

LESSON 4.3

98-365 Windows Server Administration Fundamentals

Understand Disk Types

Lesson Overview

In this lesson, you will learn:

- Managing basic disks
- Managing dynamic disks
- Managing file systems
- Managing virtual hard disks

Anticipatory Set

- What is the difference between a basic and a dynamic disk?

Managing Basic Disks

- Basic Disk
 - A physical disk that may contain primary partitions, extended partitions, and logical drives
 - Partitions and logical drives on basic disks are known as basic volumes.
 - You can create basic volumes only on basic disks.

Managing Basic Disks (continued)

- You can add more space to existing primary partitions and logical drives by extending them into adjacent, contiguous unallocated space on the same disk.
 - Must be formatted with the NTFS file system
 - You can extend a logical drive within contiguous free space in the extended partition that contains it.
 - If you extend a logical drive beyond the free space available in the extended partition, the extended partition grows to contain the logical drive as long as the extended partition is followed by contiguous unallocated space.
- You can use Disk Management to assign a mount-point folder path to the drive.

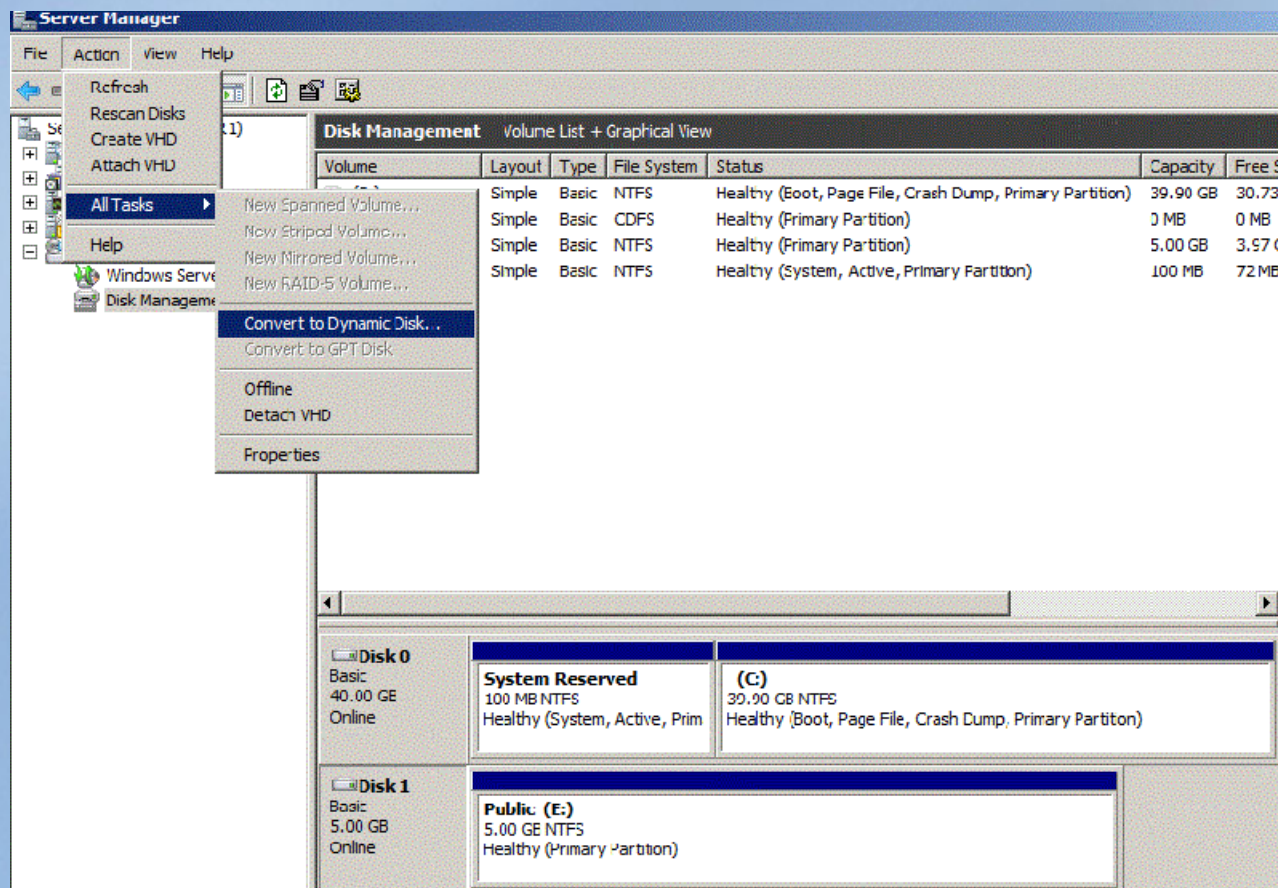
Managing Dynamic Disks

- Dynamic disk
 - Can use the master boot record (MBR) or GUID partition table (GPT) partitioning scheme
 - All volumes on dynamic disks are known as dynamic volumes.
 - Were first introduced with Windows 2000® and provide features that basic disks do not, such as the ability to create volumes that span multiple disks (spanned and striped volumes) and fault tolerant volumes (mirrored and RAID-5 volumes).
- Basic disks can be converted to dynamic disks through Disk Management.
 - Right-click on the icon for the Basic disk and select **Convert to Dynamic Disk...**

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Managing Dynamic Disks (continued)



Managing Dynamic Disks (continued)

Before you change a basic disk to a dynamic disk, note these items:

- You must have at least 1 megabyte (MB) of free space on any master boot record (MBR) disk that you want to convert.
- The existing partitions or logical drives on the basic disk are converted to simple volumes on the dynamic disk.
- After you convert to a dynamic disk, the dynamic volumes cannot be changed back to partitions.
 - You must first delete all dynamic volumes on the disk, and then convert the dynamic disk back to a basic disk.
 - If you want to keep your data, you must first back up or move the data to another volume.

Managing File Systems

- Distributed File System (DFS)
 - Provides wide area network (WAN)-friendly replication as well as simplified, highly-available access to geographically dispersed files
- DFS Namespaces
 - Enables you to group shared folders that are located on different servers into one or more logically structured namespaces. Each namespace appears to users as a single shared folder with a series of subfolders.
- DFS Replication
 - Is an efficient, multiple-master replication engine that you can use to keep folders synchronized between servers across network connections, even the limited bandwidth connections

Managing File Systems (continued)

- Self-healing NTFS
 - Attempts to correct corruptions of the NTFS file system online, without requiring Chkdsk.exe to be run.
 - The enhancements to the NTFS kernel code base help to correct disk inconsistencies.
 - Provides the following functionality:
 - Helps provide continuous availability
 - Preserves data
 - Reduces failed file system mounting requests
 - Provides better reporting
 - Allows authorized users to administer and monitor repairs
 - Recovers a volume if boot sector is readable but doesn't identify an NTFS volume
 - Validates and preserves data within critical system files.

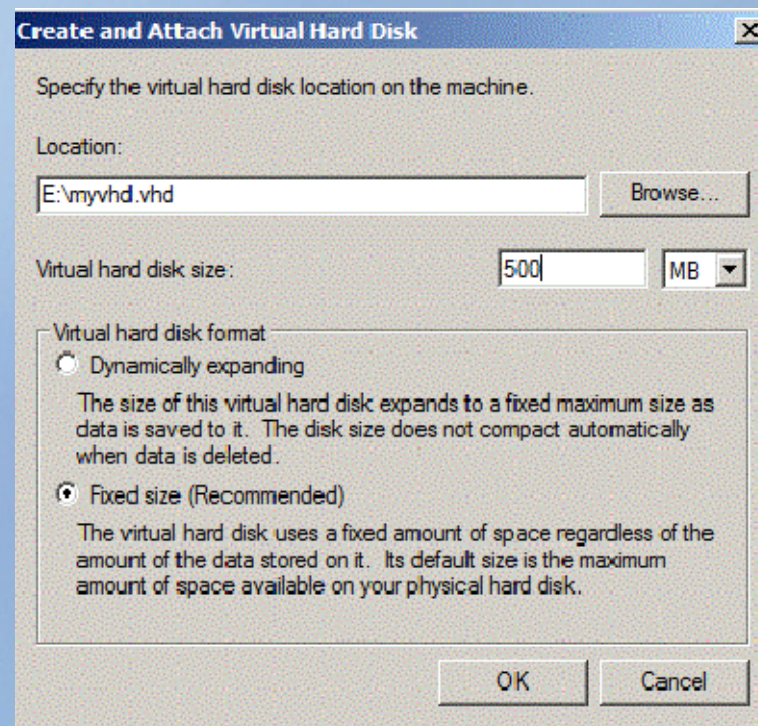
Managing VHDs

- Virtual Hard Disk (VHD)
 - The Microsoft® VHD file format specifies a virtual machine hard disk that can reside on a native host file system encapsulated within a single file.
 - Can be mounted and copied from one system to another

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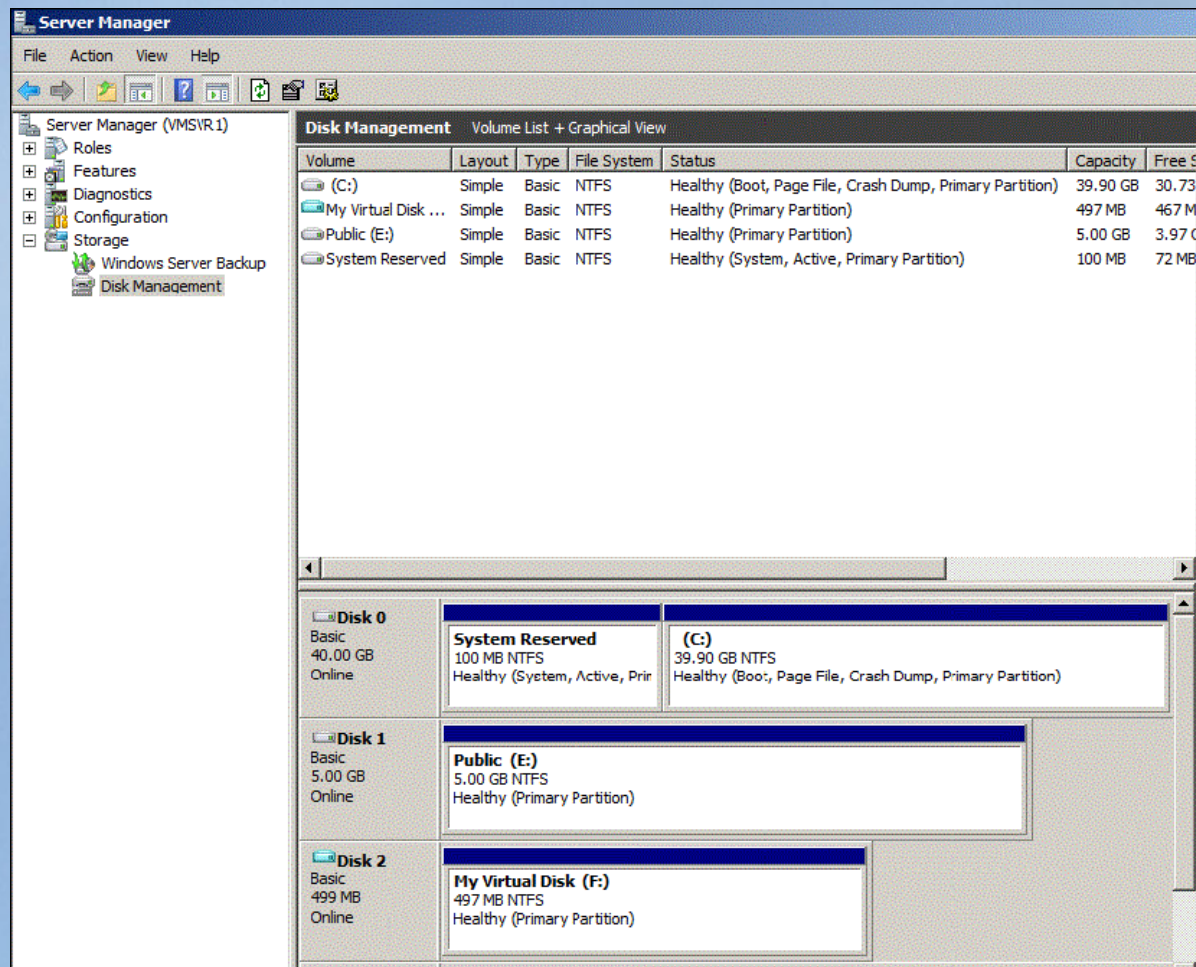
Managing VHDs (continued)



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Managing VHDs (continued)



Lesson Review

- What is the purpose of self-healing NTFS?
- What is a mount point?
- Why would an administrator want to convert a basic disk to a dynamic disk?
- Can a VHD be copied to another system?