pax8

AZ-900 Study Guide

Microsoft Azure Fundamentals

PURPOSE

The following resources have been assembled to help you prepare for the AZ-900 Microsoft Azure Fundamentals learning track during Microsoft Certification Week.

Use this guide to understand what knowledge is needed to complete the exam and as a learning tool to help you understand areas where you feel you need additional training. It is not required that you leverage all the resources in this guide to participate in Microsoft Certification Week.

AUDIENCE

All Pax8 Partners

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AZ-900: Exam Resources

Audience Profile for the Exam

Candidates for this exam should have foundational knowledge of cloud services and how those services are provided with Microsoft Azure. The exam is intended for candidates who are just beginning to work with cloud-based solutions and services or are new to Azure.

Azure Fundamentals exam is an opportunity to prove knowledge of cloud concepts, Azure services, Azure workloads, security and privacy in Azure, as well as Azure pricing and support.

Candidates should be familiar with the general technology concepts, including concepts of networking, storage, compute, application support, and application development.

Azure Fundamentals can be used to prepare for other Azure role-based or specialty certifications, but it is not a prerequisite for any of them.

Preparing with an Azure Subscription

It is highly recommended when preparing for a Microsoft exam, that you have had some level of hands- on experience with the services within the objectives. Microsoft courses have a GitHub repository for labs that are recommended and available to the public.
- Suggested Lab Guides: https://github.com/MicrosoftLearning/MB-910T00A-Microsoft- Dynamics-365-Fundamentals-Customer-Engagement-Apps

All lab guides can be found at this link: https://github.com/MicrosoftLearning

Exam Objectives

The following are the learning objectives for the exam. In line with each objective are links to Microsoft documentation around the specific concept or service. In addition to the documentation, there are also online courses from Microsoft Learn and the Microsoft Partner virtual training series available for additional learning resources. Access to the exam objectives can be found on Microsoft Learn: https://docs.microsoft.com/en-us/learn/certifications/exams/az-104

Objective: Describe Cloud Concepts (20-25%)

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
  Top benefits of cloud computing
  Examples of cloud computing
- Identify the differences between Capital Expenditure (CapEx) and Operational Expenditure (OpEx)
  Cloud Concepts – Principles of cloud computing
- Describe the consumption-based model
  Azure pricing

Describe the Differences Between Categories of Cloud Services
- Describe the shared responsibility model
  Shared responsibility in the cloud
- Describe Infrastructure-as-a-Service (IaaS)
  What is IaaS?
- Describe Platform-as-a-Service (PaaS)
  What is PaaS?
- Describe serverless computing
  Serverless computing
- Describe Software-as-a-Service (SaaS)
  What is SaaS?
- Identify a service type based on a use case

[What are the different types of cloud computing services?](#)

Describe the Differences Between Types of Cloud Computing
- Define cloud computing
  [The Definition of Cloud Computing](#) (thomasmaurer.ch)
- Describe public cloud
  [Learn more about public cloud computing](#)
- Describe private cloud
  [Learn more about private cloud computing](#)
- Describe hybrid cloud
  [Learn more about hybrid cloud computing](#)
- Compare and contrast the three types of cloud computing
  [What are public, private, and hybrid clouds?](#)

Objective: Describe Core Azure Services (15-20%)

Describe the Core Azure Architectural Components
- Describe the benefit and usage of Regions and Region Pairs
  [Azure global infrastructure](#)
  [Azure regions](#)
- Describe the benefit and usage of Availability Zones
  [What are Availability Zones in Azure?](#)
- Describe the benefit and usage of Resource Groups
  [Azure Resource Manager overview](#)
- Describe the benefit and usage of Subscriptions
  [Azure subscription and service limits, quotas, and constraints](#)
- Describe the benefit and usage of Management Groups
  [Organize your resources with Azure management groups](#)
- Describe the benefit and usage of Azure Resource Manager
  [Azure Resource Manager overview](#)
- Explain Azure resources
  [Azure resource providers and types](#)

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 Windows Virtual Desktop
  [Azure Compute](#)
  [Virtual Machines](#)
  [App Service](#)
  [Container Instances](#)
  [Azure Kubernetes Service (AKS)](#)
  [Windows Virtual Desktop (WVD)](#)
- Describe as the benefits and usage of Virtual Networks, VPN Gateway, Virtual network peering, and Express Route
  [Networking](#)
  [Virtual Network](#)
  [About Azure VPN gateway](#)
  [Virtual network peering](#)
  [Azure ExpressRoute](#)
- Describe the benefits and usage of Container (Blob) Storage, Disk Storage, File Storage, and storage tiers
  [Storage](#)
  [Blob Storage](#)
  [Disk](#)
  [File](#)
  [Azure Blob storage: hot, cool, and archive access tiers](#)
- Describe the benefits and usage of Cosmos DB, Azure SQL Database, Azure Database for MySQL, and Azure Database for PostgreSQL, and SQL Managed Instance
  [Welcome to Azure Cosmos DB](#)

- Describe the benefits and usage of Azure Marketplace

Objective: Describe Core Solutions and Management Tools on Azure (10-15%)

Describe Core Solutions Available on Azure
- Describe the benefits and usage of 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 Functions and Logic Apps
- Describe solutions for software development including Azure DevOps, GitHub, GitHub Actions, and Azure DevTest Labs

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

Objective: Describe General Security and Network Security Features (10-15%)

Describe Azure Security Features
- Describe basic features of Azure Security Center, including policy compliance, security alerts, secure score, and resource hygiene
  Azure Security Center
- Describe the functionality and usage of Key Vault
  Key Vault
- Describe the functionality and usage of Azure Sentinel
  Azure Sentinel
- Describe the functionality and usage of Azure Dedicated Hosts
  Azure Dedicated Hosts

Describe Network Security
- Describe the concept of defense in depth
  Azure network security overview
- Describe the functionality and usage of Network Security Groups (NSG)
  Network Security Groups (NSG)
- Describe the functionality and usage of Azure Firewall
  Azure Firewall
- Describe the functionality and usage of Azure DDoS protection
  Azure DDoS Protection

Objective: Describe Identity, Governance, Privacy, and Compliance Features (20-25%)

Describe Core Azure Identity Services
- Explain the difference between authentication and authorization
  Windows Authentication Concepts
- Define Azure Active Directory
  Azure Active Directory
- Describe the functionality and usage of Conditional Access, Multi-Factor Authentication (MFA), and Single Sign-On (SSO)
  Conditional Access
  Multi-Factor Authentication (MFA)
  What is single sign-on (SSO)?

Describe Azure Governance Features

- Describe the functionality and usage of Role-Based Access Control (RBAC)
  [Role-Based Access Control (RBAC)](#)
- Describe the functionality and usage of Azure Policy
  [Azure Policy](#)
  [Azure Policy](#) ThomasMaurer.ch
- Describe the functionality and usage of resource locks
  [Resource locks](#)
  [Resource locks](#) ThomasMaurer.ch
- Describe the functionality and usage of tags
  [Azure tags](#)
  [Azure Tags](#) ThomasMaurer.ch
- Describe the functionality and usage of Azure Blueprints
  [Azure Blueprints](#)
- Describe the Cloud Adoption Framework for Azure
  [What is the Microsoft Cloud Adoption Framework for Azure?](#)

Describe Privacy and Compliance Resources

- Describe the Microsoft core tenets of Security, Privacy, and Compliance
  [Introduction to Azure security](#)
  [Strengthen your security posture with Azure](#)
  [Azure data privacy and protection](#)
  [Azure compliance](#)
- Describe the purpose of the Microsoft Privacy Statement, Online Services Terms (OST) and Data Protection Amendment (DPA)
  [Microsoft Privacy Statement](#)
  [Online Services Terms (OST)](#)
  [Privacy: It's all about you](#)
- Describe the purpose of the Trust Center
  [Microsoft Trust Center](#)
- Describe the purpose of the Azure compliance documentation
  [Azure compliance documentation](#)
- Describe the purpose of Azure Sovereign Regions (Azure Government cloud services and Azure China cloud services)
  [National clouds](#)
  [Microsoft Azure operated by 21Vianet](#)
  [What is Azure Government?](#)

Objective: Describe Azure Cost Management and Service Level Agreements (10-15%)

Describe Methods for Planning and Management Costs

- Identify factors that can affect costs (resource types, services, locations, ingress and egress traffic)
  [Azure pricing](#)
- Identify factors that can reduce costs (reserved instances, reserved capacity, hybrid use benefit, spot pricing)
  [Tutorial: Optimize costs from recommendations](#)
  [Save costs on Azure](#) (ThomasMaurer.ch)
- Describe the functionality and usage of the Pricing calculator and the Total Cost of Ownership (TCO) calculator
  [Pricing calculator](#)
  [TCO calculator](#)
- Describe the functionality and usage of Azure Cost Management
  [What is Azure Cost Management + Billing?](#)

Describe Azure Service Level Agreements (SLAs) and Service Lifecycles

- Describe the purpose of an Azure Service Level Agreement (SLA)
  Service Level Agreements
  SLA summary for Azure services
- Identify actions that can impact an SLA (i.e. Availability Zones)
  Overview of the reliability pillar
- Describe the service lifecycle in Azure (Public Preview and General Availability)
  Lifecycle FAQ – Microsoft Azure
  Supplemental Terms of Use for Microsoft Azure Previews

On-Demand Training from Microsoft Learn

New to the cloud? Azure fundamentals is a six-part series that teaches you basic cloud concepts, provides a streamlined overview of many Azure services, and guides you with hands-on exercises to deploy your very first services for free.

- Azure Fundamentals part 1: Describe core Azure Concepts
- Azure Fundamentals part 2: Describe core Azure Services
- Azure Fundamentals part 3: Describe core solutions and management tools on Azure
- Azure Fundamentals part 4: Describe general security and network security features
- Azure Fundamentals part 5: Describe identity, governance, privacy, and compliance features
- Azure Fundamentals part 6: Describe Azure cost management and service level agreements

Virtual Training Series

In this online course, we will introduce you to the basic concepts of customer engagement and what they share. We will cover the basics of each of the Microsoft Dynamics 365 customer engagement apps, including Marketing, Sales Customer Service, Field Service, and Project Operations, and their common features and integration.

All Virtual Training Series http://aka.ms/vts