Introduction to Azure

INTRODUCTION TO AZURE

Kevin James

Technical Lead and Training Architect, prev. The Walt Disney Company

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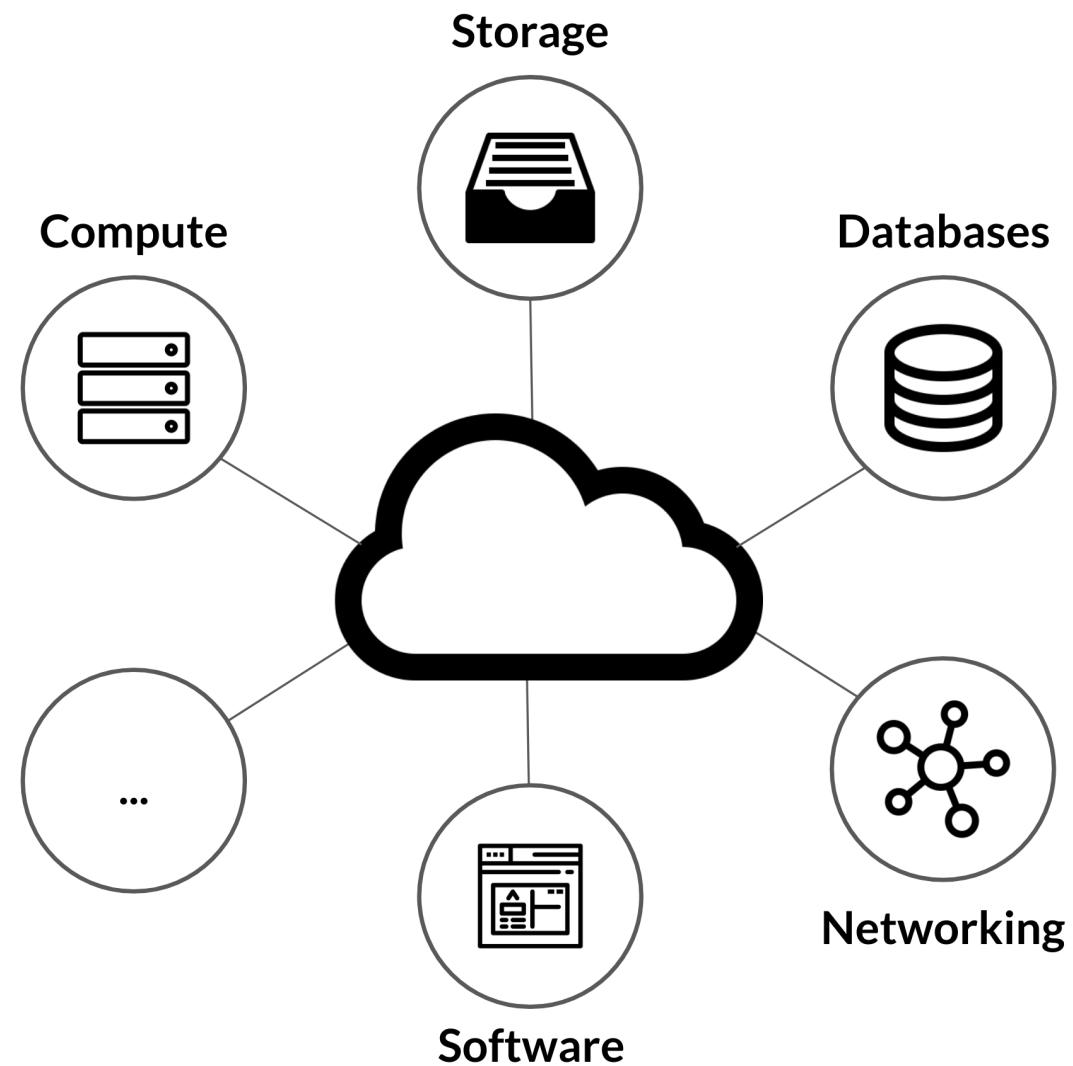# Built in collaboration with Microsoft

Introducing: Azure

- Leading cloud computing provider

- Over 200 products and cloud services

- Trusted by 95% of Fortune 500 companies

- Supports businesses to:
  - Build

  - Deploy

  - Manage

Refresher: Cloud computing

Cloud computing is the on-demand delivery of IT resources over the internet

Refresher: On-premises
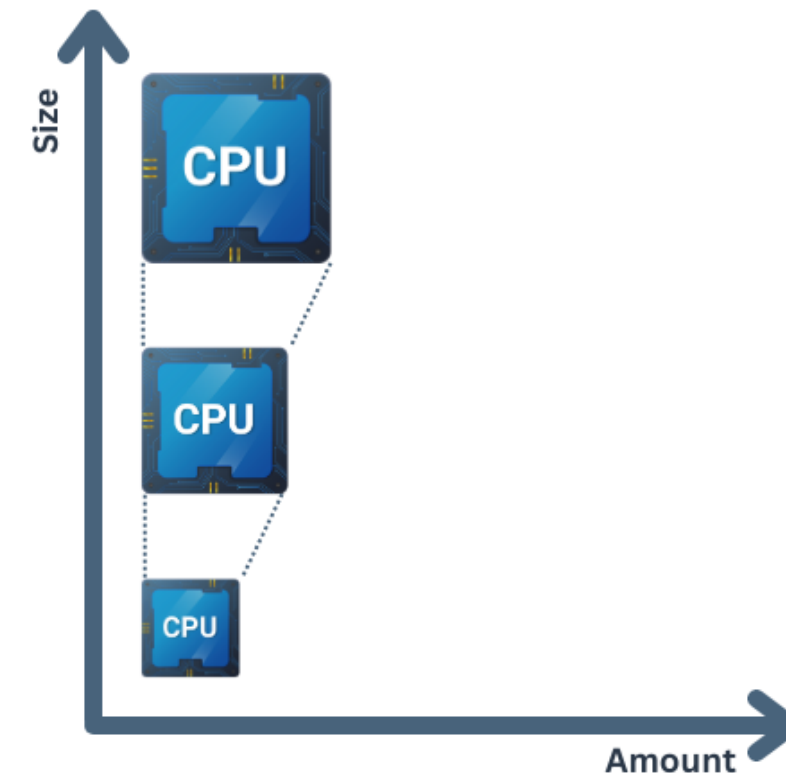
Server is located on the premise of the organization

Benefits of cloud services

High Availability

- SLA guarantees around uptime
- 99%, 99.9%, 99.95% and 99.99%

Scalability

- Handling increased/decreased demand
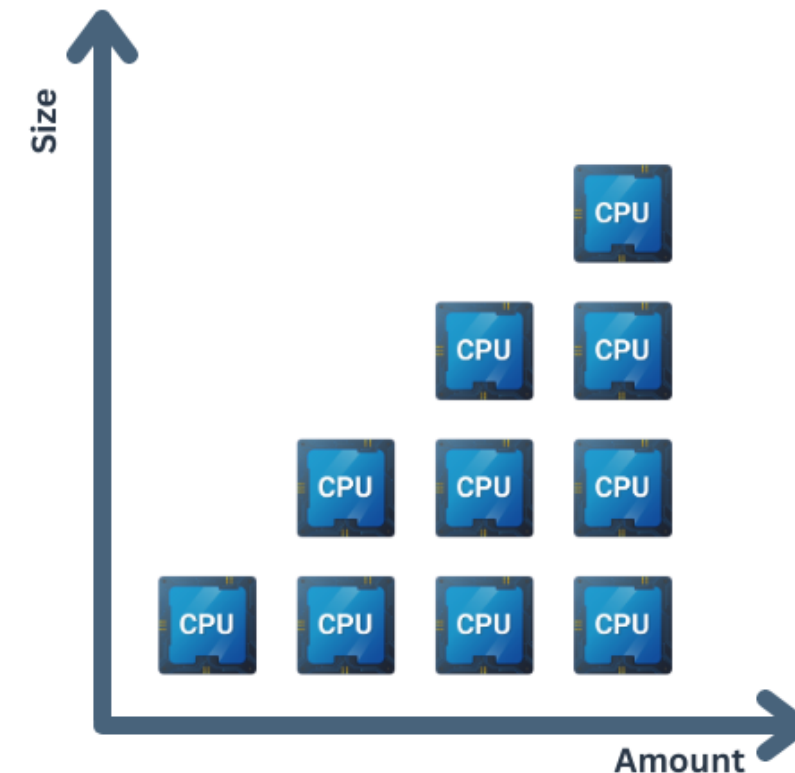- Add/remove CPUs or RAM on VM

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Benefits of cloud services

High Availability

- SLA guarantees around uptime

- 99%, 99.9%, 99.95% and 99.99%

Scalability

- Handling increased/decreased demand

- Scaling resources (manual/automatic)

Benefits of cloud services

Reliability

- Pillar of Azure's Well-Architected framework
- Automatically shift between regions

Predictability

- Auto-scaling / load-balancing
- Total Cost of Ownership / Pricing calculator

Use cases

Web hosting

Data Analysis

Game development

Machine Learning

What to expect in this course

Let's practice!

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Azure's core components

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Resources

- **Resource** represents a purchased service
  - Web hosting
  - Virtual machine
  - Database
- Generic JSON template

Resource

Resources

- **Resource** represents purchased service
  - Web hosting

  - Virtual machine

  - Database

- Generic JSON template
  - Text-based file presenting structured
    data in JavaScript

```json
{
    "type": "Microsoft.Web/sites",
    "apiVersion": "2024-01-01",
    "name": "[variables('webAppPortalName')]",
    "location": "[parameters('location')]"
}
```

Resource groups

- **Resource** requires a **Resource Group**

- Logical groupings to hold related resources
  - Life-cycle

  - Permissions

  - Policies
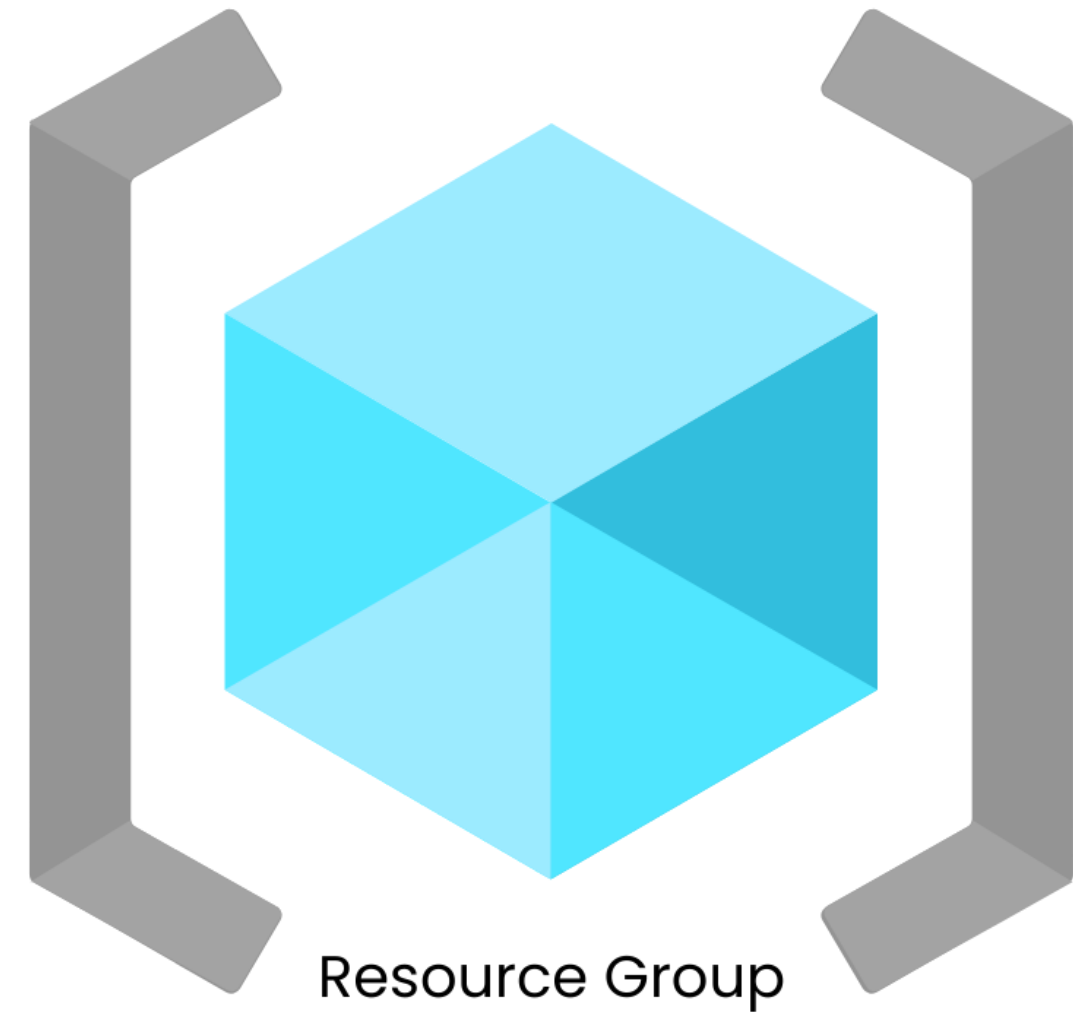
Resource Group

Resource groups

- **Resource** requires a **Resource Group**

- Logical groupings to hold related resources
  - Life-cycle

  - Permissions

  - Policies

- Manage, monitor and maintain resources within group

- Different grouping options:
  - Service type

  - Deparment

  - ...
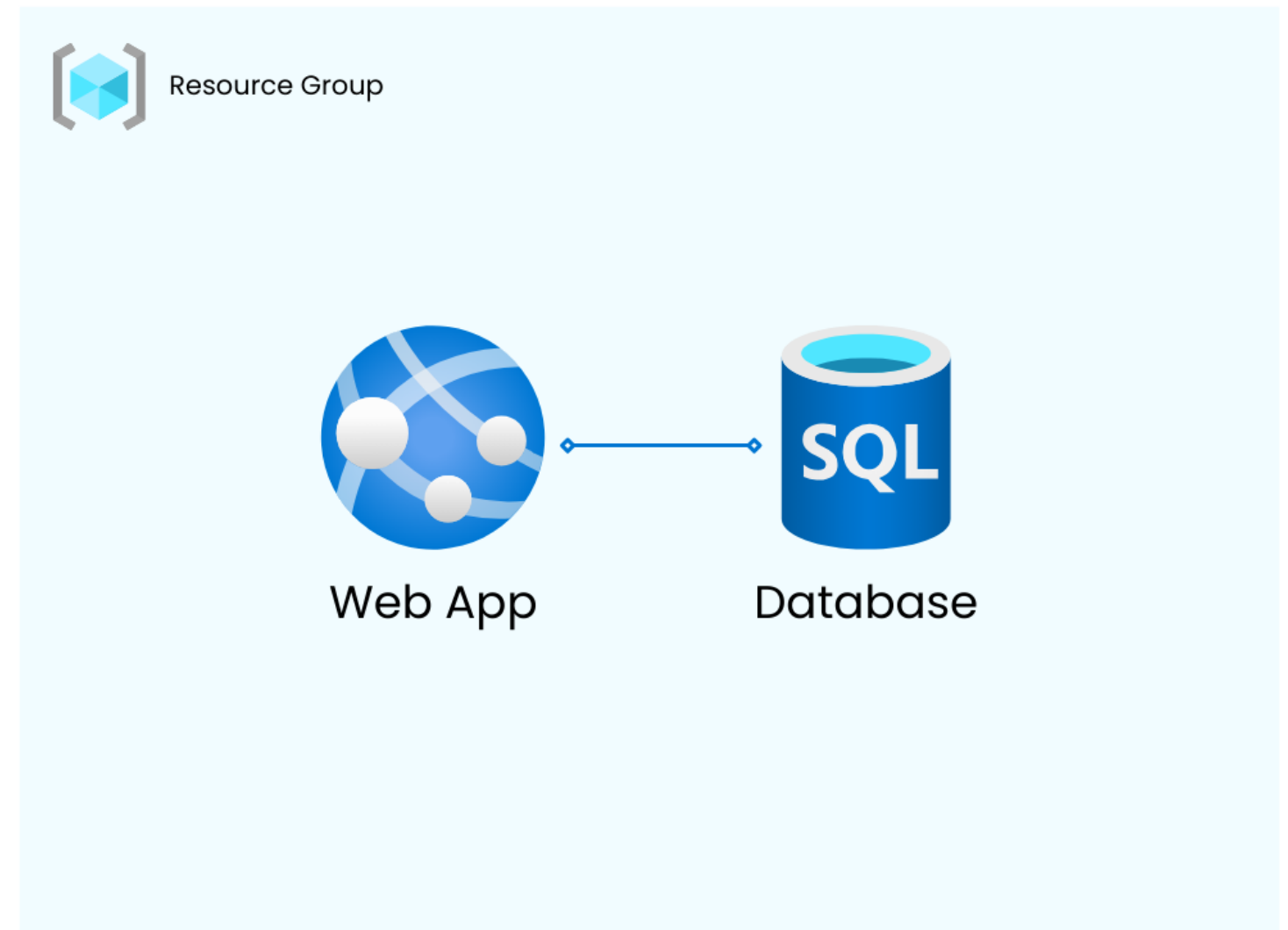
Azure Resource Manager (ARM)

- Centralized management layer for resources and resource groups

- Checks privileges against ActiveDirectory for resource:
  - Creation
  - Management
  - Deletion

[1] MSFT
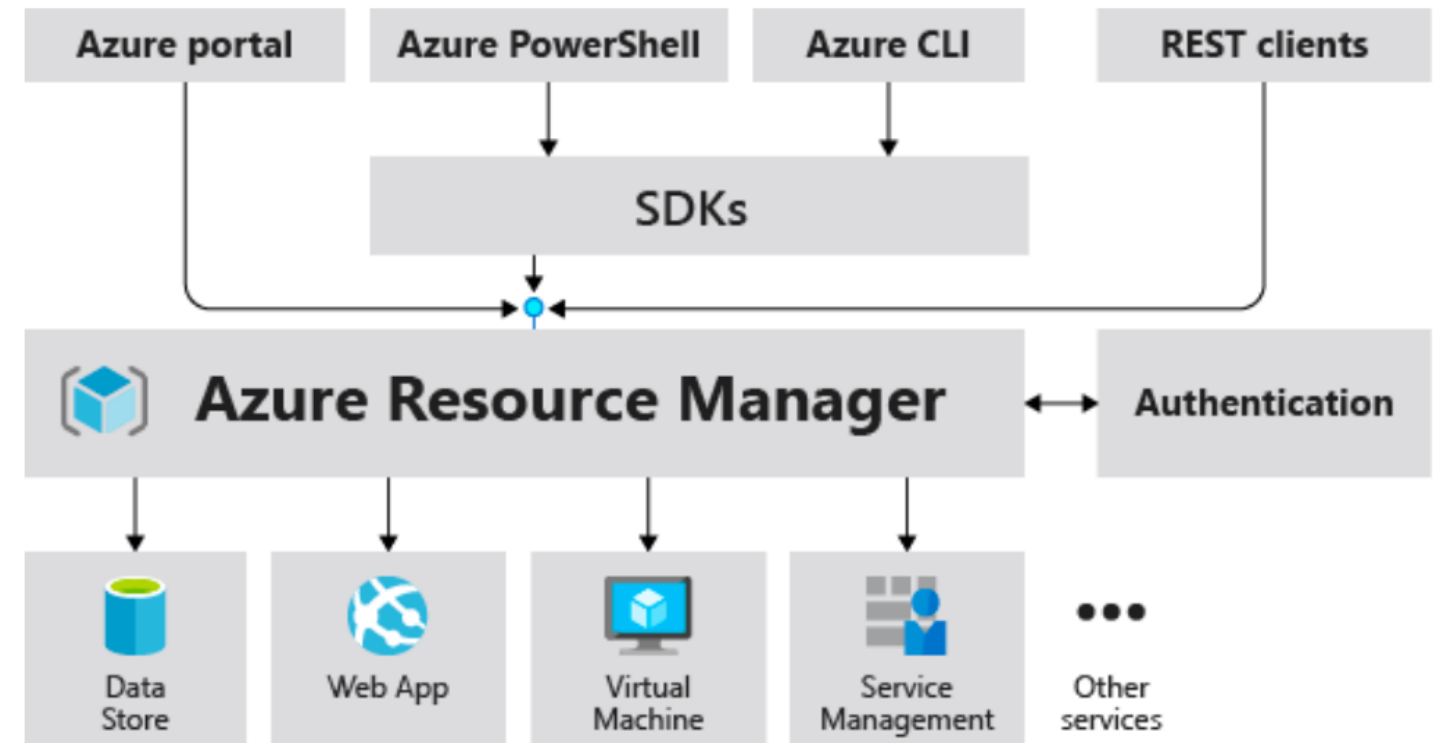
Core offering

Compute

Storage

Networking

Databases

Compute

Provision and manage cloud resources to run application without managing physical hardware

Virtual
Machines

Container
Instances
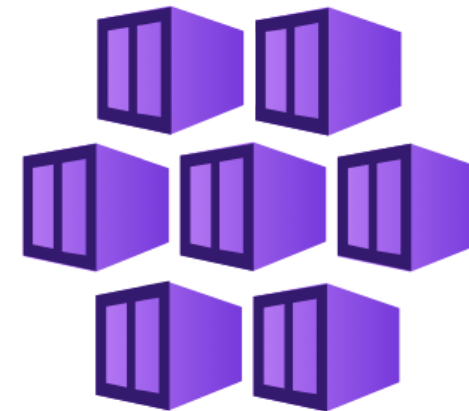
Kubernetes
Service

Storage

Managed service responsible for providing readily available cloud storage solutions

Data Lake
Storage
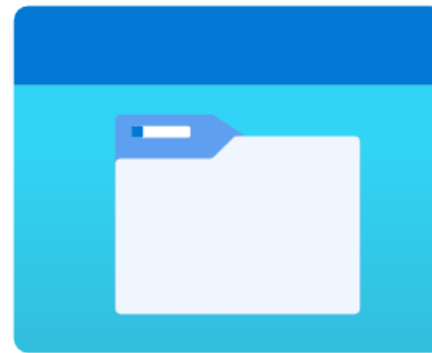
Files

Blob
Storage

Networking

Digital highway connecting different resources whether on-premises or on Azure platform

Content
Delivery
Network

Virtual
Network
Manager

VPN
Gateway
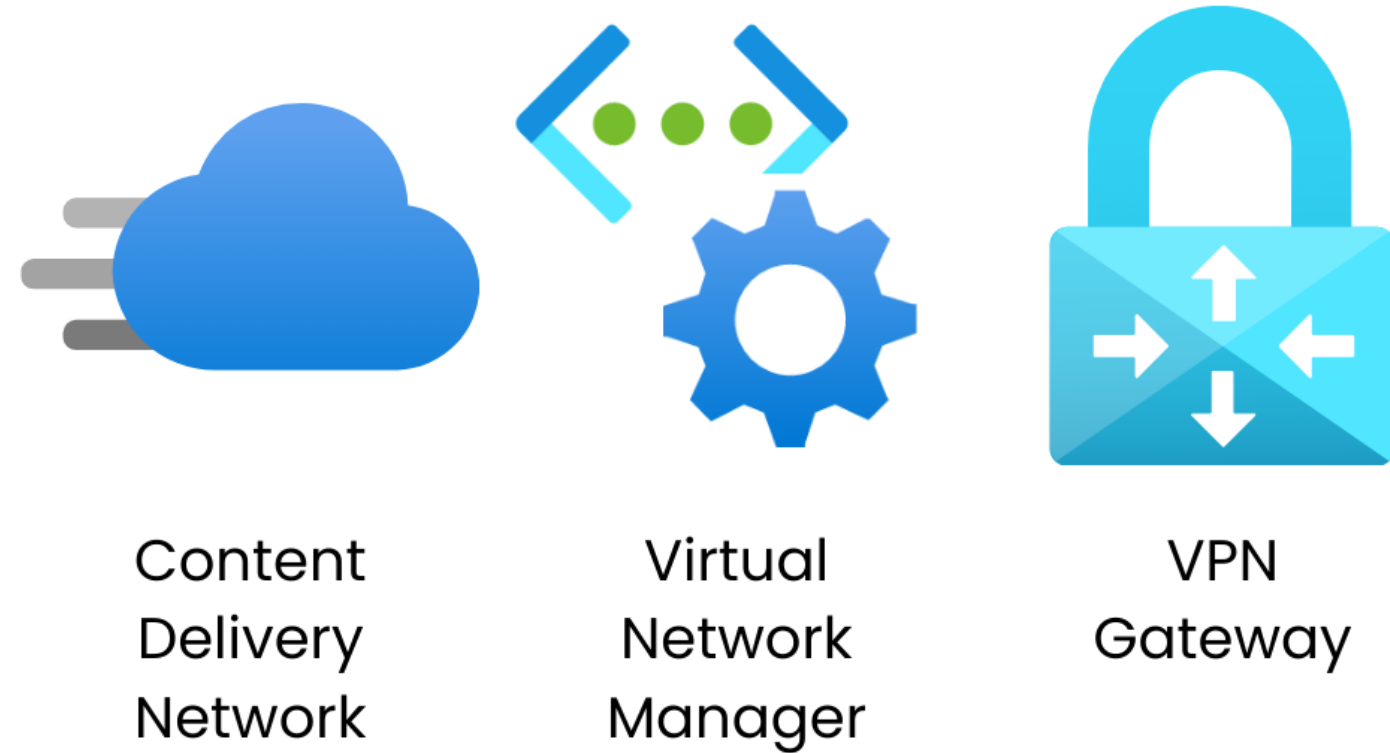
Databases

Store structured and semi-structured data in a central repository

Cosmo
Database

SQL
Database

SQL
Managed
Instance

Let's practice!

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Azure services overview

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Cloud service types

Infrastructure as a Service (IaaS)

Platform as a Service (PaaS)

Software as a Service (SaaS)

Infrastructure as a Service (IaaS)

Most flexible category, provides the user maximum control

	Responsibility	IaaS
Responsibility always retained by the customer	Information and data	
	Devices (Mobile and PCs)	
	Accounts and identities	
Responsibility varies by type	Identity and directory infrastructure	
	Applications	
	Network controls	
	Operating system	
Responsibility transfers to cloud provider	Physical hosts	
	Physical network	
	Physical datacenter	

■ Microsoft ■ Customer ◨ Shared

Platform as a Service (PaaS)

Middle-ground between Infrastructure and Software as a Service

	Responsibility	IaaS	PaaS
Responsibility always retained by the customer	Information and data		
	Devices (Mobile and PCs)		
	Accounts and identities		
Responsibility varies by type	Identity and directory infrastructure		
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Responsibility transfers to cloud provider	Physical hosts		
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Microsoft   Customer   Shared

Software as a Service (SaaS)

Complete solution - subscription fee to connect to applications
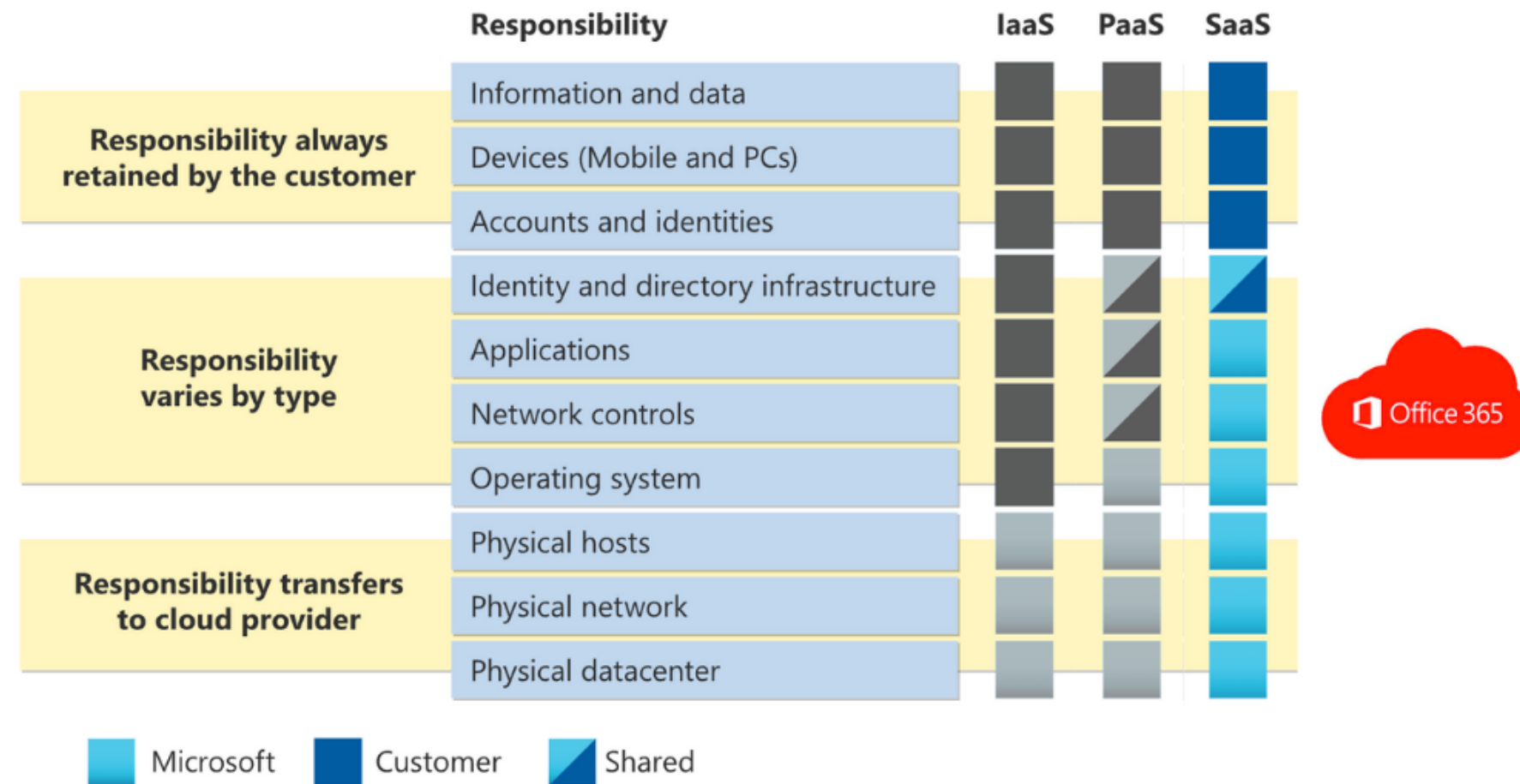
Services by cloud service type

Infrastructure as a Service (IaaS)

Virtual Desktop

Virtual Machine

Storage Accounts

Disks

Firewall

Load Balancer

Platform as a Service (IaaS)

SQL Database

DevTest Labs

Maria DB

App Service

Azure Functions

API Management

Software as a Service (IaaS)

Azure DevOps

Sentinel

IoT Central

Advisor

Azure Migrate

Internet Analyzer

Availability of services

Foundational services

Azure Application Gateway

Azure Backup

Azure Cosmos

Azure Event Hubs

Azure Virtual Machines

Azure VPN Gateway

Mainstream services

Azure API Management

Azure Container Registry

Azure Functions

Azure Private Link

Azure Virtual WAN

Strategic services

Azure Lab Services

Azure VMware Solution

Azure Applied AI Services

Azure Machine Learning
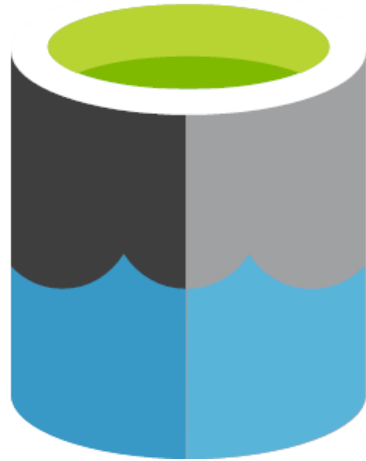
Azure Red Hat OpenShift

Azure Kubernetes

Ecosystem

Versatile ecosystem: from modernizing urban infrastructure to powering business solutions

Big data and analytics

Azure Data Lake

HDInsight

Synapse

Stream Analytics

AI & Machine Learning

Machine Learning

Cognitive Services

Databricks
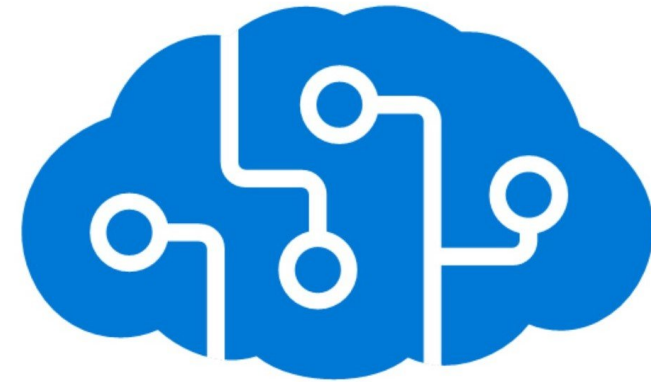
and more...

- Language comprehension

- Speech recognition

Let's practice!

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