

Developing Solutions for Microsoft Azure

Duration	Delivery Method	Level
5 days	Online / Instructor Led	Intermediate

Introduction

This course teaches developers how to create end-to-end solutions in Microsoft Azure. Students will learn how to implement Azure compute solutions, create Azure Functions, implement, and manage web apps, develop solutions utilising Azure storage, implement authentication and authorisation, and secure their solutions by using Key Vault and Managed Identities. Students will also learn how to connect to and consume Azure services and third-party services and include event- and message-based models in their solutions. The course also covers monitoring, troubleshooting, and optimising Azure solutions.

Audience profile

Students in this course are interested in Azure development or in passing the Microsoft Azure Developer Associate certification exam.

Pre-requisites

To be successful in this course, learners should have the following:

- Hands-on experience with Azure IaaS and PaaS solutions, and the Azure Portal.
- Experience writing in an Azure supported language at the intermediate level. (C#, JavaScript, Python, or Java)
- Ability to write code to connect and perform operations on, a SQL or NoSQL database product. (SQL Server, Oracle, MongoDB, Cassandra or similar)
- Experience writing code to handle authentication, authorisation, and other security principles at the intermediate level.
- A general understanding of HTML, the HTTP protocol and REST API interfaces.

Course Objectives

After completing this course, students will be able to:

- Select an appropriate licensing model for Windows Virtual Desktop
- Implement networking for Windows Virtual Desktop
- Manage Windows Virtual Desktop session hosts by using Azure Bastion
- Create Azure App Service web apps.
- Implement Azure functions.
- Develop solutions that use Blob storage.
- Develop solutions that use Azure Cosmos DB
- Implement infrastructure as a service solution.
- Implement user authentication and authorisation.
- Implement secure cloud solutions.
- Implement API Management
- Develop event-based solutions.
- Develop message-based solutions.
- Instrument solutions to support monitoring and logging

Course Content

Module 1: Create Azure App Service web apps.

Learn how Azure App Service functions and how to create and update an app. Explore App Service authentication and authorisation, configuring app settings, scale apps, and how to use deployment slots.

- Explore Azure App Service
- Configure web app settings.
- Scale apps in Azure App Service
- Explore Azure App Service deployment slots.

Module 2: Implement Azure functions.

- Explore Azure Functions
- Develop Azure Functions
- Implement Durable Functions

Module 3: Develop solutions that use Blob storage.

- Explore Azure Blob storage.
- Manage the Azure Blob storage lifecycle.
- Work with Azure Blob storage

Module 4: Develop solutions that use Azure Cosmos DB Learn how to create Azure Cosmos DB resources with the appropriate consistency levels, choose and create a partition key, and perform data operations by using the .NET SDK V3 for Azure Cosmos DB.

- Explore Azure Cosmos DB
- Implement partitioning in Azure Cosmos DB
- Work with Azure Cosmos DB

Module 5: Implement infrastructure as a service solution.

- Provision virtual machines in Azure
- Create and deploy Azure Resource Manager templates.
- Manage container images in Azure Container Registry
- Run container images in Azure Container Instances

Module 6: Implement user authentication and authorisation.

- Explore the Microsoft identity platform.
- Implement authentication by using the Microsoft Authentication Library
- Implement shared access signatures.
- Explore Microsoft Graph

Module 7: Implement secure cloud solutions.

- Implement Azure Key Vault
- Implement managed identities.
- Implement Azure App Configuration

Module 8: Implement API Management

Learn how the API Management service functions, how to transform and secure APIs, and how to create a backend API.

- Explore API Management

Module 9: Develop event-based solutions

- Explore Azure Event Grid
- Explore Azure Event Hubs

Module 10: Develop message-based solutions.

- Discover Azure message queues.

Module 11: Instrument solutions to support monitoring and logging

- Monitor app performance.

Module 12: Integrate caching and content delivery within solutions.

- Develop for Azure Cache for Redis
- Develop for storage on CDNs.