O'REILLY®

Azure Fundamentals (AZ-900) Bootcamp

Gain knowledge of Azure cloud concepts and services

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Reza Salehi

Cloud Consultant and Trainer

@zaalion

Course Overview

Exam AZ-900: Microsoft Azure Fundamentals

https://docs.microsoft.com/en-us/learn/certifications/exams/az-900

https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE3VwUY

AZ-900 Bootcamp

- Day 01

  - Cloud concepts

  - Core Azure services

  - Core solutions and management tools on Azure

  - Wrap-up and Q&A

AZ-900 Bootcamp

- Day 02

  - General Azure security and network security features

  - Azure identity, governance, privacy, and compliance features

  - Azure cost management and service-level agreements

  - Wrap-up and Q&A

Course Repository

https://github.com/zaalion/oreilly-az-900

Azure Free Account

https://azure.microsoft.com/en-ca/free

Day 1

Azure Fundamentals Bootcamp

- Cloud concepts

- Core Azure services

- Core solutions and management tools on Azure

- Wrap-up and Q&A

Cloud Computing

Cloud computing is the **on-demand** availability of computer system resources, especially **data storage** (cloud storage) and **computing power**, **without** direct active management by the user.
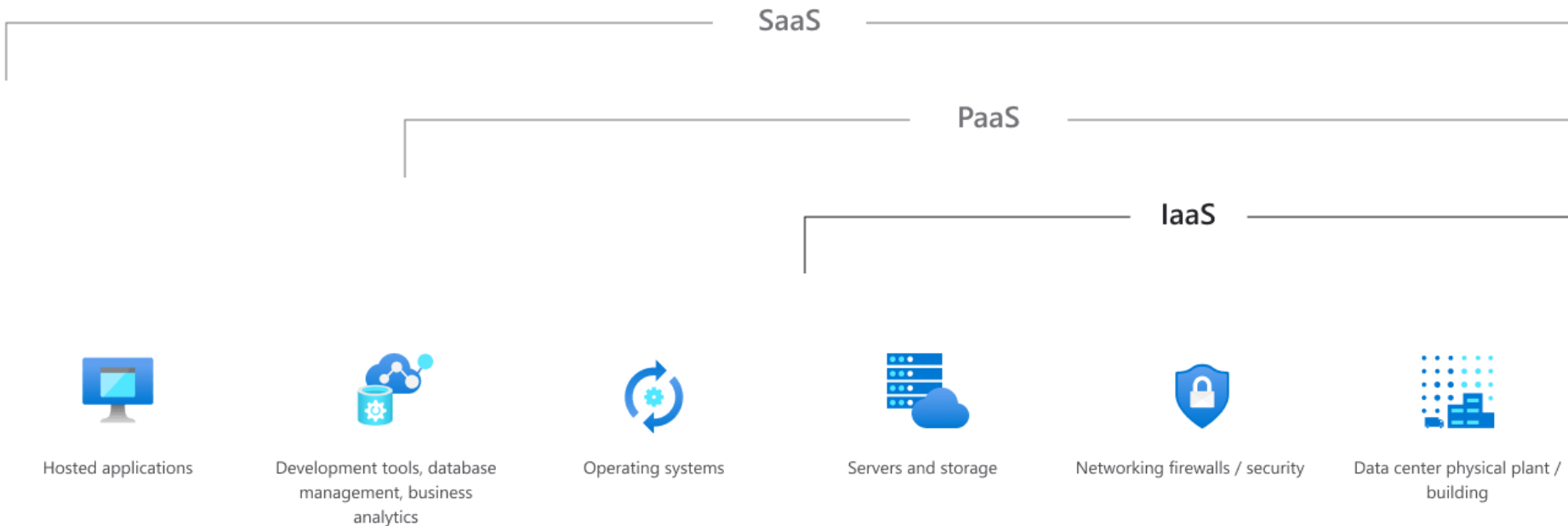
Cloud Benefits

- Scalability

- Flexibility (IaaS, PaaS, SaaS)

- Unlimited storage

- Unlimited processing

- Rich tooling

- Easily accessible

- Advanced cost management

- Maintainability

- Rich security

- Democratizing expensive services

IaaS, PaaS and SaaS

SaaS

PaaS

IaaS

Hosted applications

Development tools, database management, business analytics

Operating systems

Servers and storage

Networking firewalls / security

Data center physical plant / building

See reference

Consumption-based Model

You are charged for only what you use. This model is also known as the Pay-As-You-Go rate.

Serverless Computing

A cloud computing execution model in which the cloud provider allocates machine resources on demand, taking care of the servers on behalf of their customers.

See Azure Serverless offerings here.

Cloud Considerations

- Design security beforehand (data, app, in transit, at rest)

- Invest in service/app monitoring and logging

- IaaS vs. PaaS vs. SaaS

- Choose your services before jumping into implementation

- Design your solution before jumping into implementation

- Be mindful of the cost when designing your solution / monitor cost

- There are always multiple ways to implement a project

Demo

- Getting to know the Azure portal

- Provisioning a new resource
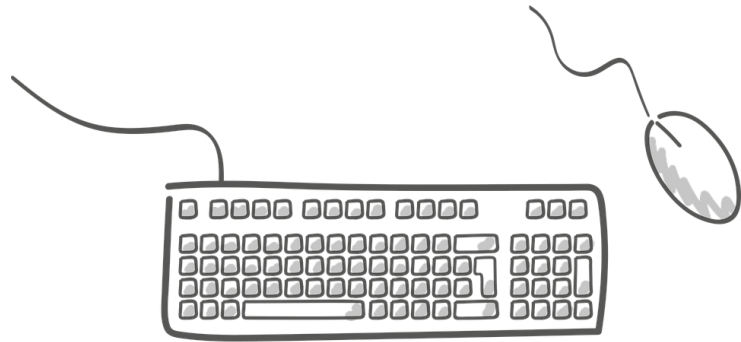
Cloud Service Categories

AI + machine learning
Analytics
Compute
Containers
Databases
Developer tools
DevOps
Hybrid + multicloud
Identity

Integration
Internet of Things
Management and governance
Media
Migration
Mixed reality
Mobile
Networking
Security
Storage
Virtual desktop infrastructure

Public, Private and Hybrid Network

- Public cloud: Services and delivered to clients over the public internet, the infrastructure is shared among different clients

- Private cloud: The network is dedicated to one client/company

- Hybrid cloud: Mixture of public and private clouds, which could be connected using VPN or other technologies (e.g. ExpressRoute)
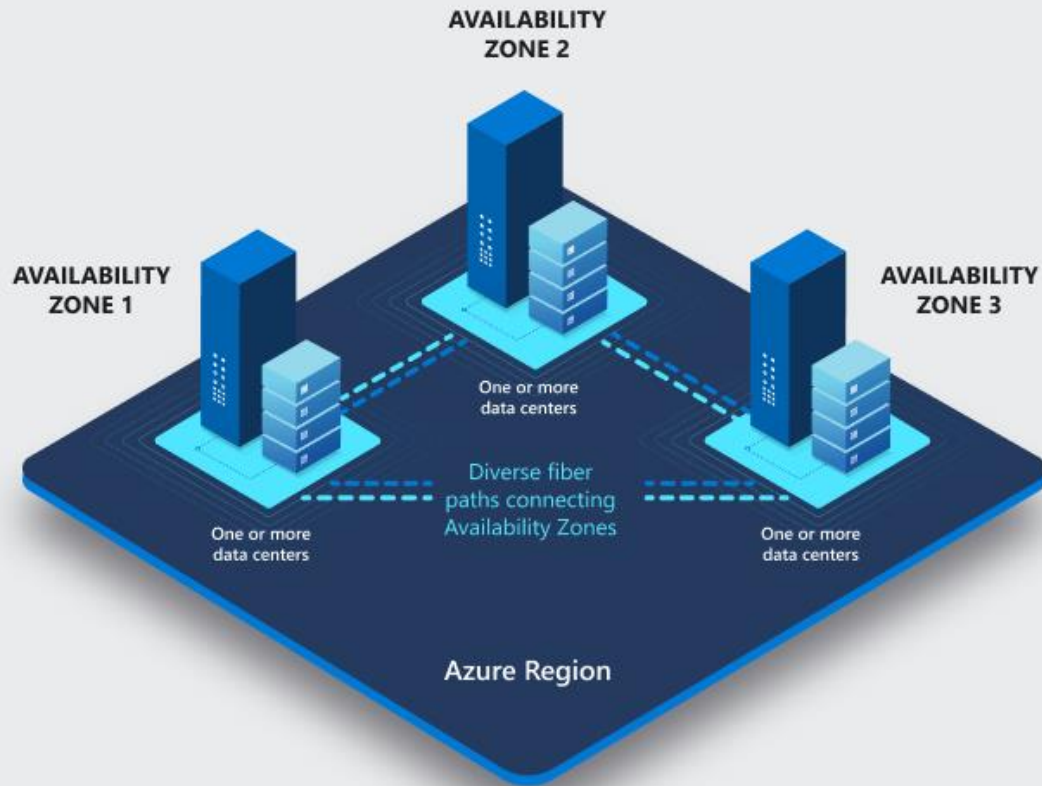
Azure regions with availability zones

Azure provides the most extensive global footprint of any cloud provider and is rapidly opening new regions and availability zones. The following regions currently support availability zones.

Americas	Europe	Middle East	Africa	Asia Pacific
Brazil South	France Central	Qatar Central*	South Africa North	Australia East
Canada Central	Germany West Central	UAE North*		Central India
Central US	North Europe			Japan East
East US	Norway East			Korea Central
East US 2	UK South			Southeast Asia
South Central US	West Europe			East Asia
US Gov Virginia	Sweden Central			China North 3
West US 2	Switzerland North			
West US 3				

AVAILABILITY ZONE 2

AVAILABILITY ZONE 1

AVAILABILITY ZONE 3

One or more data centers

Diverse fiber paths connecting Availability Zones

One or more data centers

One or more data centers

Azure Region

See reference

Management groups

Subscriptions

Resource groups
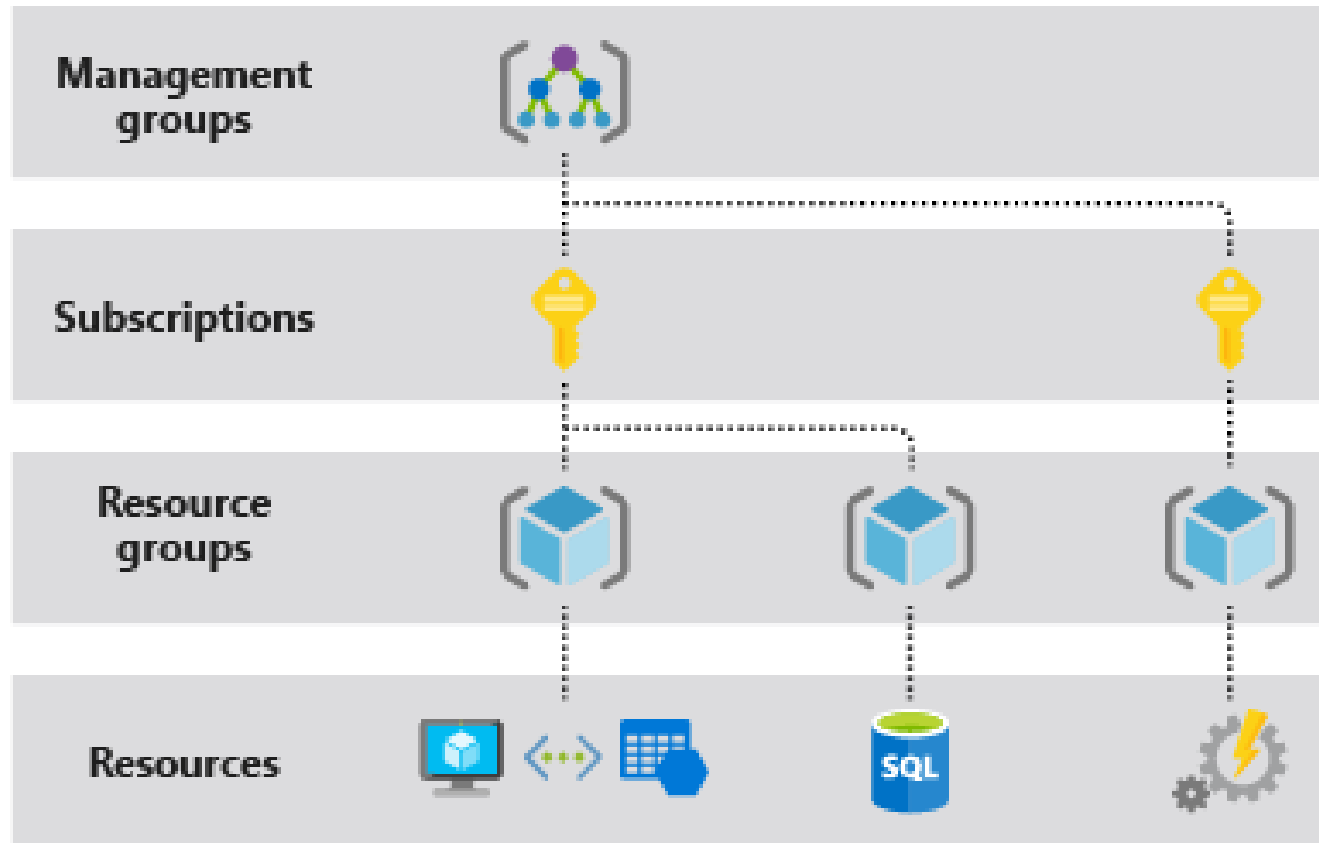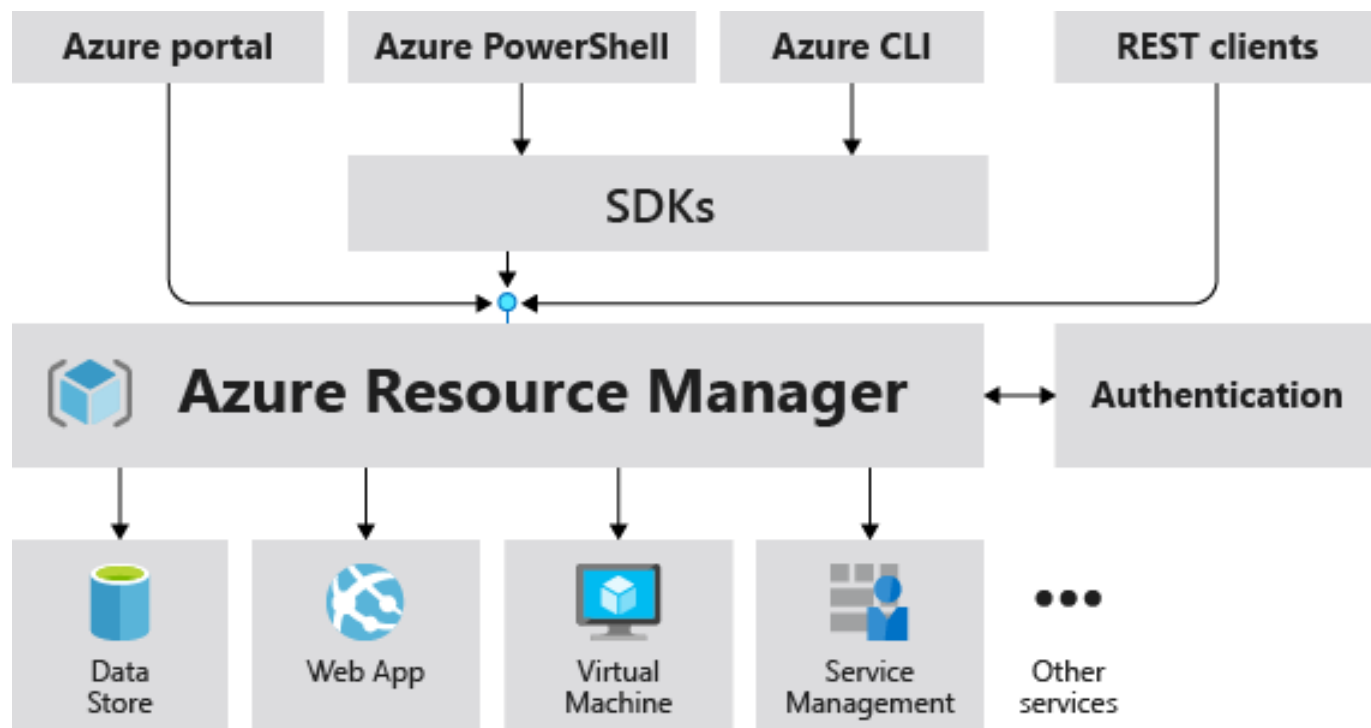
Resources

See reference

Azure Resource Manager (ARM) is the deployment and management service for Azure.
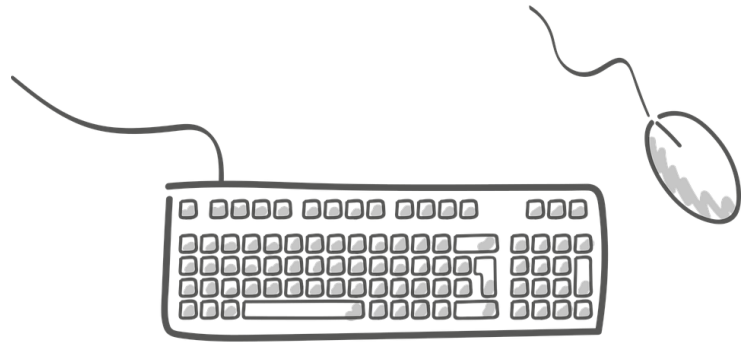
Core Azure Services

- Virtual machines
- Azure App Service
- Azure Container Instances (ACI)
- Azure Kubernetes Service (AKS)
- Windows Virtual Desktop
- Virtual networks
- VPN gateway
- Virtual network peering, and ExpressRoute
- Container (blob) storage
- Disk storage
- File storage, and storage tiers
- Azure SQL Database, Azure Database for MySQL, Azure Database for PostgreSQL, and SQL Managed Instance

Demo

- Azure App Services

- Cosmos DB

- Azure Marketplace

Core solutions and management tools on Azure

- Azure Logic Apps and Function Apps
- Azure Machine Learning
- Cognitive Services, and Bot Service
- Azure DevOps, GitHub, GitHub Actions, and Azure DevTest Labs
- Internet of Things (IoT) Hub, IoT Central, and Azure Sphere
- HDInsight, and Azure Databricks
- Azure portal, Azure PowerShell, Azure CLI, Cloud Shell
- Azure Mobile App
- Azure management tools: Azure Advisor, Azure Monitor, Azure Service Health
- Azure Status

Demo
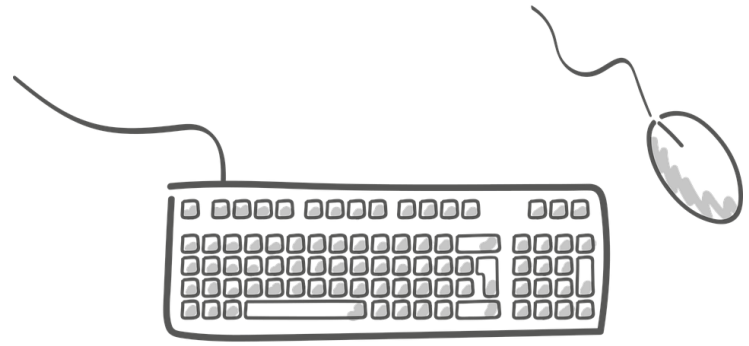
- Azure Resource Manager (ARM) templates

- Azure Synapse Analytics

- Azure Functions and Logic Apps

Use Azure Architecture Center for architecting solutions on Azure using established patterns and practices.

Day 2

Azure Fundamentals Bootcamp

- General Azure security and network security features

- Azure identity, governance, privacy, and compliance features

- Azure cost management and service-level agreements

- Wrap-up and Q&A

General Azure security and network security features

- Azure network security and the concept of defense in depth
- Azure Security Center, including policy compliance, security alerts, secure score, and resource hygiene, Azure Status
- Azure Policy
- Azure Sentinel
- Azure Defender
- Azure Dedicated Hosts
- Azure Firewall
- Azure Network Security Groups
- Azure Application Security Groups
- Azure DDoS protection
- Azure Key Vault

Azure Network Security

- Network Security Rules (NSGs): Provides basic network level access control (based on IP address and the TCP or UDP protocols)

- Azure Firewall: "Cloud-native and intelligent network firewall security service that provides threat protection for your Azure workloads"

- Web Application Firewall (WAF): "cloud-native service that protects web apps from common web-hacking techniques such as SQL injection"
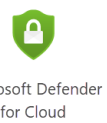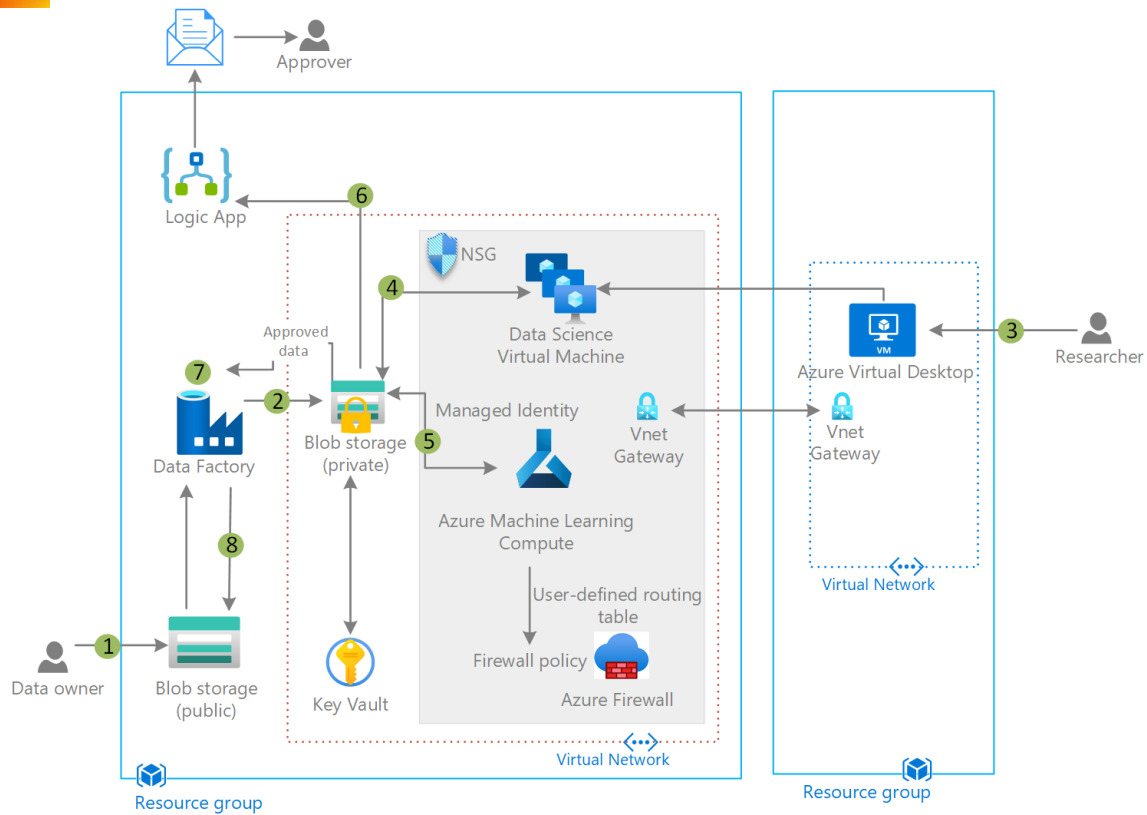
Azure Policy

- Helps enforcing company standards, so the company can meet its compliance commitments.

- Enforcing data residency laws

- Enforcing security best practices

- Enforcing cost management

Demo

- Azure Key Vault

- Network Security Groups (NSG)

- Azure Policy
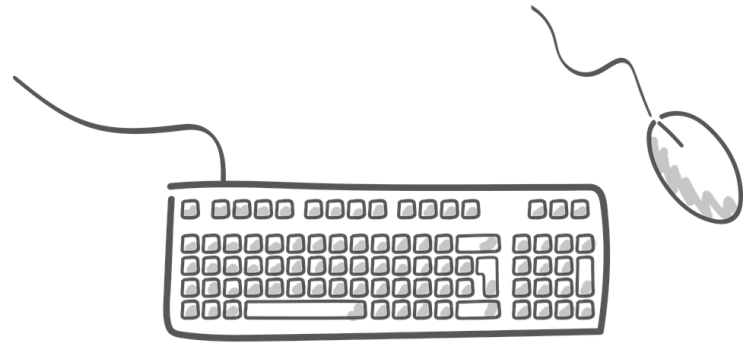
Azure identity, governance, privacy, and compliance features

- Authentication vs. authorization
- Azure Active Directory
- Conditional Access, multifactor authentication (MFA), and single sign-on (SSO)
- Azure governance
- Azure Blueprints
- Azure Cloud Adoption Framework
- The purpose of the Microsoft privacy statement, data protection addendum (DPA), and Product Terms site
- Privacy in Azure
- Azure compliance
- Trust Center, Azure regions
- Resource locks

Demo

- Role-based access control (RBAC)

- Using Azure Policy
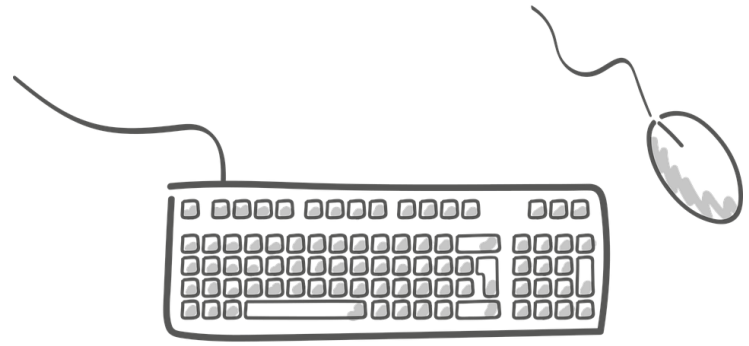
Azure cost management and service-level agreements

- Methods for planning and managing costs
- Identifying factors that can affect costs (resource types, services, locations, ingress and egress traffic)
- Factors that can reduce costs (reserved instances, reserved capacity, hybrid use benefit, spot pricing)
- The purpose of an Azure service-level agreement
- The service lifecycle in Azure (public preview and general availability)
- Pricing calculator and the total cost of ownership (TCO) calculator
- Azure cost management

Demo

- [Azure Pricing Calculator](#)

- [Azure Cost of Ownership Calculator](#)
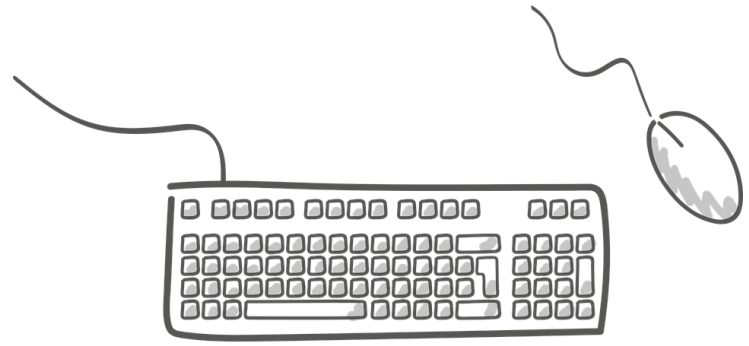
The Exam

Azure Apps and Infrastructure certifications

Fundamentals

Associate

Expert

Microsoft Certified:
Azure Solutions Architect Expert

Microsoft Certified:
Azure Fundamentals
(Optional)

Microsoft Certified:
Azure Administrator Associate

Microsoft Certified:
Azure Developer Associate

COMING SOON

Microsoft Certified:
Azure DevOps Engineer Expert

More roles to come

Transition Exams Available:
70-532 – take AZ-202
70-533 – take AZ-102
70-535 – take AZ-302

See reference

Two ways to prepare

Learning paths to gain the skills needed to become certified

LEARNING PATH

Azure Fundamentals part 1: Describe core Azure concepts

3 Modules

Beginner Administrator Azure

Start >

⊕ Save

LEARNING PATH

Azure Fundamentals part 2: Describe core Azure services

4 Modules

Beginner Administrator Azure

Questions in AZ-900

- Number of Questions 40-60 Questions

- Questions

  - Multiple choice

  - Drag and drop

  - Scenario based

- There will NOT be hands-on labs but watch for updates!

- Pass Score 700 (on a scale of 1-1000)

AZ-900

- Exam AZ-900 →

  https://docs.microsoft.com/en-us/learn/certifications/exams/az-900

- Skills measured →

  https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE3VwUY

Schedule exam

Exam AZ-900: Microsoft Azure Fundamentals

United States ⌄

$99 USD*

Languages: English, Japanese, Chinese (Simplified), Korean, Spanish, German, French, Indonesian (Indonesia), Arabic (Saudi Arabia), Chinese (Traditional), Italian, Portuguese (Brazil), Russian
Retirement date: none

Price based on the country in which the exam is proctored.

This exam measures your ability to describe the following concepts: cloud concepts; core Azure services; core solutions and management tools on Azure; general security and network security features; identity, governance, privacy, and compliance features; and Azure cost management and Service Level Agreements.

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Next

Course Repository

https://github.com/zaalion/oreilly-az-900

Q&A

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Thank you!

Reza Salehi

@zaalion