



Azure DevOps

Course ISI-1504B - 4 Days - Instructor-led, Hands on

Introduction

This 4 -day, instructor-led hands on course teaches Azure DevOps, formerly known as Team Foundation (TFS and VSTS). Azure DevOps is a set of collaborative software development tools, hosted on-premises and in the cloud. Azure DevOps integrates with your existing IDE or editor, enabling your cross-functional team(s) to work effectively on projects of all sizes. Azure DevOps works for any language, and on any platform. Azure DevOps has everything you need to turn an idea into a working piece of software. You can plan your project with Agile tools, you can manage your test plans, version your code using Git, and deploy your solution using an incredible cross-platform CI-CD system, all while getting full traceability and visibility across your development activities.

Target Audience

This course is aimed for software professionals including developers, testers, architects, configuration analysts and release managers who want to understand the capabilities of Azure DevOps.

Prerequisites

Users must have knowledge in using source control and Visual Studio.

Course Outline

Module 1: Planning and Tracking Work (Azure Boards)

- Creating a team project for an Agile team
- Importing requirements from Excel
- Getting social with work items
- Portfolio backlog hierarchies and decomposing work
- Configuring and customizing backlog boards
- Preparing and planning a sprint
- Visualizing progress in a sprint
- Delivery plans to track multiple teams
- Dashboards for planning and tracking work

Module 2: Planning and Tracking Work (Azure Boards)

- Migrating from TFVC to Git keeping with code history
- Accessing Azure DevOps Server Git repositories using SSH
- Importing a Git repository from GitHub into Azure DevOps Server
- Basic Git operations using Visual Studio Code
- Setting up Git branches for continuous delivery
- Pull request for code review using branch policies
- Using Git hooks with Azure DevOps Server

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- Managing and storing large files in Git
- Git branching model for Continuous Delivery
- Configuring code search as a search engine
- Using Git forks and sync changes with upstream PR

Module 3: Build and Release Agents (Azure Pipelines)

- Unattended configuration of build agents using PowerShell
- Downloading agents using the GitHub release API
- Configuring deployment groups
- Configuring the agent to use a proxy
- Analyzing build usage data
- Automating agent pool maintenance
- Configuring build and release retention policies
- Agent capabilities and build demands for special builds
- Managing agent permissions using role-based access

Module 4: Continuous Integration and Build Automation

- Configuring one build definition for all branches of a Git repository
- Reflecting the branch quality in the build name
- Using web deploy to create a package in an ASP.NET build pipeline
- Organizing build output into separate folders
- Configuring assembly version info in build pipelines
- Setting up a build pipeline for a .NET core application
- Setting up a build pipeline for Node.js application
- Setting up a build pipeline for your database projects
- Integrating SonarQube in build pipelines to manage technical debt

Module 5: Continuous Testing (Azure Test Plans)

- Running NUnit tests using Azure Pipelines
- Using feature flags to test in production
- Distributing multi-configuration tests against agents
- Configuring parallel execution of tests using Azure Pipelines
- Running SpecFlow tests using Azure Pipelines
- Analyzing test execution results from Runs view
- Exporting test artifacts and test results from Test Hub
- Charting testing status on dashboards in the team portal

Module 6: Continuous Deployments

- Deploying the database to Azure SQL using the release pipeline
- Consuming secrets from Azure Key Vault in your release pipeline
- Deploying the .NET Core web application to Azure App Service
- Deploying an Azure function to Azure
- Publishing secrets to Azure Key Vault
- Deploying a static website on Azure Storage
- Deploying a VM to Azure DevTest Labs

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Module 7: Azure Artifacts and Dependency Management

- Publishing a NuGet package to Artifacts
- Consuming a NuGet package in Visual Studio from the Artifacts feed
- Testing a NuGet package using Artifact views
- Publishing an NPM package to Artifacts
- Consuming an NPM package from the Artifacts feed
- Scanning for vulnerabilities in your package using WhiteSource

Module 8: Azure DevOps Extensions

- Build and release tools
- UI enhancements for BuildHub
- Work item forms
- Dashboard widgets
- Custom utility tasks such as managing tags, publishing secrets to Azure Key Vault, and so on