

Module 18 Cloud Virtualization Lab

Virtualization Capacity

- types
 - capacity planning
 - capacity monitoring
 - capacity management

Scaling Patterns

- Elastic Resource Capacity
- Load Balanced Virtual Server Instances
- Load Balanced Virtual Switches
- Resource Workload Management
 - required
 - Storage Workload Management
 - Storage Capacity Assurance
 - Storage Performance Assurance
 - optional
 - Automated Administration

Hosting Patterns

- Virtual Server-to-Host Affinity
- Virtual Server-to-Host Anti-Affinity
- Virtual Server-to-Virtual Server Affinity
- Virtual Server-to-Virtual Server Anti-Affinity
- Memory Over-Committing
- Power Consumption Reduction

Migration & Relocation Patterns

- Cross-Hypervisor Workload Mobility
- Non-Disruptive Service Relocation
- Persistent Virtual Network Configuration
- Virtual Server Folder Migration
- Virtual Disk Splitting
- Stateless Hypervisor

Failover & Recovery Patterns

- Resource Pooling
- Resource Reservation
- Virtual Server Auto Crash Recovery
- Hypervisor Clustering
- Redundant Physical Connection for Virtual Servers
- Zero Downtime

Connectivity & Accessibility Patterns

- External Virtual Server Accessibility
- Virtual Server NAT Connectivity
- Virtual Server-to-Host Connectivity
- Virtual Server Connectivity Isolation
- Virtual Switch Isolation

Basic Virtualization as a Pattern

Shared Resources

Performance & Capacity Patterns

- Direct I/O Access
- Single Root I/O Virtualization
- Direct LUN Access
- NIC Teaming

Virtualization

- layers
 - hardware layer
 - operating system layer
 - virtualization provider layer
 - virtualization machine layer
 - application and services

Key Performance Indicators (KPIs)

- host CPU monitoring
- virtual system CPU monitoring
- host memory monitoring
- virtual memory monitoring
- physical NIC monitoring
- virtual NIC monitoring
- response time
- traffic prioritization

Virtualization Mechanisms

- types
 - type 1
 - monolithic
 - micro-kernel
 - type 2
- hypervisor
- virtual disk
- virtual switch
- physical uplink
- virtual network
- virtual infrastructure manager (VIM)
- virtualization agent
- virtual server snapshot
- virtual server state manager
- virtual server template
- virtual appliance
- virtual desktop
- cloud storage device
- virtualization monitor
- virtual CPU
- virtual RAM
- live VM migration
- virtual firewall

Virtualization Types

- operation modes
 - client-hosted
 - centralized
 - remotely synchronized
 - hosted virtual desktop
- desktop virtualization
- application virtualization
- data center virtualization
- network virtualization
- server virtualization
- data virtualization
- CPU virtualization
- storage virtualization
- I/O virtualization
- memory virtualization
- methods
 - P2V conversion
 - V2V conversion
 - thin provisioning
 - thick provisioning

