Microsoft

AZ-900

Learning path 01: Cloud concepts

Learning path 01—outline

NIST

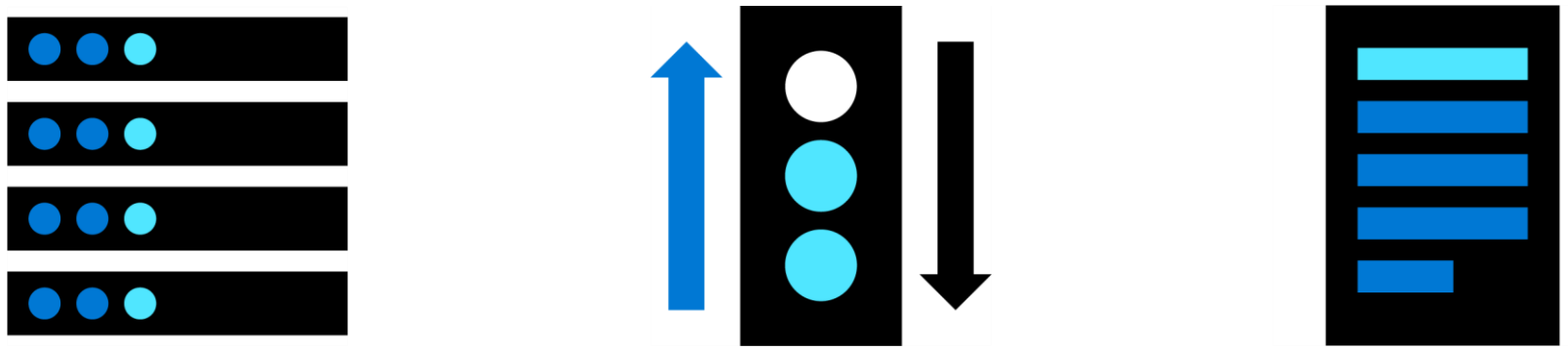
You will learn the following concepts:

1. **Cloud computing**
   - What is cloud computing
   - Shared responsibility
   - Cloud models
   - Capital vs operational costing
2. **Cloud benefits**
   - Benefits of the cloud
3. **Cloud service types**
   - IaaS, PaaS, and SaaS

Cloud computing

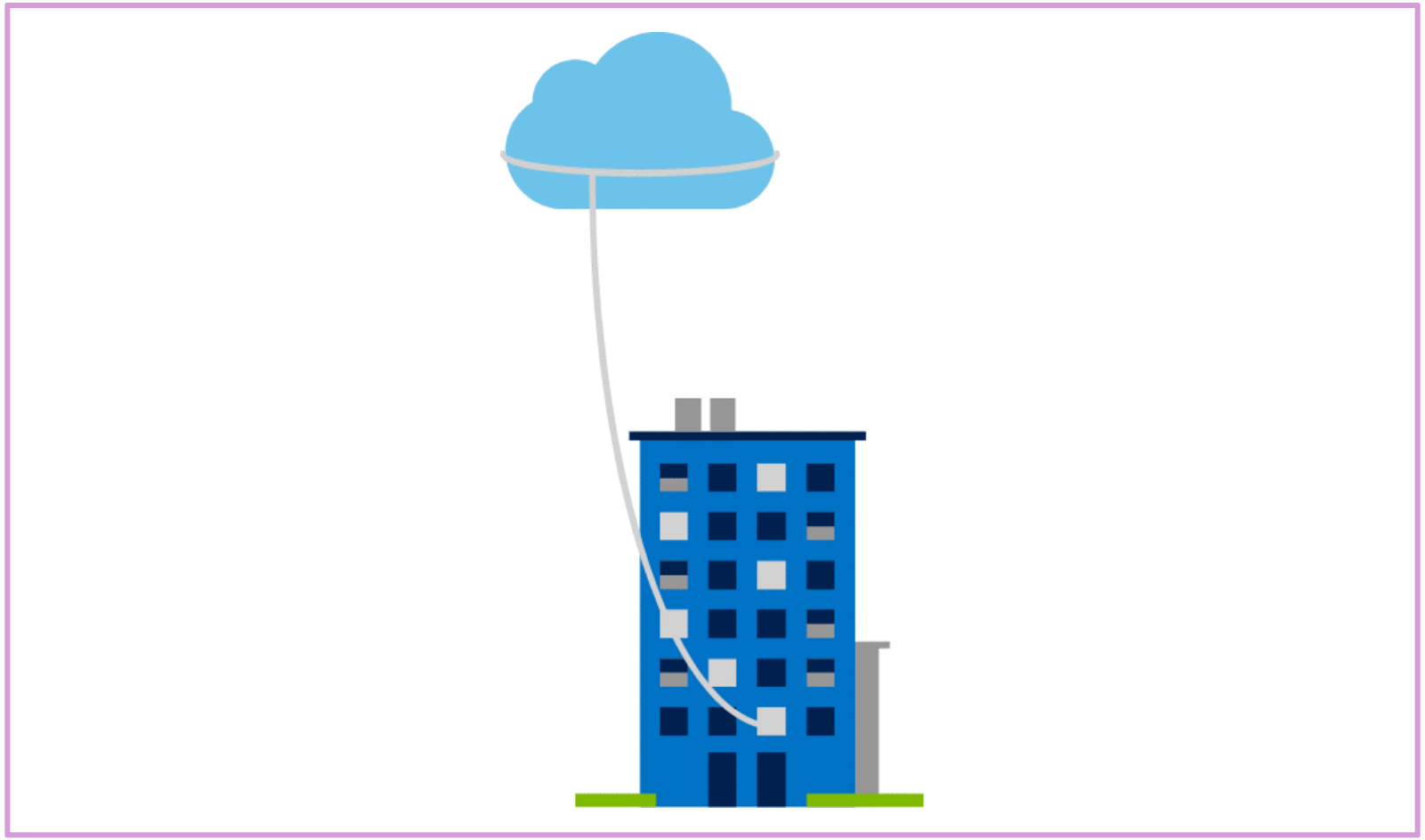
What is cloud computing?

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



Private cloud

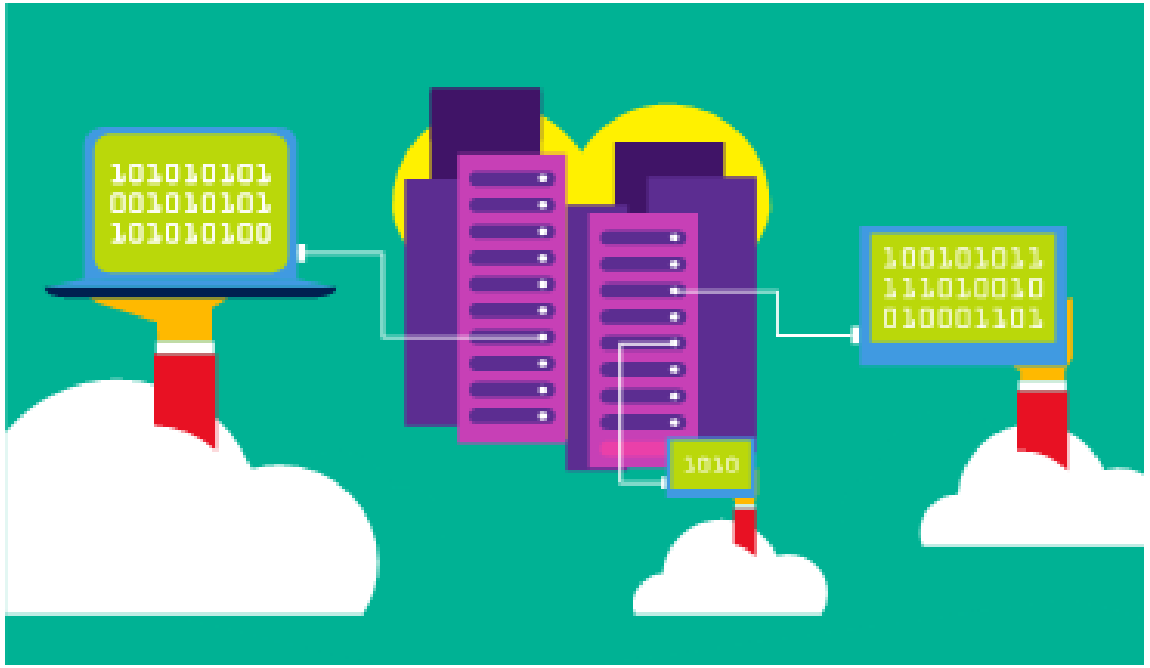
- Organizations create a cloud environment in their datacenter.
- Organizations are responsible for operating the services they provide.
- Does not provide access to users outside of the organization.



Public cloud

AWS
Azure — 2013 ARM
GCP Bicep
IBM
Alibaba

- 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.

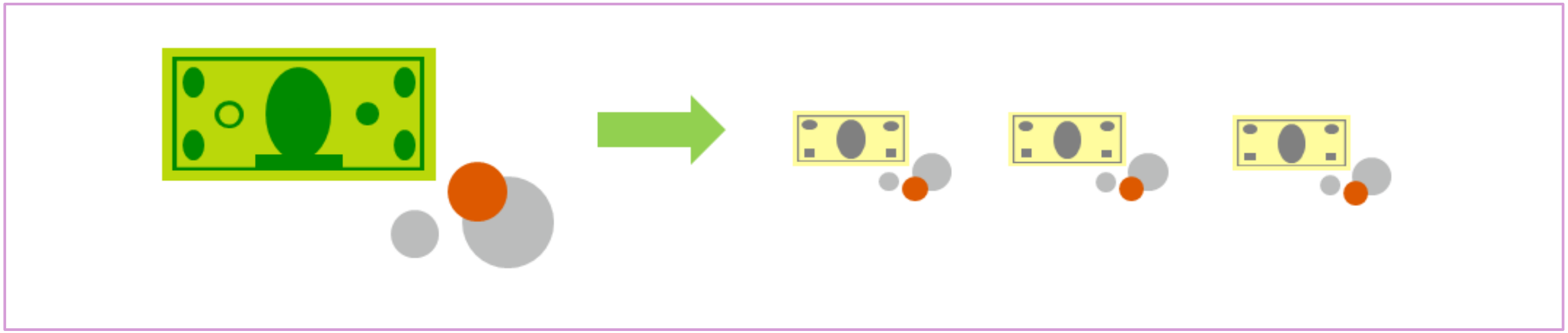
Compare CapEx vs. OpEx

Capital expenditure (CapEx)

- The upfront spending of money on physical infrastructure.
- Costs from CapEx have a value that reduces over time.

Operational expenditure (OpEx)

- Spend on products and services as needed, pay-as-you-go.
- Get billed immediately.



Consumption-based model

Cloud service providers operate on a consumption-based model, which means that end users only pay for the resources that they use.

- Better cost prediction.
- Prices for individual resources and services are provided.
- Billing is based on actual usage.

Cloud benefits

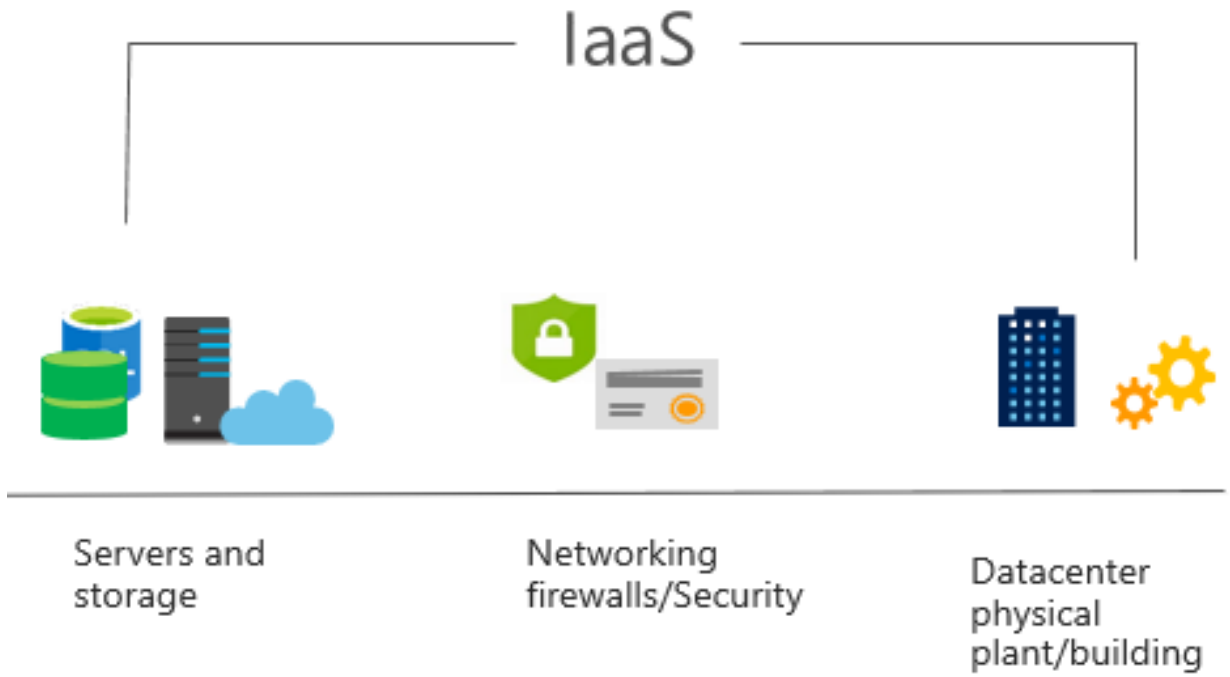
Cloud benefits

High availability	Elasticity
Scalability	Reliability
Predictability	Security
Governance	Manageability

Cost

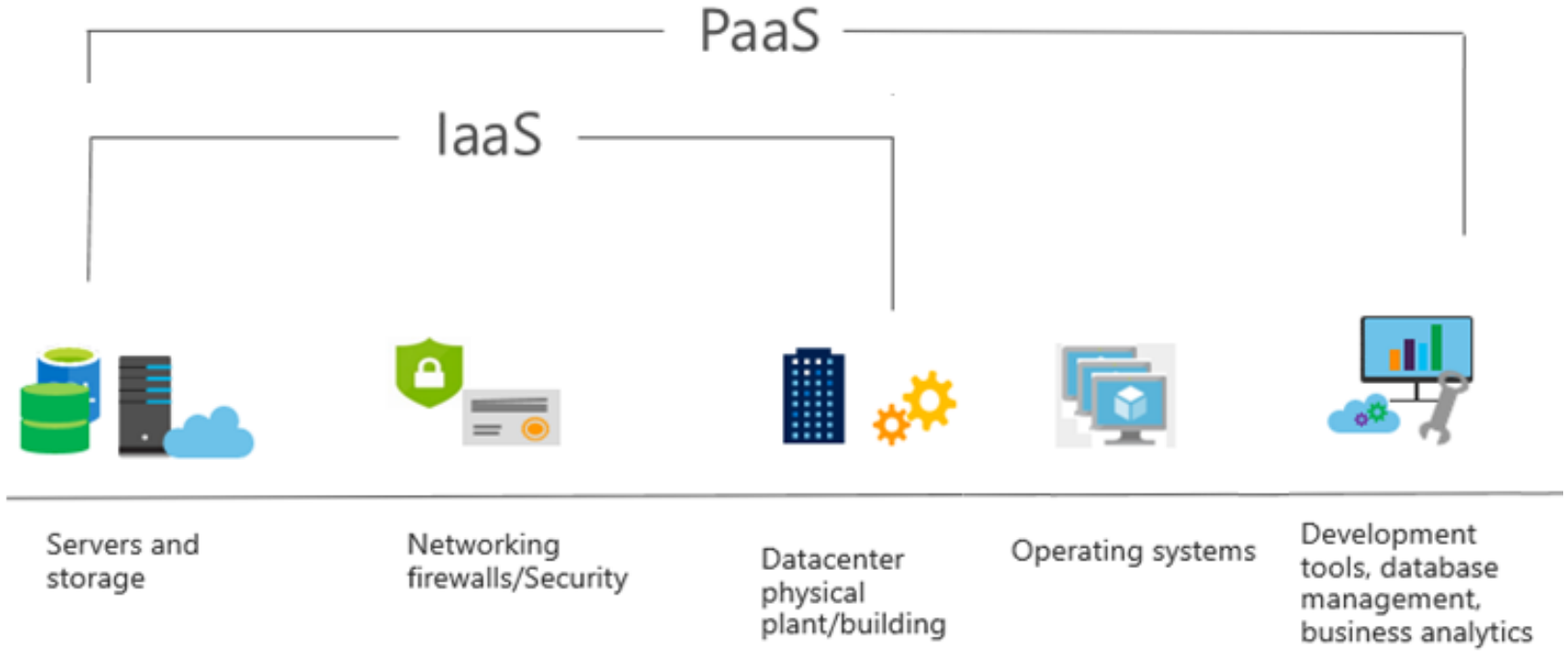
Cloud service types

Infrastructure as a service (IaaS)



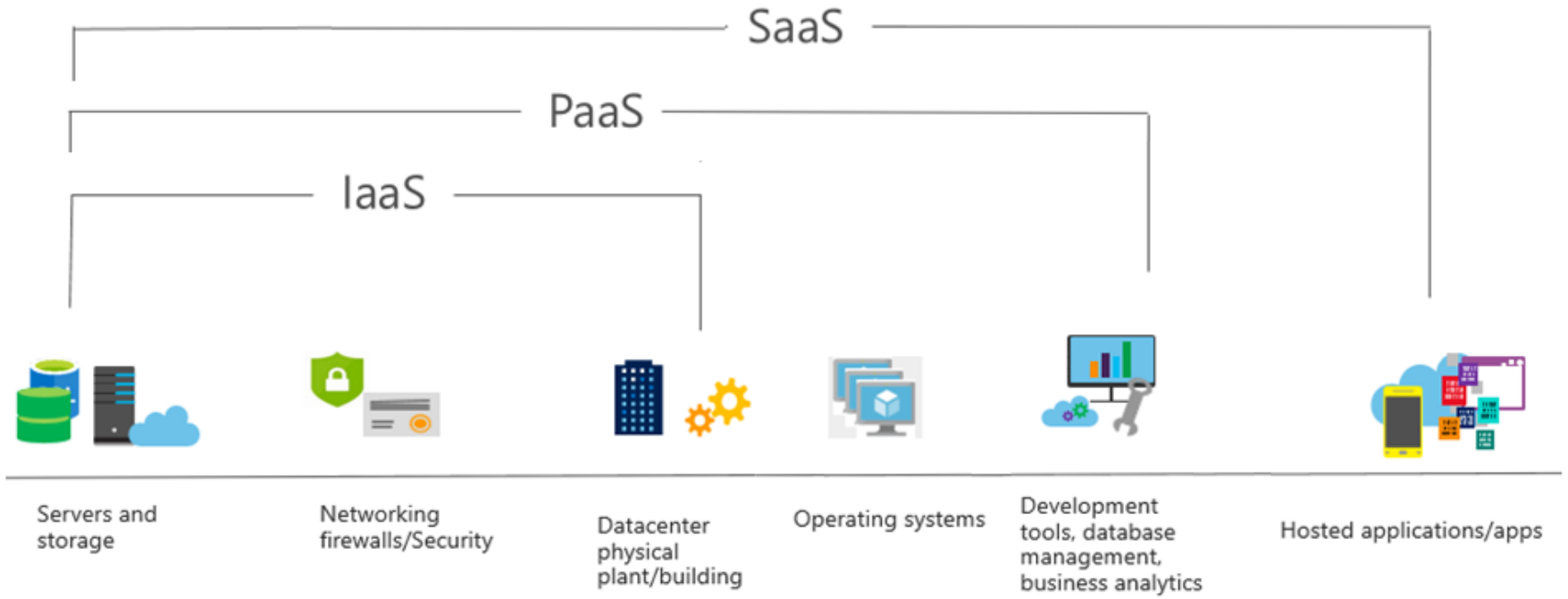
Build pay-as-you-go IT infrastructure by renting servers, virtual machines, storage, networks, and operating systems from a cloud provider.

Platform as a service (PaaS)



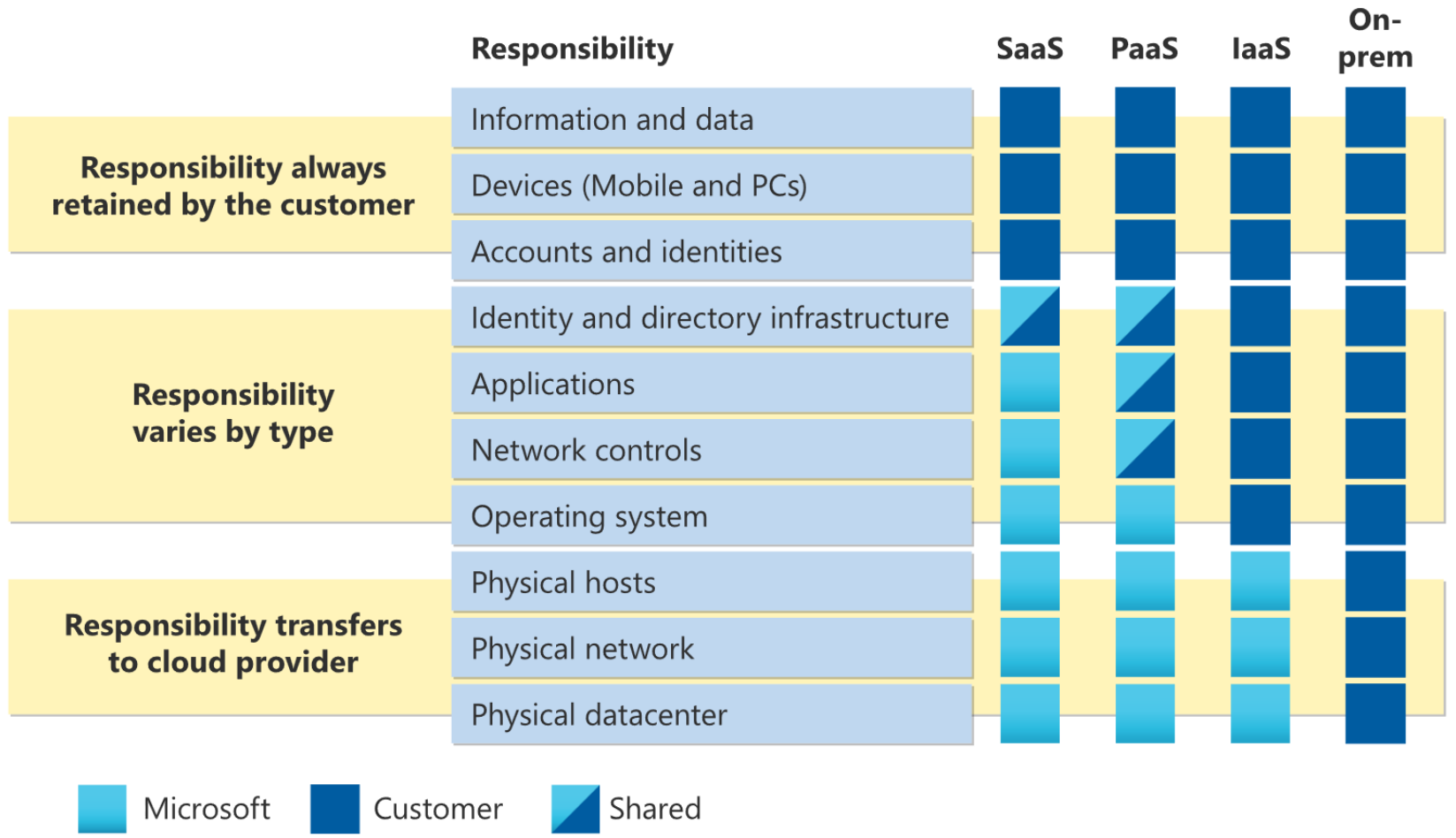
Provides an environment for building, testing, and deploying software applications; without focusing on managing underlying infrastructure.

Software as a service (SaaS)



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

Shared responsibility model



Cloud service comparison

IaaS

- The most flexible cloud service.
- You configure and manage the hardware for your application.

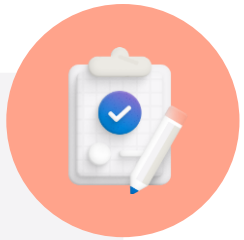
PaaS

- Focus on application development.
- Platform management is handled by the cloud provider.

SaaS

- Pay-as-you-go pricing model.
- Users pay for the software they use on a subscription model.

Learning path 01 review



Microsoft Learn Modules (learn.microsoft.com/training)

- The shared responsibility model
- Public, private, and hybrid-cloud
- Benefits of cloud computing
- Cloud service types