
Microsoft Azure Solutions Architect - Technologies (Exam AZ-300)

Duration: 5 Days Course Code: M-AZ300 Version: A

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 cloud resources are managed in Azure through user and group accounts, and how to grant access to Azure AD users, groups, and services using Role-based access control (RBAC).

Learn about the different storage accounts and services as well as basic data replication concepts and available replication schemes.

Introduced to Storage Explorer as a convenient way to work with Azure storage data.

Learn the types of storage and how to work with managed and custom disks.

Azure blob storage is how Azure stores unstructured data in the cloud, and you will work with blobs and blob containers. In addition to blob storage, the course covers Table and Queue storage as storage options for structured data.

Learn how to create and deploy virtual machines in Azure, using the Azure portal, PowerShell, and ARM templates. The course includes instruction on deploying custom images and Linux virtual machines. You will see how to configure the networking and storage components of virtual machines. Deploying highly available virtual machines is critical for planned and unplanned events, and you will learn how to use availability sets to ensure that virtual machine resources are available during downtime.

Learn the monitoring tools and capabilities provided by Azure, including Azure Alerts and Activity Log. In addition to alerts and logs, you will be introduced to Log Analytics as an effective data analytics solution for understanding your system status and health. And perhaps the most exciting thing you will learn is how to use the Azure Resource Manager deployment model to work with resources, resource groups, and ARM templates.

Discover, assess, plan and implement a migration of on-premises resources and infrastructure to Azure.

Learn how to use Azure Migrate to perform the discovery and assessment phase that is critical to a successful migration. Students will also learn how to use Azure Site Recovery for performing the actual migration of workloads to Azure. The course focuses primarily on using ASR on a Hyper-V infrastructure to prepare and complete the migration process.

Learn how to deploy serverless computing features like Azure Functions, Event Grid, and Service Bus. You will learn how Azure Multi-Factor Authentication helps safeguard access to data and applications, helping to meet customer demand for a simple sign-in process. Also, how to use Azure Active Directory Privileged Identity Management to manage, control, and monitor access to Azure resources within your organization.

Manage and maintain the infrastructure for the core web apps and services that developers build and deploy.

Learn how Azure App Service is used as a Platform as a Service (PaaS) offering for deploying cloud apps for web and mobile environments. Get a glimpse of how to implement advanced networking features like Application Gateway and how to configure load balancing. Learn to integrate on-premises networks with Azure virtual networks and to use Network Watcher to monitor and troubleshoot issues.

Operations are done in parallel and asynchronously. And, how your whole enterprise system must be resilient when failures occur, and just as importantly, how deployments can be automated and predictable. By using the Azure Application Architecture Guide and Azure reference architectures as a basis, you will understand how monitoring and telemetry are critical for gaining insight into the system.

You will dive into the cloud design patterns that are important, such as partitioning workloads where a modular application is divided into functional units that can be integrated into a larger application. In such cases, each module handles a portion of the application's overall functionality and represents a set of related concerns.

Load balancing where the application traffic, or load, is distributed among various endpoints by using algorithms. Load balancers allow multiple instances of your website to be created so they can behave in a predictable manner. In Azure, it is possible to use virtual load balancers, which are hosted in virtual machines, if a company requires a very specific load balancer configuration.

Transient fault handling which helps define the primary differences between developing applications on-premises and in the to handle transient errors. Transient errors are errors that occur due to temporary interruptions in the service or to excess latency.

Discussion of hybrid networking that provides an overview of site-to-site connectivity, point-to-site connectivity, and the combination of the two.

To build Logic App solutions that integrate apps, data, systems, and services across enterprises or organizations by automating tasks and business processes as workflows. Logic Apps is cloud service in Azure that simplifies how you design and create scalable solutions for app integration, data integration, system integration, enterprise application integration (EAI), and business-to-business (B2B) communication, whether in the cloud, on premises, or both.

How Azure Service Fabric is a distributed systems platform that makes it easy to package, deploy, and manage scalable and reliable microservices and containers. Service Fabric also addresses the significant challenges in developing and managing cloud native applications. Developers and administrators can avoid complex infrastructure problems and focus on implementing mission-critical, demanding workloads that are scalable, reliable, and manageable. Service Fabric represents the next-generation platform for building and managing these enterprise-class, tier-1, cloud-scale applications running in containers.

See how Azure Kubernetes Service (AKS) makes it simple to deploy a managed Kubernetes cluster in Azure. AKS reduces the complexity and operational overhead of managing Kubernetes by offloading much of that responsibility to Azure. As a hosted Kubernetes service, Azure handles critical tasks like health monitoring and maintenance for you.

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.

Target Audience:

Successful Cloud Solutions Architects begin this role with practical experience with operating systems, virtualization, cloud infrastructure,

Objectives:

- 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

Content:

AZ-300T01: Deploying and Configuring Infrastructure	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.	Lessons for module 1
Module 1: Managing Azure Subscriptions and Resources	After completing module 4, students will be able to:	Implementing authentication in applications (certificates, Azure AD, Azure AD Connect, token-based)
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.	Securing Identities using Azure AD	Implementing multi-factor authentication
After completing module 1, students will be able to:	AZ-300T03: Understanding Cloud Architect Technology Solutions	Claims-based authorization
Managing Azure Subscriptions and Resources	Module 1: Selecting Compute and Storage Solutions	Role-based access control (RBAC) authorization
Module 2: Implementing and Managing Storage	Lessons for module 1	After completing module 1, students will be able to:
In this module you will learn about Azure storage accounts, data replication, how to use Azure Storage Explorer, and monitor storage.	Azure Architecture Center	Understand how to Implement authentication using certificates, Azure AD, Azure AD Connect, and tokens
After completing module 2, students will be able to:	Cloud design patterns	Implement Role-Based Access Control (RBAC) authorization
Implementing and Managing Storage	Competing consumers pattern	Module 2: Implementing Secure Data
Module 3: Deploying and Managing Virtual Machines (VMs)	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.	Lessons for module 2
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	After completing module 1, students will be able to:	End-to-end encryption
Additionally, you will learn how to protect data using backups at regular intervals, whether by snapshot, Azure Backup, or Azure Site Recovery.	Design and Connectivity Patterns	Implementing Azure confidential computing
After completing module 3, students will be able to:	Module 2: Hybrid Networking	Implementing SSL and TLS communications
Deploying and Managing VMs	Lessons for module 2	Managing cryptographic keys in Azure Key Vault
Module 4: Configuring and Managing Virtual	Site-to-site connectivity	After completing module 2, students will be able to:
	Point-to-site connectivity	Implement secure data for end-to-end encryption
	Combining site-to-site and point-to-site connectivity	Implement secure data for implementing SSL and TLS communications.
	Virtual network-to-virtual network	Use Azure Key Vault to manage cryptographic keys

Networks	connectivity As well as connecting across cloud providers for failover, backup, or even migration between providers such as AWS.	AZ-300T06: Developing for the Cloud
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.	After completing module 2, students will be able to:	Module 1: Developing Long-Running Tasks and Distributed Transactions
	Hybrid Networking	Lessons for module 1
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 3: Measuring Throughput and Structure of Data Access	Implementing large-scale, parallel, and high-performance apps using batches
	Lessons for module 3	HPC using Microsoft Azure Virtual Machines
After completing module 4, students will be able to:	DTUs – Azure SQL Database	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.
Configuring and Managing Virtual Networks	RUs – Azure Cosmos DB	Module 2: Configuring a Message-Based Integration Architecture
Module 5: Managing Identities	Structured and unstructured data	Lessons for module 2
	Using structured data stores	Configure an app or service to send emails
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.	After completing module 3, students will be able to:	Configure an event publish and subscribe model
	Address Durability of Data and Caching	Configure the Azure Relay service
Lessons for module 5	Measure Throughput and Structure of Data Access	Configure apps and services with Microsoft Graph
Role-Based Access Control (RBAC)	AZ-300T04: Creating and Deploying Apps	After completing module 2, students will be able to:
built-in roles	Module 1: Creating Web Applications using PaaS	How to configure a message-based integration architecture
Self-Service Password Reset (SSPR)	This module provides and overview of Azure App Service Web Apps for hosting web applications, REST APIs, and a mobile back end. Topics include the following:	Module 3: Developing for Asynchronous Processing
authentication methods for password reset	Using shell commands to create an App Service Web App	Lessons for module 3
After completing module 5, students will be able to:	Creating Background Tasks	
Managing Identities using Azure Active Directory	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	
AZ-300T02: Implementing Workloads and Security		
Module 1: Evaluating and Performing Server Migration to Azure		

<p>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.</p>	<p>organizations by automating tasks and business processes as workflows.</p>	<p>Implement parallelism, multithreading, and processing</p>
<p>Additionally, you will receive an overview of Azure Site Recovery (ASR) that includes end-to-end scenarios.</p>	<p>After completing module 1, students will be able to:</p> <p>Use shell commands to create an App Service Web App</p> <p>Create Background Tasks</p> <p>Use Swagger to document an API</p>	<p>Implement Azure Functions and Azure Logic Apps</p> <p>Implement interfaces for storage or data access</p> <p>Implement appropriate asynchronous computing models</p> <p>Implement autoscaling rules and patterns</p>
<p>After completing module 1, students will be able to:</p>	<p>Module 2: Creating Apps and Services Running on Service Fabric</p>	<p>After completing module 3, students will be able to:</p>
<p>Evaluating and Performing Server Migration to Azure</p>	<p>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:</p>	<p>Understand how to Develop for Asynchronous Processing</p>
<p>Module 2: Implementing and Managing Application Services</p> <p>Lessons for module 2</p>	<p>Creating a reliable service</p> <p>Creating a Reliable Actors app</p> <p>Working with Reliable collections</p>	<p>Module 4: Developing for Autoscaling</p> <p>Lessons for module 4</p>
<p>Deploying Web Apps</p> <p>Managing Web Apps</p>	<p>Creating a reliable service</p> <p>Creating a Reliable Actors app</p> <p>Working with Reliable collections</p>	<p>Implementing autoscaling rules and patterns</p> <p>Implementing code that addresses singleton application instances</p>
<p>App Service Security</p> <p>Serverless Computing Concepts</p>	<p>Working with Reliable collections</p> <p>After completing module 2, students will be able to:</p>	<p>Implementing code that addresses a transient state</p>
<p>Managing Event Grid</p> <p>Managing Service Bus</p>	<p>After completing module 2, students will be able to:</p> <p>Create a reliable service</p> <p>Create a Reliable Actors app</p>	<p>After completing module 4, students will be able to:</p> <p>Begin creating apps for Autoscaling</p>
<p>Managing Logic App</p> <p>After completing module 2, students will be able to:</p>	<p>Hands-on with Reliable collections</p> <p>Module 3: Using Azure Kubernetes Service</p>	<p>Module 5: Developing Azure Cognitive Services Solutions</p> <p>Lessons for module 5</p>
<p>Implementing and Managing Application Services</p> <p>Module 3: Implementing Advanced Virtual Networking</p>	<p>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:</p>	<p>Developing Solutions using Computer Vision</p> <p>Developing solutions using Bing Web Search</p> <p>Developing solutions using Custom Speech Service</p>

Lessons for module 3	Azure Container Registry	Developing solutions using QnA Maker
Azure Load Balancer	Azure Container Instances	
Azure Application Gateway	After completing module 3, students will be able to:	After completing module 5, students will be able to:
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.	Understand the Azure Container Registry	Understand Azure Cognitive Services Solutions
	Use Azure Container instances	
After completing module 3, students will be able to:	AZ-300T05: Implementing Authentication and Secure Data	
Implementing Advanced Virtual Networking.	Module 1: Implementing Authentication	
Module 4: Securing Identities	Topics for this module include:	
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		

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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