



GLOBAL
INDUSTRIES
INTELLIGENCE



AZ-305T00 - DESIGNING

MICROSOFT AZURE INFRASTRUCTURE
SOLUTIONS

COURSE OUTLINES

The **AZ-305T00: Designing Microsoft Azure Infrastructure Solutions** course is designed to help professionals prepare for the **Microsoft Certified: Azure Solutions Architect Expert** certification exam. This course provides comprehensive knowledge of how to design and implement Azure solutions that meet business requirements and comply with security, performance, and scalability standards. Participants will gain expertise in key Azure services,

The course is typically delivered over **5 days**, each focusing on specific areas of Azure solution design and implementation.

DAY 1: : INTRODUCTION TO AZURE ARCHITECTURE AND DESIGN PRINCIPLES

- **Overview of Azure Architecture**
 - Introduction to Azure and its global infrastructure (regions, availability zones, etc.)
 - Core components of Azure architecture: Virtual Machines (VMs), networking, storage, identity, and security
 - Designing solutions with Azure services: Compute, storage, databases, security, and networking
- **Azure Design Principles**
 - Designing for scalability, reliability, and performance
 - Key principles of cloud architecture: Agility, elasticity, high availability, and disaster recovery
 - Designing for cost optimization and performance efficiency
- **Azure Resource Management**
 - Using Azure Resource Manager (ARM) for managing resources
 - Resource grouping and organizing workloads
 - Understanding Azure subscriptions, resource groups, and management groups

DAY 2: DESIGNING COMPUTE AND NETWORKING SOLUTIONS

- **Designing Virtual Network Architecture**

- Designing Virtual Networks (VNETs) for communication between resources
- Subnets, network security groups (NSGs), and route tables
- Designing hybrid cloud solutions with VPNs and ExpressRoute
- Designing network peering and connectivity

- **Designing Compute Solutions**

- Virtual Machine (VM) sizing and configuration for workloads
- Using Azure App Services, Azure Functions, and Azure Kubernetes Service (AKS) for scalable compute
- Designing for high availability and scalability: Load balancing and autoscaling options
- Designing Azure Virtual Desktop (AVD) solutions for remote environments



DAY 3: DAY 3: DESIGNING STORAGE AND DATA SOLUTIONS

- **Designing Storage Solutions**

- Azure Storage accounts: Blob, Disk, Queue, and Table storage
- Designing for data redundancy, availability, and performance (LRS, GRS, ZRS)
- Managing large-scale data storage and data movement strategies in Azure
- Design strategies for backup and archival data storage solutions

- **Designing Data Solutions**

- Designing for relational databases using Azure SQL Database, SQL Managed Instance, and Cosmos DB
- Implementing data lakes, data warehousing, and big data solutions with Azure Synapse Analytics
- Data migration and integration strategies using Azure Data Factory
- Designing for data security, governance, and compliance (e.g., encryption and access control)

DAY 4: DESIGNING SECURITY, MONITORING, AND GOVERNANCE

- **Designing Security Solutions**

- Identity management with Azure Active Directory (Azure AD) and Azure AD B2C
- Implementing multi-factor authentication (MFA), conditional access, and role-based access control (RBAC)
- Designing security features such as encryption, key management (Azure Key Vault), and securing applications

- **Designing Monitoring and Logging Solutions**

- Implementing Azure Monitor, Log Analytics, and Application Insights for resource monitoring
- Designing diagnostic logging and alerts to monitor resource health
- Implementing security monitoring with Azure Security Center

- **Designing Governance Solutions**

- Azure Policy and Blueprints for resource compliance
- Implementing cost management, budgets, and recommendations with Azure Cost Management
- Designing for compliance with regulatory standards (GDPR, HIPAA, etc.)

DAY 5: :: DESIGNING FOR HIGH AVAILABILITY, DISASTER RECOVERY, AND COST OPTIMIZATION

- **Designing High Availability Solutions**

- High availability in Azure: Availability sets, availability zones, and region pairs
- Configuring Azure Load Balancer, Application Gateway, and Traffic Manager for fault tolerance and load distribution
- Designing for failover and disaster recovery (Azure Site Recovery, Azure Backup)

- **Designing for Disaster Recovery (DR) and Business Continuity**

- Designing backup and recovery solutions with Azure Backup and Site Recovery
- Business continuity planning and recovery objectives (RPO, RTO)
- Design considerations for multi-region solutions and geo-replication

- **Cost Optimization Strategies**

- Optimizing cloud spend with Azure Cost Management and Azure Advisor
- Design principles for cost-effective solutions: Reserved instances, spot pricing, and scaling policies



- Automating cost management practices
- **Final Exam Preparation and Review**
 - Reviewing key exam objectives and study tips for the AZ-305 exam
 - Practice questions and mock exams
 - Review common mistakes and best practices for exam success
- **Target Audience:**
 - Azure professionals looking to earn the Microsoft Certified: Azure Solutions Architect Expert certification
 - IT professionals responsible for designing, deploying, and managing Azure solutions
 - Cloud architects, solution architects, and IT administrators looking to enhance their skills in Azure infrastructure design
 - Developers and operations personnel who want to transition into architectural roles
- **Learning Methodology:**
 - The course utilizes a combination of lectures, real-world case studies, hands-on labs, and practice exams. Participants will have opportunities to apply their knowledge through lab exercises, which include setting up and managing Azure resources, designing solutions for high availability, and ensuring secure and cost-effective implementations.

By the end of this course, participants will be able to:

1. Design and implement Azure compute, networking, storage, and data solutions based on business requirements.
2. Implement security solutions, identity management, and monitoring in Azure environments.
3. Design solutions for high availability, disaster recovery, and business continuity.
4. Optimize costs and manage resources efficiently in the Azure cloud.
5. Prepare for and pass the AZ-305: Designing Microsoft Azure Infrastructure Solutions certification exam