

Azure DevOps Training

Course Overview

Designing and Implementing Microsoft DevOps Solutions course is a comprehensive training program designed to equip IT professionals with the skills and knowledge needed to design and implement DevOps processes and practices using Microsoft Azure. This course covers a wide range of topics, including DevOps transformation, source control, continuous integration (CI), continuous deployment (CD), infrastructure as code, security, dependency management, and continuous feedback. The program is tailored to help professionals understand how to leverage Azure and related tools to build, deploy, and manage high-quality, scalable, and secure software solutions. Upon completion, participants will have gained the expertise to streamline development lifecycles, enhance collaboration, and drive organizational efficiency in the rapidly evolving software industry.

Module 1: Get Started on a DevOps Transformation Journey

Lessons

- Introduction to DevOps
- Choose the right project
- Describe team structures
- Choose the DevOps tools
- Plan Agile with GitHub Projects and Azure Boards
- Introduction to source control
- Describe types of source control systems
- Work with Azure Repos and GitHub

Lab

- Agile planning and portfolio management with Azure Boards
- Version controlling with Git in Azure Repos

Module 2: Development for Enterprise DevOps

Lessons

- Structure your Git Repo
- Manage Git branches and workflows
- Collaborate with pull requests in Azure Repos
- Explore Git hooks

- Plan foster inner source
- Manage Git repositories
- Identify technical debt

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- Version controlling with Git in Azure Repos

Module 3: Implement CI with Azure Pipelines and GitHub Actions

Lessons

- Explore Azure Pipelines
- Manage Azure Pipeline agents and pools
- Describe pipelines and concurrency
- Explore Continuous integration
- Implement a pipeline strategy
- Integrate with Azure Pipelines
- Introduction to GitHub Actions
- Learn continuous integration with GitHub Actions
- Design a container build strategy

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- Configuring agent pools and understanding pipeline styles
- Enabling continuous integration with Azure Pipelines
- Integrating external source control with Azure Pipelines
- Implementing GitHub Actions by using DevOps Starter
- Deploying Docker Containers to Azure App Service web apps

Module 4: Design and Implement a Release Strategy

Lessons

- Introduction to continuous delivery
- Explore release strategy recommendations
- Build a high-quality release pipeline
- Introduction to deployment patterns
- Implement blue-green deployment and feature toggles

- Implement canary releases and dark launching
- Implement A/B testing and progressive exposure deployment

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- Creating a release dashboard
- Controlling deployments using Release Gates

Module 5: Implement a Secure Continuous Deployment Using Azure Pipelines

Lessons

- Create a release pipeline
- Provision and test environments
- Manage and modularize tasks and templates
- Automate inspection of health
- Manage application configuration data
- Integrate with identity management systems
- Implement application configuration

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- Configuring pipelines as code with YAML
- Setting up and running functional tests
- Integrating Azure Key Vault with Azure DevOps

Module 6: Manage Infrastructure as Code Using Azure and DSC

Lessons

- Explore infrastructure as code and configuration management
- Create Azure resources using Azure Resource Manager templates
- Create Azure resources by using Azure CLI
- Explore Azure Automation with DevOps
- Implement Desired State Configuration (DSC)
- Implement Bicep

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- Azure deployments using Azure Resource Manager templates

Module 7: Implement Security and Validate Code Bases for Compliance

Lessons

- Introduction to Secure DevOps
- Implement open-source software
- Software Composition Analysis
- Static analyzers
- OWASP and Dynamic Analyzers
- Security Monitoring and Governance

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- Implement security and compliance in Azure Pipelines
- Managing technical debt with SonarQube and Azure DevOps

Module 8: Design and Implement a Dependency Management Strategy

Lessons

- Explore package dependencies
- Understand package management
- Migrate, consolidate, and secure artifacts
- Implement a versioning strategy
- Introduction to GitHub Packages

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- Package management with Azure Artifacts

Module 9: Implement Continuous Feedback

Lessons

- Implement tools to track usage and flow
- Develop monitor and status dashboards
- Share knowledge within teams
- Design processes to automate application analytics
- Manage alerts, Blameless retrospectives and a just culture

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- Monitoring application performance with Application Insights
- Integration between Azure DevOps and Microsoft Teams

- Sharing Team Knowledge using Azure Project Wikis
- Configure Azure Dashboards
- Work with View Designer in Azure Monitor