Designing Microsoft Azure Infrastructure Solutions (AZ-305)

Description

Understanding the foundations of an effective cloud architecture

This AZ-305 course guides you through the design of comprehensive infrastructure solutions on Microsoft Azure. It’s not just about configuring resources, but about building a robust, secure, and scalable architecture. You’ll learn to think like a cloud architect, anticipate technical, business, and operational needs, while applying governance best practices.

You will explore key concepts such as high availability, disaster recovery, identity management, storage, and security. With a structured, module-based approach, you will master the critical components of the Azure environment, optimize performance, and ensure the resilience of your cloud solutions.

Building strong cloud solutions with Microsoft Azure

Throughout the program, you will apply the recommendations of the Microsoft Azure Well-Architected Framework. You will be trained to design cloud environments that meet today’s business challenges: flexibility, security, performance, and cost optimization.

Niveau
Avancé
Course Content
Module 1: Describe Azure architectural components

- What is Microsoft Azure?
- Get started with Azure accounts
- Describe Azure's physical infrastructure
- Describe Azure's management infrastructure

Module 2: Describe Azure compute and network services

- Describe Azure Virtual Machines
- Describe Azure Virtual Desktop
- Describe Azure containers
- Describe Azure Functions
- Describe application hosting options
- Describe Azure Virtual Networking
- Describe Azure VPNs
- Describe Azure ExpressRoute
- Describe Azure DNS

Module 3: Describe Azure storage services

- Describe Azure storage accounts
- Describe Azure storage redundancy
- Describe Azure storage services

- Identify Azure data migration options
- Identify Azure file transfer options

Module 4: Describe Azure identity, access, and security

- Describe Azure directory services
- Describe Azure authentication methods
- Describe Azure external identities
- Describe Azure conditional access
- Describe Azure role-based access control (RBAC)
- Describe Zero Trust model
- Describe defense in depth
- Describe Microsoft Defender for Cloud

Module 5: Introduction to the Microsoft Cloud Adoption Framework

- Strategy
- Plan
- Ready
- Migrate
- Innovate
- Govern
- Manage
- Secure

Module 6: Introduction to Microsoft Azure Well-Architected Framework

- Pillars of the Azure Well-Architected Framework
- Cost optimization
- Operational excellence
- Performance efficiency
- Reliability
- Security

Module 7: Design governance

- Design for governance
- Design for management groups
- Design for subscriptions
- Design for resource groups
- Design for resource tagging
- Design for Azure Policy
- Design for RBAC
- Design for Azure landing zones

Module 8: Design authentication and authorization solutions

- Design for identity and access management (IAM)
- Design Microsoft Entra ID
- Design Microsoft Entra business-to-business (B2B)
- Design for Azure Active Directory B2C
- Design for conditional access
- Design for identity protection

- Design for access reviews
- Design for application service principals
- Design managed identities
- Design for Azure Key Vault

Module 9: Design a solution to log and monitor Azure resources

- Design for Azure Monitor data sources
- Design Azure Monitor Logs workspaces (Log Analytics)
- Design Azure workbooks and insights
- Design for Azure Data Explorer

Module 10: Describe high availability and disaster recovery strategies

- Define RTO and RPO
- Explore HA and DR options
- Describe Azure HA and DR for VMs
- Describe HA and DR for PaaS deployments
- Explore an IaaS HA and DR solution
- Describe hybrid solutions

Module 11: Design a backup and disaster recovery solution

- Design for backup and recovery
- Design for Azure Backup
- Design for Azure Blob backup and recovery
- Design for Azure Files backup and recovery
- Design for Azure VM backup and recovery
- Design for Azure SQL backup and recovery
- Design for Azure Site Recovery

Module 12: Design a data storage solution for non-relational data

- Design data storage
- Design Azure storage accounts
- Design data redundancy
- Design Azure Blob storage
- Design for Azure Files
- Design for Azure managed disks
- Design storage security

Module 13: Design a data storage solution for relational data

- Design for Azure SQL Database
- Design for Azure SQL Managed Instance
- Design for SQL Server on Azure VMs
- Recommend a database scalability solution
- Recommend a database availability solution
- Design security for data at rest, in transit, and in use
- Design for Azure SQL Edge
- Design for Azure Cosmos DB and Table Storage

Module 14: Design data integration

- Design a data integration solution with Azure Data Factory
- Design a data integration solution with Azure Data Lake
- Design a data integration and analytics solution with Azure Databricks
- Design a data integration and analytics solution with Azure Synapse Analytics
- Design strategies for hot, warm, and cold data paths
- Design an Azure Stream Analytics solution for data analysis

Module 15: Design an Azure compute solution

- Choose an Azure compute service
- Design for Azure VM solutions
- Design for Azure Batch solutions
- Design for Azure App Service solutions
- Design for Azure Container Instances
- Design for Azure Kubernetes Service
- Design for Azure Functions solutions
- Design for Azure Logic Apps solutions

Module 16: Design an application architecture

- Describe messaging and event scenarios
- Design a messaging solution
- Design an Azure Event Hubs messaging solution
- Design an event-driven solution
- Design a caching solution
- Design API integration
- Design an automated application deployment solution
- Design an application configuration management solution

Module 17: Design network solutions

- Recommend a network architecture based on workload requirements
- Design patterns for Azure network connectivity services
- Design outbound connectivity and routing
- Design for on-premises to Azure VNet connectivity
- Choose an application delivery service
- Design for application delivery services
- Design for application protection services

Module 18: Design migrations

- Assess migration with the Cloud Adoption Framework
- Describe Azure migration infrastructure
- Assess on-premises workloads
- Select a migration tool
- Migrate structured data to databases
- Select an online storage migration tool for unstructured data
- Migrate offline data

Module 19: Overview of Microsoft Azure Well-Architected Framework

- Pillars of Azure Well-Architected Framework

- Cost optimization
- Operational excellence
- Performance efficiency
- Reliability
- Security

Module 20: Azure Well-Architected Framework – Cost Optimization

- Develop a cost management discipline
- Design with cost-efficiency in mind
- Design to optimize usage
- Design to optimize pricing
- Monitor and optimize continuously

Module 21: Azure Well-Architected Framework – Operational Excellence

- Adopt DevOps culture
- Establish development standards
- Evolve operations with observability
- Deploy with confidence
- Automate efficiency
- Adopt secure deployment practices

Module 22: Azure Well-Architected Framework – Performance Efficiency

- Negotiate realistic performance objectives
- Design to meet capacity requirements
- Achieve and maintain performance
- Improve efficiency through optimization

Module 23: Azure Well-Architected Framework – Reliability

- Design based on business needs
- Design for resiliency
- Design for recovery
- Design for operations
- Keep it simple

Module 24: Azure Well-Architected Framework – Security

- Plan for security readiness
- Design to protect confidentiality
- Design to protect integrity
- Design to protect availability
- Maintain and evolve your security posture

Module 25: Prepare for successful cloud adoption with a well-defined strategy

- Customer story
- Define strategic motivation
- Define key objectives and results
- Assess financial considerations
- Understand technical considerations

- Create a business case

Module 26: Prepare for cloud adoption with a data-driven plan

- Customer story
- Exercise: Deploy your first cloud adoption plan
- Exercise: Customize your cloud adoption plan

Module 27: Choose the best Azure landing zone to support your cloud operations

- Customer story
- Common operating models
- Design areas for Azure landing zones
- Design principles for Azure landing zones
- Path to target architecture
- Select an Azure landing zone option
- Deploy the Azure landing zone accelerator
- Improve your landing zone

Module 28: Use Cloud Adoption Framework methodology to migrate workloads to the cloud

- Prepare your migration
- Assess your workload
- Deploy your resources
- Release your workload

Module 29: Address tangible risks with the Cloud Adoption Framework governance methodology for Azure

- Customer story
- Governance methodology
- Assess cloud governance risks
- Document cloud governance strategies
- Apply cloud governance strategies
- Monitor cloud governance

Module 30: Ensure stable operations and optimization across all cloud-supported workloads

- Establish business commitments
- Deploy operations baseline
- Protection and recovery
- Improve the operations baseline
- Manage platform and workload specialization

Module 31: Innovate applications using Azure cloud technologies

- Follow the innovation lifecycle
- Azure technologies for creation
- Add AI to your applications
- Azure technologies for business impact measurement
- Azure technologies for learning processes

Module 32: Strengthen cloud security with the Cloud Adoption Framework

- Customer story
- Methodology
- Security roles and responsibilities
- Simplify compliance and security
- Simplify security implementation
- Security tools and strategies

Lab / Exercises

- This course provides you with exclusive access to the official Microsoft lab, enabling you to practice your skills in a professional environment.

Documentation

- Access to Microsoft Learn, Microsoft's online learning platform, offering interactive resources and educational content to deepen your knowledge and develop your technical skills.

Exam

- This course prepares you to the AZ-305 Designing Microsoft Azure Infrastructure Solutions exam.

Participant profiles

- Cloud Architect
- Infrastructure Engineer
- Azure Cloud Consultant
- Senior Systems Administrator
- IT Technical Manager

Prerequisites

- Azure Active Directory
- Azure compute technologies such as virtual machines, containers, and serverless solutions
- Azure Virtual Network including load balancers
- Azure storage technologies (unstructured and database solutions)
- Have the equivalent knowledge or followed the course: Microsoft Azure Administrator

Objectives

- Design a secure cloud architecture on Microsoft Azure
- Identify Azure infrastructure services suited to each requirement
- Design authentication and identity management solutions
- Implement high availability and disaster recovery strategies
- Structure a storage solution for relational and non-relational data
- Design efficient and secure network solutions
- Plan and manage migrations to Microsoft Azure
- Apply the Microsoft Azure Well-Architected Framework in designs

Description
Designing Microsoft Azure Infrastructure Solutions (AZ-305)
Classroom Registration Price (CHF)
3200
Virtual Classroom Registration Price (CHF)
3000
Duration (in Days)

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Reference
AZ-305T00