

AZ-400T05-A: Implementing Application Infrastructure

OBJECTIVE

This course provides knowledge and skills to deploy an application infrastructure in DevOps pipelines. Students will learn how to implement infrastructure as code and configuration management, how to provision Azure infrastructure using common automation tools, and how to deploy an application infrastructure using various Azure services and deployment methodologies. Students will also learn how to integrate third party deployment tools with Azure, such as Chef and Puppet, to incorporate compliance and security into the release pipeline.

COURSE TOPICS

Module 1: Infrastructure and Configuration Azure Tools

Lessons

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

After completing this module, students will be able to:

- Apply infrastructure and configuration as code principles
- Deploy and manage infrastructure using Microsoft automation technologies such as ARM templates, PowerShell, and Azure CLI

Module 2: Azure Deployment Models and Services

Lessons

- 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

After completing this module, students will be able to:

- Describe deployment models and services that are available with Azure

Module 3: Create and Manage Kubernetes Service Infrastructure

Lessons

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

After completing this module, students will be able to:

- Deploy and configure a Managed Kubernetes cluster

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

Lessons

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

After completing this module, students will be able to:

- Deploy and configure infrastructure using 3rd party tools and services with Azure, such as Chef, Puppet, Ansible, SaltStack, and Terraform

Module 5: Implement Compliance and Security in your Infrastructure

Lessons

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

After completing this module, students will be able to:

- Define an infrastructure and configuration strategy and appropriate toolset for a release pipeline and application infrastructure
- Implement compliance and security in your application infrastructure

PREREQUISITES

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.

TRAINING APPROACH

This course includes lectures, course notes, exercises and hands-on practice.

COURSE DURATION

Bundle course in 4 days

Time: 9:00am to 6:00pm

Lunch Time: 1:00pm to 2:00pm

CERTIFICATION COMPLETION

A certificate of completion is provided for all trainees attending the course.