AZ-300: Microsoft Azure Architect Technologies

40 HORAS

AUDIENCE

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

AZ-300T01-A: Deploying and Configuring Infrastructure

INTRODUCTION

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. You will also 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).

You will learn about the different storage accounts and services as well as basic data replication concepts and available replication schemes. Students are also introduced to Storage Explorer as a convenient way to work with Azure storage data. Students also 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.

You will 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.

You will 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.

Because this course is the first course in the series for the Azure Solutions Architect exams, there is a sizeable amount of introductory content presented to prepare students for the remaining courses in the curriculum. Students are provided with a lesson that covers tips and tricks for working in the Azure portal, as well as an introduction to key tools used in the Azure environment, such as the Cloud Shell and Resource Explorer. Emphasis is focused on PowerShell and the command line interface (CLI) as important skills to acquire not only in preparation for the exam but for the job role itself.

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

COURSE OUTLINE

Module 1: Managing Azure Subscriptions and Resources

Module 2: Implementing and Managing Storage

Module 3: Deploying and Managing Virtual Machines (VMs)

Module 4: Configuring and Managing Virtual Networks

- 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

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

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AZ-300T02-A: Implementing Workloads and Security

INTRODUCTION

This course teaches IT professionals how to discover, assess, plan and implement a migration of on-premises resources and infrastructure to Azure. Students will 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.
Also, you will 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.
See how to manage and maintain the infrastructure for the core web apps and services that developers build and deploy. Students will learn how Azure App Service is used as a Platform as a Service (PaaS) offering for deploying cloud apps for web and mobile environments.
Lastly, you will 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.

AT COURSE COMPLETION

After completing this course, students will be able to:

- Evaluating and Performing Server Migration to Azure
- Implementing and Managing Application Services
- Implementing Advanced Virtual Networking.
- Securing Identities using Azure AD.

COURSE OUTLINE

Module 1: Evaluating and Performing Server Migration to Azure

Module 2: Implementing and Managing Application Services

Module 3: Implementing Advanced Virtual Networking

Module 4: Securing Identities

AZ-300T03-A: Understanding Cloud Architect Technology Solutions

INTRODUCTION

This course teaches IT professionals how 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.
Also, 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.
Also, 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.
Lastly, a discussion of hybrid networking that provides an overview of site-to-site connectivity, point-to-site connectivity, and the combination of the two.

AT COURSE COMPLETION

After completing this course, students will be able to:

- Design and Connectivity Patterns
- Hybrid Networking
- Address Durability of Data and Caching
- Measure Throughput and Structure of Data Access

COURSE OUTLINE

Module 1: Selecting Compute and Storage Solutions

Module 2: Hybrid Networking

Module 3: Measuring Throughput and Structure of Data Access

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AZ-300T04-A: Creating and Deploying Apps

INTRODUCTION

This course teaches IT Professionals how 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.
You will also see 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.
Lastly, you'll 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.

AT COURSE COMPLETION

After completing this course, students will be able to:

- 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

COURSE OUTLINE

Module 1: Creating Web Applications using PaaS

Module 2: Creating Apps and Services Running on Service Fabric

Module 3: Using Azure Kubernetes Service This module focuses on the Azure

AZ-300T05-A: Implementing Authentication and Secure Data

INTRODUCTION

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**.**

AT COURSE COMPLETION

After completing this course, students will be able to:

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

COURSE OUTLINE

Module 1: Implementing Authentication Topics for this module include:

- Implementing authentication in applications (certificates, Azure AD, Azure AD Connect, token-based)
- Implementing multi-factor authentication
- Claims-based authorization
- Role-based access control (RBAC) authorization

Module 2: Implementing Secure Data

- End-to-end encryption
- Implementing Azure confidential computing
- Implementing SSL and TLS communications
- Managing cryptographic keys in Azure Key Vault

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AZ-300T06-A: Developing for the Cloud

INTRODUCTION

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:

- 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

COURSE OUTLINE

Module 1: Developing Long-Running Tasks and Distributed Transactions

Module 2: Configuring a Message-Based Integration Architecture

- 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

- 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

- 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

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

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