

CompTIA A+ Core 1 Exam 220-1101

Lesson 7



Summarizing Virtualization and Cloud Concepts

Objectives

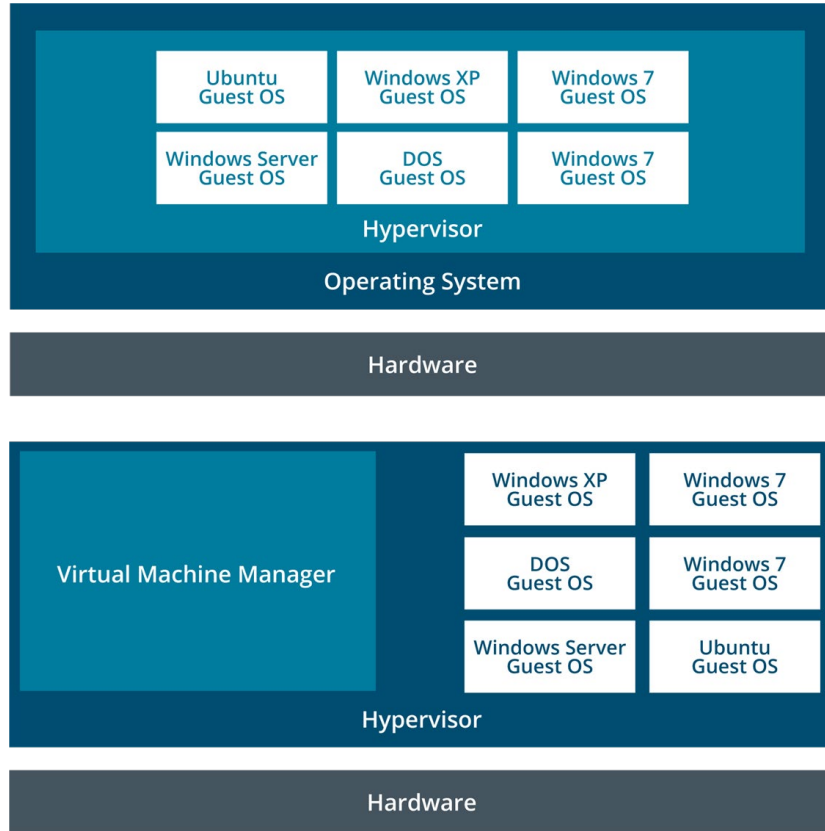
- Summarize client-side virtualization
- Summarize cloud concepts

Lesson 7

Topic 7A

Summarize Client-side Virtualization

Hypervisors



- Functions

- Emulation and resource allocation
- Guest OS support

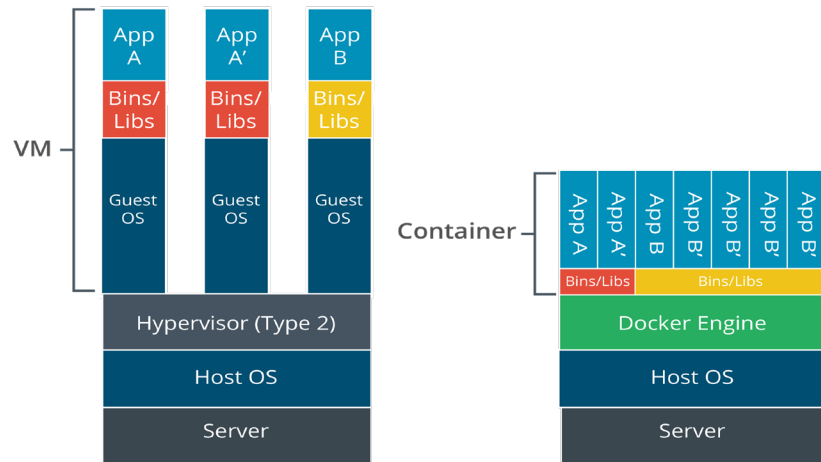
- Types

- Host-based (Type II) installed to an existing OS
- Bare metal (Type I) installed directly to the computer

Uses for Virtualization

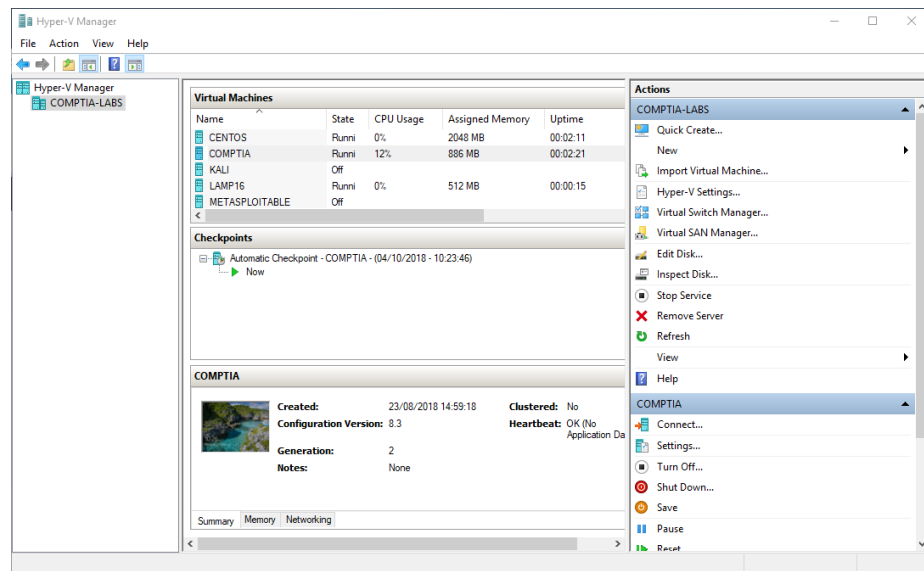
- Client-side virtualization
 - Sandboxes, install legacy software applications and operating systems, test software across different platforms, training, ...
- Server-side virtualization
 - Better hardware utilization and resource flexibility
- Application virtualization
 - Install software to server and stream to clients
- Container virtualization
 - Run apps within an isolated workspace

Container vs. VMs



Virtualization Resource Requirements

- CPU platform
 - Virtualization extensions
 - Virtual CPU allocation
- Other resource
 - System RAM allocation
 - Mass storage space for disk images
 - Networking



Screenshot courtesy of Microsoft

Virtualization Security Requirements

- Guest OS security
 - Manage patches and security apps on each guest
 - Rogue VMs
- Host security
 - Increased risk from hardware failures
- Hypervisor security and VM escaping
 - Manage patches and security of hypervisor
 - Isolate host from guests and isolate guests from other guests

Review Activity: Client-side Virtualization

- Hypervisors
- Uses for Virtualization
- Virtualization Resource and Security Requirements

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Topic 7B

Summarize Cloud Concepts

Cloud Characteristics

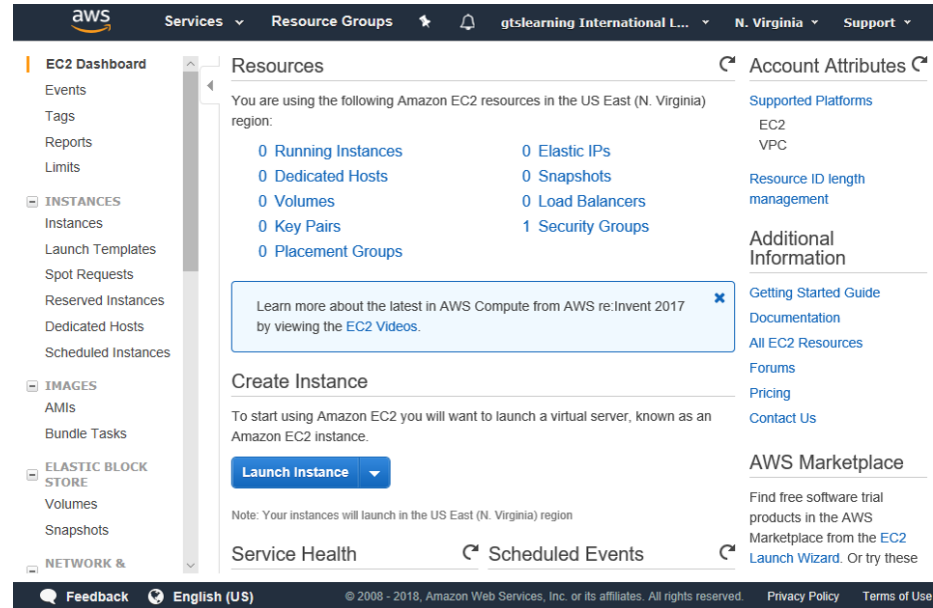
- Cloud versus on-premises or hosted services
- For cloud consumers
 - Metered utilization
- For cloud service providers
 - High availability
 - Scalability
 - Rapid elasticity
 - Shared resources

Common Cloud Deployment Models

- Public cloud
 - Cloud service provider (CSP)
 - Multitenant
- Private cloud
 - Organization's departments or business users are the customers
- Community cloud
- Hybrid cloud

Common Cloud Service Models

- Infrastructure as a service (IaaS)
 - Unconfigured network and computing resources
 - Virtual machines, switches, routers, firewalls, load balancers, ...
- Software as a service (SaaS)
 - Fully configured applications
- Platform as a service (PaaS)
 - Virtual machines with pre-installed operating systems and software/database environments
 - Customer creates and maintains the applications



Screenshot courtesy of Amazon

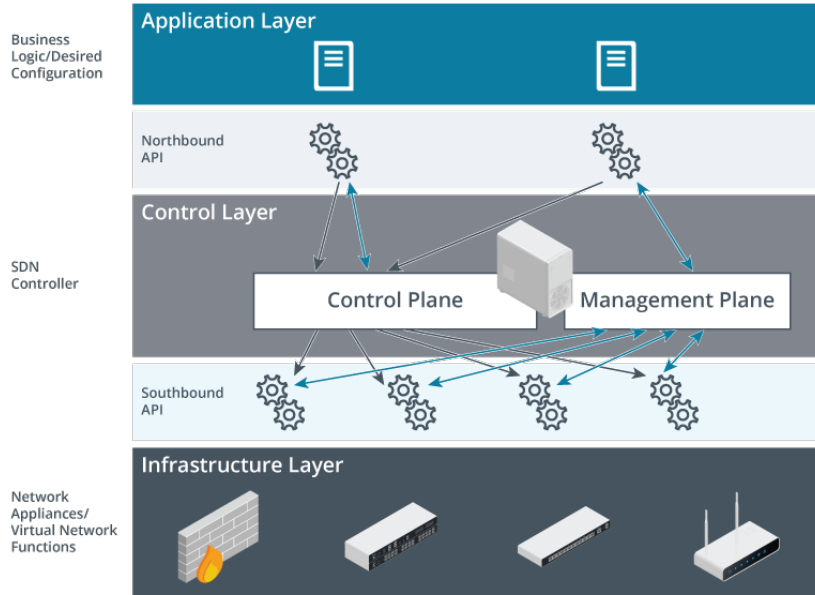
Desktop Virtualization

- Virtual desktop infrastructure (VDI)
 - Provision client desktops as VMs
 - Installed with OS version plus relevant applications software
 - User access via minimal client hardware (thin client) or via browser/RDP client
- Virtualization server
 - On-premises versus cloud

Cloud File Storage

- Personal file storage
 - File synchronization between devices
- Document sharing
 - Synchronize user changes
 - Comment and review features
- Cloud replication
 - Replication of files to different datacenter zones and geographies

Software-defined Networking



- Provision and configure network appliances through code
- Layer model and SDN controller
- Application programming interface (API)

Review Activity: Cloud Concepts

- Cloud Characteristics
- Common Cloud Deployment and Service Models
- Desktop Virtualization
- Cloud File Storage
- Software-defined Networking

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Summary