

# Syllabus

## Microsoft Azure Fundamentals

### Exam: AZ-900

## 1. Describe cloud concepts (20-25%)

### 1.1 Identify the benefits and considerations of using cloud services

- identify the benefits of cloud computing, such as High Availability, Scalability, Elasticity, Agility, and Disaster Recovery
- identify the differences between Capital Expenditure (CapEx) and Operational Expenditure (OpEx)
- describe the consumption-based model

### 1.2 Describe the differences between categories of cloud services

- describe the shared responsibility model
- describe Infrastructure-as-a-Service (IaaS),
- describe Platform-as-a-Service (PaaS)
- describe serverless computing
- describe Software-as-a-Service (SaaS)
- identify a service type based on a use case

### 1.3 Describe the differences between types of cloud computing

- define cloud computing
- describe Public cloud
- describe Private cloud
- describe Hybrid cloud
- compare and contrast the three types of cloud computing

## 2. Describe core Azure Services (15-20%)

### 2.1 Describe the core Azure architectural components

- describe the benefits and usage of Regions and Region Pairs
- describe the benefits and usage of Availability Zones
- describe the benefits and usage of Resource Groups
- describe the benefits and usage of Subscriptions
- describe the benefits and usage of Management Groups
- describe the benefits and usage of Azure Resource Manager
- explain Azure resources

### 2.2 Describe core resources available in Azure

- describe the benefits and usage of Virtual Machines, Azure App Services, Azure Container Instances (ACI), Azure Kubernetes Service (AKS), and Azure Virtual Desktop
- describe the benefits and usage of Virtual Networks, VPN Gateway, Virtual Network peering, and ExpressRoute
- describe the benefits and usage of Container (Blob) Storage, Disk Storage, File Storage, and storage tiers
- describe the benefits and usage of Cosmos DB, Azure SQL Database, Azure

- Database for MySQL, Azure Database for PostgreSQL, and Azure SQL Managed Instance
- describe the benefits and usage of Azure Marketplace

### **3. Describe core solutions and management tools on Azure (10-15%)**

#### **3.1 Describe core solutions available in Azure**

- describe the benefits and usage of Internet of Things (IoT) Hub, IoT Central, and Azure Sphere
- describe the benefits and usage of Azure Synapse Analytics, HDInsight, and Azure Databricks
- describe the benefits and usage of Azure Machine Learning, Cognitive Services and Azure Bot Service
- describe the benefits and usage of serverless computing solutions that include Azure

#### **3.2 Functions and Logic Apps**

- describe the benefits and usage of Azure DevOps, GitHub, GitHub Actions, and Azure DevTest Labs

#### **3.3 Describe Azure management tools**

- describe the functionality and usage of the Azure Portal, Azure PowerShell, Azure CLI, Cloud Shell, and Azure Mobile App
- describe the functionality and usage of Azure Advisor
- describe the functionality and usage of Azure Resource Manager (ARM) templates
- describe the functionality and usage of Azure Monitor
- describe the functionality and usage of Azure Service Health

### **4. Describe general security and network security features (10-15%)**

#### **4.1 Describe Azure security features**

- describe basic features of Microsoft Defender for Cloud, including policy compliance, security alerts, secure score, and resource hygiene
- describe the functionality and usage of Azure Key Vault
- describe the functionality and usage of Microsoft Sentinel
- describe the functionality and usage of Azure Dedicated Hosts

#### **4.2 Describe Azure network security**

- describe the concept of defense in depth
- describe the functionality and usage of Network Security Groups (NSG)
- describe the functionality and usage of Azure Firewall
- describe the functionality and usage of Azure DDoS protection

### **5. Describe identity, governance, privacy, and compliance features (15-20%)**

#### **5.1 Describe core Azure identity services**

- explain the difference between authentication and authorization
- define Azure Active Directory
- describe the functionality and usage of Azure Active Directory
- describe the functionality and usage of Conditional Access, Multi-Factor Authentication (MFA), and Single Sign-On (SSO)

## **5.2 Describe Azure governance features**

- describe the functionality and usage of Role-Based Access Control (RBAC)
- describe the functionality and usage of resource locks
- describe the functionality and usage of tags
- describe the functionality and usage of Azure Policy
- describe the functionality and usage of Azure Blueprints
- describe the Cloud Adoption Framework for Azure

## **5.3 Describe privacy and compliance resources**

- describe the Microsoft core tenets of Security, Privacy, and Compliance
- describe the purpose of the Microsoft Privacy Statement, Online Services Terms (OST) and Data Protection Amendment (DPA)
- describe the purpose of the Trust Center
- describe the purpose of the Azure compliance documentation
- describe the purpose of Azure Sovereign Regions (Azure Government cloud services and Azure China cloud services)

# **6. Describe Azure cost management and Service Level Agreements (10-15%)**

## **6.1 Describe methods for planning and managing costs**

- identify factors that can affect costs (resource types, services, locations, ingress and egress traffic)
- identify factors that can reduce costs (reserved instances, reserved capacity, hybrid use benefit, spot pricing) Describe the functionality and usage of the Pricing calculator and the Total Cost of Ownership (TCO) calculator
- describe the functionality and usage of Azure Cost Management

## **6.2 Describe Azure Service Level Agreements (SLAs) and service lifecycles**

- describe the purpose of an Azure Service Level Agreement (SLA)
- identify actions that can impact an SLA (i.e. Availability Zones)
- describe the service lifecycle in Azure (Public Preview and General Availability)