

Classroom Training - Days

Azure: 10 to 12 Hours

Azure DevOps: 6 to 8 Hours

Data Factory: 4 to 6 Hours

Data Bricks: 6-8 Hours

Expectations for successful training

Participants and the trainer should present the class as per the training schedule and be on time

Participants should focus on the labs considering the time allocated to each lab.

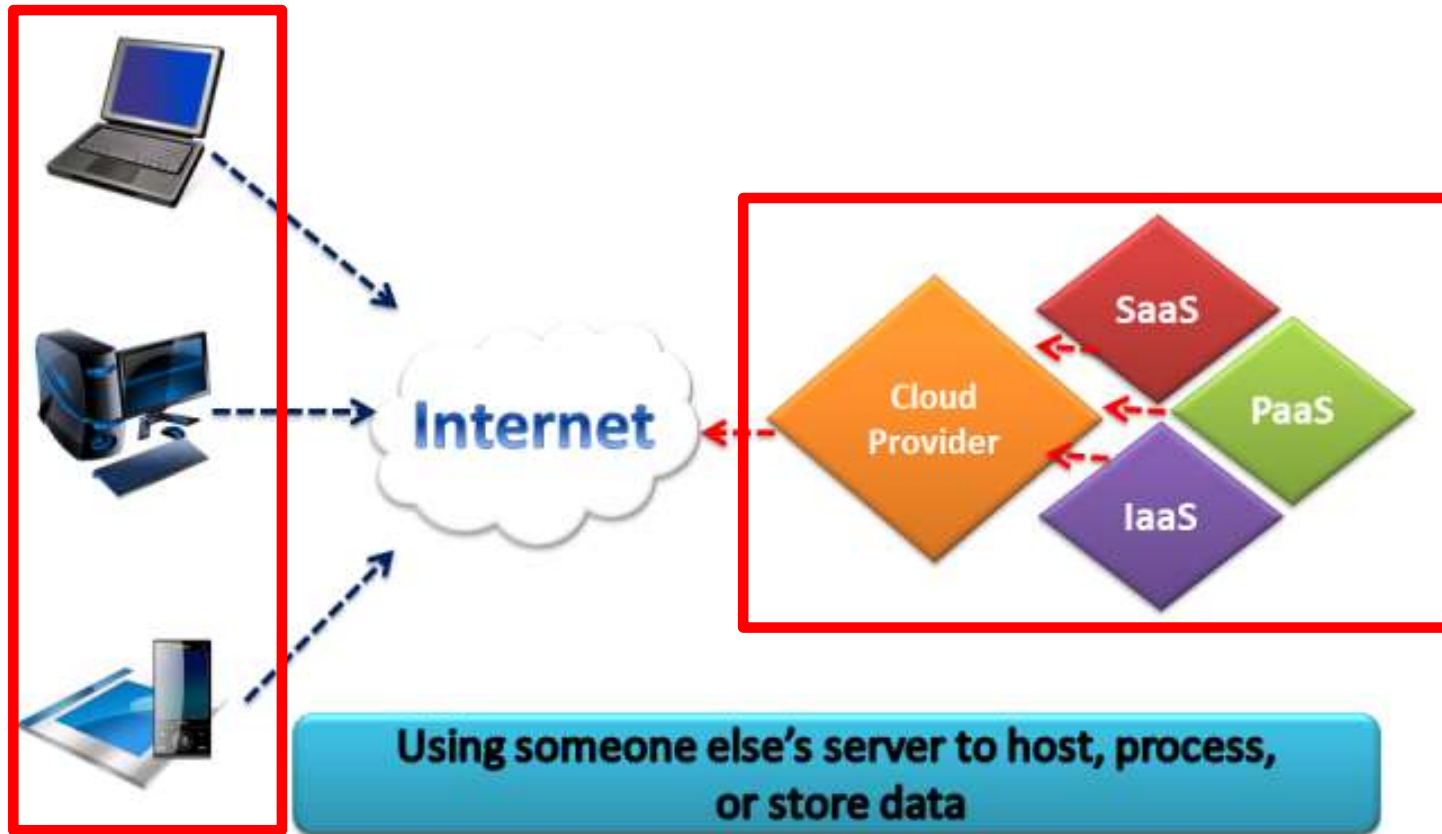
Since participants takes their time and the speed of each may vary, they need to give some extra efforts during or after the training and trainer should be available for the same on request

Trainer will also provide the hands-on material separately and participants can use that material to do the hands-on offline as well.

Cloud Computing

Duration: 10-20 Minutes

What is Cloud?



Characteristics

On-demand self-service

- Consumer can provision resources as needed automatically
- No human interaction

Broad network access

- Are available over network

Resource pooling

- The provider's resources are pooled to serve multiple consumers

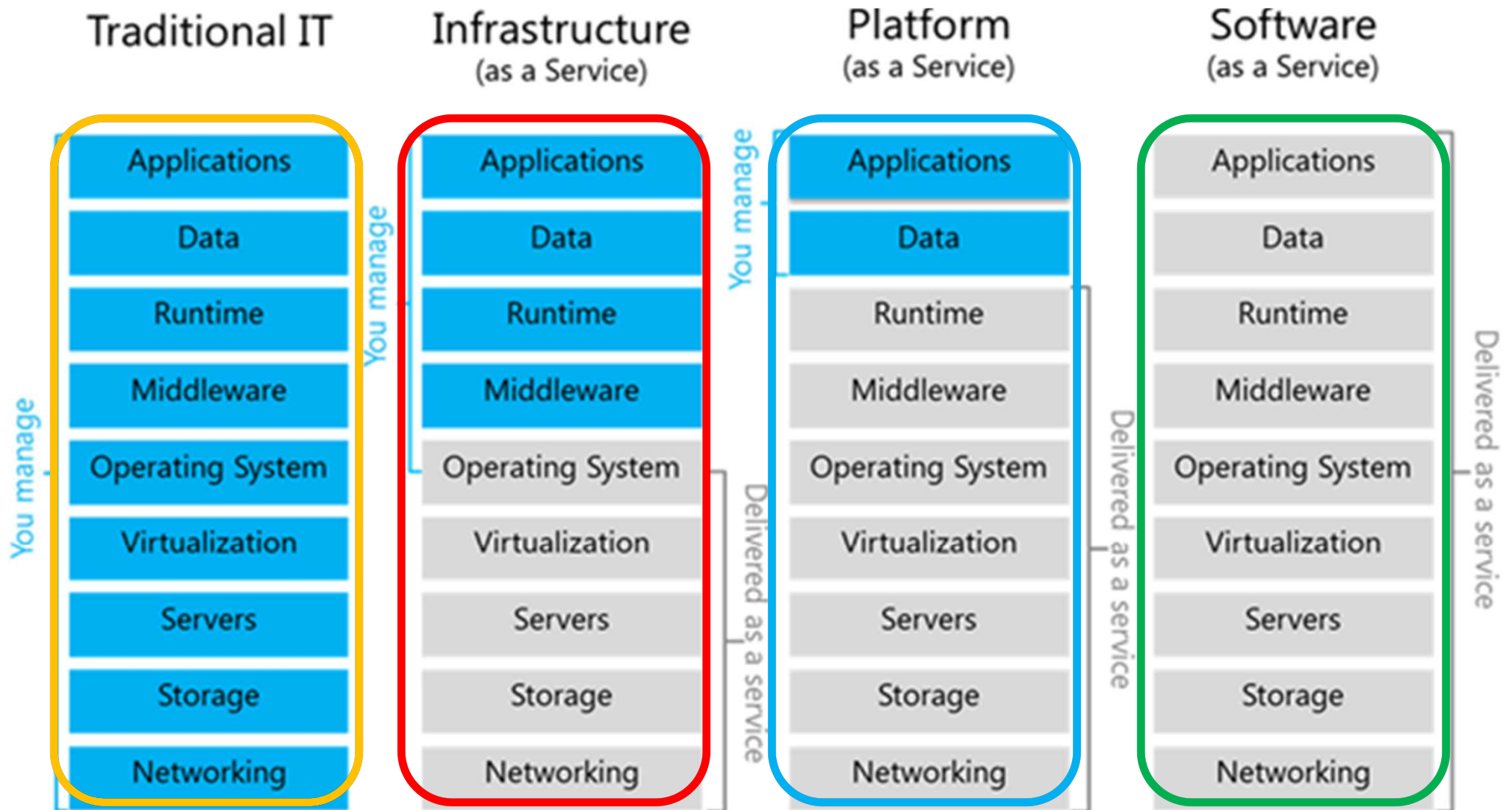
Measured Service

- Resource usage can be monitored and controlled providing transparency.
- Used for billing

Rapid elasticity

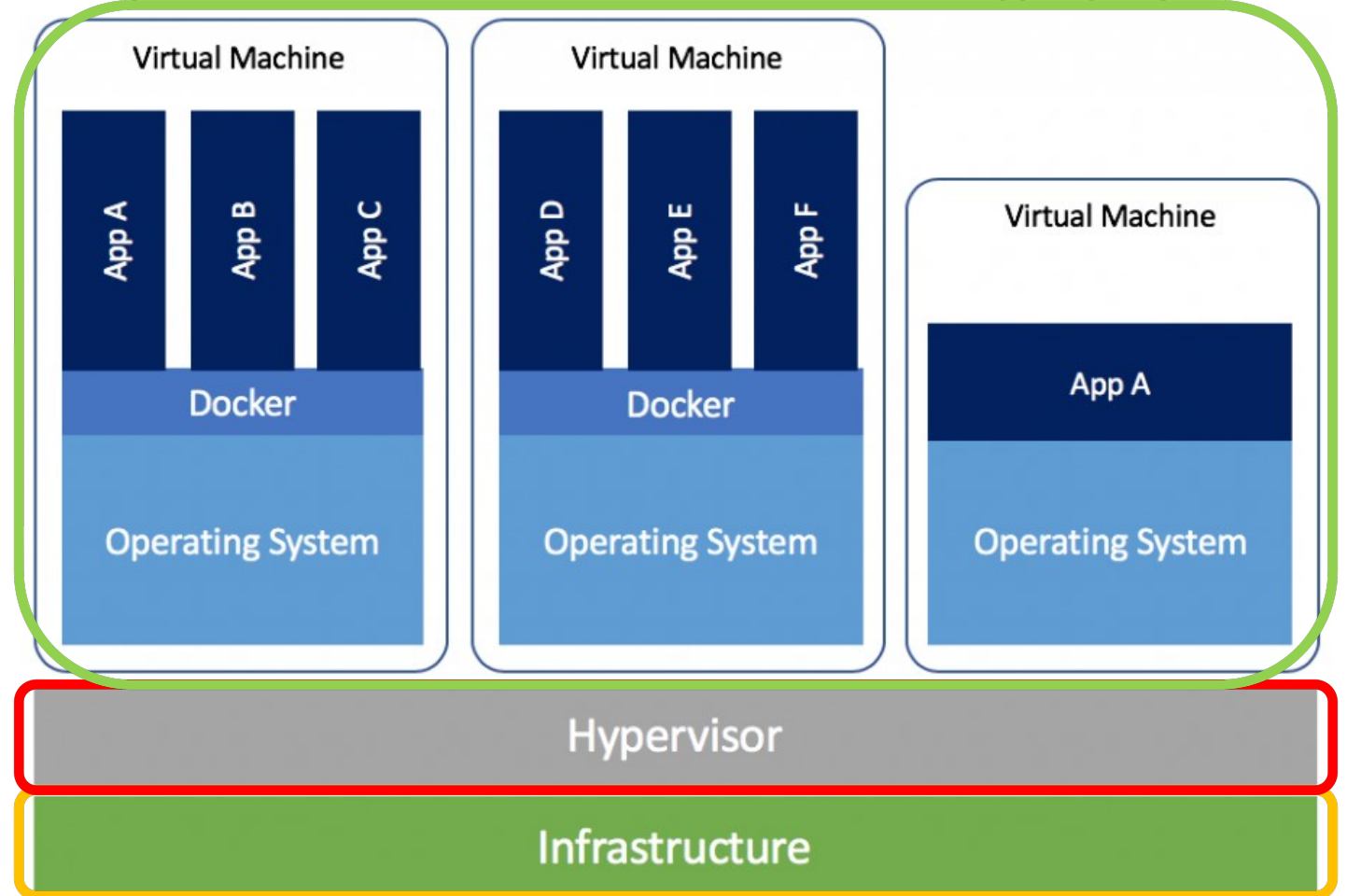
- Scale rapidly outward and inward

Cloud Services Deployment Models



Virtual Machines

- VM technology allows multiple virtual machines to run on a single physical machine



Microsoft Azure Fundamentals

Duration: 40-60 Minutes including labs

Introduction of Microsoft Azure

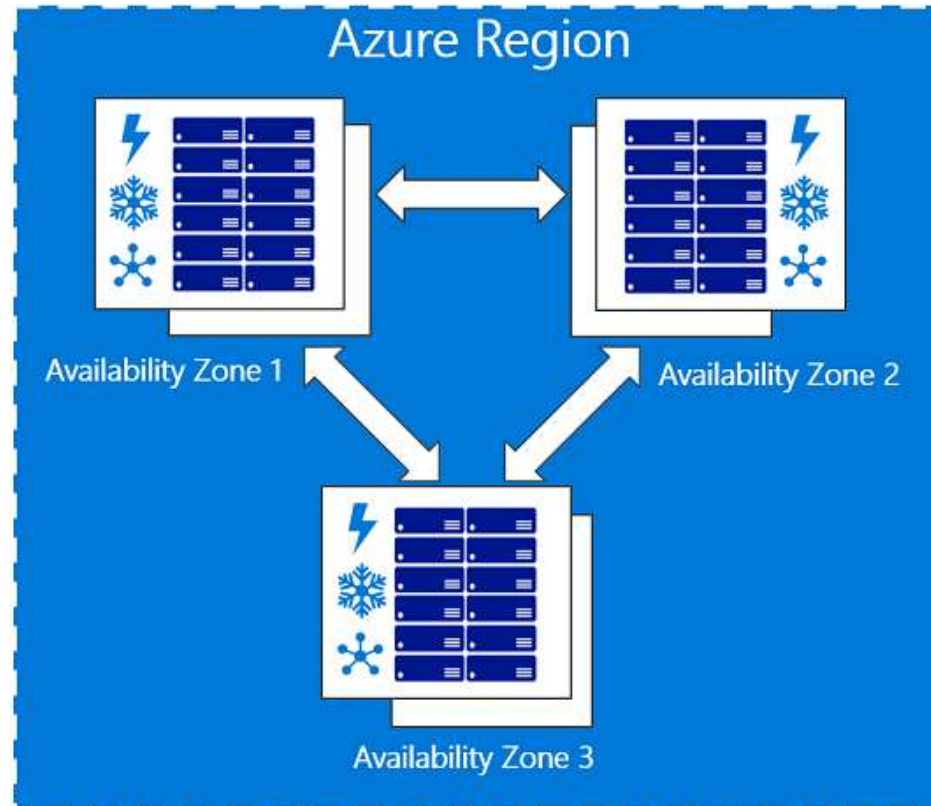
- Microsoft's public cloud platform
- Azure offers a large collection of services
 - PaaS
 - IaaS
 - managed database service capabilities



Concept of Region & Availability Zone



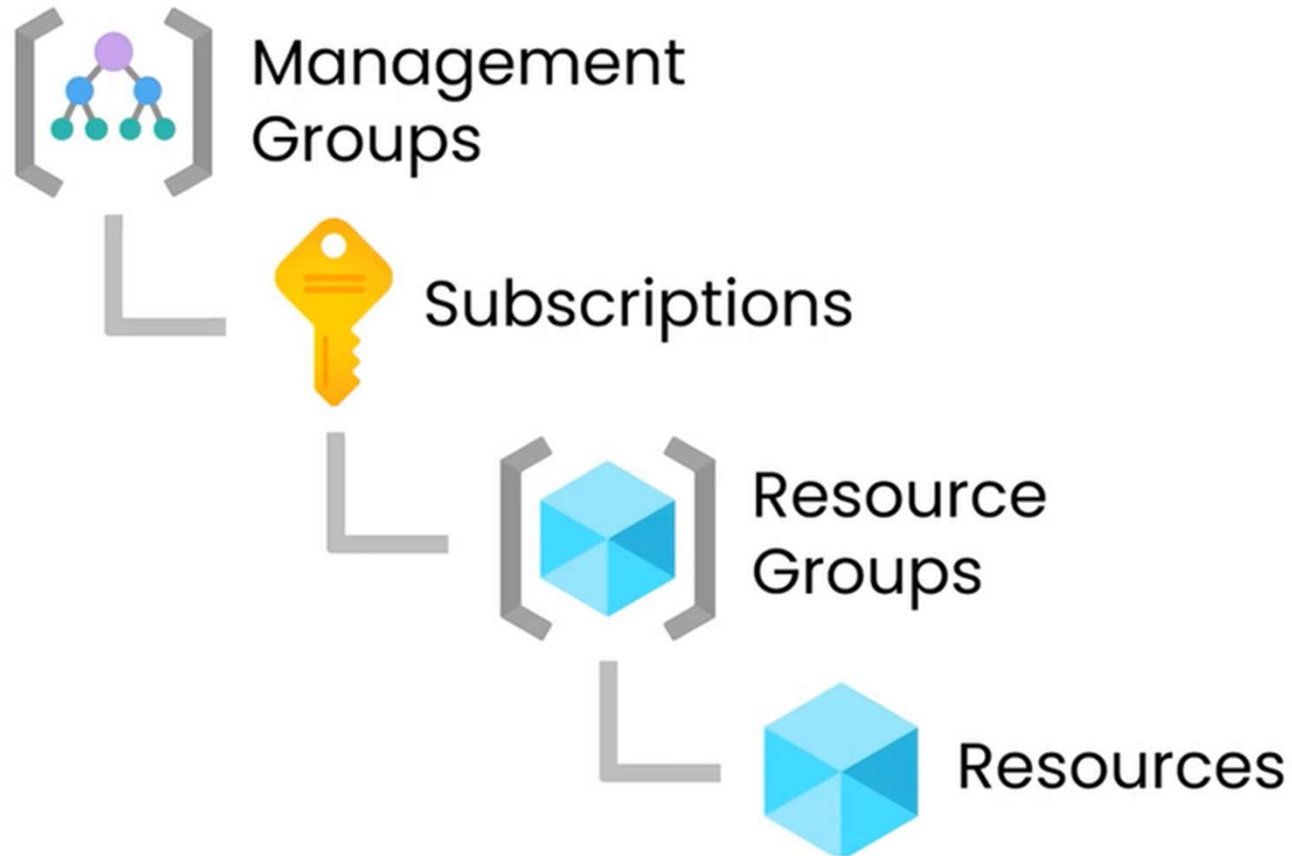
Concept of Region & Availability Zone



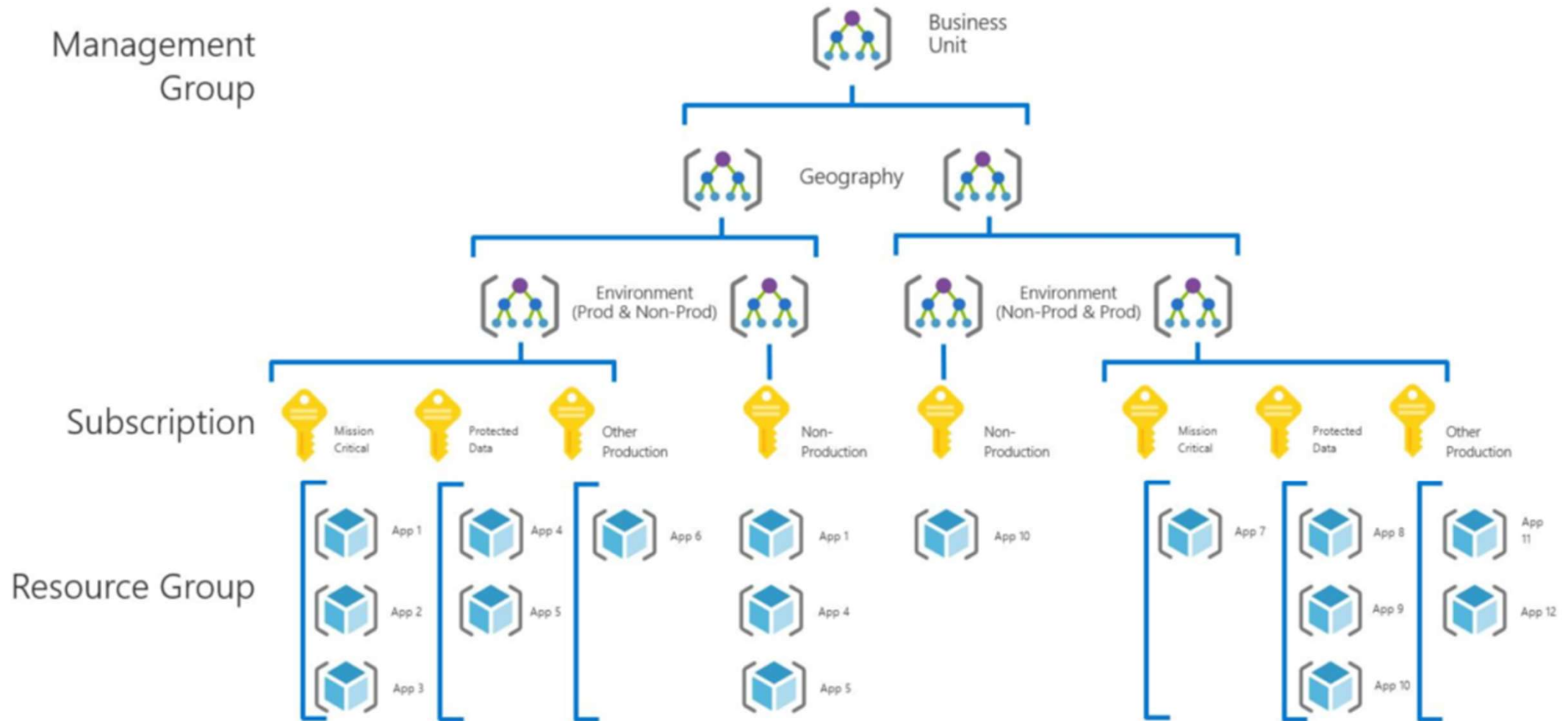
Azure Services



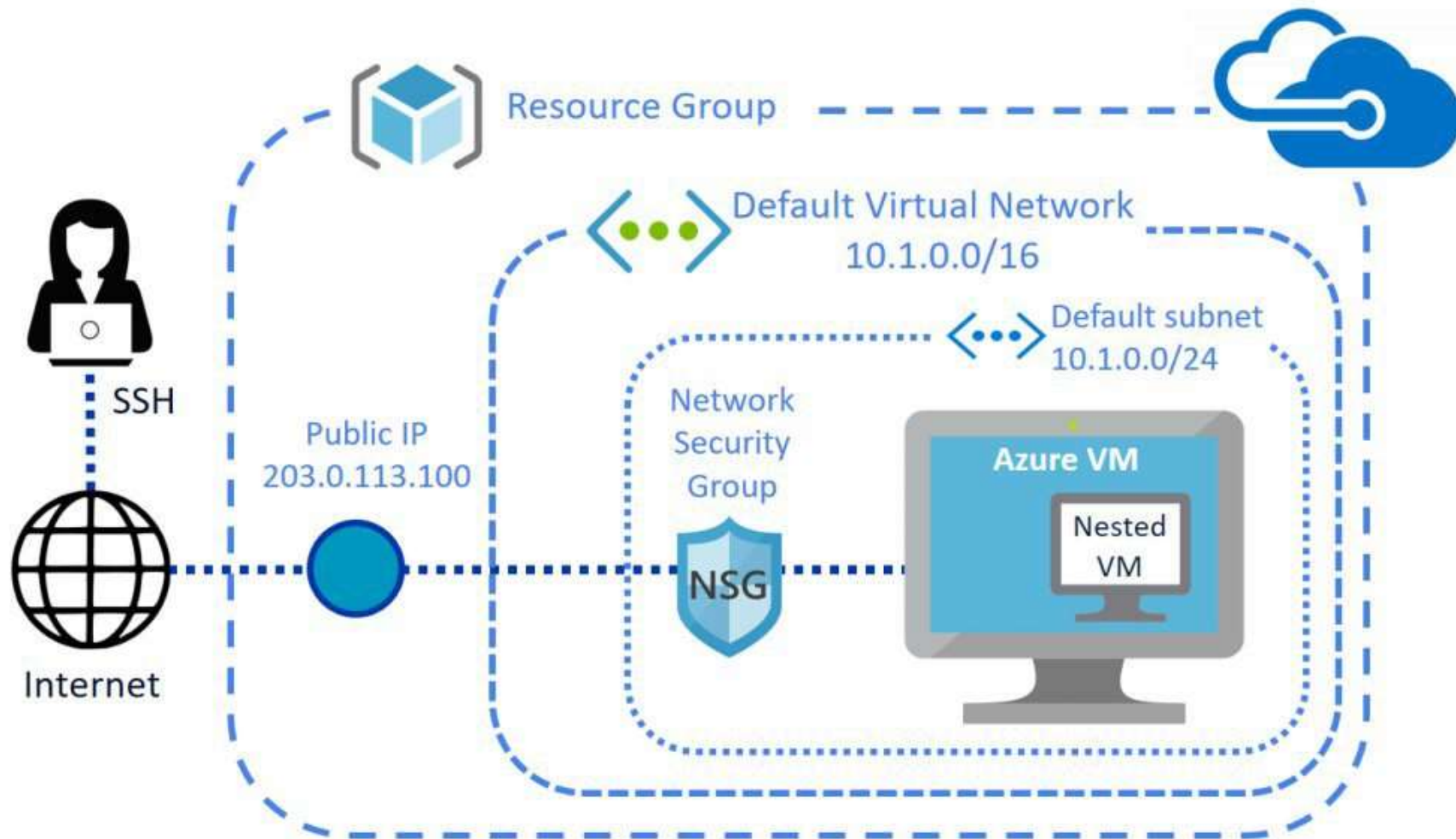
Concept of Resource Group



Concept of Resource Group



Introduction of Azure Virtual Machine



Lab: Planning and implementing VM

Lab: Creating virtual Machine using Portal

- Duration: 10 minutes

Lab: Creating virtual Machine using CLI

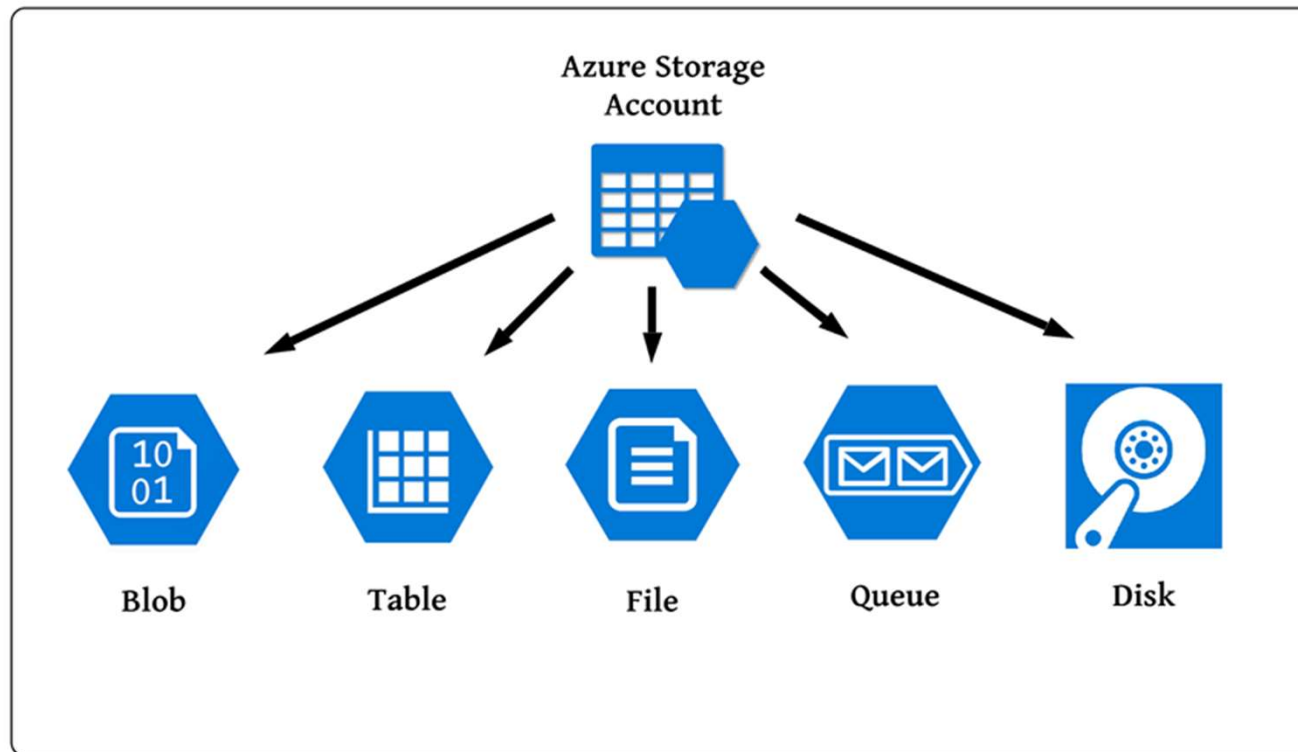
- Duration: 10 minutes
- Commands
 - `az group create --name rgAtinGupta --location eastus`
 - `az vm create --resource-group rgAtinGupta --name vmAtinGuptaCLI --image win2016datacenter --public-ip-sku Basic --admin-username azureuser`

Azure Storage Account

Duration: 40-60 Minute with Labs

Introduction to Storage Account

- Provides a unique namespace in Azure for data



Core Storage Services

Azure Storage Account Services

Blobs



Block: Text or binary data (.log, .exe, .jpg, etc.).
Up to 200GB.

Page: Optimized for disks (.vhd). Supports random read-write. Up to 1TB.

Append Blob: Writes to end of the blob (4MB max) up to 50k times (~195GB)

File Shares



Supports SMB 3.0 protocol.

Can be accessed like a traditional file share.

Share files between multiple Virtual Machines.

A single file share can be up to 5TB.

Tables



NoSQL storage of structured data (entities).

Key/value storage.

A single entity can have up to 255 properties and be up to 1MB.

Queues



Durable messaging.

Provides asynchronous communication between application tiers and components.

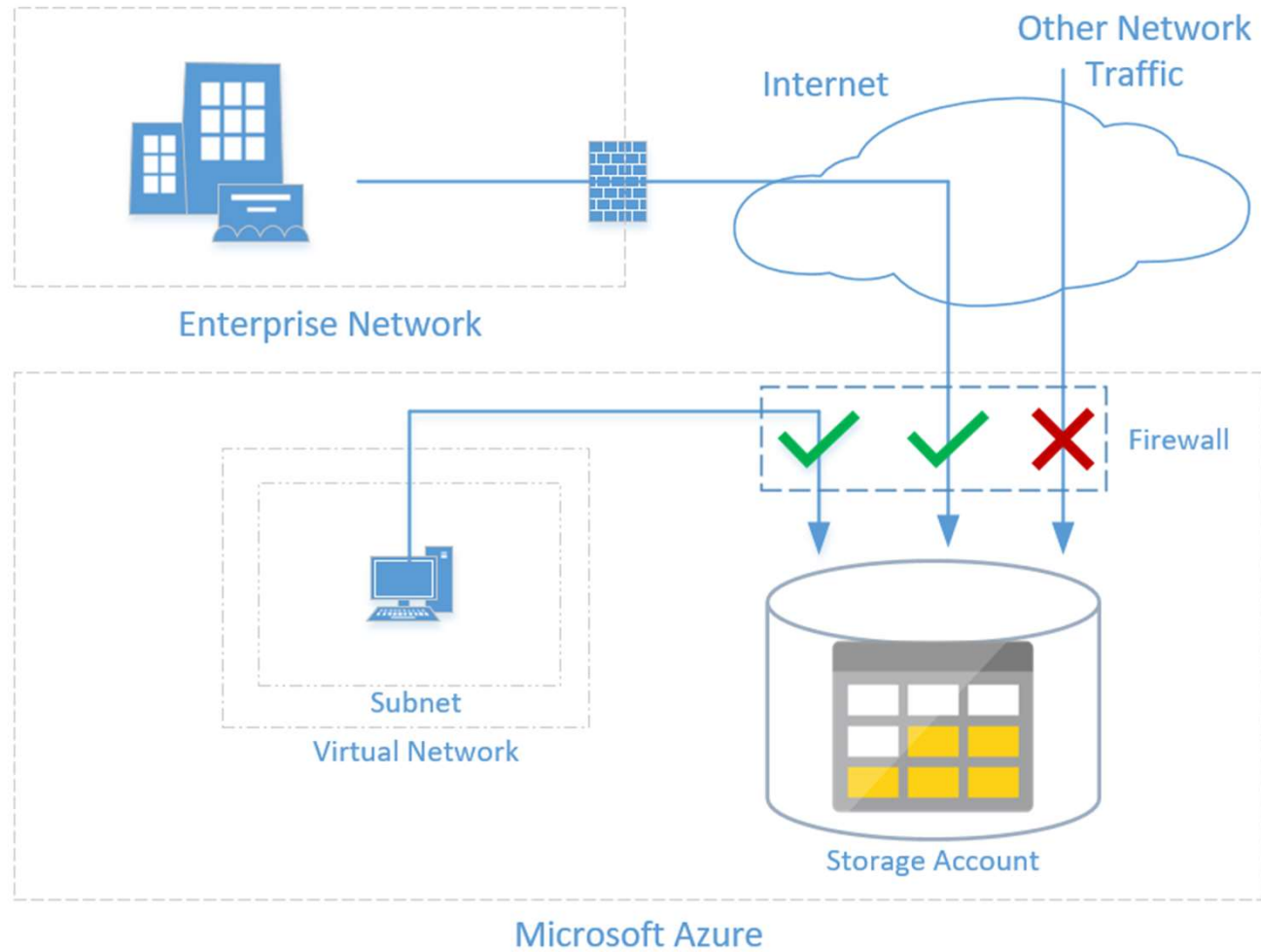
A single message can be up to 64KB.



Types of Storage Accounts

Storage Account Type	Supported Services	Supported Performance Tiers	Replication Options
BlobStorage	Blob (block blobs and append blobs only)	Standard	LRS, GRS, RA-GRS
General-purpose V1	Blob, File, Queue, Table, and Disk	Standard premium	LRS, GRS, RA-GRS
General-purpose V2	Blob, File, Queue, Table, and Disk	Standard premium	LRS, GRS, RA-GRS, ZRS, ZGRS (preview), RA-ZGRS (preview)
Block blob storage	Blob (block blobs and append blobs only)	premium	LRS, ZRS (limited regions)
FileStorage	Files only	premium	LRS, ZRS (limited regions)

Securing the Data



Lab : Planning and implementing storage

Lab: Creating and manage Storage Accounts

- Duration: 5 minutes

Lab: Create and manage containers

- Duration: 10 minutes

Lab: Create & manage Blobs, Queues, Files & Tables

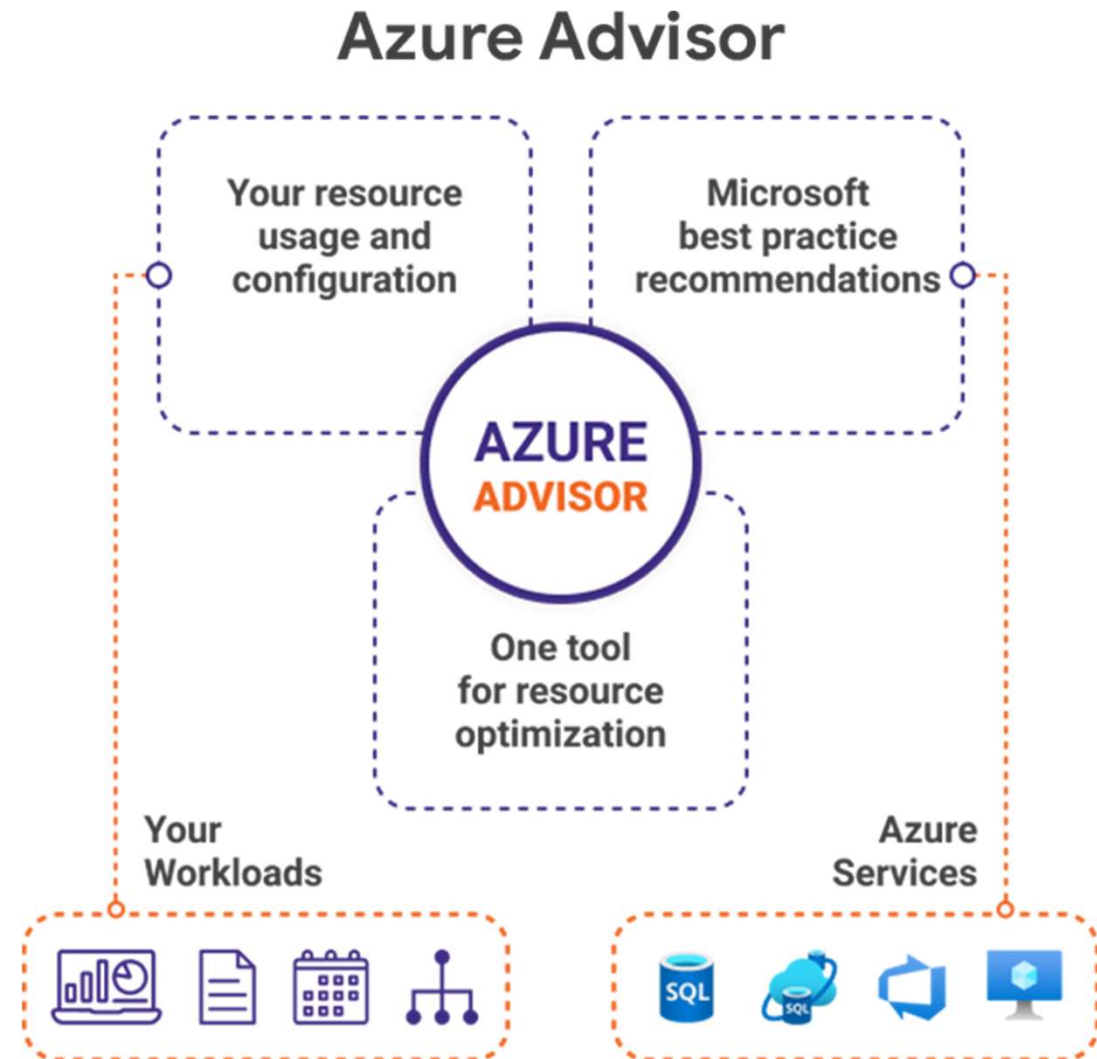
- Duration: 10 minutes

Azure Management and Governance

Duration: 2-3 hours including labs

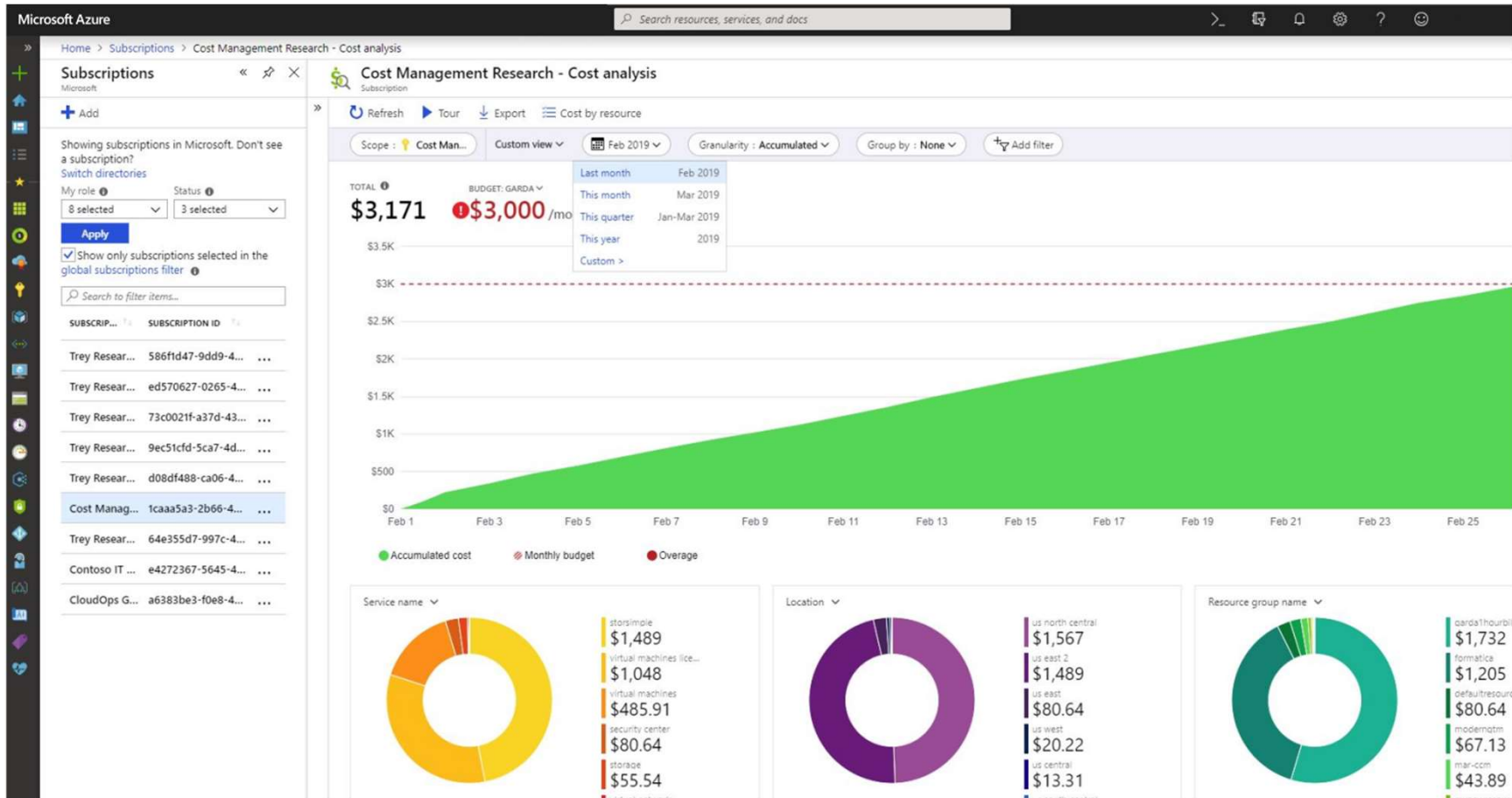
Concept of Azure Advisor

- Analyses configurations and usage telemetry
- Offers recommendations to help to optimise Azure resources
- For reliability, security, operational excellence, performance and cost



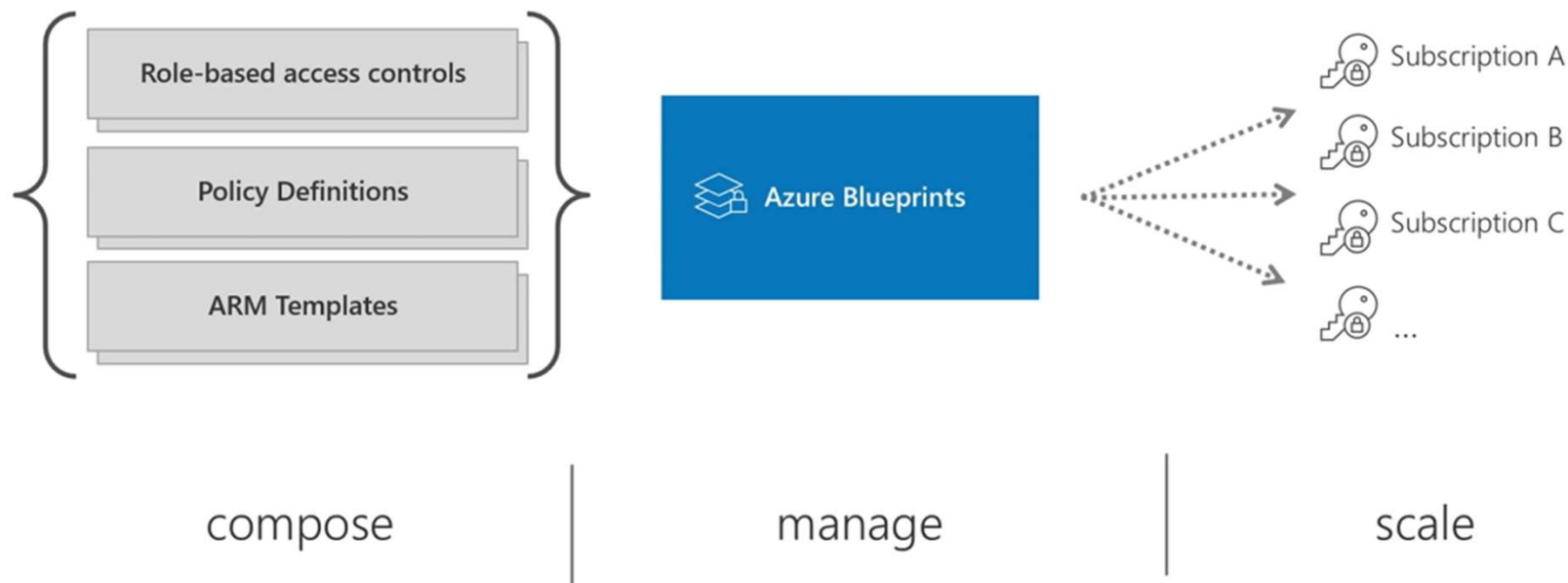
Cost management

- Provides information about your overall costs and utilization



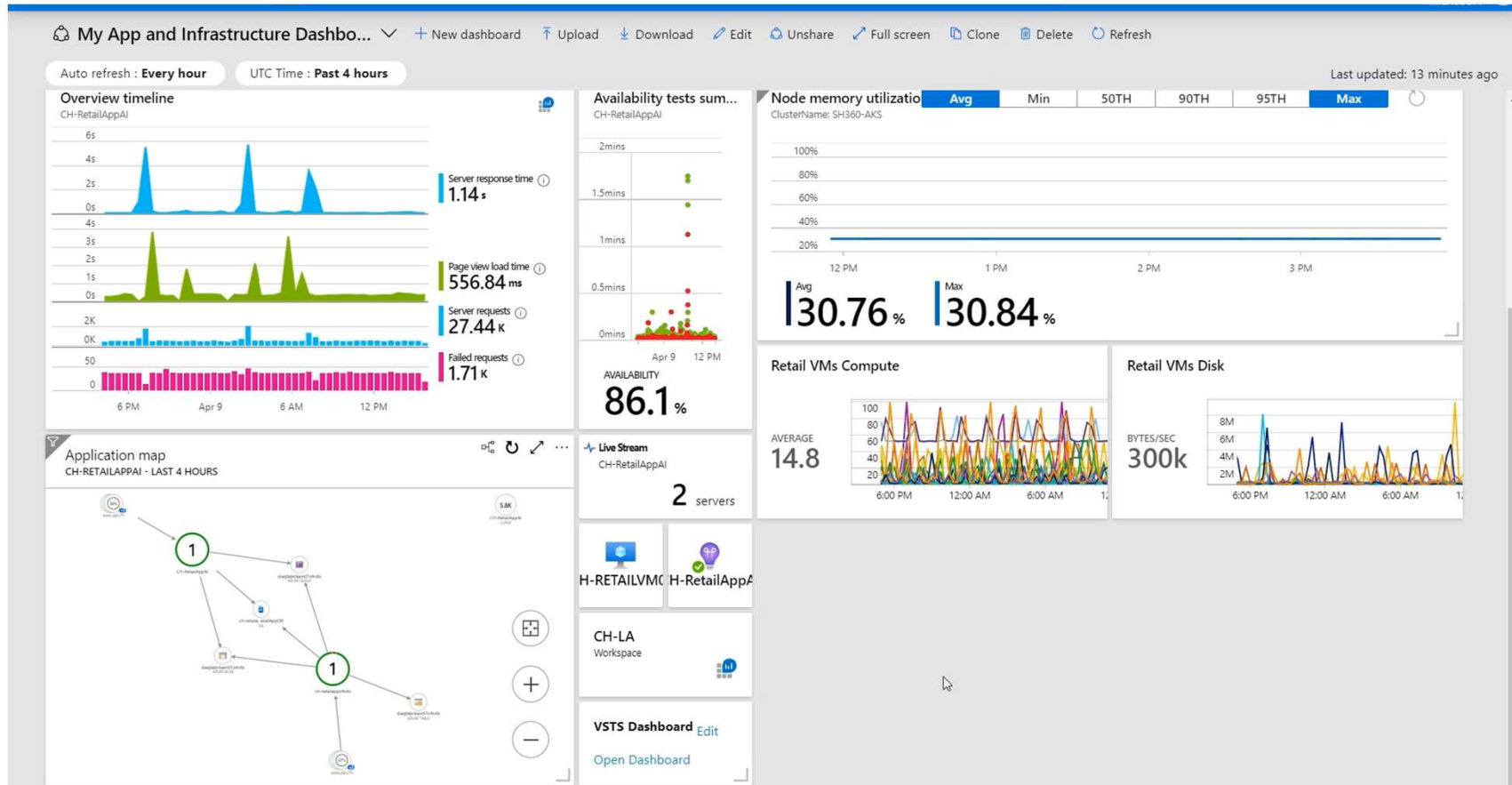
Azure Blueprints

- To design and deploy a repeatable collection of Azure resources
- Adhere to certain requirements and standards
- Can quickly build and deploy new environments that are always compliant with organizational standards



Azure Dashboard

- Focused and organized view of your cloud resources in the Azure portal.



Lab : Azure Management and Governance

Lab: Azure Advisor

- Duration: 10 minutes
- Sign in to the Azure portal.
- In the left pane, click Advisor. ...
- The Advisor dashboard will display a summary of your recommendations for all selected subscriptions. ...
- To get recommendations for a specific category, click one of the tabs: Reliability, Security, Performance, or Cost.

Lab: Understand concept of Cost management & billing

- Duration: 10 minutes

Lab: Implementation of Azure Blueprints

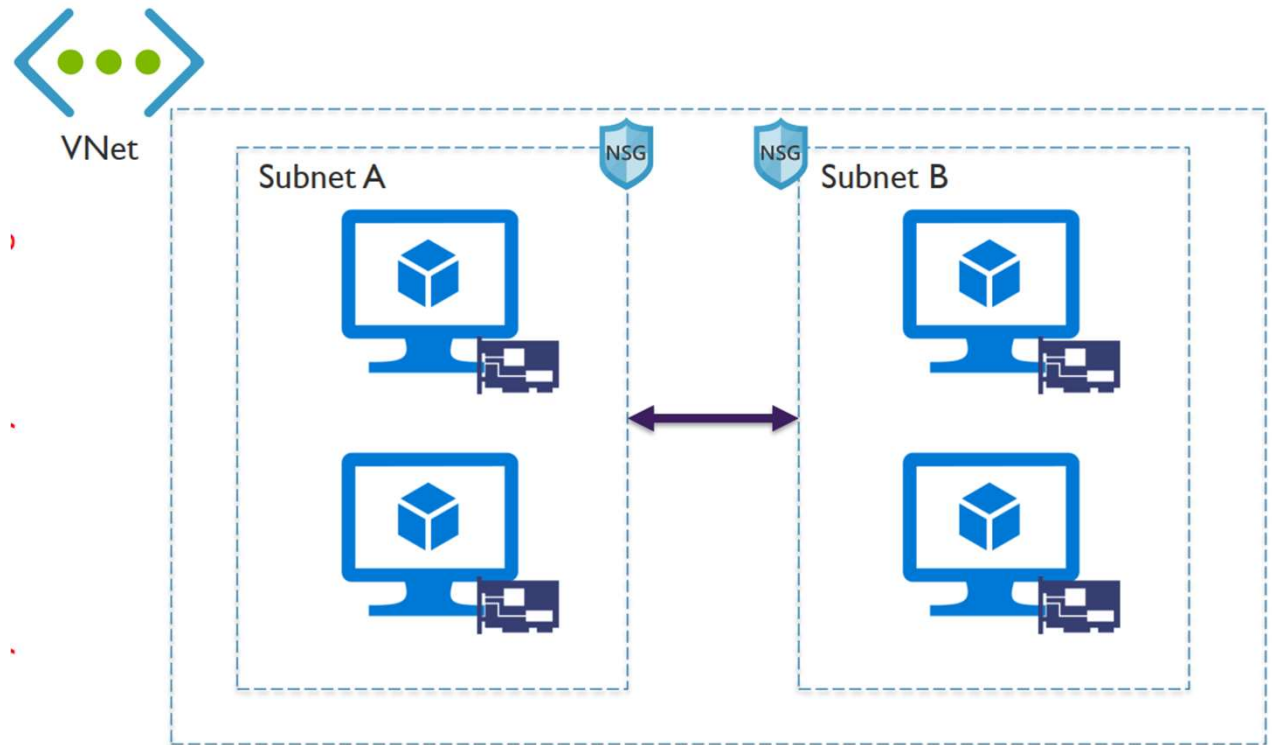
- Duration: 30 minutes

Azure Networking

Duration: 2 to 3 hours including Labs

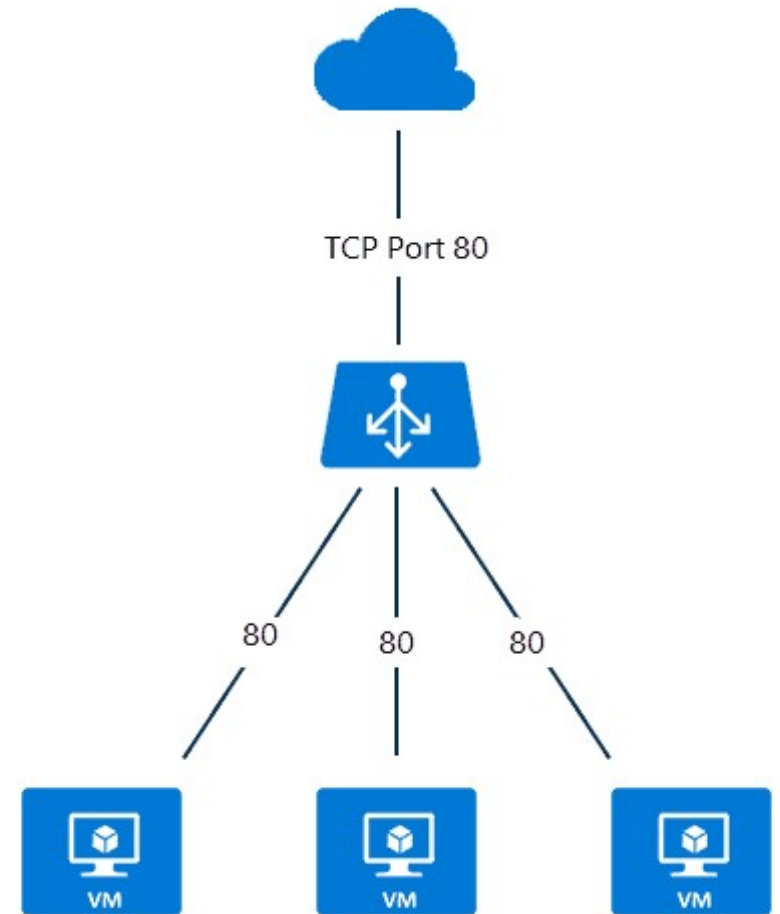
Introduction of VNet and Security Group

- Fundamental building block for private network in Azure
- Enables many types of Azure resources to securely communicate with each other



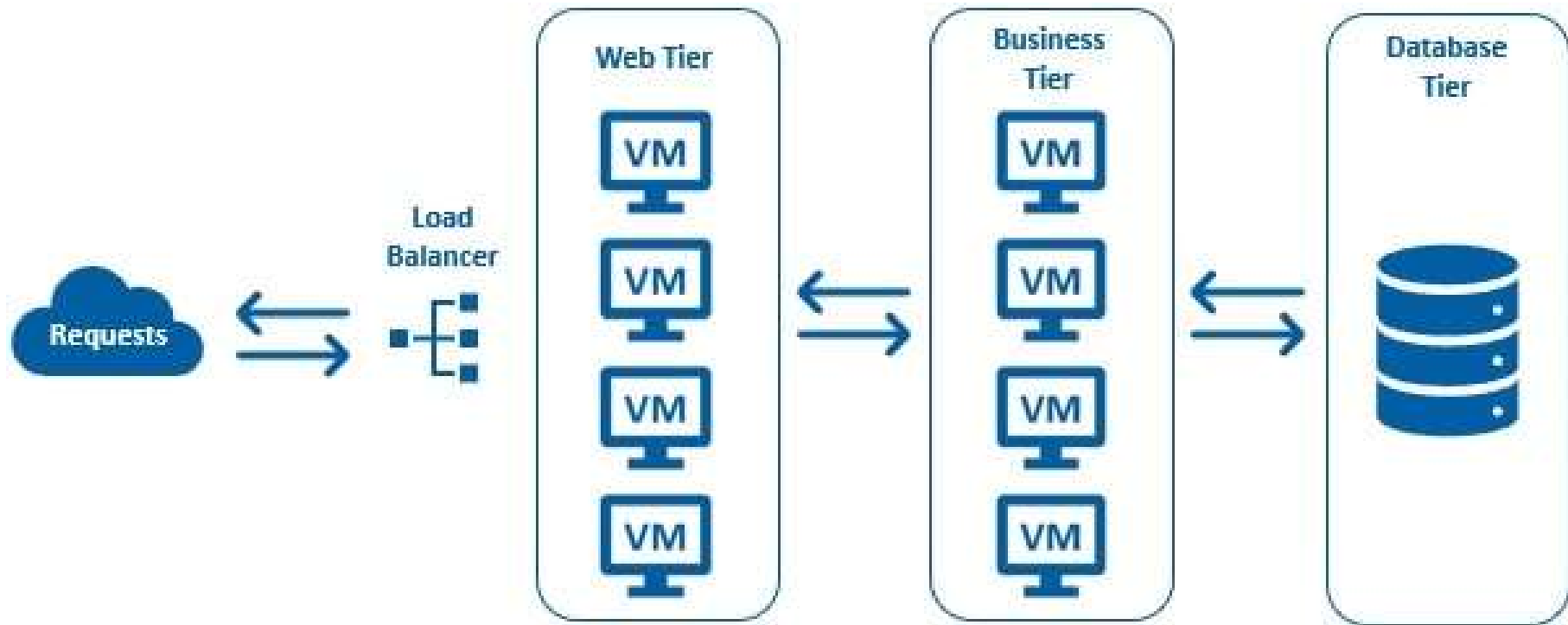
Concept of azure load balancer

- Layer 4 load-balancing service
- Built to handle millions of requests per second



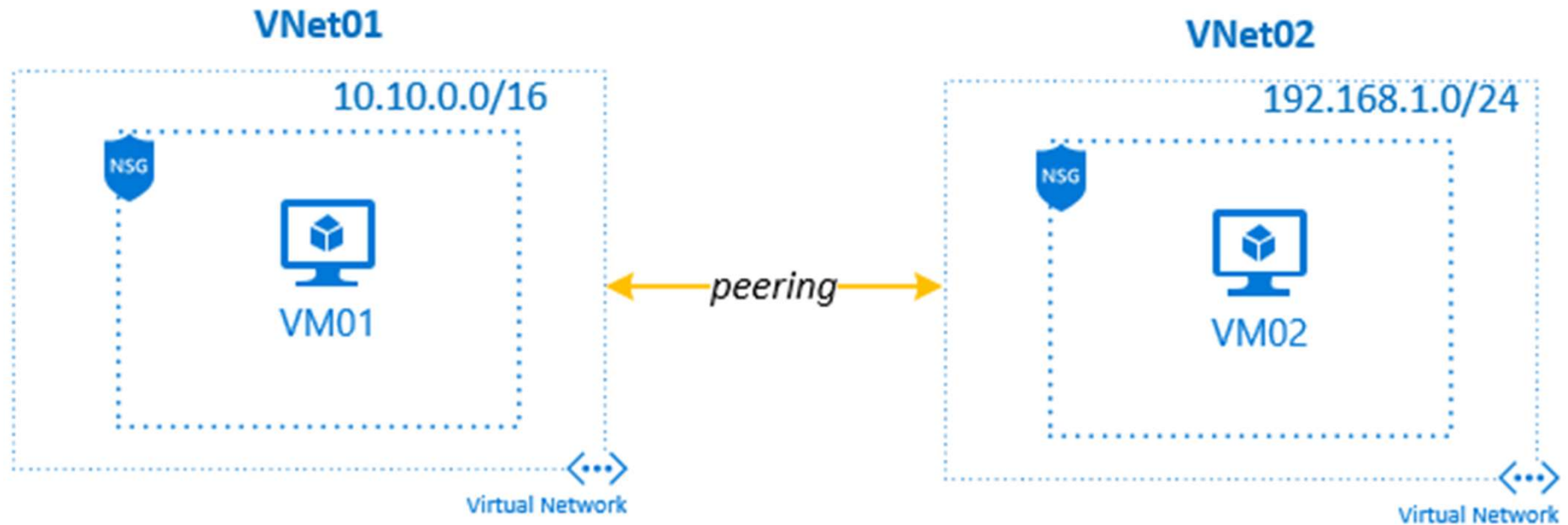
Azure Virtual Machine Scale

- To create and manage a group of load balanced VMs
- The number of VM instances can automatically increase or decrease in response to demand or a defined schedule



VNet Peering

- Enables to seamlessly connect two or more Virtual Networks in Azure



Lab: Azure Networking

Lab: Implementation of VNet

- Duration: 15 Minutes

Lab: Configure of public and private LB

- Duration: 40 Minutes

Lab: Configuration of VM scale Set

- Duration: 20 Minutes

Lab: Implementation of global and local peering

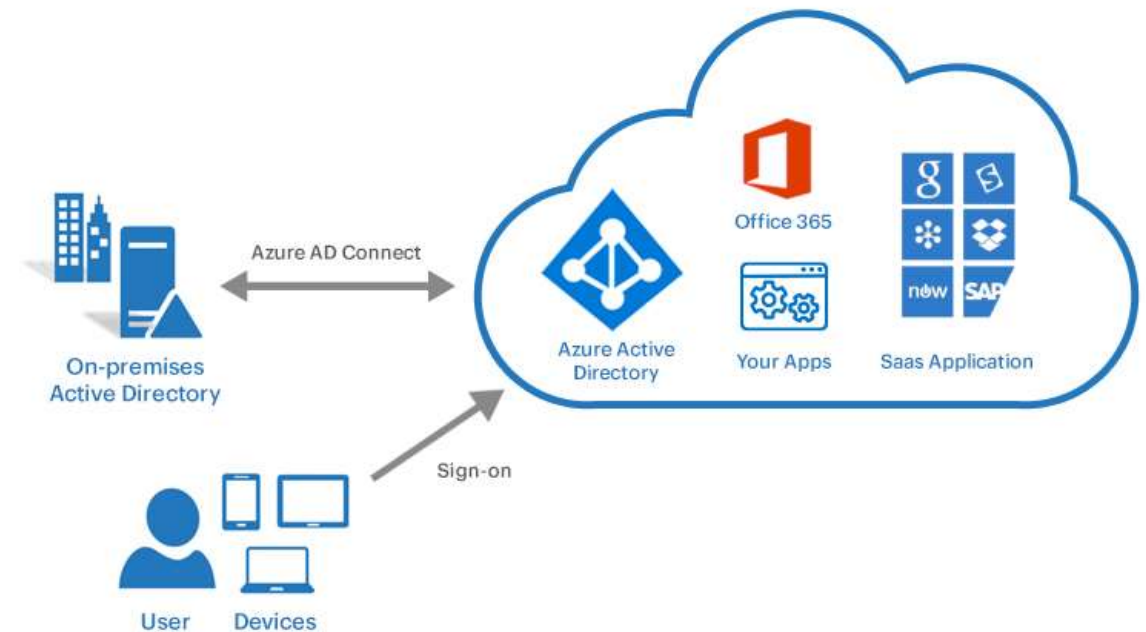
- Duration: 20 Minutes

Azure AD Authentication

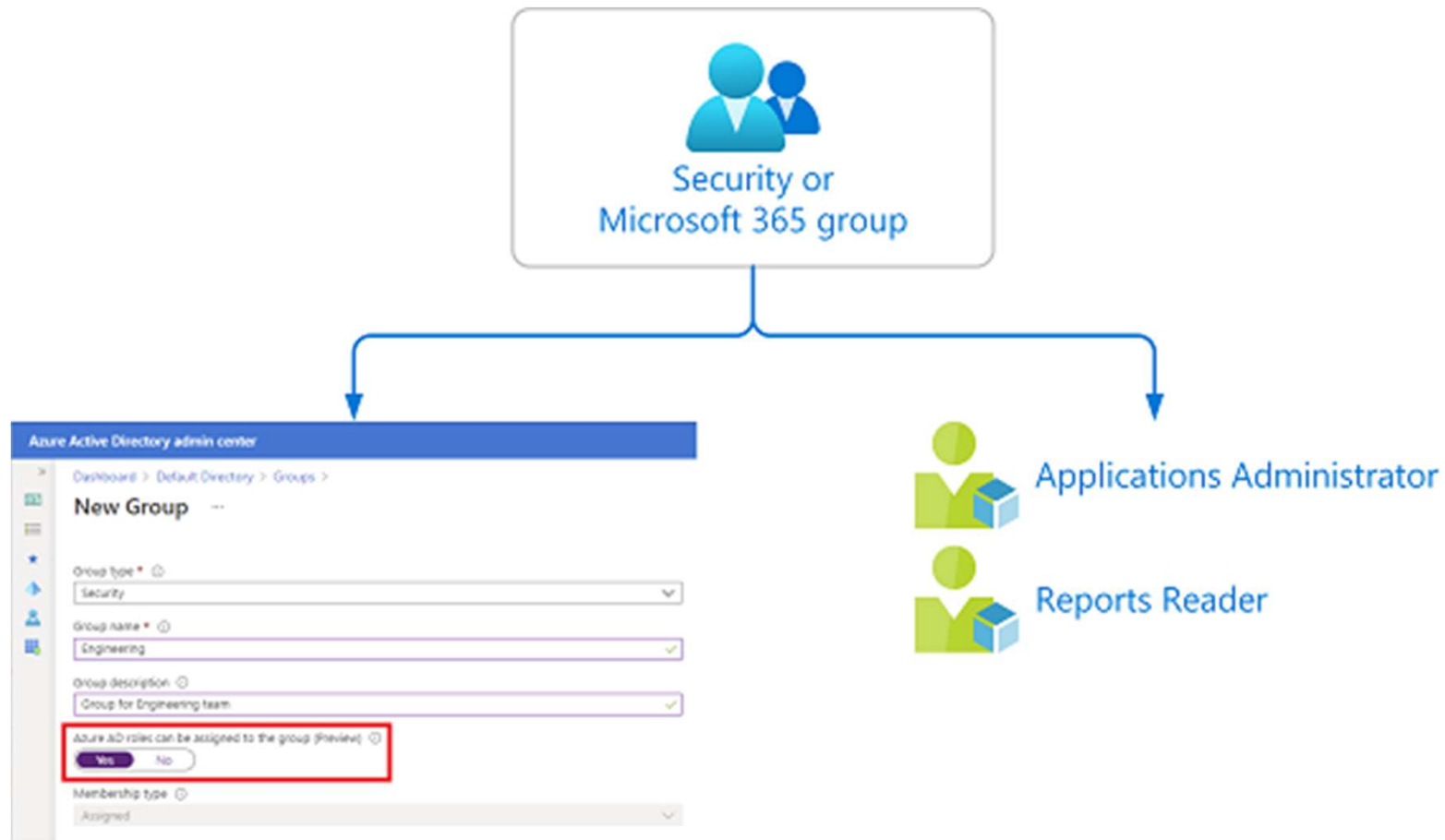
Duration: 1.5-2 hours including labs

What is Azure Active Directory?


- Cloud-based identity and access management (IAM) solution
- Provides
 - Single sign-on
 - Conditional access to guard against 99.9 percent of cybersecurity attacks.
 - Multifactor authentication



User, Groups & Audit Logs



User, Groups & Audit Logs

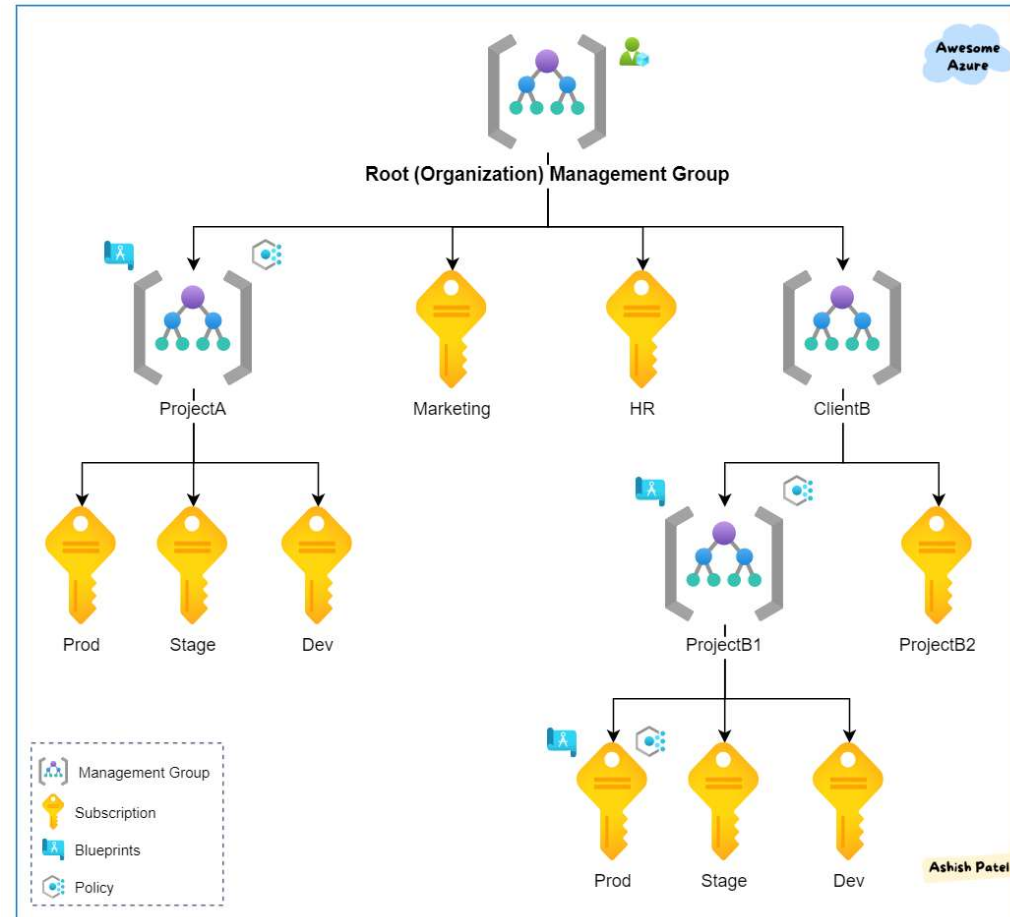
 **Windows Corp** | Audit logs

Search (Ctrl+/) << Download **Export Data Settings** Refresh Columns Got feedback?

Date: **Last 24 hours** Show dates as: **Local** Service: **All** Category: **All** Activity: **All** + Add filters

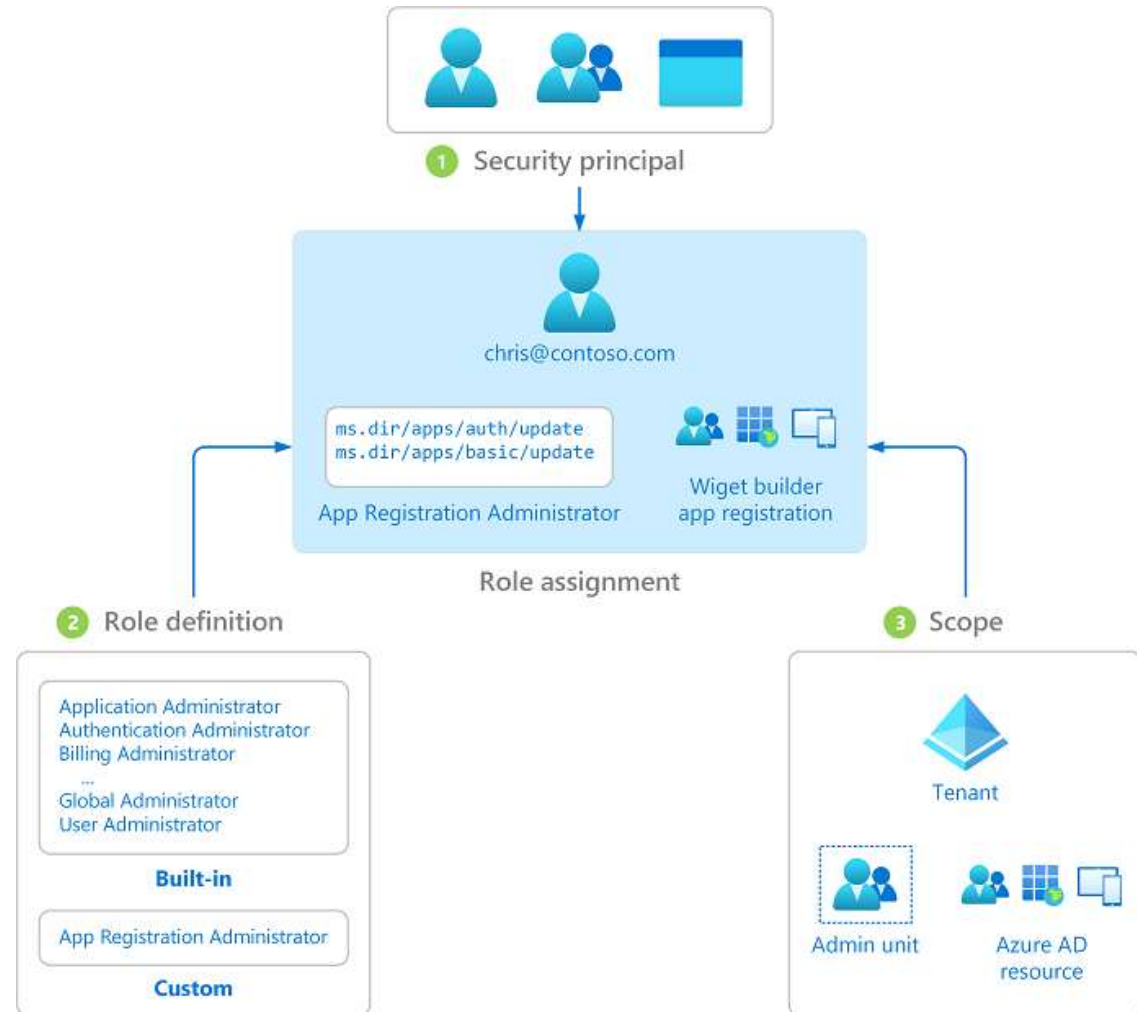
Date	Service	Category	Activity	Status	Status reason
6/3/2020, 2:13:49 AM	Core Directory	ApplicationManagement	Add service principal	Success	
6/2/2020, 7:03:35 PM	B2C	ResourceManagement	Get B2C directory resource	Success	<null>
6/2/2020, 7:03:35 PM	B2C	Authorization	Get B2C directory resource	Success	User Authorization: Us
6/2/2020, 7:03:35 PM	B2C	ResourceManagement	Get B2C directory resource	Success	<null>
6/2/2020, 7:03:35 PM	B2C	Authorization	Get B2C directory resource	Success	User Authorization: Us
6/2/2020, 5:17:23 PM	Core Directory	GroupManagement	Delete group	Success	
6/2/2020, 4:53:50 PM	Core Directory	GroupManagement	Add owner to group	Success	
6/2/2020, 4:53:48 PM	Core Directory	GroupManagement	Add group	Success	
6/2/2020, 1:37:15 PM	PIM	RoleManagement	Remove eligible member f...	Success	
6/2/2020, 1:37:15 PM	Core Directory	RoleManagement	Remove eligible member f...	Success	
6/2/2020, 1:37:14 PM	PIM	RoleManagement	Remove eligible member f...	Success	
6/2/2020, 1:35:01 PM	PIM	RoleManagement	Remove member from rol...	Success	
6/2/2020, 1:35:01 PM	Core Directory	RoleManagement	Remove member from role	Success	
6/2/2020, 1:35:00 PM	PIM	RoleManagement	Remove member from rol...	Success	Deactivation request

Manage Subscriptions



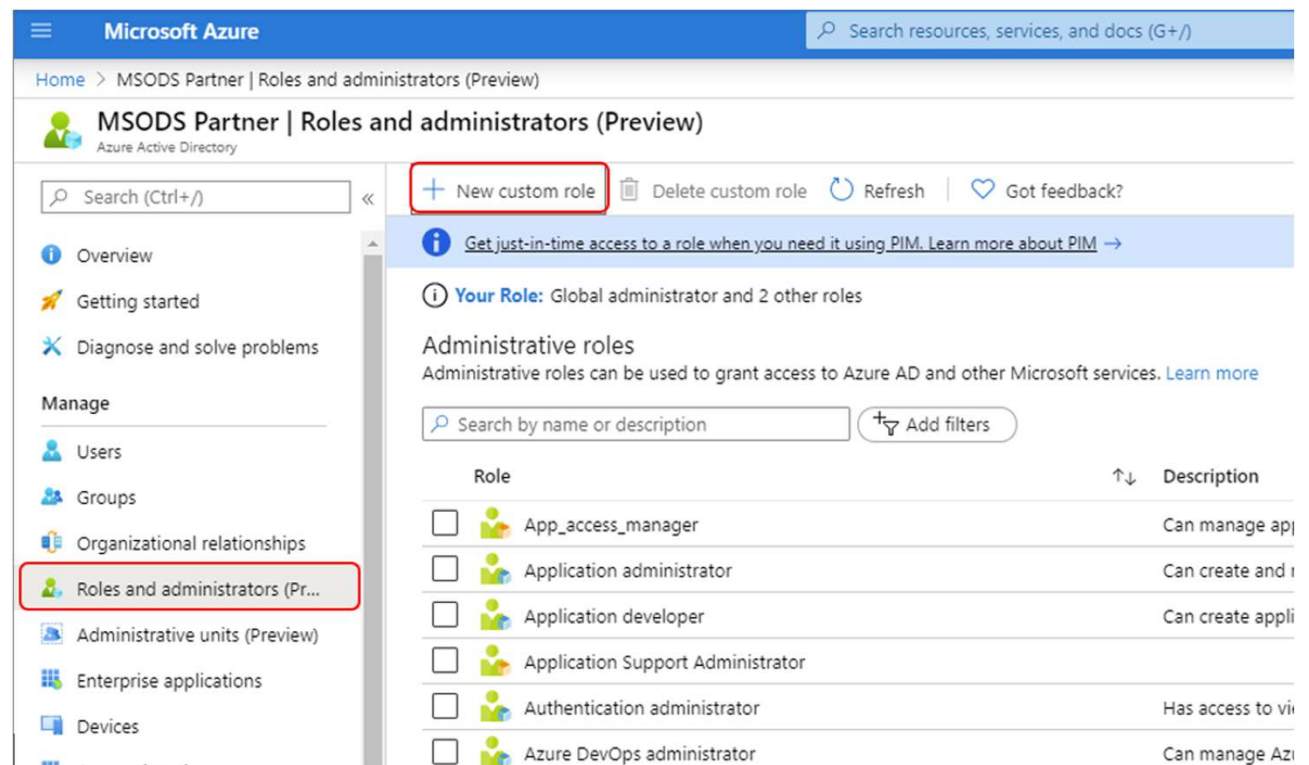
Role Base Access Control (RBAC)

- Provides fine-grained access management of Azure resources.
- Segregates duties within team and grant only the amount of access to users that they need to perform their jobs



Custom Roles (RBAC)

- If the Azure built-in roles don't meet the specific needs of your organization, you can create your own custom roles

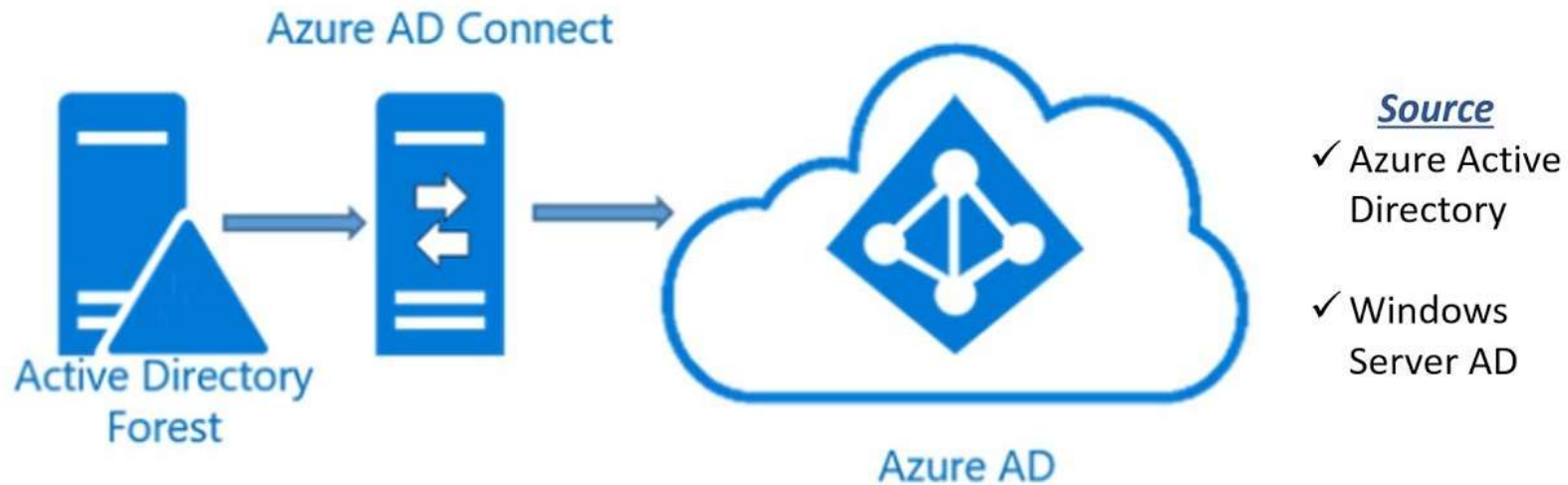


The screenshot shows the Microsoft Azure portal interface for managing roles and administrators. The top navigation bar includes the Microsoft Azure logo and a search bar. The breadcrumb trail indicates the current location: Home > MSODS Partner | Roles and administrators (Preview). The main heading is 'MSODS Partner | Roles and administrators (Preview)' with 'Azure Active Directory' below it. A search bar is present with the text 'Search (Ctrl+ /)'. The left sidebar contains a 'Manage' section with various options, including 'Roles and administrators (Pr...' which is highlighted with a red box. The main content area features a '+ New custom role' button, a 'Delete custom role' button, a 'Refresh' button, and a 'Got feedback?' link. Below these is an information icon and a link: 'Get just-in-time access to a role when you need it using PIM. Learn more about PIM →'. A section titled 'Your Role: Global administrator and 2 other roles' is followed by 'Administrative roles' and a description: 'Administrative roles can be used to grant access to Azure AD and other Microsoft services. Learn more'. A search bar 'Search by name or description' and an 'Add filters' button are also present. A table lists administrative roles with checkboxes for selection:

Role	Description
<input type="checkbox"/> App_access_manager	Can manage ap...
<input type="checkbox"/> Application administrator	Can create and i...
<input type="checkbox"/> Application developer	Can create appli...
<input type="checkbox"/> Application Support Administrator	
<input type="checkbox"/> Authentication administrator	Has access to vi...
<input type="checkbox"/> Azure DevOps administrator	Can manage Azi...

AD Connect Overview

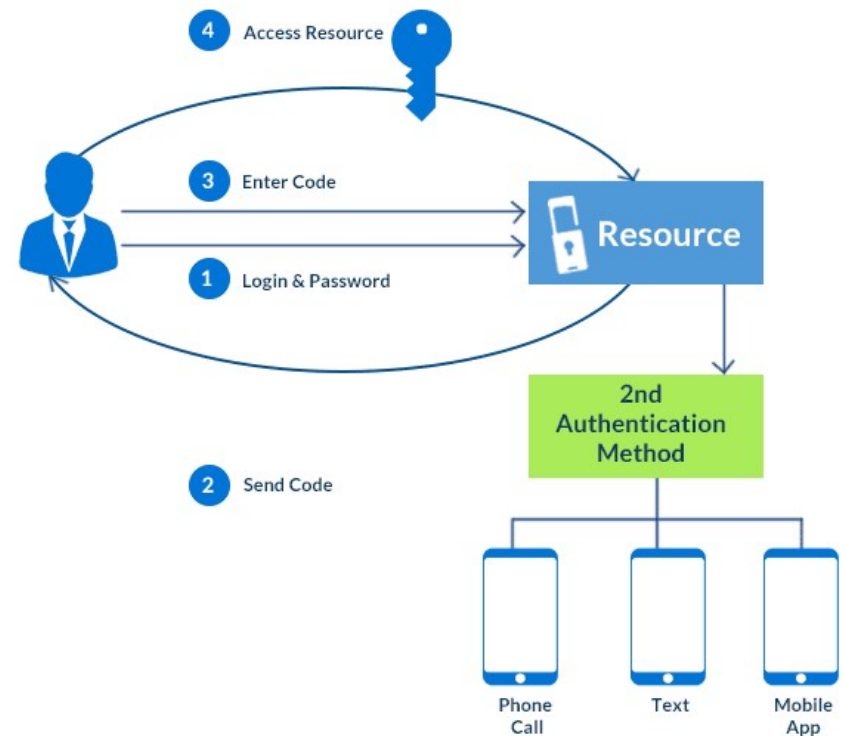
- To meet and accomplish hybrid identity goals



AD - Multifactor Authentication (MFA)

- Multi-factor authentication is a process in which users are prompted during the sign-in process for an additional form of identification

Multi Factor Authentication



Lab : Azure AD Authentication

- Duration: 45 Minutes for all labs below
- Lab: How to create management group?
- Lab: How to manage Subscription?
- Lab: How to create user and groups?
- Lab: Implementation of permission
- Lab: Implementation of MFA

Thanks