

Architecting Cloud-Native .NET Apps for Azure

Course Duration: 40 Hours

Course Code: AZ-400-DOTNET-CNA

1. Course Overview

The **Architecting Cloud-Native .NET Apps for Azure Training** is designed to help developers and IT professionals build scalable, resilient, and modern applications using cloud-native principles on Microsoft Azure. This course covers microservices architecture, containerization, DevOps practices, and Azure-native services to design high-performance .NET applications.

2. What You'll Learn

- Fundamentals of cloud-native application architecture
- Designing microservices using .NET and Azure
- Implementing containerization with Docker and Kubernetes
- Using Azure services like App Services, AKS, and Azure Functions
- CI/CD pipelines using Azure DevOps
- Monitoring and logging with Azure Monitor and Application Insights
- Security best practices for cloud-native apps
- Scalability and performance optimization techniques

3. Target Audience

- .NET Developers
- Software Architects
- Cloud Engineers
- DevOps Engineers
- IT Professionals looking to transition to cloud-native development

- Professionals working with Microsoft Azure

4. Pre-Requisites

- Basic knowledge of C# and .NET framework
- Understanding of web application development
- Familiarity with cloud computing concepts
- Basic knowledge of Microsoft Azure (preferred but not mandatory)
- Understanding of APIs and databases

5. Course Content

Module 1: Introduction to Cloud-Native Architecture

- What is Cloud-Native?
- Principles and benefits
- Monolithic vs Microservices architecture

Module 2: .NET for Cloud-Native Development

- .NET Core and .NET 6+ overview
- Building RESTful APIs
- Dependency Injection and Middleware

Module 3: Microservices Architecture

- Designing microservices
- API Gateway implementation
- Service-to-service communication

Module 4: Containerization

- Introduction to Docker
- Creating Docker images for .NET apps

- Managing containers

Module 5: Kubernetes & Azure Kubernetes Service (AKS)

- Kubernetes fundamentals
- Deploying applications on AKS
- Scaling and orchestration

Module 6: Azure Services for Cloud-Native Apps

- Azure App Service
- Azure Functions
- Azure Storage & Databases
- Azure Service Bus

Module 7: DevOps & CI/CD

- Azure DevOps overview
- Building CI/CD pipelines
- Infrastructure as Code (IaC)

Module 8: Monitoring & Security

- Azure Monitor and Application Insights
- Logging and diagnostics
- Security best practices

Module 9: Performance & Scalability

- Load balancing and auto-scaling
- Performance tuning
- Cost optimization