

AZ-300: Azure Architect-Technologies

Overview

This course teaches IT Professionals:

How to manage their Azure resources, including deployment and configuration of virtual machines, virtual networks, storage accounts, and Azure AD that includes implementing and managing hybrid identities.

Learn how to Implement authentication in applications (certificates, Azure AD, Azure AD Connect, token-based), implement secure data (SSL and TLS), and manage cryptographic keys in Azure Key Vault. Learn how to configure a message-based integration architecture, develop for asynchronous processing, create apps for autoscaling, and better understand Azure Cognitive Services solutions.

At Course Completion

After completing this course, students will be able to:

Managing Azure Subscriptions and Resources

Implementing and Managing Storage

Deploying and Managing VMs

Configuring and Managing Virtual Networks

Managing Identities using Azure Active Directory

Evaluating and Performing Server Migration to Azure

Implementing and Managing Application Services

Implementing Advanced Virtual Networking.

Securing Identities using Azure AD.

Design and Connectivity Patterns

Hybrid Networking

Address Durability of Data and Caching

Measure Throughput and Structure of Data Access

Use shell commands to create an App Service Web App

Create Background Tasks

Use Swagger to document an API

Create a reliable service

Create a Reliable Actors app

Hands-on with Reliable collections

Understand the Azure Container Registry

Use Azure Container instances

Understand how to Implement authentication using certificates, Azure AD, Azure AD Connect, and tokens.

Implement Role-based Access Control (RBAC) authorization.

Implement secure data for end-to-end encryption.

Implement secure data for implementing SSL and TLS communications.

Use Azure Key Vault to manage cryptographic keys.

How to configure a message-based integration architecture

Understand how to Develop for Asynchronous Processing

Begin creating apps for Autoscaling

Understand Azure Cognitive Services Solutions

Related Certifications

Microsoft Certified: Azure Solutions Architect Expert

Who Should Attend

Successful Cloud Solutions Architects begin this role with practical experience with operating systems, virtualization, cloud infrastructure, storage structures, billing, and networking.

Course Outline

AZ-300T01: Deploying and Configuring Infrastructure

Module 1: Managing Azure Subscriptions and Resources

In this module you will explore Azure monitoring capabilities using Azure alerts, Azure activity logs, and Log Analytics. You will learn to query, analyze, and interpret the data viewed in Log Analytics.

Module 2: Implementing and Managing Storage

In this module you will learn about Azure storage accounts, data replication, how to use Azure Storage Explorer, and monitor storage.

Module 3: Deploying and Managing Virtual Machines (VMs)

In this module you will learn how to do the following: • Create Virtual Machines (VM)s within the Azure Portal • Create Virtual Machines (VM)s using Azure PowerShell • Create Virtual Machines (VM)s using ARM templates • Deploy Linux Virtual Machines (VM)s • Monitor Virtual Machines (VM)s Additionally, you will learn how to protect data using backups at regular intervals, whether by snapshot, Azure Backup, or Azure Site Recovery.

Module 4: Configuring and Managing Virtual Networks

In this module you will create and implement virtual networks using the Azure Portal as well as Azure PowerShell and CLI. You will receive and overview on how to assign IP addresses to Azure resources to communicate with other Azure resources, your on-premises network, and the Internet.

Lessons

Network routing using routing tables and algorithms
Inter-site connectivity using VNet-to-VNet connections and VPNs
Virtual network peering for regional and global considerations
Gateway transit

Module 5: Managing Identities

This module covers Azure Active Directory (Azure AD) for IT Admins and Developers with a focus on the Azure AD multi-tenant cloud-based directory and identity management service.

Lessons

Role-Based Access Control (RBAC)
built-in roles
Self-Service Password Reset (SSPR)
authentication methods for password reset

AZ-300T02: Implementing Workloads and Security

Module 1: Evaluating and Performing Server Migration to Azure

This module covers migrating workloads to a new environment, whether it be another datacenter, or to a public cloud, and setting clear goals for the migration. Goals include both technology-focused and business-focused goals for migrations, and the benefits to an organization's business. Activities include components of the Azure migration process: creating a project, creating a collector, assessing readiness, and estimating costs. Additionally, you will receive and overview of Azure Site Recovery (ASR) that includes and end-to-end scenarios.

Module 2: Implementing and Managing Application Services

This module includes the following topics:

Deploying Web Apps
Managing Web Apps
App Service Security
Serverless Computing Concepts
Managing Event Grid
Managing Service Bus
Managing Logic App

Module 3: Implementing Advanced Virtual Networking

This module includes the following topics:

Azure Load Balancer
Azure Application Gateway
Site-to-Site VPN Connections As well as an overview of ExpressRoute which allows companies to extend on-premises networks into the Microsoft cloud over a dedicated private connection facilitated by a connectivity provider.

Module 4: Securing Identities

This module includes the following topics with an emphasis on identity and roles:

Azure AD Identity Protection
Azure Domains and Tenants
Azure Users and Groups
Azure Roles As well as an overview of Azure AD integration options that focuses on Azure AD Connect to integrate on-premises directories with Azure Active Directory.

AZ-300T03: Understanding Cloud Architect Technology Solutions

Module 1: Selecting Compute and Storage Solutions

This module includes the following topics:

Azure Architecture Center

Cloud design patterns

Competing consumers pattern

Cache-aside pattern As well as sharding patterns to divide a data store into horizontal partitions, or shards. Each shard has the same schema but holds its own distinct subset of the data.

Module 2: Hybrid Networking

This module includes the following topics:

Site-to-site connectivity

Point-to-site connectivity

Combining site-to-site and point-to-site connectivity

Virtual network-to-virtual network connectivity As well as connecting across cloud providers for failover, backup, or even migration between providers such as AWS.

Module 3: Measuring Throughput and Structure of Data Access

This module includes the following topics:

DTUs – Azure SQL Database

RUs – Azure Cosmos DB

Structured and unstructured data

Using structured data stores

AZ-300T04: Creating and Deploying Apps

Module 1: Creating Web Applications using PaaS

This module provides an overview of Azure App Service Web Apps for hosting web applications, REST APIs, and a mobile back end. Topics include the following:

Using shell commands to create an App Service Web App

Creating Background Tasks

Using Swagger to document an API As well as an explanation of how Logic Apps help to build solutions that integrate apps, data, systems, and services across enterprises or organizations by automating tasks and business processes as workflows.

Module 2: Creating Apps and Services Running on Service Fabric

This module provides an overview of Azure Service Fabric as a distributed systems platform that makes it easy to package, deploy, and manage scalable and reliable microservices and containers. This module also addresses the challenges in developing and managing cloud native applications. Additional topics include:

Creating a reliable service

Creating a Reliable Actors app

Working with Reliable collections

Module 3: Using Azure Kubernetes Service

This module focuses on the Azure Kubernetes Service (AKS) for deploying and managing a Kubernetes cluster in Azure. Topics include how to reduce operational overhead of managing Kubernetes by offloading much of that responsibility to Azure, such as health monitoring and maintenance. Additional topics include:

Azure Container Registry

Azure Container Instances

AZ-300T06: Developing for the Cloud

Module 1: Developing Long-Running Tasks and Distributed Transactions

Topics for this module include:

Implementing large-scale, parallel, and high-performance apps using batches

HPC using Microsoft Azure Virtual Machines

Implementing resilient apps by using queues As well as, implementing code to address application events by using webhooks. Implementing a webhook gives an external resource a URL for an application. The external resource then issues an HTTP request to that URL whenever a change is made that requires the application to take an action.

Module 2: Configuring a Message-Based Integration Architecture

Lessons

Configure an app or service to send emails

Configure an event publish and subscribe model

Configure the Azure Relay service

Configure apps and services with Microsoft Graph

Module 3: Developing for Asynchronous Processing

Lessons

- Implement parallelism, multithreading, and processing
- Implement Azure Functions and Azure Logic Apps
- Implement interfaces for storage or data access
- Implement appropriate asynchronous computing models
- Implement autoscaling rules and patterns

Module 4: Developing for Autoscaling

Lessons

- Implementing autoscaling rules and patterns
- Implementing code that addresses singleton application instances
- Implementing code that addresses a transient state

Module 5: Developing Azure Cognitive Services Solutions

Lessons

- Developing Solutions using Computer Vision
- Developing solutions using Bing Web Search
- Developing solutions using Custom Speech Service
- Developing solutions using QnA Maker