

Configuring Local Storage

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MSSA Cohort #2

Lab Summary

1/18/2020

Configuring Local Storage

In the scenario, the virtual machine will grow significantly in size and need flexibility in the storage options. The administrator should access what would be the best options for the storage and think about the potential use in the future as well. When resizing a disk, bad clusters would prevent the volume to shrink.

To create the hard disk volume and format for ReFS, the PowerShell is the tool to use to determine how many disks are offline and which can be used. Also, it can initialize the disks and create a Resilient File System volume. ReFS provide better functions than NTFS does. Both ReFS and NTFS provide metadata, auditing, and security. Mainly, it is suitable for the large volume, file and directory sizes, redundancy for fault tolerance and resiliency to corruptions, whereas NTFS does not provide enough error-tracking and self-repairing mechanisms. Also, FAT volumes are not used because they cannot even be resized in the Windows Server 2016.

Also, two more disks initiated to make them as mirrored volume. The mirrored volume is also known as RAID 1. The other disks will act as the backup for disk 1. When one disk is corrupted, the others can help backups. At the end of the step, they are set up as dynamic disks because it can be modified without restarting the Windows systems and have more flexibility than the basic disks do. There are two ways to provide fault tolerance in RAID. One is disk mirroring, and the other is parity information. , the disk mirroring is one disk has full fault tolerance whereas parity information provides each disk has the partial data from the whole. It seems like there were other options for RAID, but RAID 1 is used because it has a full fault tolerance for Disk 1 and is much cheaper than RAID 5.

When the new volume was created, it needs to be resized from the default. By using disk management or PowerShell, each volume can be modified up to the maximum size. Especially,

DiskPart commands could help manage disks, partitions, and volumes in the virtual hard disks. This command is handy because it can only give the command to the specific disk or partitions.

The next task is to manage virtual hard disks for the Sales department. For this step, the Hyper-V module needs to be installed and used by using the Server Manager. Hyper-V in Windows Server is used for this task because it can create virtual hard disks, which helps reduce other threats and physical spaces. There are two files to configure. One is the .vhd file, and the other is the .vhdx file. Since the .vhdx file is more advanced than the .vdx file, it is used. Once the Hyper-V is installed, PowerShell could configure the virtual hard disk.

In this module, I have learned the multiple options for the storage, disk volumes, formats, and other options for the Server Manager. It was the first time using Disk management, and it can be performed in the PowerShell and Disk management. If one is used, the other could be used as a checking tool whether the command has been thoroughly gone through.

Module 02: Configuring local storage - Microsoft Edge

https://labclient.labondemand.com/LabClient/82bd320e-588c-4ce4-b995-19bf6eb6779f?rc=10

20740C-LON-HOST1

Administrator: Windows PowerShell

```
PS C:\Users\Administrator> Get-Vhd C:\Sales.vhd

ComputerName      : LON-HOST1
Path              : c:\sales.vhd
VhdFormat         : VHD
VhdType           : Dynamic
FileSize          : 31547392
Size              : 10737418240
MinimumSize       : 10736386560
LogicalSectorSize : 512
PhysicalSectorSize : 512
BlockSize         : 2097152
ParentPath        :
DiskIdentifier     : 0A9369BD-0A11-4241-8FEF-873261EE0455
FragmentationPercentage : 0
Alignment         : 1
Attached          : False
DiskNumber        :
Number            :

PS C:\Users\Administrator> Convert-VHD -Path C:\Sales.vhd -DestinationPath c:\Sales.vhdx
PS C:\Users\Administrator> Set-VHD -Path c:\Sales.vhdx -PhysicalSectorSizeBytes 4096
PS C:\Users\Administrator> Get-Vhd C:\Sales.vhdx

ComputerName      : LON-HOST1
Path              : c:\sales.vhdx
VhdFormat         : VHDX
VhdType           : Dynamic
FileSize          : 171966464
Size              : 10737418240
MinimumSize       : 10736386560
LogicalSectorSize : 512
PhysicalSectorSize : 4096
BlockSize         : 33554432
ParentPath        :
DiskIdentifier     : 0A9369BD-0A11-4241-8FEF-873261EE0455
FragmentationPercentage : 0
Alignment         : 1
Attached          : False
DiskNumber        :
Number            :

PS C:\Users\Administrator> Optimize-VHD -Path c:\Sales.vhdx -Mode Full
PS C:\Users\Administrator>
```

Module 02: Configuring local storage

1 Hour Remaining

Instructions Resources Help 100%

[Screenshot](#)

[Screenshot](#)

What is the physical sector size?

[Click for Answer](#)

7. To optimize the .vhdx file, at the Windows PowerShell command prompt, type the following command, and then press Enter:

[Optimize-VHD -Path c:\Sales.vhdx -Mode Full](#)

[Screenshot](#)

Results

After completing this exercise, you should have successfully created and managed virtual hard disks by using Windows PowerShell.

Congratulations!

You have completed this module. To mark the lab as complete click on the menu in the upper right-hand corner and select **End**.

100% Tasks Complete

< Previous End >

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