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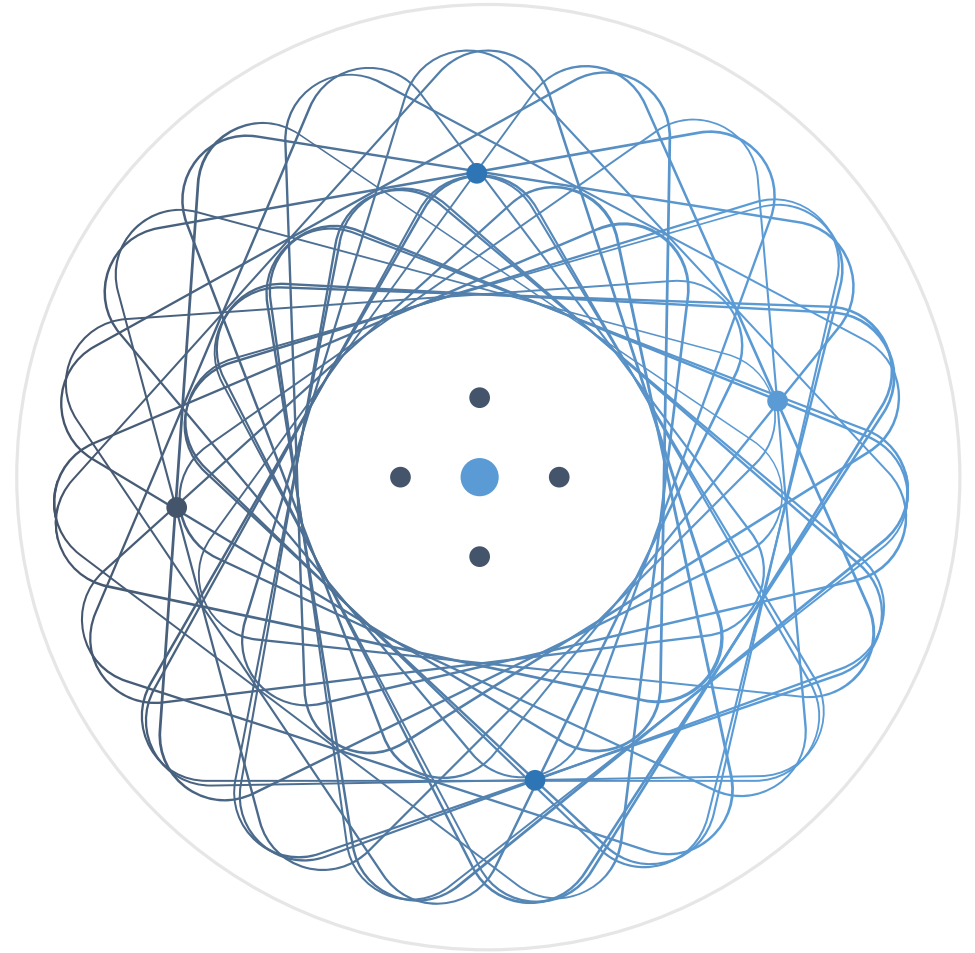
Learning Path 01:

Cloud concepts

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Learning Path Outline



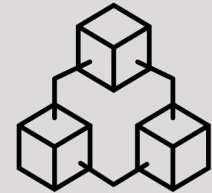
Learning Path 01 - Outline

You will learn the following concepts:

- **Cloud Computing**
 - What is cloud computing
 - Shared responsibility
 - Cloud models
 - Capital vs Operational costing
- **Cloud Benefits**
 - Benefits of the cloud
- **Cloud Service Types**
 - IaaS, PaaS, and SaaS



Cloud Computing

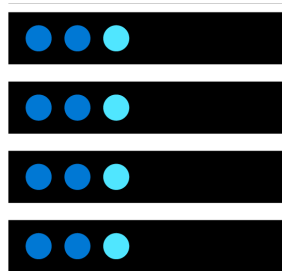


Cloud computing - Objective Domain

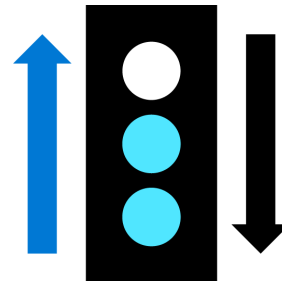
- Define cloud computing
- Describe the shared responsibility model
- Define cloud models, including public, private, and hybrid
- Identify appropriate use cases for each cloud model
- Describe the consumption-based model
- Compare cloud pricing models

What is cloud computing?

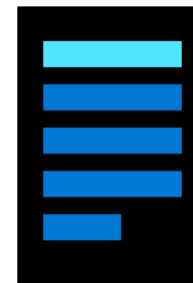
Cloud Computing is the delivery of computing services over the internet, enabling faster innovation, flexible resources, and economies of scale.



Compute






Networking



Storage

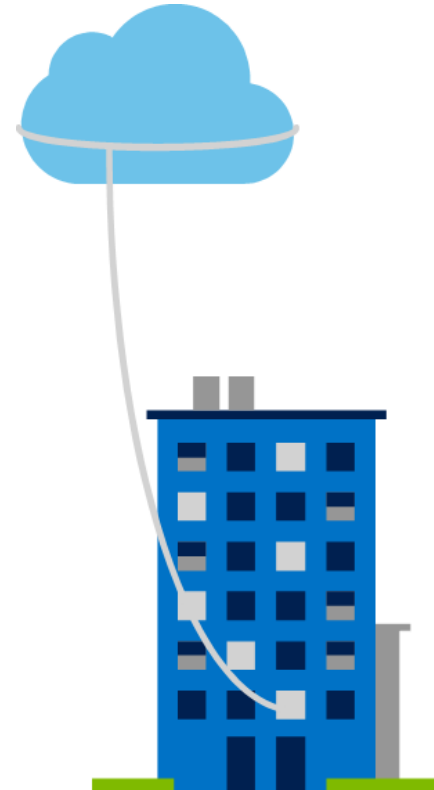
Shared responsibility model

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

 Microsoft	 Customer	 Shared
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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



- 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.

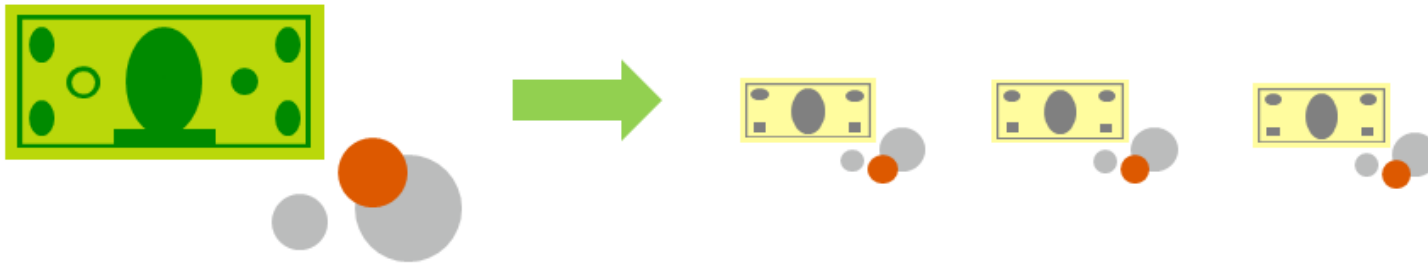
Compare CapEx vs. OpEx

Capital Expenditure (CapEx)

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

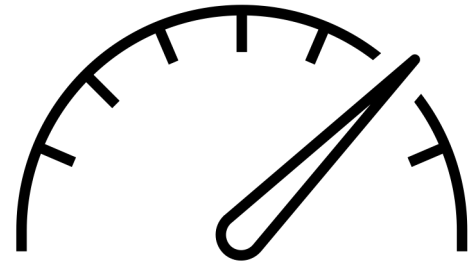
Operational Expenditure (OpEx)

- 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. Whatever they use is what they pay for.
- 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

Scalability

Predictability

Governance

Elasticity

Reliability

Security

Manageability