Design and Implement Microsoft DevOps solutions (AZ-400T00)

Duration: 4 days
Audience: Professionnel TI

Who is this training for?

Students in this course are interested in designing and implementing DevOps processes or in passing the Microsoft Azure DevOps Solutions certification exam.

Training objectives

By the end of this course, students will be able to:

- Design and implement end-to-end DevOps practices and processes that improve collaboration, automation, and software delivery across the development lifecycle.
- Implement and manage source control, continuous integration (CI), and continuous delivery/deployment (CD) using Azure DevOps, Git, GitHub Actions, and Azure Pipelines.
- Develop secure, scalable, and reliable deployment strategies by managing artifacts, secrets, dependencies, infrastructure as code, and release workflows.
- Monitor, optimize, and continuously improve DevOps performance through feedback mechanisms, automation, and operational excellence practices.

Summary

This course provides the knowledge and skills to design and implement DevOps processes and practices. Students will learn how to plan for DevOps, use source control, scale Git for an enterprise, consolidate artifacts, design a dependency management strategy, manage secrets, implement con-

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tinuous integration, implement a container build strategy, design a release strategy, set up a release management workflow, implement a deployment pattern, and optimize feedback mechanisms

Course outline

Learning Path 1 : Implement Development for Enterprise DevOps

- Module 1 : Introduction to DevOps
- Module 2 : Plan Agile with GitHub Projects and Azure Boards
- Module 3 : Design and Implement Branch Strategies and Workflows
- Module 4 : Collaborate with Pull Requests in Azure Repos
- Module 5 : Explore Git Hooks
- Module 6 : Plan Foster Inner Source
- Module 7 : Manage and Configure Repositories
- Module 8 : Identify Technical Debt

Learning Path 2 : Implement CI with Azure Pipelines and GitHub Actions

- Module 1 : Explore Azure Pipelines
- Module 2 : Manage Azure Pipeline Agents and Pools
- Module 3 : Describe Pipelines and Concurrency
- Module 4 : Design and Implement a Pipeline Strategy
- Module 5 : Integrate with Azure Pipelines
- Module 6 : Introduction to GitHub Actions
- Module 7 : Learn Continuous Integration with GitHub Actions
- Module 8 : Design a Container Build Strategy

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Learning Path 3 : Design and Implement a Release Strategy

- Module 1 : Create a Release Pipeline
- Module 2 : Explore Release Recommendations
- Module 3 : Provision and Test Environments
- Module 4 : Manage and Modularize Tasks and Templates
- Module 5 : Automate Inspection of Health

Learning Path 4 : Implement a Secure Continuous Deployment Using Azure Pipelines

- Module 1 : Introduction to Deployment Patterns
- Module 2 : Implement Blue-Green Deployment and Feature Toggles
- Module 3 : Implement Canary Releases and Dark Launching
- Module 4 : Implement A/B Testing and Progressive Exposure Deployment
- Module 5 : Integrate with Identity Management Systems
- Module 6 : Manage Application Configuration Data

Learning Path 5 : Manage Infrastructure as Code Using Azure and DSC

- Module 1 : Explore Infrastructure as Code and Configuration Management
- Module 2 : Create Azure Resources Using Azure Resource Manager Templates
- Module 3 : Create Azure Resources by Using Azure CLI
- Module 4 : Explore Azure Automation with DevOps
- Module 5 : Implement Desired State Configuration (DSC)

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Module 6 : Implement Bicep

Learning Path 6 : Implement Security and Validate Code Bases for Compliance

- Module 1 : Introduction to Secure DevOps
- Module 2 : Implement Open-Source Software
- Module 3 : Software Composition Analysis
- Module 4 : Security Monitoring and Governance

Learning Path 7 : Design and Implement a Dependency Management Strategy

- Module 1 : Explore Package Dependencies
- Module 2 : Understand Package Management
- Module 3 : Migrate, Consolidate and Secure Artifacts
- Module 4 : Implement a Versioning Strategy
- Module 5 : Introduction to GitHub Packages

Learning Path 8 : Implement Continuous Feedback

- Module 1 : Implement Tools to Track Usage and Flow
- Module 2 : Develop Monitor and Status Dashboards
- Module 3 : Share Knowledge Within Teams
- Module 4 : Design Processes to Automate Application Analytics
- Module 5 : Manage Alerts, Blameless Retrospectives and a Just Culture

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Approach and methodology

Practical and structured approach combining focused theory and guided workshops. Participants gradually discover how to design and manage analytics solutions with Power BI through hands-on exercises inspired by real-world business scenarios, promoting immediate application of the learnings.

They learn how to prepare and model data, create impactful visualizations, develop interactive reports and dashboards, and apply analytical techniques to support data-driven decision-making.

Led by a Microsoft Certified Trainer (MCT), the training emphasizes interactivity and the development of practical, transferable skills for effectively using Power BI in a professional environment.

Prerequisites

Students should have the following knowledge and experience before attending this course:

- Cloud computing concepts, including an understanding of PaaS, SaaS, and IaaS implementations.
- Both Azure administration and Azure development with proven expertise in at least one of these areas.
- Foundational DevOps concepts, including version control, Agile software development, and core software development principles. It would be helpful to have experience in an organization that delivers software

Recommendations

- Cloud computing concepts, including an understanding of PaaS, SaaS, and IaaS implementations.
- Azure administration and Azure development with proven know-how in at least one of these areas.
- Version control, agile software development, and basic software development principles. It would be beneficial to have the experience of an organization that provides software.

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