CLOUD, DEVOPS, AND CONTAINERS

Implementing DevOps with Azure DevOps (AZ-400)

Level: Practitioner • 2 days (expandable to 3) • Virtual, In-person

Overview

Azure DevOps remains the delivery backbone for a large share of enterprises, especially in the Microsoft ecosystem, and AZ-400 is how the industry credentials the people who run it. The trouble with the AZ-400 surface area is its size: it spans process, source control, pipelines, security, and operations, and courses that chase full coverage end up teaching all of it thinly.

This is a hands-on, practitioner course. It is grounded in the AZ-400 domains but follows a less-but-deeper philosophy: it concentrates on the delivery spine (work tracking, repos with real branch policy, YAML pipelines for CI, and multi-stage delivery with environments and approvals) and then builds outward to quality gates, security, and feedback from production. Every module includes a lab in a live Azure DevOps organization, and each module builds on the one before.

Who Should Attend

- Developers and DevOps engineers implementing delivery pipelines with Azure DevOps
- Teams standardizing on Azure DevOps for source control, builds, and releases
- Engineers preparing for the AZ-400 certification

  Learners new to DevOps ideas themselves should take *DevOps Foundations* first.

Prerequisites

- Working experience with git and at least one programming language
- Basic Azure familiarity; *Microsoft Azure Fundamentals (AZ-900)* covers it
- Familiarity with DevOps concepts, per *DevOps Foundations*

What You Will Learn

- Configure Azure Boards to plan and track work without ceremony for its own sake
- Manage source control with Azure Repos, branch policies, and pull requests that protect quality
- Build continuous integration pipelines in YAML with Azure Pipelines
- Design multi-stage delivery with environments, approvals, and proper secret management
- Integrate testing, security scanning, and package management into the pipeline
- Close the loop with monitoring, and prepare with confidence for the AZ-400 exam

Course Outline

Day one: the delivery spine

- Organizing Work
  - Organizations, projects, and Azure Boards: just enough process
  - Work items, backlogs, and connecting work to code
  - Lab: set up a project and trace a work item from backlog to branch
- Source Control That Protects Quality

  - Branching strategies that scale, and ones that do not
  - Branch policies, pull requests, and required reviewers
  - Lab: enforce branch policies and take a change through a compliant pull request
- Continuous Integration with Azure Pipelines
  - YAML pipelines: triggers, stages, jobs, and agents
  - Building and testing on every change, with results people actually read
  - Lab: build a YAML CI pipeline that blocks a failing change

Day two: delivery, quality, and feedback

- Multi-Stage Delivery
  - Environments, approvals, and checks
  - Variables, variable groups, and secrets done properly
  - Lab: extend the pipeline to deploy through staging to production with an approval gate
- Quality and Security in the Pipeline
  - Test integration and code coverage as gates
  - Dependency scanning and secret detection
  - Azure Artifacts: managing packages and feeds
  - Lab: add quality and security gates that catch a planted vulnerability
- Feedback and the Exam
  - Monitoring releases with Azure Monitor and Application Insights
  - Reading delivery performance from Azure DevOps data
  - Mapping what you have built to the AZ-400 domains, with a study plan
  - Lab: wire release annotations into monitoring and work through exam-style questions

Extended Version

The three-day version keeps the same gradient and adds:

- Infrastructure as code in the pipeline, connecting to *Infrastructure as Code with Terraform*
- GitHub and Azure DevOps together: where Microsoft is heading, and how to span both
- Advanced deployment strategies: rings, feature flags, and progressive exposure
- A capstone: implement a complete, gated delivery pipeline for an application, followed by a full practice exam