CCNA 200-301, Volume 2

Chapter 15
Cloud Architecture

Objectives

- Explain the role and function of network components
  - ▫ Servers
- Describe the characteristics of network topology architectures
  - ▫ On-premises and cloud
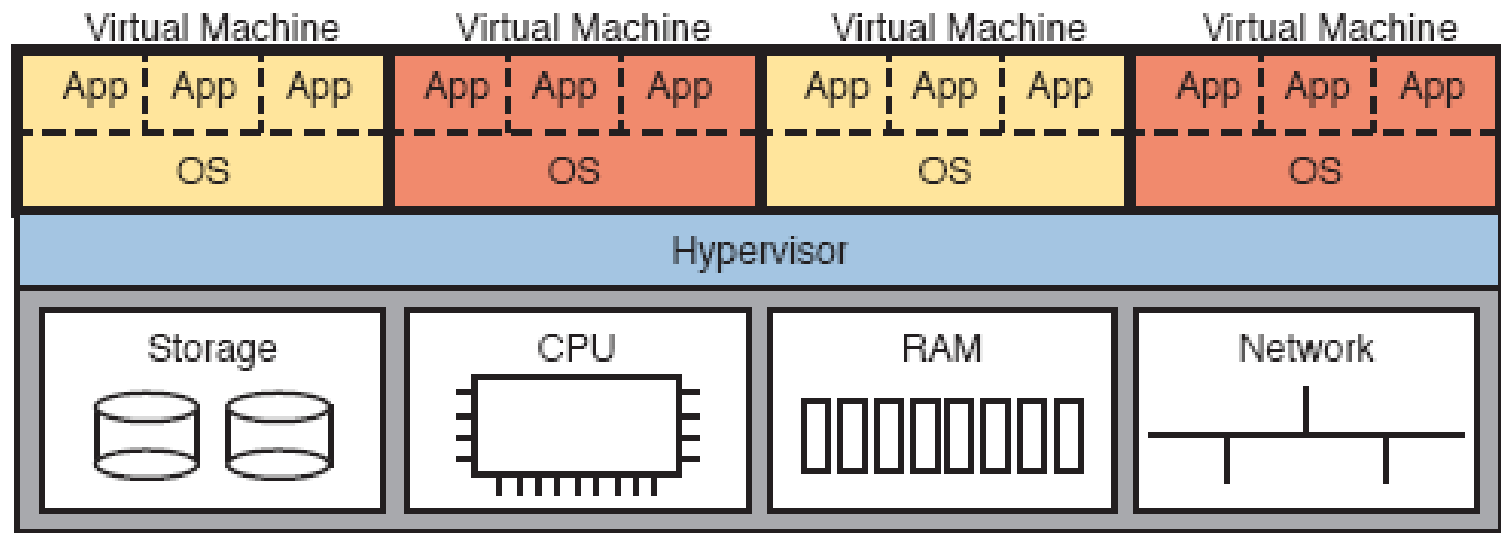- Explain virtualization fundamentals (virtual machines)
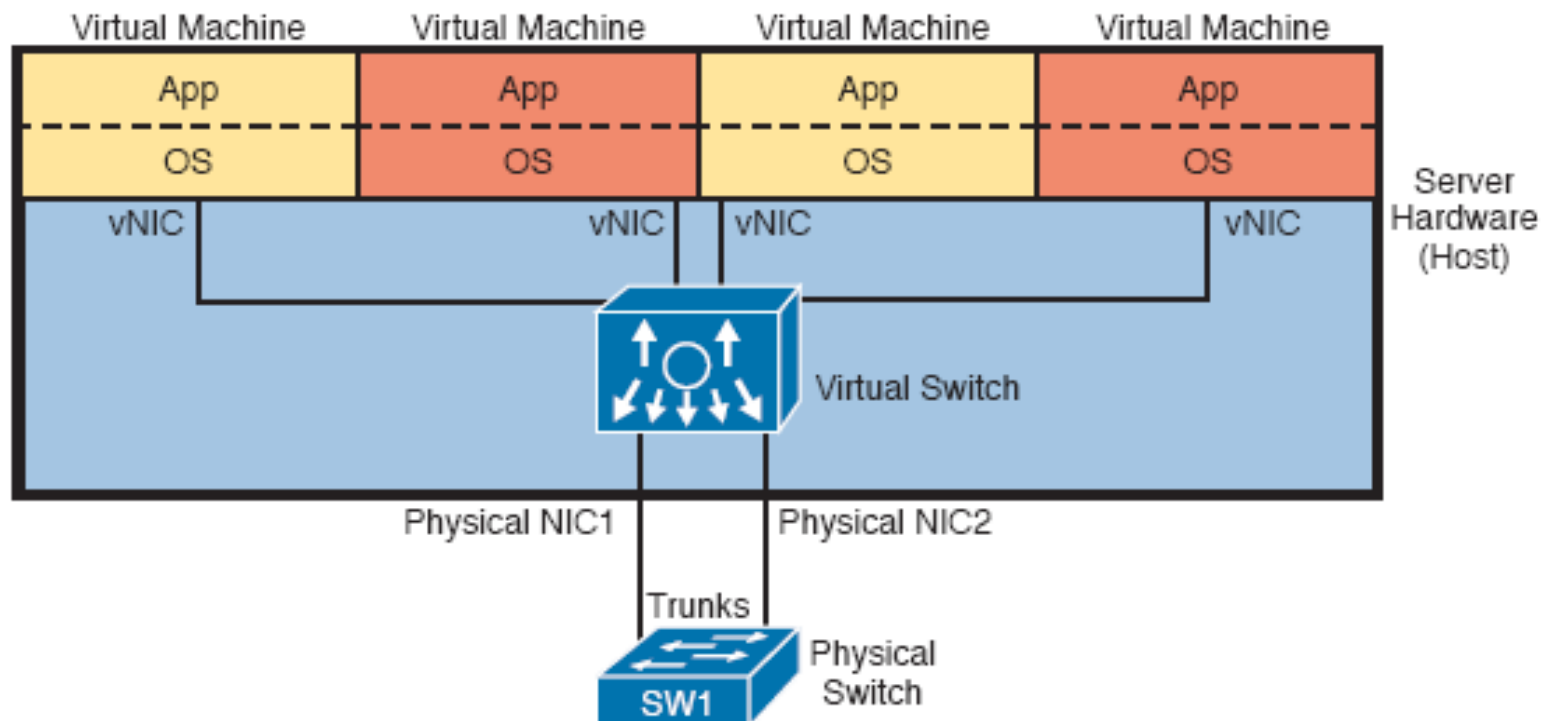
Cisco UCS Servers: B-Series (Blade)

Physical Server Model: Physical Hardware, One OS, and Applications

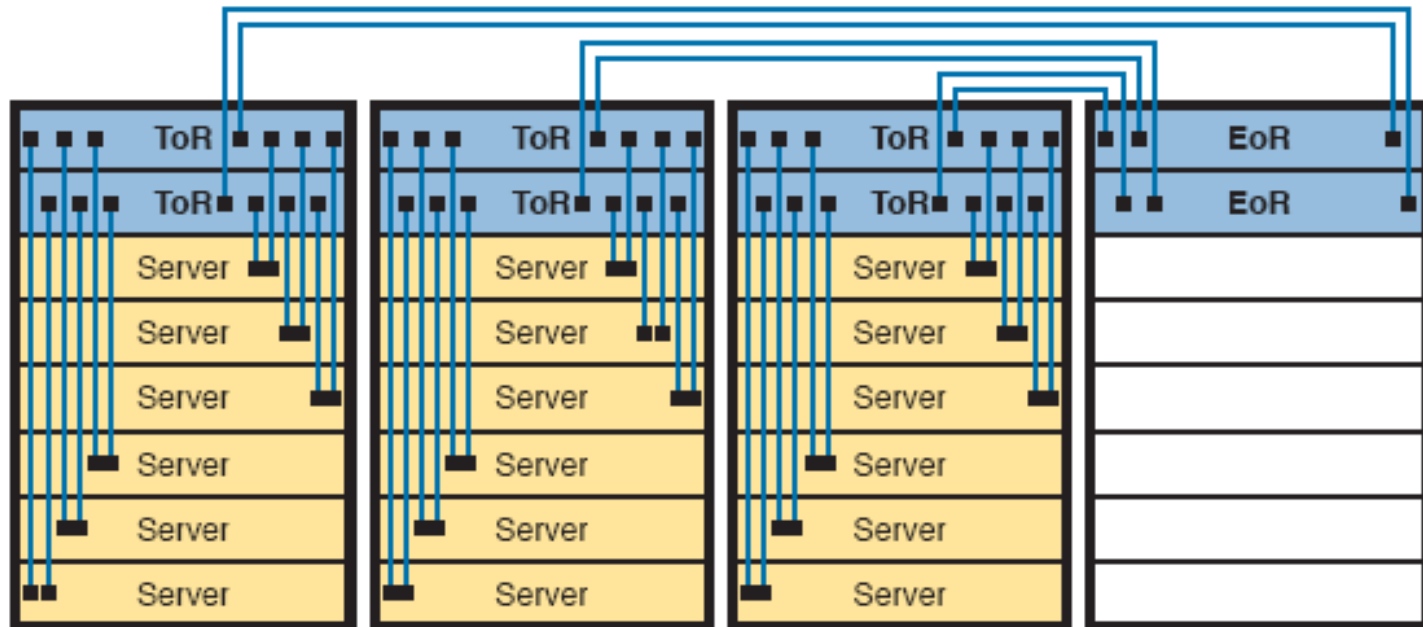| App1	App2	App3	App4
Operating System			
Storage	CPU	RAM	Network
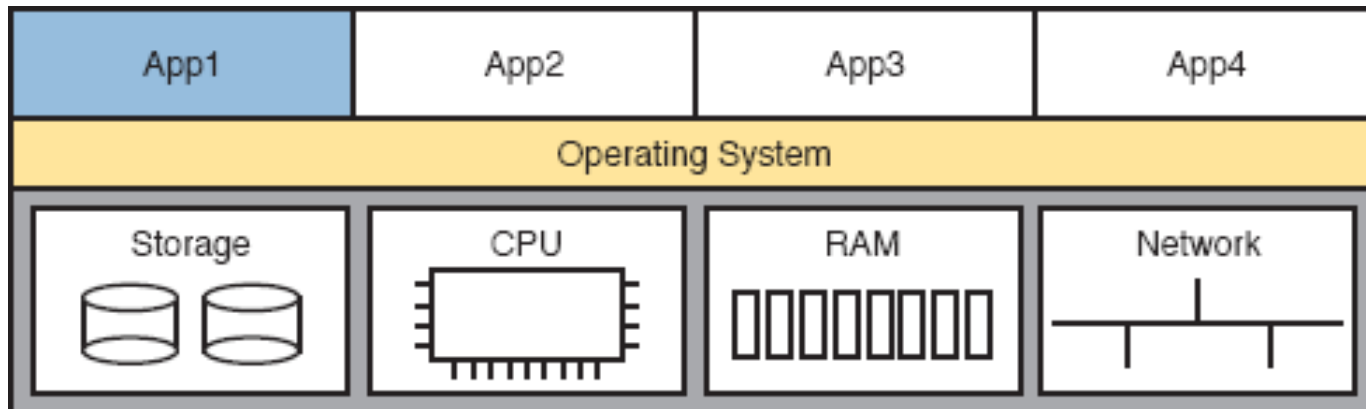
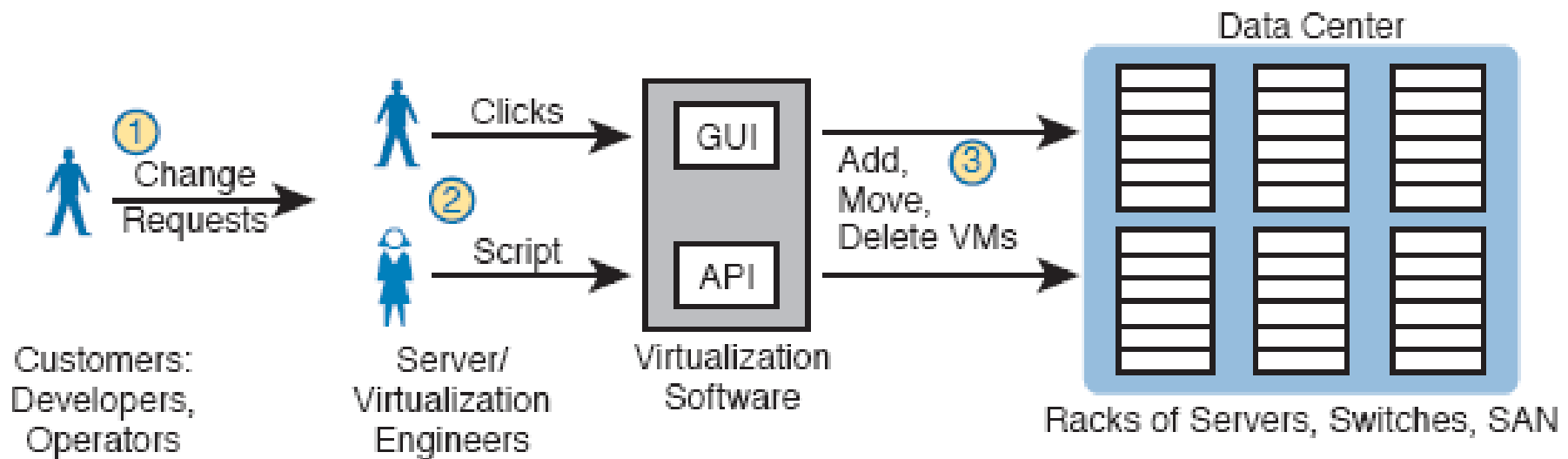# Four VMs Running on One Host; Hypervisor Manages the Hardware

Basic Networking in a Virtualized Host with a Virtual Switch

Traditional Data Center Top-of-Rack and End-of-Row Physical Switch Topology

Traditional Workflow: Customer (Human) Asks Virtualization (Human) for Service
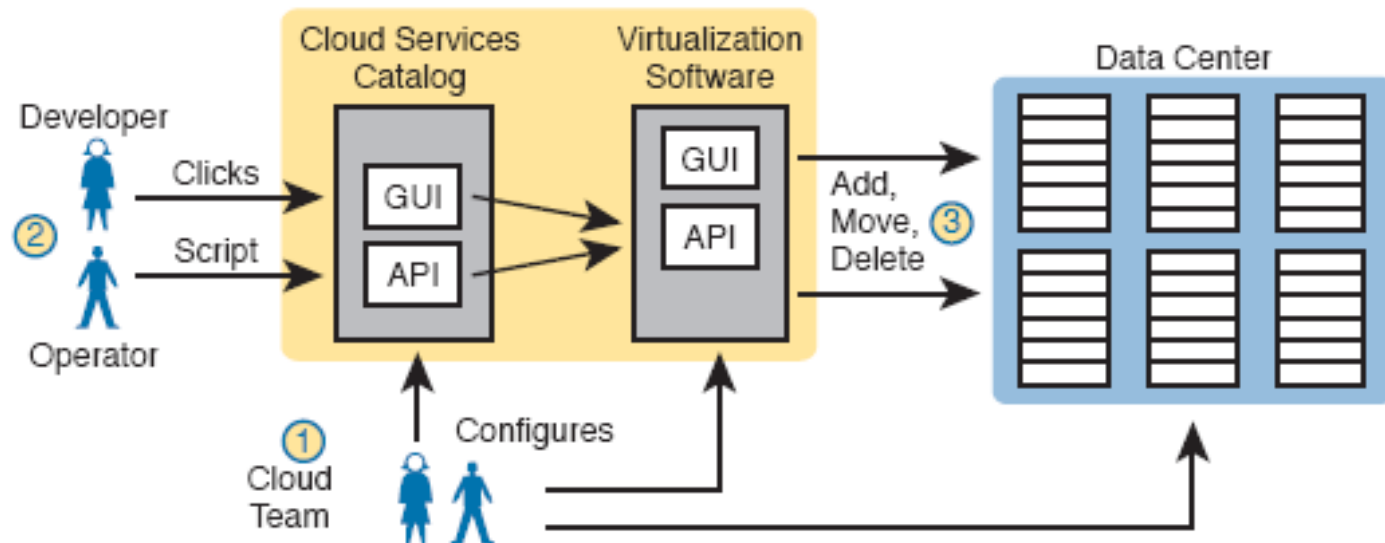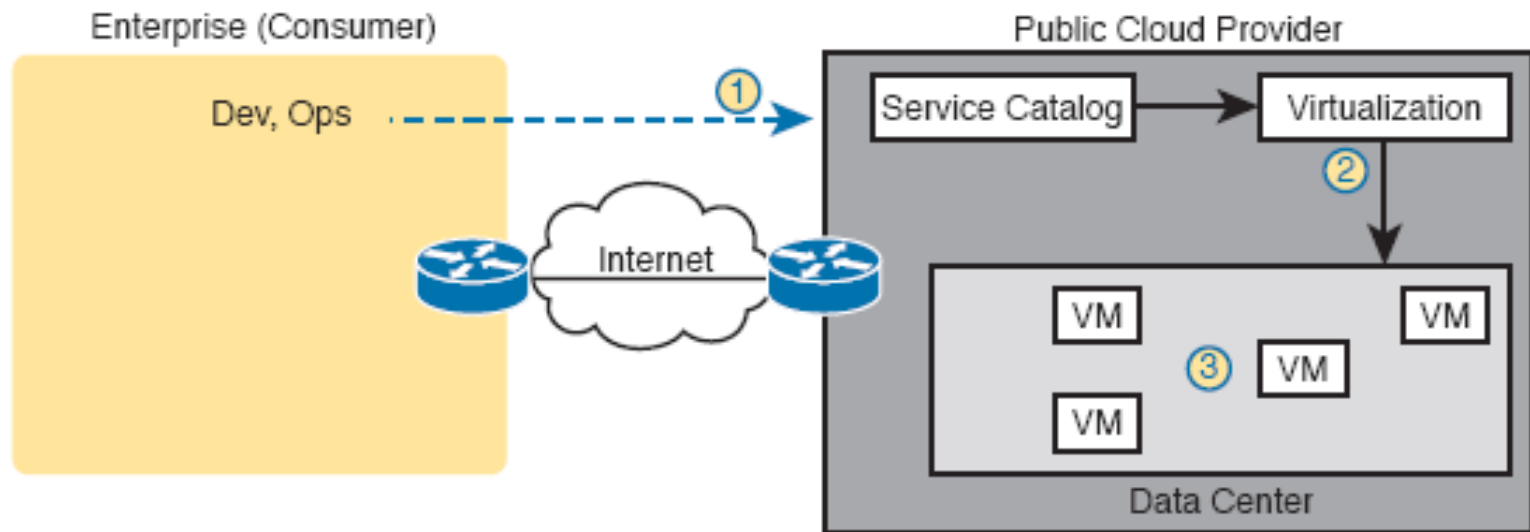
Cloud Computing Criteria

- On-demand self-service

- Broad network access

- Resource pooling

- Rapid elasticity
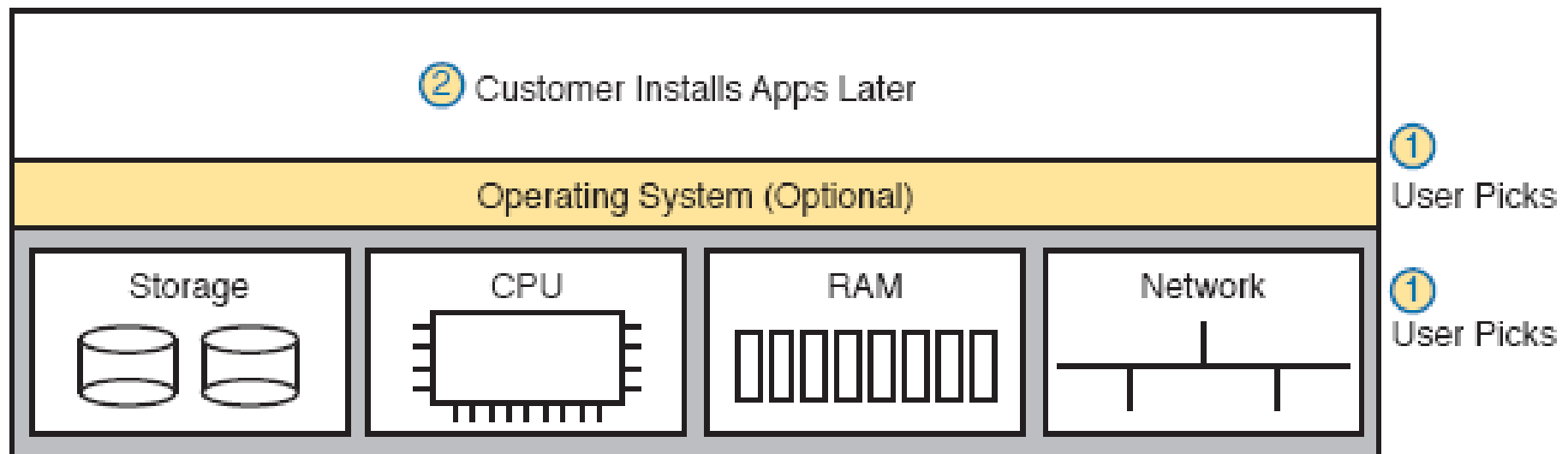
- Measured service

Basic Private Cloud Workflow to Create One VM

Public Cloud Provider in the Internet

IaaS Concept

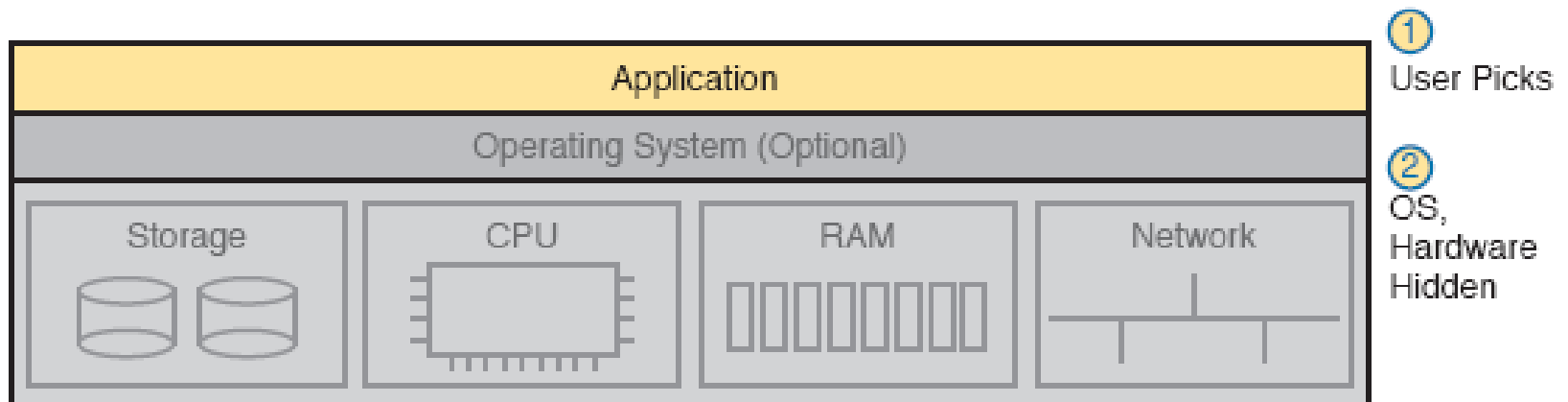# AWS Screenshot—Set Up VM with Different CPU/RAM/OS

SaaS Concept

PaaS Concept

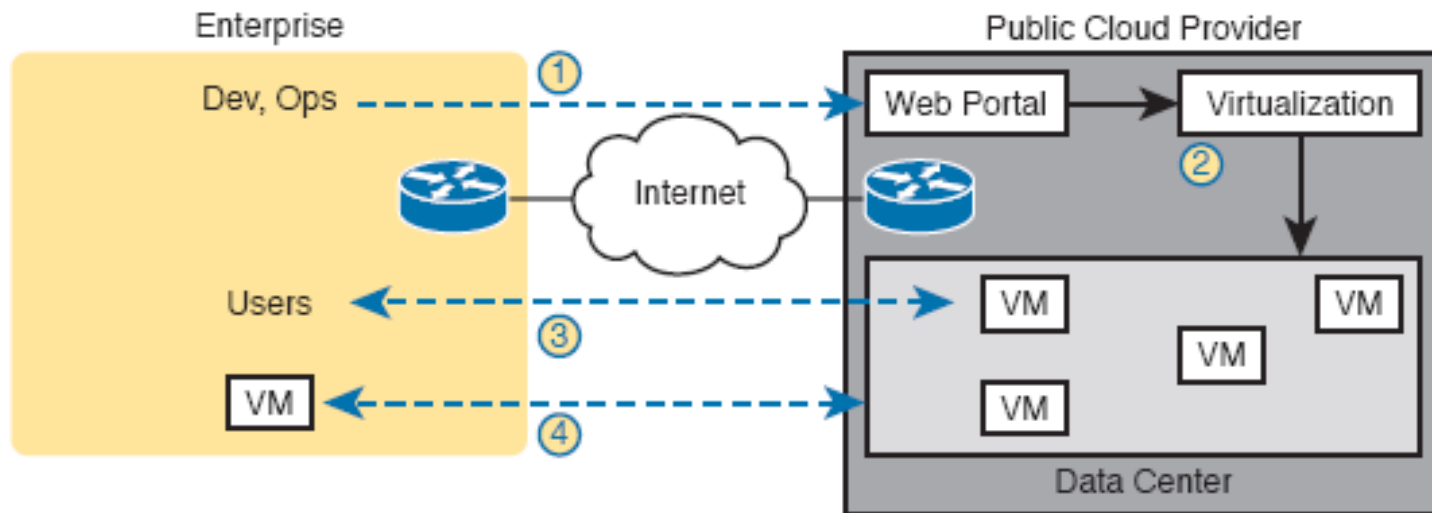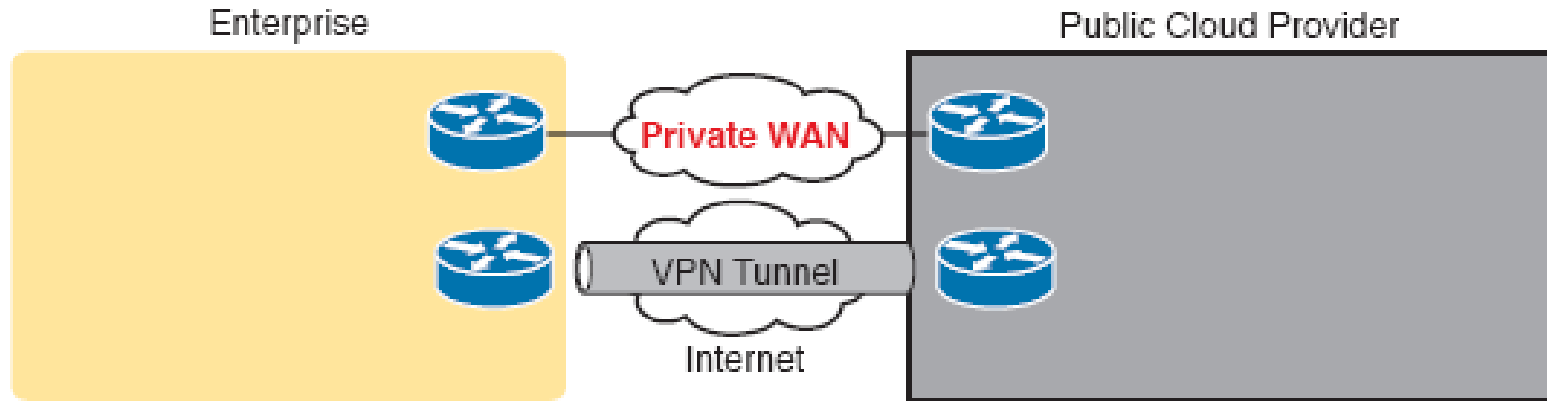| Development Environment and Tools (Platform)				Primary Factor
Operating System				
Storage	CPU	RAM	Network	
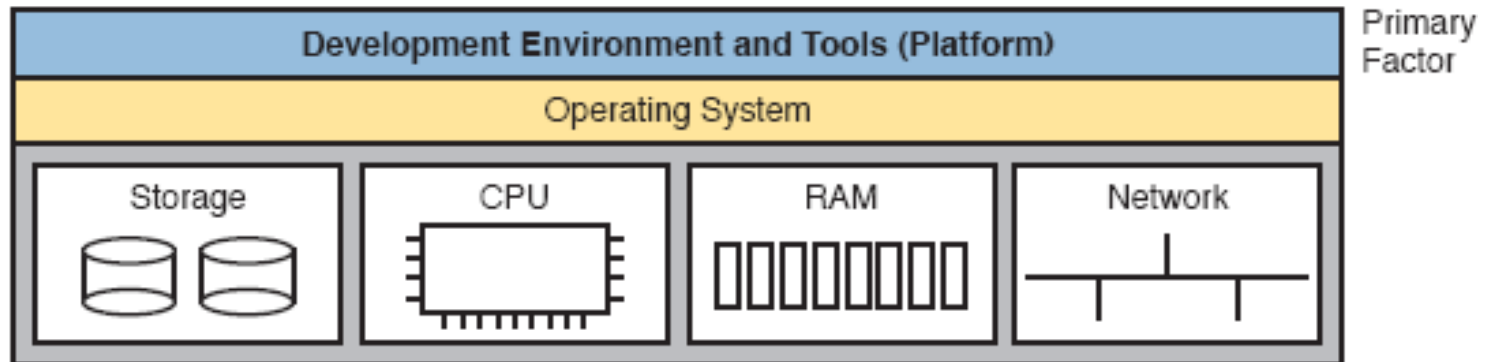
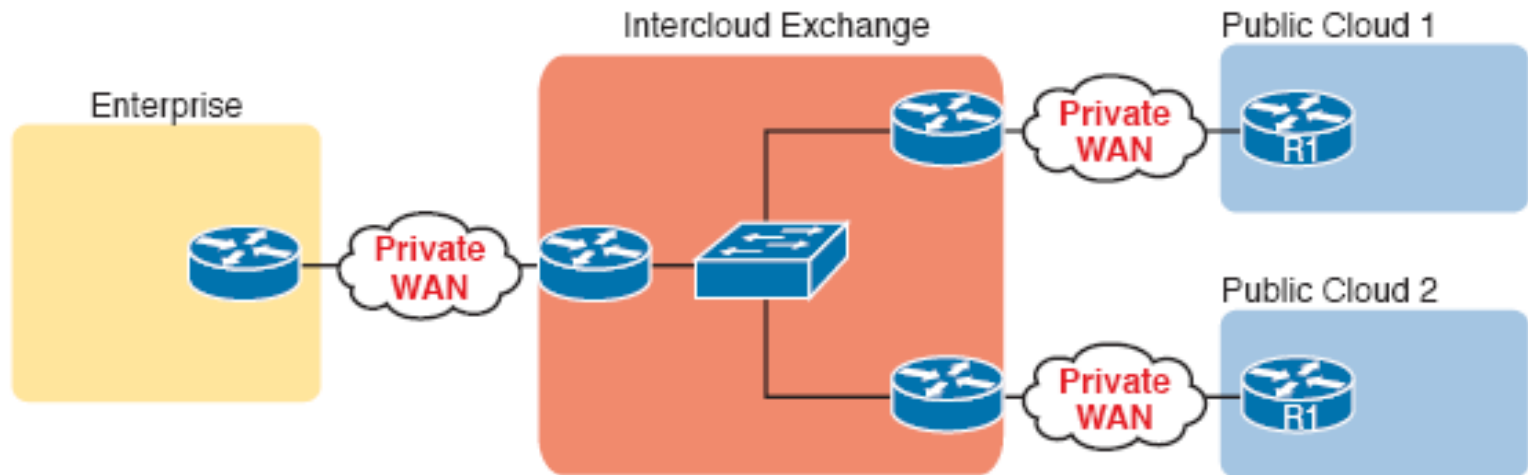# Accessing a Public Cloud Service Using the Internet

Using Private WAN to a Public Cloud: Security, QoS, Capacity, Reporting

# Permanent Private WAN Connection to an Intercloud Exchange

Comparison of Public Cloud WAN Options

	Internet	Internet VPN	MPLS VPN	Ethernet WAN	Intercloud Exchange
Makes data private	No	Yes	Yes	Yes	Yes
Supports QoS	No	No	Yes	Yes	Yes
Requires capacity planning	Yes	Yes	Yes	Yes	Yes
Eases migration to a new provider	Yes	Yes	No	No	Yes
Speeds initial installation	Yes	Yes	No	No	No

Traffic Flow: Private WAN, Enterprise Implements Email Services
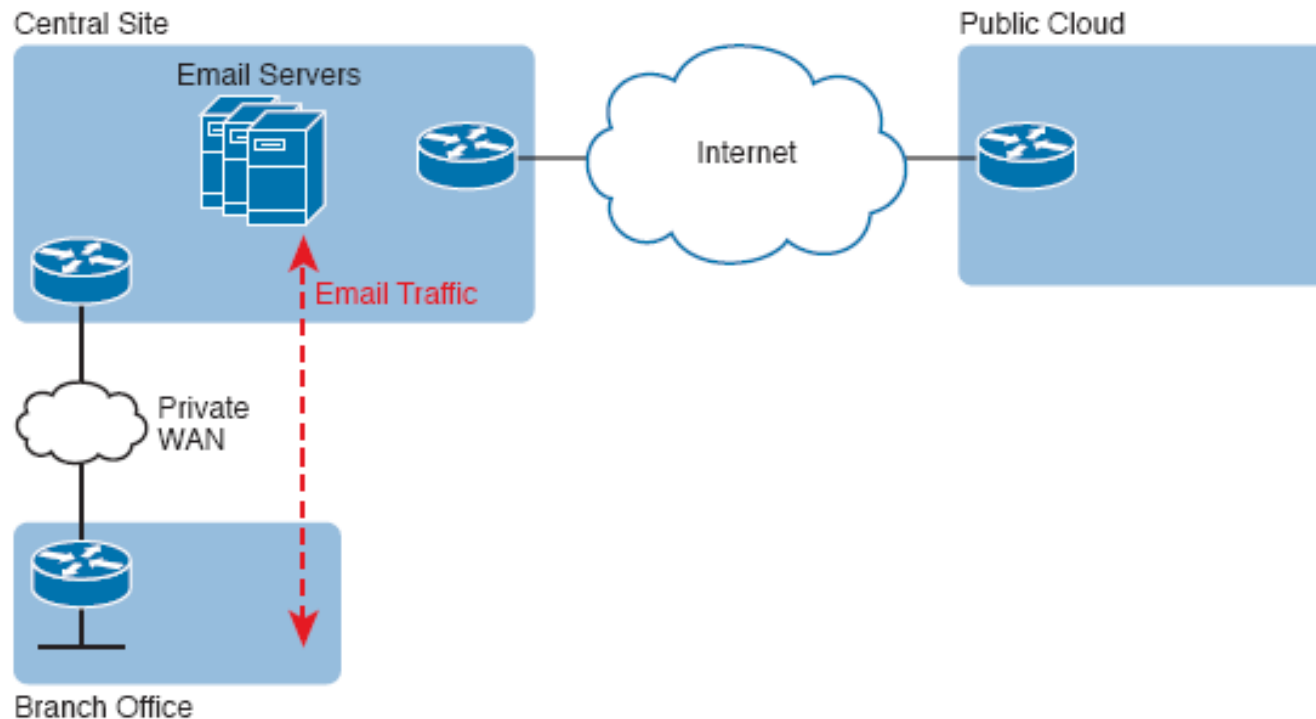
Traffic Flow: Private WAN, Enterprise Implements Email Services
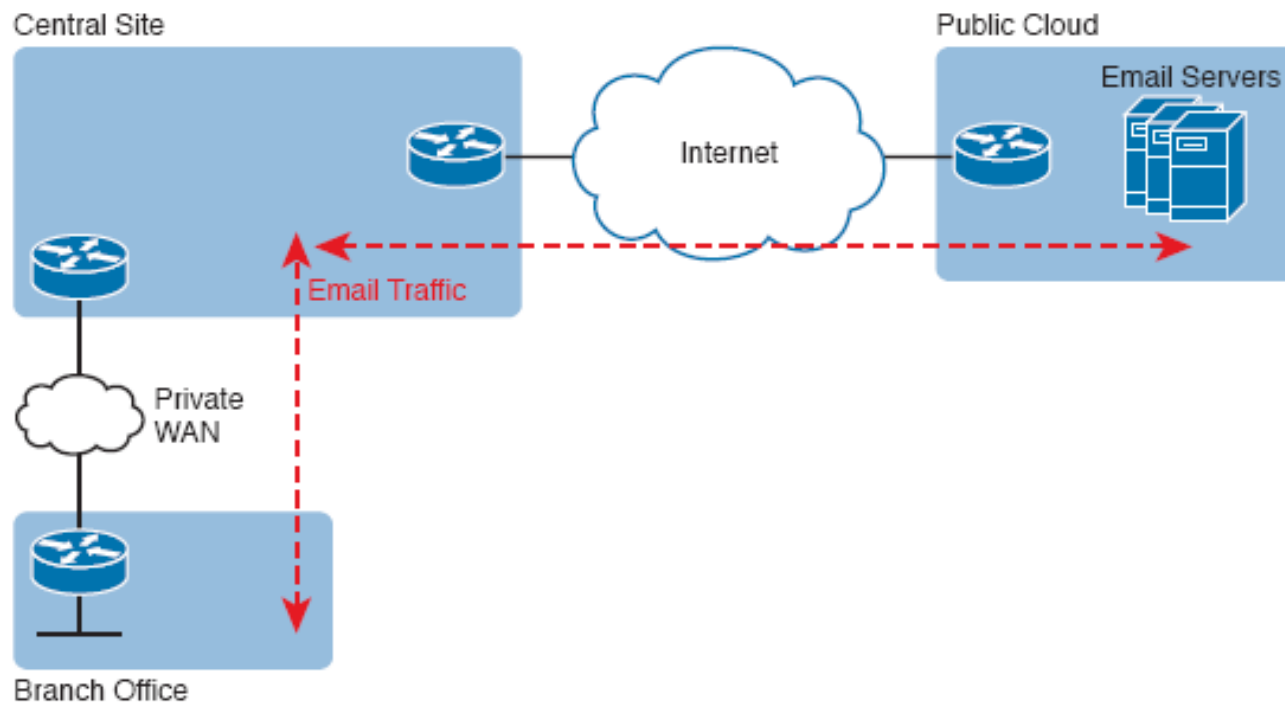
Connecting Branches Directly to the Internet for Public Cloud Traffic