Enterprise Computing Solutions - Education Services

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Designing and Implementing Microsoft DevOps Solutions

CODE:	LENGTH:	PRICE:
MCS_AZ-400T00	40 Hours (5 days)	CHf2,800.00

Description

Dieser Kurs vermittelt die Kenntnisse und Fähigkeiten zur Implementierung, Umsetzung von DevOps-Prozessen und Praktiken. Entwerfen Sie dabei Release-Strategien und richten Sie Release-Management-Workflows ein. Ausserdem erwerben Sie Fähigkeiten zur Implementierung von Dependency Management Strategien und zur Bereitstellung von Anwendungsinfrastruktur in DevOps-Pipelines mit Rücksicht auf Compliance und Sicherheitsanforderungen.

Des Weiteren lernen Sie in diesem Seminar wie Sie kontinuierliches Feedback mithilfe von System-Feedback-Mechanismen implementieren können. Schliesslich können Sie nach diesem Training eine DevOps-Strategie entwerfen inkl. der Planung einer Transformation und des Projektes sowie die Erstellung von effizienten Teamstrukturen.
Nach Abschluss dieses Seminars haben die Teilnehmer Wissen zu folgenden Themen:

- Getting started with Source Control
- Scaling git for enterprise DevOps
- Implement & Manage Build Infrastructure
- Managing application config & secrets
- Implement a mobile DevOps strategy
- Implementing Continuous Integration in an Azure DevOps Pipeline
- Managing Code Quality and Security Policies
- Implementing a Container Build Strategy
- Design a Release Strategy
- Set up a Release Management Workflow
- Implement an appropriate deployment pattern
- Designing a Dependency Management Strategy
- Manage security and compliance
- Infrastructure and Configuration Azure Tools
- Azure Deployment Models and Services
- Create and Manage Kubernetes Service Infrastructure
- Third Party and Open Source Tools available with Azure
- Implement Compliance and Security in your Infrastructure
- Recommend and design system feedback mechanisms
- Implement process for routing system feedback to development teams
- Optimize feedback mechanisms
- Planning for DevOps
- Planning for Quality and Security
- Migrating and Consolidating Artifacts and Tools

Dieses Seminar basiert auf der originalen **Microsoft MOC Unterlage AZ-400** und bereitet auf die dementsprechende Prüfung vor.

Mögliche Zertifizierung: Microsoft Azure DevOps Engineer

Audience

Dieses Seminar richtet sich an:

- Teilnehmer, die DevOps Projekte und Prozesse planen und implementieren möchten
- Teilnehmer, die eine Anwendungsinfrastruktur implementieren und diese managen sowie konfigurieren möchten
- Teilnehmer, die an kontinuierlichen DevOps Integrationsprozessen interessiert sind
- Teilnehmer, die an der Zertifizierungsprüfung für Microsoft Azure_DevOps Engineer interessiert sind

Prerequisites

Für dieses Seminar werden folgende Vorkenntnisse empfohlen:

- Fundierte Kenntnisse über Azure, Erfahrung mit virtuellen Maschinen und Containern und einige Erfahrungen mit Automatisierung und Skripting
- Grundlegende Kenntnisse über Versionskontrolle, Agile Softwareentwicklung und grundlegende Prinzipien der Softwareentwicklung
- Erfahrung in einer Softwareentwicklungs- oder Betriebsumgebung mit Windows oder Linux wäre hilfreich, ist aber nicht zwingend erforderlich
- Die Teilnehmer sollten auch Kenntnisse über allgemeine Prozesse der Anwendungsentwicklung und -bereitstellung haben
- Ausserdem wird empfohlen, dass Sie über Erfahrung in der Arbeit mit einer IDE sowie über einige Kenntnisse zum Azure-Portal verfügen. Teilnehmer, die keinen technischen Hintergrund in diesen Technologien haben, aber neugierig auf DevOps-Praktiken als Kulturwandel sind, sollten jedoch in der Lage sein, die prozeduralen und expositorischen Erklärungen der kontinuierlichen Integration unabhängig davon zu verfolgen.
- In diesem Seminar erlernen Sie notwendige Vorkenntnisse für das DevOps Seminar: Developing Solutions für Microsoft Azure

Programme

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

Scaling git for enterprise DevOps

- How to structure your git repo? Mono Repo or Multi-Repo?
- Git Branching workflows
- Collaborating with Pull Requests
- Why care about GitHooks?
- Fostering Internal Open Source
- Git Version
- public projects
- Storing Large files in Git

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 loves Open Source projects
- Azure Pipelines YAML vs Visual Designer
- Setup private agents
- Integrate Jenkins with Azure Pipelines
- Integration external source control with Azure Pipelines
- Analyse & Integrate Docker multi stage builds

Managing application config & secrets

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

Implement a mobile DevOps strategy

- 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
- Provision tester devices for deployment

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

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

Implementing a Container Build Strategy

- Lab: Existing .NET Applications with Azure and Docker Images

Design a Release Strategy

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

Set up a Release Management Workflow

- Introduction
- 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
- Building a release management workflow
- 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

Implement an appropriate deployment pattern

- Introduction into Deployment Patterns
- Implement Blue Green Deployment
- Implement Canary Release
- Implement Progressive Exposure Deployment
- Describe deployment patterns
- Implement Blue Green Deployment
- Implement Canary Release
- Implement Progressive Exposure Deployment

Hands-On Lab

- Lab: Microsoft 365 Tenant and Service Management
- Exercise 1: Set up a Microsoft 365 trial tenant
- Exercise 2: Managing Microsoft 365 users, groups, and administration
- Exercise 3: Configuring Rights Management and compliance
- Exercise 4: Monitor and troubleshoot Microsoft 365

Designing a Dependency Management Strategy

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

Manage security and compliance

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

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

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
- Moduel Review Questions

Create and Manage Kubernetes Service Infrastructure

- Learning Objectives
- Azure Kubernetes Service
- Lab Deploy and Scale AKS Cluster
- Module Review Questions
- After completing this module, students will be able to:

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

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

Module 1: Recommend and design system feedback mechanisms

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

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 with development team's work management system

Optimize feedback mechanisms

- Site Reliability Engineering
- Analyse 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

Planning for DevOps

- Transformation Planning
- Project Selection
- Team Structures
- **Lab:** Agile Planning and Portfolio Management with Azure Boards

Planning for Quality and Security

- Planning a Quality Strategy
- Planning Secure Development
- **Lab:** Feature Flag Management with LaunchDarkly and AzureDevOps

Migrating and Consolidating Artifacts and Tools

- Migrating and Consolidating Artifacts
- Migrating and Integrating Source Control
- Lab: Integrating Azure Repos and Azure Pipelines with Eclipse

Further Information

- Durchführung in Kooperation mit Arrow ECS Österreich und ETC
- Für Produkte, die mit Fremdwährung berechnet werden, behalten wir uns das Recht vor, die Preise bei Währungsschwankungen anzupassen.

Session Dates

Auf Anfrage. Bitte kontaktieren Sie uns

Zusätzliche Information

Diese Schulung ist auch als Vor-Ort-Schulung verfügbar. Bitte kontaktieren Sie uns, um mehr zu erfahren.