Azure

Tuesday, June 29, 2021   3:57 PM

https://www.examtopics.com/exams/microsoft/az-900/view/1/
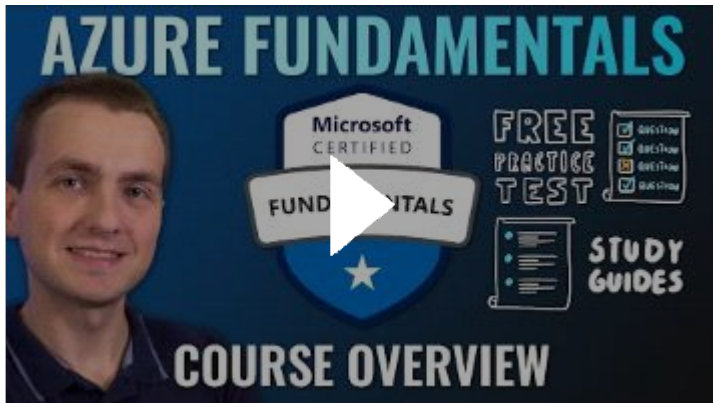
Microsoft Certified: Azure Fundamentals - Learn | Microsoft Docs

Reference Links:
 AZ-900 | Microsoft Azure Fundamentals Full Course, Free Practice Tests, Website and Study Guides

https://marczak.io/az-900/

Day 1 - 03/07/2021 - Cloud Concepts

Saturday, July 3, 2021   10:17 PM

- Cloud Concepts
- Core Azure Services
- Security, Privacy, Compliance and Trust
- Azure Pricing and Support

Episode 1

Cloud Computing : Delivery model for services like
-Storage
-Compute Power
-Networking
-Analytics
-and more services
-Internet

Cloud:

Key Characteristics
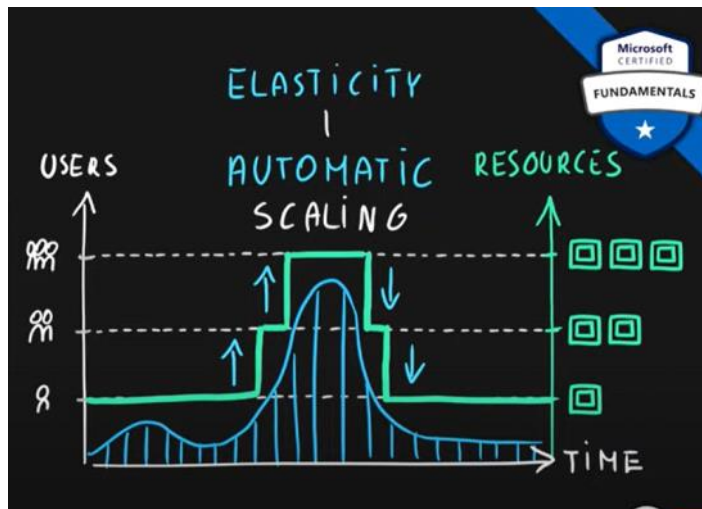
-Scalability - Ability to Scale
- Vertical Scaling - Increasing or Decreasing of Size (Scaling UP(Increase) & Scaling DOWN(Decrease))
- Horizontal Scaling - Increasing or Decreasing of Amount (Scaling IN(Decrease) & Scaling OUT(increase))
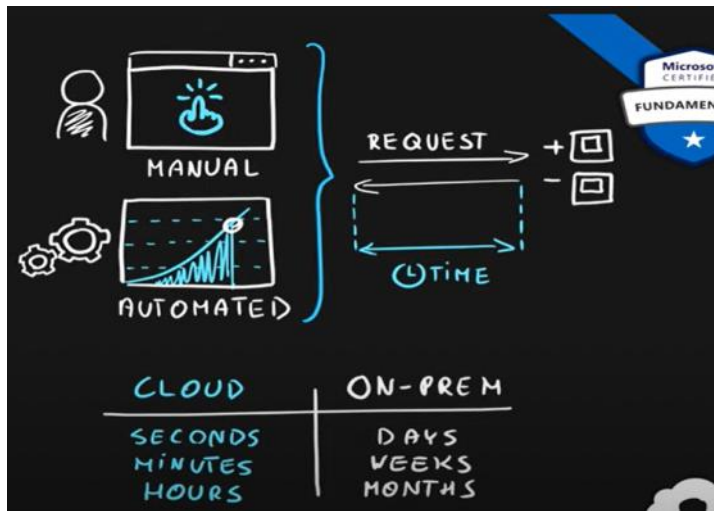
Scaling Process
- Allocating (Adding)
- Deallocating(Removing)
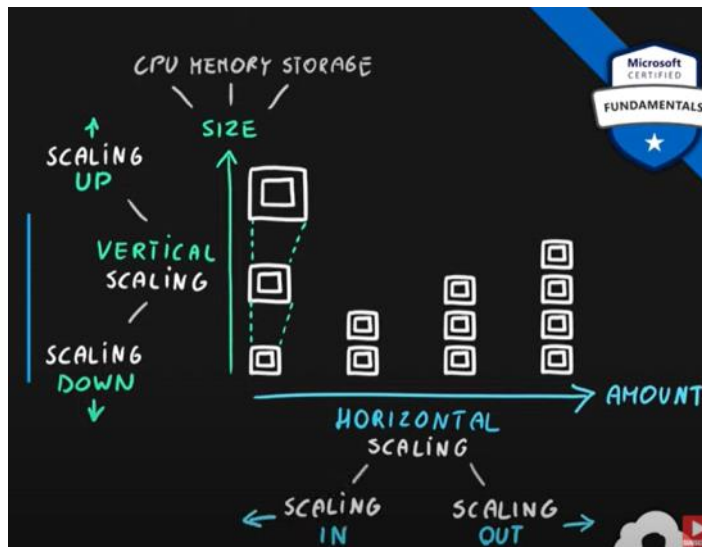
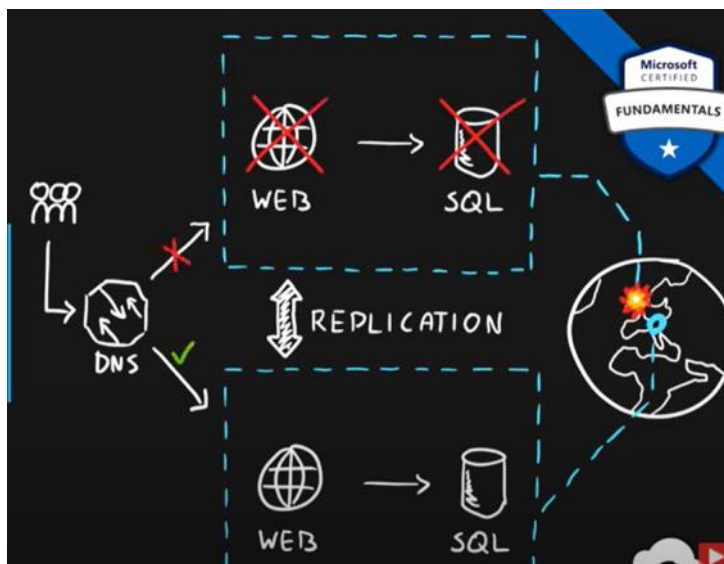**-Elasticity - Ability of the system to scale automatically**

-Agility - Ability to react quickly - Ability to allocate and deallocate (scale) resources quickly.
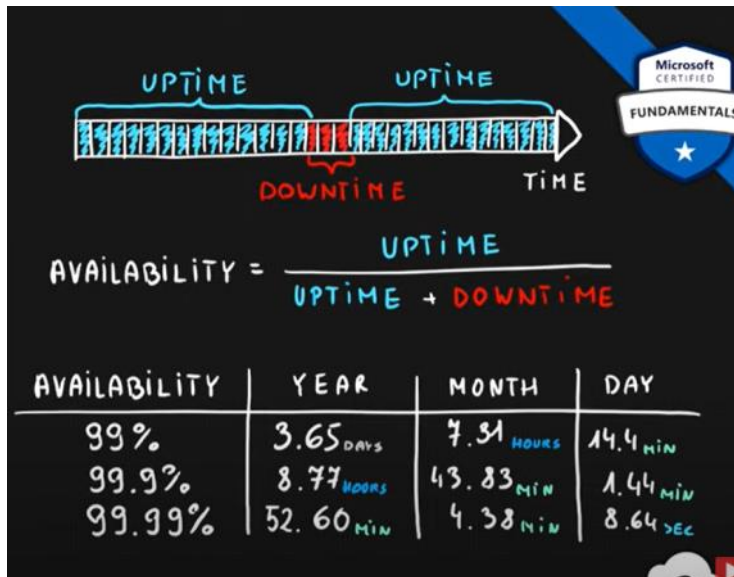
-Fault Tolerance - Ability to remain up and running during component and service failures

-Disaster Recovery - Ability to recover from an event that has taken down the service(disaster)
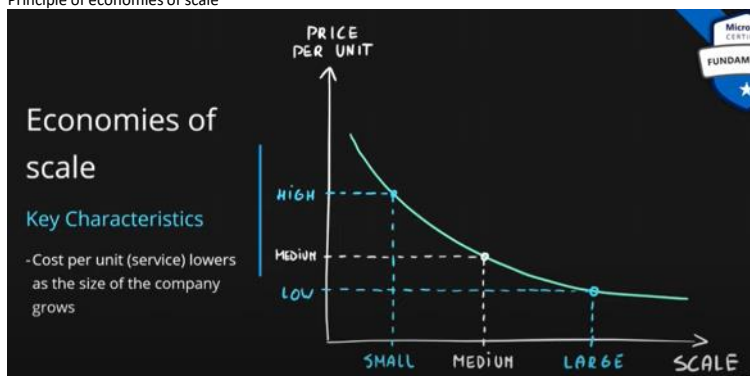

-High Availability - Ability to keep services running for extended periods of time with very little downtime

More Details:
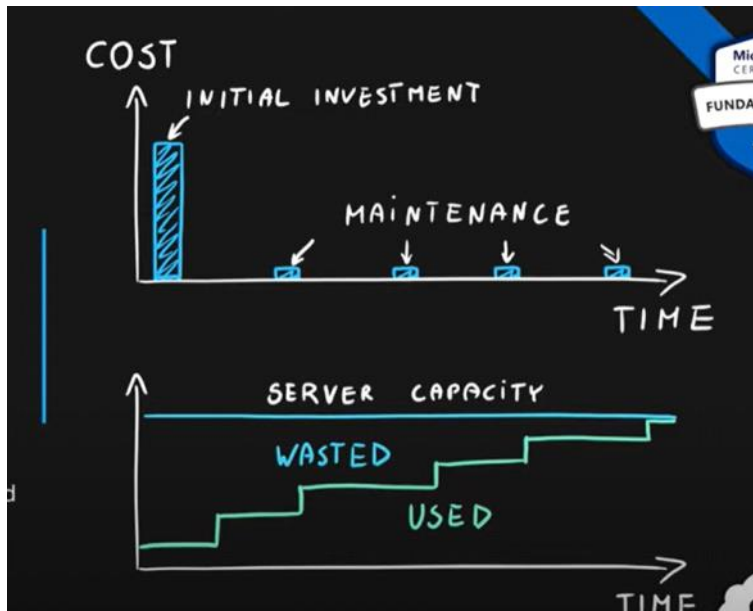Study cheat sheet
Practice Test

Principle of economies of scale
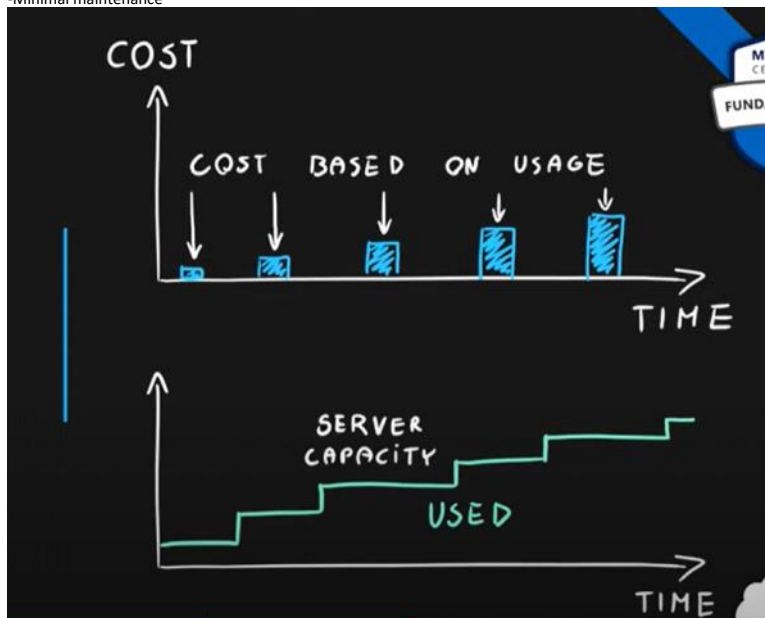

More Details:
Study cheat sheet
Practice Test

CapEx & OpEx

Capital Expenditure
-Own Infrastructure
-Big initial investment
-Lots of maintenance required

Operational Expenditure
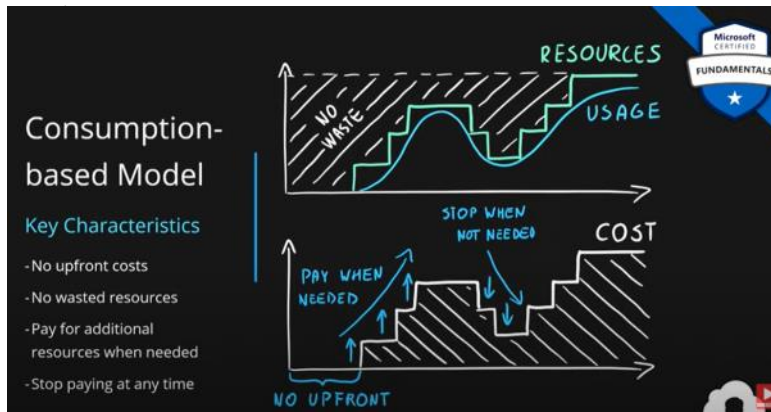-Rent infrastructure
-No initial investment
-Minimal maintenance

|	CapEx	OpEx
Up front cost	Significant	None
Ongoing cost	Low	Based on usage
Tax Deduction	Over time	Same year
Early Termination	No	Anytime
Maintenance	Significant	Low
Value over time	Lowers	No change

More Details:
Study cheat sheet
Practice Test

Episode 4

Consumption based model

-Multiple pricing component per service
-Very granular usage measurement

More Details:
Study cheat sheet
Practice Test
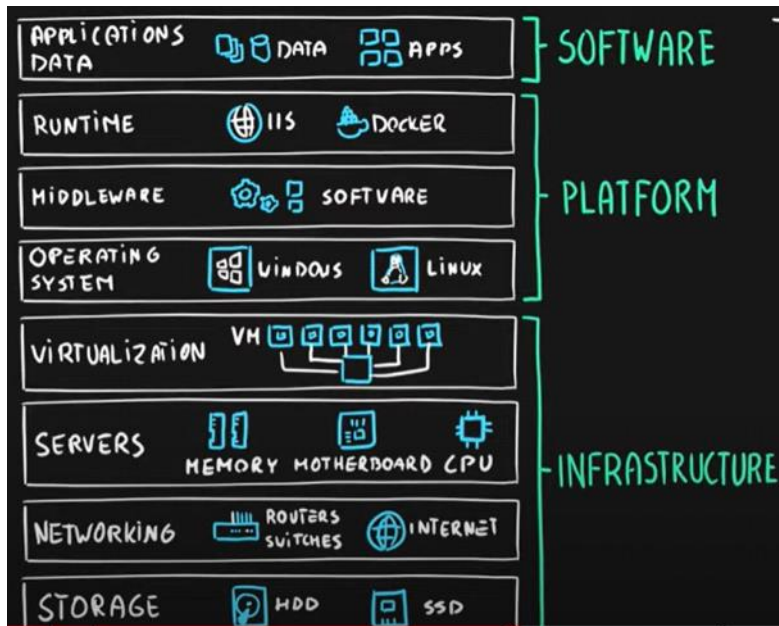
A RMO VSNS

Infrastructure - Networking, Hardware & Virtualization (NHV)
Platform - Operating System, Middleware, Runtime (OMR)
Software - Data & Application (DA)

Cloud Service Type:

IaaS - Microsoft manages the infrastructure & YOU manage Platform & Software

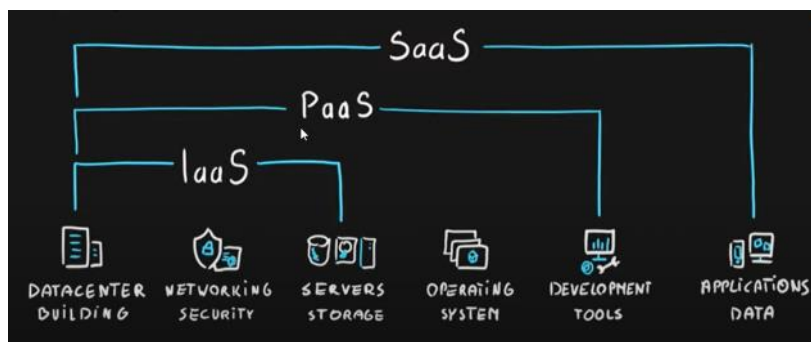PaaS - Microsoft manages the infrastructure & Platform & YOU manage Software

Key Characteristics

Ownership

- Cloud provider manages infrastructure & platform
  - Infrastructure – networking, hardware & virtualization
  - Platform – operating system, middleware, runtime
- You manage software
  - Software – data & applications

Use cases

- Development framework
- Analytics & business intelligence

SQL · APP SERVICE · LOGIC APPS · FUNCTION APPS

SaaS - Microsoft manages the infrastructure & Platform & Software

Key Characteristics

Ownership

- Cloud provider manages infrastructure, platform & software
  - Infrastructure – networking, hardware & virtualization
  - Platform – operating system, middleware, runtime
  - Software – data & applications
- You manage nothing

Use cases

- Buying of-the-shell applications

ONE DRIVE · OUTLOOK · SKYPE

SaaS · PaaS · IaaS

DATACENTER BUILDING · NETWORKING SECURITY · SERVERS STORAGE · OPERATING SYSTEM · DEVELOPMENT TOOLS · APPLICATIONS DATA

More Details:
Study cheat sheet
Practice Test

Episode 6

Public Cloud : Hosting everything in cloud

Advantages	Disadvantages
No CapEx	Security & Compliance
High availability & Agility	Ownership
Pay as you go pricing	Specific scenarios with unique business req.
No hardware maintenance	
No deep technical skills required	

Private Cloud : Hosting everything in own data center

Advantages	Disadvantages
Can support any scenario	Initial CapEx
Control over security	Limited Agility
Can meet any security & compliance requirements	IT skills & expertise are mandatory

Hybrid Cloud : Hosting both the sides

Advantages	Disadvantages
Great flexibility	Can be more expensive
Run legacy apps in private cloud	Complicated to manage
Utilize existing infrastructure	IT skills & expertise are mandatory
Meet any security requirements	

More Details:
Study cheat sheet
Practice Test

Day 2 - 04/07/2021 - Core Azure Services

Sunday, July 4, 2021   12:14 AM
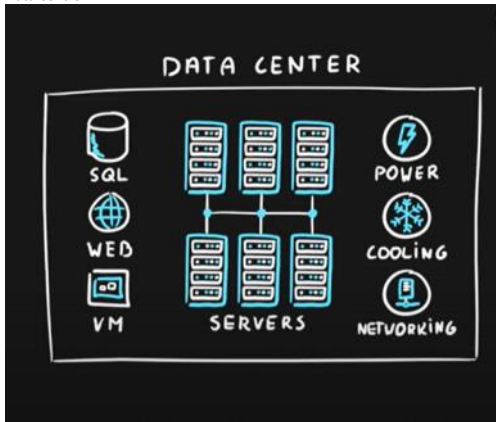
Data Centre

Region - Collection of Data Centers
-Geographical area on the planet
-Datacenters connected with low latency network(<2 milliseconds)

Availability Zone
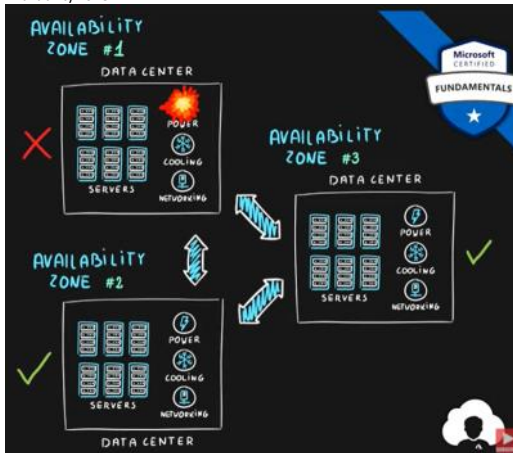
Availability Zone
- Zonal Services(Virtual Machines,Disks,etc.) - Deployment
- Zone-Redundant Services(SQL,Storage,etc.)

Region, Region Pair, Geography
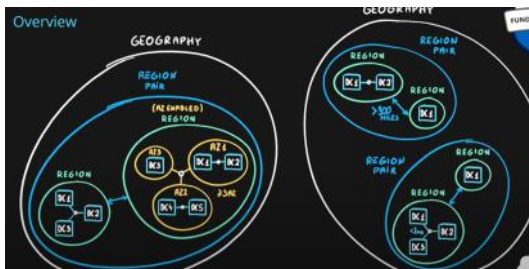
More Details:
Study cheat sheet
Practice Test
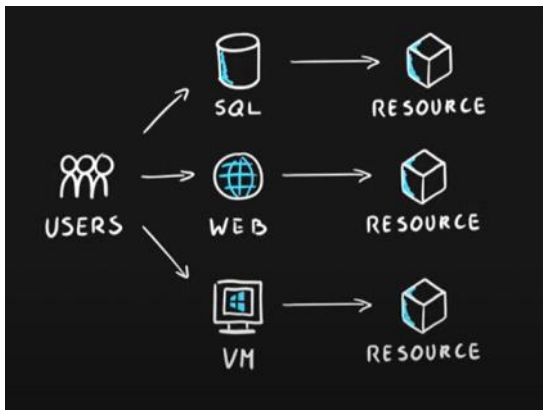
Resources

Resource -> JSON(Java Script Object Notation) Template

Resource Group:

Can be organized based on its
-Type (SQL, WEB)
-Lifecycle(DEV,PROD)
-Department
-Billing, Location

A single resource cannot be placed in multiple resource groups
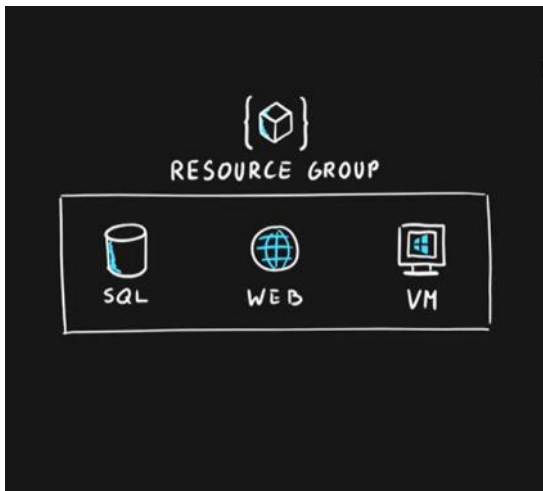
Resource Manager
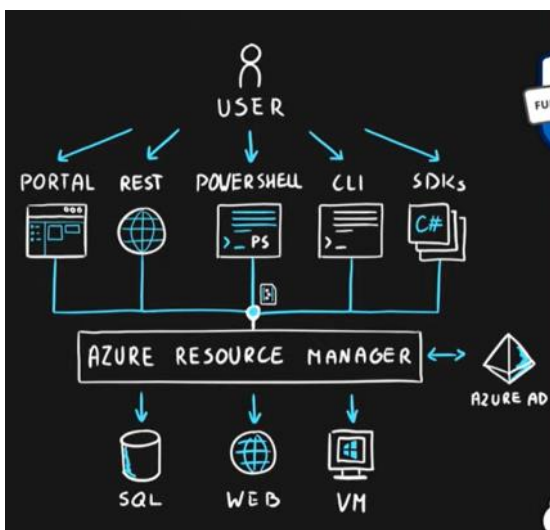
More Details:
Study cheat sheet
Practice Test

Episode 9

Compute Service

- Virtual Machines
- Virtual Machine Scale Sets
- Container Instances (ACI)
- Kubernetes Service(AKS)
- App Services
- Functions

Compute Service - Build & Run Cloud Based Applications

Virtual Machines - IaaS
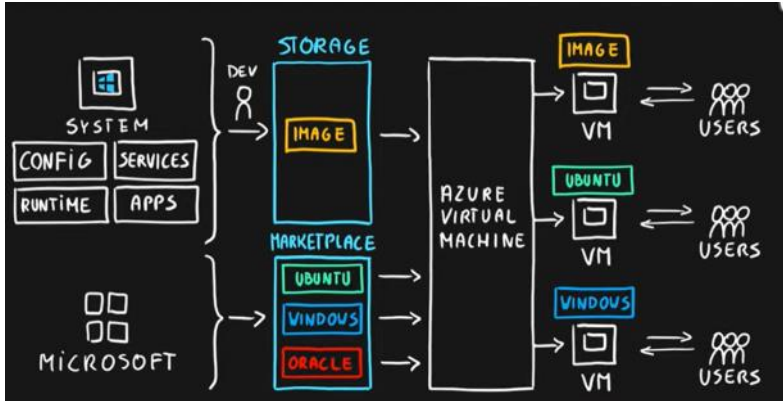
Virtual Machine Scale Sets - Iaas
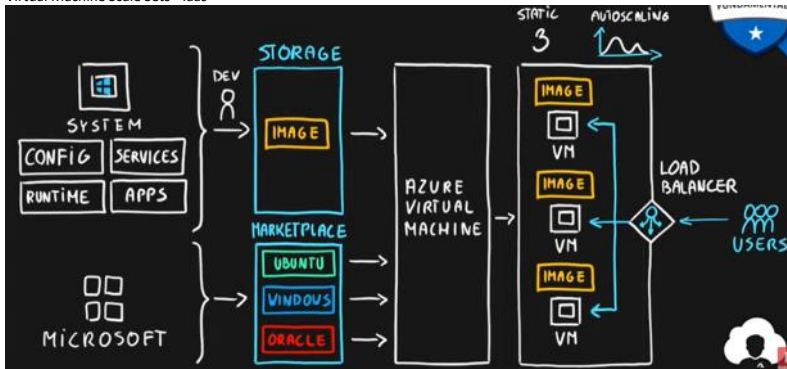
Containers vs VMs

Azure Container Instances(ACS) - PaaS
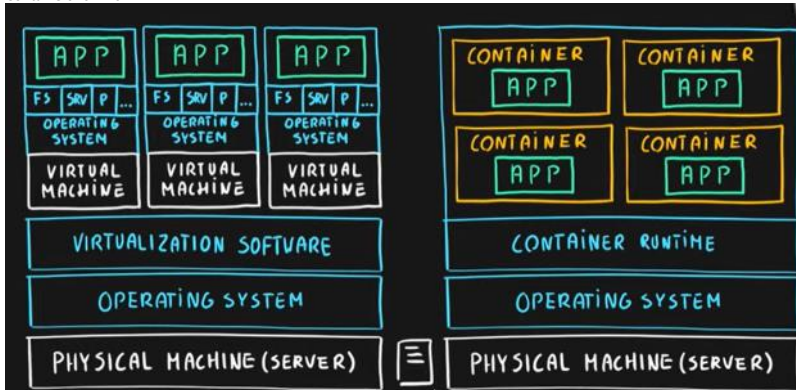
Azure Kubernetes Service(AKS) - PaaS
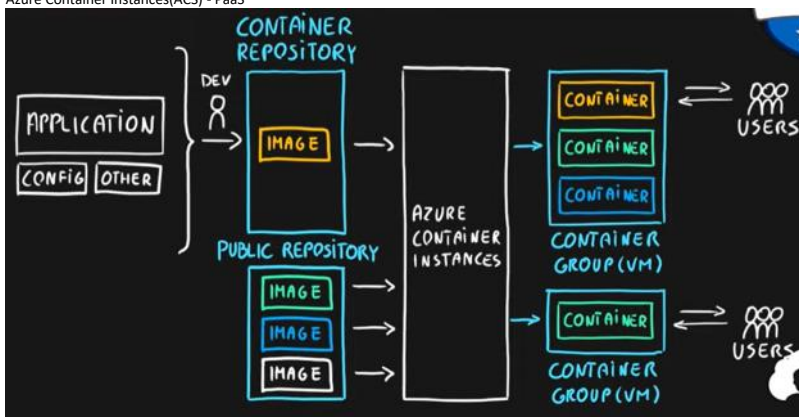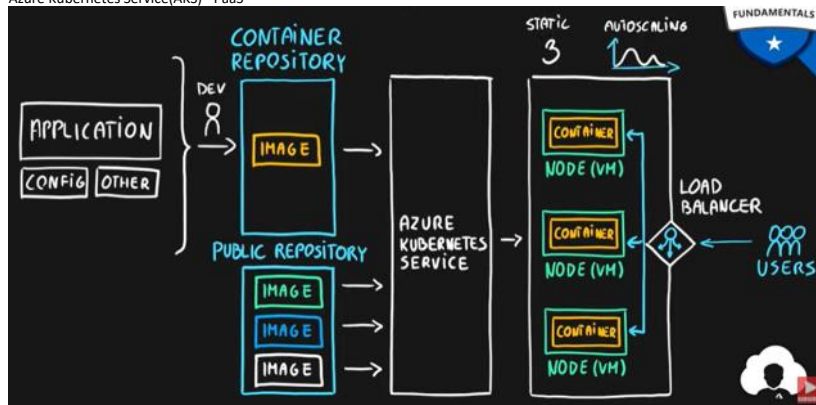
App Service - PaaS - Container Available
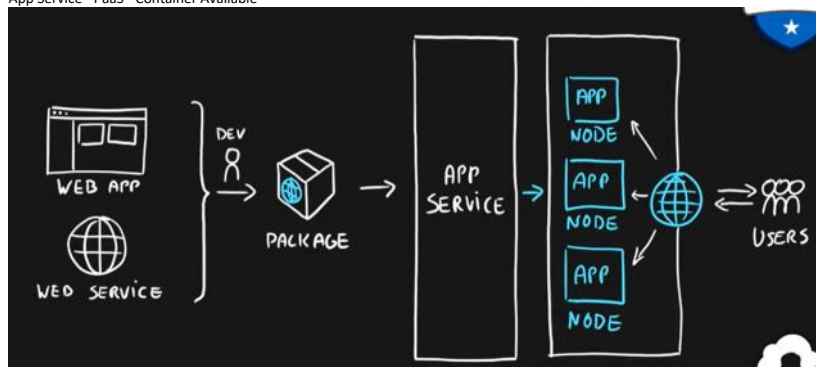
Azure Functions - PaaS - Serverless - Event Driven
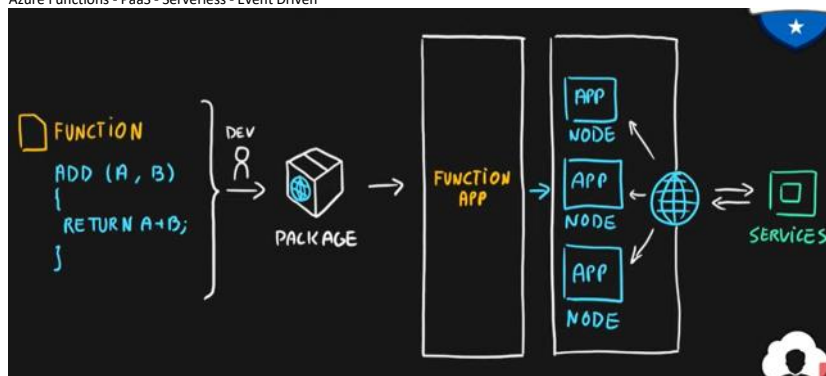
Service	Configuration Control / Maintenance	Autoscaling	Min Nodes	Max Nodes	Scalability
Virtual Machines	☆☆☆☆☆	No	1	1	☆
VM Scale Sets	☆☆☆☆☆	Yes	1	1000/600	☆☆☆☆☆
Container Instances	☆☆☆	No	0	20	☆☆
Kubernetes Service	☆☆☆☆	Yes	3	100	☆☆☆☆
App Service	☆☆	Yes	1	20/100	☆☆☆
Functions	☆	Yes	0	200	☆☆☆☆

- Virtual Machines (IaaS) - Custom software, custom requirements, very specialized, high degree of control
- VM Scale Sets (IaaS) - Auto-scaled workloads for VMs
- Container Instances (PaaS) - Simple container hosting, easy to start
- Kubernetes Service (PaaS) - Highly scalable and customizable * container hosting platform
- App Services (PaaS) - Web applications, a lot of enterprise web * hosting features, easy to start
- Functions (PaaS) (Function as a Service) (Serverless) - micro/nano-services, excellent consumption-based pricing, easy to start

Compute Decision Flow
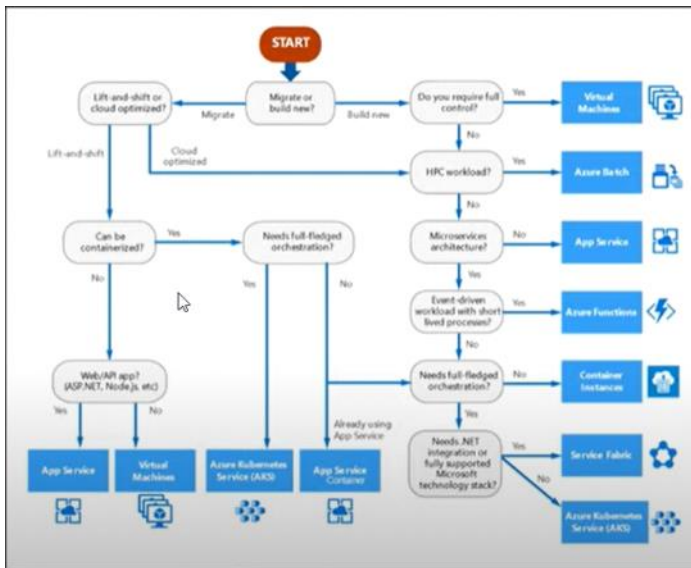
More Details:
Study cheat sheet
Practice Test

Network Services

    -Virtual Network
    -Load Balancer
    -VPN Gateway
    -Application Gateway
    -Content Delivery Network

Virtual Network - Isolation, Segmentation, Communication, Filtering, Routing
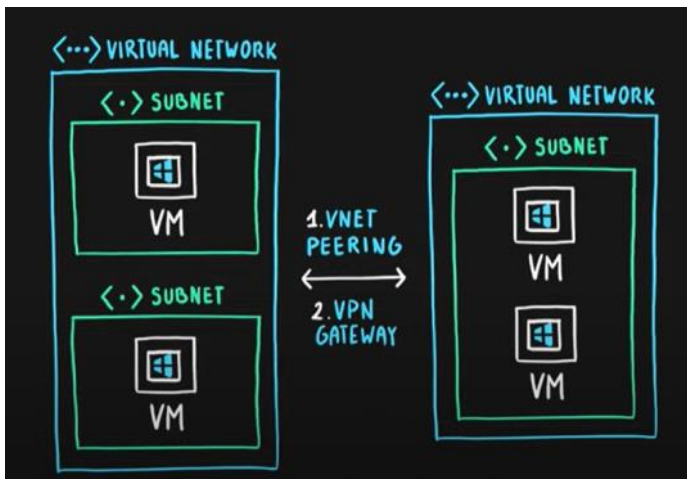
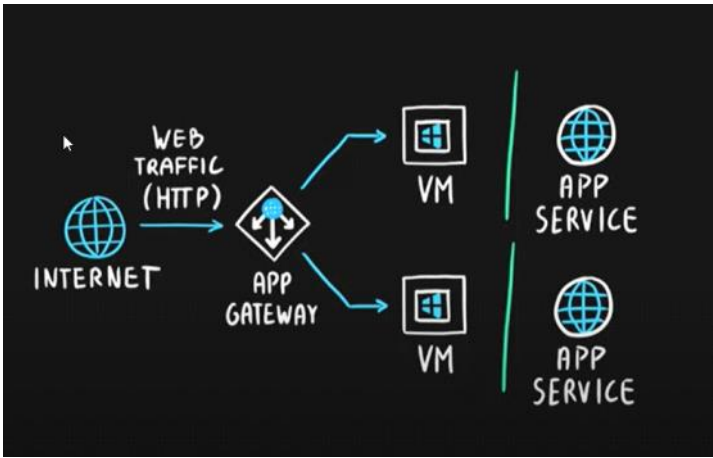
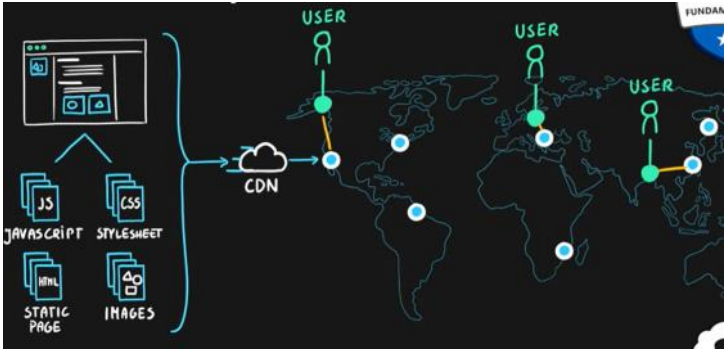Network Security Group - Controls the network traffic
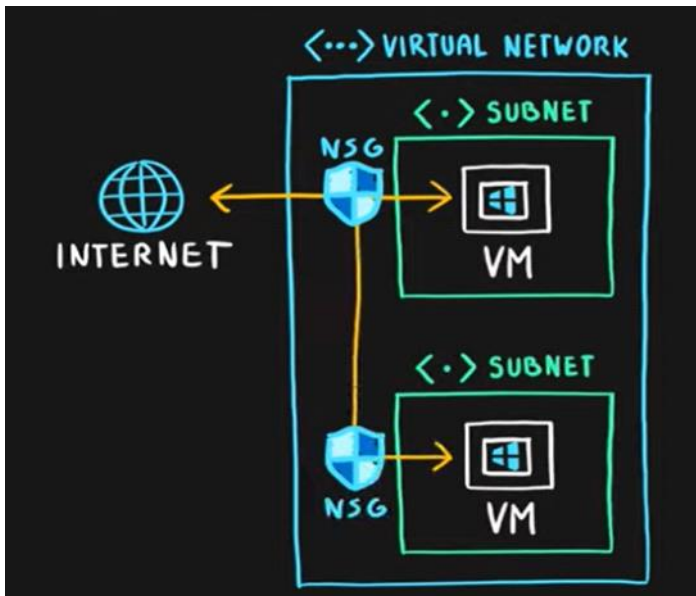
VPN Gateway - Connect ON-PREMISE Environment
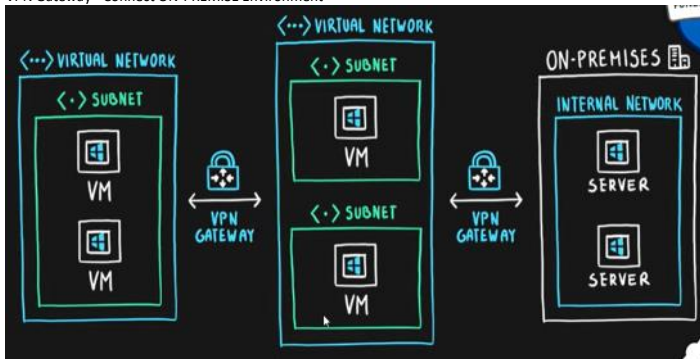
Azure Load Balancer - Evenly distribute the traffic between network.(Incoming & Outcoming Traffic) - Non-Web Based Traffic
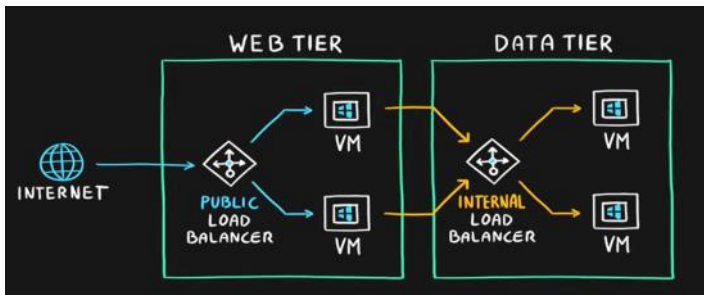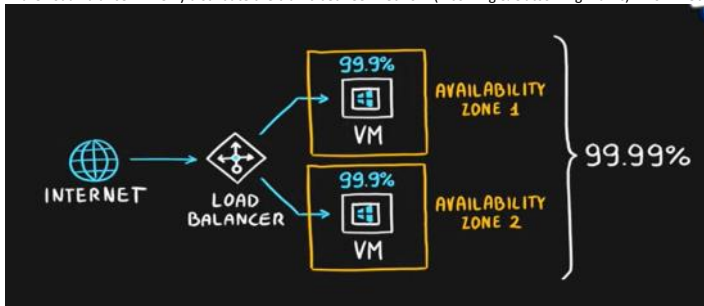
Application Gateway - Web Based Traffic Load Balancer

Content Delivery Network (CDN)

More Details:

Types of Data
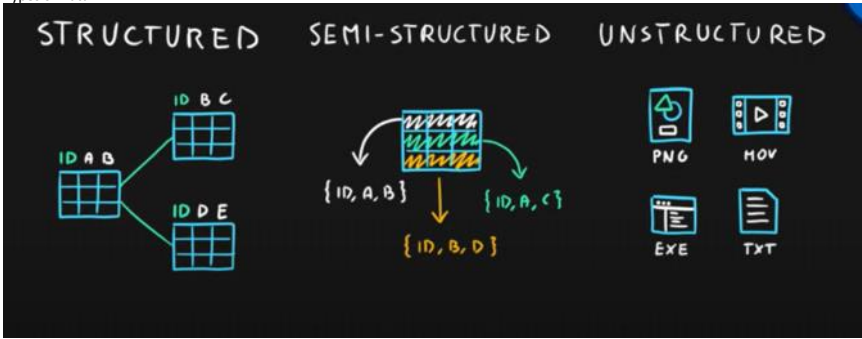
Storage Services

Blob Storage
File Storage
Table Storage
Queue Storage
Disk Storage

Blob Storage (Binary Large Object)
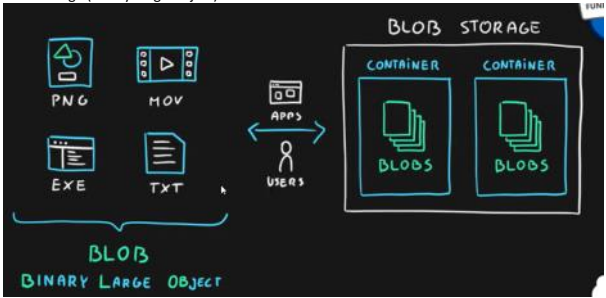
Queue Storage (Messages)
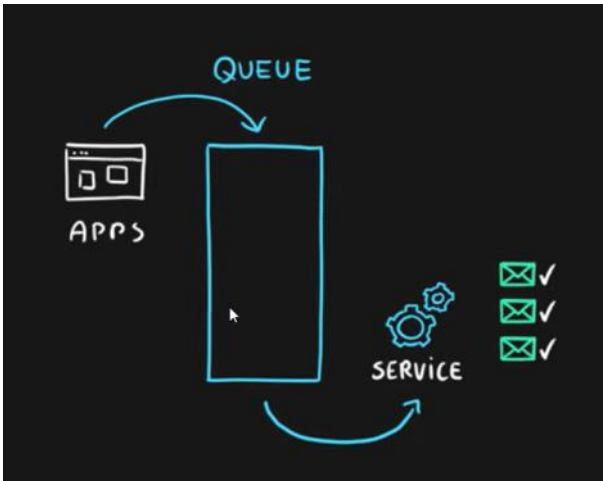
Table Storage -(Semi Structured) - NoSQL
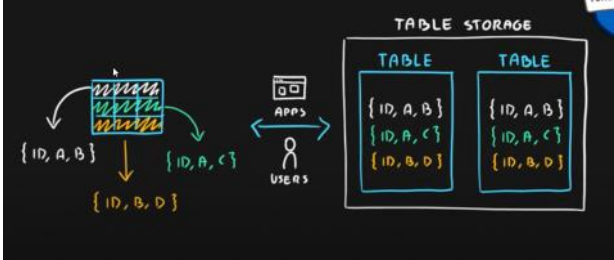
File Storage
SMB - File Share Protocol
Lift & Shift Scenarios
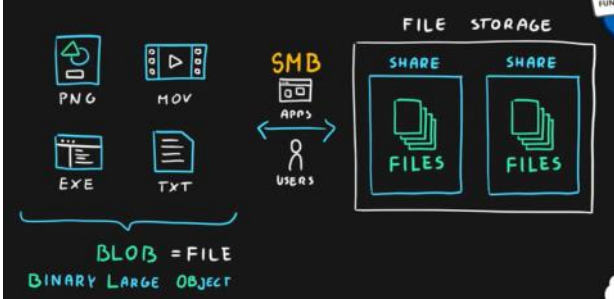
Storage Account
- Highly Scalable
- Highly Durable
- Cheapest per GB storage
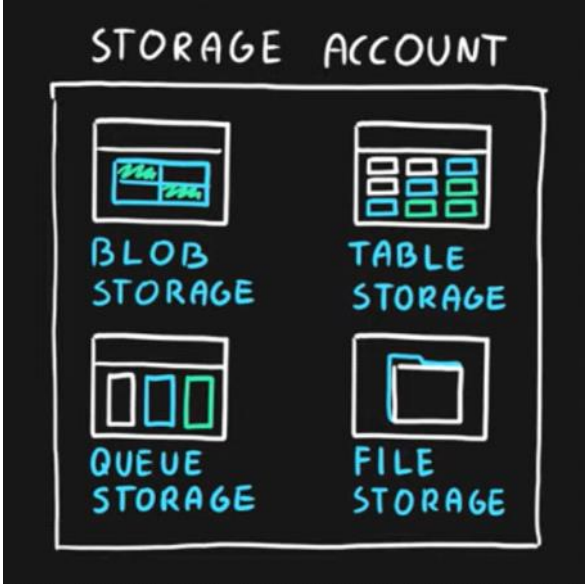
Disk Storage
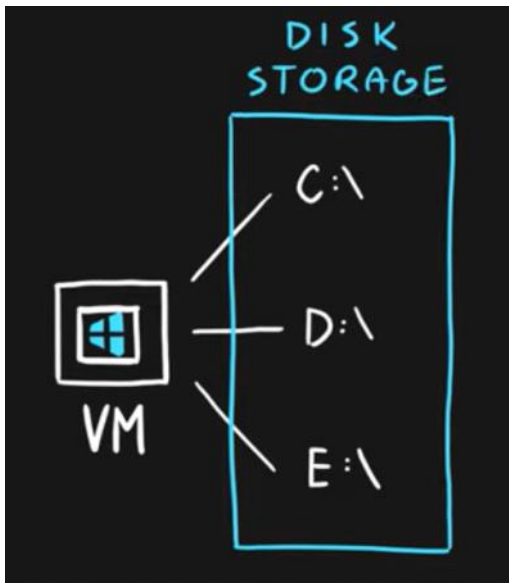
More Details:
Study cheat sheet
Practice Test

Episode 12

Database Services

- Cosmos DB
- SQL
- MySQL
- PostgreSQL
- SQL Managed Instance

Cosmos DB - Ability to read/write data (<10ms)
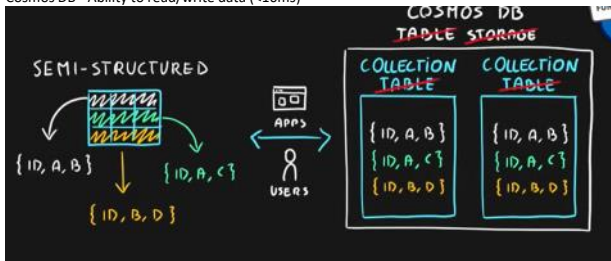
SQL Database - PaaS
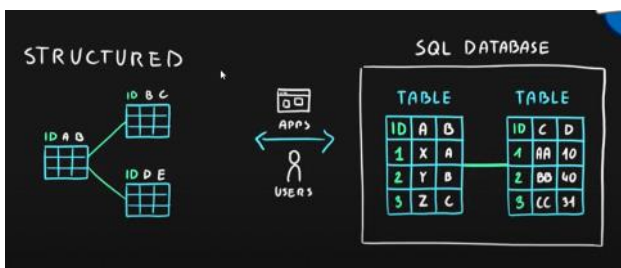
Managed Instance (SQL Instance)
SQL Data Warehouse (Bigdata)
SQL VM(IaaS)
Db for MySQL
Db for PostgreSQL

- Azure Cosmos DB – Globally distributed NoSQL database, low latency, multi-master, perfect for serverless
- Azure SQL Database – Reliable relational database based on SQL Server
- Azure Database for MySQL – Azure SQL version for MySQL database engine
- Azure Database for PostgreSQL – Azure SQL version for PostgreSQL database engine
- Azure SQL Managed Instance – Fully fledged SQL Server managed by cloud provider
- Azure SQL on VM – Fully fledged SQL Server on IaaS
- Azure SQL DW (Synapse) – Massively Parallel Processing (MPP) version of SQL Server

More Details:
Study cheat sheet

Episode 13

Azure Marketplace - Azure Shop

More Details:
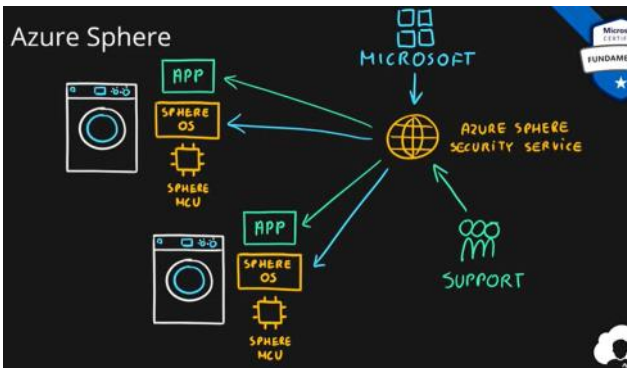
Episode 14
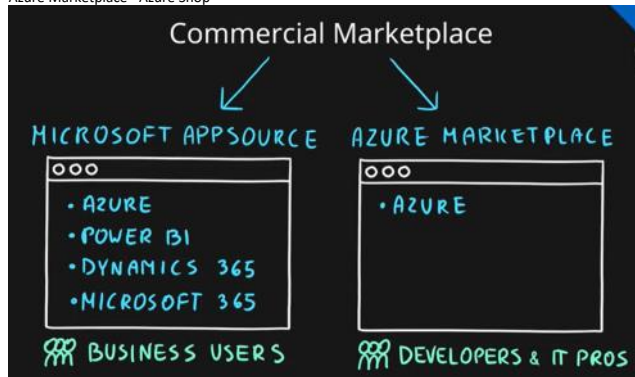
IoT Hub
IoT Central
Azure Sphere
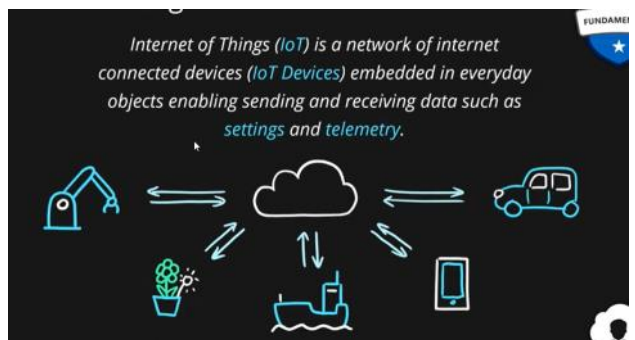
IoT Hub - Bidirectional Communication between cloud + IoT devices (PaaS)
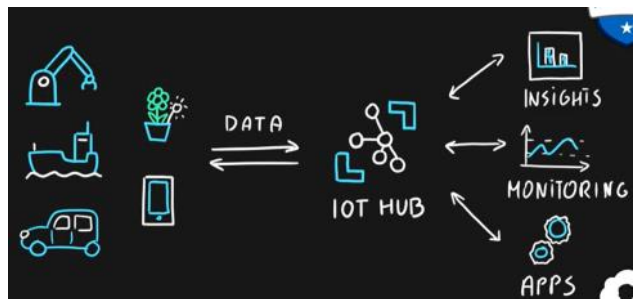
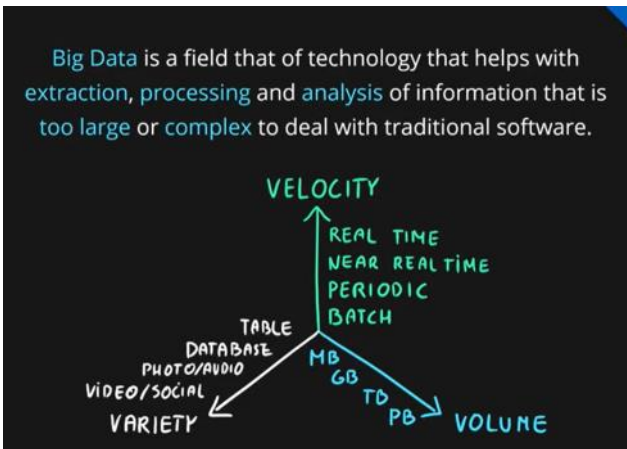IoT Central - (SaaS)
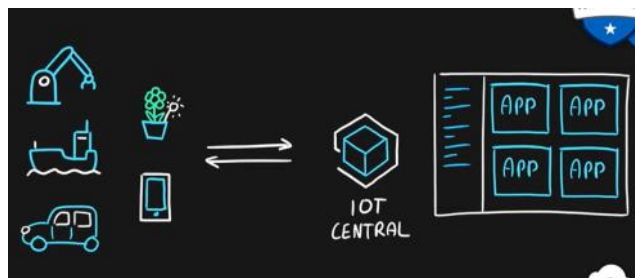
Azure Sphere (Secured IoT Application)
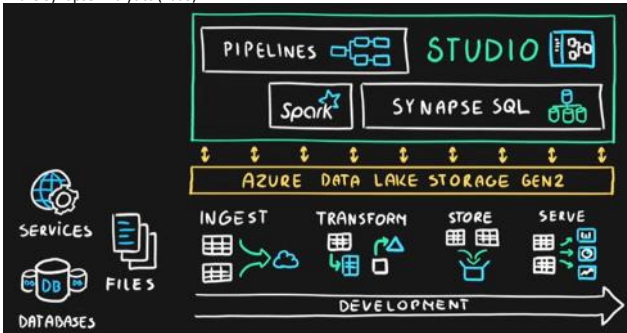
More Details:
Study cheat sheet
Practice Test

Azure Bigdata and Analytics

-Azure Synapse Analytics
-Azure HDInsight
-Azure Databricks

Azure Synapse Analytics (PaaS)
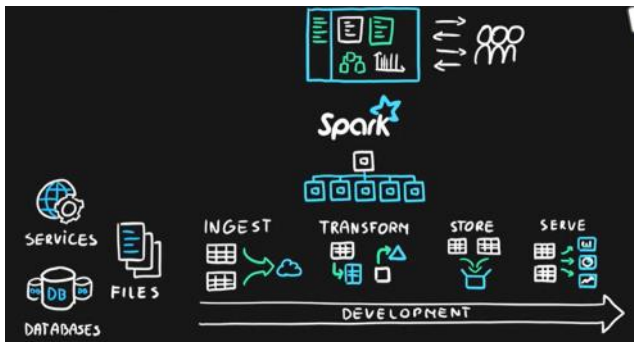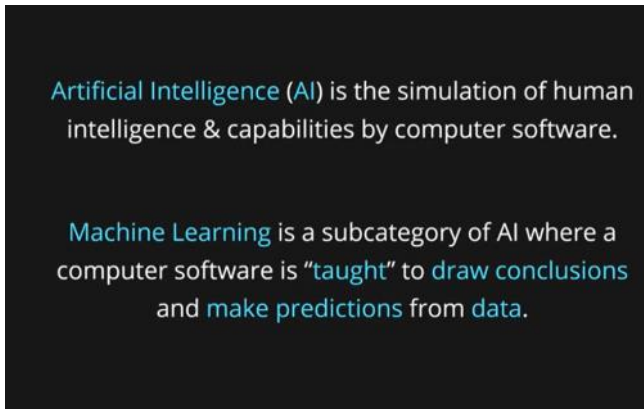

Azure HDInsight (PaaS)

Azure Databricks(PaaS)

More Details:
Study cheat sheet
Practice Test

Artificial Intelligence:
- Machine Learning Service
- Machine Learning Studio

Artificial Intelligence (AI) is the simulation of human intelligence & capabilities by computer software.

Machine Learning is a subcategory of AI where a computer software is "taught" to draw conclusions and make predictions from data.

Azure Machine Learning - Cloud based platform for creating, managing and publishing machine learning models (PaaS)
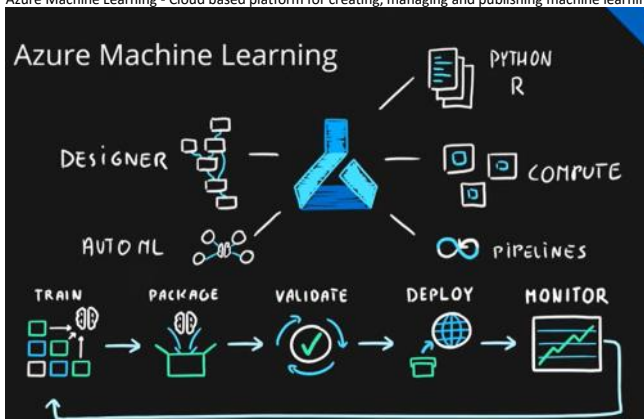
More Details:
Study cheat sheet
Practice Test

Serverless Computing Services
- Azure Functions
- Logic Apps
- Event Grid

Azure Functions(Function Apps) - FaaS
Azure Logic Apps(Serverless Enterprise Integration Service)-PaaS
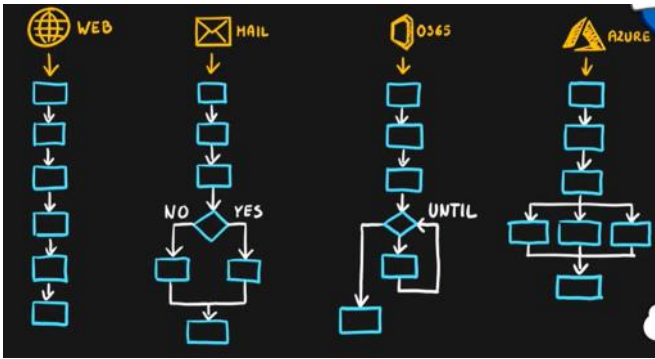
Event Grid (Publish-Subscribe Model)
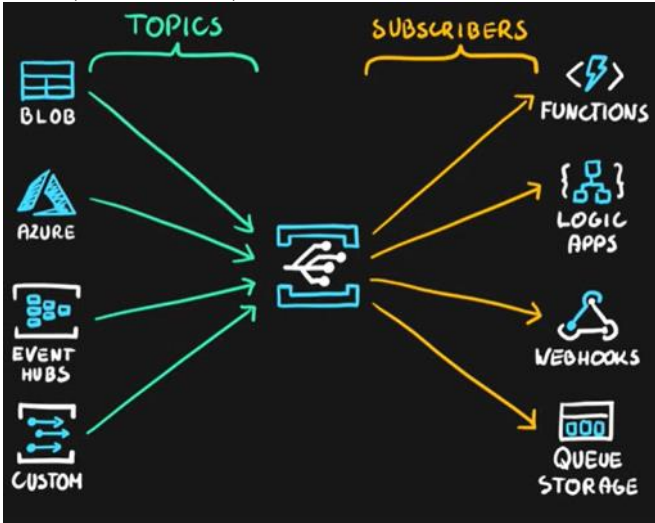
More Details:
Study cheat sheet
Practice Test

DevOps Services

- Azure DevOps
- Azure DevTest Labs

DevOps is a set of practices that combine both development (Dev) and operations (Ops).

DevOps aims to shorten the development life cycle by providing continuous integration and delivery (CI/CD) capabilities while ensuring high quality of deliverables.

DevOps - TFS -> VSTS

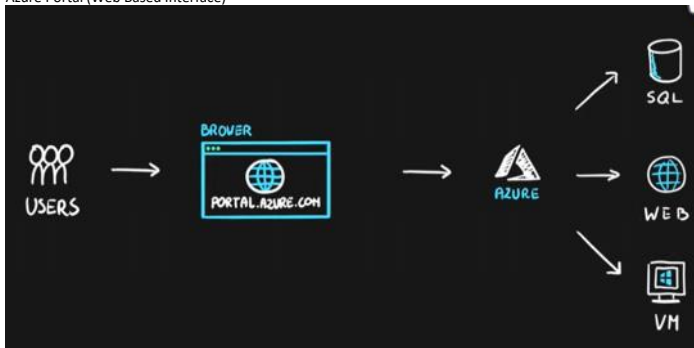
DevTest Labs(Sandbox Environment for Developers/Testers(PaaS))
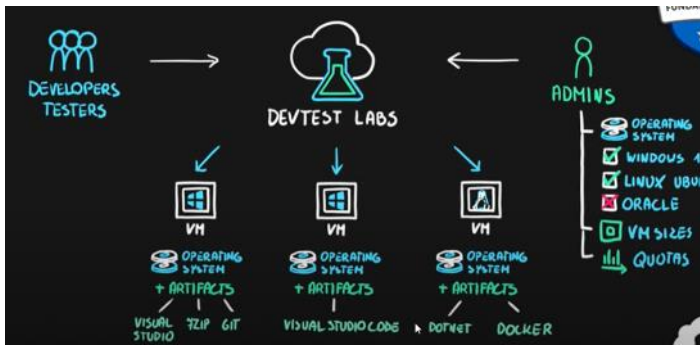
More Details:
Study cheat sheet
Practice Test

Azure Tools

- Azure Portal
- Azure Powershell
- Azure CLI
- Azure Cloud Shell

Azure Portal (Web Based Interface)

Azure Powershell (Powershell & Module)
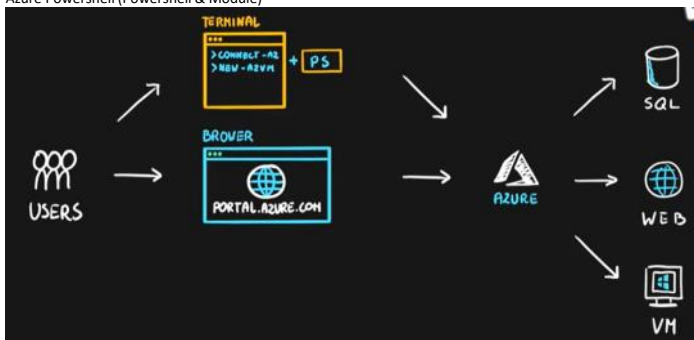
Azure CLI (Command Line Interface)
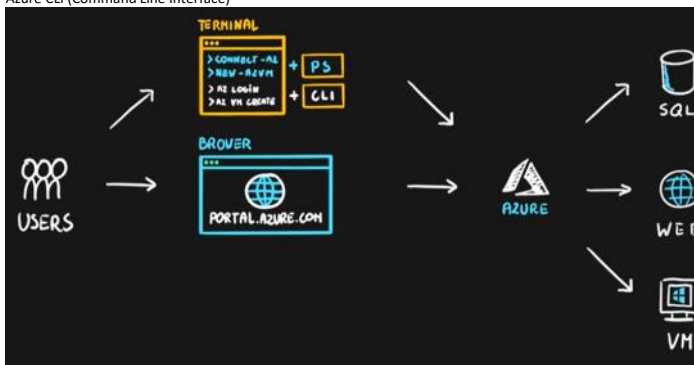
Azure Cloud Shell (Cloud Based Scripting Environment)
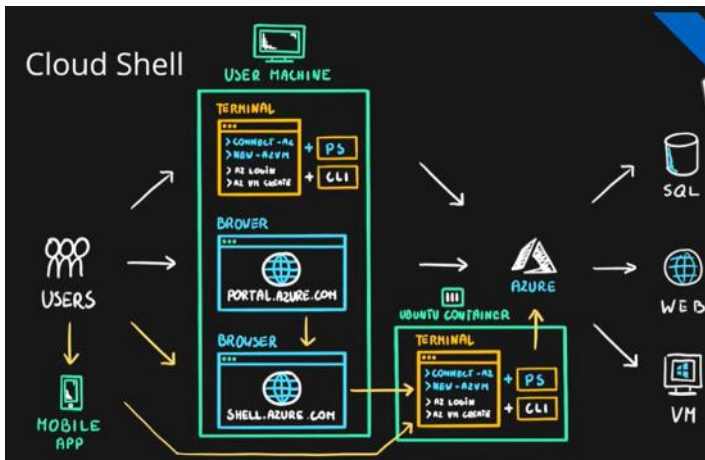
More Details:
Study cheat sheet
Practice Test

Episode 20

Azure Advisor

- Cost
- Security
- Reliability
- Performance
- Operational Excellence

More Details:
Study cheat sheet
Practice Test

Day 3 - 05/07/2021 - Security, Privacy, Compliance, and Trust

Sunday, July 4, 2021   9:20 PM

Security Groups
- Network Security Groups(NSG)
- Application Security Groups(ASG)

Network Security Groups - Filter traffic to inbound and from outbound Azure Resources
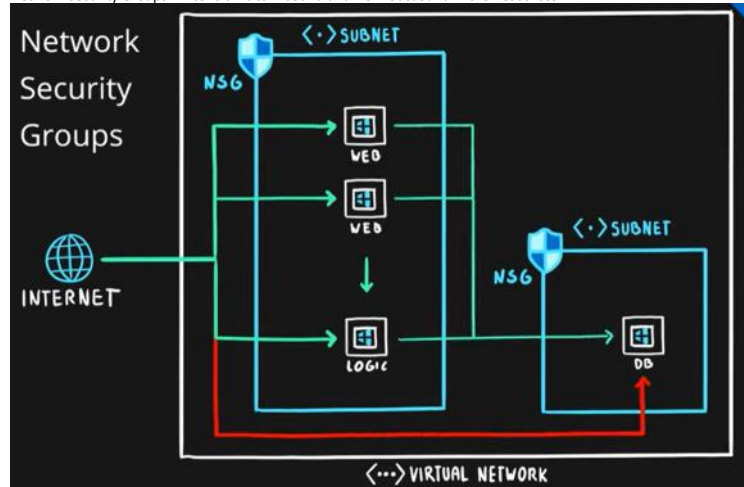
Application Security Group - Logical Grouping of Virtual Network Resources Logically)
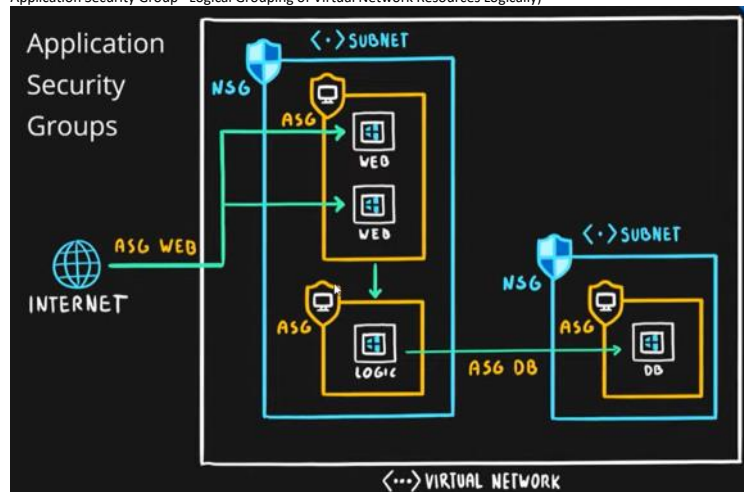
More Details:
Study cheat sheet
Practice Test

User Defined Routes (UDR) - Route Table

Routing - Finding/Selecting a path for a traffic in one or across multiple network

NVA - Network Virtualize Appliance

User-defined Routes
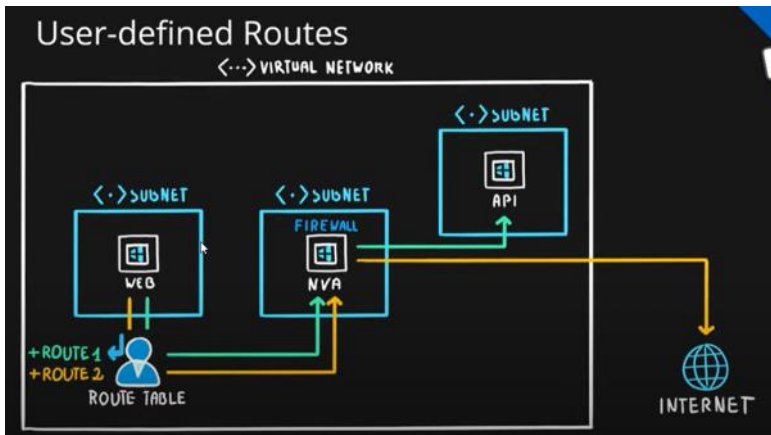
More Details:
Study cheat sheet
Practice Test

Azure Firewall - Network Security Service - PaaS
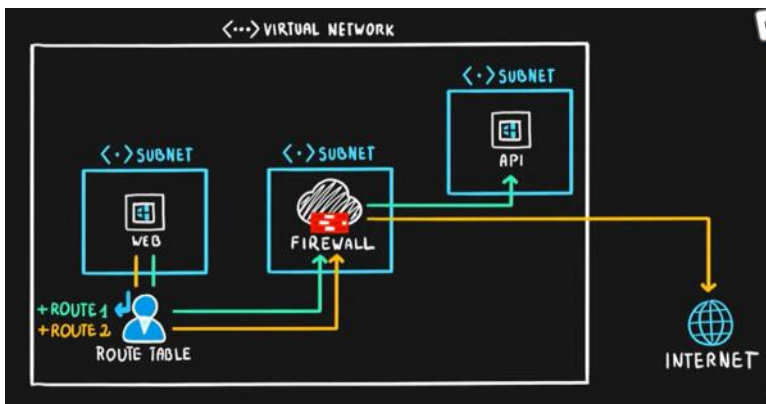
More Details:
Study cheat sheet
Practice Test

Azure DDoS Protection

DoS - Denial of Service

DoS - *Denial of Service*
Cyber-attack with *intent* to cause temporary or
indefinite *disruption of service*
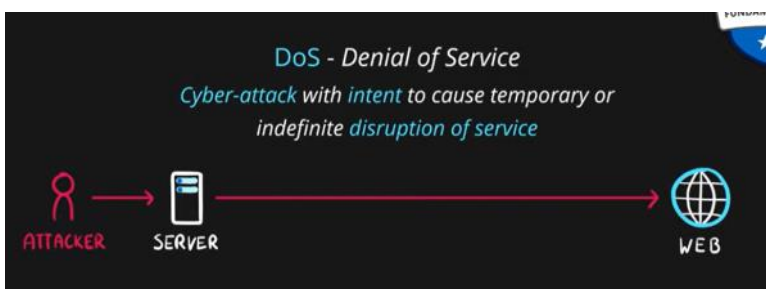
DDoS - Distributed Denial of service

More Details:
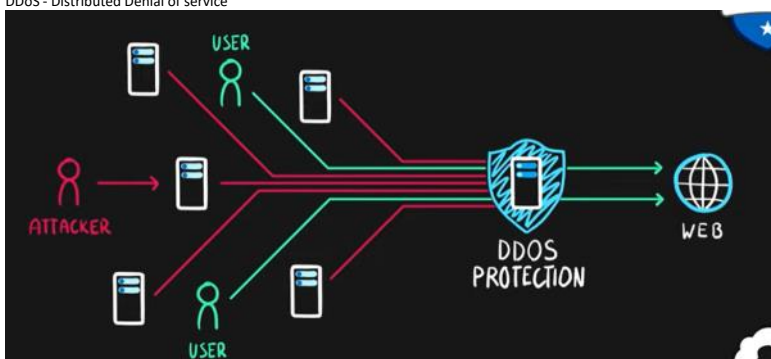
Episode 25

Azure Identity Services

- Identity, Authentication & Authorization
- Azure Active Directory
- Multi-Factor Authentication(MFA)

Identity
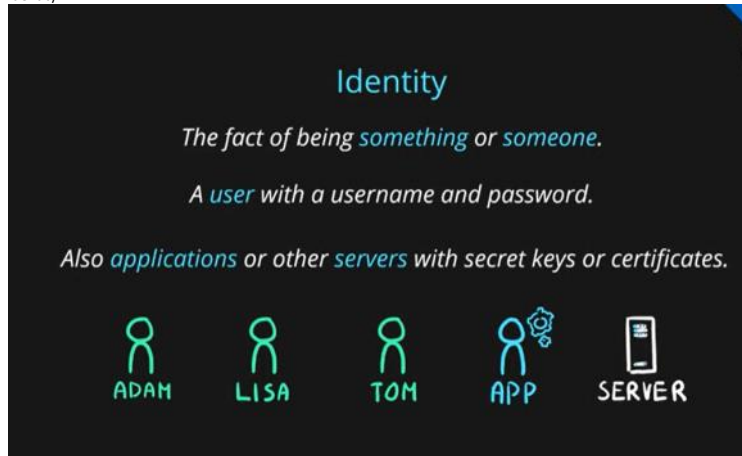
Authentication
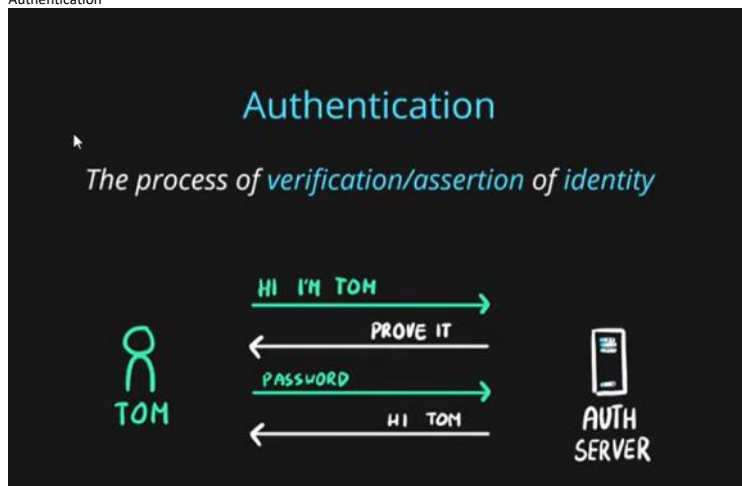
Authorization - Access of Service
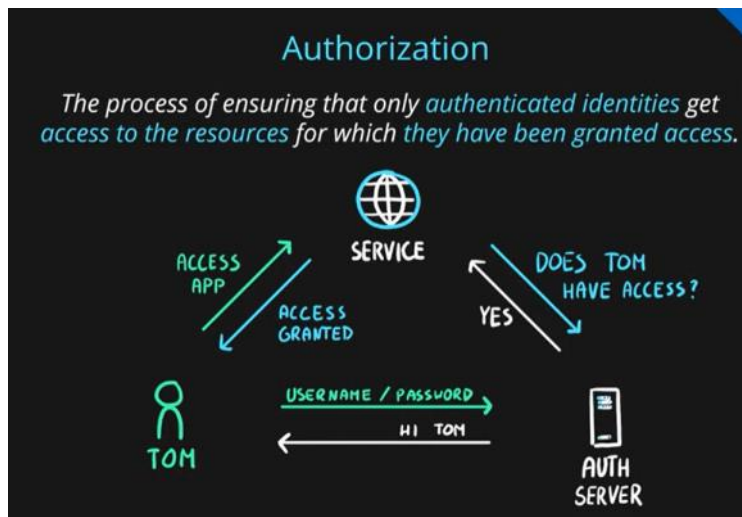
Access Management - Controlling, Verifying, Tracking and Managing access to authorized users and applications

Azure Active Directory

Multifactor Authentication
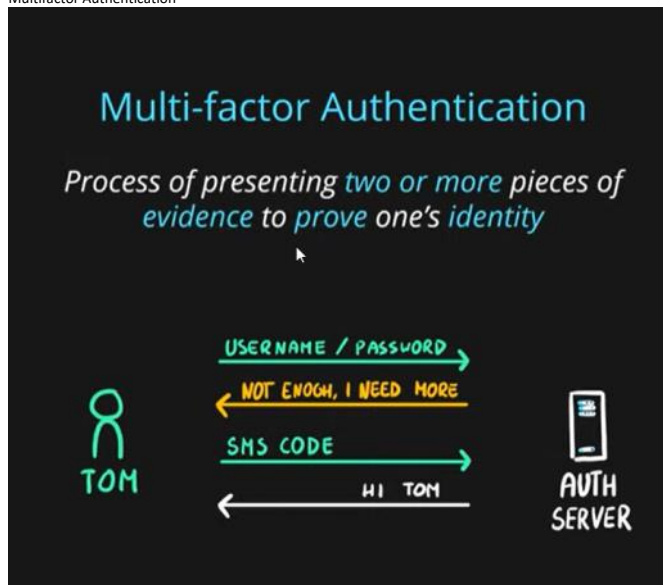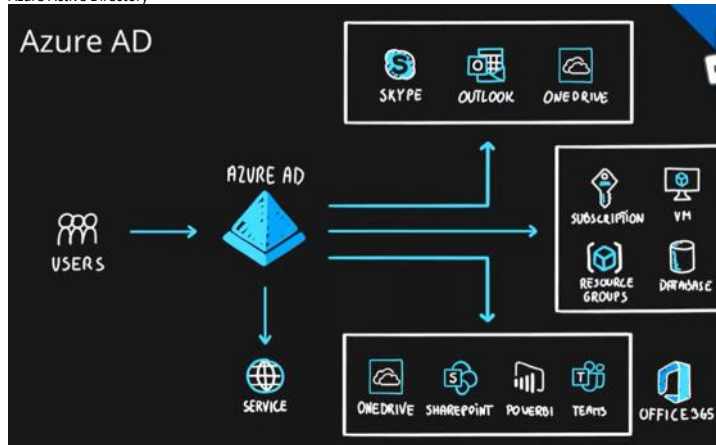
More Details:
Study cheat sheet
Practice Test

Episode 26

Azure Security Centre

Security Centre - Continuously scans the services

Centralized/ Unified Infrastructure and platform security management service

More Details:
Study cheat sheet
Practice Test

Episode 27

Azure Key Vault (PaaS)

Azure Key Vault
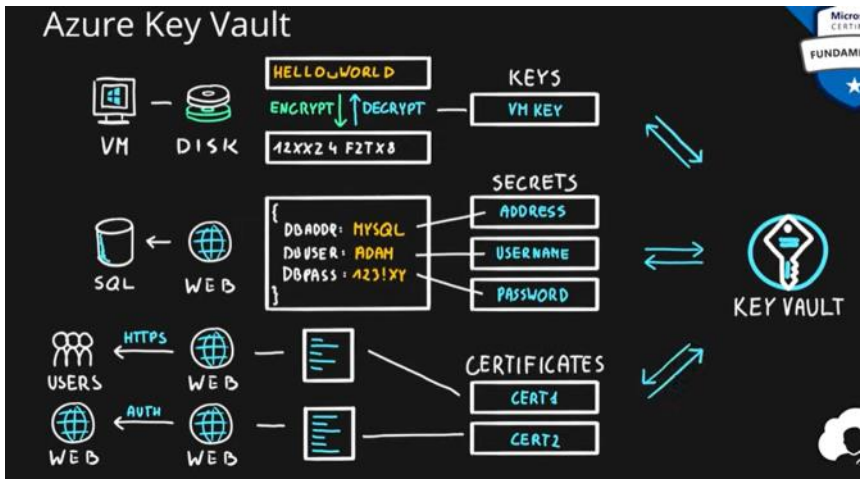
More Details:
Study cheat sheet
Practice Test

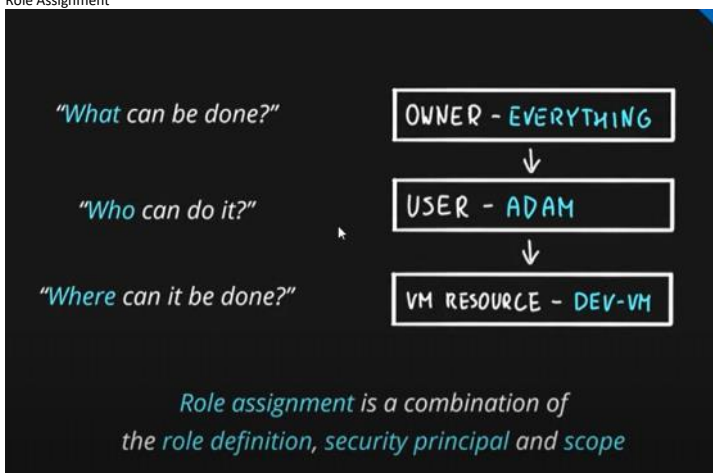Role Based Access Control (RBAC)

Roles
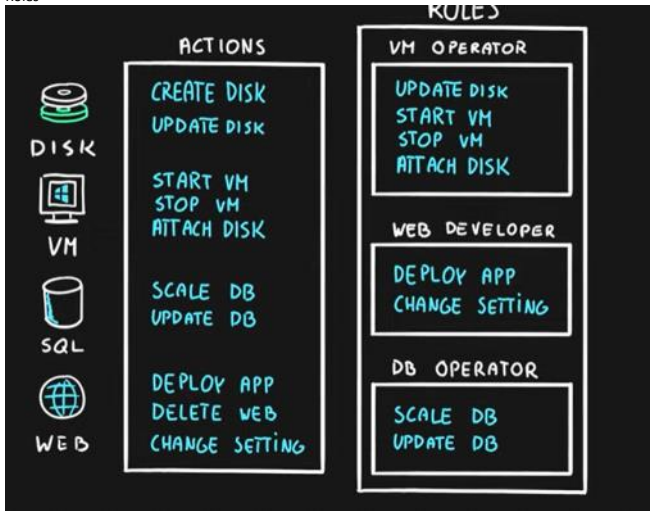
Security Principles
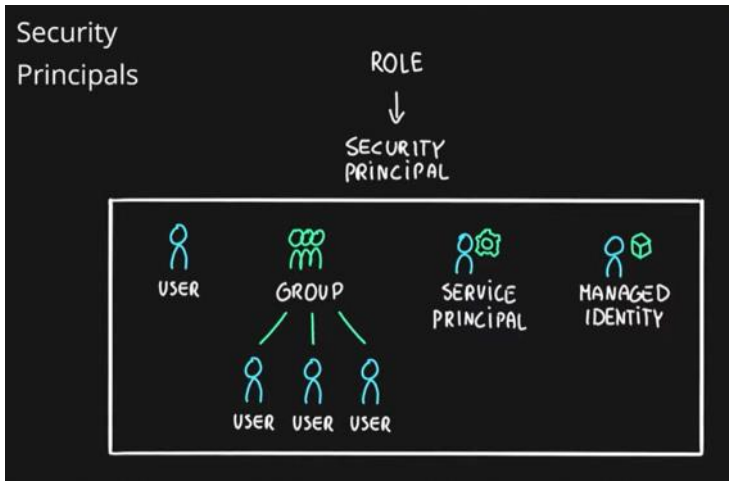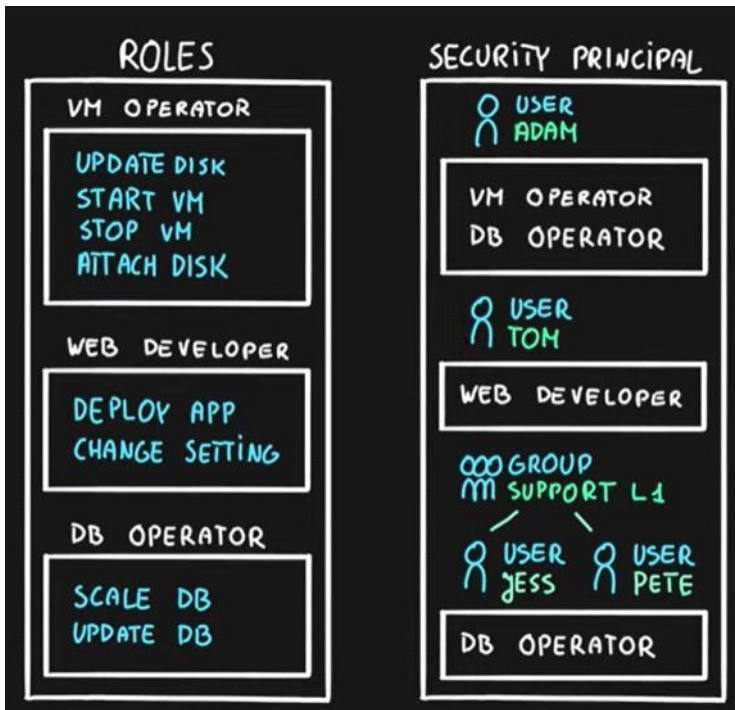
Scopes
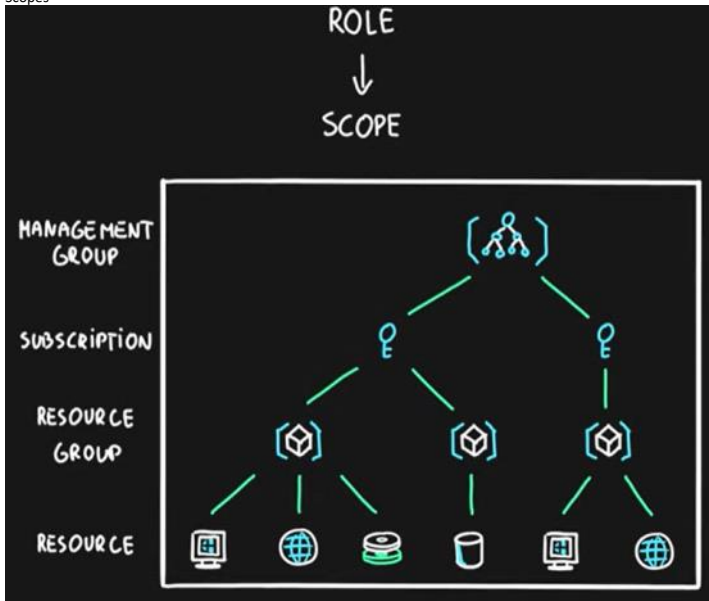
Role Assignment

Role Definition : What can be done?
Security Principle : Who can do it ?

Scope : Where can it be done?

More Details:

Episode 29

Azure Resource Locks
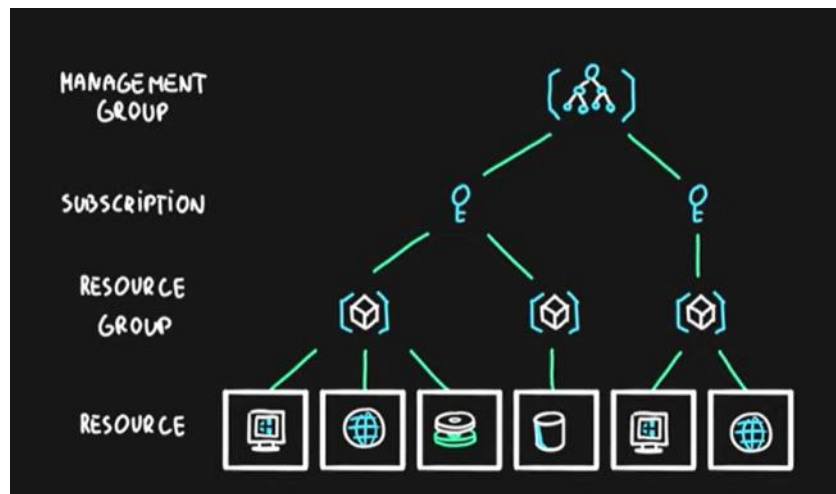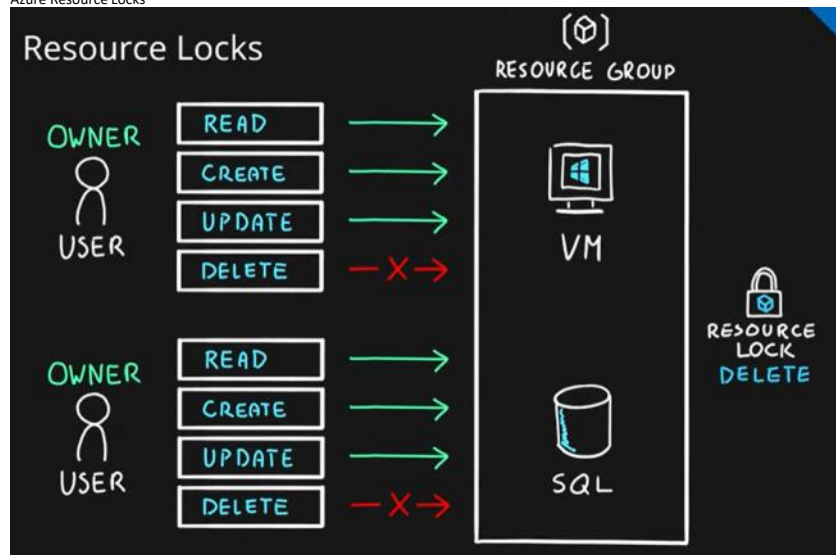
More Details:
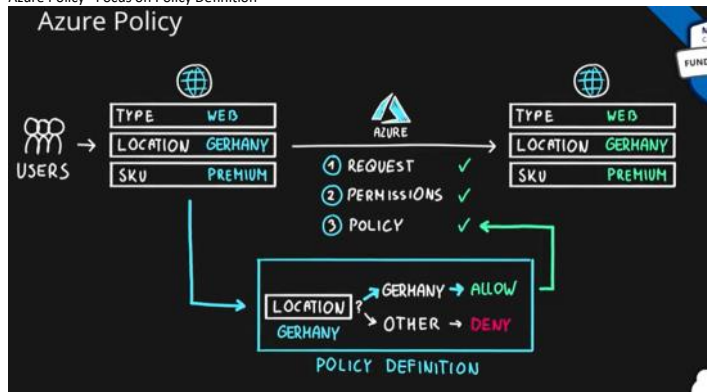
Episode 30

Azure Resource Tags
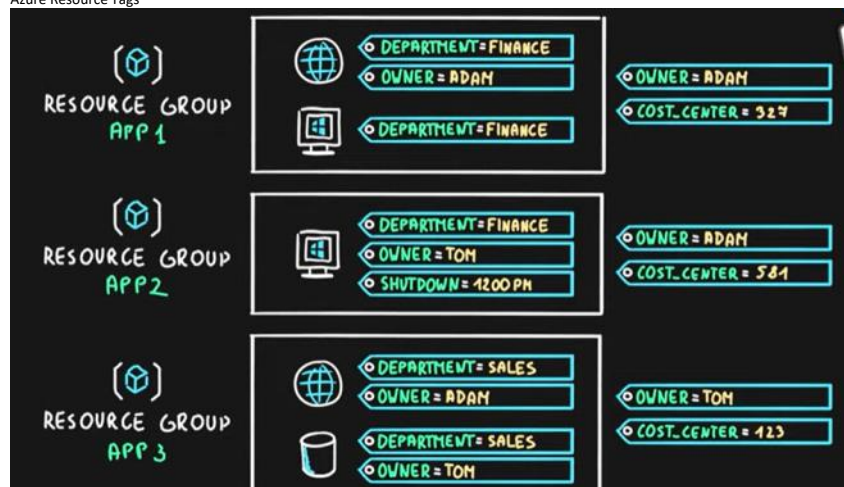
Episode 31

Azure Policy - Focus on Policy Definition

Episode 32

Azure Blueprints
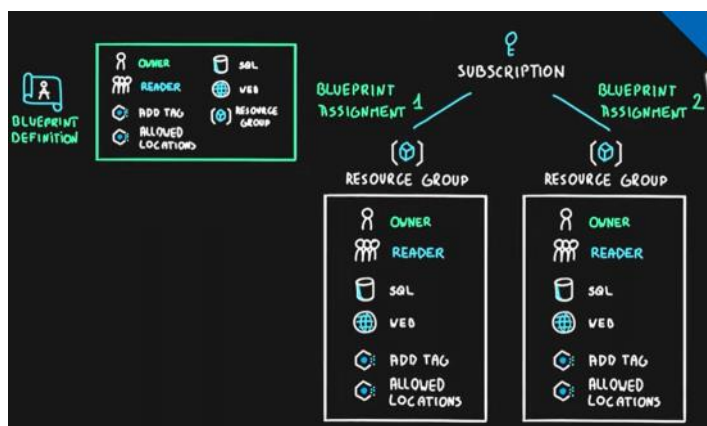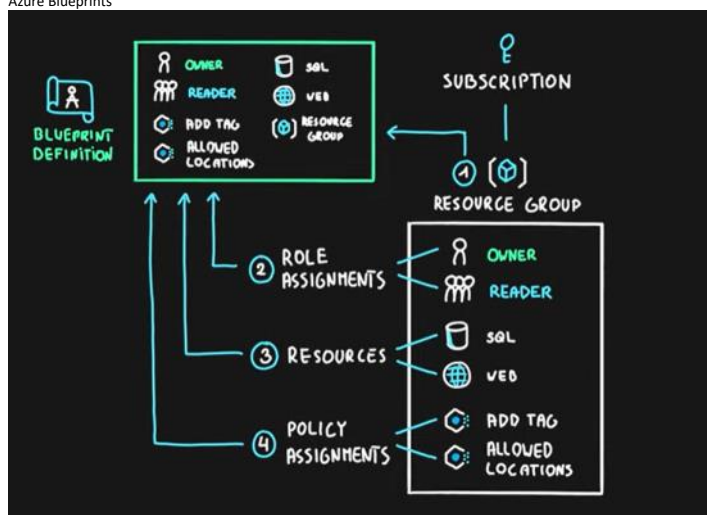
Episode 33

Cloud Adoption Framework for Azure - Leverage cloud in their business

Strategy (Business Justification & Outcome)
- Motivations
- Business Outcomes
- Business Justification
- First Project

Planning (Actionable Plan)
- Digital Estate(5R - Rehost, Refactor, Rearchitect, Rebuild, Replace
- Initial Organization Alignment
- Skills Readiness Plan
- Cloud Adoption Plan

Ready (Prepare Azure Env)
- Azure Setup guide
- Azure Landing zone
- Extend Landing Zone
- Best Practices

Adopt (Implement -> Migrate, Innovate)
- Migrate
  - First Migration
  - Migration Scenarios
  - Best Practices
  - Process Improvements
- Innovate
  - Business Value
  - Innovative Guide
  - Best Practices
  - Process Improvements
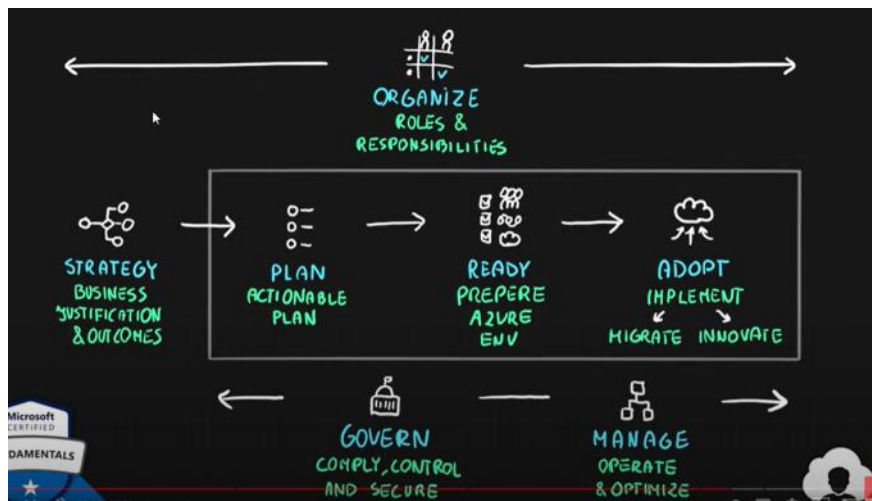
Govern (Comply ,Control and Secure)
- Define governance solutions
- Manage cloud environment

Manage (Operate & Optimize)

More Details:
Study cheat sheet
Practice Test

Episode 34

Core tenants of Security ,Privacy, compliance

Microsoft Privacy Statement
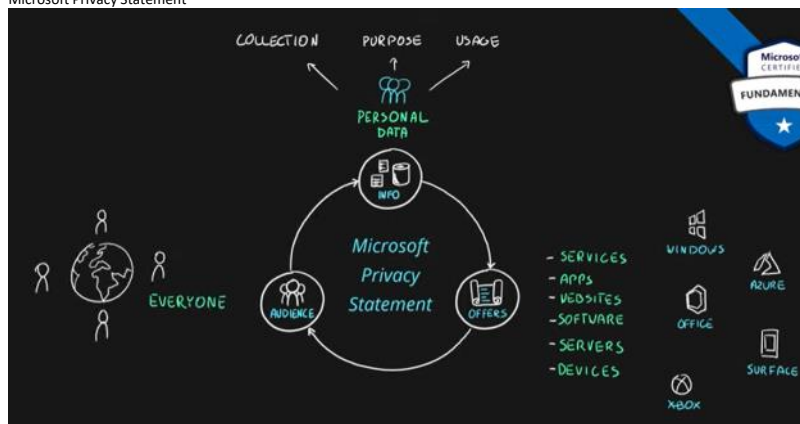
Online Services Terms
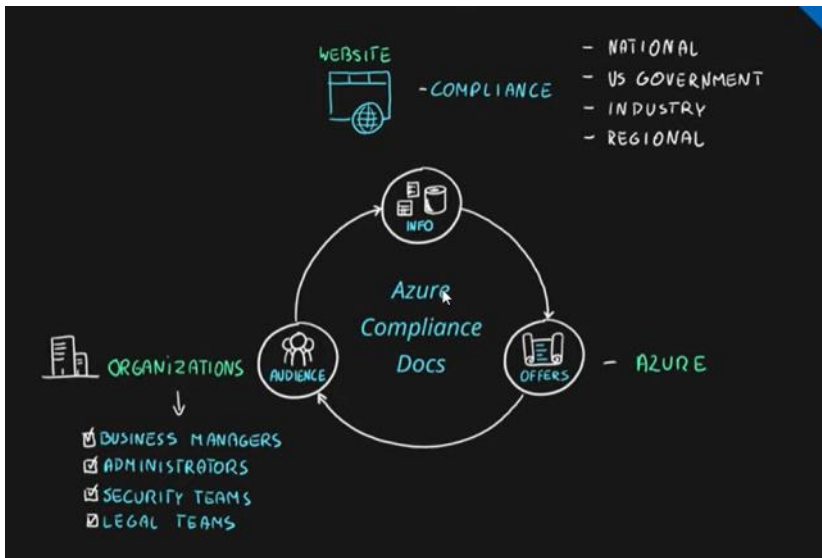
Data Protection Addendum

Trust Centre

Azure Compliance Docs

More Details:
Study cheat sheet
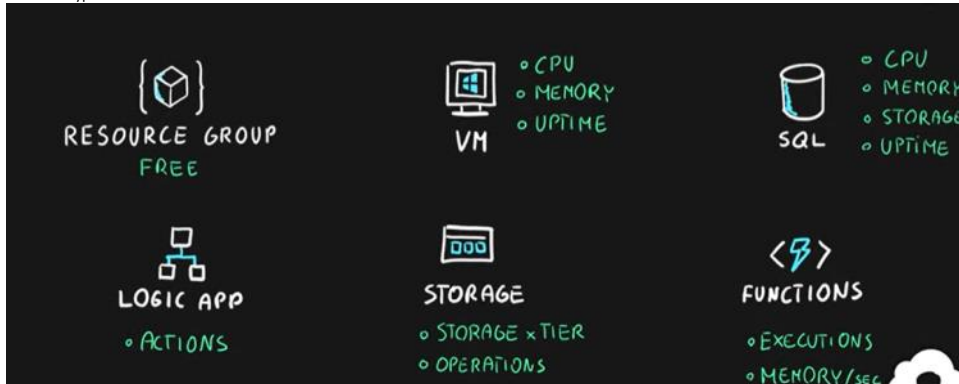Practice Test

Day 4 - 07/07/2021 - Azure Pricing & Support

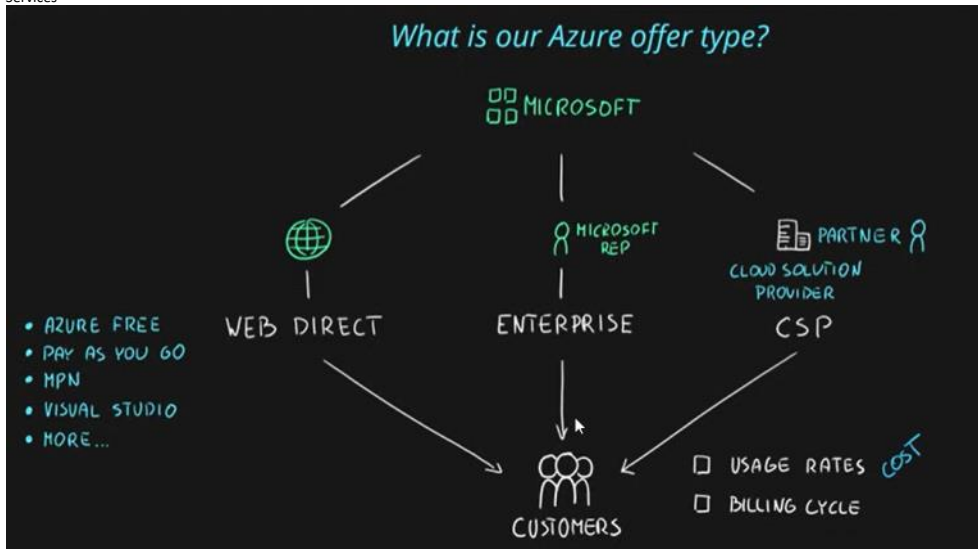Wednesday, July 7, 2021   11:58 PM

Cost Affecting Factors

- Resource Types
- Services
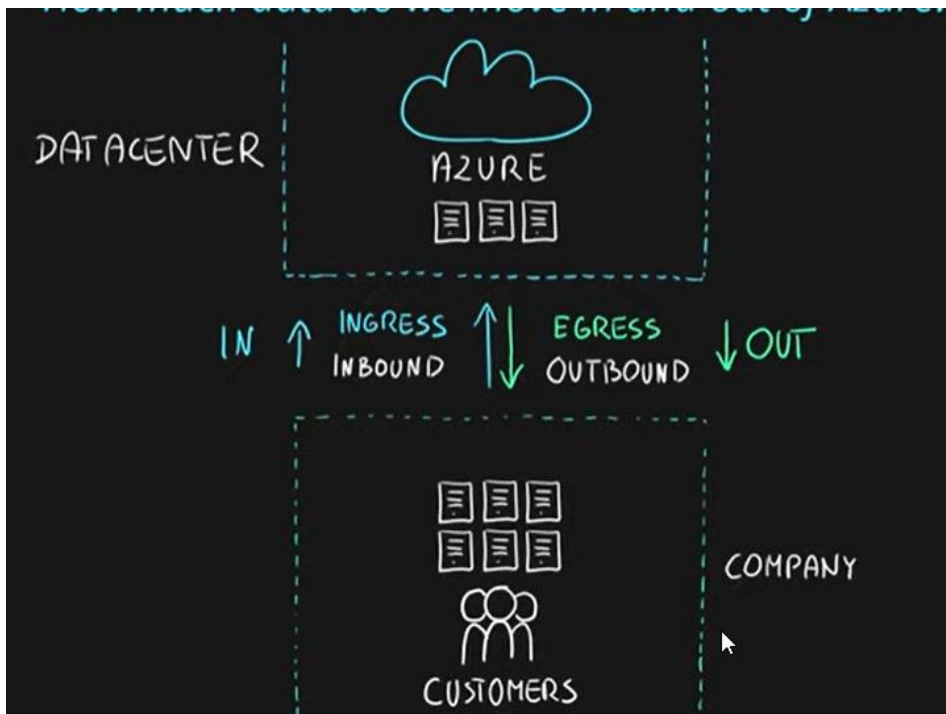- Locations
- Ingress and Egress traffic

Resource Types

Services

Location

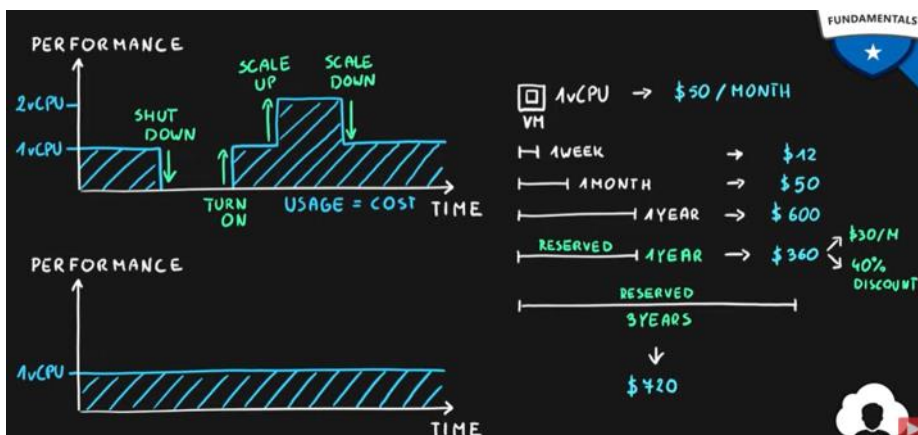Bandwidth/Traffic

More Details:
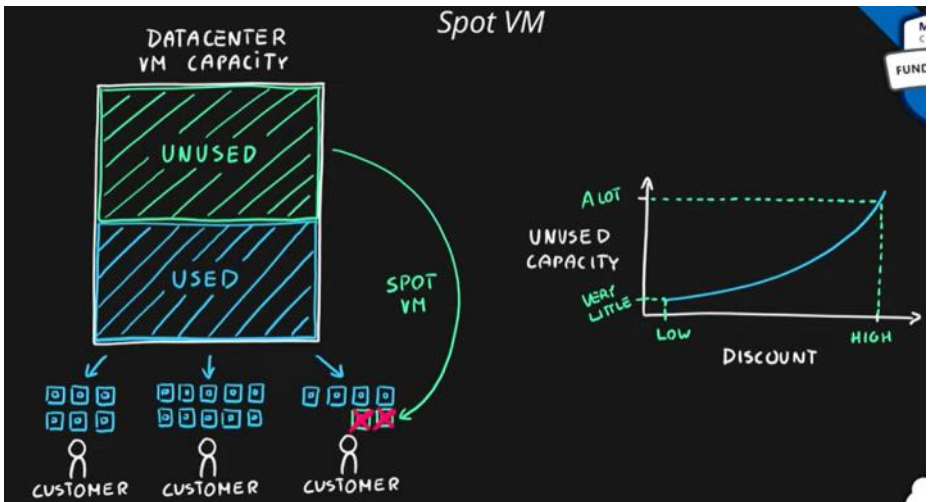Study cheat sheet
Practice Test

Episode 36

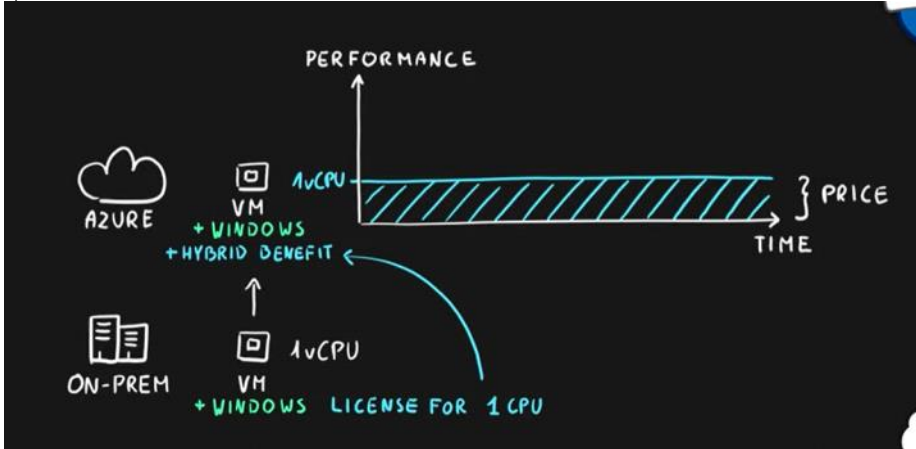Cost Reduction Methods
- Reservations
- Hybrid Benefit
- Spot VM, Pricing & TCO

Reservations
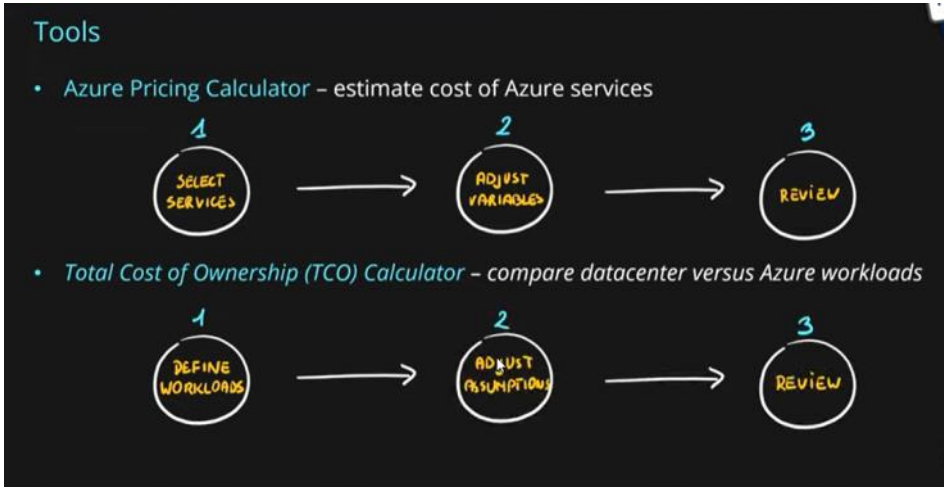- Reserved instances
- Reserved capacity
- Software Plans

Spot VM

Hybrid use Benefit

Pricing Calculation & Total Cost Ownership (TCO) Calculator

More Details:
Study cheat sheet
Practice Test

Episode 37

Azure Cost Management

Minimizing Costs

More Details:
Study cheat sheet
Practice Test

SLA and Composite SLA

Azure Service Level Agreement

Composite SLA

More Details:
Study cheat sheet
Practice Test

Service Lifecycle in Azure

- Public Preview and General Availability
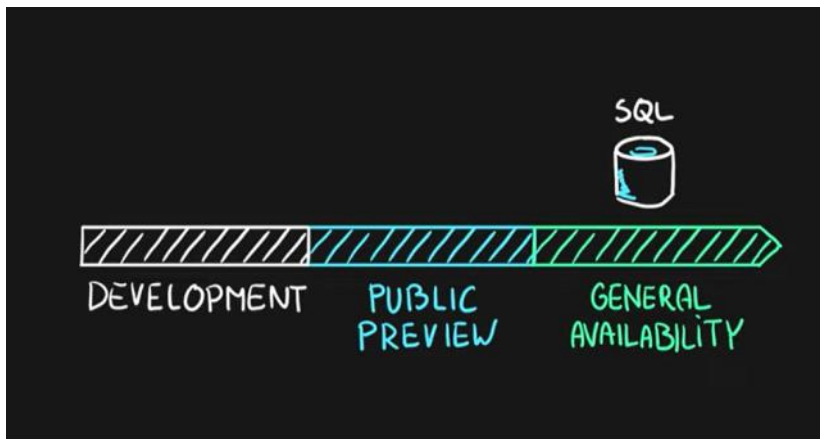
Public Preview - Beta Stage, Testing
General Availability - Production Release

More Details:
Study cheat sheet
Practice Test