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# MVS3-7 - MOC 20487 - DEVELOPING WINDOWS AZURE AND WEB SERVICES

Categoria: Visual Studio

# **INFORMAZIONI SUL CORSO**



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Durata: 5 Giorni

Categoria: Visual Studio

Qualifica Istruttore: **Microsoft Certified** Trainer

Dedicato a: Sviluppatore



# Produttore: Microsoft

# **OBIETTIVI**

After completing this course, students will be able to:

- -Describe the basic concepts of service development and data access strategies using the .NET platform.
- -Describe the Microsoft Azure cloud platform and its compute, data, and application hosting offerings.
- -Design and develop a data-centric application using Visual Studio 2017 and Entity Framework Core.
- -Design, implement, and consume HTTP services using ASP.NET Core.
- -Extend HTTP services using ASP.NET Core.
- -Host services on-premises and in Microsoft Azure.
- -Deploy services to both on-premises and cloud environments and manage the interface and policy for their services.
- Choose a data storage solution, cache, distribute, and synchronize data.
- -Monitor, log, and troubleshoot services.
- -Describe claim-based identity concepts and standards, and implement authentication and authorization with Azure Active Directory.
- -Create scalable service applications.

# PREREQUISITI

Before attending this course, students must have:

- -Experience with C# programming, and concepts such as lambda expressions, LINQ, and anonymous types
- -Understanding the concepts of n-tier applications
- -Experience with querying and manipulating data with ADO.NET

# CONTENUTI

## Module 1: Overview of service and cloud technologies

- -Key Components of Distributed Applications
- -Data and Data Access Technologies
- -Service Technologies
- -Cloud Computing
- -Manipulating Data
- Lab : Exploring the Work Environment



-Creating an ASP.NET Core project

-Create a simple Entity Framework model

-Create a web API class

-Deploy the web application to Azure

## Module 2: Querying and Manipulating Data Using Entity Framework

-ADO.NET Overview

-Creating an Entity Data Model

-Querying Data

## Lab : Creating a Data Access Layer using Entity Framework

-Creating a data model

-Query the Database

## Lab : Manipulating Data

-Create repository methods

-Test the model using SQL Server and SQLite

## Module 3: Creating and Consuming ASP.NET Core Web APIs

-HTTP Services

-Creating an ASP.NET Core Web API

-Consuming ASP.NET Core Web APIs

-Handling HTTP Requests and Responses

-Automatically Generating HTTP Requests and Responses

## Lab : Creating an ASP.NET Core Web API

-Create a controller class

-Use the API from a browser

-Create a client

#### Module 4: Extending ASP.NET Core HTTP Services

-The ASP.NET Core Request Pipeline

-Customizing Controllers and Actions

-Injecting Dependencies into Controllers

#### Lab : Customizing the ASP.NET Core Pipeline

-Use Dependency Injection to Get a Repository Object

-Create a Cache Filter

-Create a Debugging Middleware

# Module 5: Hosting Services On-Premises and in Azure

-Hosting Services on-premises

-Hosting Services in Azure App Service

-Packaging Services in Containers

-Implementing Serverless Services

# Lab : Host an ASP.NET Core service in a Windows Service

-Creating a new ASP.NET Core Application

-Registering the Windows Service

Lab : Host an ASP.NET Core Web API in an Azure Web App

-Create a Web App in the Azure portal

-Deploy an ASP.NET Core Web API to the Web App

# Lab : Host an ASP.NET Core service in Azure Container Instances

-Publish the service to a Docker container



-Host the service in Azure Container Instances

#### Lab : Implement an Azure Function

-Develop the service locally

-Deploy the service to Azure Functions

#### Module 6: Deploying and Managing Services

-Web Deployment with Visual Studio 2017

- -Continuous Delivery with Visual Studio Team Services
- -Deploying Applications to Staging and Production Environments
- -Defining Service Interfaces with Azure API Management

#### Lab : Deploying an ASP.NET Core web service on Linux

-Publish the ASP.NET Core web service for Linux

-Configure Nginx as a reverse proxy

#### Lab : Deploying to Staging and Production

- -Deploy the application to production
- -Create a staging slot
- -Swap the Environments

#### Lab : Publishing a Web API with Azure API Management

- -Creating an Azure API Management instance
- -Testing and managing the API

#### Module 7: Implementing Data Storage in Azure

-Choosing a Data Storage Mechanism

- -Accessing Data in Azure Storage
- -Working with Structured Data in Azure
- -Geographically Distributing Data with Azure CDN
- -Scaling with Out-of-Process Cache

#### Lab : Storing Files in Azure Storage

-Store publicly accessible files in Azure Blobs

-Generate and store private files in Azure Blobs

#### Lab : Querying Graph Data with CosmosDB

-Create the CosmosDB graph database

-Query the CosmosDB database

#### Lab : Caching out-of-process with Azure Redis cache

- -Create the Azure Redis Cache service
- -Access the cache service from code
- -Test the application

#### Module 8: Diagnostics and Monitoring

-Logging in ASP.NET Core

-Diagnostic Tools

Application Insights

#### Lab : Monitoring ASP.NET Core with ETW and LTTng

-Collect and view ETW events

-Collect and view LTTng events

#### Lab : Monitoring Azure Web Apps with Application Insights

-Add the Application Insights SDK

-Load test the web service

-Analyze the performance results



## Module 9: Securing services on-premises and in Microsoft Azure

-Explaining Security Terminology

-Securing Services with ASP.NET Core Identity

-Securing Services with Azure Active Directory

#### Lab : Using ASP.NET Core Identity

-Add ASP.NET Core Identity middleware

-Add authorization code

-Run a client application to test the server

## Lab : Using Azure Active Directory with ASP.NET Core

-Authenticate a client application using AAD B2C and MSAL.js

## Module 10: Scaling Services

-Introduction to Scalability

- -Automatic Scaling
- -Azure Application Gateway and Traffic Manager

## Lab : Load Balancing Azure Web Apps

- -Prepare the application for load-balancing
- -Test the load balancing with instance affinity
- -Test the load balancing without affinity

## Lab : Load Balancing with Azure Traffic Manager

- -Deploy an Azure Web App to multiple regions
- -Create an Azure Traffic Manager profile

# **INFO**

Materiale didattico: Materiale didattico in formato digitale Costo materiale didattico: incluso nel prezzo del corso a Calendario Natura del corso: Operativo (previsti lab su PC)