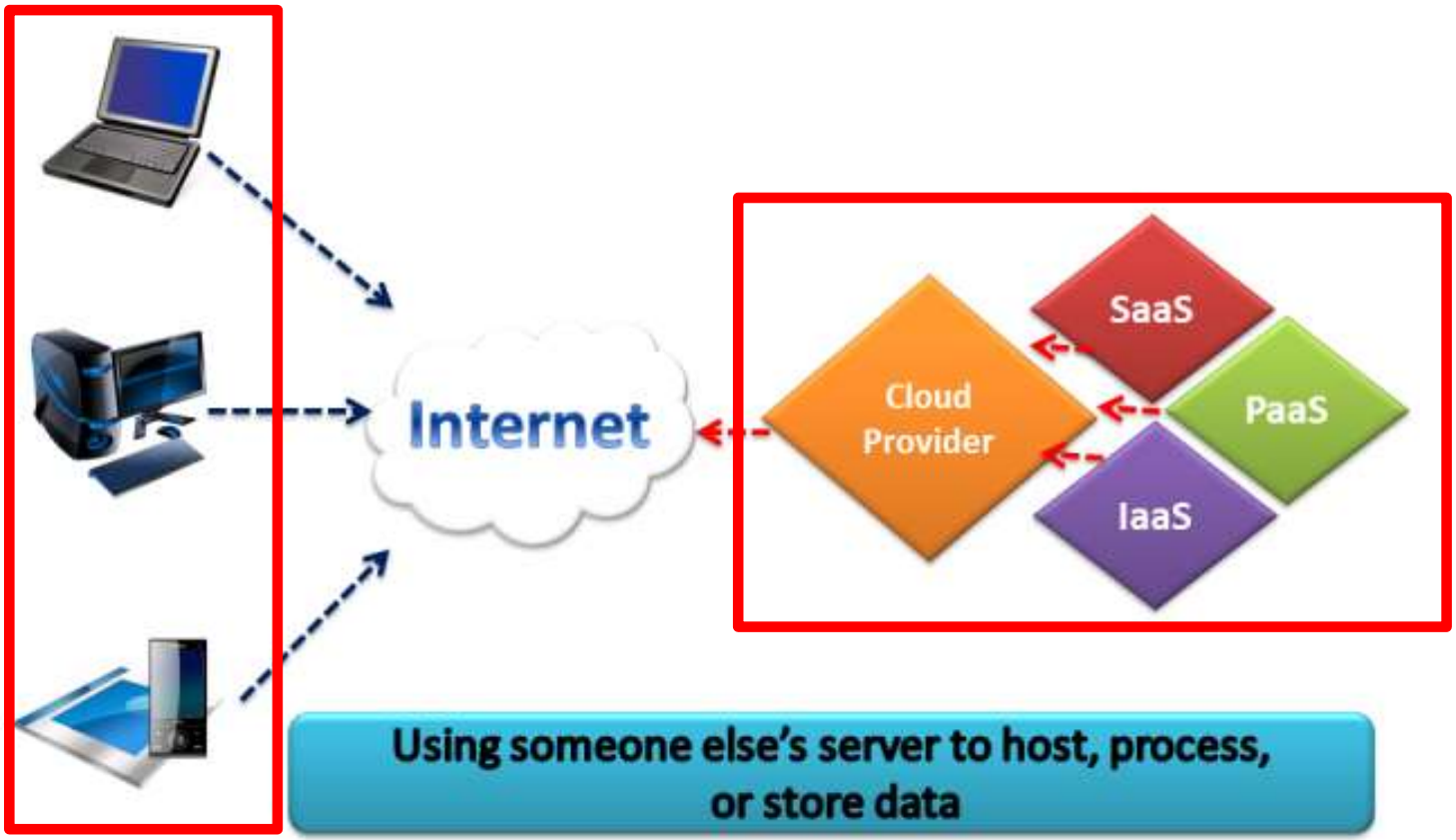
Cloud Computing

What is Cloud?



Characteristics

On-demand self-service

- Consumer can provision resourced 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

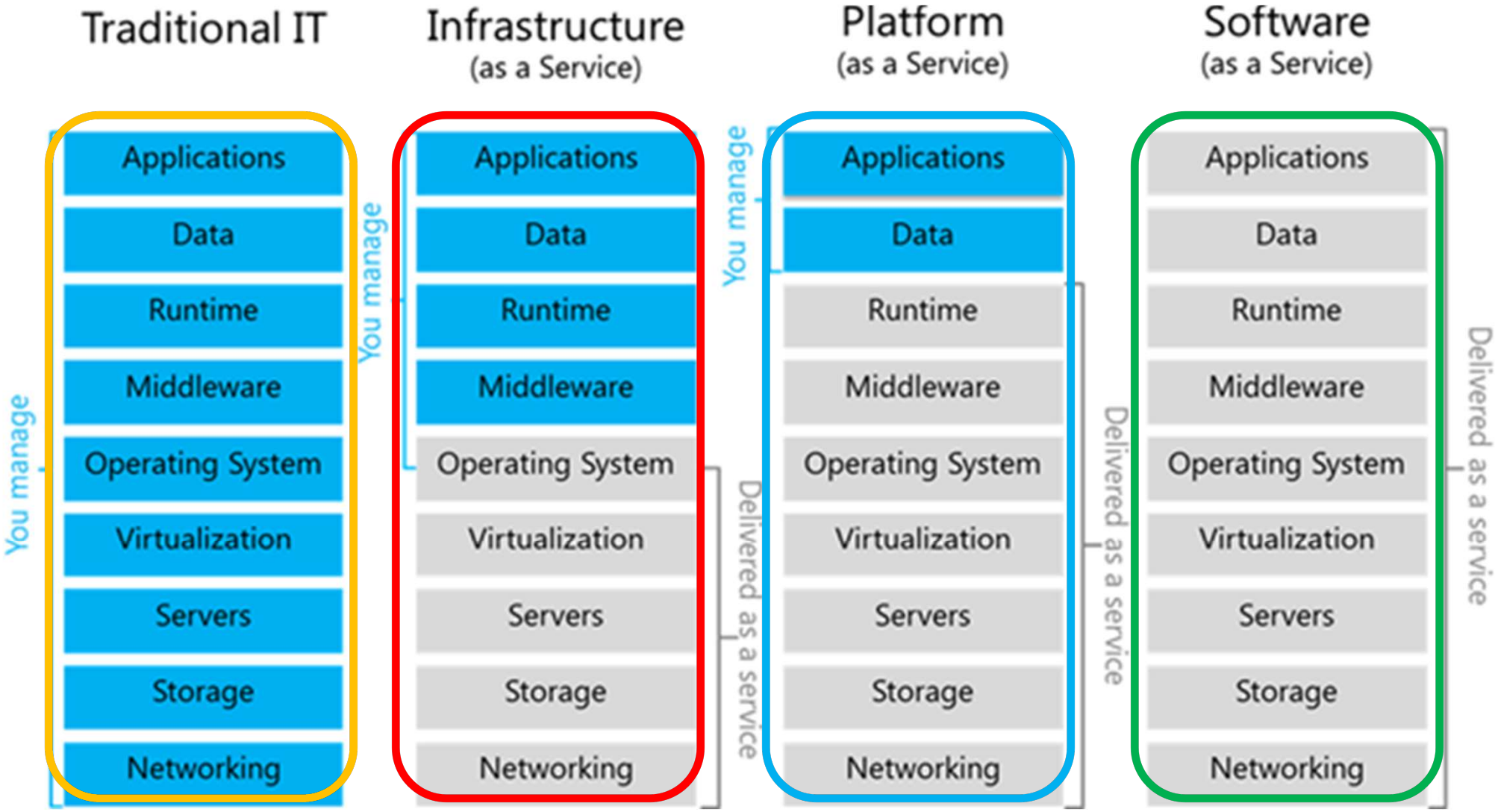
Measured Service

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

Rapid elasticity

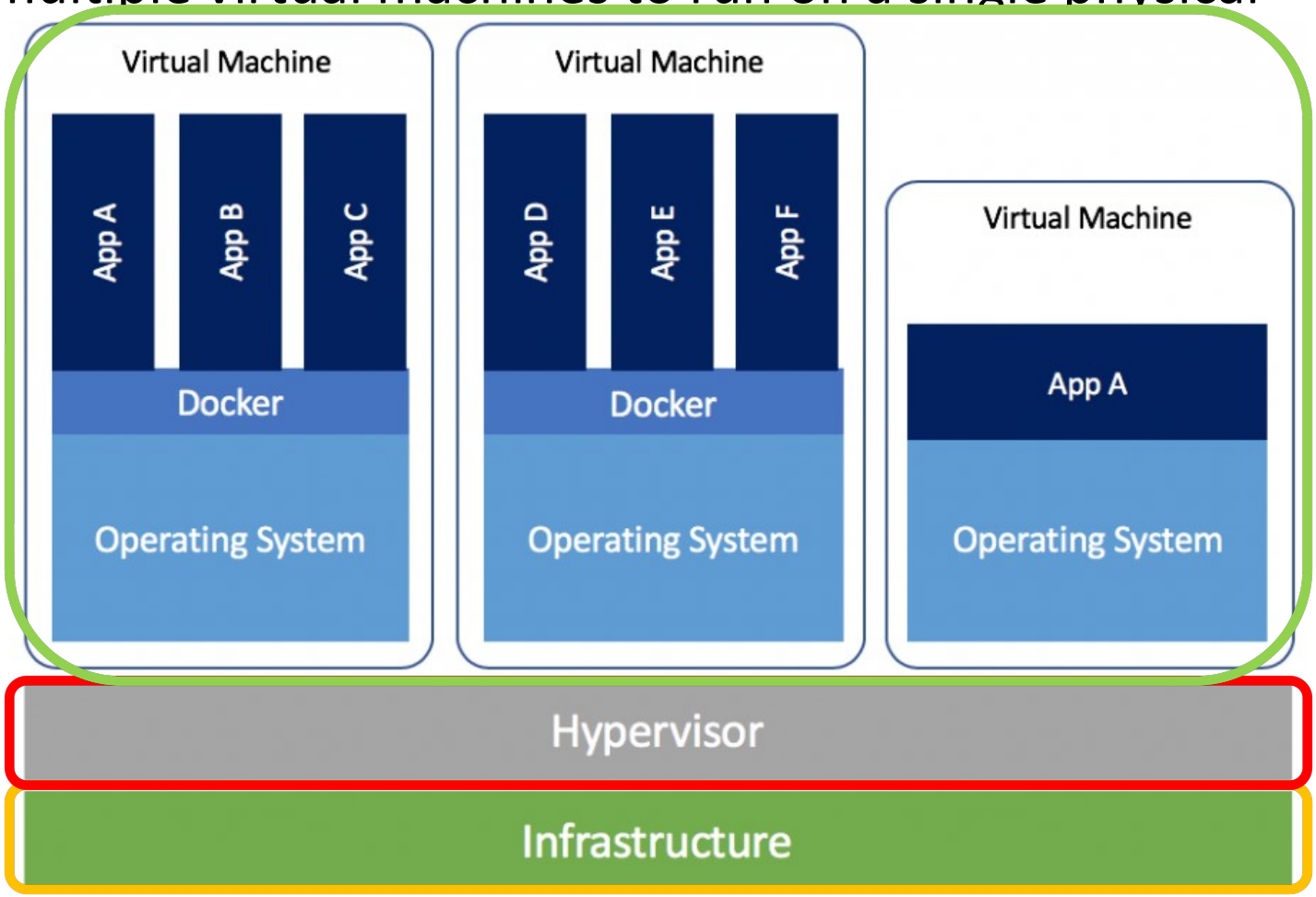
- Scale rapidly outward and inward

Cloud Services Deployment Models



Virtual Machines

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



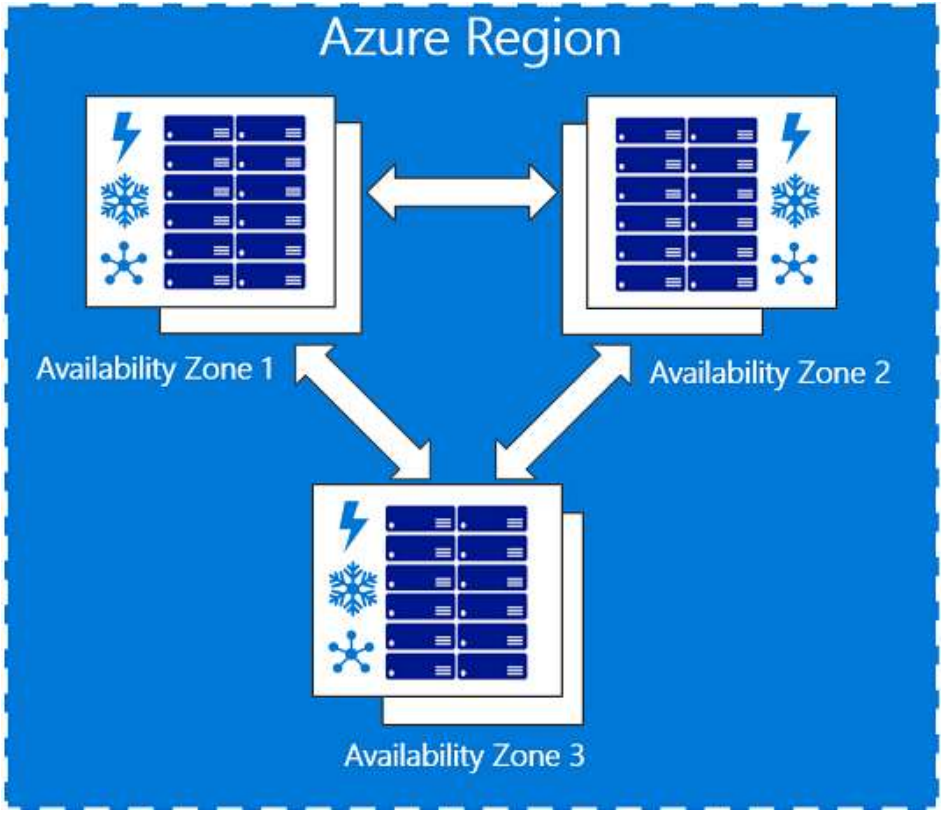
Microsoft Azure Fundamentals

Introduction of Microsoft Azure

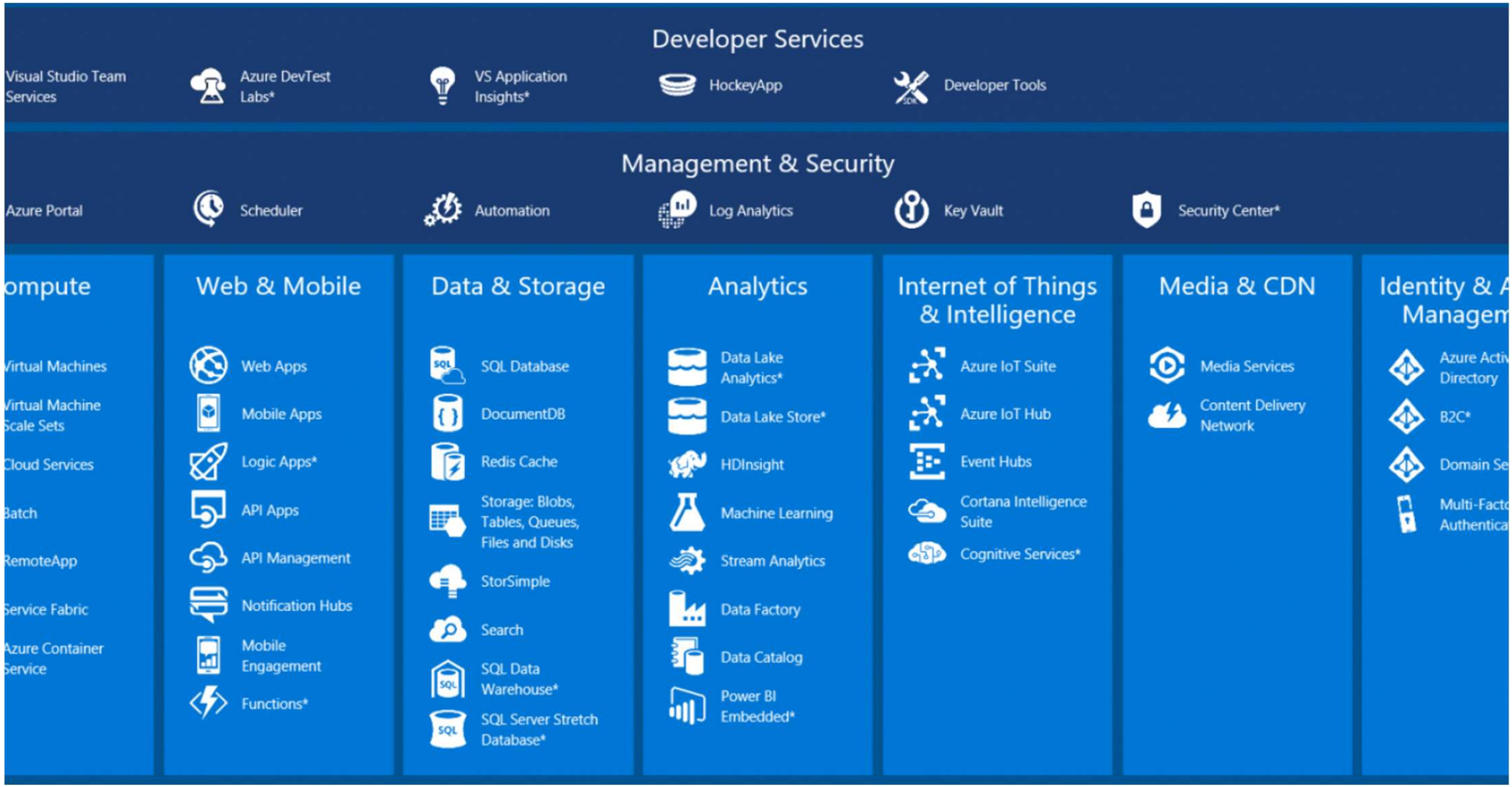
- Microsoft's public cloud platform
- Azure offers a large collection of services
  - PaaS
  - IaaS
  - managed database service capabilities

Concept of Region & Availability Zone

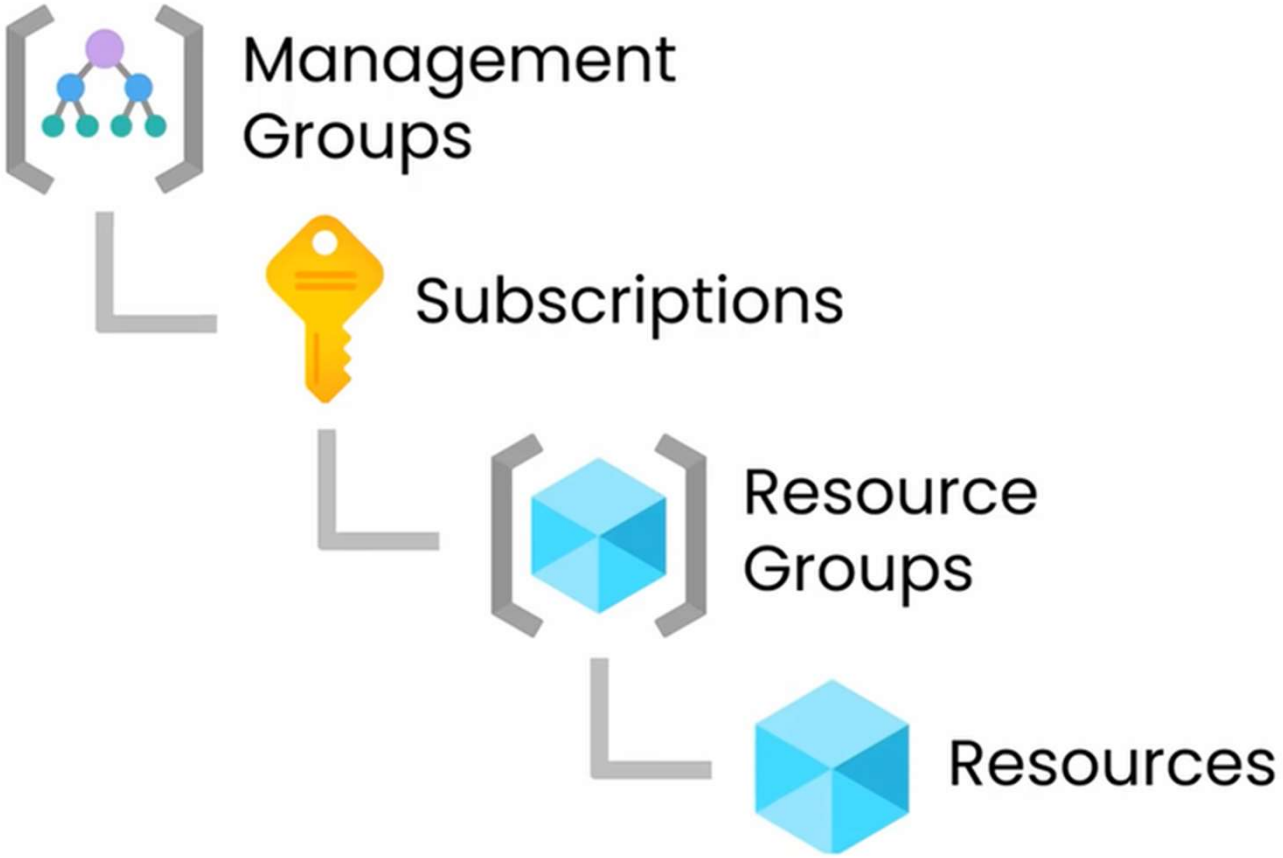
Concept of Region & Availability Zone



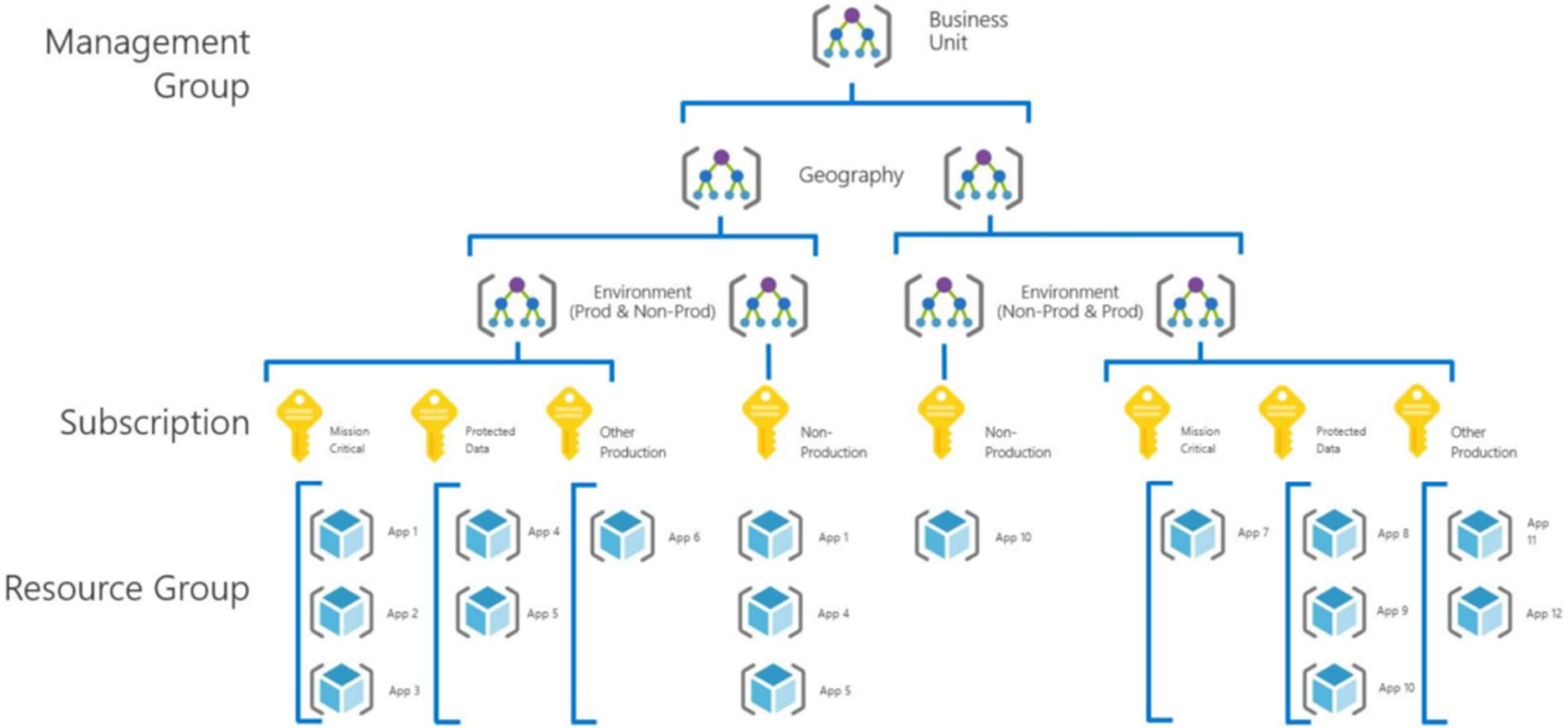
Azure Services



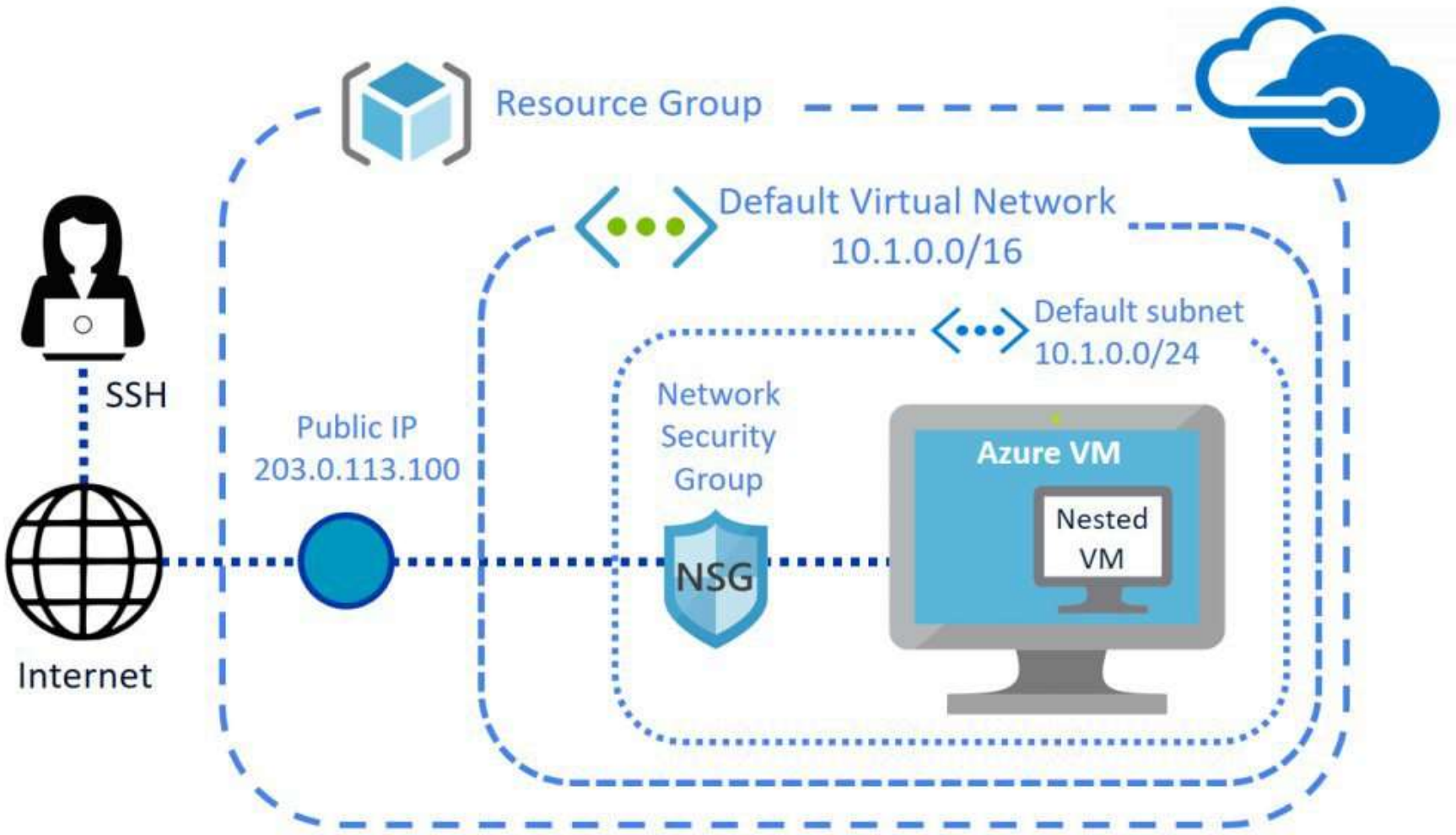
Concept of Resource Group



Concept of Resource Group



Introduction of Azure Virtual Machine



Lab: Planning and implementing VM

Lab: Creating virtual Machine using Portal

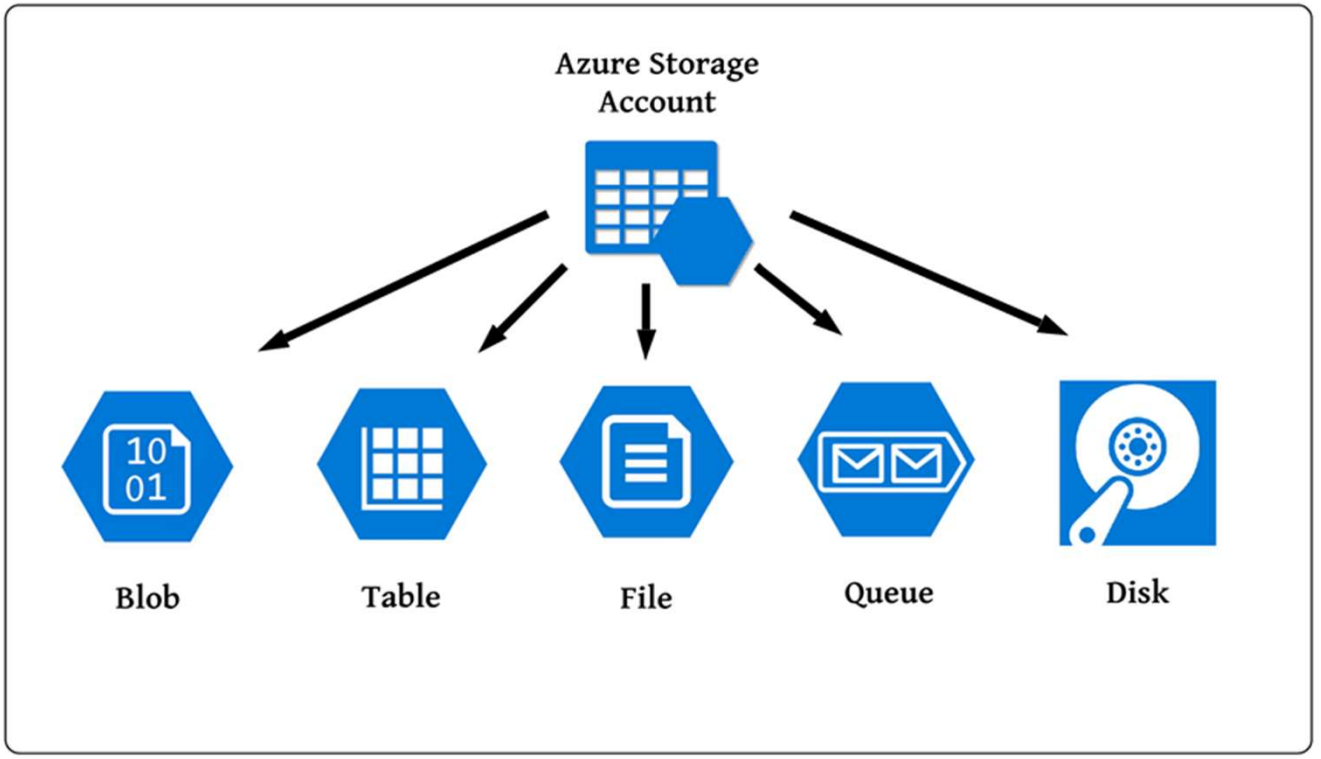
Lab: Creating virtual Machine using CLI

- 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

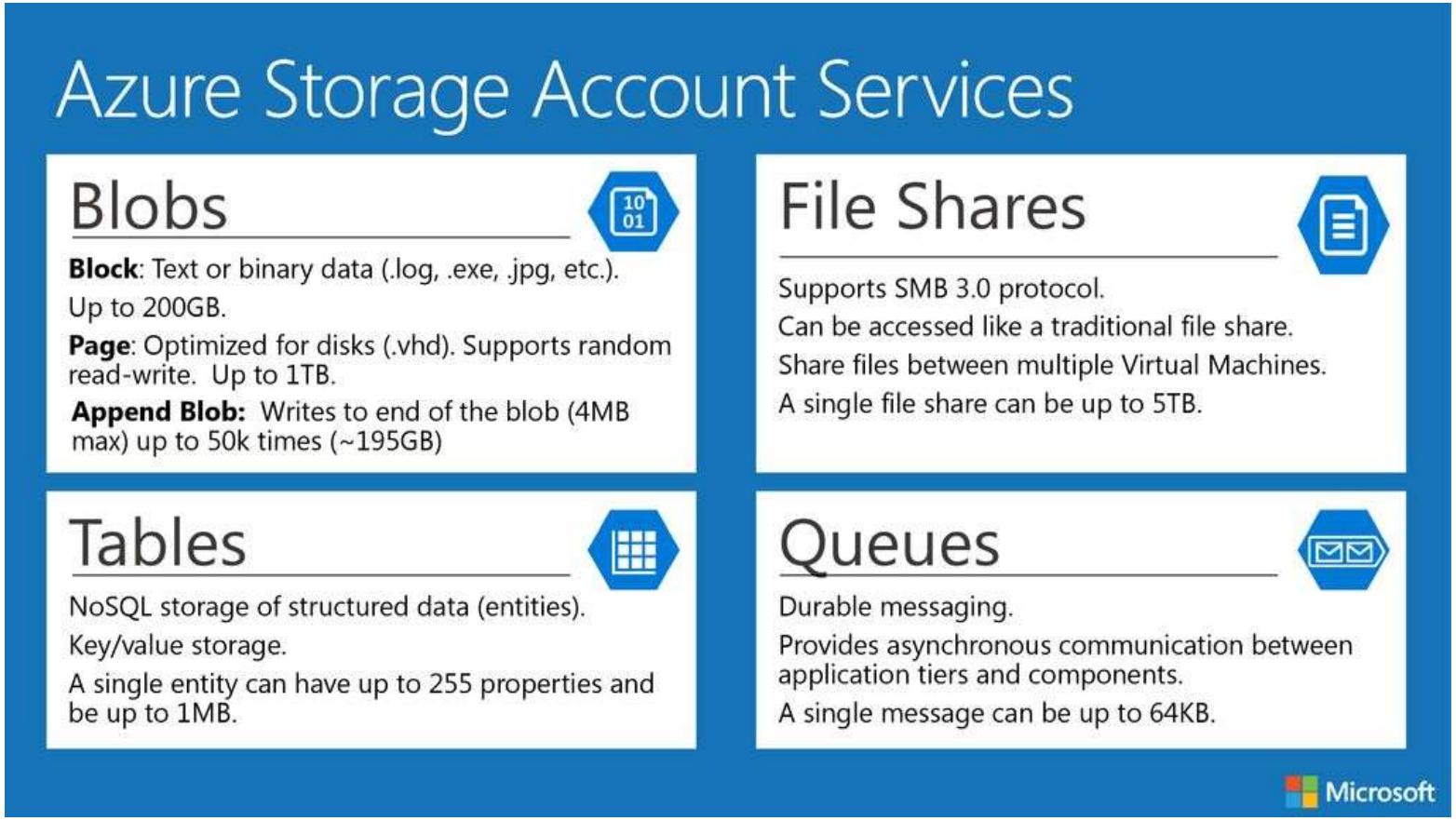
Azure Storage Account

Introduction to Storage Account

- Provides a unique namespace in Azure for data



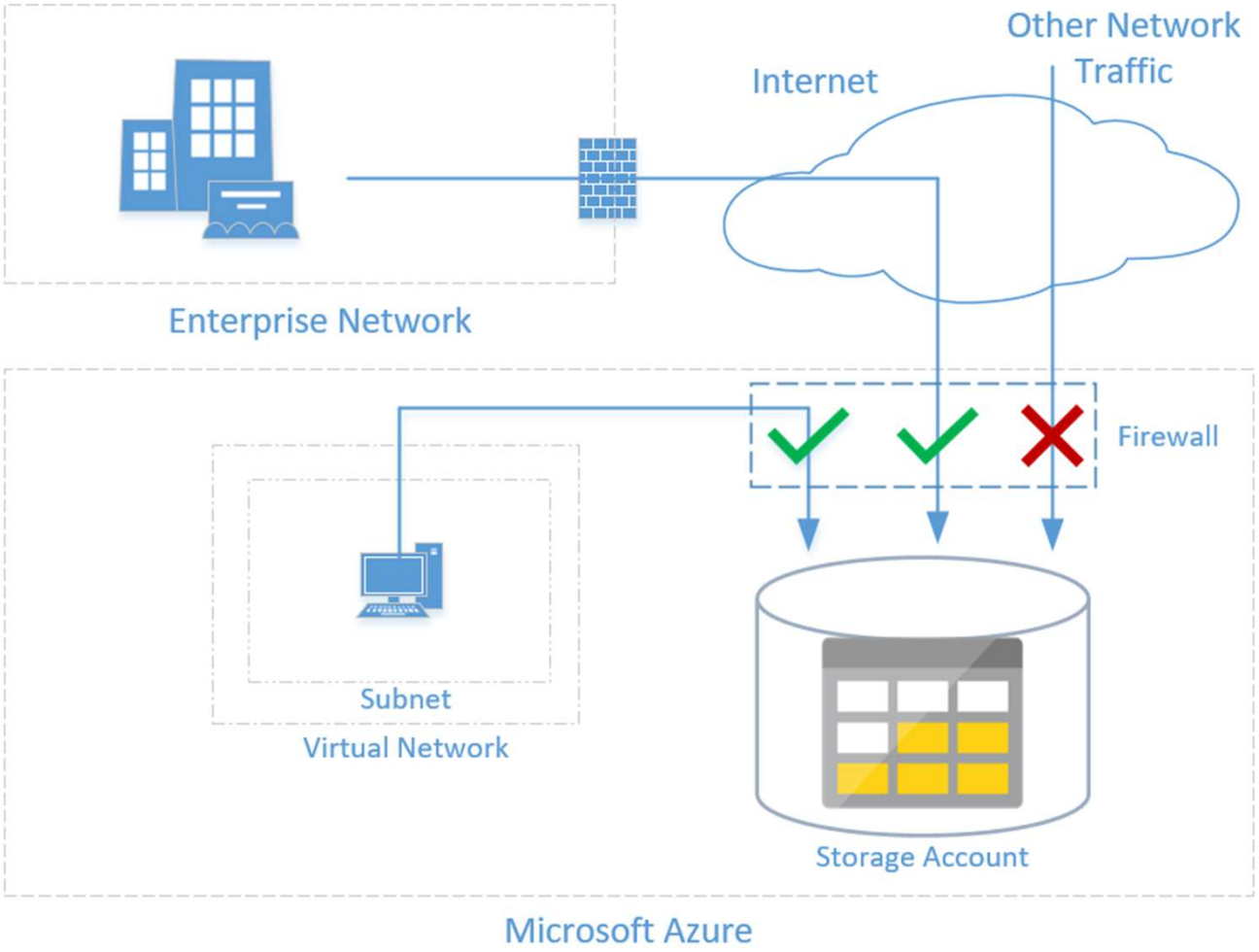
Core Storage Services



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 VI	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

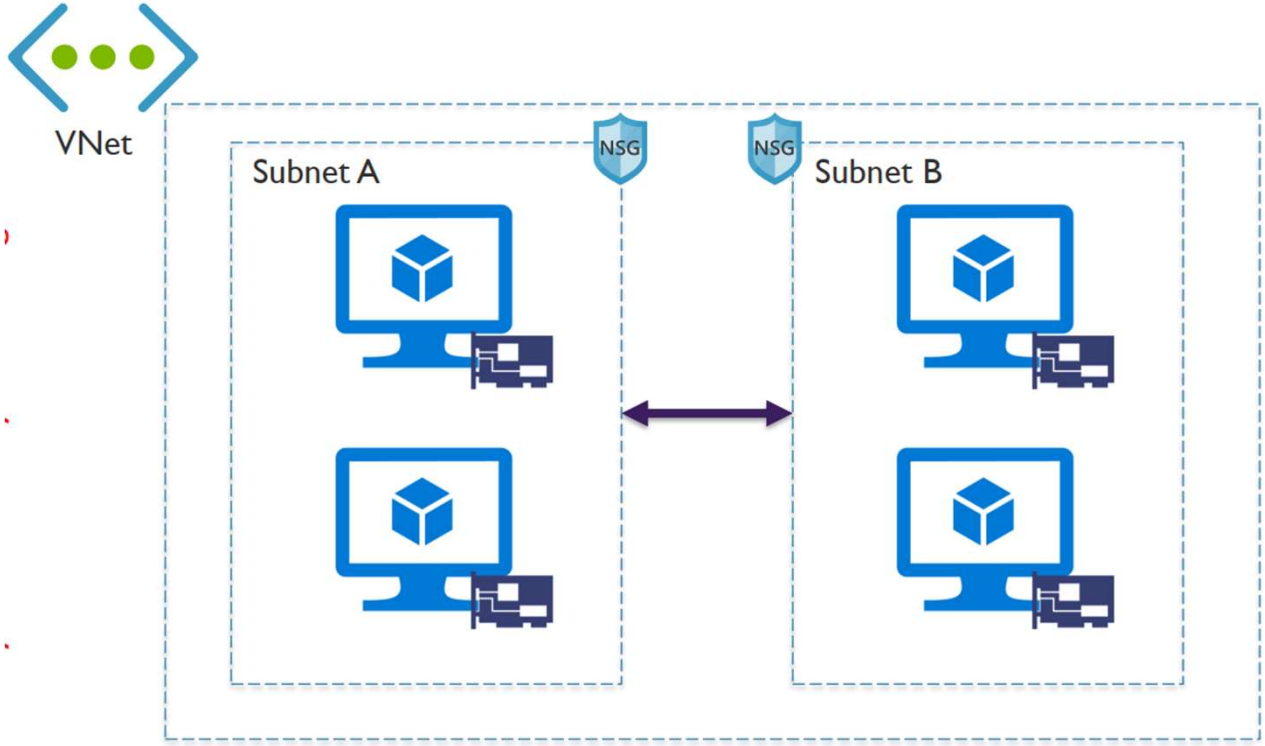
Lab: Create and manage containers

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

Azure Networking

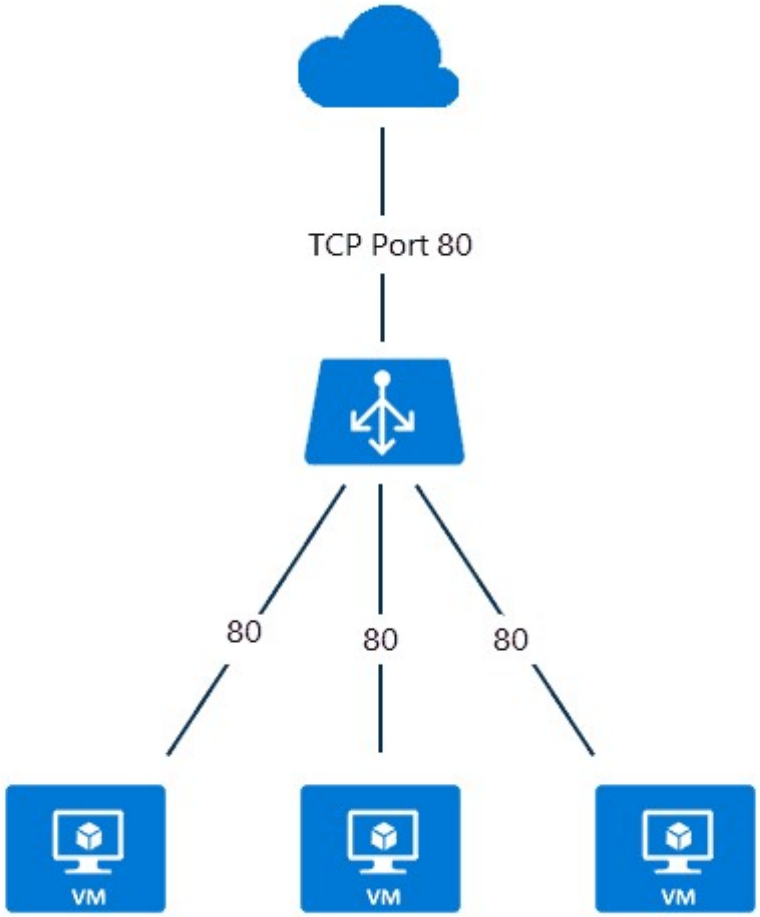
Introduction of VNet and Security Group

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



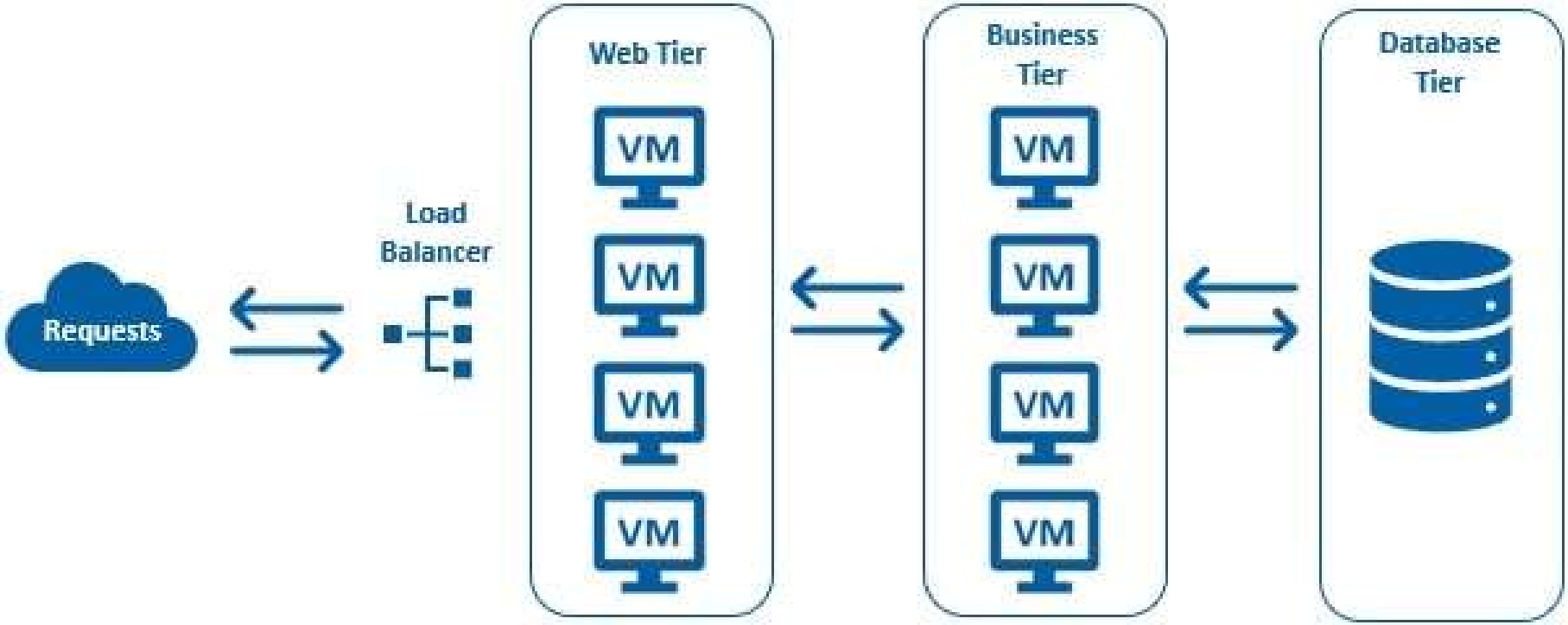
Concept of azure load balancer

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



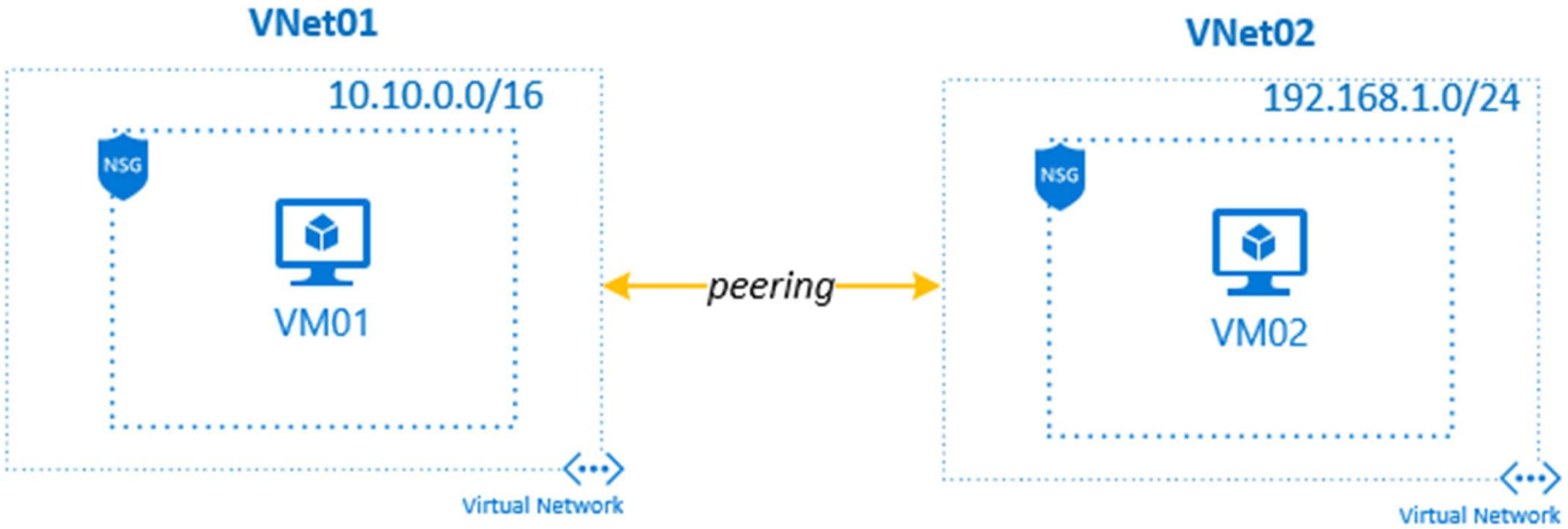
Azure Virtual Machine Scale

- 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



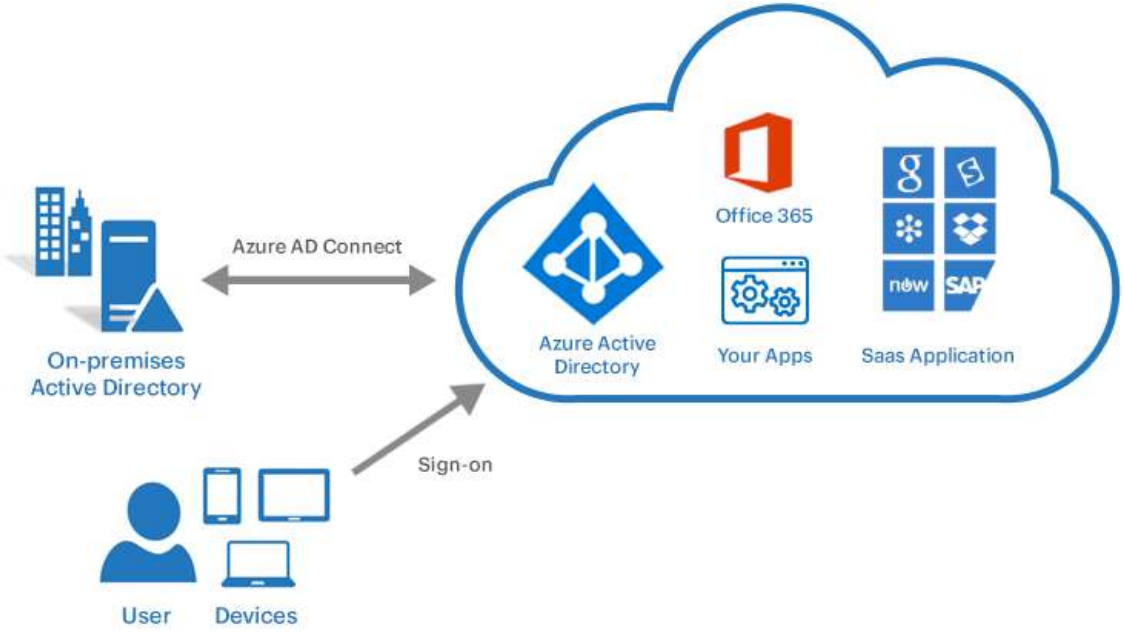
Lab: Azure Networking

Lab: Implementation of VNet

Azure AD Authentication

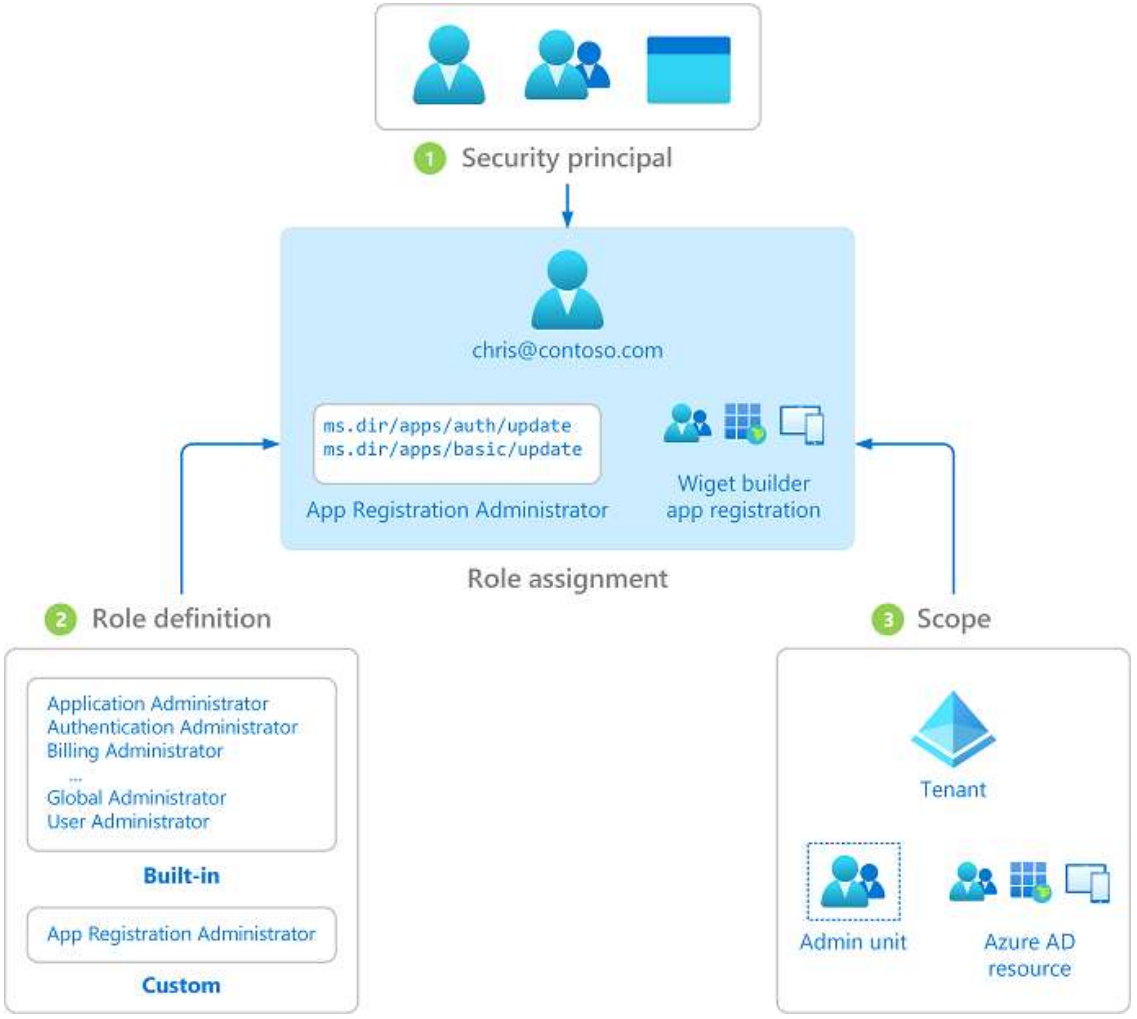
What is Azure Active Directory?

- 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



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



Lab : Azure AD Authentication

- Lab: How to create user and groups?
- Lab: Implementation of permission

Thanks