Cloud Contraptions
TRAINING & CONSULTING

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# Shipping Software Faster with Azure DevOps

## Class Duration

21 hours of live training delivered over 3-5 days to accommodate your scheduling needs

## Student Prerequisites

- Ability to read computer program code.
- Command line experience with a terminal or command prompt.
- Experience with a modern editor (ex. Visual Studio Code) or IDE (ex. Visual Studio or a JetBrains IDE).
- Experience using cloud-based services such as Azure, AWS, or Google Cloud Platform.
- This course focuses on using Azure DevOps Services. Students write minimal code and all necessary programming code is provided.

## Target Audience

Designed for software engineers, tech leads, SREs/DevOps engineers, QA leads, release managers, and solution/enterprise architects working in cloud, hybrid, or on-prem environments. It is especially valuable for teams standardizing on Microsoft tooling, organizations seeking tighter GitHub–Azure DevOps integration, and enterprises that need auditable pipelines, package governance, and full traceability from idea to production. Managers and L&D partners will gain clarity on how Azure DevOps accelerates delivery while improving quality, compliance, and visibility across products and programs.

## Description

Modern software organizations win by delivering reliable features faster. This live, instructor-led Azure DevOps training shows teams how to plan, build, test, release, and operate with a single toolchain. You'll map DevOps principles to Azure Boards, Repos, Pipelines, Test Plans, and Artifacts; stand up secure organizations and projects; integrate GitHub; and implement CI/CD with YAML, multi-stage releases, quality gates, and approvals. The course also covers infrastructure as code with ARM and Bicep, scripting with Azure CLI and PowerShell, and configuration management with DSC—so application

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and platform changes move together. Throughout, you'll apply best practices for traceability, dashboards, and analytics to improve flow, reduce risk, and align engineering work to business outcomes.

## Learning Outcomes

- Explain DevOps principles and map them to Azure DevOps architecture, services vs. server, and extensibility options.
- Provision organizations and projects; configure permissions, security, and team structures; integrate GitHub and external tools.
- Model and track work in Azure Boards (epics, features, user stories); run Scrum/Kanban with WIP limits, Definition of Done, queries, charts, and dashboards.
- Implement Git strategies in Azure Repos and GitHub Repos, including branching, pull requests, merge policies, code reviews, and large codebase navigation.
- Author YAML pipelines to automate builds, tests, and quality checks; configure agents, service connections, approvals; deploy to Azure and on-prem environments.
- Use Azure Test Plans for manual and exploratory testing, capture UAT feedback, integrate tests into pipelines, and track defects and coverage.
- Publish and consume packages with Azure Artifacts and GitHub Packages; manage versions and supply-chain security; integrate packages into CI/CD.
- Define infrastructure and configuration as code with ARM, Bicep, Azure CLI/PowerShell, and DSC; ensure end-to-end traceability and continuous improvement with analytics.

## Training Materials

All students receive comprehensive courseware covering all topics in the course. Courseware is distributed via GitHub in the form of documentation and extensive code samples. Students practice the topics covered through challenging hands-on lab exercises.

## Software Requirements

Students will need a free, personal GitHub account to access the courseware. Student will need permission to install the selected language platform (Node.js, .NET SDK, or Python) and Visual Studio Code on their computers.

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Also, students will need permission to install packages for the selected coding platform as well as Visual Studio Code Extensions.

## Training Topics

### DevOps and Azure DevOps

- What is DevOps? Core principles and goals
- Overview of Azure DevOps Services and Azure DevOps Server
- End-to-End DevOps lifecycle with Microsoft tools
- Azure DevOps architecture and extensibility

### Provisioning and Environment Setup

- Provisioning Azure DevOps Services vs. Azure DevOps Server
- Creating organizations and projects
- Permissions, security, and team structure
- Integrating with GitHub and external tools

### Azure Boards: Planning and Tracking Work

- Creating and managing backlogs, epics, and user stories
- Using Kanban and task boards effectively
- Planning and managing sprints
- Limiting WIP and establishing “Definition of Done”
- Reporting with queries, charts, and dashboards

### Azure Repos: Version Control with Git

- Centralized vs. decentralized workflows
- Creating, cloning, and branching repositories
- Pull requests, merge policies, and code reviews
- Using GitHub Repos and integrating with Azure Boards
- Searching and navigating large codebases

### Azure Pipelines: CI/CD and Automation

- Setting up build pipelines using YAML
- Automating tests, builds, and quality checks
- Releasing applications with multi-stage pipelines
- Working with agents, service connections, and approvals
- Deploying to cloud and on-prem environments

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## Testing and Quality with Azure Test Plans

- Manual testing and exploratory testing workflows
- Creating test suites and test cases
- Capturing feedback from UAT
- Integrating testing into build/release pipelines
- Tracking defects and test coverage

## Artifact Management with Azure Artifacts

- Publishing and sharing NuGet, npm, Maven, and Python packages
- Integrating artifacts into build pipelines
- Managing package versions and security
- Using GitHub Packages as an alternative

## Infrastructure and Configuration as Code

- Creating Azure resources with ARM and Bicep
- Using Azure CLI and PowerShell in pipelines
- Managing infrastructure state with templates
- Implementing Desired State Configuration (DSC)

## Final Workflow and Best Practices

- Full DevOps workflow from planning to release
- Promoting DevOps culture across teams
- Ensuring traceability across boards, repos, pipelines, and test plans
- Using dashboards and analytics for continuous improvement

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