Infrastructure as a Service (IaaS)

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Overview

What is Virtualization?

What is a Virtual Machine?

What is a Container?

Private Cloud, Hybrid Cloud, and Public Cloud

Virtualization vs Private Cloud

IaaS Pricing Models

Service Level Agreements (SLA)

Migrating to the Cloud

Virtualization is the logical division of physical computing resources

Virtualization

Started in the 1960's as a way to slice up mainframe resources

There are many resources that can be virtualized – server (compute), storage, and network

There are many forms of virtualization – including server and desktop

Virtualization was popularized in the enterprise datacenter with VMware ESX Server, launched in 2001

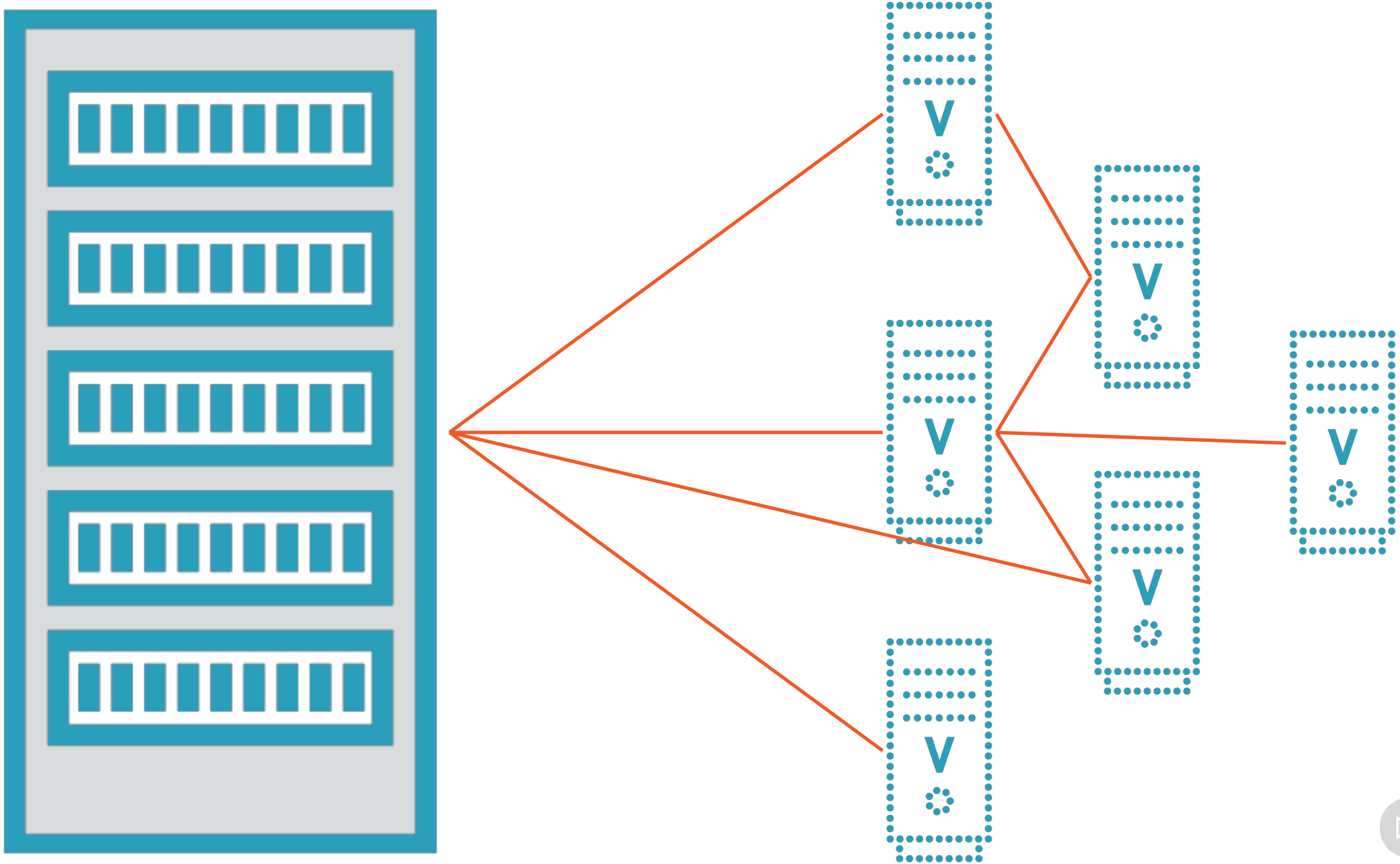
Running on a hypervisor, a virtual machine is software-based instance of physical server where a guest operating system has access to emulated virtual hardware.

Virtual Machine

A hypervisor is loaded on the virtual host to run virtual machines

Virtual guests run on a virtual host, which provides the physical resources

An operating system and applications are loaded in the guest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A container is operating-system level virtualization where the OS kernel provides isolated user spaces to run specific applications.

Containers

Have been around for a long time

Could run inside a virtual machine

Have less overhead and faster startup time than virtual machines

Have been popularized with the excitement around Docker containers

Different Types of Infrastructure as a Service Cloud Offerings

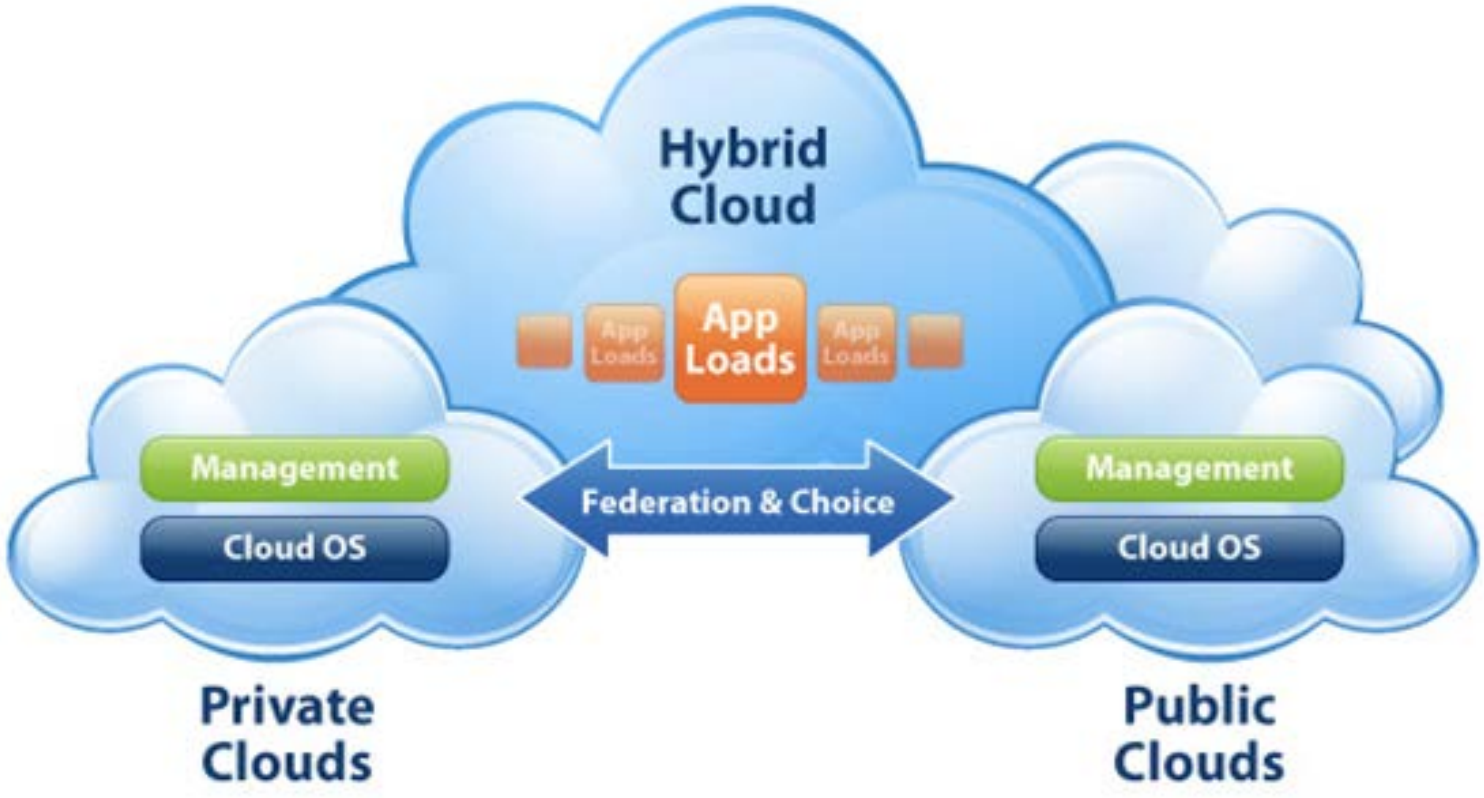

Diagram thanks to VMware.com

Virtualization vs. Private Cloud

Virtualization

Required for cloud computing

Virtualization provides:

Scalability / elastic computing

Resource sharing & pooling

Load balancing

High availability

Portability

Cloning

Private Cloud

On top of virtualization, private cloud provides:

Abstraction of underlying infrastructure layer

Secure multi-tenancy

Self-service portal

Catalog of applications

Chargeback / showback

Potential to burst to a hybrid cloud

Infrastructure as a Service (IaaS) pricing is, ideally, utility / consumption / subscription-based where you pay for what you use

IaaS Pricing Models Can Get Complex...

On-Demand

Spot-Instances

Reserved Instances

Dedicated Hosts

Having a Service Level Agreement (SLA) with Your Cloud Provider is Important

Service Level Agreement (SLA)

Defines what level of performance and availability the IaaS provider will provide you

And what they will do if they are unable to provide you that level of service

Amazon's SLA is located here- https://aws.amazon.com/ec2/sla/

How Do You Get to the Cloud?

Some companies have “greenfield deployments”, but that’s not common

Here’s what you should consider before you migrate to the cloud:

- Costs associated with using the cloud?
- Security, availability, and performance?
- Migrate vs rebuild?
- Enterprise-grade functionality?
- Tools that can help?

Summary

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- Virtualization vs Private Cloud
- IaaS Pricing Models
- Service Level Agreements (SLA)
- Migrating to the Cloud