

LESSON 2.5

98-365 Windows Server Administration Fundamentals

Understand Server Virtualization

Lesson Overview

In this lesson, you will learn:

- Server virtualization and what it's used for
- Virtual server hardware considerations
- Various virtual storage components
- Hyper-V® host system requirements
- How to add the Hyper-V role
- How to create a virtual hard disk (VHD)
- Virtual machine options

LESSON 2.5

98-365 Windows Server Administration Fundamentals

Anticipatory Set

- What is server virtualization?

What Is Server Virtualization?

- Virtual machine (VM) technology applies to both server and client hardware.
- VM technology enables multiple operating systems to run concurrently on a single machine.
- Examples of VM software
 - Virtual PC
 - Virtual Server 2005
 - Hyper-V
 - Windows® Virtual PC

What Is Server Virtualization Used For?

- Server consolidation
- Consolidation for development and testing environments
- Legacy application re-hosting
- Simplify disaster and recovery
- Moving to a dynamic datacenter

Virtual Server Hardware Considerations

Hardware	Maximum Configurations
Processor	X64-based processor. Maximum number of processors is 16, however with a hotfix the maximum is 24
Memory	Windows Server 2008® R2 Enterprise and Datacenter support 1TB of physical memory with VM's configured with up to 64GB
Networking	Each VM can be configured with up to 12 virtual adapters. (You cannot connect a virtual network to a wireless network adapter)
Storage	Direct attached: Serial Advanced Technology Attachment(SATA), eSata, PATA, SAS, USB, Firewire. SAN: iSCSI, Fiber Channel, and SAS

Various Virtual Storage Components

- You can configure a virtual machine to use the following types of storage:
 - **Virtual IDE devices**
 - **Virtual SCSI devices**
 - **Virtual hard disks (VHD) of up to 2040 GB**
 - **Physical disks**
 - **Virtual machine storage capacity**
 - **Virtual machine snapshots**

Hyper-V Host System Requirements

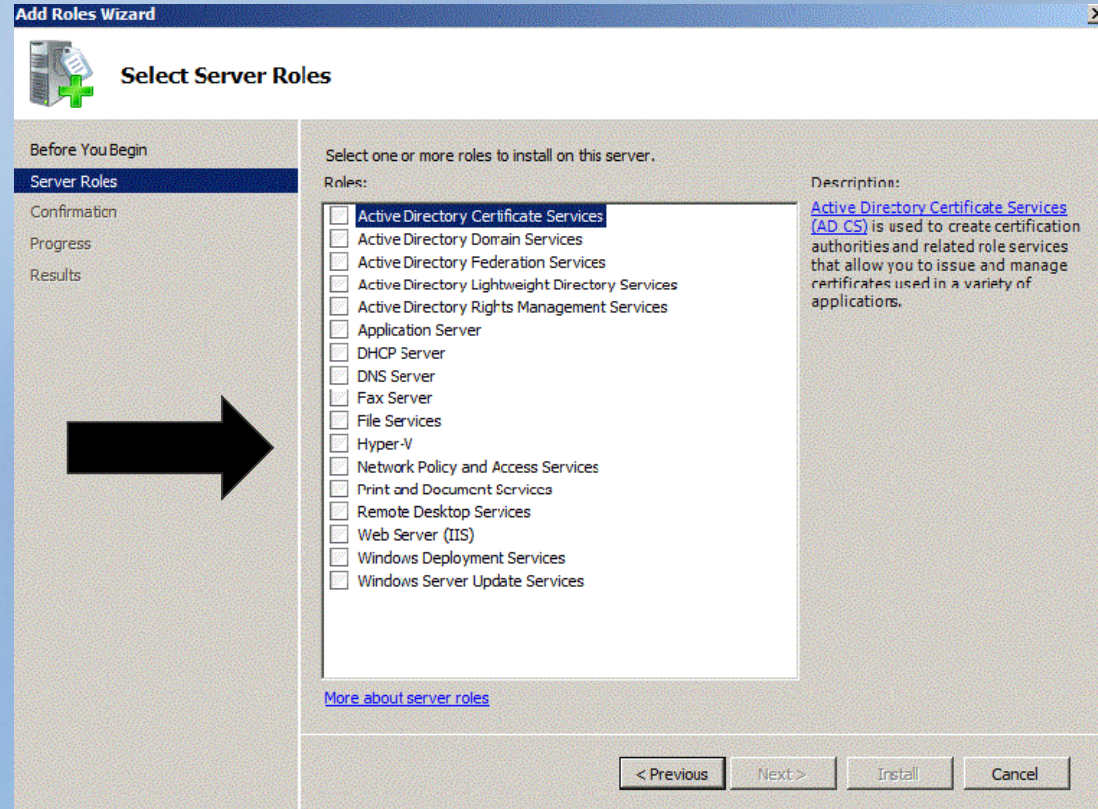
- **Supported operating systems:** A list of supported guest operating systems can be found at <http://www.microsoft.com/windowsserver2008/en/us/hyperv-supported-guest-os.aspx>
- **Processor:** x64 compatible processor with Intel VT or AMD-V technology enabled. Hardware Data Execution Prevention (DEP), specifically Intel XD bit (execute disable bit) or AMD NX bit (no execute bit), must be available and enabled.
- **CPU speed:** Minimum: 1.4 GHz; Recommended: 2 GHz or faster
- **RAM:** Minimum: 1 GB RAM; Recommended: 2 GB RAM or greater (additional RAM is required for each running guest operating system)
- **Available disk space:** Minimum: 8 GB; Recommended: 20 GB or greater (additional disk space needed for each guest operating system)
- **DVD ROM drive**
- **Display:** Super VGA (800 × 600) or higher resolution monitor
- **Other:** Keyboard and Microsoft® Mouse or compatible pointing device

LESSON 2.5

98-365 Windows Server Administration Fundamentals

Adding the Hyper-V Role

- Launch Server Manager and Add Role

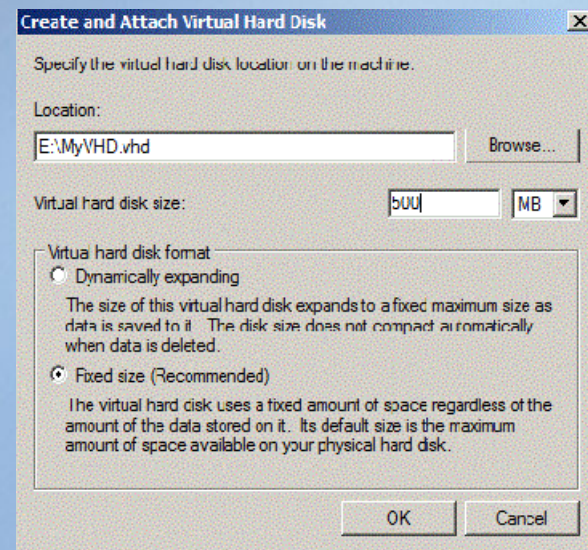
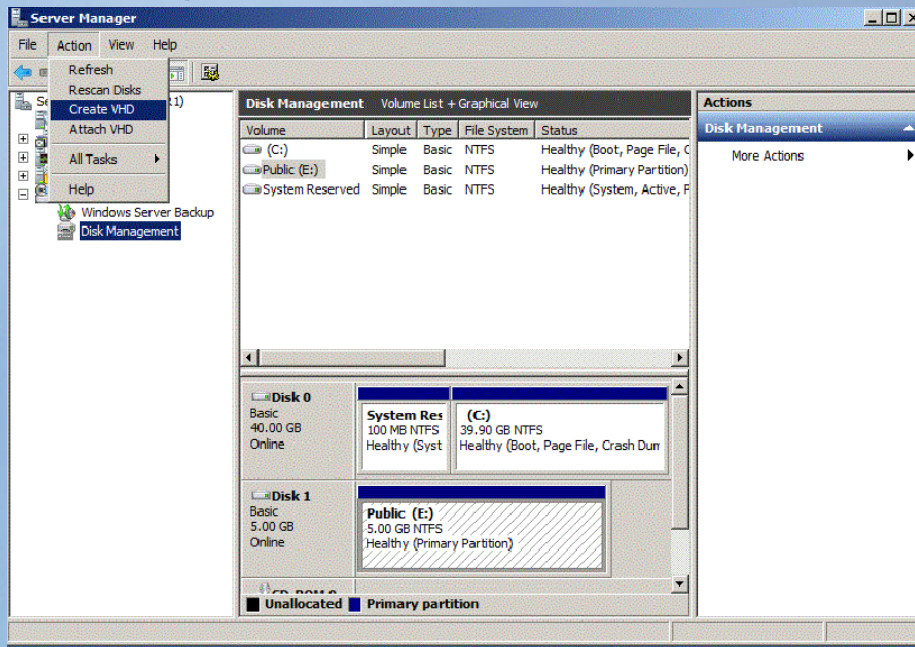


LESSON 2.5

98-365 Windows Server Administration Fundamentals

Creating a Virtual Hard Disk

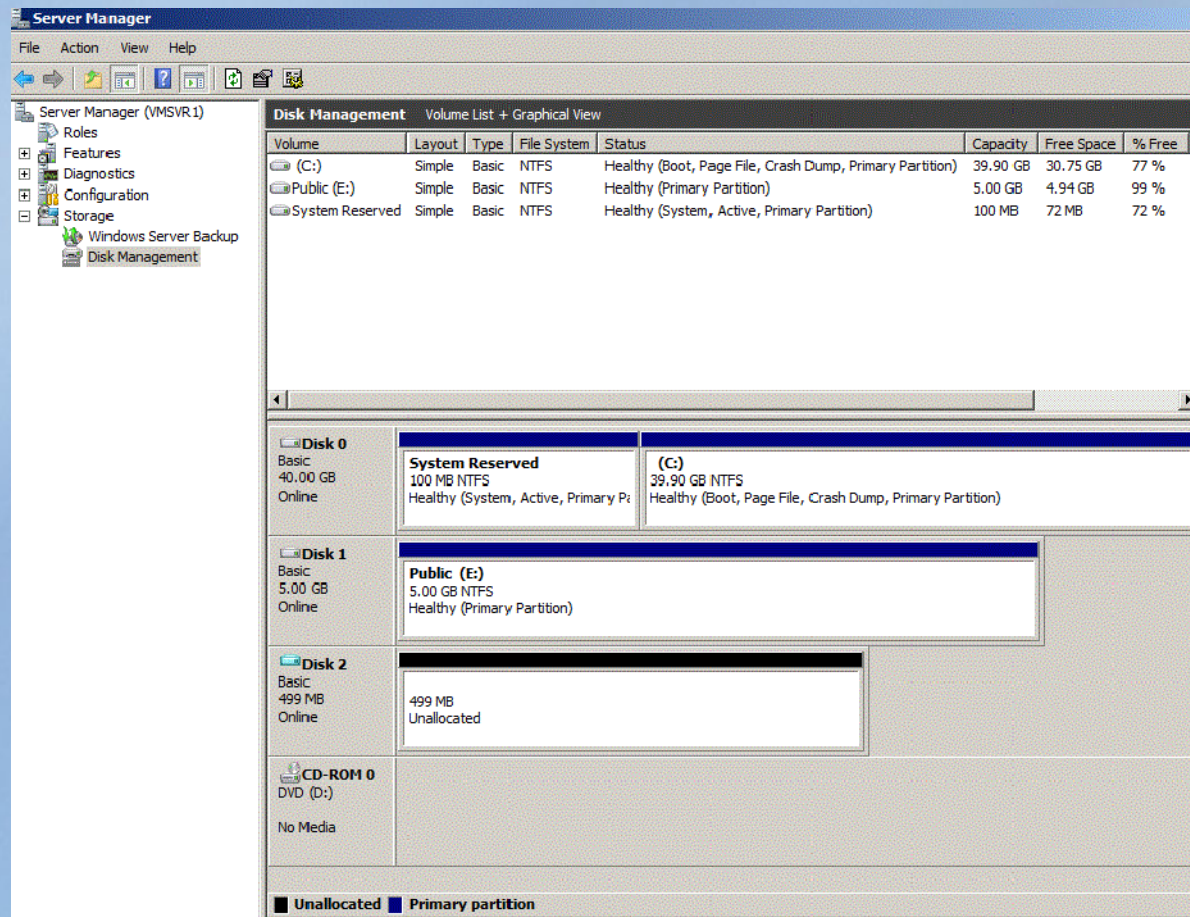
- Open Server Manager
- Select Create VHD from the Action menu
- Assign a location and file name
- Assign size of VHD



LESSON 2.5

98-365 Windows Server Administration Fundamentals

Creating a Virtual Hard Disk



Virtual Machine Components

- Snapshots
 - Virtual machine snapshots capture the state, data, and hardware configuration of a running virtual machine.
- Saved state
 - Saves the current state of the virtual machine, and stops the virtual machine from running.
- Physical to virtual (P2V)
 - A process in which an existing physical computer is converted into a virtual machine.
- Virtual to physical (V2P)
 - A process in which an existing virtual machine is converted or deployed to a physical machine

LESSON 2.5

98-365 Windows Server Administration Fundamentals

Lesson Review

List three benefits of server virtualization