Microsoft

AZ-900
Learning path 01:
Cloud concepts

Learning path outline

Learning path 01—outline

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

Cloud computing—objective domain

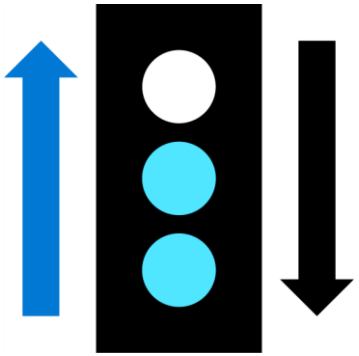
- Define cloud computing.
- Define cloud models, including public, private, and hybrid.
- Identify appropriate use cases for each cloud model.
- Describe the consumption-based model.
- Compare cloud pricing models.

What is cloud computing?

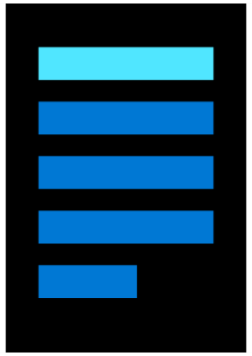
AWS
Azure
GCP
M365

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

Compute



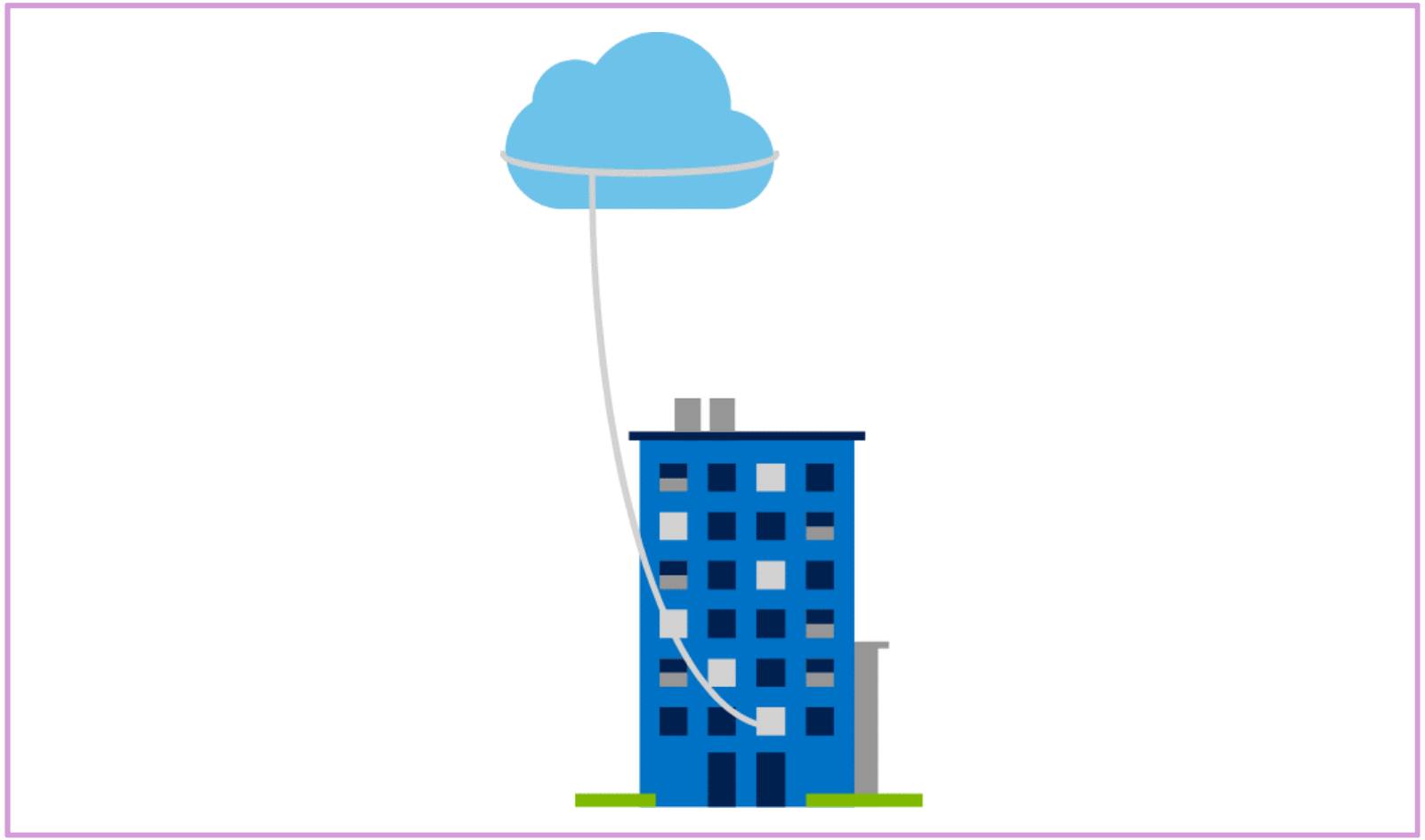
Networking



Storage

Private cloud

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

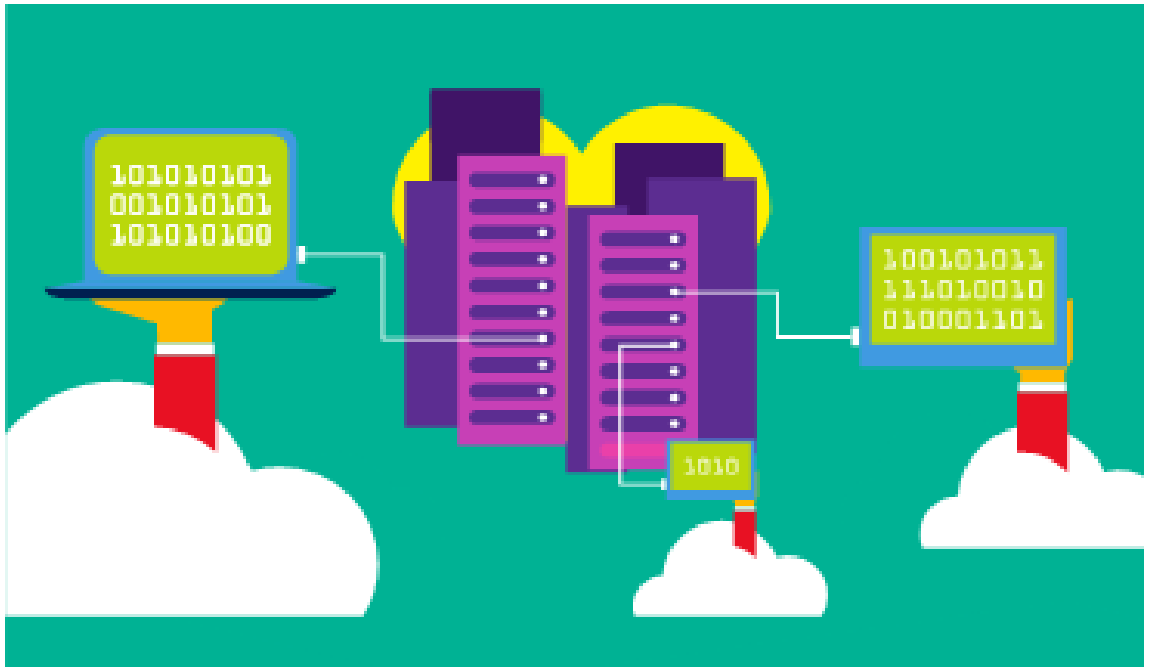


Public cloud

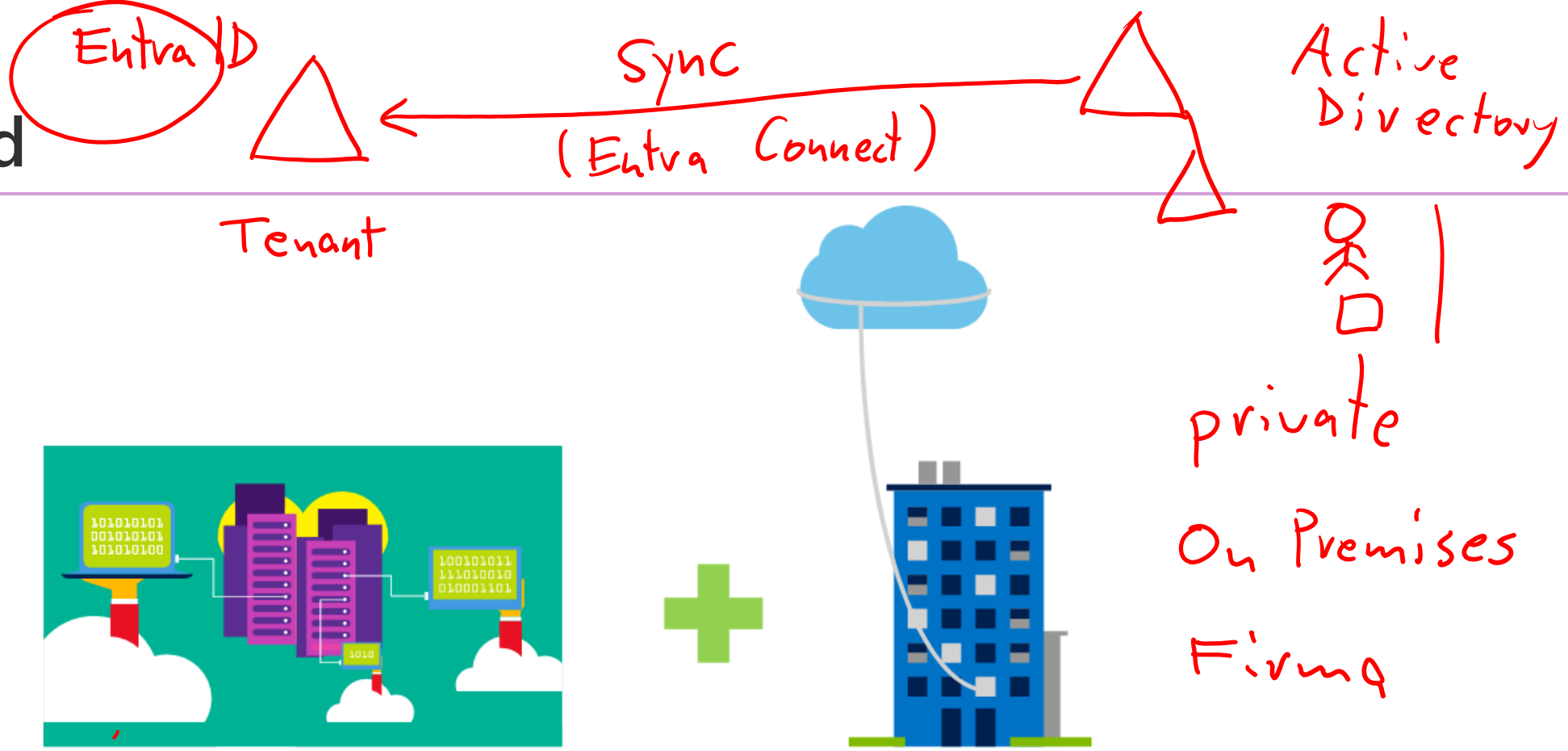
Software defined ...

- 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).

Express Route



Hybrid cloud



Combines **public** and **private** clouds to allow applications to run in the most appropriate location.

AAA

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

Azure consumption

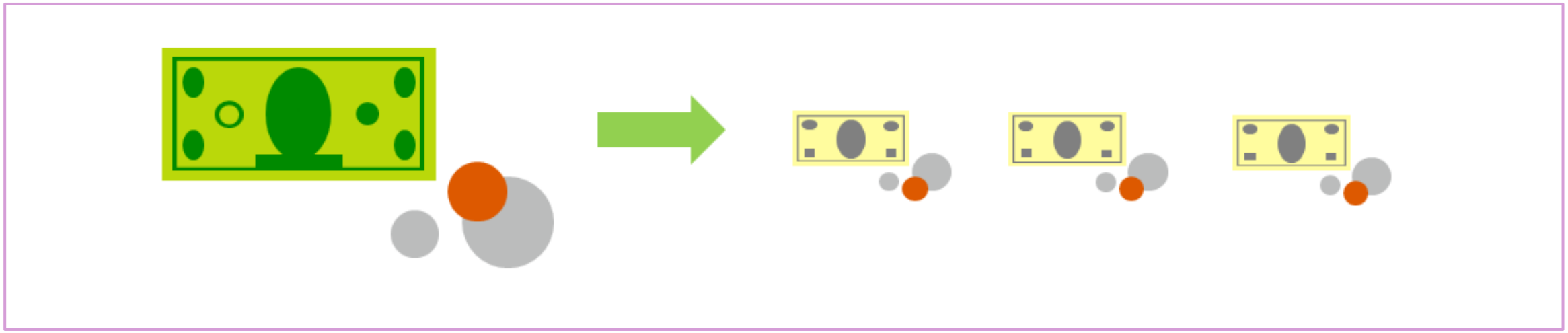
M365 Lizenz E3 / E5

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.

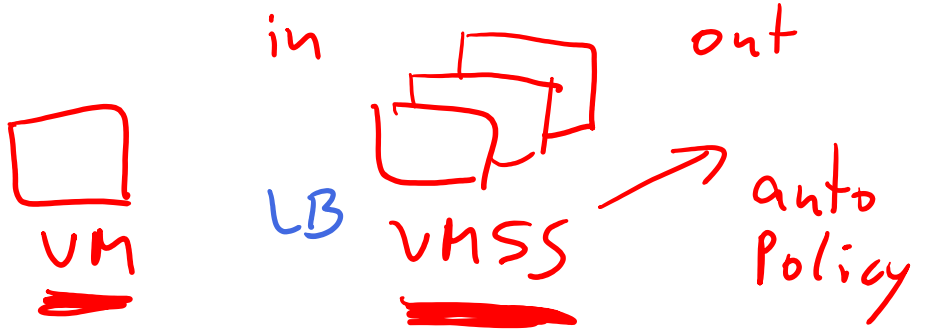
- Better cost prediction.
- Prices for individual resources and services are provided.
- Billing is based on actual usage.

Cloud benefits

Cloud benefits—objective domain

- Describe the benefits of high availability and scalability in the cloud.
- Describe the benefits of reliability and predictability in the cloud.
- Describe the benefits of security and governance in the cloud.
- Describe the benefits of manageability in the cloud.

Cloud benefits



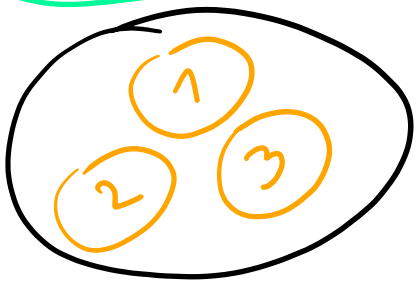
High availability	Elasticity
Scalability	Reliability
Predictability	Security
Governance	Manageability

DR

IaaS

Apps

SLA



Region westeurope (Amsterdam)

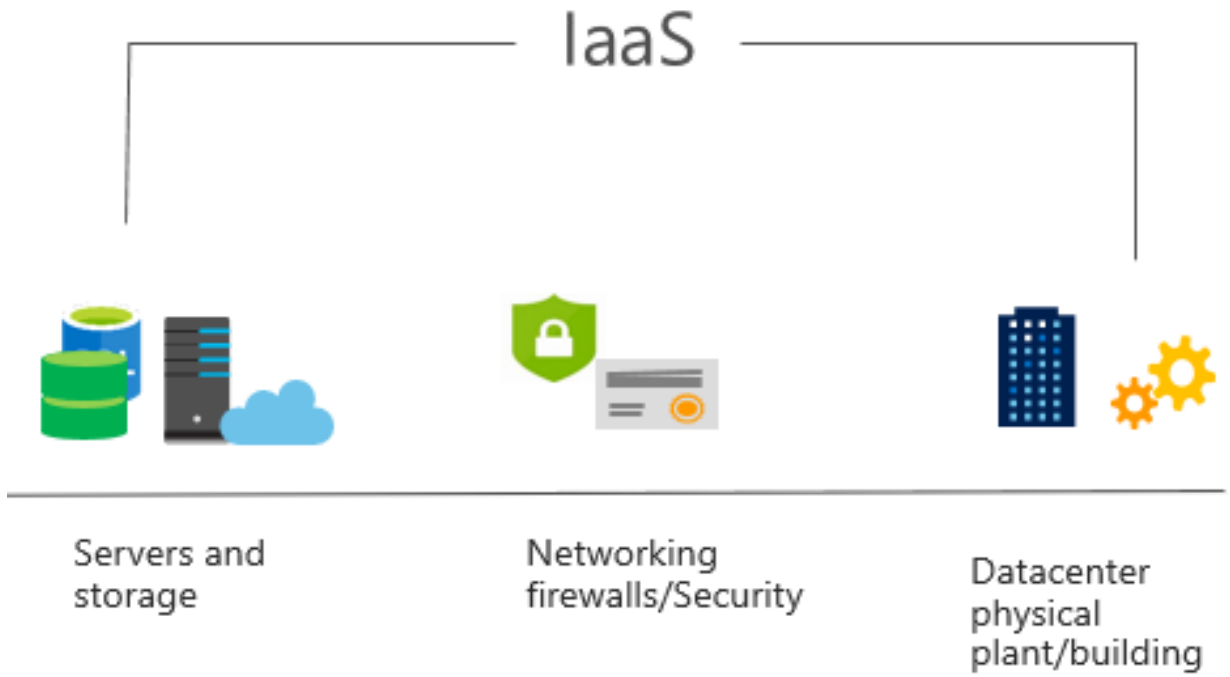
Avail Zone = DC

Cloud service types

Cloud services—objective domain

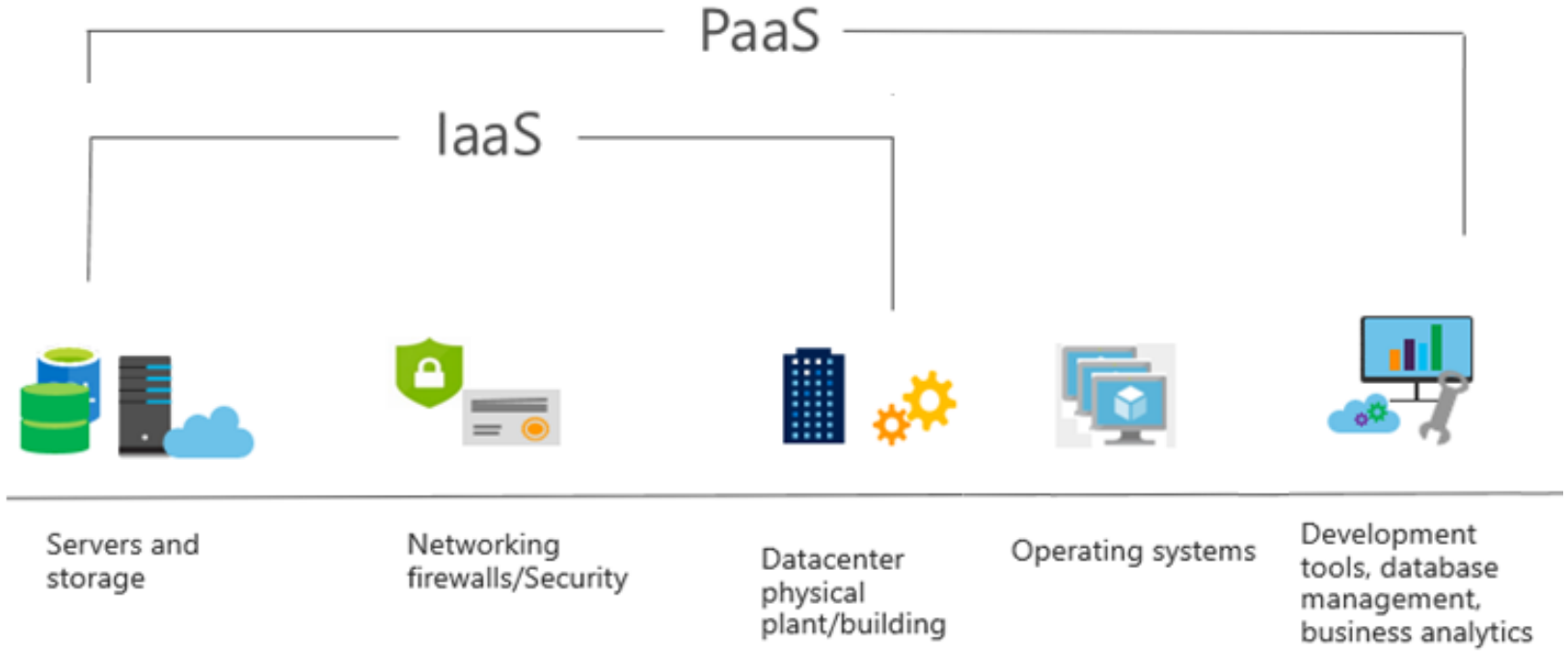
- Describe infrastructure as a service (IaaS).
- Describe platform as a service (PaaS).
- Describe software as a service (SaaS).
- Describe the shared responsibility model.
- Identify appropriate use cases for each cloud service (IaaS, PaaS, SaaS).

Infrastructure as a service (IaaS)



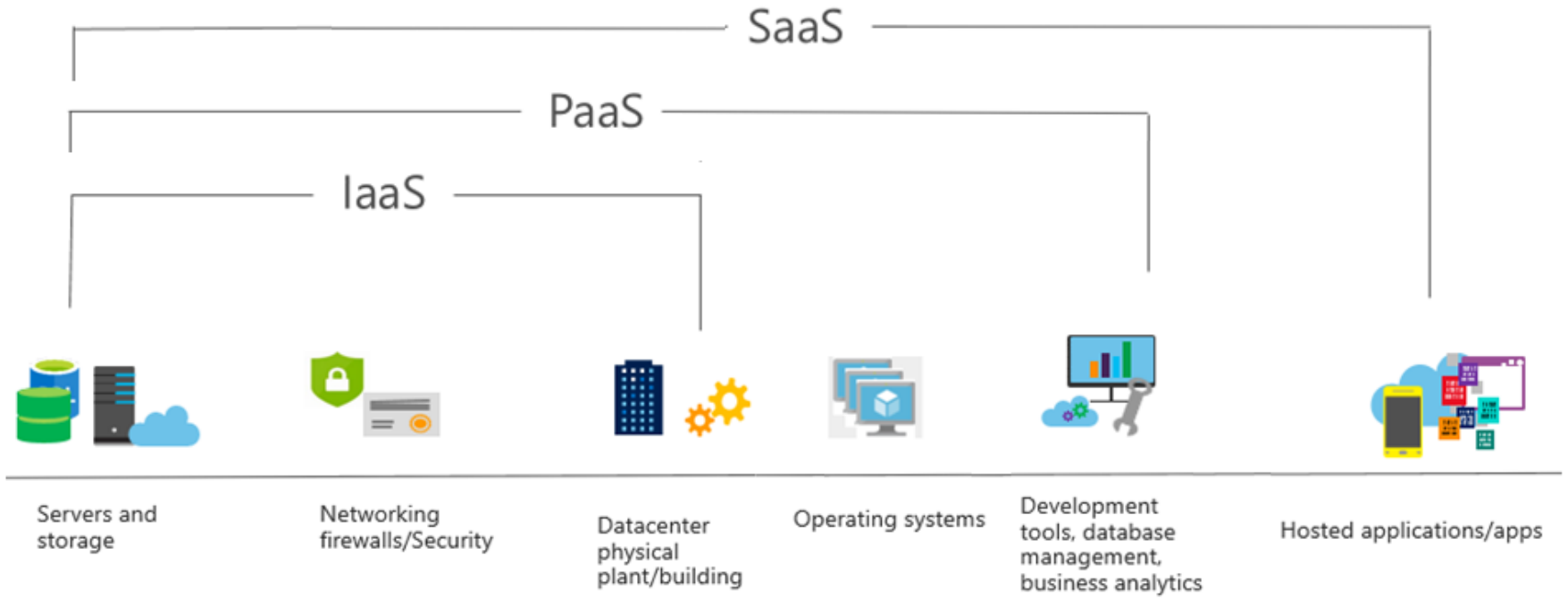
Build pay-as-you-go IT infrastructure by renting servers, virtual machines, storage, networks, and operating systems from a cloud provider.

Platform as a service (PaaS)



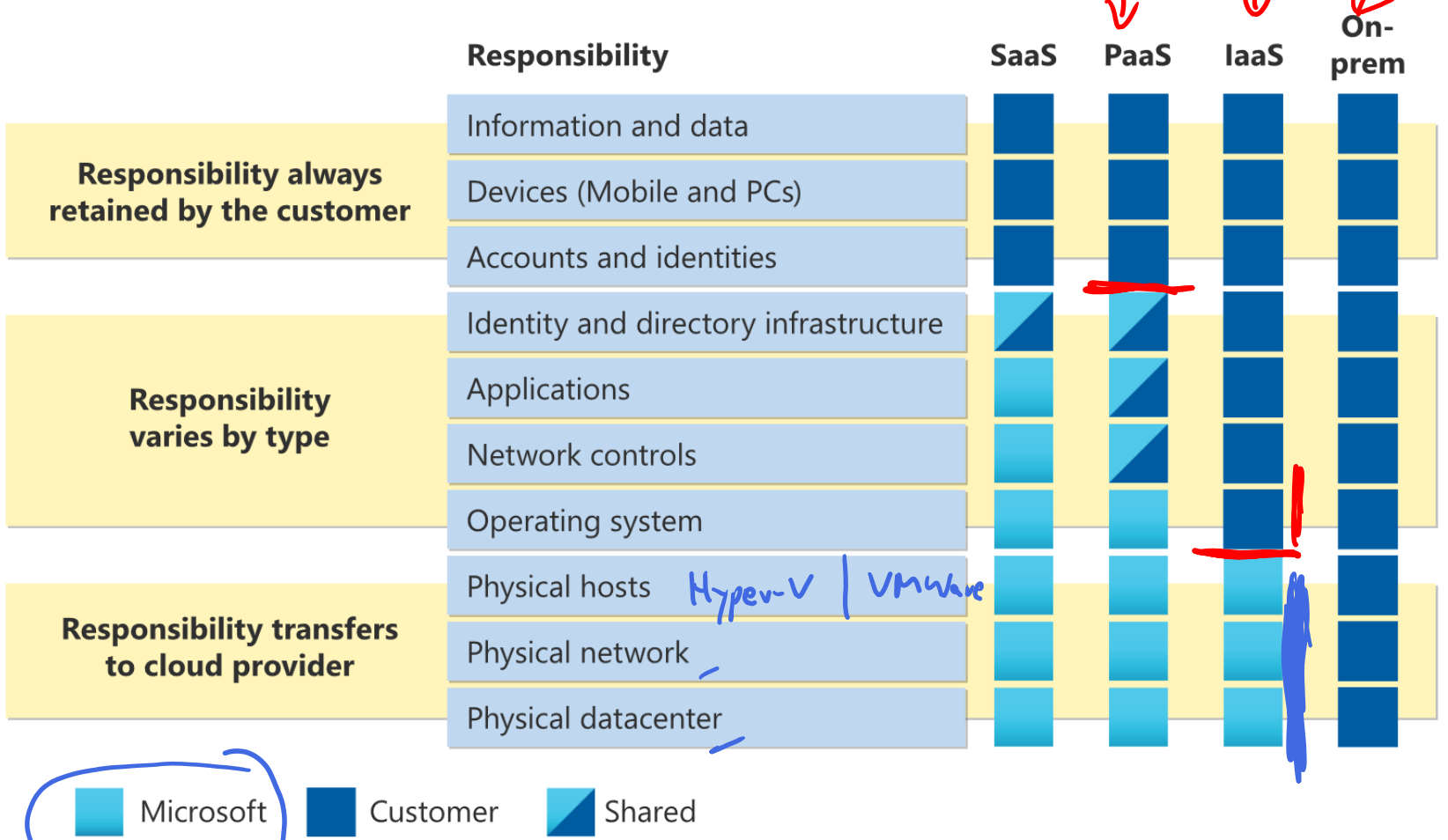
Provides an environment for building, testing, and deploying software applications; without focusing on managing underlying infrastructure.

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

Container (Kubernetes) → CaaS

Trigger → Functions → FaaS

IaaS

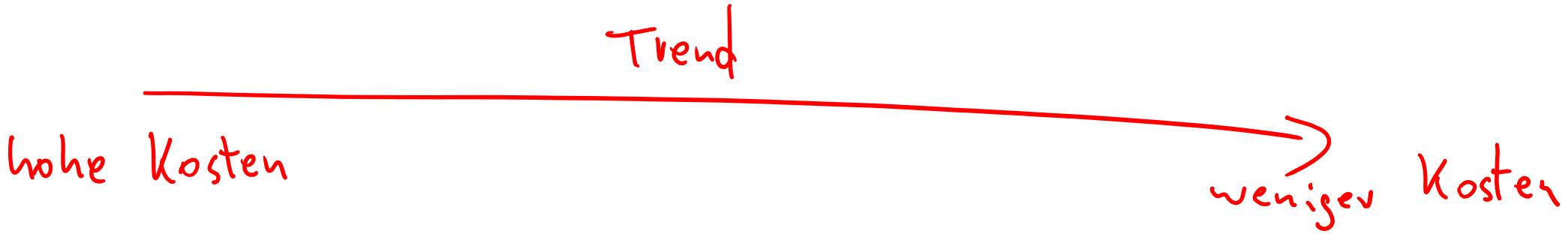
- The most flexible cloud service.
- You configure and manage the hardware for your application.

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.

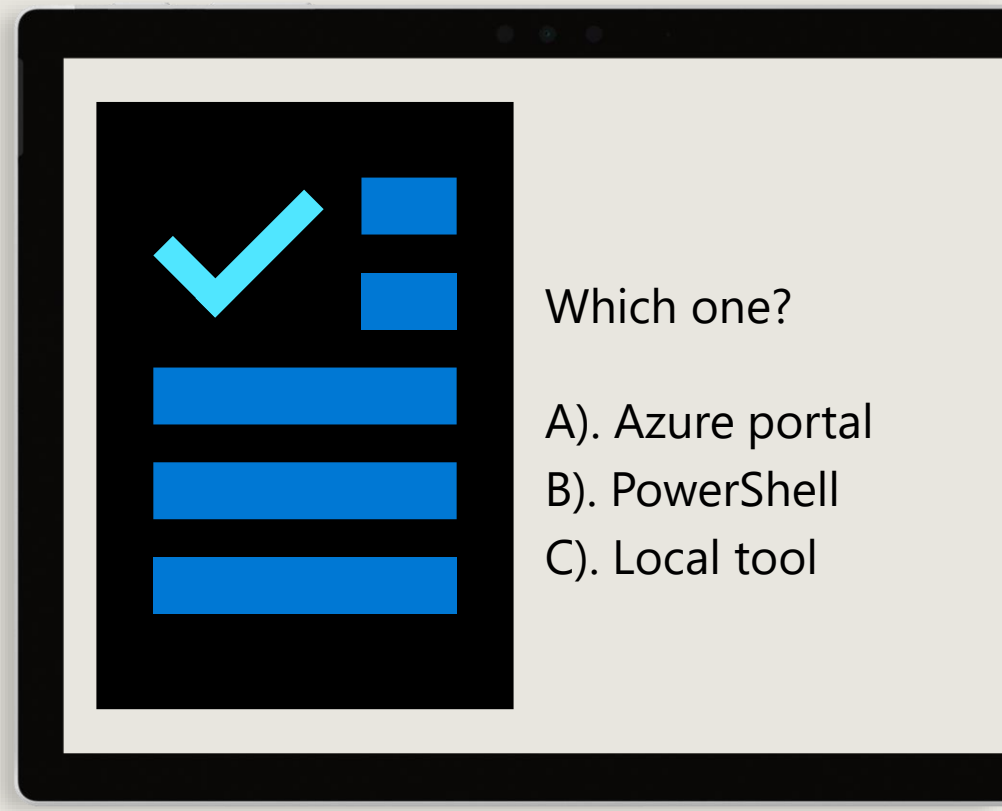


Knowledge check

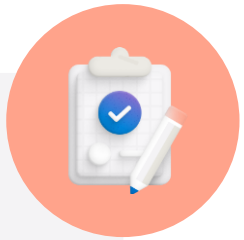
Populate with instructions to use the polling tool of your choice

Learning path 1

1. Use your smartphones or mobile devices.
2. Go to (***insert polling app link of your choice***).
3. Enter code: **123-45-678.**
4. Please participate in the quiz for this section.



Learning path 01 review



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

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