

# Cloud Deployment Scenarios

# Preface

- List the four major cloud deployment types
- Describe the features of private, public, hybrid, and community clouds
- List some additional cloud deployment types
- Select the most appropriate deployment model based on a set of business and technical requirements

## Agenda

- Cloud deployment models - public, private, hybrid, community clouds
- Selection criteria for cloud deployment types

# Cloud deployment models

- There are 4 cloud deployment model that will be covered during this chapter
  - Public Cloud
  - Private Cloud
  - Community Cloud
  - Hybrid Cloud

# Gartner Definition of Public Cloud computing

- Gartner defines **public cloud computing** as a style of computing where scalable and elastic **IT-enabled capabilities are provided as a service to external customers using Internet technologies**—i.e., public cloud computing uses cloud computing technologies to support customers that are external to the provider's organization.
- Using public cloud services generates the types of economies of scale and sharing of resources that can reduce costs and increase choices of technologies.

# Public Cloud

- A *public cloud* is a publicly accessible cloud environment owned by a third-party cloud provider. The IT resources on public clouds are usually provisioned via the previously described cloud delivery models and are generally offered to cloud consumers at a cost or are commercialized via other avenues (such as advertisement).
- The **cloud provider is responsible for the creation and on-going maintenance of the public cloud and its IT resources**. Many of the scenarios and architectures explored in upcoming chapters involve public clouds and the relationship between the providers and consumers of IT resources via public clouds.

# Gartner definition of Private Cloud computing

**Private cloud computing** is a form of cloud computing that is used by only one organization, or that ensures that an organization is completely isolated from others.

# Private Cloud Computing

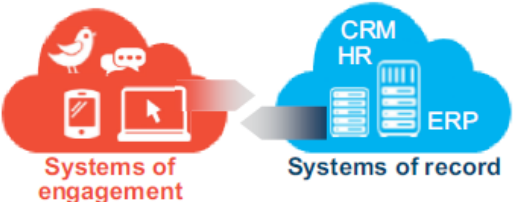

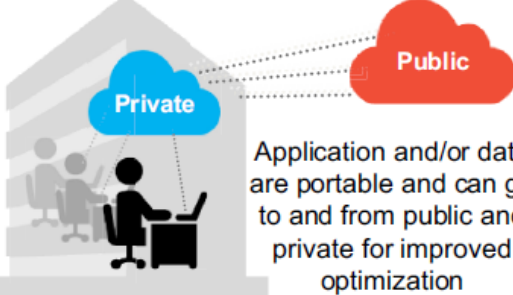
- A private cloud is owned by a single organization. Private clouds enable an organization to use cloud computing technology as a means of centralizing access to IT resources by different parts, locations, or departments of the organization.
- The use of a private cloud can change how organizational and trust boundaries are defined and applied. The actual administration of a private cloud environment **may be carried out by internal or outsourced staff.**

# Hybrid Cloud Computing

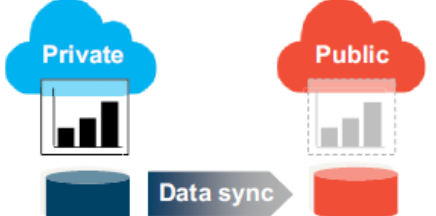
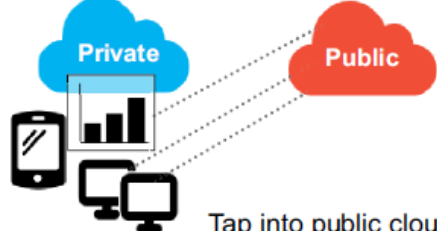

- A hybrid cloud is a cloud environment comprised of two or more different cloud deployment models. For example, a cloud consumer may choose to deploy cloud services processing sensitive data to a private cloud and other, less sensitive cloud services to a public cloud.
- Typical challenges:
  - Management
  - Workload Balancing,
  - Brokerage / Integration
  - Portability



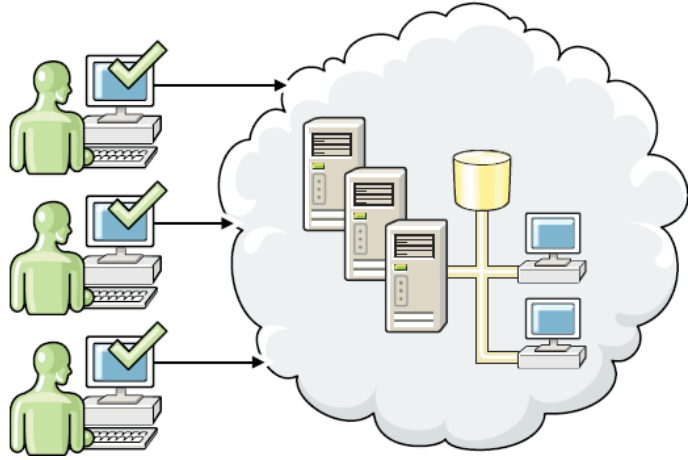
# Hybrid Cloud Use Cases (examples)

SoR-SoE Integration	Independent Workloads	Portability & Optimization
 <p>Systems of engagement</p> <p>Systems of record</p> <p>Link new social and mobile systems to core business systems</p>	<p>Traditional IT</p>  <p>Public Dev/Test</p> <p>Private Prod</p> <p>Choose private, public or hybrid cloud based on independent workload requirements</p>	 <p>Private</p> <p>Public</p> <p>Application and/or data are portable and can go to and from public and private for improved optimization</p>
Able to be implemented quickly, without infrastructure or application changes		

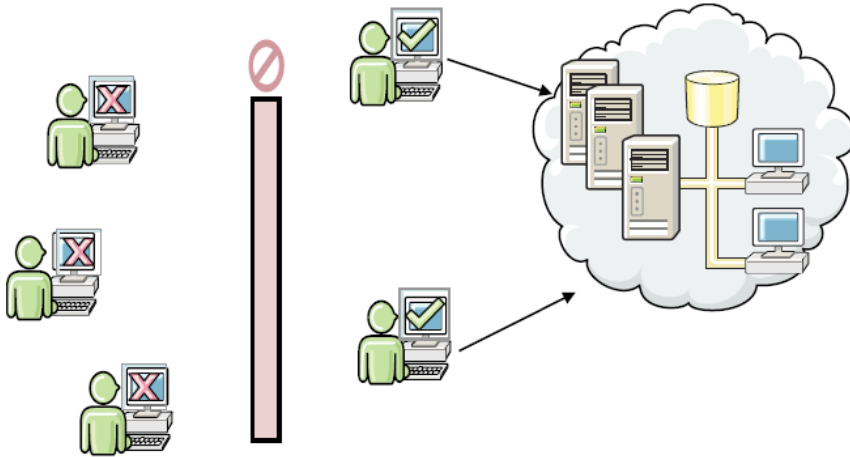
**Hybrid Cloud Brokerage & Management** Planned or Policy based Management and sourcing across multiple environments (infrastructure, platform & app)

Disaster Recovery	Reserve for capacity (bursting)	Backup and Archive
 <p>Private</p> <p>Public</p> <p>Data sync</p> <p>Use private cloud normally and switch to public cloud to recover files and data</p>	 <p>Private</p> <p>Public</p> <p>Tap into public cloud resources dynamically when a shortage occurs on private cloud</p>	 <p>Public</p> <p>Private</p> <p>Leverage off-premise resources for backup and archiving of on-premises resources</p>
More complex deployment, possibly requiring infrastructure or application changes		

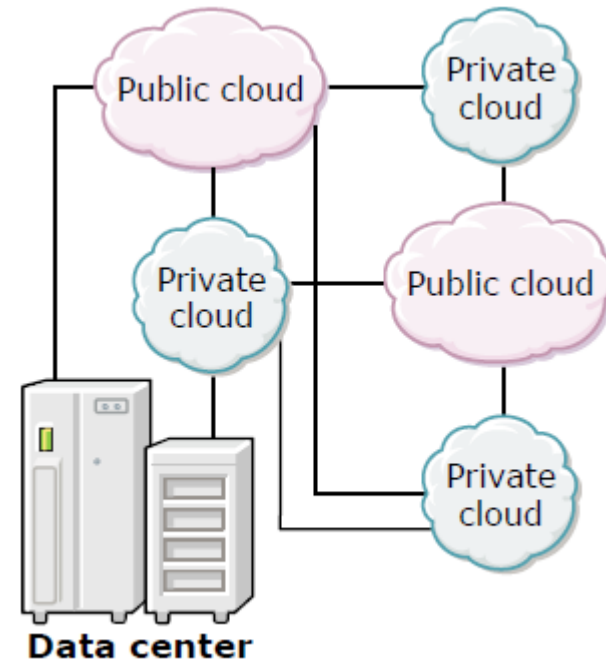
## Public Cloud



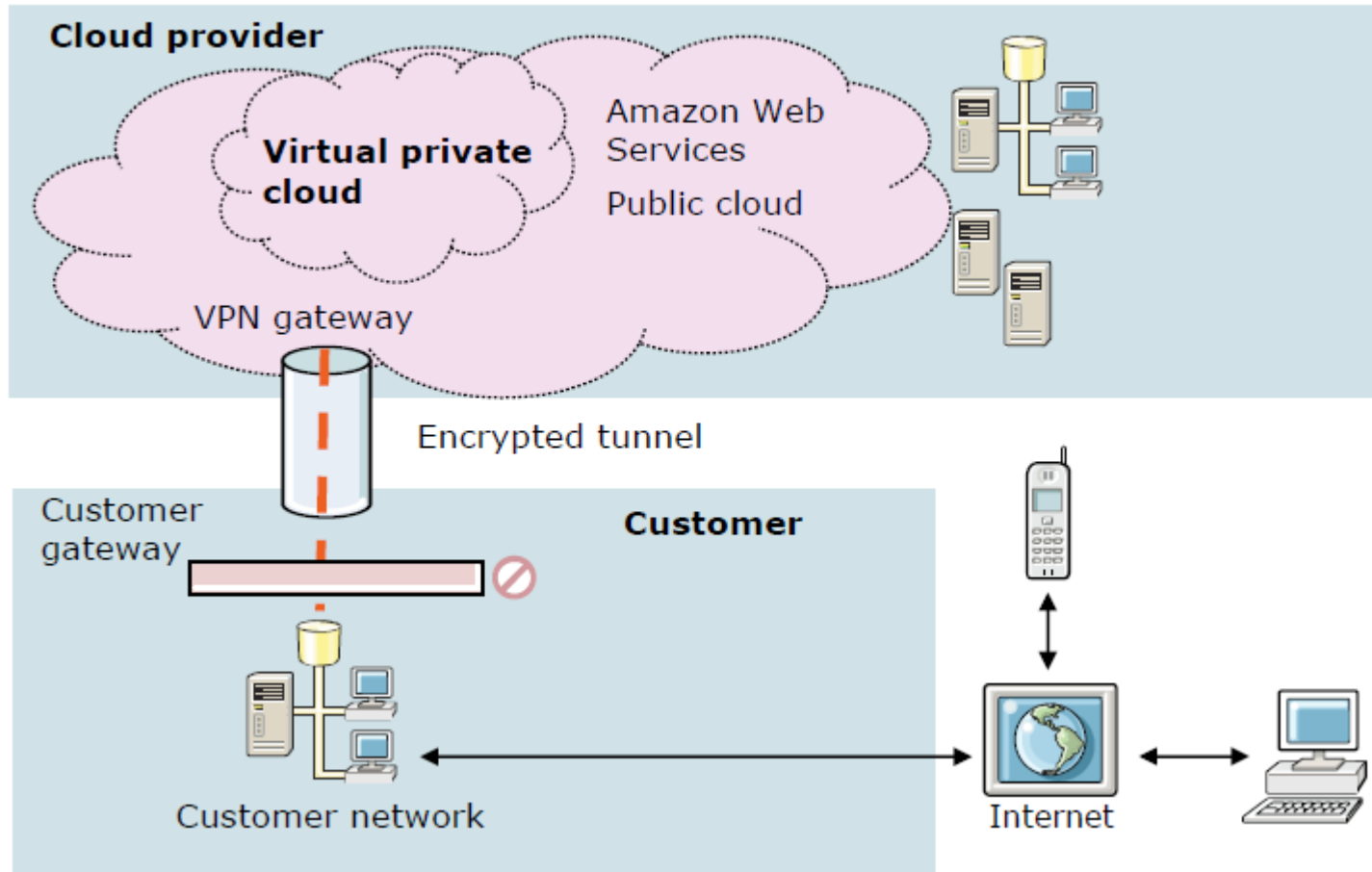
## Private Cloud



## Hybrid Cloud



## Virtual private clouds



**A virtual private cloud (VPC) is dedicated to a single user within a public cloud.** The virtual private cloud extends the customer network into the cloud provider's "space", making the additional resources available on demand.

## Workload types – cloud suitability (public vs. private)

Private cloud	Public Cloud
Employee information or other <b>sensitive</b> data typically restricted to the enterprise	<b>Test</b> systems and environments
Workloads composed of multiple, co-dependent services	Pre-production systems and environments
Workloads requiring <b>customization</b>	Mature packaged offerings, like e-mail and collaboration
Workloads based on third-party software that does not have a virtualization or cloud-aware licensing strategy	<b>Storage</b> solutions (including storage as a service)
<b>High throughput</b> online transaction processing	<b>Backup</b> solutions (including backup and restore as a service)
	<b>Batch</b> processing jobs with <b>limited security requirements</b>
	Data-intensive workloads if the provider has a cloud storage offering linked to the cloud compute

# Community Cloud

- A community cloud is similar to a public cloud except that its access is limited to a specific community of cloud consumers. The community cloud may be jointly owned by the community members or by a third-party cloud provider that provisions a public cloud with limited access. The member cloud consumers of the community typically share the responsibility for defining and evolving the community cloud