COURSE OVERVIEW

Course Name:
(AZ-204) Developing Solutions for Microsoft Azure

COURSE DURATION: 5 Days

Gauteng:
3rd Floor, 34 Whitely Road
Melrose Arch
Johannesburg
2196

Gauteng:
192 on Bram
192 Bram Fischer Drive
Ferndale, Randburg
Johannesburg
2160

Cape Town:
3rd Floor, Thomas Pattullo Building
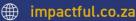19 Jan Smuts St
Cape Town
8000

Durban:
9 Mountview Close
Broadlands
Mount Edgecombe
Durban
4302

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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 utilizing Azure storage, implement authentication and authorization, and secure their solutions by using KeyVault 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 optimizing Azure solutions.

DELIVERY METHOD

Our courses have flexible delivery options:
- In-person classroom training at the Impactful training facilities
  - Johannesburg, Durban, Cape Town
- Virtual instructor-led training
- Nationally: on-site at the client

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INTENDED AUDIENCE

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

PREREQUISITES

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, authorization, and other security principles at the intermediate level.
- A general understanding of HTML, the HTTP protocol and REST API interfaces.

COURSE CONTENT

Module 1: Creating Azure App Service Web Apps
Students will learn how to build a web application on the Azure App Service platform. They will learn how the platform functions and how to create, configure, scale, secure, and deploy to the App Service platform.
Lessons
Azure App Service core concepts
Creating an Azure App Service Web App
Configuring and Monitoring App Service apps
Scaling App Service apps
Azure App Service staging environments

Module 2: Implement Azure functions
This module covers creating Functions apps, and how to integrate triggers and inputs/outputs in to the app.
Lessons
Azure Functions overview
Developing Azure Functions
Implement Durable Functions

Module 3: Develop solutions that use blob storage
Students will learn how Azure Blob storage works, how to manage data through the hot/cold/archive blob storage lifecycle, and how to use the Azure Blob storage client library to manage data and metadata.
Lessons
Azure Blob storage core concepts
Managing the Azure Blob storage lifecycle
Working with Azure Blob storage

Module 4: Develop solutions that use Cosmos DB storage
Students will learn how Cosmos DB is structured and how data consistency is managed. Students will also learn how to create Cosmos DB accounts and create databases, containers, and items by using a mix of the Azure Portal and the .NET SDK.
Lessons
Azure Cosmos DB overview
Azure Cosmos DB data structure
Working with Azure Cosmos DB resources and data

Module 5: Implement IaaS solutions

This module instructs students on how to use create VMs and container images to use in their solutions. It covers creating VMs, using ARM templates to automate resource deployment, create and manage Docker images, publishing an image to the Azure Container Registry, and running a container in Azure Container Instances.

Lessons

Provisioning VMs in Azure

Create and deploy ARM templates

Create container images for solutions

Publish a container image to Azure Container Registry

Create and run container images in Azure Container Instances

Module 6: Implement user authentication and authorization

Students will learn how to leverage the Microsoft Identity Platform v2.0 to manage authentication and access to resources. Students will also learn how to use the Microsoft Authentication Library and Microsoft Graph to authenticate a user and retrieve information stored in Azure, and how and when to use Shared Access Signatures.

Lessons

Microsoft Identity Platform v2.0

Authentication using the Microsoft Authentication Library

Using Microsoft Graph

Authorizing data operations in Azure Storage

Module 7: Implement secure cloud solutions

This module covers how to secure the information (keys, secrets, certificates) an application uses to access resources. It also covers securing application configuration information.

Lessons

Manage keys, secrets, and certificates by using the KeyVault API

Implement Managed Identities for Azure resources

Secure app configuration data by using Azure App Configuration

Module 8: Implement API Management

Students will learn how to publish APIs, create policies to manage information shared through the API, and to manage access to their APIs by using the Azure API Management service.

Lessons

API Management overview

Defining policies for APIs

Securing your APIs

Module 9: Develop App Service Logic Apps

This module teaches students how to use Azure Logic Apps to schedule, automate, and orchestrate tasks, business processes, workflows, and services across enterprises or organizations.

Lessons

Azure Logic Apps overview

Creating custom connectors for Logic Apps

Module 10: Develop event-based solutions

Students will learn how to build applications with event-based architectures.

Lessons

Implement solutions that use Azure Event Grid

Implement solutions that use Azure Event Hubs

Implement solutions that use Azure Notification Hubs

Module 11: Develop message-based solutions
Students will learn how to build applications with message-based architectures.
Lessons
Implement solutions that use Azure Service Bus
Implement solutions that use Azure Queue Storage queues

Module 12: Monitor and optimize Azure solutions
This module teaches students how to instrument their code for telemetry and how to analyze and troubleshoot their apps.
Lessons
Overview of monitoring in Azure
Instrument an app for monitoring
Analyzing and troubleshooting apps
Implement code that handles transient faults

Module 13: Integrate caching and content delivery within solutions
Students will learn how to use different caching services to improve the performance of their apps.
Lessons
Develop for Azure Cache for Redis
Develop for storage on CDNs