Lesson 3
Reading:
"Types of Cloud computing"

"Types of Cloud computing".

- **Public Cloud:** Meaning: A type of cloud computing where a cloud service provider offers computing resources, such as virtual machines and enterprise-grade infrastructures, over the public internet. It is a multi-tenant environment shared by millions of customers.
- **Private Cloud:** Meaning: A cloud environment dedicated to and accessible by one customer only. It provides benefits of cloud computing along with access control, security, and resource customization. It can be hosted on-premises or by an independent cloud provider.
- **Hybrid Cloud:** Meaning: A combination of public and private cloud environments, connecting an organization's private cloud services and public clouds into a single infrastructure. It offers flexibility to choose the optimal cloud for each application and move workloads between them.
- **Multi Cloud:** Meaning: The use of two or more clouds from different cloud providers. It can involve using various cloud services (SaaS, PaaS, and IaaS) from different leading public cloud providers.
- **Hybrid Multi Cloud:** Meaning: The use of two or more public clouds along with a private cloud environment. It combines the benefits of multiple public clouds and a private cloud.
- **Elasticity:** Meaning: The ability of a cloud system to scale resources up or down based on demand. It allows flexibility in adjusting computing capacity to changing workload demands.
- **Scalability:** Meaning: The capability of a cloud system to handle increasing workloads by adding resources. It ensures that the system can accommodate growth without a loss in performance.
- **Orchestration:** Meaning: The coordination and management of multiple cloud services and resources to work together seamlessly. In a hybrid cloud, orchestration enables efficient movement of workloads between public and private clouds.
- **Access Control:** Meaning: The mechanism that restricts or allows users' access to resources based on their permissions. In a private cloud, access control enhances security by controlling who can access the dedicated resources.
- **Regulatory Compliance:** Meaning: Adherence to laws and regulations governing the handling and storage of sensitive data. Private cloud is chosen by some companies to meet regulatory compliance requirements, especially when dealing with confidential or sensitive information.

Reading: Types of cloud computing

Public Cloud

Public cloud is a type of cloud computing in which a cloud service provider makes computing resources—anything from SaaS applications, to individual virtual machines (VMs), to bare metal computing hardware, to complete enterprise-grade infrastructures and development platforms—available to users over the public internet. These resources might be accessible for free, or access might be sold according to subscription-based or pay-per-usage pricing models.

The public cloud provider owns, manages, and assumes all responsibility for the data centers, hardware, and infrastructure on which its customers' workloads run, and it typically provides high-bandwidth network connectivity to ensure high performance and rapid access to applications and data.

Public cloud is a multi-tenant environment—the cloud provider's data center infrastructure is shared by all public cloud customers. In the leading public clouds—Amazon Web Services (AWS), Google Cloud, IBM Cloud, Microsoft Azure, and Oracle Cloud—those customers can number in the millions.

Many enterprises are moving portions of their computing infrastructure to the public cloud because public cloud services are elastic and readily scalable, flexibly adjusting to meet changing workload demands. Others are attracted by the promise of greater efficiency and fewer wasted resources since customers pay only for what they use. Still others seek to reduce spending on hardware and on-premises infrastructures.
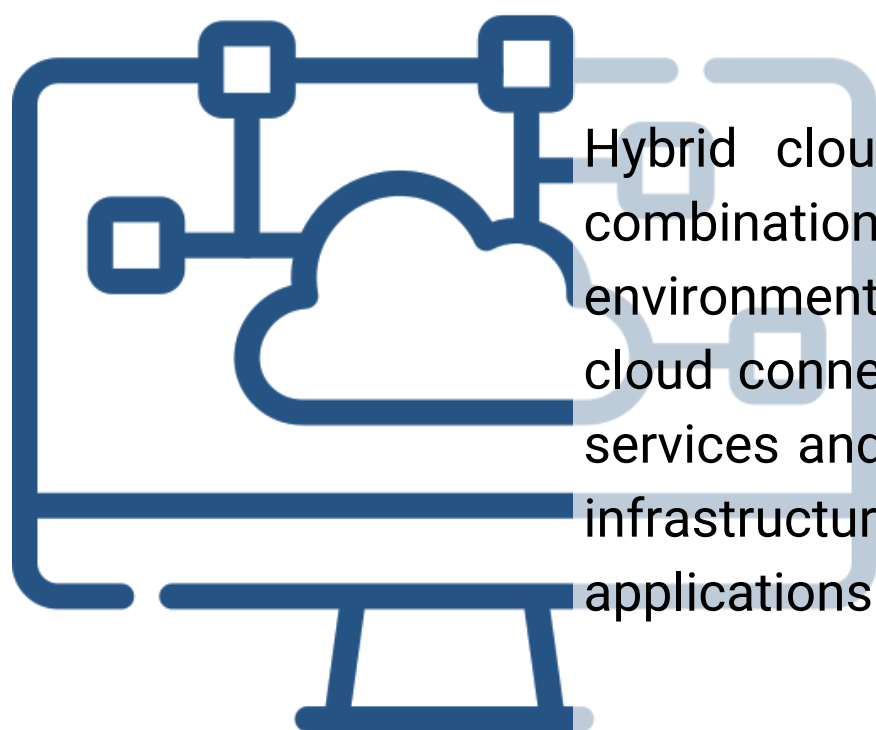
Private cloud
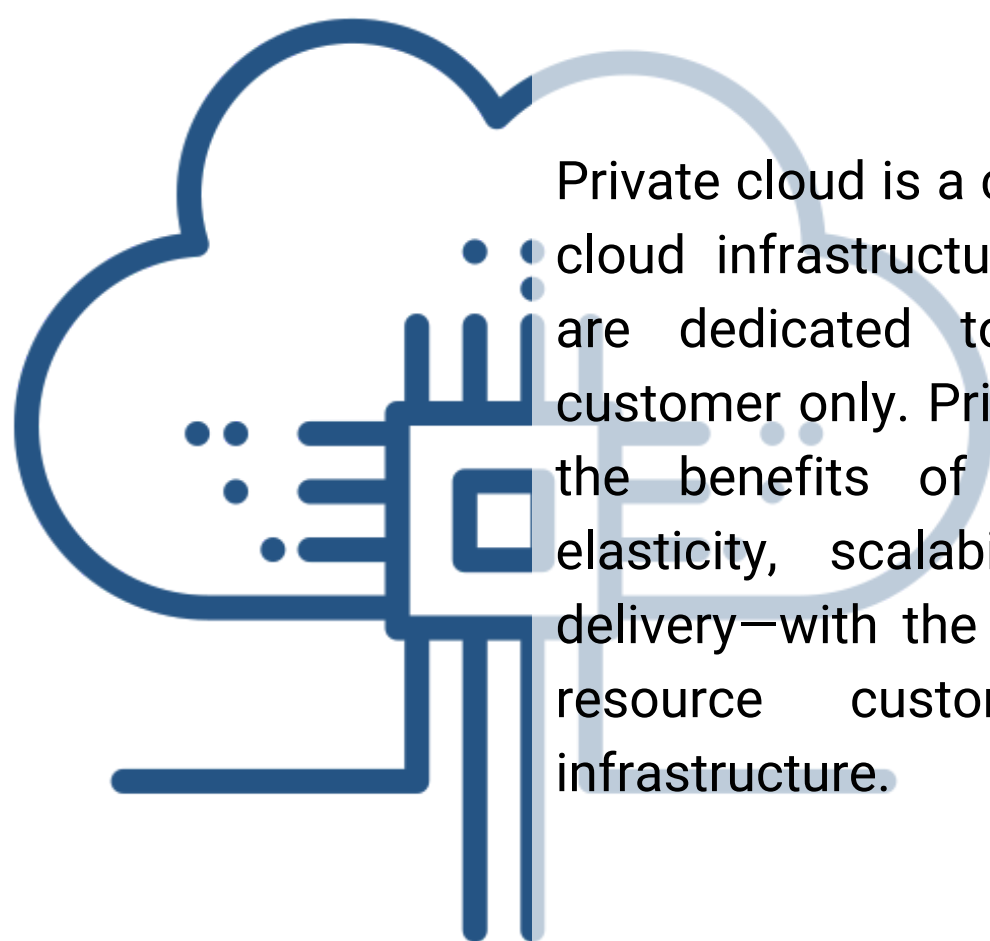
Private cloud is a cloud environment in which all cloud infrastructure and computing resources are dedicated to, and accessible by, one customer only. Private cloud combines many of the benefits of cloud computing—including elasticity, scalability, and ease of service delivery—with the access control, security, and resource customization of on-premises infrastructure.

A private cloud is typically hosted on-premises in the customer's data center. But a private cloud can also be hosted on an independent cloud provider's infrastructure or built on rented infrastructure housed in an offsite data center.

Many companies choose private cloud over public cloud because private cloud is an easier way (or the only way) to meet their regulatory compliance requirements. Others choose private cloud because their workloads deal with confidential documents, intellectual property, personally identifiable information (PII), medical records, financial data, or other sensitive data.

By building private cloud architecture according to cloud native principles, an organization gives itself the flexibility to easily move workloads to the public cloud or run them within a hybrid cloud (see below) environment whenever they're ready.
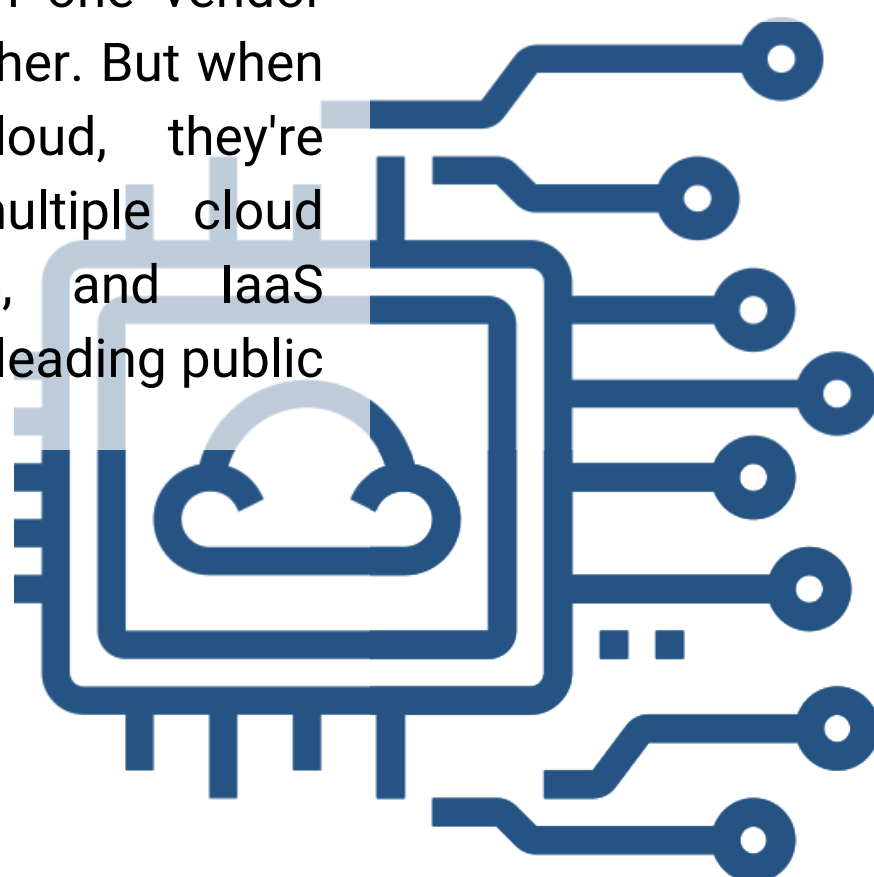
Hybrid cloud

Hybrid cloud is just what it sounds like—a combination of public and private cloud environments. Specifically, and ideally, a hybrid cloud connects an organization's private cloud services and public clouds into a single, flexible infrastructure for running the organization's applications and workloads.

The goal of hybrid cloud is to establish a mix of public and private cloud resources—and with a level of orchestration between them—that gives an organization the flexibility to choose the optimal cloud for each application or workload and to move workloads freely between the two clouds as circumstances change. This enables the organization to meet its technical and business objectives more effectively and cost-efficiently than it could with public or private cloud alone.

Multi Cloud and hybrid multi cloud

Multicloud is the use of two or more clouds from two or more different cloud providers. Having a multi cloud environment can be as simple as using email SaaS from one vendor and image editing SaaS from another. But when enterprises talk about multicloud, they're typically talking about using multiple cloud services—including SaaS, PaaS, and IaaS services—from two or more of the leading public cloud providers.

Hybrid multi cloud is the use of two or more public clouds together with a private cloud environment.

Organizations choose multi cloud to avoid vendor lock-in, to have more services to choose from, and to access more innovation. But the more clouds you use—each with its own set of management tools, data transmission rates, and security protocols—the more difficult it can be to manage your environment. Multi Cloud management platforms provide visibility across multiple provider clouds through a central dashboard, where development teams can see their projects and deployments, operations teams can keep an eye on clusters and nodes, and the cybersecurity staff can monitor for threats.

Inferential reading activity based on the text: "Types of Cloud computing"

- **Question 1:** Why might some companies prefer a private cloud over a public cloud, and what specific benefits do they gain from this choice?
- **Question 2:** How does the concept of "elasticity" contribute to the appeal of public cloud services, and how does it address the challenges faced by enterprises in managing their workloads?
- **Question 3:** What challenges might organizations face when implementing a multi cloud strategy, and how do multi cloud management platforms address these challenges?
- **Question 4:** In what ways does hybrid cloud offer a solution to the limitations of relying solely on public or private cloud services, and how does orchestration play a key role in achieving the benefits of a hybrid cloud environment?

Matching vocabulary activity

Para consolidar las respuestas ingrese al cuestionario online.