Sela.

AZ203

Developing Solutions for Microsoft Azure

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AZ203 - Version: 1

6 days Course

Description:

In this course you will get the knowledge and skill to become Azure Developers who design and build cloud solutions such as applications and services. You will learn how to participate in all phases of development, from solution design, to development and deployment, to testing and maintenance and how to partner with cloud solution architects, cloud DBAs, cloud administrators, and clients to implement the solution. This course is comprised of six separate short courses.

Intended audience:

Students in this course are interested in Azure development or in passing the Microsoft Azure Developer Associate certification exam.
Students should have 1-2 years experience as a developer. This course assumes students know how to code and have a fundamental knowledge of Azure.

Prerequisites:

Students should have 1-2 years experience as a developer. This course assumes students know how to code and have a fundamental knowledge of Azure.
It is recommended that students have some experience with PowerShell or Azure CLI, working in the Azure portal, and with at least one Azure-supported programming language. Most of the examples in this course are presented in C\# .NET.

Objectives:

Learn how to create and deploy virtual machines by using the Azure Portal, PowerShell, and through code.
Learn how to create and deploy Azure Resource Manager templates by using the Azure Portal and Visual Studio.
Understand the different encryption options and learn how to encrypt existing and new deployments.
Understand how the Azure Batch service works
Learn how to create and run batch jobs by using the Azure CLI
Learn how to create and run batch jobs by using code
Learn how to use the Azure Batch Service API to manage jobs
Learn core concepts for Azure Kubernetes Service (AKS)
Learn how to deploy AKS clusters
Publish an image to the Azure Container Registry
Learn about Azure Container Instances and how to deploy to them
Understand App Service core concepts and capabilities
Know how to create App Service web apps by using Azure CLI, Azure Portal, and PowerShell.
Be able to create continuous and triggered WebJobs
Push their app on to the Mobile App service
How to register apps for push notifications
Know how to create an APIM instance and create a new API
Know how to use Swashbuckle to create Swagger objects in ASP.NET Core
Understand the core features and functionality of Azure Functions
Be able to create functions, bindings, and triggers
Know common patters for Durable Functions and be able to create them
Understand the features and uses of Azure Table storage
Know how to utilize Shared Key authorization
Know how to use the Azure Table storage REST service to manage data
Understand core features and functionality of Azure Cosmos DB
Be able to manage containers and items
Be able to create and update documents
Know how the Azure SQL Database service works

Be able to perform database operations by using code
Understand when and why to use Azure Blob storage
Know how to set and retrieve Blob storage properties and metadata
Know how to replicate and copy Blobs
Understand the architecture of the Microsoft identity platform
Be able to implement OAuth2 authentication in their solutions
Be able to use Azure Key Vault to store and retrieve authentication information
Learn how to use claims-based authorization in their development solutions
How to manage access to resources using RBAC through the REST API
Understand encryption options
Learn how to encrypt data with Transparent Data Encryption
Manage and utilize encryption keys by using the Azure key Vault
Understand how Azure Monitor works
Know where and how Azure Monitor collects data
Understand autoscale patterns and best practices for scaling their solutions
How to use the Azure CLI to communicate with a specific copy of a resource
How to handle transient faults in your solution
Know how to add default code to web pages, console apps, and Windows desktop apps to support telemetry
Know how to use dashboards and other tools to monitor and troubleshoot their app
Understand how Azure Cache for Redis operates and how to configure and interact with it
Know how to manage Azure CDN
Understand how to create and manage Azure Logic Apps.
Provision the service, create an index, load data, and execute searches.
Provision the APIM service using the Azure Portal, secure APIs with subscriptions and client certificates, and use API policies to modify the behavior of an API.
Know how the services work and how to integrate them in to their solutions.
Understand how to leverage Azure message-based services in their solutions.

Topics:

Develop Azure Infrastructure as a Service compute solutions

- Module 1: Implement solutions that use virtual machines
  - º Provision VMs
  - º Create ARM templates
  - º Configure Azure Disk Encryption for VMs
- Module 2: Implement batch jobs by using Azure Batch Services
  - º Azure Batch overview
  - º Run a batch job by using the Azure CLI and Azure Portal
  - º Run batch jobs by using code
  - º Manage batch jobs by using the Batch Service API
- Module 3: Create containerized solutions
  - º Create an Azure Managed Kubernetes Service (AKS) cluster
  - º Create container images for solutions
  - º Publish an image to the Azure Container Registry
  - º Run containers by using Azure Container Instance or AKS

Develop Azure Platform as a Service compute solutions

- Module 1: Create App Service web apps
  - º Azure App Service core concepts
  - º Creating an Azure App Service web app
  - º Creating background tasks by using WebJobs in Azure App Service
- Module 2: Creating Azure App Service mobile apps
  - º Getting started with mobile apps in App Service
  - º Enable push notifications for your app
  - º Enable offline sync for your app
- Module 3: Create Azure App Service API apps
  - º Know how to create an APIM instance and create a new API
  - º Know how to use Swashbuckle to create Swagger objects in ASP.NET Core
- Module 4: Implement Azure Functions

- Understand the core features and functionality of Azure Functions
- Be able to create functions, bindings, and triggers
- Know common patters for Durable Functions and be able to create them

Develop for Azure storage

- Module 1: Develop solutions that use Azure Table storage
  - Azure Table storage overview
  - Authorization in Table storage
  - Table service REST API
- Module 2: Develop solutions that use Azure Cosmos DB storage
  - Azure Cosmos DB overview
  - Managing containers and items
  - Create and update documents by using code
- Module 3: Develop solutions that use a relational database
  - Azure SQL overview
  - Create, read, update, and delete database tables by using code
- Module 4: Develop solutions that use Microsoft Azure Blob storage
  - Azure Blob storage overview
  - Working with Azure Blob storage

Implement Azure security

- Module 1: Implement authentication
  - Microsoft identity platform
  - Implement OAuth2 authentication
  - Implement managed identities for Azure resources
  - Implement authentication by using certificates, forms-based authentication, or tokens
  - Implement multi-factor authentication
- Module 2: Implement access control

    - Claims-based authorization
    - Role-based access control (RBAC) authorization
- Module 3: Implement secure data solutions
    - Encryption options
    - End-to-end encryption
    - Implement Azure confidential computing
    - Manage cryptographic keys in Azure Key Vault

Monitor, troubleshoot, and optimize Azure solutions

- Module 1: Introduction to Azure Monitor
    - Overview of Azure Monitor
- Module 2: Develop code to support scalability of apps and services
    - Implement autoscale
    - Implement code that addresses singleton application instances
    - Implement code that handles transient faults
- Module 3: Instrument solutions to support monitoring and logging
    - Configure instrumentation in an app or server by using Application Insights
    - Analyze and troubleshoot solutions by using Azure Monitor
- Module 4: Integrate caching and content delivery within solutions
    - Azure Cache for Redis
    - Develop for storage on CDNs

Connect to and consume Azure and third-party services

- Module 1: Develop an App Service Logic App
    - Azure Logic Apps overview
    - Create Logic Apps by using Visual Studio
    - Create custom connectors for Logic Apps
    - Create custom templates for Logic Apps

- Module 2: Integrate Azure Search within solutions
  - Create and query an Azure Search Index
  - Full text search in Azure Search
- Module 3: API Management
  - Introduction to the API Management service
  - Securing your APIs
  - Defining API policies
- Module 4: Develop event-based solutions
  - Implement solutions that use Azure Event Grid
  - Implement solutions that use Azure Event Hubs
  - Implement solutions that use Azure Notification Hubs
- Module 5: Develop message-based solutions
  - Implement solutions that use Azure Service Bus
  - Implement solutions that use Azure Queue Storage queues