

## Designing and Implementing Microsoft DevOps Solutions

### Détails

- Code : AZ-400
- Durée : 4 jours ( 28 heures )

#### Public

- Administrateurs de bases de données
- Administrateurs de Cloud
- Consultants IT
- Consultants techniques
- Ingénieurs d'infrastructure
- Ingénieurs DevOps
- IT Professionals

#### Pré-requis

- Have knowledge of : — Cloud computing concepts, PaaS, SaaS, and IaaS implementations. — Both Azure administration and Azure development with proven expertise in at least one of these areas. — Version control, Agile software development, and core software development principles.

#### Objectifs

- see course description

### Programme

#### 1 – AZ-400: Get started on a DevOps transformation journey

- Module 1: Introduction to DevOps
- Module 2: Choose the right project
- Module 3: Describe team structures
- Module 4: Choose the DevOps tools
- Module 5: Plan Agile with GitHub Projects and Azure Boards
- Module 6: Introduction to source control
- Module 7: Describe types of source control systems
- Module 8: Work with Azure Repos and GitHub

#### 2 – Development for enterprise DevOps

- Module 1: Structure your Git Repo
- Module 2: Manage Git branches and workflows
- Module 3: Collaborate with pull requests in Azure Repos
- Module 4: Identify technical debt
- Module 5: Explore Git hooks
- Module 6: Plan foster inner source
- Module 7: Manage Git repositories

#### 3 – 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: Explore continuous integration
- Module 5: Implement a pipeline strategy
- Module 6: Integrate with Azure Pipelines
- Module 7: Introduction to GitHub Actions
- Module 8: Learn continuous integration with GitHub Actions
- Module 9: Design a container build strategy

#### 4 – Design and implement a release strategy

- Module 1: Introduction to continuous delivery
- Module 2: Create a release pipeline

- Module 3: Explore release recommendations
- Module 4: Provision and test environments
- Module 5: Manage and modularize tasks and templates
- Module 6: Automate inspection of health

#### 5 – 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

#### 6 – 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)
- Module 6: Implement Bicep

#### 7 – 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: Static analyzers
- Module 5: OWASP and Dynamic Analyzers
- Module 6: Security Monitoring and Governance

## 8 – Design and implement a dependency management strategy

- Module 1: Explore package dependencies
- Module 2: Understand package management
- Module 3: Migrate consolidating and secure artifacts
- Module 4: Implement a versioning strategy
- Module 5: Introduction to GitHub Packages

- 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

## 9 – Implement continuous feedback

### Modalités

- **Type d'action** :Acquisition des connaissances
- **Moyens de la formation** :Formation présentielle – 1 poste par stagiaire – 1 vidéo projecteur – Support de cours fourni à chaque stagiaire
- **Modalités pédagogiques** :Exposés – Cas pratiques – Synthèse
- **Validation** :Exercices de validation – Attestation de stages