Planning and Configuring Storage Technologies and Components

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MSSA Cohort #2

Lab Summary 3

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Planning and Configuring Storage Technologies and Components

In this lab, the data storage systems should meet the business needs in both the short-term and long-term. To meet these requirements, external customers need better business services in web applications; internal users need more internal infrastructure services. Also, a storage administrator manages black-level storage and shard file access and a mixed environment, including remote geographical areas. The cost has gone decreased over the years, and the amount of data has increased even faster.

In the first question in the proposal, the storage administrator should determine which components, among iSCSI, Fibre Channel, and InfiniBand, meet the requirements, which the cost should be reasonable while the cost is low. InfiniBand has high performance, whereas it is expensive. The iSCSI component is the better choice than Fibre Channel because it is easier to implement and transmits SCSI commands over IP networks.

Since iSCSI is used, it can minimize administrative overhead for storage administrators because it requires less hardware and software. Regarding choosing SMB or NFS shared file system, NFS supports Kerberos v5 authentication and storage for VMware virtual machines. Otherwise, the SMB file system would have larger and better performance.

After recording the planned course of action, MPIO is used to implement iSCSI storage because MPIO has redundancy in network connections to storage. If using DCB or iSNS, servers might reduce the performance because sometimes it does not take optimized paths. In the MPIO configuration setting, there are five different Load balance policies: Fail Over Only, Round Robin, Round Robin With subset, Least Queue Depth, Weighted Paths, and Least Blocks. Round Robin option is the best option because it attempts to distribute evenly incoming requests to all processing paths. Other options do not distribute incoming requests evenly.

This lab scenario needs both SMB and NFS shared file systems because of the VMware virtual machine installation. SMB share is necessary because NFS does not support the virtual machines. After the SMB 3.0 version, it also supports block-level storage. In configure share settings, access-based enumeration should be enabled because Windows can high the folders or files from other users' views if users do not have Read permissions.

The storage administrator should disable Legacy SMB because the current Windows versions do not have any dependencies. Now, SMB 3.0 or higher can support for storage of SQL server databases and Hyper-V virtual machines. PowerShell prompt is used to disable legacy SMB access because it is easier to get information on all legacy SMB and disable it.

When creating an NFS share on iSCSI storage, on the Specify authentication methods page, Kerberos v5 authentication protocol is selected because NFS needs the encryption. When there are two FNS servers or VMs, it will request and send back information so that Kerberos v5 authentication could prevent any unsecured attempts for security purposes.

This lab provided me ample knowledge. During planning storage requirements, there are so many things to be considered to determine which choice would satisfy the business needs. These requirements contain the reduction of cost and time and which option would be the best for specific scenarios. If one of these factors failed to meet the requirements, the project might take more time and/or cost.

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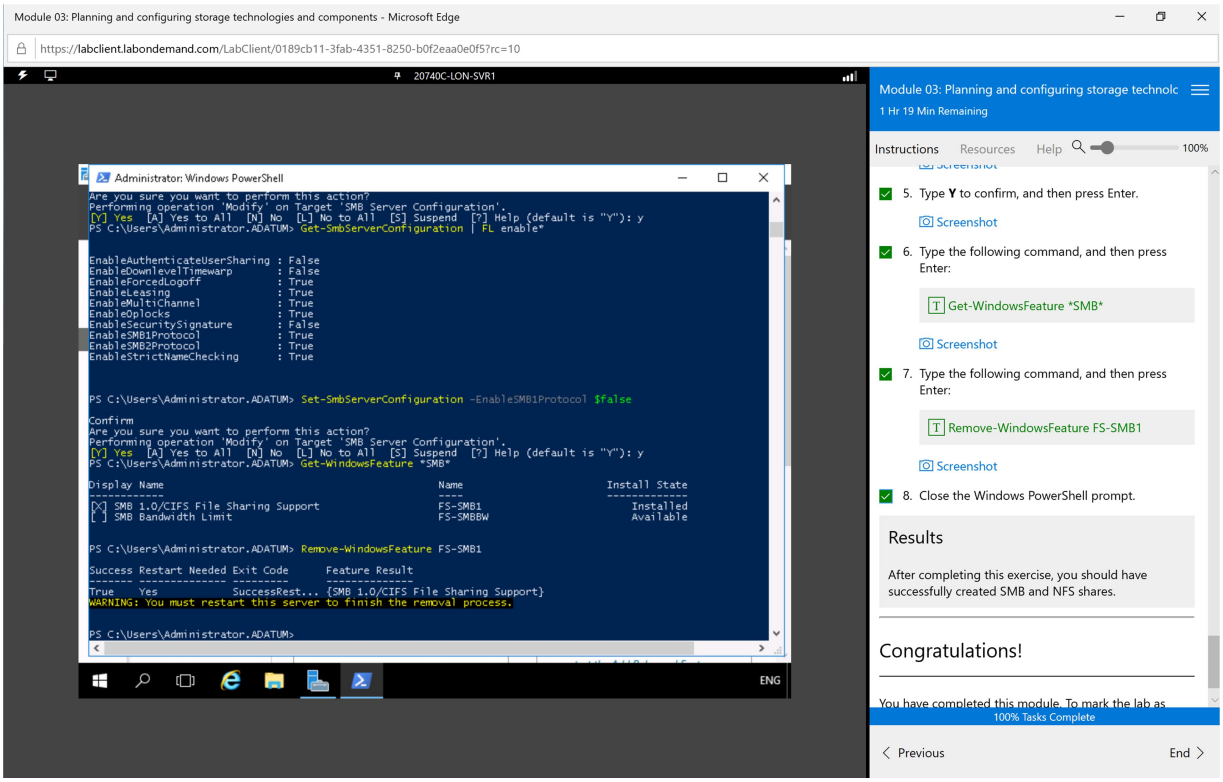
Module 03: Planning and configuring storage technologies and components - Microsoft Edge
https://labclient.labondemand.com/LabClient/0189cb11-3fab-4351-8250-b0f2eaa0e0f5?rc=10
20740C-LON-SVR1
Administrator: Windows PowerShell
Are you sure you want to perform this action?
Performing operation 'Modify' on Target 'SMB Server Configuration'.
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"): y
PS C:\Users\Administrator.ADATUM> Get-SmbServerConfiguration | FL enable*
EnableAuthenticateUserSharing : False
EnableDownlevelTimewarp : False
EnableForcedLogoff : True
EnableLeasing : True
EnableMultiChannel : True
EnableOplocks : True
EnableSecuritySignature : False
EnableSMB1Protocol : True
EnableSMB2Protocol : True
EnableStrictNameChecking : True
PS C:\Users\Administrator.ADATUM> Set-SmbServerConfiguration -EnableSMB1Protocol $false
Confirm
Are you sure you want to perform this action?
Performing operation 'Modify' on Target 'SMB Server Configuration'.
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"): y
PS C:\Users\Administrator.ADATUM> Get-WindowsFeature *SMB*
Display Name Name Install State
[X] SMB 1.0/CIFS File Sharing Support FS-SMB1 Installed
[ ] SMB Bandwidth Limit FS-SMBBW Available
PS C:\Users\Administrator.ADATUM> Remove-WindowsFeature FS-SMB1
Success Restart Needed Exit Code Feature Result
True Yes SuccessRest... {SMB 1.0/CIFS File Sharing Support}
WARNING: You must restart this server to finish the removal process.
PS C:\Users\Administrator.ADATUM>
ENG
Module 03: Planning and configuring storage technolc
1 Hr 19 Min Remaining
Instructions Resources Help 100%
5. Type Y to confirm, and then press Enter.
Screenshot
6. Type the following command, and then press Enter:
Get-WindowsFeature *SMB*
Screenshot
7. Type the following command, and then press Enter:
Remove-WindowsFeature FS-SMB1
Screenshot
8. Close the Windows PowerShell prompt.
Results
After completing this exercise, you should have successfully created SMB and NFS shares.
Congratulations!
You have completed this module. To mark the lab as
100% Tasks Complete
Previous
End