AZ-400: Designing and Implementing Microsoft DevOps Solutions Course Outline

Duration: 32–40 Hours
Level: Intermediate to Advanced
Delivery Mode: Online / Offline
Certification Provider: Microsoft
Target Audience: DevOps Engineers, System Administrators, Cloud Engineers, Software Developers

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Module 1: Introduction to DevOps

- Overview of DevOps Strategy
- Understanding DevOps Culture
- Agile Practices and Planning
- Microsoft DevOps Tools and Ecosystem
- Introduction to GitHub and Azure DevOps

Module 2: Plan for DevOps Transformation

- Organizational Structure and Team Topologies
- Key Metrics and KPIs for DevOps
- Value Stream Mapping
- Identifying Project Selection and Transformation Drivers

Module 3: Design and Implement Source Control

- Version Control Strategies
- Integrating Git with Azure Repos and GitHub
- Branching Strategies (GitFlow, Trunk-Based, Release Flow)
- Managing Code Quality and Policies

Module 4: Design and Implement Continuous Integration (CI)

- Implementing Build Automation
- Integrating Build Pipelines with Azure Pipelines and GitHub Actions
- Running Unit Tests and Code Coverage
- Implementing Static Code Analysis

Module 5: Implement Continuous Delivery (CD)

- Deployment Patterns and Release Strategies
- Designing Release Pipelines
- Deployment Groups and Environments
- Release Approvals and Gates
- Using Azure Pipelines for Multi-Stage Deployment

Module 6: Implement Dependency Management

- Package Management with Azure Artifacts
- Managing Maven, npm, NuGet, and Python Packages
- Secure Dependencies and Open Source Software Usage
- Integrating Package Feeds into CI/CD Pipelines

Module 7: Implement Application Infrastructure

- Infrastructure as Code (IaC) with ARM Templates, Bicep, and Terraform
- Configuration Management with Ansible and Chef
- Provisioning Azure Resources Automatically
- Secrets and Key Management with Azure Key Vault

Module 8: Implement Continuous Feedback

- Monitoring Tools and Telemetry
- Integrating Application Insights and Azure Monitor
- Logging with Log Analytics
- User Feedback and Incident Response Integration

Module 9: Implement Security and Compliance (DevSecOps)

- Secure Development Practices
- Implementing Security Gate Checks in Pipelines
- Code Scanning and Dependency Scanning
- Azure Defender for DevOps Integration

Module 10: Exam Preparation and Review

- Overview of AZ-400 Exam Structure
- Sample Questions and Case Studies
- Microsoft Learn Resources
- Certification and Renewal Process