

MAZR-52 - MOC AZ-400 - MICROSOFT AZURE DEVOPS SOLUTIONS

Categoria: **Azure**

INFORMAZIONI SUL CORSO



Durata:
5 Giorni



Categoria:
Azure



Qualifica Istruttore:
Microsoft Certified
Trainer



Dedicato a:
Professionista IT



Produttore:
Microsoft

OBIETTIVI

Questo corso è l'unione dei corsi: AZ-400T01, AZ-400T02, AZ-400T03, AZ-400T04, AZ-400T05, AZ-400T06, AZ-400T07

After completing this course, students should be able to:

Course AZ-400T01 - Implementing DevOps Development Processes

- Describe the benefits of using source control
- Migrate from TFVC to Git
- Scale Git for Enterprise DevOps
- Implement and manage build infrastructure
- Manage application config & secrets
- Implement a mobile DevOps strategy

Course AZ-400T02 - Implementing Continuous Integration

- Explain why continuous integration matters
- Implement continuous integration using Azure DevOps
- Configure builds and the options available
- Create an automated build workflow
- Integrate other build tooling with Azure DevOps
- Create hybrid build processes
- Describe what is meant by code quality and how it is measured
- Detect code smells
- Integrate automated tests for code quality
- Report on code coverage during testing
- Add tooling to measure technical debt
- Detect open source and other licensing issues
- Implement a container build strategy

Course AZ-400T03 - Implementing Continuous Delivery

- Differentiate between a release and a deployment
- Define the components of a release pipeline
- Explain things to consider when designing your release strategy
- Classify a release versus a release process, and outline how to control the quality of both
- Describe the principle of release gates and how to deal with release notes and documentation

- Explain deployment patterns, both in the traditional sense and in the modern sense
- Choose a release management tool
- Explain the terminology used in Azure DevOps and other Release Management Tooling
- Describe what a Build and Release task is, what it can do, and some available deployment tasks
- Classify an Agent, Agent Queue and Agent Pool
- Explain why you sometimes need multiple release jobs in one release pipeline
- Differentiate between multi-agent and multi-configuration release job
- Use release variables and stage variables in your release pipeline
- Deploy to an environment securely, using a service connection
- Embed testing in the pipeline
- List the different ways to inspect the health of your pipeline and release by using, alerts, service hooks and reports
- Create a release gate
- Describe deployment patterns
- Implement Blue Green Deployment
- Implement Canary Release
- Implement Progressive Exposure Deployment

Course AZ-400T04 - Implementing Dependency Management

- Recommend artifact management tools and practices
- Abstract common packages to enable sharing and reuse
- Inspect codebase to identify code dependencies that can be converted to packages
- Identify and recommend standardized package types and versions across the solution
- Refactor existing build pipelines to implement version strategy that publishes packages
- Manage security and compliance
- Inspect open source software packages for security and license compliance to align with corporate standards
- Configure build pipeline to access package security and license rating
- Configure secure access to package feeds

Course AZ-400T05 - Implementing Application Infrastructure

- Apply infrastructure and configuration as code principles
- Deploy and manage infrastructure using Microsoft automation technologies such as ARM templates, PowerShell, and Azure CLI
- Describe deployment models and services that are available with Azure
- Deploy and configure a Managed Kubernetes cluster
- Deploy and configure infrastructure using 3rd party tools and services with Azure, such as Chef, Puppet, Ansible, SaltStack, and Terraform
- Define an infrastructure and configuration strategy and appropriate toolset for a release pipeline and application infrastructure
- Implement compliance and security in your application infrastructure

Course AZ-400T06 - Implementing Continuous Feedback

- Design practices to measure end-user satisfaction
- Design processes to capture and analyze user feedback from external sources
- Design routing for client application crash report data
- Recommend monitoring tools and technologies
- Recommend system and feature usage tracking tools
- Configure crash report integration for client applications

- Develop monitoring and status dashboards
- Implement routing for client application crash report data
- Implement tools to track system usage, feature usage, and flow
- Integrate and configure ticketing systems with development team's work management system
- Analyze alerts to establish a baseline
- Analyze telemetry to establish a baseline
- Perform live site reviews and capture feedback for system outages
- Perform ongoing tuning to reduce meaningless or non-actionable alerts

Course AZ-400T07 - Designing a DevOps Strategy

- Plan for the transformation with shared goals and timelines.
- Select a project and identify project metrics and KPIs.
- Create a team and agile organizational structure.
- Develop a project quality strategy.
- Plan for secure development practices and compliance rules.
- Migrate and consolidate artifacts.
- Migrate and integrate source control measures.

PREREQUISITI

Course AZ-400T01 - Implementing DevOps Development Processes

Fundamental knowledge about Azure, version control, Agile software development, and core software development principles. It would be helpful to have experience in an organization that delivers software.

Course AZ-400T02 - Implementing Continuous Integration

- Students should have fundamental knowledge about Azure, version control, Agile software development, and core software development principles. It would be helpful to have experience in an organization that delivers software.
- It is recommended that you have experience working in an IDE, as well as some knowledge of the Azure portal. However, students who may not have a technical background in these technologies, but who are curious about DevOps practices as a culture shift, should be able to follow the procedural and expository explanations of continuous integration regardless.

Course AZ-400T03 - Implementing Continuous Delivery

Fundamental knowledge about Azure, version control, Agile software development, and core software development principles. It would be helpful to have experience in an organization that delivers software.

Course AZ-400T04 - Implementing Dependency Management

Fundamental knowledge about Azure, version control, Agile software development, and core software development principles. It would be helpful to have experience in an organization that delivers software.

Course AZ-400T05 - Implementing Application Infrastructure

Students should have fundamental knowledge about Azure, experience with virtual machines and containers, and some exposure to automation and scripting.

Experience working in a software development or operations environment with either Windows or Linux would be helpful but is not essential.

Students should also have knowledge of general application development and deployment processes.

Course AZ-400T06 - Implementing Continuous Feedback

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

Course AZ-400T07 - Designing a DevOps Strategy

- Fundamental knowledge about Azure, version control, Agile software development, and core software development principles. It would be helpful to have experience in an organization that delivers software.
- Also, it is recommended that you have experience working in an IDE, as well as some knowledge of the Azure portal. However, students who may not have a technical background in these technologies, but who are curious about DevOps practices as a culture shift, should be able to follow the procedural and expository explanations of continuous integration regardless.

CONTENUTI

Course AZ-400T01 - Implementing DevOps Development Processes

Module 1: Getting started with Source Control

- What is Source Control?
- Benefits of Source Control
- Types of source control systems
- Introduction to Azure Repos
- Migrating from TFVC to Git
- Authenticating to your Git Repos

Module 2: Scaling git for enterprise DevOps

- How to structure your git repo
- Git Branching workflows
- Collaborating with Pull Requests
- Why care about GitHooks?
- Fostering Internal Open Source
- Git Version
- Public projects
- Files in Git

Module 3: Implement & Manage Build Infrastructure

- The concept of pipelines in DevOps
- Azure Pipelines
- Evaluate use of Hosted vs Private Agents
- Agent pools
- Pipelines & Concurrency
- Azure DevOps and Open Source projects
- Azure Pipelines YAML vs Visual Designer
- Setup private agents
- Integrate Jenkins with Azure Pipelines
- Integration external source control with Azure Pipelines
- Analyze & Integrate Docker multi-stage builds

Module 4: Managing application config & secrets

- Introduction to Security

- Implement secure & compliant development process
- Rethinking application config data
- Manage secrets, tokens & certificates
- Implement tools for managing security and compliance in a pipeline

Module 5: Implement a mobile DevOps strategy

- Introduction to Mobile DevOps
- Introduction to Visual Studio App Center
- Manage mobile target device sets and distribution groups
- Manage target UI test device sets
- Provision tester devices for deployment
- Create public and private distribution groups

Course AZ-400T02 - Implementing Continuous Integration

Module 1: Implementing Continuous Integration in an Azure DevOps Pipeline

- Continuous Integration Overview
- Implementing a Build Strategy

Lab : Enabling Continuous Integration with Azure Pipelines

Lab : Creating a Jenkins Build Job and Triggering CI

Module 2: Managing Code Quality and Security Policies

- Managing Code Quality
- Managing Security Policies

Lab : Managing Technical Debt with Azure DevOps and SonarCloud

Lab : Checking Vulnerabilities using WhiteSource Bolt and Azure DevOps

Module 3: Implementing a Container Build Strategy

- Implementing a Container Build Strategy

Lab : Existing .NET Applications with Azure and Docker Images

Course AZ-400T03 - Implementing Continuous Delivery

Module 1: Design a Release Strategy

- Introduction to Continuous Delivery
- Release strategy recommendations
- Building a High Quality Release pipeline
- Choosing a deployment pattern
- Choosing the right release management tool

Lab : Building a release strategy

Module 2: Set up a Release Management Workflow

- Create a Release Pipeline
- Provision and Configure Environments
- Manage And Modularize Tasks and Templates
- Integrate Secrets with the release pipeline
- Configure Automated Integration and Functional Test Automation
- Automate Inspection of Health

Lab : Automating your infrastructure deployments in the Cloud with Terraform and Azure Pipelines

Lab : Setting up secrets in the pipeline with Azure Key vault

Lab : Setting up and Running Load Tests

Lab : Setting up and Running Functional Tests

Lab : Using Azure Monitor as release gate

Lab : Creating a Release Dashboard

Module 3: Implement an appropriate deployment pattern

- Introduction into Deployment Patterns
- Implement Blue Green Deployment
- Feature Toggles
- Canary Releases
- Dark Launching
- AB Testing
- Progressive Exposure Deployment

Lab : Blue-Green Deployments

Lab : Traffic Manager

Course AZ-400T04 - Implementing Dependency Management

Module 1: Designing a Dependency Management Strategy

- Introduction
- Packaging dependencies
- Package management
- Implement a versioning strategy

Lab : Updating packages

Module 2: Manage security and compliance

- Introduction
- Package security
- Open source software
- Integrating license and vulnerability scans

Course AZ-400T05 - Implementing Application Infrastructure

Module 1: Infrastructure and Configuration Azure Tools

- Learning Objectives
- Infrastructure as Code and Configuration Management
- Create Azure Resources using ARM Templates
- Create Azure Resources using Azure CLI
- Create Azure Resources by using Azure PowerShell
- Additional Automation Tools
- Version Control
- Lab Deploy to Azure using ARM templates
- Module Review Questions

Module 2: Azure Deployment Models and Services

- Learning Objectives
- Deployment Models and Options
- Azure Infrastructure-as-a-Service (IaaS) Services
- Azure Automation with DevOps
- Desired State Configuration (DSC)

- Azure Platform-as-a-Service (PaaS) services
- Azure Service Fabric
- Lab Azure Automation - IaaS or PaaS deployment
- Module Review Questions

Module 3: Create and Manage Kubernetes Service Infrastructure

- Learning Objectives
- Azure Kubernetes Service
- Lab Deploy and Scale AKS Cluster
- Module Review Questions

Module 4: Third Party and Open Source Tools available with Azure

- Learning Objectives
- Chef
- Puppet
- Ansible
- Cloud-Init
- Terraform
- Lab Provision and configure an App in Azure Using X
- Module Review Questions

Module 5: Implement Compliance and Security in your Infrastructure

- Security and Compliance Principles with DevOps
- Azure Security Center
- Lab Integrate a scanning extension or tool in an AZ DevOps pipeline/security center
- Module Review Questions

Course AZ-400T06 - Implementing Continuous Feedback

Module 1: Recommend and design system feedback mechanisms

- The inner loop
- Continuous Experimentation mindset
- Design practices to measure end-user satisfaction
- Design processes to capture and analyze user feedback
- Design process to automate application analytics

Lab : Integration between Azure DevOps and Teams

Lab : Feature Flags

Module 2: Implement process for routing system feedback to development teams

- Implement tools to track system usage, feature usage, and flow
- Implement routing for mobile application crash report data
- Develop monitoring and status dashboards
- Integrate and configure ticketing systems

Module 3: Optimize feedback mechanisms

- Site Reliability Engineering
- Analyze telemetry to establish a baseline
- Perform ongoing tuning to reduce meaningless or non-actionable alerts

- Analyze alerts to establish a baseline
- Blameless PostMortems and a Just Culture

Course AZ-400T07 - Designing a DevOps Strategy

Module 1: Planning for DevOps

- Transformation Planning
- Project Selection
- Team Structures

Lab : Agile Planning and Portfolio Management with Azure Boards

Module 2: Planning for Quality and Security

- Planning a Quality Strategy
- Planning Secure Development

Lab : Feature Flag Management with LaunchDarkly and AzureDevOps

Module 3: Migrating and Consolidating Artifacts and Tools

- Migrating and Consolidating Artifacts
- Migrating and Integrating Source Control

Lab : Integrating Azure Repos and Azure Pipelines with Eclipse

INFO

Esame: AZ-400 - Microsoft Azure DevOps Solutions

Manuale: Il Materiale Didattico Ufficiale per tutti i corsi Microsoft MOC può essere richiesto, se disponibile, in forma elettronica (DMOC) invece che cartacea e lo studente iscritto potrà scaricarlo dal sito Microsoft. Chi acquista un DMOC ha diritto a consultare tutte le versioni del manuale, sia quelle precedenti a quella che acquista sia quelle che usciranno successivamente, dove troverà corretti eventuali errori e/o le novità del prodotto.

Prezzo manuale: 330 € incluso nel prezzo del corso a Calendario

Natura del corso: Operativo (previsti lab su PC)