

AZ-204: Developing Solutions for Microsoft Azure

Course description

This course teaches IT Professionals how to manage their Azure subscriptions, secure identities, administer the infrastructure, configure virtual networking, connect Azure and on premises sites, manage network traffic, implement storage solutions, create, and scale virtual machines, implement web apps and containers, back up and share data, and monitor your solution.

Audience

This course is for Azure Developers. They design and build cloud solutions such as applications and services. They participate in all phases of development including solution design, development and deployment, and testing and maintenance. They partner with cloud solution architects, cloud DBAs, cloud administrators, and clients to implement the solution.

Learning objectives

After completing this course, students will be able to:

- Deploy and update apps in Azure App Service, implement App Service authentication and authorization, configuring app settings, scale apps, and how to use deployment slots.
- Create and deploy Azure Functions and utilize bindings and triggers to interact with other Azure services.
- Create Azure Blob storage resources, manage data through the blob storage lifecycle, and work with containers and items by using the Azure Blob storage client library V12 for .NET.
- Develop solutions integrating Azure Cosmos DB resources with the appropriate consistency levels, and perform data operations by using the .NET SDK V3 for Azure Cosmos DB.
- Implement authentication and authorization to resources by using the Microsoft identity platform, Microsoft Authentication Library, shared access signatures, and use Microsoft Graph.
- Securely deploy apps in Azure by using Azure Key Vault, managed identities, and Azure App Configuration.
- Implement the Azure API Management service to transform and secure APIs, and how to create a backend API.
- Build applications with event-based architectures by integrating Azure Event Grid and Azure Event Hubs into their solutions.
- Build applications with message-based architectures by integrating Azure Service Bus and Azure Queue Storage into their solutions.
- Explain how Azure Monitor operates, how Application Insights collects events and metrics, and how to instrument apps to monitor and troubleshoot issues.
- Improve the performance and scalability of applications by integrating Azure Cache for Redis and Azure Content Delivery Network into solutions.

Course Outline

	Module	Lab
0: Course Introduction 30 minutes	<ul style="list-style-type: none"> • Introductions • Prerequisites • Certifications • Exam • Course Outline 	Slides only
01: Implement Azure App Service web apps	Module 1: Explore Azure App Service Module 2: Configure web app settings Module 3: Scale apps in Azure App Service Module 4: Explore Azure App Service deployment slots	Lab 01: Build a web application on Azure platform as a service offerings
02: Implement Azure Functions	Module 1: Explore Azure Functions Module 2: Develop Azure Functions	Lab 02: Implement task processing logic by using Azure Functions
03: Develop solutions that use Blob storage	Module 1: Explore Azure Blob storage Module 2: Manage the Azure Blob storage lifecycle Module 3: Work with Azure Blob storage	Lab 03: Retrieve Azure Storage resources and metadata by using the Azure Storage SDK for .NET
04: Develop solutions that use Azure Cosmos DB	Module 1: Explore Azure Cosmos DB Module 2: Work with Azure Cosmos DB	Lab 04: Construct a polyglot data solution
05: Implement containerized solutions	Module 1: Manage container images in Azure Container Registry Module 2: Run container images in Azure Container Instances Module 3: Implement Azure Container Apps	Lab 05: Deploy compute workloads by using images and containers
06: Implement user authentication and authorization	Module 1: Explore the Microsoft identity platform Module 2: Implement authentication by using the Microsoft Authentication Library Module 3: Implement shared access signatures Module 4: Explore Microsoft Graph	Lab 06: Authenticate by using OpenID Connect, MSAL, and .NET SDKs

07: Implement secure cloud solutions	Module 1: Implement Azure Key Vault Module 2: Implement managed identities Module 3: Implement Azure App Configuration	Lab 07: Access resource secrets more securely across services
08: Implement API Management	Module 1: Explore API Management	08 -Exercise: Route custom events to web endpoint by using Azure CLI
09: Develop event-based solutions	Module 1: Explore Azure Event Grid Module 2: Explore Azure Event Hubs	Lab 09: Publish and subscribe to Event Grid events
10: Develop message-based solutions	Module 1: Discover Azure message queues	Lab 10: Asynchronously process messages by using Azure Service Bus Queues
11: Troubleshoot solutions by using Application Insights	Module 1: Monitor app performance	Lab 11: Monitor services that are deployed to Azure
12: Implement caching for solutions	Module 1: Develop for Azure Cache for Redis Module 2: Develop for storage on CDNs	Lab 12: Enhance a web application by using the Azure Content Delivery Network