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Updated on 04/23/2026

Sign up

AZ-204 Training – Azure Developer Associate

5 days (35 hours)

Overview

Microsoft Azure enables you to run applications and functions in a reproducible manner on highly scalable cloud servers, without relying on heavy infrastructure management. It is the ideal technology for packaging modern software pipelines, securing multi-user executions, and facilitating deployment across distributed environments.
Earning the Azure Developer Associate certification officially validates your expertise in developing high-performance cloud-native solutions.

This training aims to make your development workflows portable: creating services, running on various compute nodes (serverless, containers), and managing dependencies and data. You will learn to choose between different hosting models (App Service, Functions, Container Apps) and build your own deployment "recipes" to optimize scalability. The goal is to provide you with practical expertise to integrate Azure into your daily scripts and applications.

The approach is 100% hands-on: it centers on guided workshops, real-time build and execution demos, as well as troubleshooting common errors related to access permissions, network configurations, or resource setups. Deliverables include ready-to-use definition files (Bicep/ARM), a best-practices checklist, and sample commands to streamline your development processes.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Create and manage applications or functions (such as Azure App Service, Azure Functions, containers).
- Implement solutions that use various Azure storage services (e.g., Blob, Cosmos DB).

- Ensure authentication, authorization, and secure application components.
- Use monitoring tools to diagnose and improve performance.
- Integrate APIs, orchestrate communications, or leverage services such as Event Grid, Service Bus, etc.
- Be prepared to take the AZ-204 certification exam

Target Audience

- Anyone interested in Azure development

Prerequisites

- Experience in development and programming (C#, Java, Python, or Node.js)
- Completion of the “Microsoft Azure - Fundamentals” course or equivalent knowledge

Technical prerequisites

- Azure account: An active subscription with "Owner" or "Contributor" permissions on a trial subscription.
- Visual Studio Code (with the Azure Tools extension) and the Azure CLI installed.
- A development environment installed according to your specialization (.NET SDK, Python, or Node.js).
- Docker Desktop (or alternative) installed for the containerization and ACR workshops.

AZ-204 – Azure Developer Associate Training Agenda

[Day 1 - Morning]

Azure Developer and Web Apps Environment

- Configuring VS Code, Azure CLI, and development SDKs
- Service Identity Management: Service Principal and Authentication
- Creating and managing Resource Groups and naming conventions
- Initial deployment and validation of the environment via CLI
- Hands-on workshop: Provision a complete development environment and validate access.

[Day 1 - Afternoon]

Deployment with Azure App Service

- Web App architecture: hosting plans, scaling, and deployment slots
- Deployment strategies: ZIP deploy, Git, and VS Code integration
- Configuring Application Settings and environment variables
- Observability: Enabling diagnostic logs and Application Insights
- Hands-on workshop: Deploying an API to App Service with a staging slot and controlled rollover.

[Day 2 - Morning]

Serverless Logic with Azure Functions

- Hosting models (Consumption, Premium) and scaling
- Implementing triggers and bindings (HTTP, Timer, Queue)
- Lifecycle, version, and packaging management
- Monitoring execution and tracing failures via Application Insights
- Hands-on workshop: Create an HTTP function that handles asynchronous requests to a queue.

[Day 2 - Afternoon]

Containerization and Azure Container Apps

- Building Docker images and publishing to Azure Container Registry (ACR)
- Deployment to Azure Container Apps: revisions and ingress
- Managing secrets and connection variables at runtime
- Logging and metrics for containerized services
- Hands-on workshop: Containerizing an API and deploying it with autoscaling on Container Apps.

[Day 3 - Morning]

Azure Storage and Lifecycle Management

- Choosing the right service (Blob, Files, Tables) based on access patterns
- Managing access levels and data lifecycle management
- Securing data via SAS (Shared Access Signatures) and network restrictions
- Performance optimization via the SDK (concurrency and retries)
- Hands-on workshop: Implementing secure Blob upload/download with a retry policy.

[Day 3 - Afternoon]

Accessing data with Cosmos DB

- NoSQL modeling: containers, partition keys, and RU/s
- CRUD operations via SDK and pagination strategies
- Managing consistency and global replication

- Application Resilience: Timeout Management and Idempotency
- Hands-on workshop: Design a partitioned Cosmos DB container and expose an API endpoint.

[Day 4 - Morning]

Messaging and Event-Driven Architectures

- Comparison of Service Bus, Event Grid, and Event Hubs
- Implementing Queues and Topics
- Message Reliability: Dead-Letter Queue Management and Message Ordering
- Triggering Asynchronous Processing and Session Management
- Hands-on Workshop: Complete Asynchronous Workflow with Service Bus and Subscription.

[Day 4 - Afternoon]

Application Security and Key Vault

- Authentication with Microsoft Entra ID (OAuth2 and App Registrations)
- Using Managed Identities to Remove Secrets from Code
- Storing and reading secrets via Azure Key Vault
- Applying the principle of least privilege via application RBAC
- Hands-on Workshop: Securing an API and retrieving a Key Vault secret via a managed identity.

[Day 5 - Morning]

Application Monitoring and Resilience

- Advanced Instrumentation with Application Insights
- Log analysis with the Kusto language (KQL)
- Implementing Resilience Patterns: Circuit Breaker and Backoff
- Performance Optimization: Caching and Resource Pooling
- Hands-on Workshop: Incident Diagnosis and Alert Creation via KQL Queries.

[Day 5 - Afternoon] Automation

and CI/CD Pipelines

- Infrastructure as Code with Bicep: modules and parameters
- Release and rollback strategies using deployment slots
- Setting up a complete CI/CD pipeline (Build and Deploy)
- Deployment compliance and post-production validation
- Hands-on workshop: Automated deployment of a complete solution (Bicep + Code).

Target Audience

This training is intended for both individuals and companies, large or small, seeking to train their teams in new advanced IT technologies or to acquire specific business knowledge or modern methodologies.

Assessment upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals regarding the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

Teaching Methods

Practical Course: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been properly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training program.