Certification areas (AZ-900)

Study areas	Weight
Describe Cloud Concepts	20-25%
Describe Core Azure Services	15-20%
Describe Core Solutions and Management Tools	10-15%
Describe General Security and Network Security	10-15%
Describe Identity, Governance, Privacy and Compliance	20-25%
Describe Azure cost management and Service Level Agreements	10-15%

- This course maps directly to the exam AZ-900 Microsoft Azure Fundamentals.

- Percentages indicate the relative weight of each area on the exam.

- The higher the percentage, the more questions you are likely to see in that area.
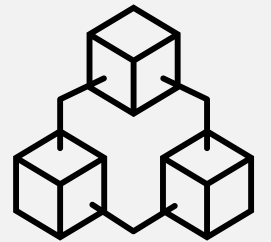
MOD 1: Azure Cloud Concepts

Module 01 - Outline

You will learn the following concepts:

- **Cloud Models**
  - Public, Private, and Hybrid cloud
  - Choosing the best for you
- **Cloud Benefits and Considerations**
  - Benefits of the cloud
  - Cloud considerations
- **Cloud Services**
  - IaaS, PaaS, and SaaS
 - Sharing responsibility

Cloud Models

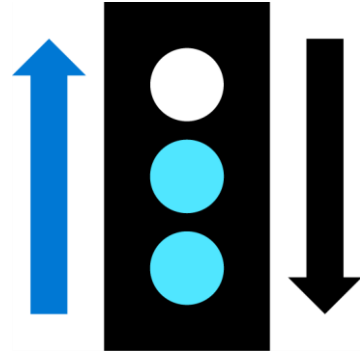# Cloud Models - Objective Domain

- Define cloud computing

- Describe Public cloud

- Describe Private cloud

- Describe Hybrid cloud

- Compare and contrast the three different cloud 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.
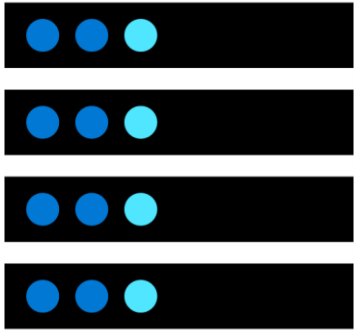
Compute

Networking

Storage

Analytics

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).

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.
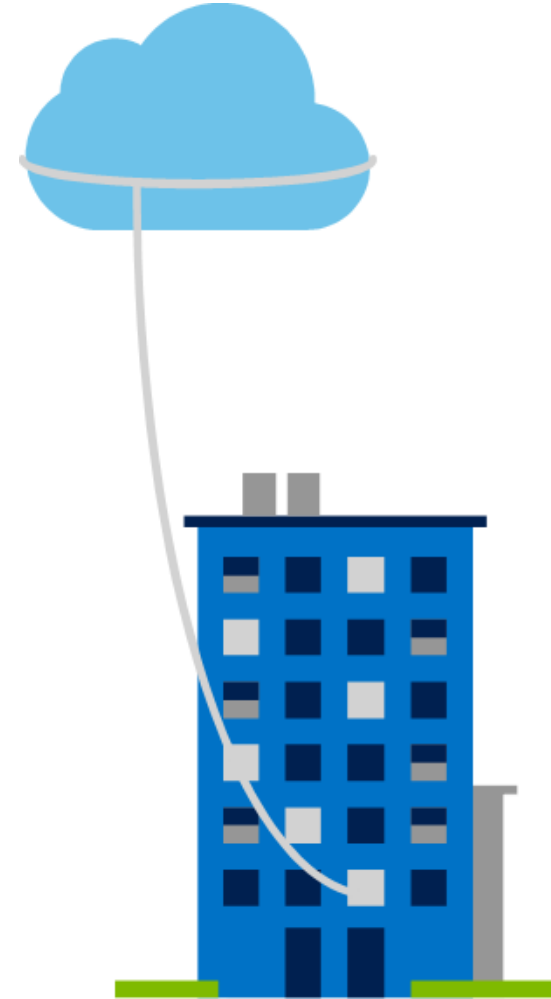
Hybrid cloud

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 and considerations

Cloud Benefits - Objective Domain

- Identify the benefits of cloud computing such as High Availability, Scalability, Elasticity, Agility, and Disaster Recovery.

- Identify the differences between Capital Expenditure (CapEx) and Operational Expenditure (OpEx).

- Describe the consumption-based model.

Cloud Benefits

|	
High availability	Fault tolerance
Scalability	Elasticity
Global reach	Customer latency capabilities
Agility	Predictive cost considerations

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)

· The spending and billing of services or products as needed.

· Expenses are deducted in the same year.
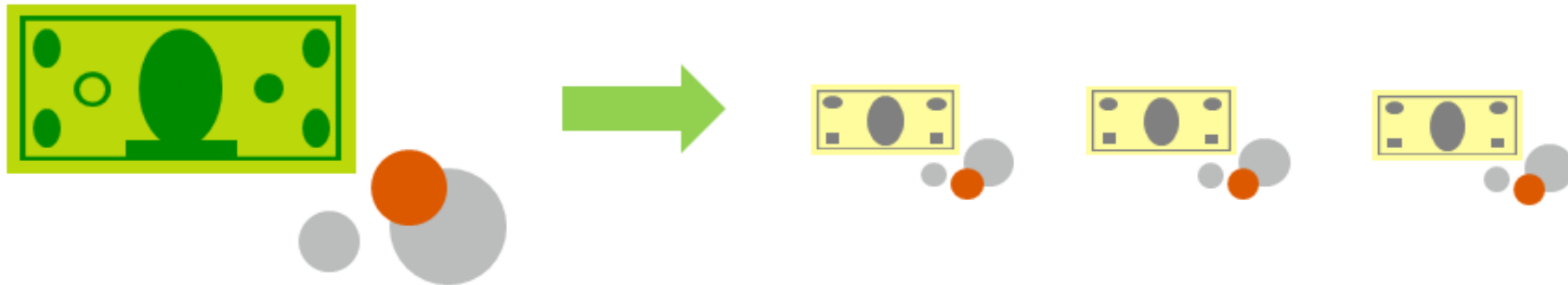
Consumption-based model

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
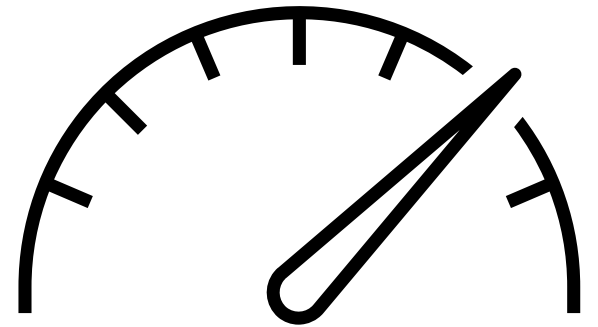
Cloud services
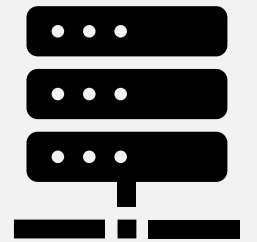
Cloud Services - Objective Domain

- Describe Infrastructure-as-a-Service (IaaS)

- Describe Platform-as-a-Service (PaaS)

- Describe Software-as-a-Service (SaaS)

- Identify a service type based on a use case

- Describe the shared responsibility model

- Describe serverless computing

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.

IaaS

Servers and storage

Networking firewalls/Security
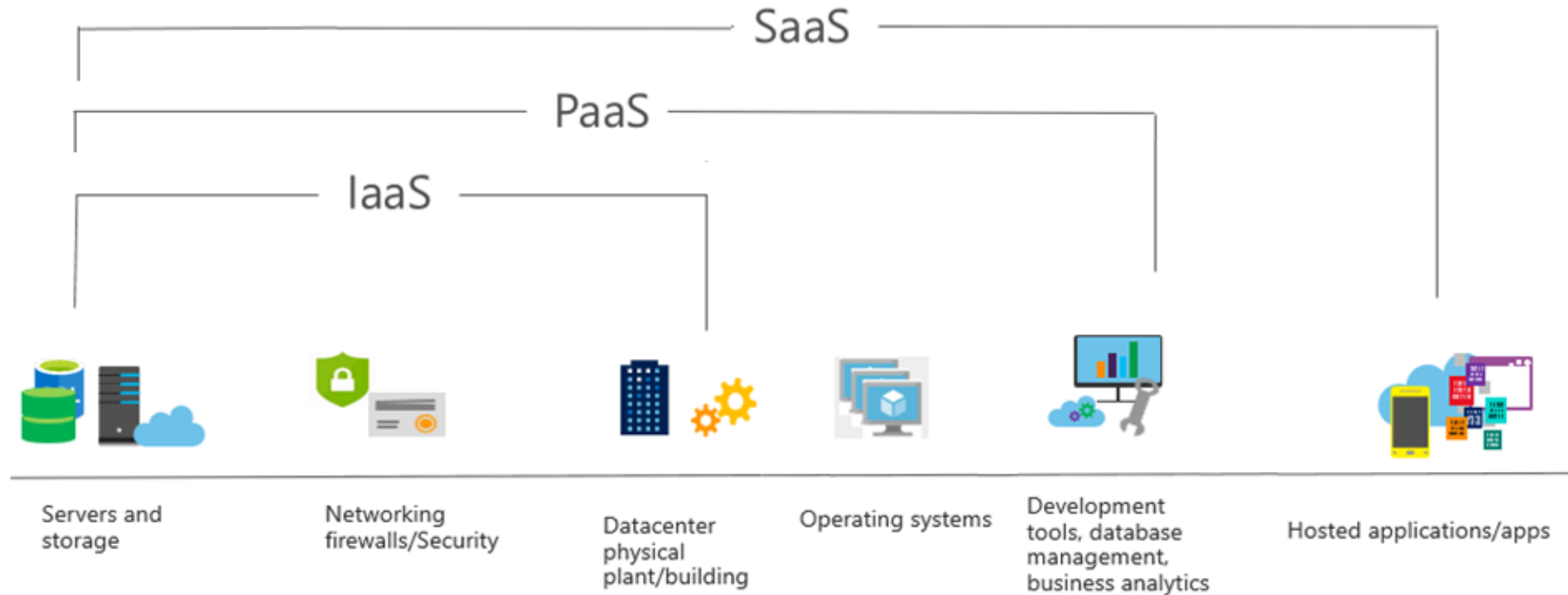
Datacenter physical plant/building
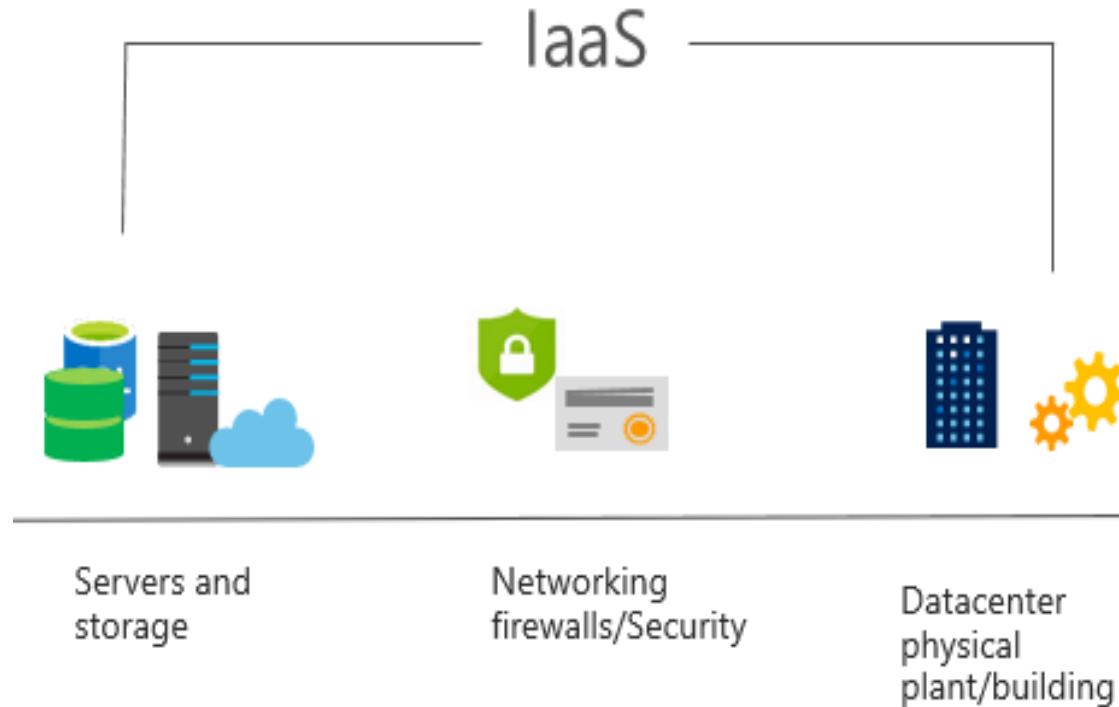
Platform as a Service (PaaS)

Provides environment for building, testing, and deploying software applications; without focusing on managing underlying infrastructure.
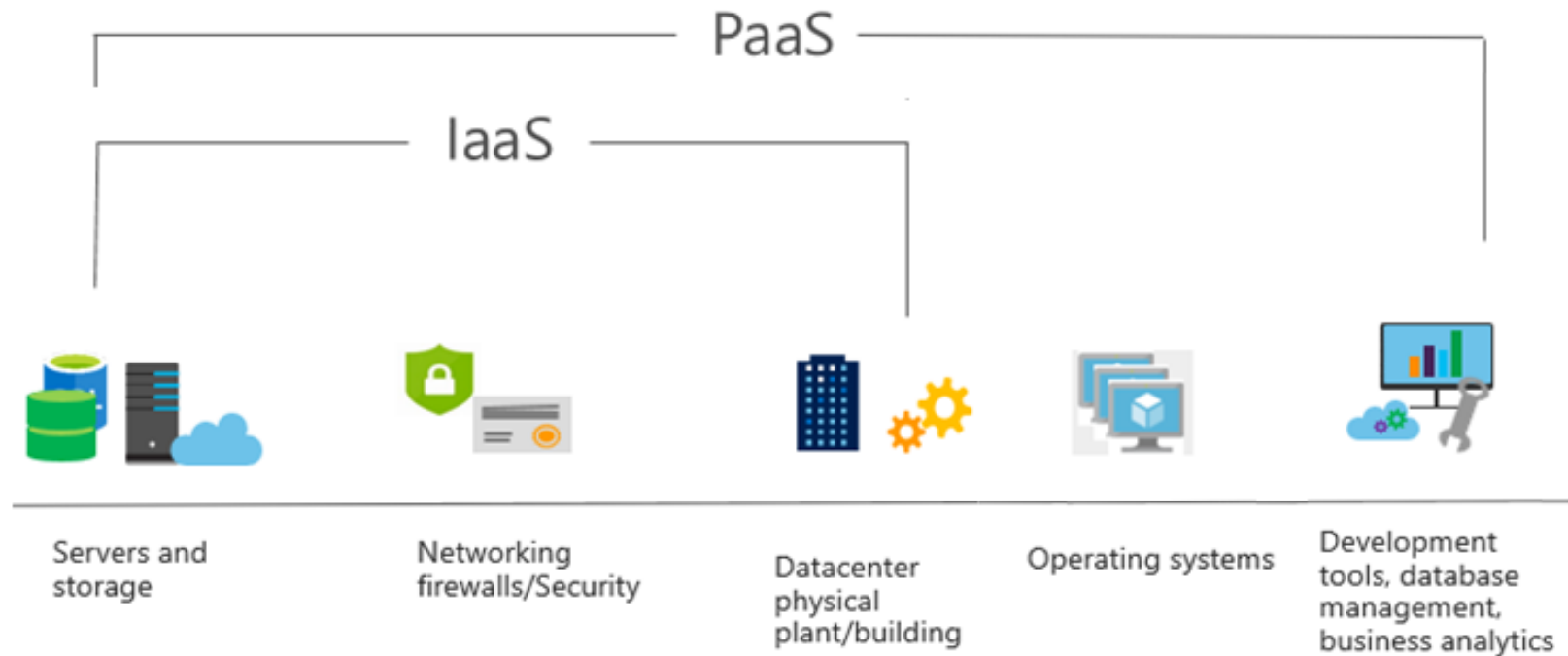
Software as a Service (SaaS)

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

Cloud service comparison

IaaS

The most flexible cloud service.

You configure and manage the hardware for your application.

PaaS

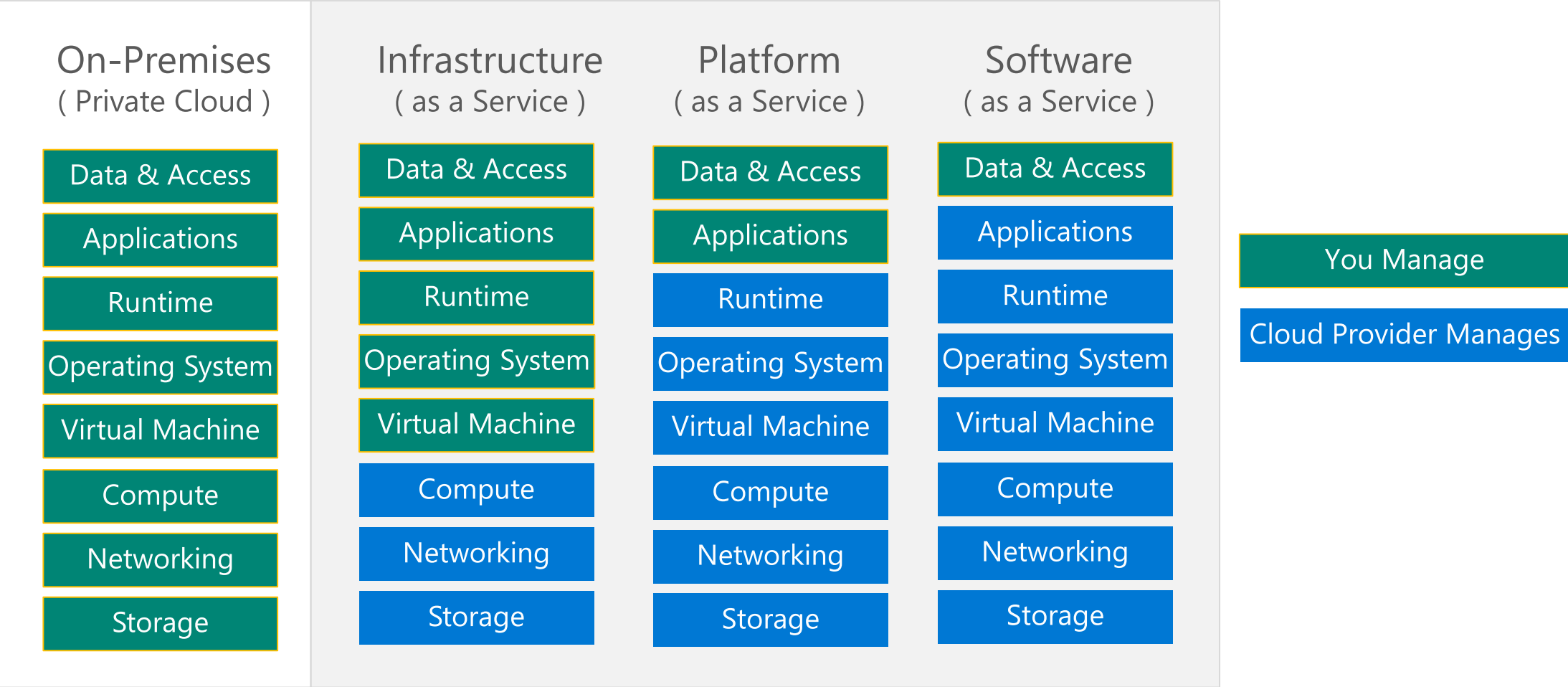Focus on application development.

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.

Shared responsibility model

On-Premises (Private Cloud)	Infrastructure (as a Service)	Platform (as a Service)	Software (as a Service)
Data & Access	Data & Access	Data & Access	Data & Access
Applications	Applications	Applications	Applications
Runtime	Runtime	Runtime	Runtime
Operating System	Operating System	Operating System	Operating System
Virtual Machine	Virtual Machine	Virtual Machine	Virtual Machine
Compute	Compute	Compute	Compute
Networking	Networking	Networking	Networking
Storage	Storage	Storage	Storage

You Manage

Cloud Provider Manages

Describe Serverless Computing

Azure Functions is code running your service and not the underlying platform or infrastructure. It creates infrastructure based on an event**.**
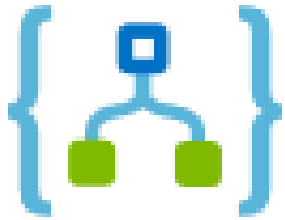
Azure Logic Apps is a cloud service that helps you automate and orchestrate tasks, business processes, and workflows when you need to integrate apps, data, systems, and services.

With **serverless computing applications**, the cloud service provider automatically provisions, scales, and manages the infrastructure required to run the code.