

KOENIG SOLUTIONS • COURSE OUTLINE

AZ-400 Exam Prep

25

MODULES

118

TOPICS

25

HANDS-ON LABS

LEARNING OBJECTIVES

- Explain source control concepts and Git branching workflows
- Configure Azure Pipelines build infrastructure and agents
- Implement continuous integration and manage code quality policies
- Implement container build strategies using Docker
- Plan release strategies and configure release management workflows
- Implement deployment patterns such as blue-green and canary releases
- Apply dependency management and package security practices
- Design continuous feedback mechanisms for development teams

25 Modules, 118 Topics

AZ-400T01-A: Implementing DevOps Development Processes

01

Getting Started with Source Control

TOPICS

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

02

Scaling Git for Enterprise DevOps

TOPICS

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

03

Implement & Manage Build Infrastructure

TOPICS

- 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

04

Managing Application Config & Secrets

TOPICS

- 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

05

Implement a Mobile DevOps Strategy

TOPICS

- 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

AZ-400T02-A: Implementing Continuous Integration

01**2 Labs**

Implementing Continuous Integration in an Azure DevOps Pipeline

In this module, you'll be introduced to continuous integration principles including: benefits, challenges, build best practices, and implementation steps. You will also learn about implementing a build strategy with workflows, triggers, agents, and tools.

TOPICS

Continuous Integration Overview · Implementing a Build Strategy

02**2 Labs**

Managing Code Quality and Security Policies

In this module, you will be learn how to manage code quality including: technical debt, SonarCloud, and other tooling solutions. You will also learn how to manage security policies with open source, OWASP, and WhiteSource Bolt.

TOPICS

Managing Code Quality · Managing Security Policies

03**Lab**

Implementing a Container Build Strategy

In this module, you will learn how to implement a container strategy including how containers are different from virtual machines and how microservices use containers. You will also learn how to implement containers using Docker.

TOPICS

Implementing a Container Build Strategy

AZ-400T03-A: Implementing Continuous Delivery

01

Lab

Design a Release Strategy

TOPICS

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

02

6 Labs

Set up a Release Management Workflow

TOPICS

- 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

03

2 Labs

Implement an Appropriate Deployment Pattern

TOPICS

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

AZ-400T04-A: Implementing Dependency Management

01

Lab

Designing a Dependency Management Strategy

TOPICS

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

02

Manage Security and Compliance

TOPICS

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

01

Lab

Infrastructure and Configuration Azure Tools

TOPICS

- 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
- Module Review Questions

02

Lab

Azure Deployment Models and Services

TOPICS

- 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
- Module Review Questions

03

Lab

Create and Manage Kubernetes Service Infrastructure

TOPICS

Learning Objectives · Azure Kubernetes Service · Module Review Questions

04

Lab

Third Party and Open Source Tools Available with Azure

TOPICS

Learning Objectives · Chef · Puppet · Ansible · Cloud-Init · Terraform · Module Review Questions

05

Lab

Implement Compliance and Security in Your Infrastructure

TOPICS

- Security and Compliance Principles with DevOps
- Azure Security Center
- Module Review Questions

06

Course Completion

TOPICS

Final Exam

AZ-400T06-A: Implementing Continuous Feedback

01

2 Labs

Recommend and Design System Feedback Mechanisms

TOPICS

- 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

02

Implement Process for Routing System Feedback to Development Teams

TOPICS

- 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

03

Optimize Feedback Mechanisms

TOPICS

- 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

01

Lab

Planning for DevOps

In this module, students will learn about transformation planning, project selection, and team structures.

TOPICS

Transformation Planning · Project Selection · Team Structures

02

Lab

Planning for Quality and Security

In this module, students will learn about developing a quality strategy and planning for secure development.

TOPICS

Planning a Quality Strategy · Planning Secure Development

03

Lab

Migrating and Consolidating Artifacts and Tools

In this module, students will learn about migrating and consolidating artifacts, and migrating and integrating source control measures.

TOPICS

Migrating and Consolidating Artifacts · Migrating and Integrating Source Control

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
01	Implementing Continuous Integration in an Azure DevOps Pipeline	■ Enabling Continuous Integration with Azure Pipelines ■ Creating a Jenkins Build Job and Triggering CI
02	Managing Code Quality and Security Policies	■ Managing Technical Debt with Azure DevOps and SonarCloud ■ Checking Vulnerabilities using WhiteSource Bolt and Azure DevOps
03	Implementing a Container Build Strategy	Existing .NET Applications with Azure and Docker Images
01	Design a Release Strategy	Building a release strategy

#	MODULE	ACTIVITY
02	Set up a Release Management Workflow	■ Automating your infrastructure deployments in the Cloud with Terraform and Azure Pipelines ■ Setting up secrets in the pipeline with Azure Key vault ■ Setting up and Running Load Tests ■ Setting up and Running Functional Tests ■ Using Azure Monitor as release gate ■ Creating a Release Dashboard
03	Implement an Appropriate Deployment Pattern	■ Blue-Green Deployments ■ Traffic Manager
01	Designing a Dependency Management Strategy	Updating packages
01	Infrastructure and Configuration Azure Tools	Deploy to Azure using ARM templates
02	Azure Deployment Models and Services	Azure Automation - IaaS or PaaS deployment
03	Create and Manage Kubernetes Service Infrastructure	Deploy and Scale AKS Cluster
04	Third Party and Open Source Tools Available with Azure	Provision and configure an App in Azure Using X
05	Implement Compliance and Security in Your Infrastructure	Integrate a scanning extension or tool in an AZ DevOps pipeline/security center
01	Recommend and Design System Feedback Mechanisms	■ Integration between Azure DevOps and Teams ■ Feature Flags
01	Planning for DevOps	Agile Planning and Portfolio Management with Azure Boards
02	Planning for Quality and Security	Feature Flag Management with LaunchDarkly and AzureDevOps
03	Migrating and Consolidating Artifacts and Tools	Integrating Azure Repos and Azure Pipelines with Eclipse

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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✉ info@koenig-solutions.com