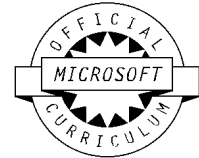


Course Outline

20532-Developing Microsoft Azure Solutions

Duration: 5 days (30 hours)



Target Audience:

The candidates targeted by this training have basic experience in implementing and monitoring Microsoft Azure solutions. Candidates are also proficient with the development tools, techniques and approaches used to build application solutions.

At course completion

After completing this course, students will be able to:

- Review the services available in the Azure platform and the Management Portals used to manage the service instances.
- Create a Virtual Machine using the Azure Management Portal and create an image of the VM.
- Create an Azure Web Site and publish an existing ASP.NET web application to the site.
- Create an Azure SQL server and database.
- Describe and identify the common practices and patterns for building resilient and scalable web applications that will be hosted in Azure.
- Create an Azure Cloud Service project in Visual Studio 2013 and debug locally.
- Create a background process using a Azure Worker Role.
- Create an Azure Table Storage table and manage the table data using the .NET API for Azure Storage.
- Create Azure Files SMB file share and store documents.
- Create an Azure Storage Queue instance to store requests.
- Create an Azure Service Bus queue instance to store requests.
- Create an Azure Service Bus namespace and use the namespace to connect a cloud web application to the local WCF service.
- Create a Virtual Machine using the existing SQL template and connect this Virtual Machine to the existing application.
- Create a test environment using powershell and the Azure Service Management cmdlets.
- Integrate ASP.NET Identity for the administration portal with Azure Active Directory.
- Deploy the web application projects to Azure.

Prerequisites:

Before attending this course, students must have:

- Compare the services available in the Azure platform.
- Configure and deploy web applications.
- Create Azure WebSites using the gallery.
- Deploying and monitoring Azure WebSites.
- Create and configure Azure Virtual Machines.
- Describe the relationship between Cloud Services and Virtual Machines.

- Deploy existing Cloud Service packages.
- Create and manage a Storage account.
- Manage blobs and containers in a Storage account.
- Create, configure and connect to a SQL Databases instance.
- Identify the implications of importing a SQL Standalone database.
- Manage users, groups and subscriptions in an Azure Active Directory instance.
- Create a virtual network.
- Implement a point to site network

Topics Covered:

➤ Module 1: OVERVIEW OF THE MICROSOFT AZURE PLATFORM

- Azure Services
- Management Portals
 - Lab : Using the Azure Preview Portal
 - Connect to the Azure Portals
 - Create a Web Site in Azure
 - Configure the Web Site Template

After completing this module, students will be able to create a Web Site using both the Azure Management and Preview Portals.

➤ Module 2: Establishing a Development Environment using Azure Virtual Machines

- Constructing Azure Virtual Machines
- Azure Virtual Machine Workloads
- Migrating Azure Virtual Machine Instances
- Using Remote Desktop Protocol (RDP) to Connect to a Virtual Machine
 - Lab : Creating an Azure Virtual Machine for Development & Testing
 - Create a Resource Group using Azure
 - Create a Development Virtual Machine in Azure
 - Configure the Virtual Machine for Development

After completing this module, students will be able to create a Virtual Machine using the Azure Management Portal and create an image of the VM.

➤ Module 3: Hosting Web Applications on the Azure Platform

- Azure Web Sites
- Hosting Web Applications in Azure
- Configuring an Azure Web Site
- Publishing an Azure Web Site
- Monitoring and Analyzing Running Azure Web Sites
- Lab Overview
 - Lab : Creating an ASP.NET Web Site Using Azure Websites
 - Create an Azure Web Site
 - Deploy an ASP.NET Web Application to an Azure Web Site
 - Configure an Azure Web Site

After completing this module, students will be able to create an Azure Web Site and publish an existing ASP.NET web application to the site.

- Module 4: Storing SQL Data in Azure
 - Azure SQL Database Overview
 - Managing SQL Databases in Azure
 - Using Azure SQL Databases with SQL Server Data Tools
 - Migrating Data to Azure SQL Databases
 - Replication and Recovery of Azure SQL Database Instances
 - Lab : Storing Event Data in Azure SQL
 - Create an Azure SQL Databases Instance
 - Using Entity Framework with Azure SQL Databases

After completing this module, students will be able to create an Azure SQL server and database. They will also be able to use Entity Framework Code First to migrate tables to Azure.

- Module 5: Designing Cloud Applications For Resiliency
 - Design Considerations for Scale with Cloud Applications
 - Application Design Practices for Highly Available Applications
 - Building High Performance Applications using ASP.NET
 - Common Cloud Application Patterns
 - Application Analytics
 - Caching Application Data
 - Lab : No lab

After completing this module, students will be able to describe and identify the common practices and patterns for building resilient and scalable web applications that will be hosted in Azure.

- Module 6: Managing Cloud Services in Azure
 - Overview of Cloud Services
 - Cloud Service Web Roles
 - Customizing Cloud Service Configurations
 - Updating and Managing Cloud Service Deployments
 - Cloud Service Worker Role
 - Cloud Service Worker Role Processing
 - Analyzing Application Cloud Service Role Instances
 - Lab : Creating Azure Web Roles Using Visual Studio 2013
 - Create an Azure Cloud Service project
 - Create an Azure Cloud Service Web Role from an existing project
 - Configure the properties of an Azure Cloud Service project
 - Debug an Azure Cloud Service project
 - Lab : Creating a Background Process Using Azure Worker Roles
 - Create a C# Class Library
 - Add the Class Library to a Cloud Service Project
 - Debug Worker Roles in a Cloud Service Project

After completing this module, students will be able to create a background process using a Azure Worker Role.

- Module 7: Storing NoSQL Data in Azure
 - Azure Storage Overview
 - Azure Storage Tables Overview

- Table Entity Transactions
- Azure DocumentDB
 - Lab : Storing Attendee Registration Data in Azure Table Storage
 - Populating the Sign-In Form with Registrant Names
 - Updating the Events Website to use Storage Tables
 - Verifying that the Events Web Site is using Azure Storage Tables for Registrations

After completing this module, students will be able to create an Azure Table Storage table and manage the table data using the .NET API for Azure Storage.

➤ Module 8: Storing and Consuming Files from Azure Storage

- Azure Storage Blobs
- Controlling Access to Storage Blobs & Containers
- Monitoring Storage Blobs
- Configuring Azure Storage Accounts
- Azure Files
- Uploading and Migrating Storage Data
 - Lab : Storing Generated Documents in Azure Blob Storage
 - Implement Azure Storage Blobs
 - Populating the Container with Files and Media
 - Retrieving Files and Media from the Container
 - Specifying Permissions for the Container
 - Lab : Creating File Shares using Azure Files
 - Implement Azure Files
 - Populating the File Share with Media

After completing this module, students will be able to create Azure Files SMB file share and store documents related to the event website.

➤ Module 9: Designing a Communication Strategy using Queues and Service Bus

- Queue Mechanisms in Azure
- Azure Storage Queues
- Handling Storage Queue Messages
- Azure Service Bus
- Azure Service Bus Queues
- Azure Service Bus Relay
- Azure Service Bus Notification Hubs
 - Lab : Using Storage Queues to Manage Requests Between Web Applications in Azure
 - Using Azure Queue Storage for Document Generation
 - Verify the Requests are Created and Consumed
 - Lab : Using Service Bus to Manage Communication Between Web Applications in Azure
 - Create an Azure Service Bus Namespace
 - Use Service Bus Queues for Document Generation
 - Verify the Requests are Created and Consumed
 - Use Service Bus Relay to Connect a WCF Service and Client[s]

After completing this module, students will be able to create an Azure Storage Queue instance to store requests. They will also create an Azure Service Bus queue instance to store requests. Students will then create an Azure Service Bus namespace and use the namespace to connect a cloud web application to the local WCF service.

- Module 10: Managing Infrastructure in Azure
 - Azure Virtual Networks
 - Highly Available Azure Virtual Machines
 - Customize Azure Virtual Machine Networking
 - Lab : Managing Multiple Virtual Machines in a Virtual Network
 - Create the Database Virtual Machine
 - Create the Application Web Site
 - Connect the Test Application to the SQL Server Virtual Machine
 - Modify the Database Virtual Machine

After completing this module, students will be able to create a Virtual Machine using the existing SQL template and connect this Virtual Machine to the existing application.

- Module 11: Automating Integration with Azure Resources
 - Azure SDK Client Libraries
 - Virtual Machine Configuration Management
 - Scripting Azure Service Management using PowerShell
 - Azure REST Interface
 - Azure Resource Manager
 - Lab : Automating the Creation of a Test Environment using PowerShell
 - Prepare Azure PowerShell Environment
 - Use PowerShell to Create and Access a Web Site Instance
 - Use a Resource Template to Create Multiple Pre-Configured Resources

After completing this module, students will be able to create a test environment using PowerShell and the Azure Service Management CmdLets.

- Module 12: Securing Azure Web Applications
 - Azure Active Directory
 - Introduction to Identity Providers
 - Azure AD Directories
 - Azure AD Multi-Factor Authentication
 - Azure Role-Based Access Control
 - Lab : Integrating Azure Active Directory with the Events Administration Portal
 - Create an Azure AD Directory
 - Secure an Existing ASP.NET Web Application
 - Integrate Azure AD with ASP.NET Identity

After completing this module, student will be able to integrate ASP.NET Identity for the administration portal with Azure Active Directory.

- Module 13: Maintaining and Monitoring Web Solutions in Azure
 - Deployment Strategies for Web Applications
 - Deploying Azure Services
 - Continuous Integration
 - Monitoring Cloud Applications
 - Lab : Deploying the Events Web Application to Azure
 - Create the Target Azure Services for Deployment
 - Manage Configuration Settings for a Cloud Web Application

- Deploy the Web Applications to Azure
- Monitor the Web Applications in Azure

After completing this module, students will be able to deploy the web application projects to Azure.