

# Azure AWS DevOps – Course Outline

---

## 1. Duration

- 40 Hours

## 2. Objectives

At end of this workshop, participants will be able to :

- Get understanding of DevOps background, goals, principles, tools and application delivery pipeline
- Get understanding of Azure vs AWS DevOps, service offerings, usage and pricing
- Get understanding of Azure DevOps Organization and Project Setup
- Get overview of Agile and DevOps Practices with Azure Boards
- Get understanding of Version Control and Repository Management services
- Get understanding of Continuous Integration (CI) and Continuous Deployment (CD) services
- Get overview of Monitoring and Logging services and integration with Azure and AWS DevOps
- Automate delivery pipeline to build, provision infra/containerize, configure, orchestrate and deploy the app

## 3. Audience

Developers, Build/Release Engineers, Architects and DevOps professionals

## 4. Pre-requisite

- Good understanding and experience with Cloud Computing and Azure/AWS cloud
- Good knowledge and exposure to Software Engineering life cycle and Agile practices
- Basic knowledge on Build Management, Version Control and CI/CD concepts and tools

## 5. Hardware & Network Requirements

- Desktop/Laptop with minimum 8 GB RAM
- Open Internet connection (minimum 10 Mbps per user)

## 6. Software Requirements

- Windows / Linux / Mac OS
- Git Client
- Putty
- Azure Cloud Account
- AWS Cloud Account

## 7. Outline

### Day 1

#### **Module-1: Introduction to Devops**

- Intro to DevOps
- DevOps Background
- DevOps Characteristics
- Agile vs DevOps
- CI/CD vs DevOps
- DevOps Pipeline
- DevOps Tools overview
- Benefits and Limitations

#### **Module-2 Introduction to Azure DevOps**

- Intro to Azure Cloud
- Recap Azure Services
- Introduction to Azure DevOps Services and its components
- Key benefits and use cases for Azure DevOps
- Azure DevOps vs. other DevOps tools
- Components of Azure DevOps: Boards, Repos, Pipelines, Test Plans, and Artifacts

#### **Module-3 Azure DevOps Organization and Project Setup**

- Creating and managing Azure DevOps organizations
- Setting up projects and understanding project settings
- User roles and permissions
- Create an Azure DevOps organization and a new project
- Configure project settings and invite team members

#### **Module-4: Agile and DevOps practices with Azure Boards**

- Agile Practices Overview
- Azure Boards Overview
- Implementing Agile methodologies in Azure DevOps
- Managing work items and boards
- Setting up and tracking sprints
- Reporting and analytics

## Day 2

### **Module-5: Source Control with Azure Repos**

- Version Control System (VCS) Overview
- Centralized VCS vs Distributed VCS
- Intro to Git / TFVC
- Characteristics and Features
- Creating and managing repositories.
- Understanding branching strategies and pull requests
- Create a Git repository, practice branching, and create a pull request with sample app

### **Module-6: Continuous Integration (CI) with Azure Pipelines**

- Continuous Integration Overview
- Intro to Azure Pipelines
- Characteristics and Features
- Integration with Azure Repos
- Setting up build jobs and configuration
- Set up a basic CI pipeline to build a sample application

### **Module-7: Continuous Inspection / Testing with Azure Pipelines**

- Code Inspection / Analysis Overview
- SonarQube integration with Azure Pipelines
- Analyse sample application source code with standard SonarQube rules and generate report
- Azure Test Plans overview
- Azure Test Plans integration with Azure Pipelines
- Automate Tests of sample application and publish reports

## Day 3

### **Module-8: Artifact Management with Azure Artifacts**

- Artifact / Repository Management Overview
- Azure Artifacts Overview
- Azure Artifacts vs Nexus vs Artifactory
- Integration with Azure Pipelines
- Configure sample app to use repository and publish snapshot / release artifacts for deployment

### **Module-9: Continuous Delivery (CD) with Azure Pipelines**

- Continuous Delivery Overview
- Continuous Deployment vs Continuous Delivery
- Understanding release pipelines and deployment strategies
- Setting up and managing release pipelines
- Automate release deployment pipeline for sample application

### **Module-10: Monitoring and Logging**

- Integrating Azure Monitor with Azure DevOps
- Setting up and configuring Application Insights
- Creating dashboards and alerts

## Day 4

### **Module-11 Introduction to AWS DevOps**

- Intro to AWS Cloud
- Recap AWS Services
- Introduction to AWS DevOps Services and its components
- Key benefits and use cases for AWS DevOps
- AWS DevOps vs. other DevOps tools
- Components of AWS DevOps: CodePipeline, CodeBuild, CodeDeploy, CodeCommit

### **Module-12: Source Control with AWS CodeCommit**

- Intro to AWS CodeCommit
- Setting up a repository
- Managing branches and commits
- Create a CodeCommit repository, practice branching, and create a pull request with sample app

### **Module-13: Continuous Integration (CI) with AWS CodeBuild**

- Intro to AWS CodeBuild
- Creating a build project
- Writing build specifications
- Set up a CodeBuild project and run a build with sample app

## Day 5

### **Module-14: Continuous Delivery with AWS CodePipeline**

- Intro to AWS CodePipeline
- Setting up a pipeline
- Integrating CodeCommit and CodeBuild
- Create a simple CI/CD pipeline using CodePipeline for sample app

### **Module-15: Automated Deployments with AWS CodeDeploy**

- Intro to AWS CodeDeploy
- Overview of deployment strategies (in-place, blue/green)
- Creating a deployment group
- Deploy the sample application using CodeDeploy

### **Module-16: Monitoring with AWS CloudWatch**

- Intro to AWS CloudWatch
- Setting up CloudWatch for logging and monitoring
- Creating alarms and dashboards

### **Module-17: Best Practices and Emerging Trends**

- DevOps Best Practices
- Emerging Trends in DevOps