

Introduction to Azure

INTRODUCTION TO AZURE



Kevin James

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

Built in collaboration with Microsoft



¹ <https://app.datacamp.com/certification/technology-certifications/azure-fundamentals>

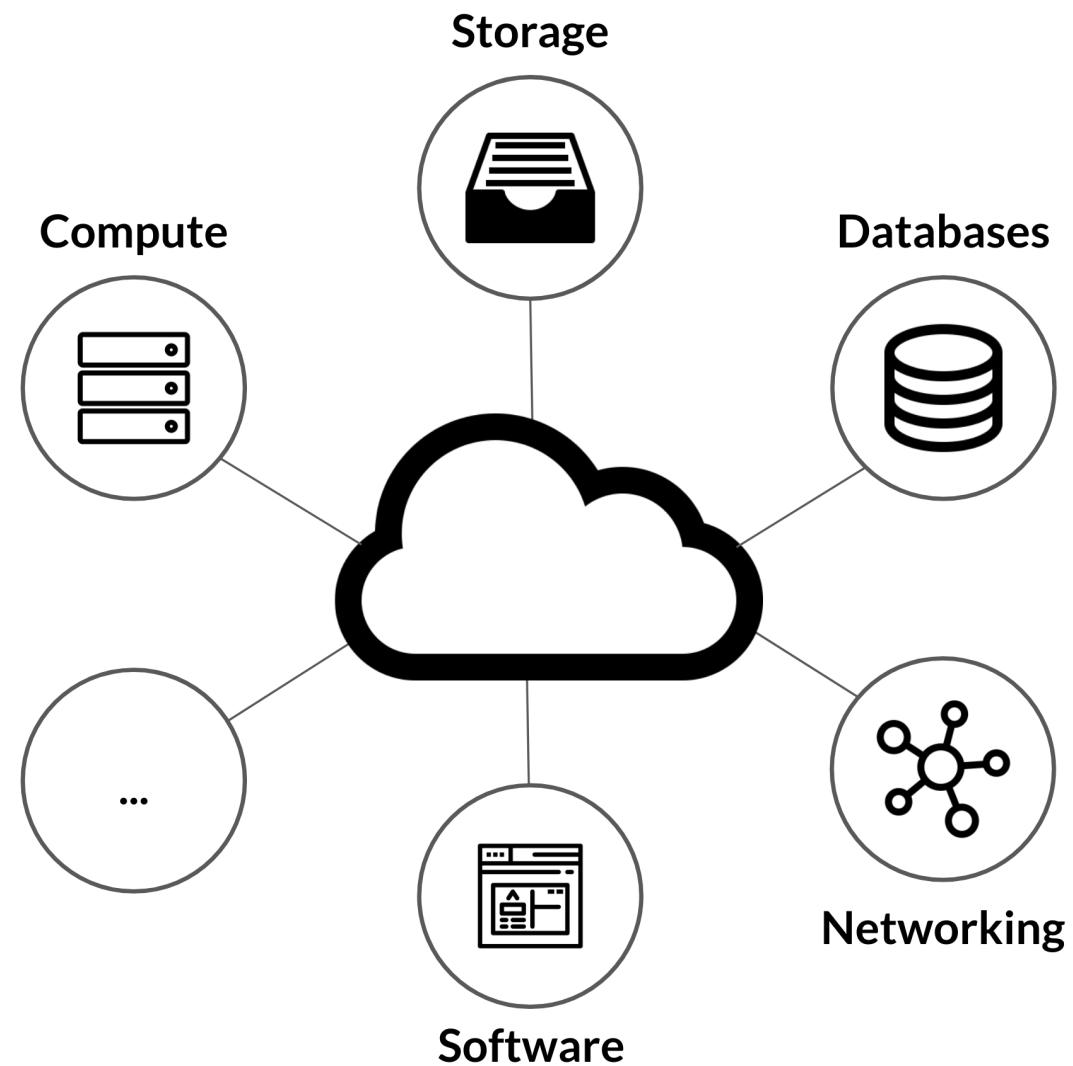
Introducing: Azure

- 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

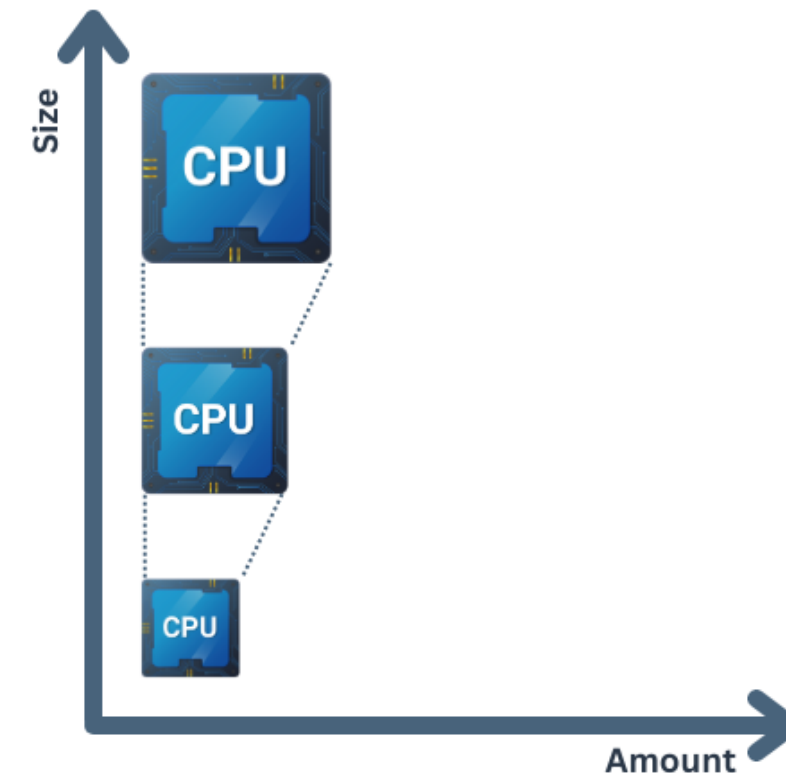
Benefits of cloud services

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

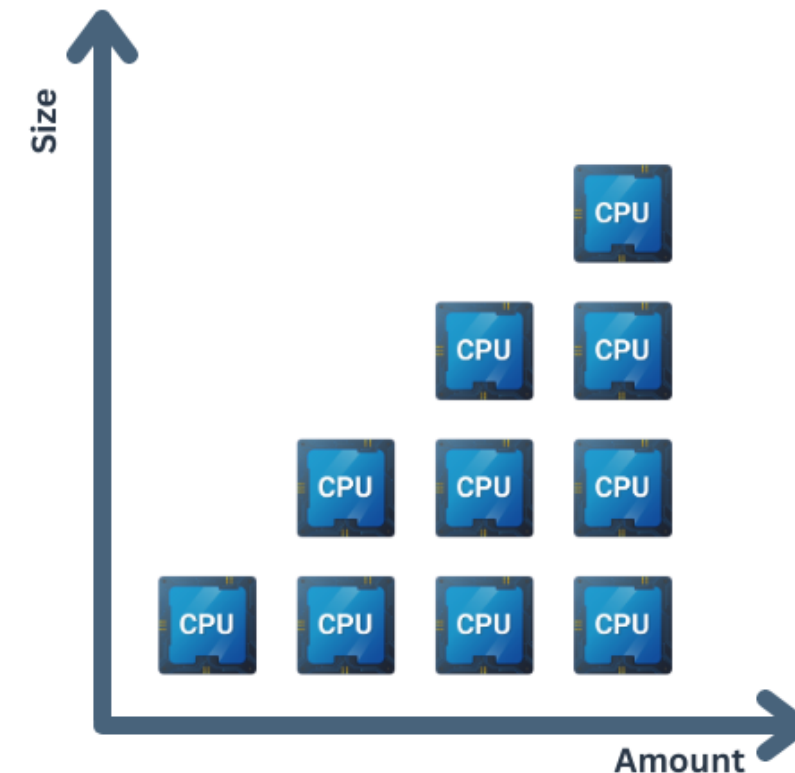
Benefits of cloud services

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

The screenshot displays a web browser with two tabs. The left tab, titled 'Create a virtual machine | R', shows a course page on 'campus-no-cache.datacamp.com'. The page has a breadcrumb 'Learn / Courses / Azure Architecture and ...' and a 'Course Outline' button. The main content area is titled 'Create a virtual machine' and contains three paragraphs of text. Below the text is a progress bar with six steps, the first of which is active. The right tab, titled 'New Tab', shows a 'Guest' login screen with the heading 'You're browsing as a guest' and a warning about browser history and cookies. A 'Learn more' link is also present.

Create a virtual machine

The Finance department has asked for a dedicated virtual machine for exclusive use.

They intend to use accounting software compatible only with Windows, and access should be restricted to finance members only.

The manager has approved their request, and you are assigned to assist in creating the VM.

Achieving an optimal balance between virtual machine performance and associated costs is crucial.

✓ Instructions 100 XP

1 — 2 — 3 — 4 — 5 — 6

Follow the instruction from the right pane to connect to an Azure environment (if not already connected).

Session Status ● Ready

Your Cloud Environment

We offer a dedicated cloud environment for you to complete the exercise. Please open an incognito window to log into this cloud environment. Connection details are provided below.

[How to Connect?](#)

Credentials

Username **Password**

student-49e96569-7 [Copy](#) QQG63Y6azwna&t1l [Copy](#)

[Open Link in Incognito Window](#)

[Copy Link](#) [Copy](#)

You're browsing as a guest

Pages that you view in this window won't appear in the browser history and they won't leave other traces, like cookies, on the computer after you close all open Guest windows. Any files that you download will be preserved, however.

[Learn more](#)

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

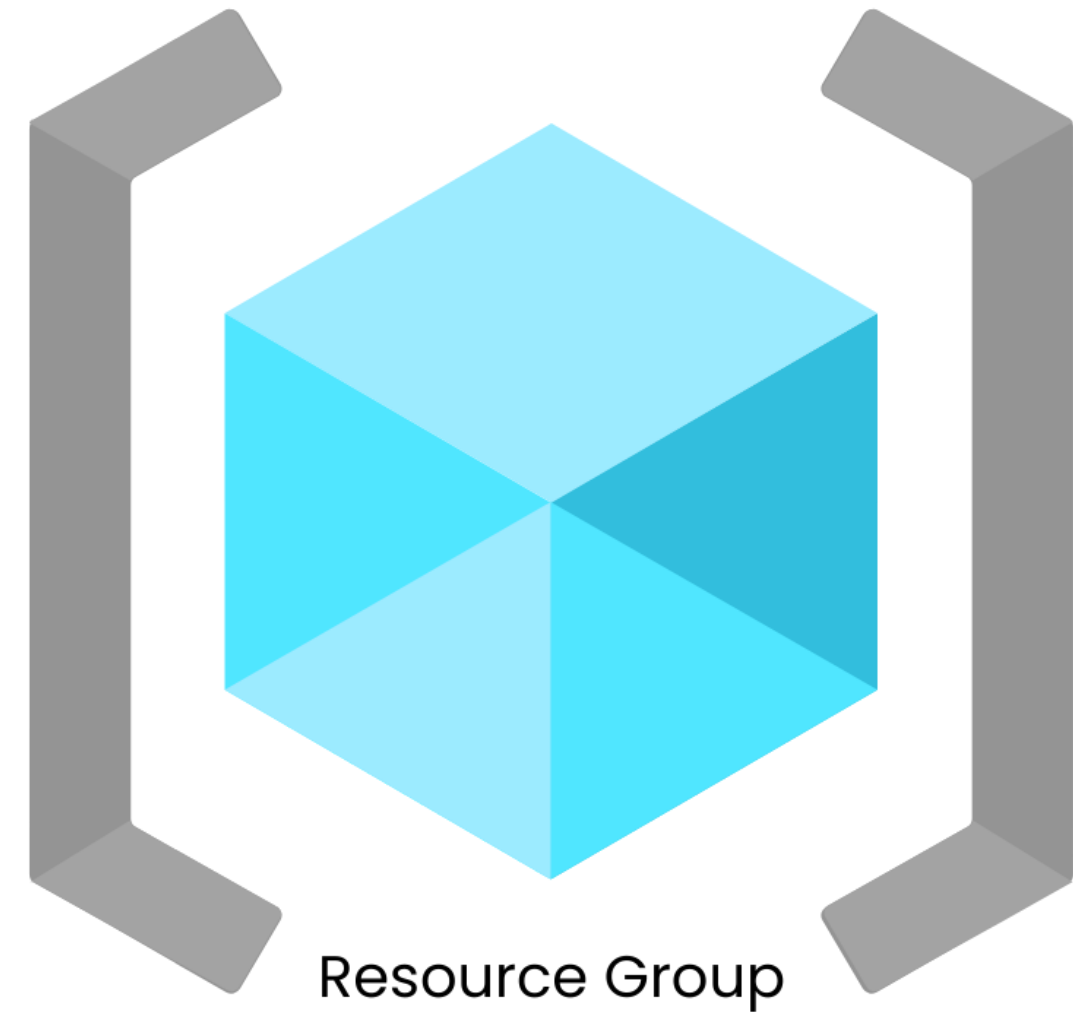
Resources

- **Resource** represents purchased service
 - Web hosting
 - Virtual machine
 - Database
- Generic JSON template
 - Text-based file presenting structured data in JavaScript

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

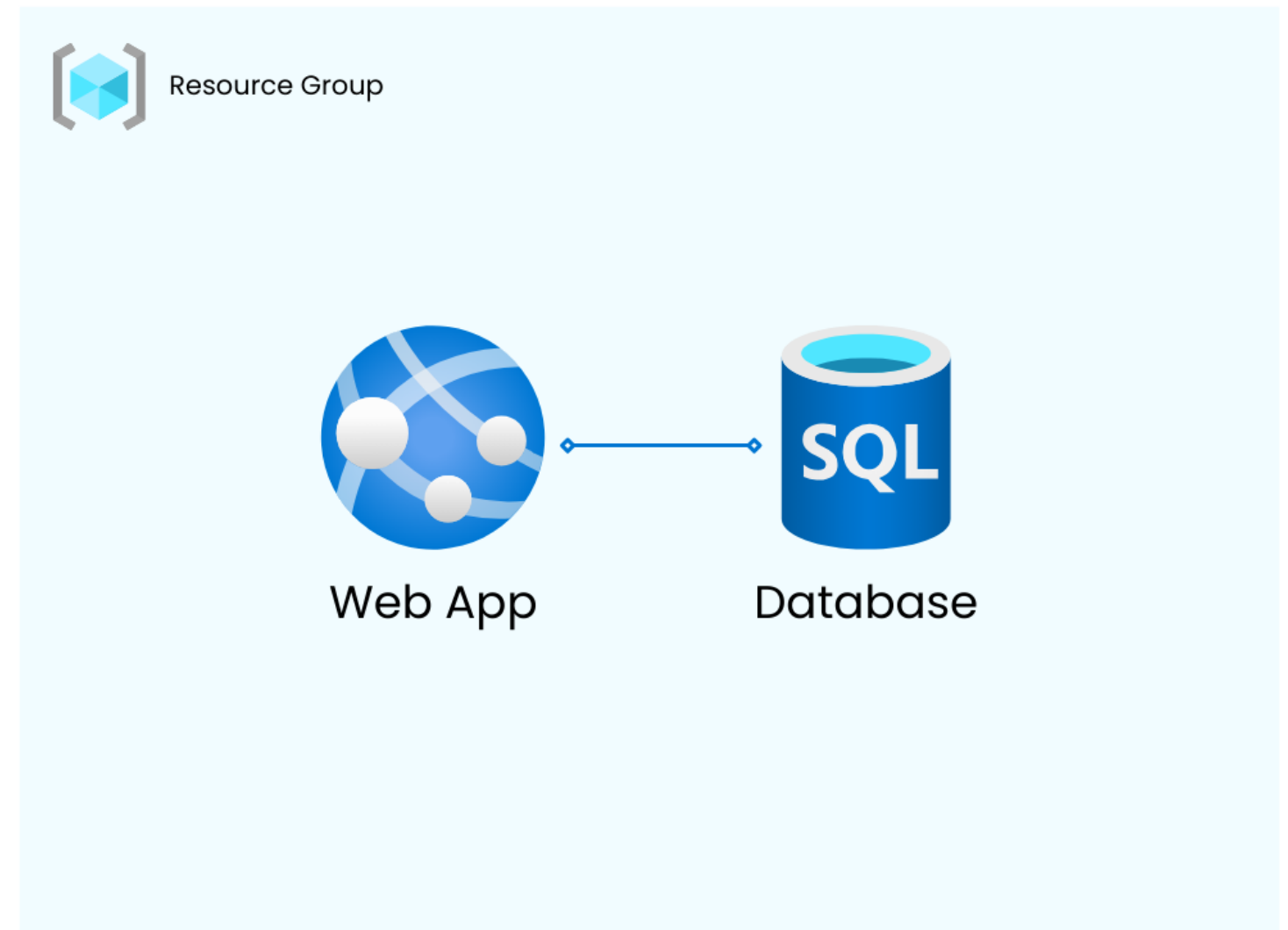
Resource groups

- Resource requires a Resource Group
- Logical groupings to hold related resources
 - Life-cycle
 - Permissions
 - Policies



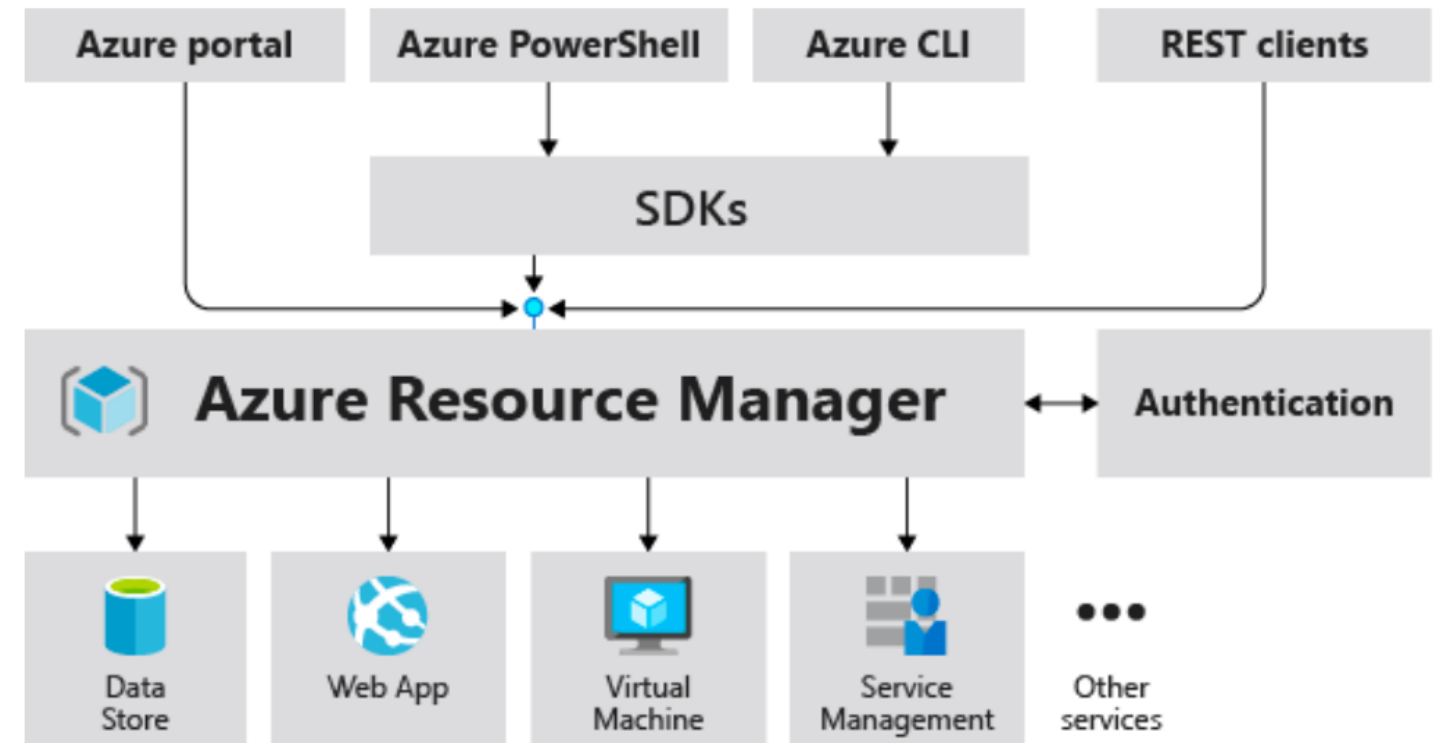
Resource groups

- 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
 - Department
 - ...



Azure Resource Manager (ARM)

- Centralized management layer for resources and resource groups
- Checks privileges against ActiveDirectory for resource:
 - Creation
 - Management
 - Deletion



Core offering



Compute



Storage



Networking



Databases

Compute

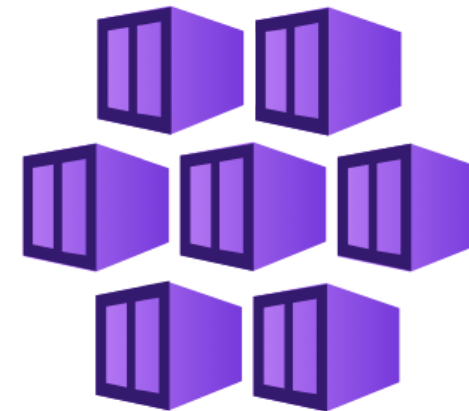
Provision and manage cloud resources to run application without managing physical hardware



Virtual
Machines



Container
Instances



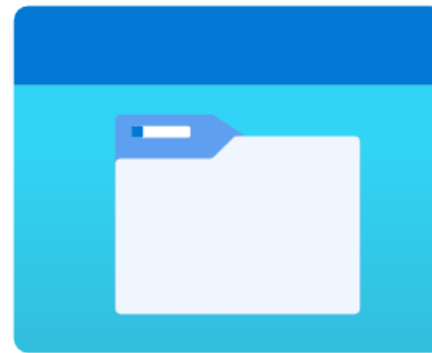
Kubernetes
Service

Storage

Managed service responsible for providing readily available cloud storage solutions



Data Lake
Storage



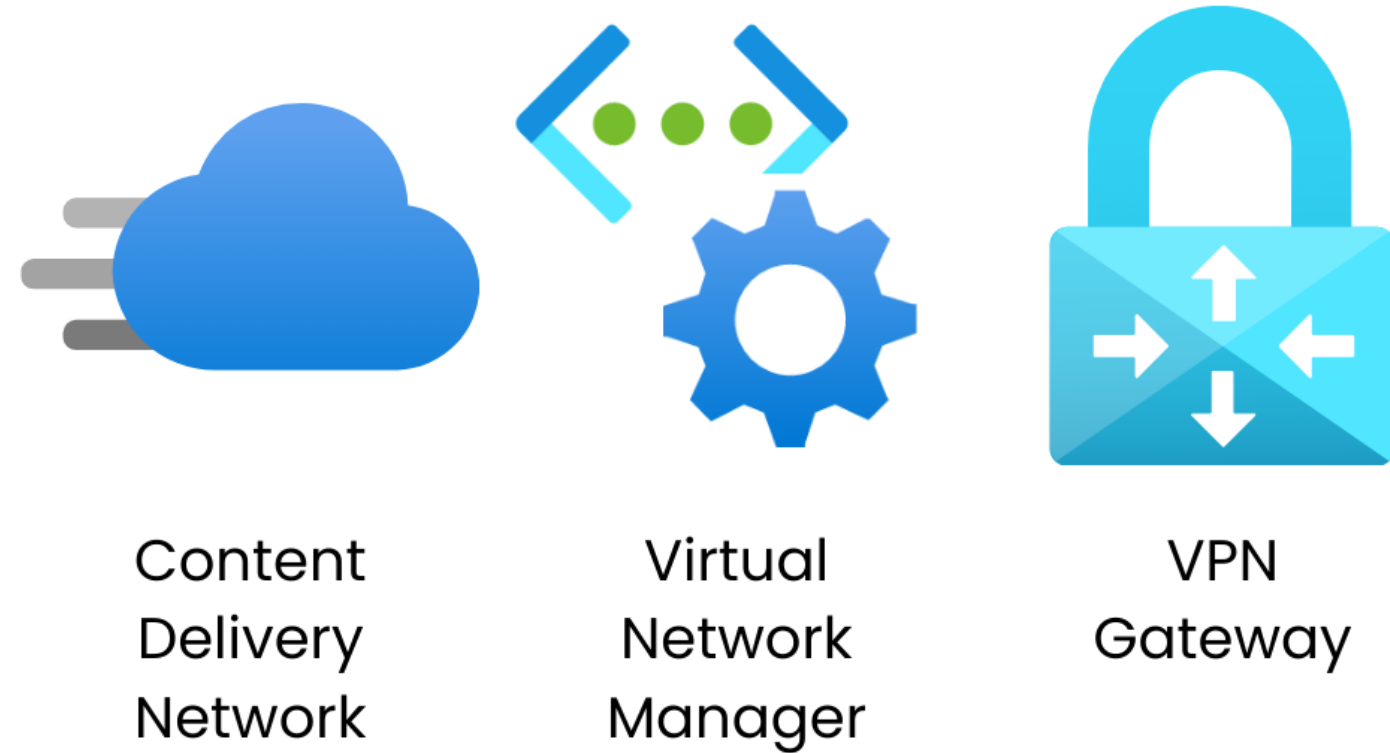
Files



Blob
Storage

Networking

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



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

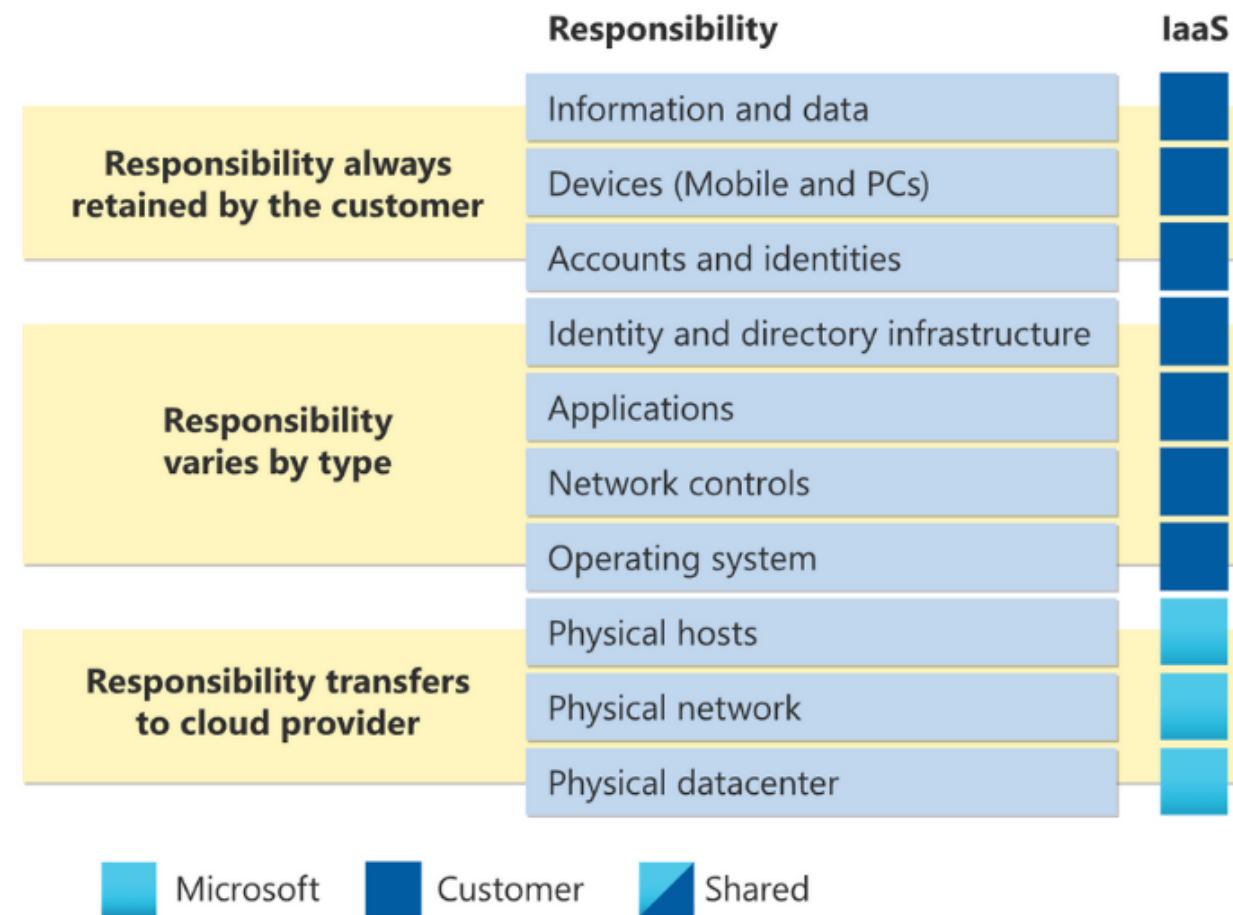
Infrastructure
as a Service
(IaaS)

Platform as a
Service
(PaaS)

Software as a
Service
(SaaS)

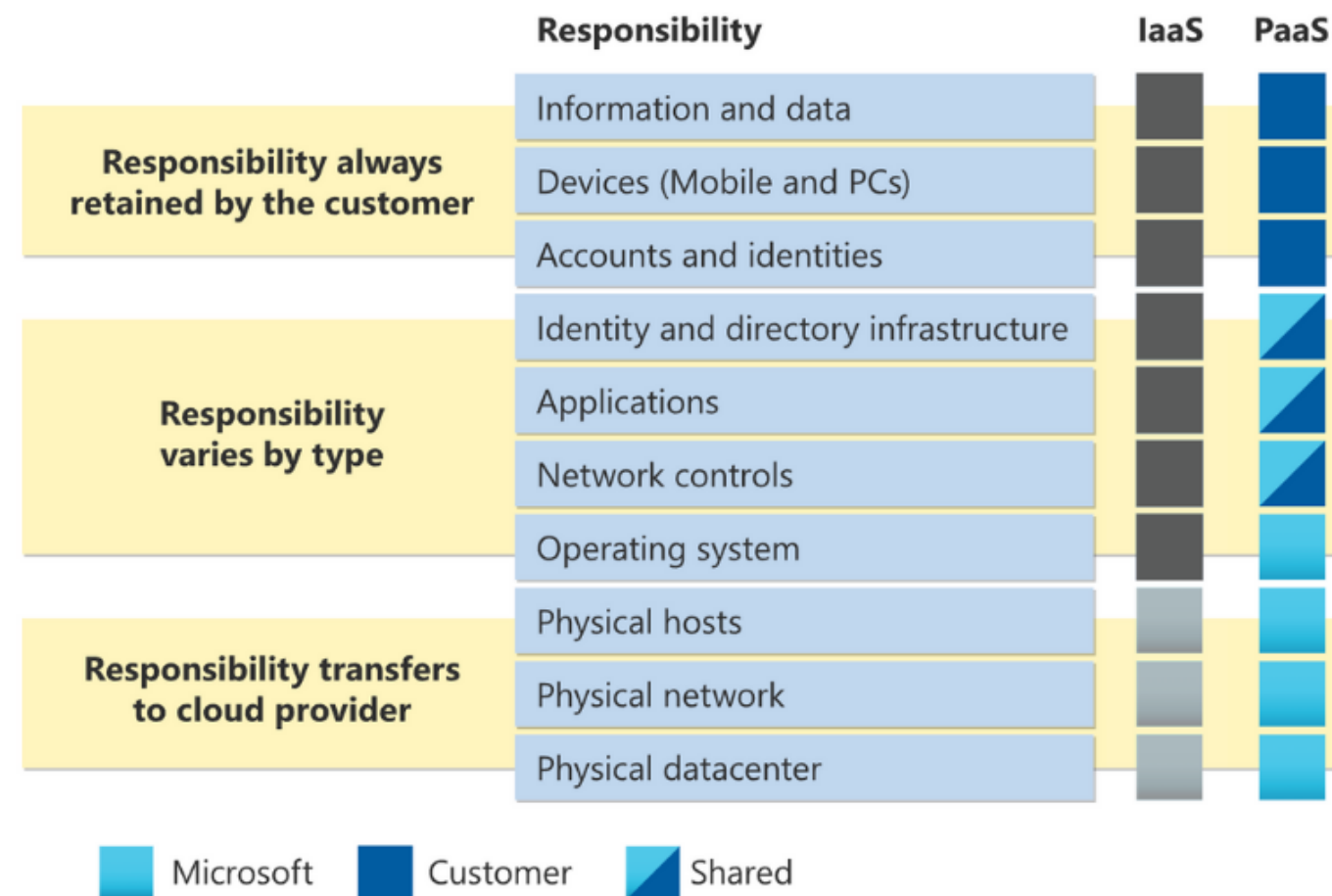
Infrastructure as a Service (IaaS)

Most flexible category, provides the user maximum control



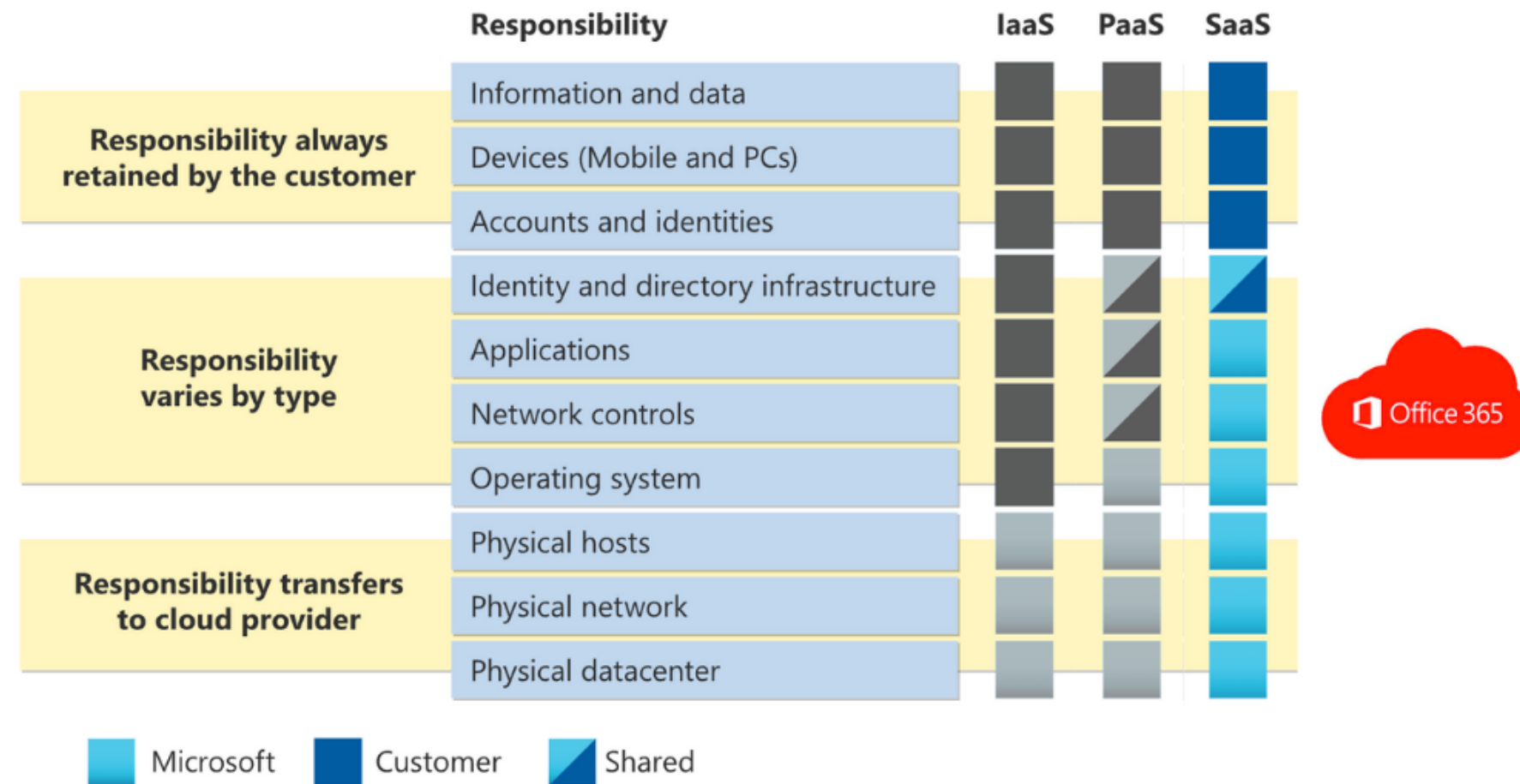
Platform as a Service (PaaS)

Middle-ground between Infrastructure and Software as a Service



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 (PaaS)



SQL Database



DevTest Labs



Maria DB



App Service



Azure Functions



API Management

Software as a Service (SaaS)



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

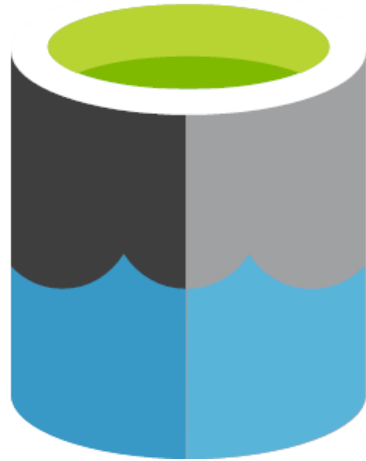
Ecosystem

Versatile ecosystem: from modernizing urban infrastructure to powering business solutions



Big data and analytics

Azure Data Lake



Synapse



HDInsight



Stream Analytics



AI & Machine Learning

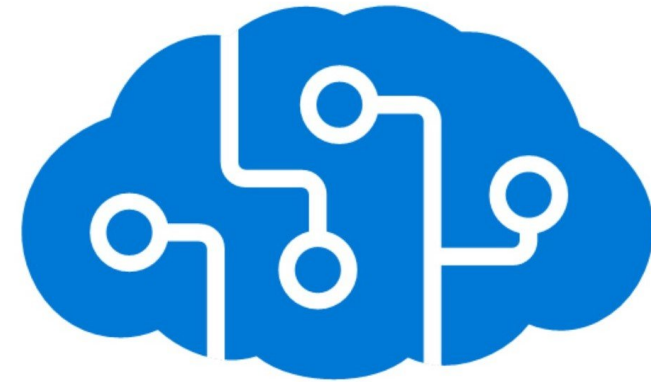
Machine Learning



Databricks



Cognitive Services



and more...

- Language comprehension
- Speech recognition

Let's practice!

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