Terraform

### Module 6: Infrastructure as Code with Terraform

- Introduction to Terraform
- Using the AzureRM Provider
- Deploying a Virtual Network
- Creating Multiple Providers
- Azure Storage Setup
- Migrating Remote State

## Module 7: Using Azure DevOps for Terraform deployments

- Using Azure DevOps Repos for Terraform Scripts
- Using Azure DevOps Pipelines
- Deploying multiple workspaces (Dev, QA and Prod)
- Using ARM Template as a Data Source for Terraform
- Deploying the ARM Template Configuration

## Module 8: Containers on Azure

- Docker basics
- Containers in Azure
- Running Containers Locally
- Creating Dockerfiles
- Working with Azure Container Instances (ACI)

## Module 9: Running Containers on Web App for Containers

- Azure App Service Overview
- Running Docker image on Web App for Containers
- Configuring Continuous Delivery with ACR and Swapping Slots

## Module 10: End to End DevOps implementation for a sample web application