BI&SemWeb’25@Abidjan

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Cloud & Science des données

Arclytics IT-Consulting GmbH

Accélérer votre transformation sur Azure Cloud

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À propos de nous

ARCLYTICS est une société Allemande de conseil en informatique spécialisée dans le **Cloud Public Azure**.

Nous offrons à nos clients des conseils et un support de premier ordre pour la **planification**, la **mise en œuvre** et la **gestion de solutions cloud sur Azure**. Nous travaillons en **étroite collaboration** avec nos clients pour développer des **solutions individuelles** qui répondent à leurs exigences spécifiques.

Notre Portefeuille de Services

Votre partenaire Azure de bout en bout

Services Clés : Infrastructure & Modern Work

Infrastructure Azure

Conception, mise en œuvre et gestion de Landing Zones Azure (Hub-Spoke) évolutives et sécurisées via IaC.

Identité & Sécurité

Conseil expert pour Entra ID, la gestion des identités et la sécurité M365 (Defender, Purview, Sentinel).

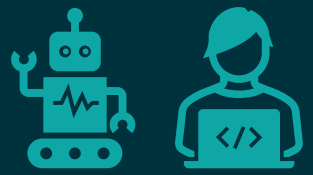
Microsoft 365

Déploiement, migration et optimisation de votre environnement M365 en mettant l'accent sur la sécurité et la gouvernance.

Services Clés : Application & Données

Migration vers le Cloud

Évaluations de la préparation, stratégie d'adoption, estimation des coûts et planification et exécution de la migration de bout en bout.



Azure DevOps

Mise en œuvre de pipelines CI/CD, automatisation des processus et gestion de projet agile (Scrum/Kanban).

AI, Données & Analytique

Construire et exploiter des plateformes modernes de données et d'analyse pour libérer tout le potentiel de vos données.

NABY SOW

CEO & Founder

Cloud Solution, Data & AI Architect

Guest Speaker & Lecturer

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PARTNERS

Solution Partners

Strategic Partners

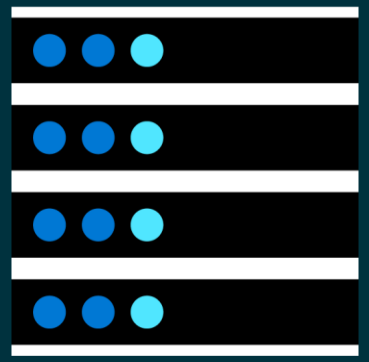
AGENDA

- Arclytics IT-Consulting GmbH
- Cloud Fundamentals
- Azure Cloud
- Data & Analytics in Azure
- Real World Customer Projects

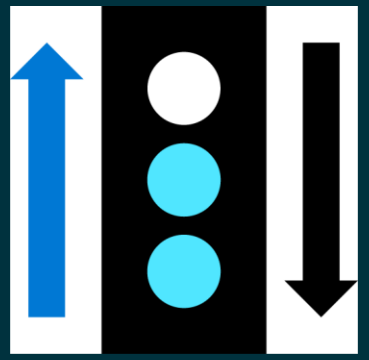
Cloud Computing

What is cloud computing?

Cloud Computing is **the delivery of computing services over the internet**, enabling faster innovation, flexible resources, and economies of scale.



Compute

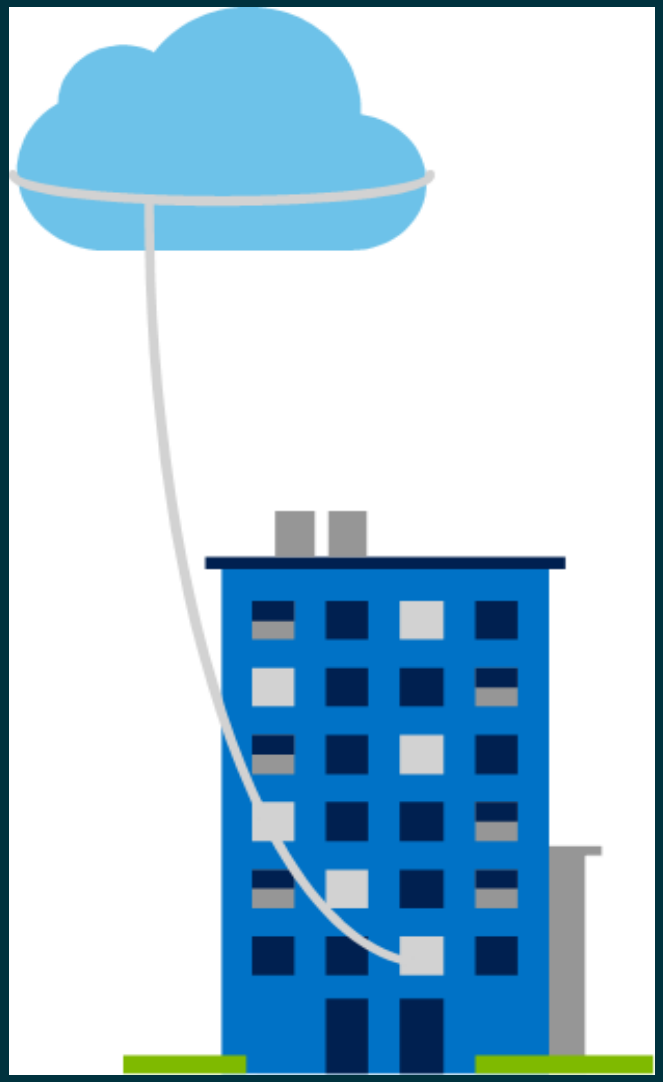


Networking

Storage

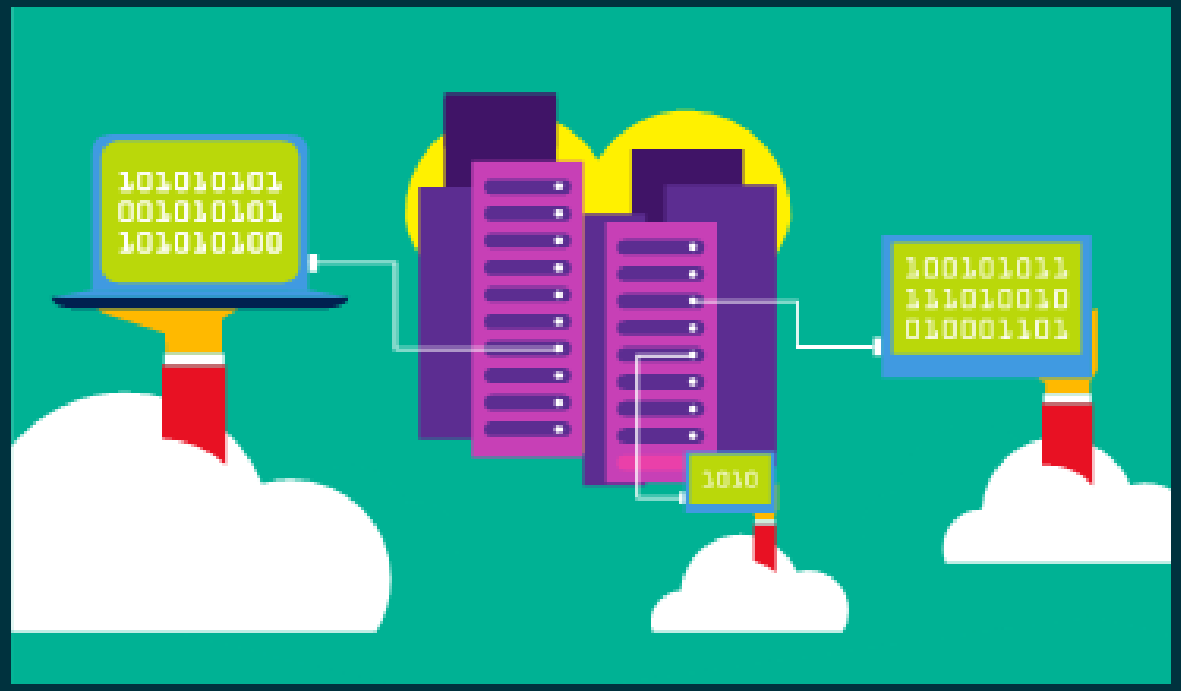
Private cloud

- Organizations create a cloud environment in their datacenter.
- Organization is responsible for operating the services they provide.
- Does not provide access to users outside of the organization.



Public cloud

- Owned by cloud services or hosting provider.
- Provides resources and services to multiple organizations and users.
- Accessed via secure network connection (typically over the internet).



Hybrid cloud

Combines **Public** and **Private** clouds to allow applications to run in the most appropriate location.

Cloud model comparison

Public Cloud	• No capital expenditures to scale up. • Applications can be quickly provisioned and deprovisioned. • Organizations pay only for what they use.
Private Cloud	• Hardware must be purchased for start-up and maintenance. • Organizations have complete control over resources and security. • Organizations are responsible for hardware maintenance and updates.
Hybrid Cloud	• Provides the most flexibility. • Organizations determine where to run their applications. • Organizations control security, compliance, or legal requirements.

Cloud benefits

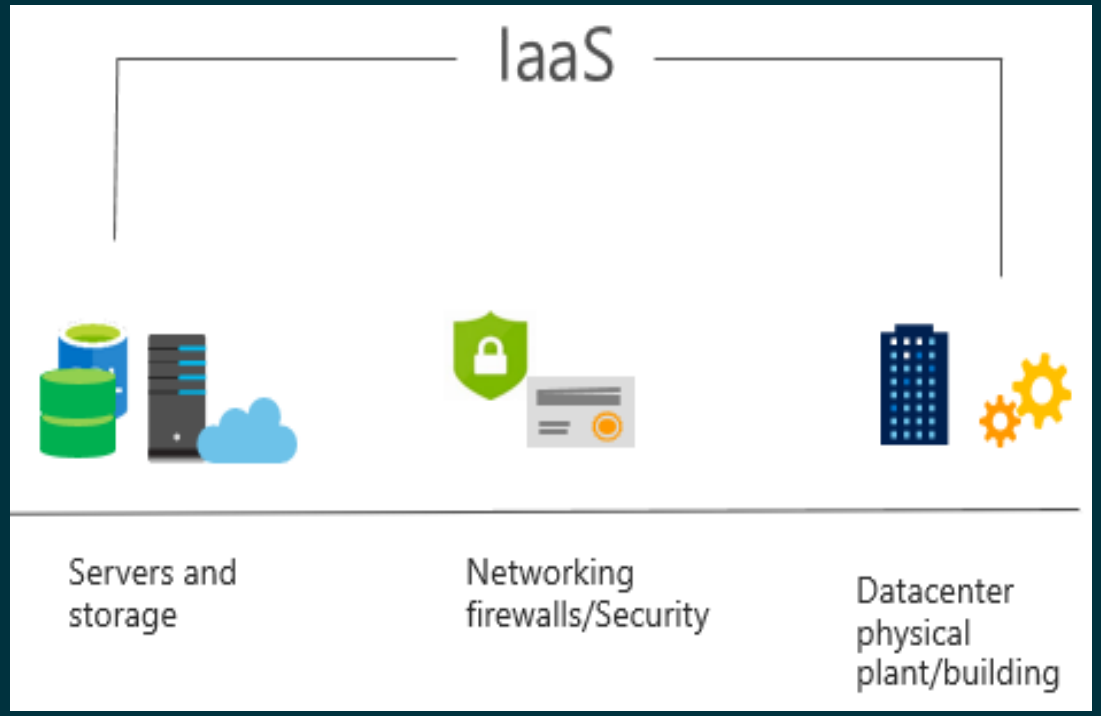
Cloud Benefits

High availability	Elasticity
Scalability	Reliability
Predictability	Security
Governance	Manageability

Cloud service types

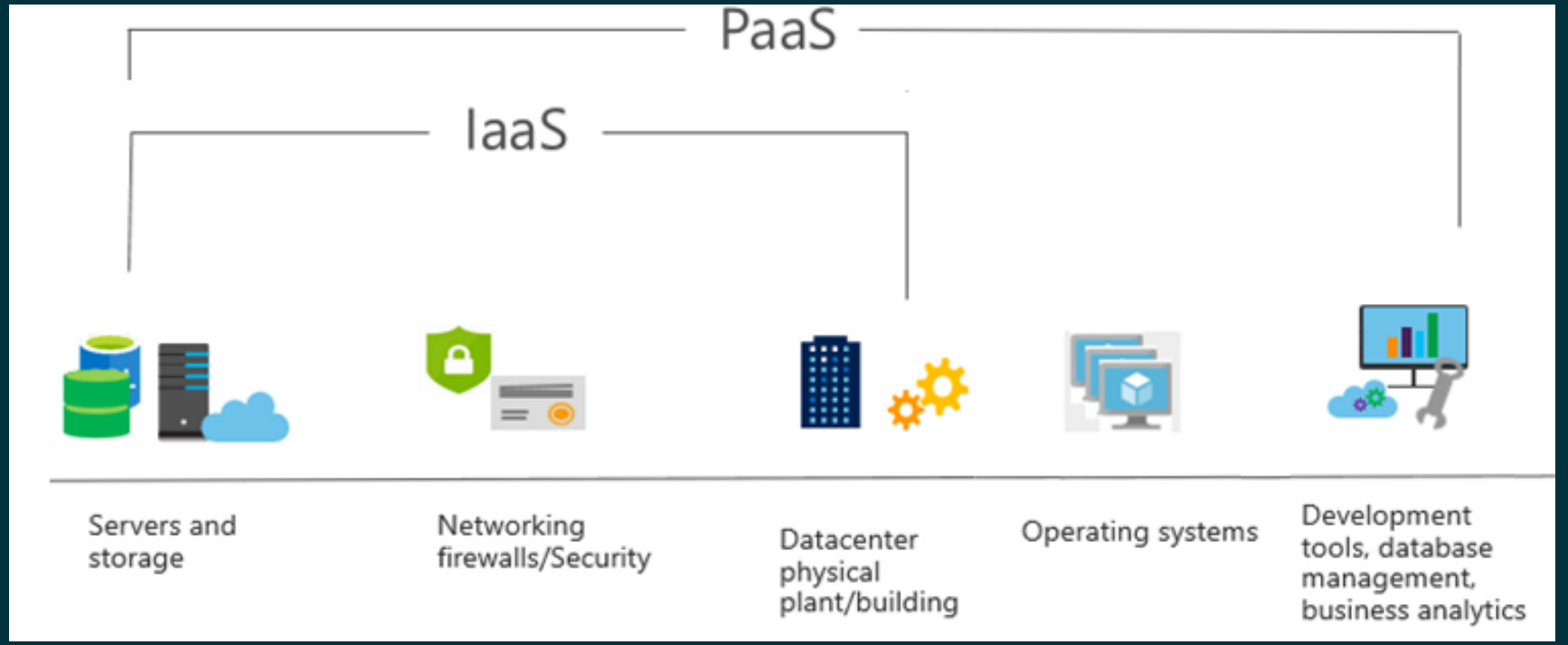
Infrastructure as a Service (IaaS)

Build pay-as-you-go IT infrastructure by renting servers, virtual machines, storage, networks, and operating systems from a cloud provider.



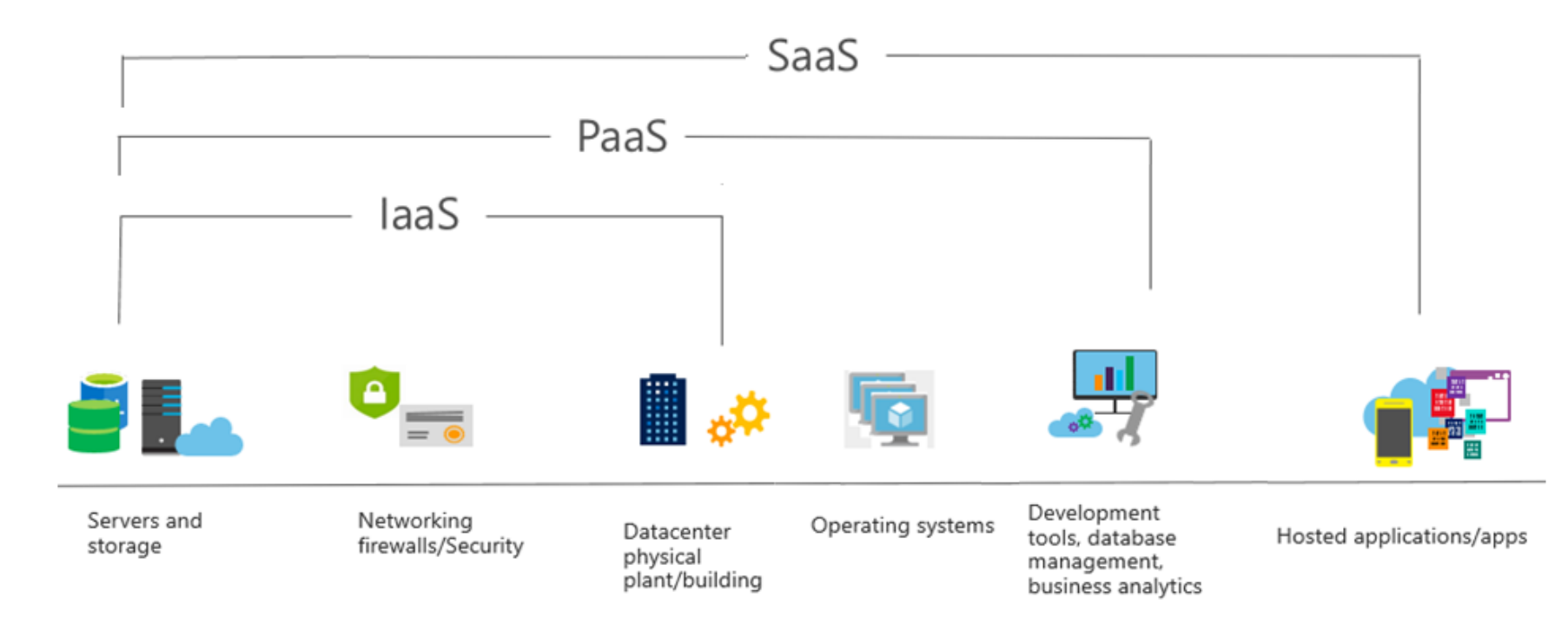
Platform as a Service (PaaS)

Provides environment for building, testing, and deploying software applications; without focusing on managing underlying infrastructure.



Software as a Service (SaaS)

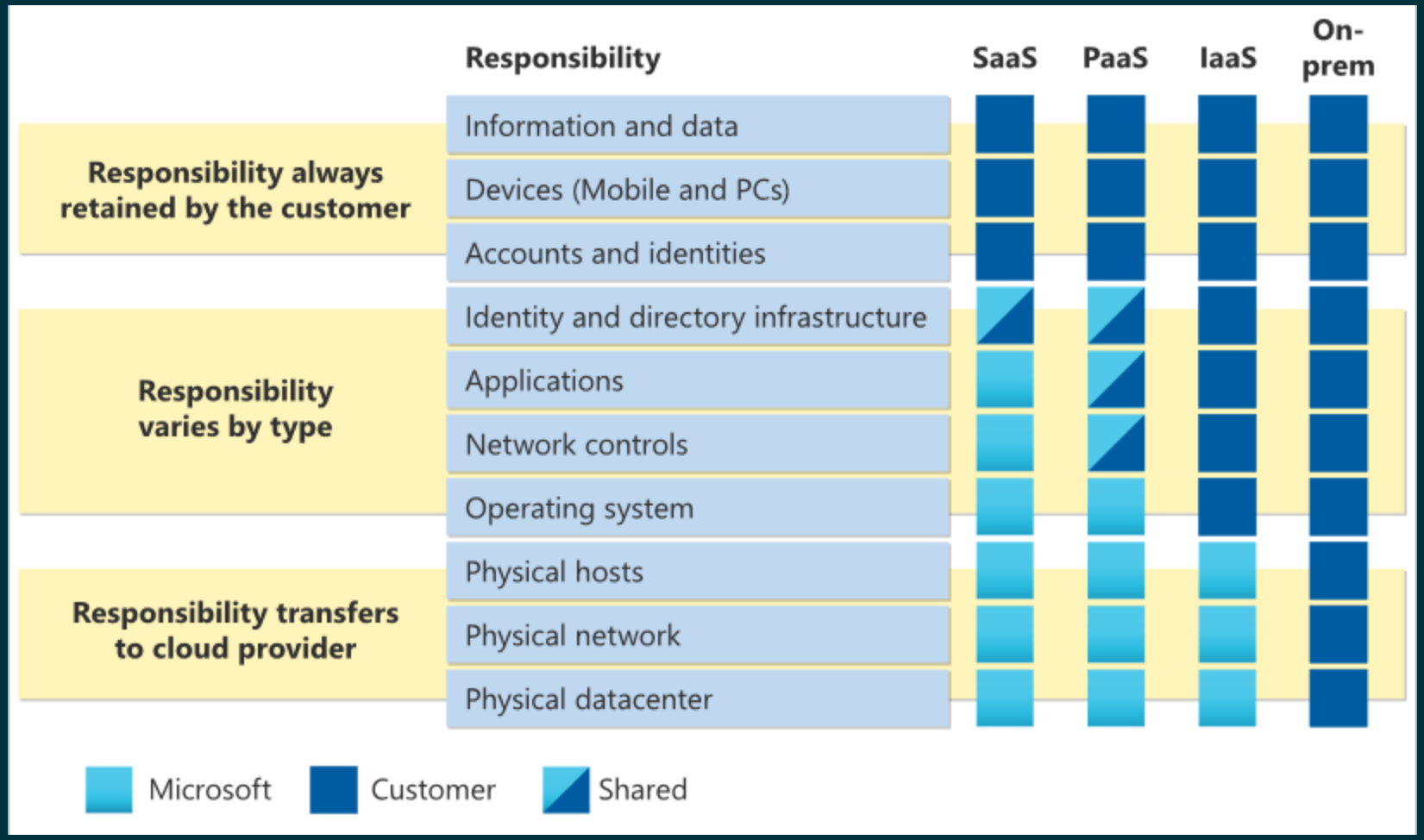
Users connect to and use cloud-based apps over the internet: for example, Microsoft Office 365, email, and calendars.



Cloud service comparison

IaaS	PaaS	SaaS
The most flexible cloud service.	Focus on application development.	Pay-as-you-go pricing model.
You configure and manage the hardware for your application.	Platform management is handled by the cloud provider.	Users pay for the software they use on a subscription model.

Shared responsibility model



Microsoft Azure

Microsoft Azure

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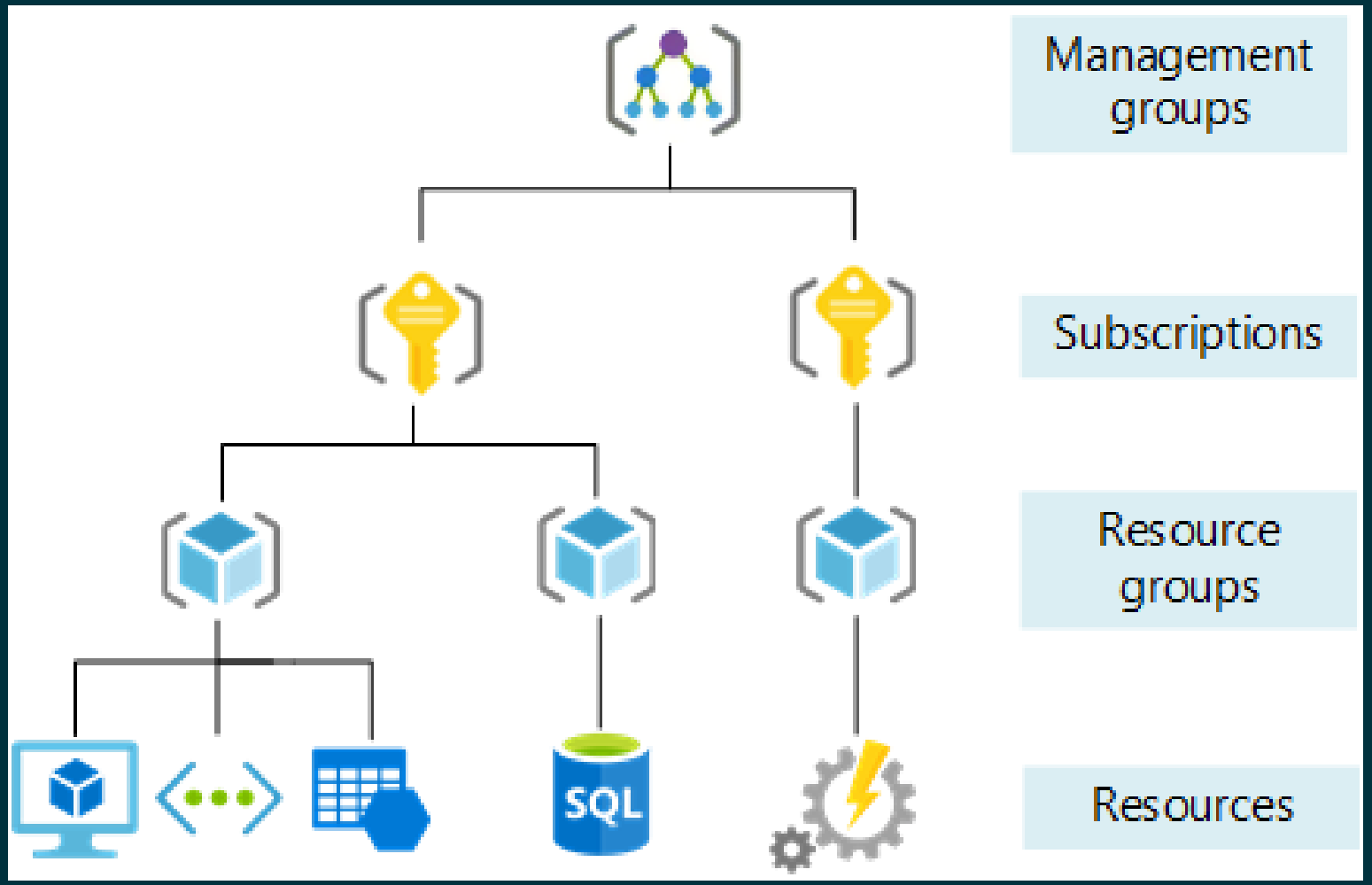
Azure architectural components

Azure Structure



Compute and Networking

Azure compute services

Azure **compute** is an on-demand computing service that provides computing resources such as disks, processors, memory, networking, and operating systems

Virtual Machines

App Services

Container Instances

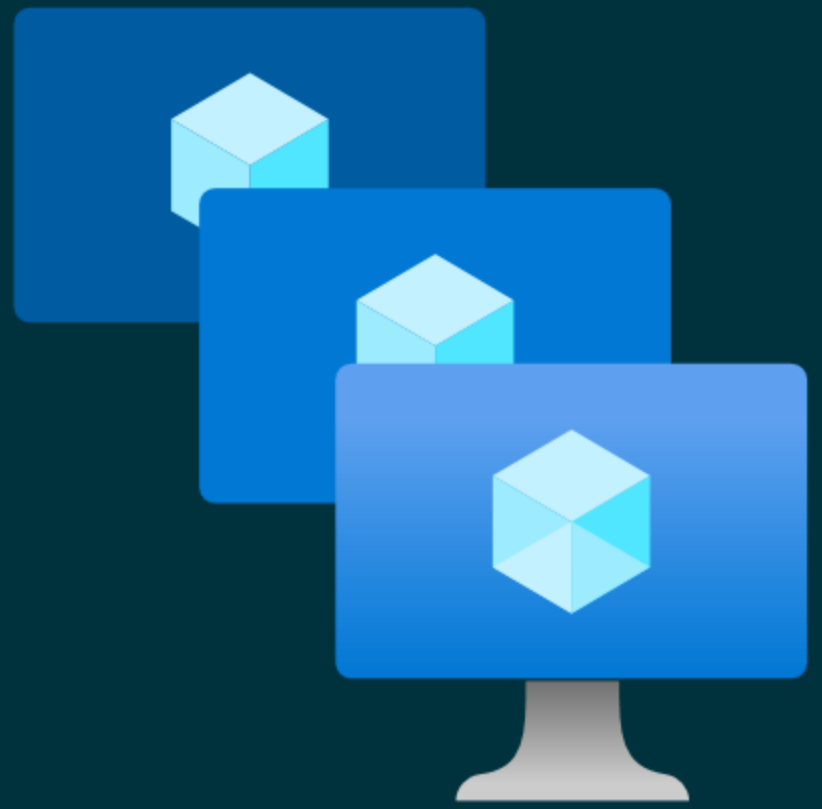
Azure Kubernetes Services (AKS)

Azure Virtual Desktop

VM scale sets

Scale sets provide a load-balanced opportunity to automatically scale resources.

- ***Scale out*** when resource needs increase.
- ***Scale in*** when resource needs are lower.



Azure Container Services

Azure **Containers** are a light-weight, virtualized environment that does not require operating system management, and can respond to changes on demand.

Azure Kubernetes Service: an orchestration service for containers with distributed architectures and large volumes of containers.

Azure Container Apps is a serverless platform that allows you to maintain less infrastructure and save costs while running containerized applications.

Comparing Azure compute options

Virtual machines

Cloud based server that supports either Windows or Linux environments.

Useful for lift-and-shift migrations to the cloud.

Complete operating system package, including the host operating system.

Virtual Desktop

Provides a cloud based personal computer Windows desktop experience.

Dedicated applications to connect and use, or accessible from any modern browser.

Multi-client login allows multiple users to log into the same machine at the same time.

Containers

Lightweight, miniature environment well suited for running microservices.

Designed for scalability and resiliency through orchestration.

Applications and services are packaged in a container that sits on-top of the host operating system. Multiple containers can sit on one host OS.

Azure networking services

Azure Virtual Network (VNet) enables Azure resources to communicate with each other, the internet, and on-premises networks.

Public endpoints, accessible from anywhere on the internet

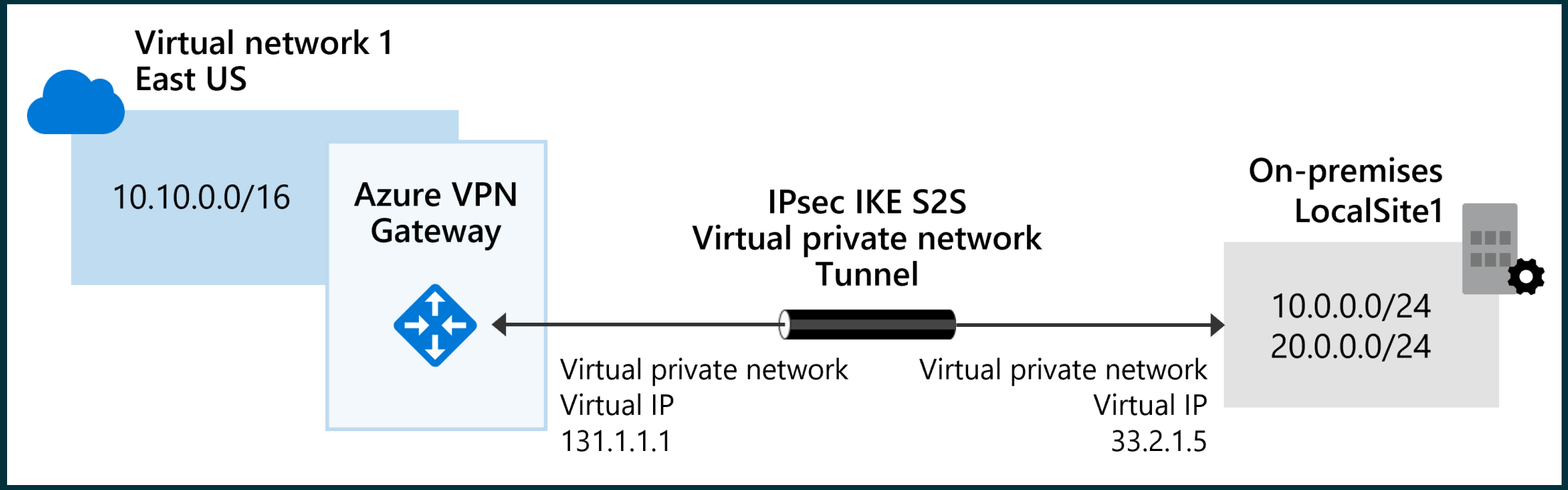
Private endpoints, accessible only from within your network

Virtual subnets, segment your network to suit your needs

Network peering, connect your private networks directly together

Azure networking services

Virtual Private Network Gateway (VPN) is used to send encrypted traffic between an Azure virtual network and an on-premises location over the public internet.



Storage

Azure storage services

Container storage (blob) is optimized for storing massive amounts of unstructured data, such as text or binary data.

Disk storage provides disks for virtual machines, applications, and other services to access and use.

Azure Files sets up a highly available network file shares that can be accessed by using the standard Server Message Block (SMB) protocol.

Azure Analytics services - Databases

It is a cloud-based, enterprise data warehouse that uses **Massively Parallel Processing (MPP)** to run complex queries across petabytes of data quickly.

is a **fully managed Platform as a Service (PaaS) database** engine that handles most database management functions (like upgrading, patching, backups, and monitoring) without user involvement.

Azure Databricks is a collaborative, Apache Spark-based big data analytics service designed for data science and data engineering

Identity, Access, and Security

Azure EntraID – (Active Directory AAD)

Azure EntraID is Microsoft Azure's cloud-based identity and access management service.

- Authentication (employees sign-in to access resources).
- Single sign-on **(SSO).**
- Application management.
- Business to Business **(B2B).**
- Business to Customer **(B2C)** identity services.
- Device management – (Azure Intune)

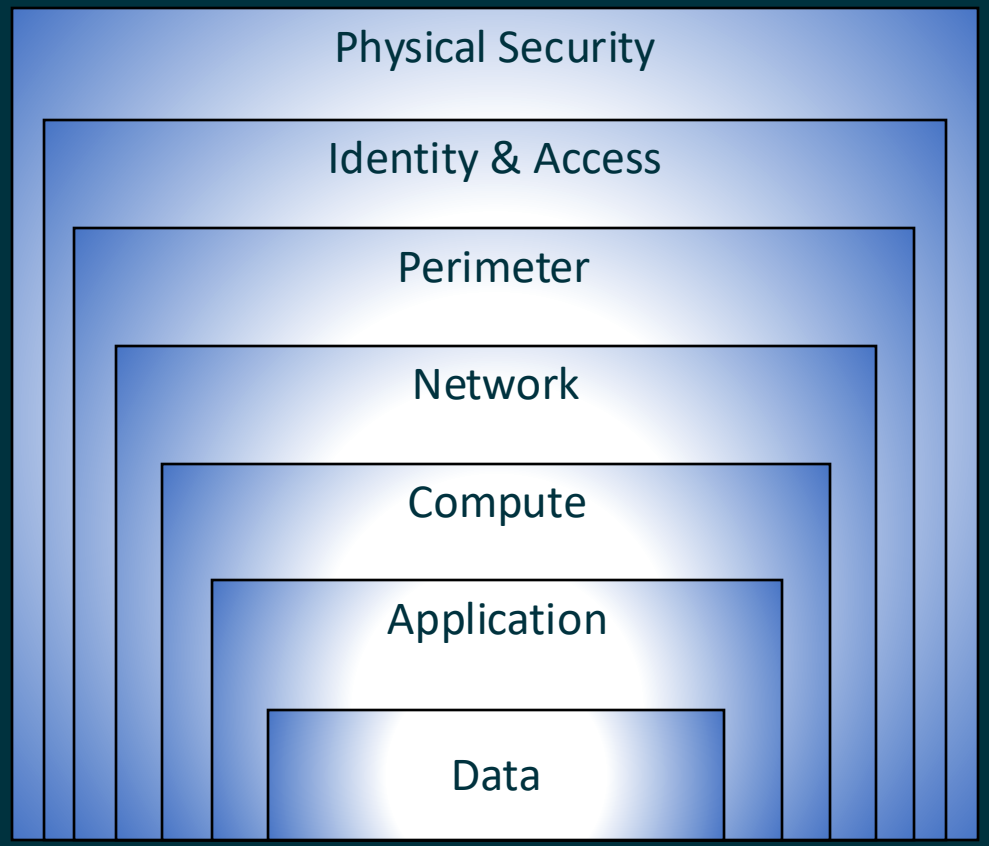
Azure Multi-Factor Authentication

Provides additional security for your identities by requiring two or more elements for full authentication.

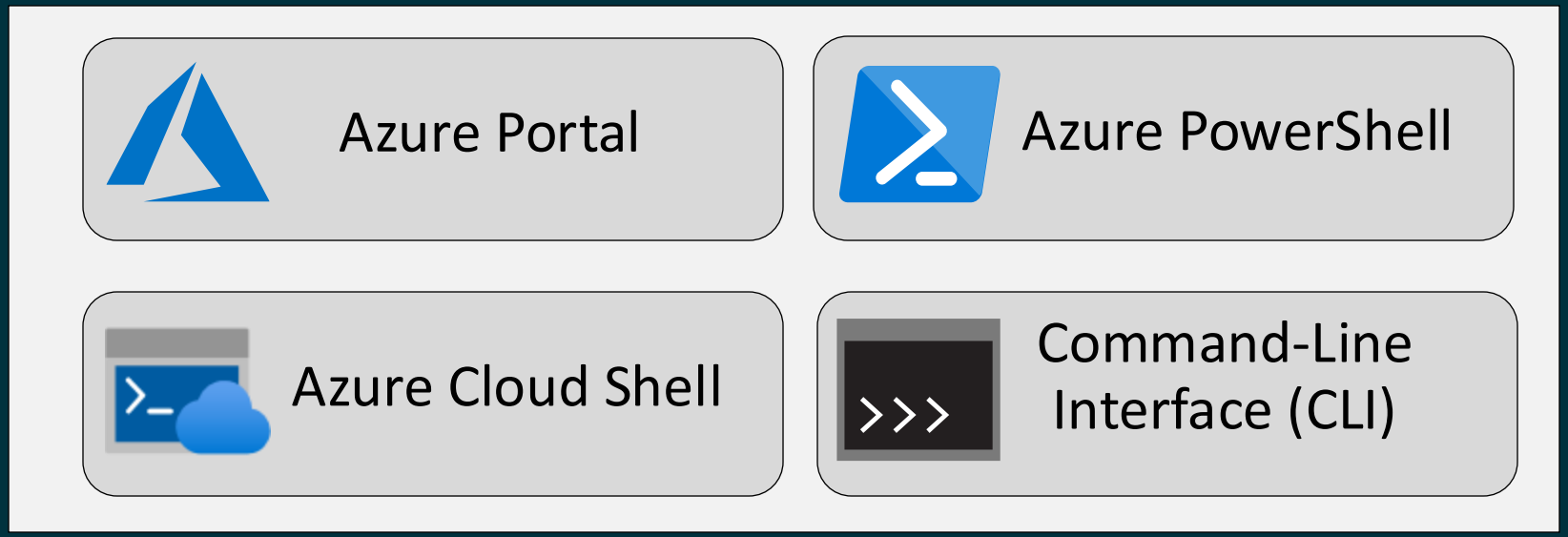
- Something you know ←→ Something you possess ←→ Something you are

Defense in depth

- A layered approach to securing computer systems.
- Provides multiple levels of protection.
- Attacks against one layer are isolated from subsequent layers.

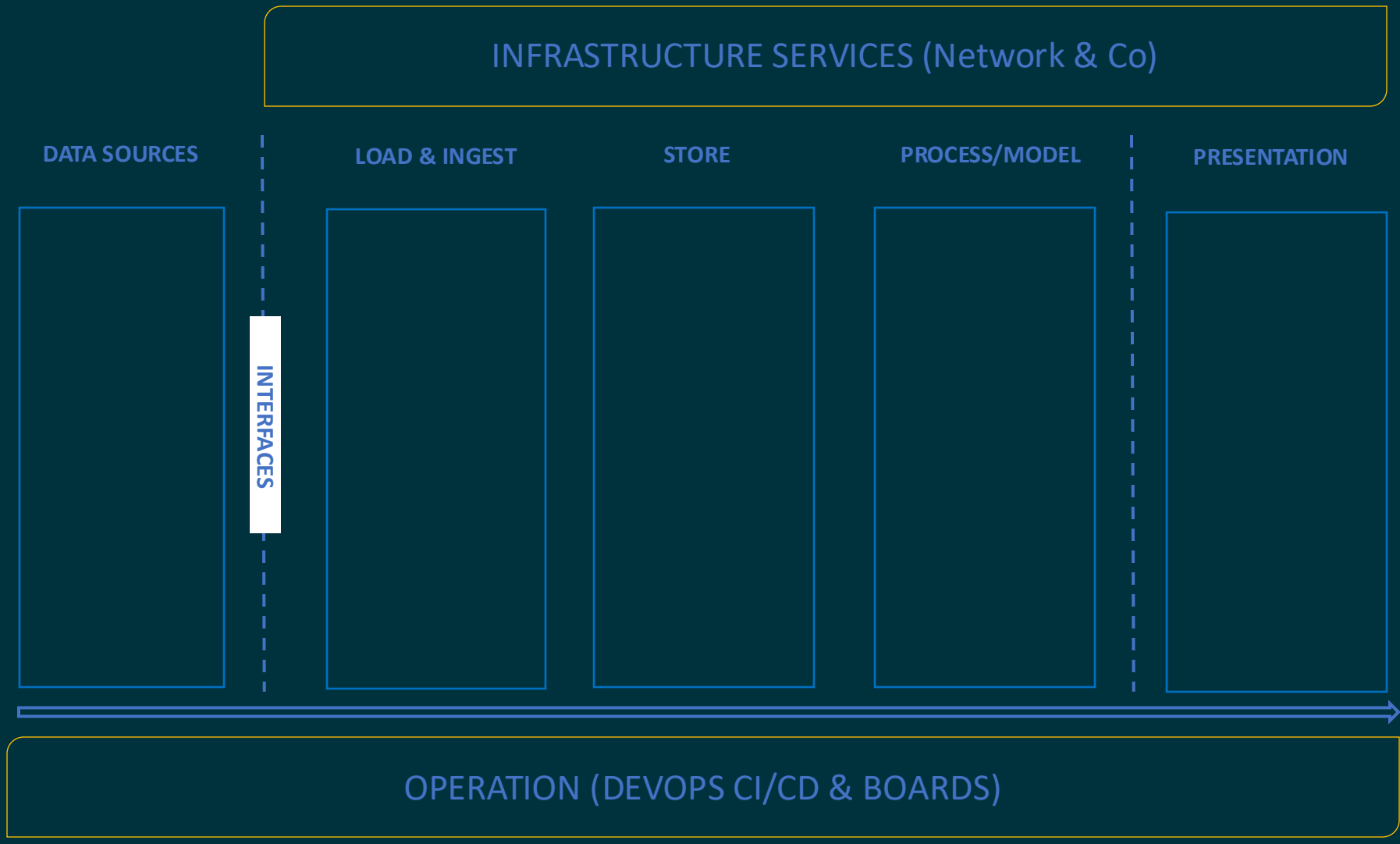


Tools for interacting with Azure



Data & Analytics in Azure

Architecture fonctionnelle de la DWH



Microsoft Fabric

Data and Analytics Platform today

From		To
One component	→	Unified stack
Single database	→	All the data
Gen AI wired in	→	Gen AI built in

Microsoft Fabric

Data analytics for the era of AI

Complete Analytics Platform

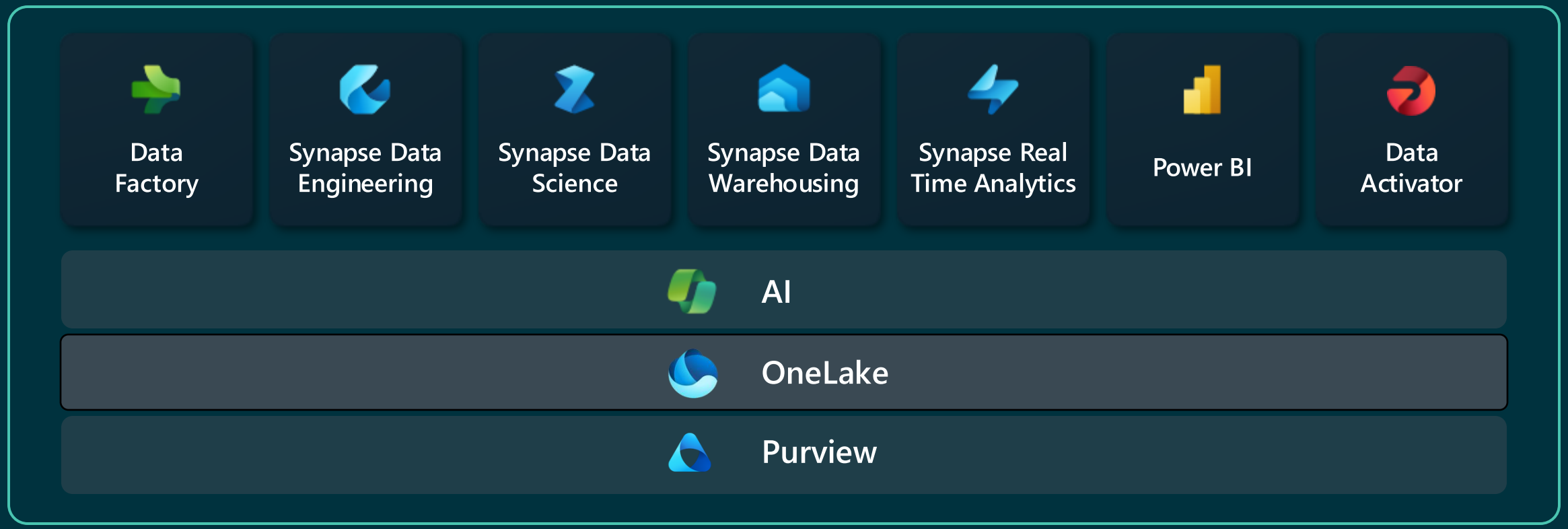
Lake Centric and Open

Empower Every Business User

AI Powered

Microsoft Fabric

The unified data platform for the era of AI



Unified architecture | Unified experience | Unified governance | Unified business model

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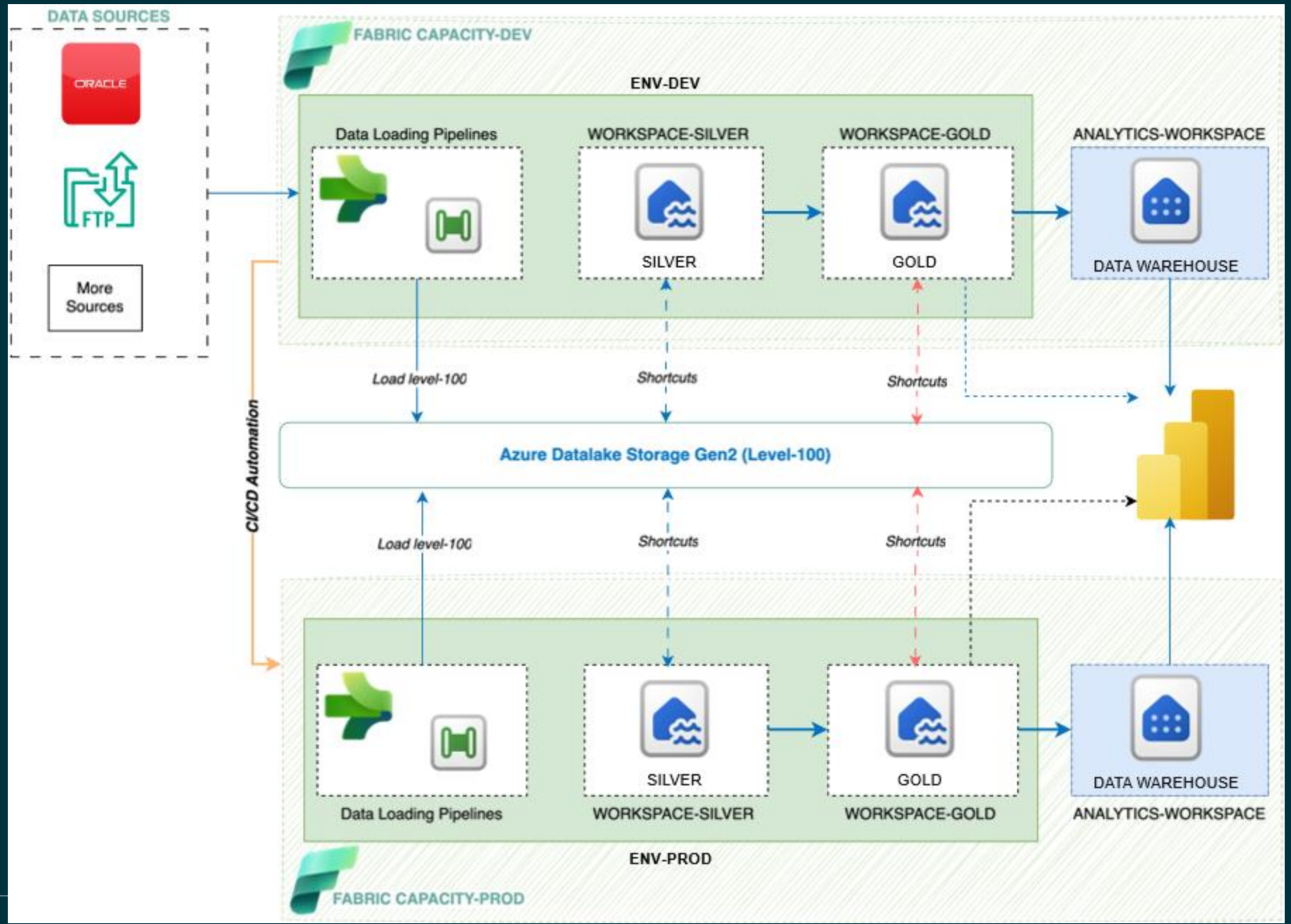
Data Platform - Architecture



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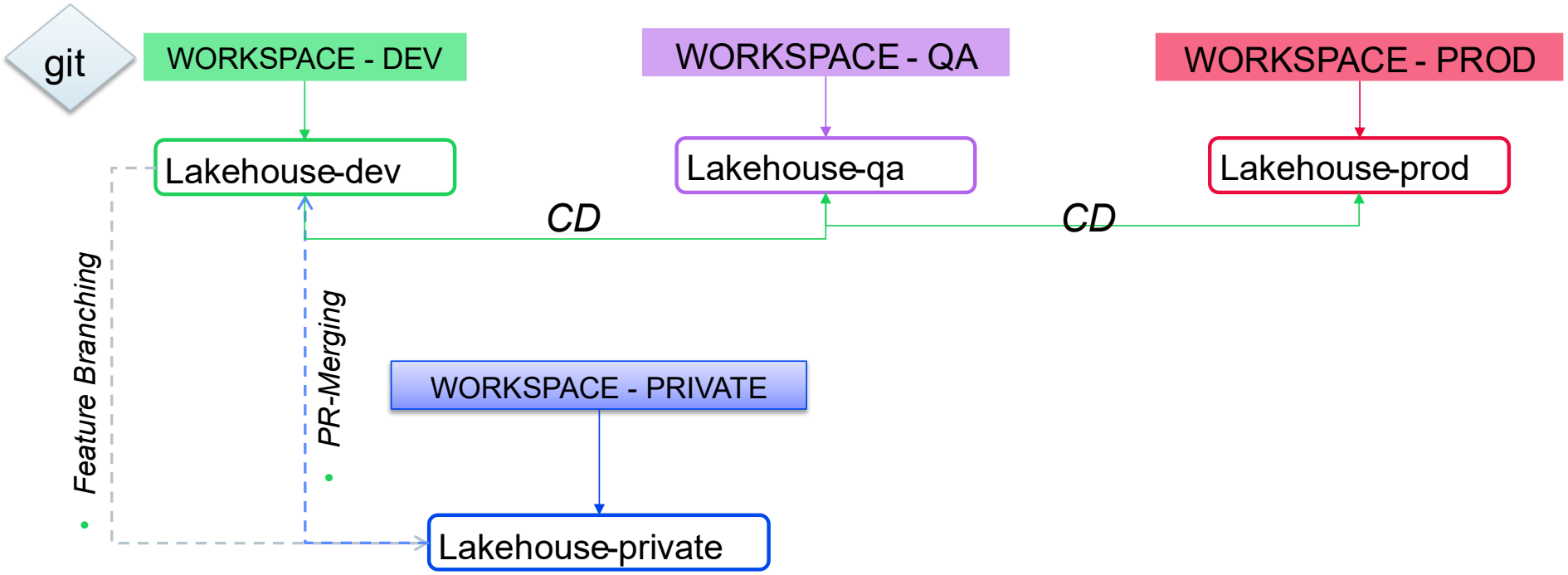
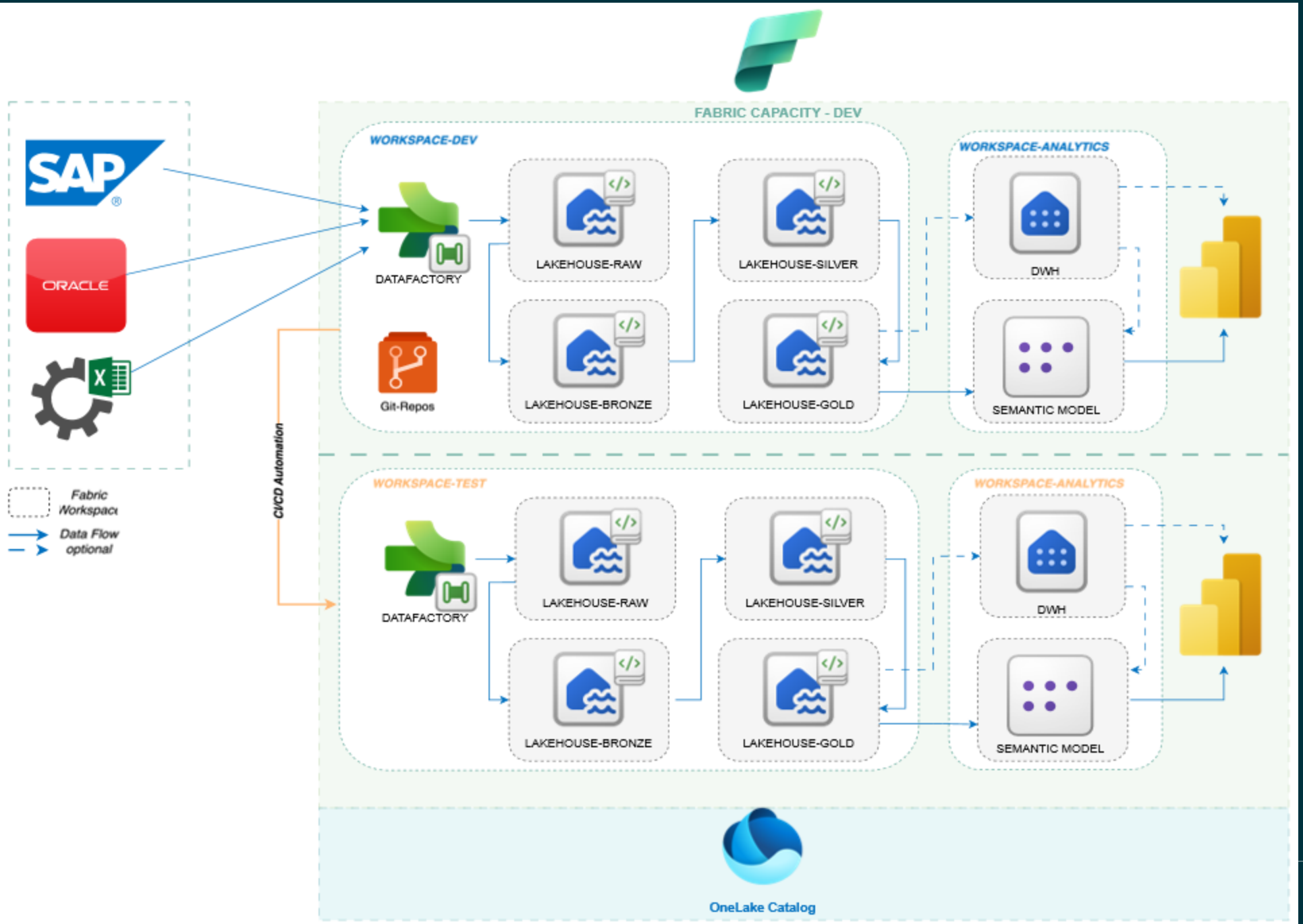
Azure DevOps Automation CI/CD





MS Fabric Data Platform

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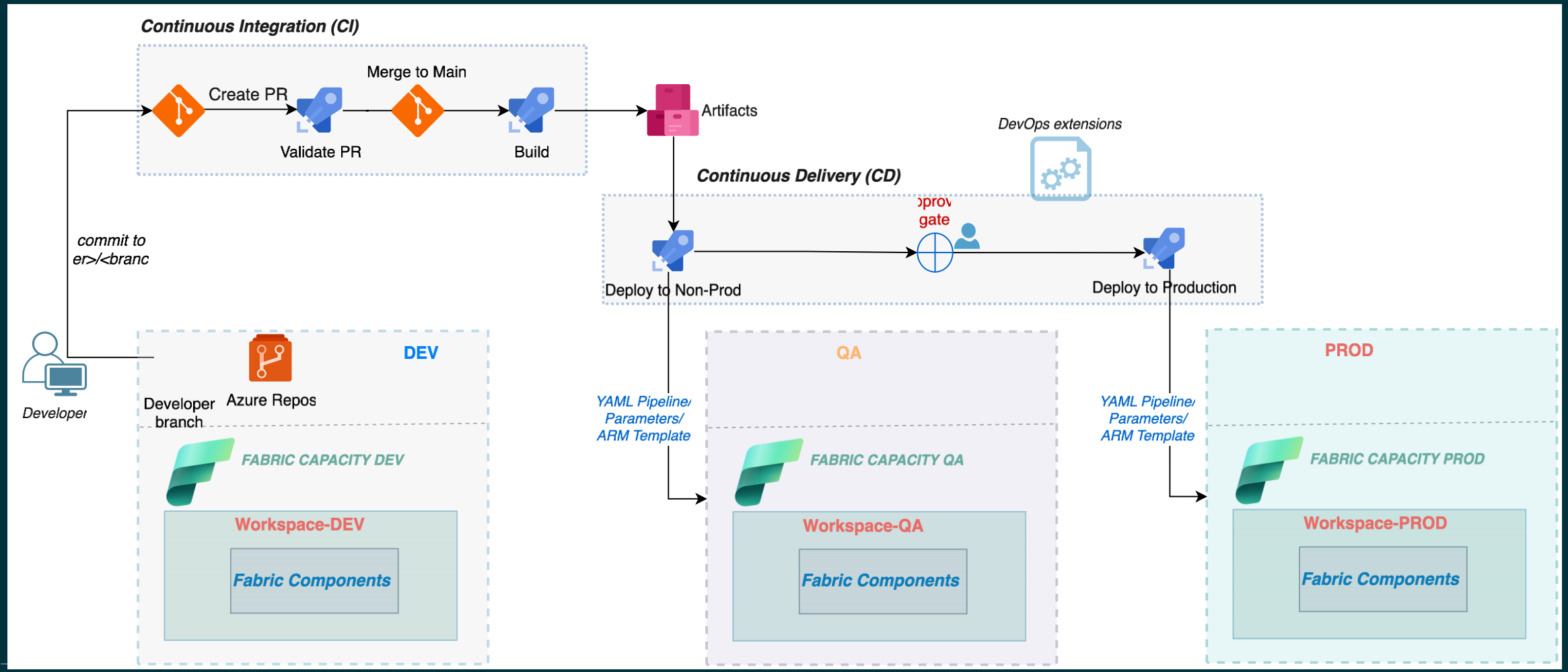
Data Platform DevOps Automation



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