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Cloud Deployment Models

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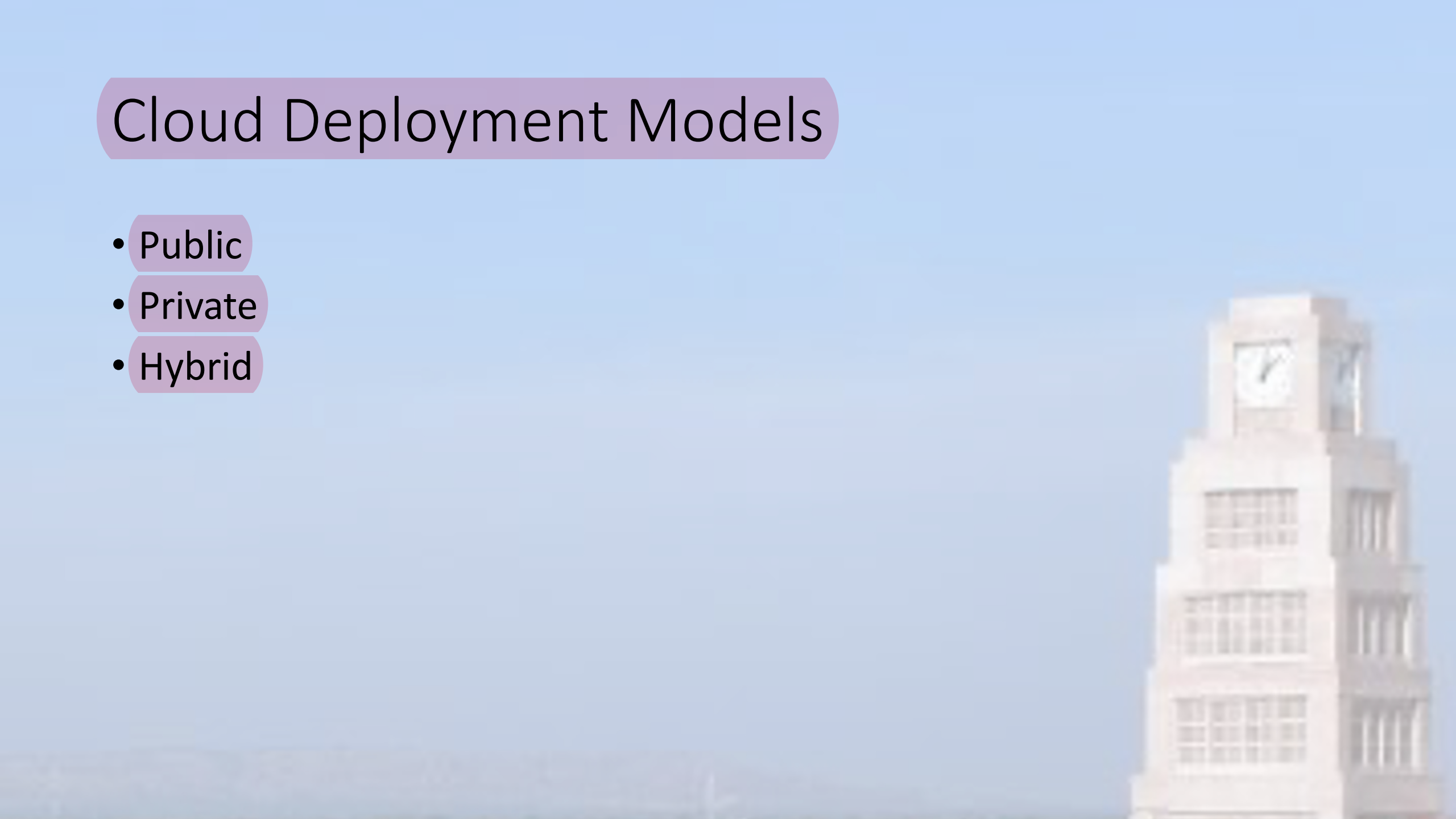
Cloud Deployment Models

- Public
- Private
- Hybrid



Public Cloud

- Public clouds are the most common type of cloud computing deployment.
- The cloud resources (like servers and storage) are owned and operated by a third-party cloud service provider and delivered over the internet.
- With a public cloud, all hardware, software, and other supporting infrastructure are owned and managed by the cloud provider.
- Example: AWS, GCP, Microsoft Azure

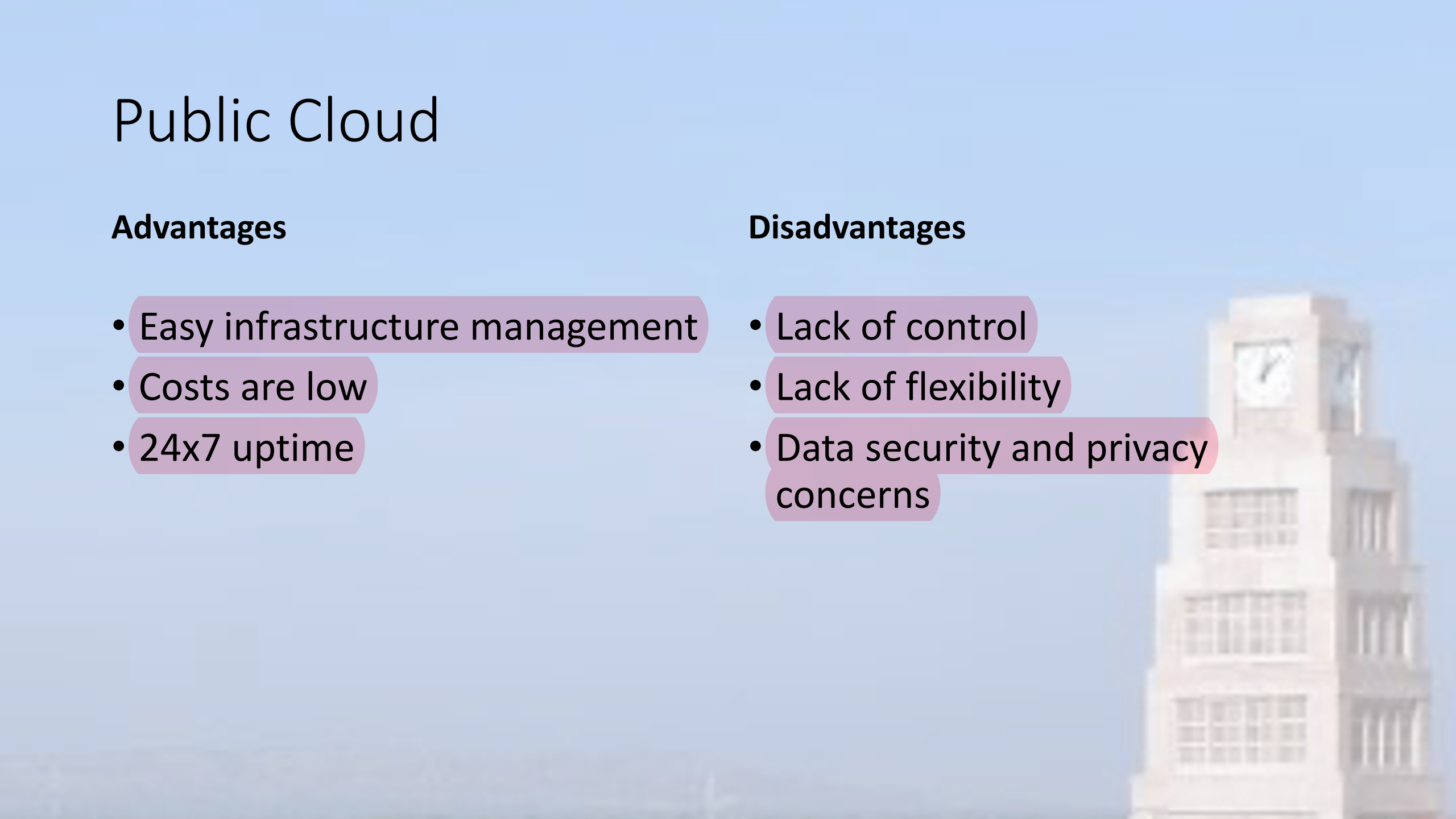
Public Cloud

Advantages

- Easy infrastructure management
- Costs are low
- 24x7 uptime

Disadvantages

- Lack of control
- Lack of flexibility
- Data security and privacy concerns



Private Cloud

- A private cloud consists of cloud computing resources used exclusively by one business or organization.
- The private cloud can be physically located at your organization's on-site data center, or it can be hosted by a third-party service provider.
- But in a private cloud, the services and infrastructure are always maintained on a private network and the hardware and software are dedicated solely to your organization.
- Example: IITJ Cloud (internal), Amazon VPC, VMware, OpenStack (external)

Types of Private Cloud

- *Virtual Private Cloud* – simply a virtual network dedicated to one organization or user in a public cloud.
- *Managed Private Cloud* – the hardware and software are owned by the organization. It can be on-premises or off-premises. However, the entire management, operation, and maintenance tasks of the cloud are outsourced to external private cloud providers.
- *Hosted Private Cloud* – cloud providers provide isolated servers in their data centers. The cloud provider is responsible for the hardware, software, network, and security of the infrastructure.
- *On-premises private cloud* – allows users to host servers locally in data centers.

Private Cloud

Advantages

- Greater isolation and control
- Greater data security and integrity
- Easy compliance
- Greater bandwidth
- Scope for customization

Disadvantages

- High upfront cost
- Less elasticity
- Higher requirements for personnel

Sovereign Cloud

- Designed and built to provide data access in compliance with local laws and regulations.
- A sovereign cloud service provider will ensure that each subscriber's data — including their metadata — is protected from foreign access and stored in compliance with the originating country's privacy mandates.

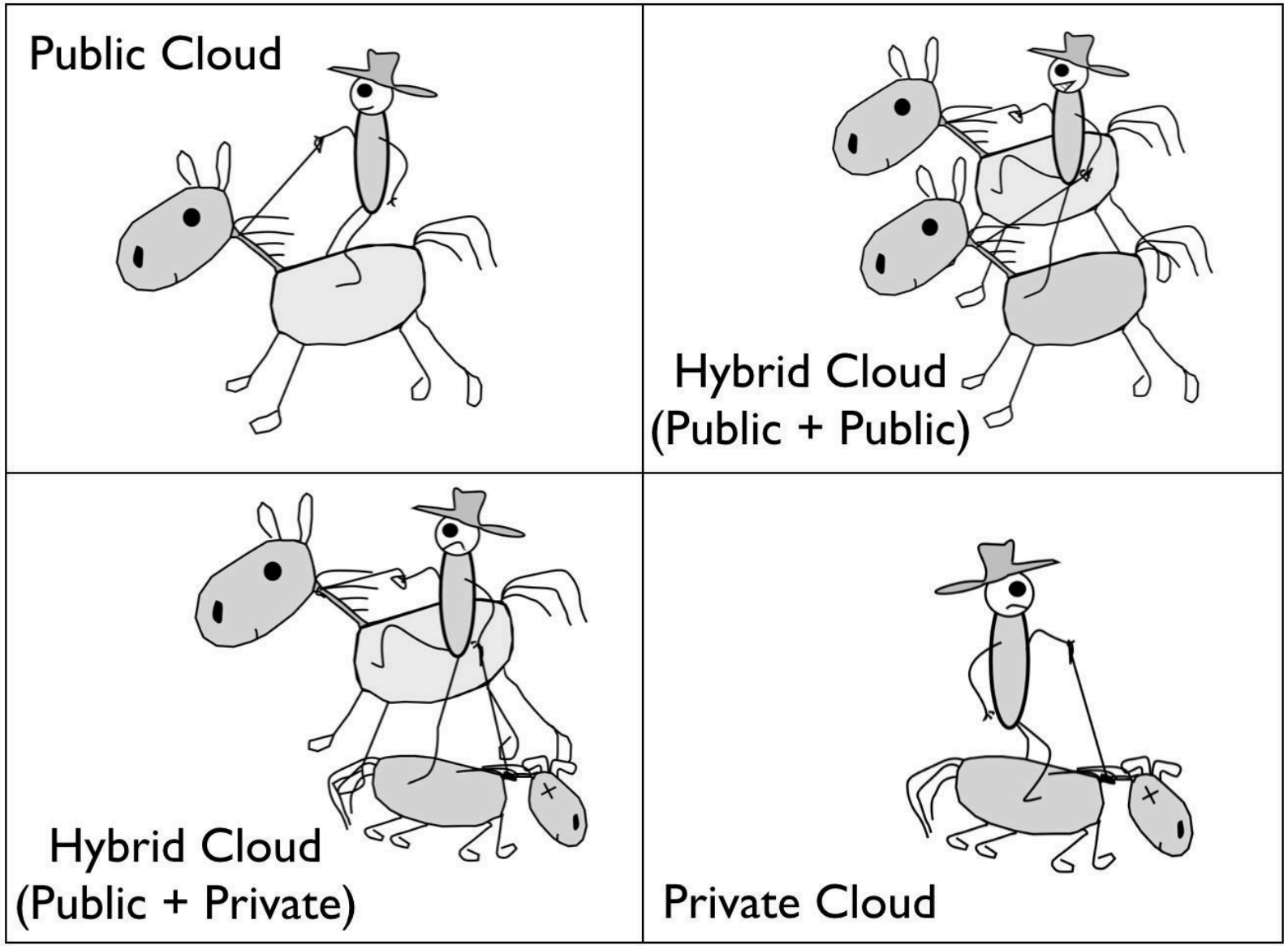
Hybrid Cloud

- A hybrid cloud is a type of cloud computing that combines on-premises infrastructure—or a private cloud—with a public cloud.
- Hybrid clouds allow data and apps to move between the two environments.
- The hybrid cloud is evolving to include edge workloads as well. Edge computing brings the computing power of the cloud to IoT devices—closer to where the data resides.

Advantages of Hybrid Cloud

- Control – the organization can maintain a private infrastructure for sensitive assets or workloads that require low latency.
- Flexibility – the organization can take advantage of additional resources in the public cloud when they need them.
- Cost-effectiveness – with the ability to scale to the public cloud, you pay for extra computing power only when needed.
- Ease – transitioning to the cloud doesn’t have to be overwhelming because you can migrate gradually – phasing in workloads over time.

Sometimes…


Public Cloud
Hybrid Cloud
(Public + Public)
Hybrid Cloud
(Public + Private)
Private Cloud
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