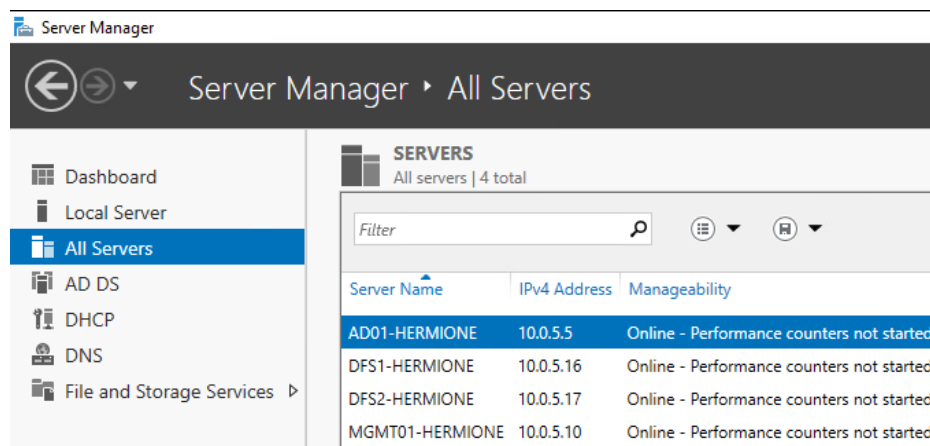


File Services Lab: DFS

Prerequisites

There are two new Server Core 2019 VMs in your environment. So, you know what that means: provision them, joined to the domain, and viewable via MGMT01. You may pick your own available LAN-based IP addresses for these systems, from .25 down. And as always, parse through the lab thoroughly.

💡 Did you know that if you are very careful and use sconfig or powershell to join the domain, you can change the IP, change the hostname and join the domain with only 1 reboot. See if you can figure out how!

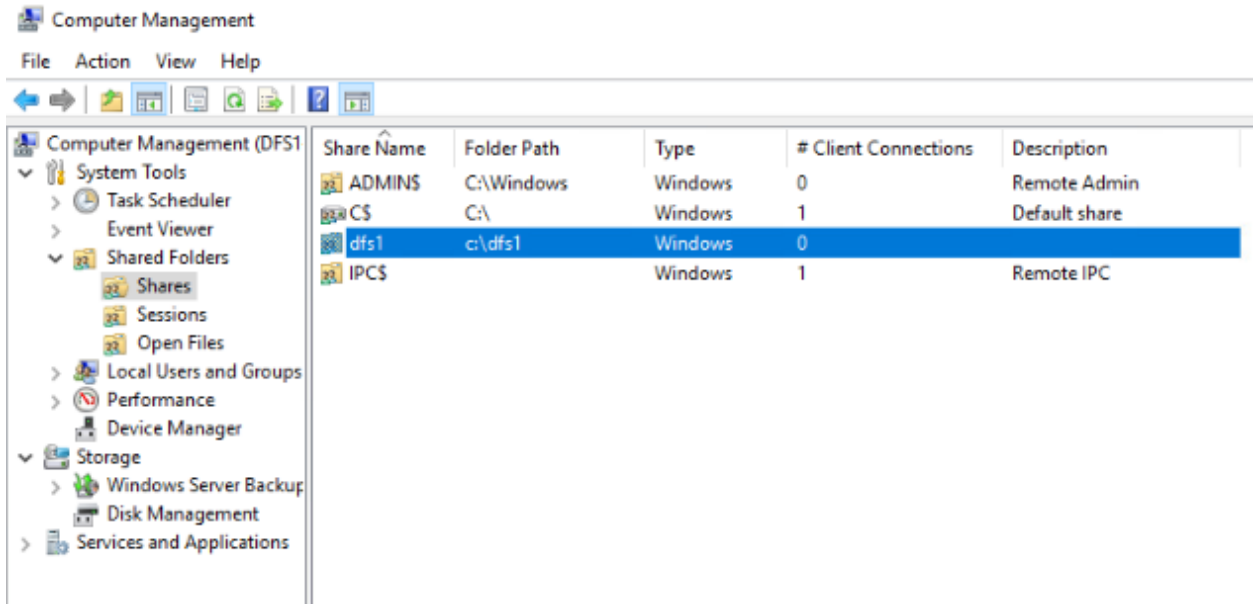


File Server Role

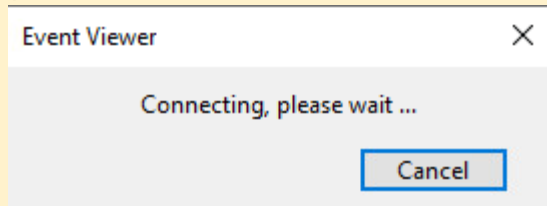
Make sure to install the file server role on both DFS1 and DFS2

Create 2 shared folders

Via Computer Management on DFS1, create a new Share named 'dfs1' with a folder path of C:\dfs1 which allows Domain Admins full access & others read-only access.



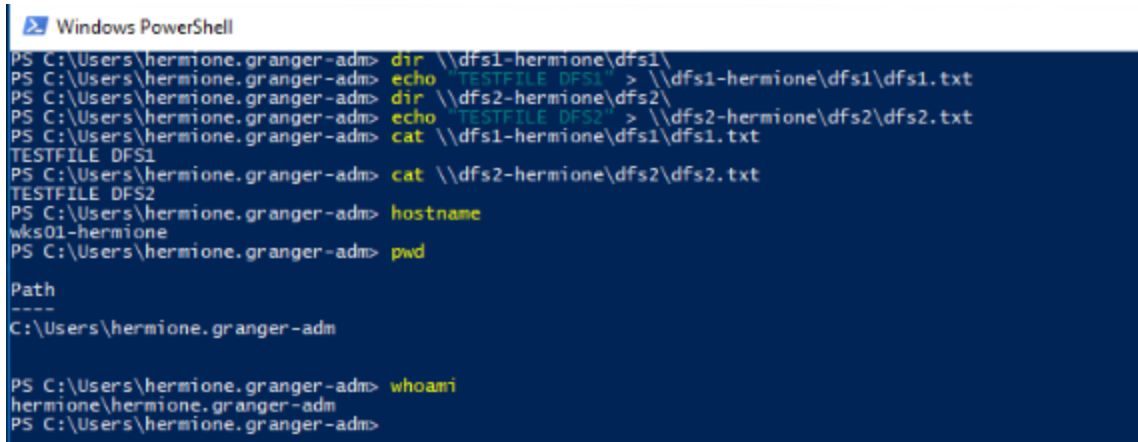
💡 If you get a message that looks like this:



or a firewall message, cancel and press on. Computer Management should open up afterwards.

Do the same for DFS2, changing the server and path names as appropriate.

On WKS01 under your AD named-adm account, you should be able to access the two new shares. Create a file in each similar to that shown below.

A screenshot of a Windows PowerShell terminal window. The title bar reads "Windows PowerShell". The terminal shows a series of commands and their outputs. The user is logged in as "hermione.granger-admin" on a machine named "WKS01-hermione". The commands include: listing the contents of "\\dfs1-hermione\dfs1\", creating a file "TESTFILE DFS1" in "\\dfs1-hermione\dfs1\dfs1.txt", listing the contents of "\\dfs2-hermione\dfs2\", creating a file "TESTFILE DFS2" in "\\dfs2-hermione\dfs2\dfs2.txt", concatenating the contents of "\\dfs1-hermione\dfs1\dfs1.txt" and "\\dfs2-hermione\dfs2\dfs2.txt" into a new file, displaying the hostname "WKS01-hermione", showing the current path "C:\Users\hermione.granger-admin", and displaying user information for "hermione\hermione.granger-admin".

```
PS C:\Users\hermione.granger-admin> dir \\dfs1-hermione\dfs1\  
PS C:\Users\hermione.granger-admin> echo "TESTFILE DFS1" > \\dfs1-hermione\dfs1\dfs1.txt  
PS C:\Users\hermione.granger-admin> dir \\dfs2-hermione\dfs2\  
PS C:\Users\hermione.granger-admin> echo "TESTFILE DFS2" > \\dfs2-hermione\dfs2\dfs2.txt  
PS C:\Users\hermione.granger-admin> cat \\dfs1-hermione\dfs1\dfs1.txt  
TESTFILE DFS1  
PS C:\Users\hermione.granger-admin> cat \\dfs2-hermione\dfs2\dfs2.txt  
TESTFILE DFS2  
PS C:\Users\hermione.granger-admin> hostname  
WKS01-hermione  
PS C:\Users\hermione.granger-admin> pwd  
  
Path  
----  
C:\Users\hermione.granger-admin  
  
PS C:\Users\hermione.granger-admin> whoami  
hermione\hermione.granger-admin  
PS C:\Users\hermione.granger-admin>
```

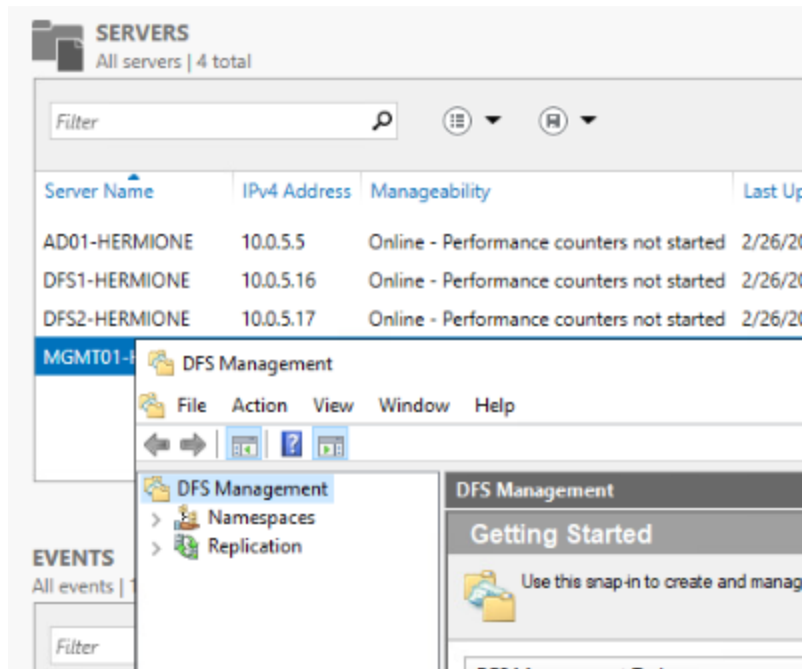
Deliverable 1. Screenshot showing WKS01 accessing two new shares and files as above alternatively you can show GUI screenshots.

Install DFS

Install DFS Management Tools feature as a Remote Server Admin tool for file services on MGMT01.

Add the two server roles DFS Namespace and DFS Replication for file and storage services on MGMT01.

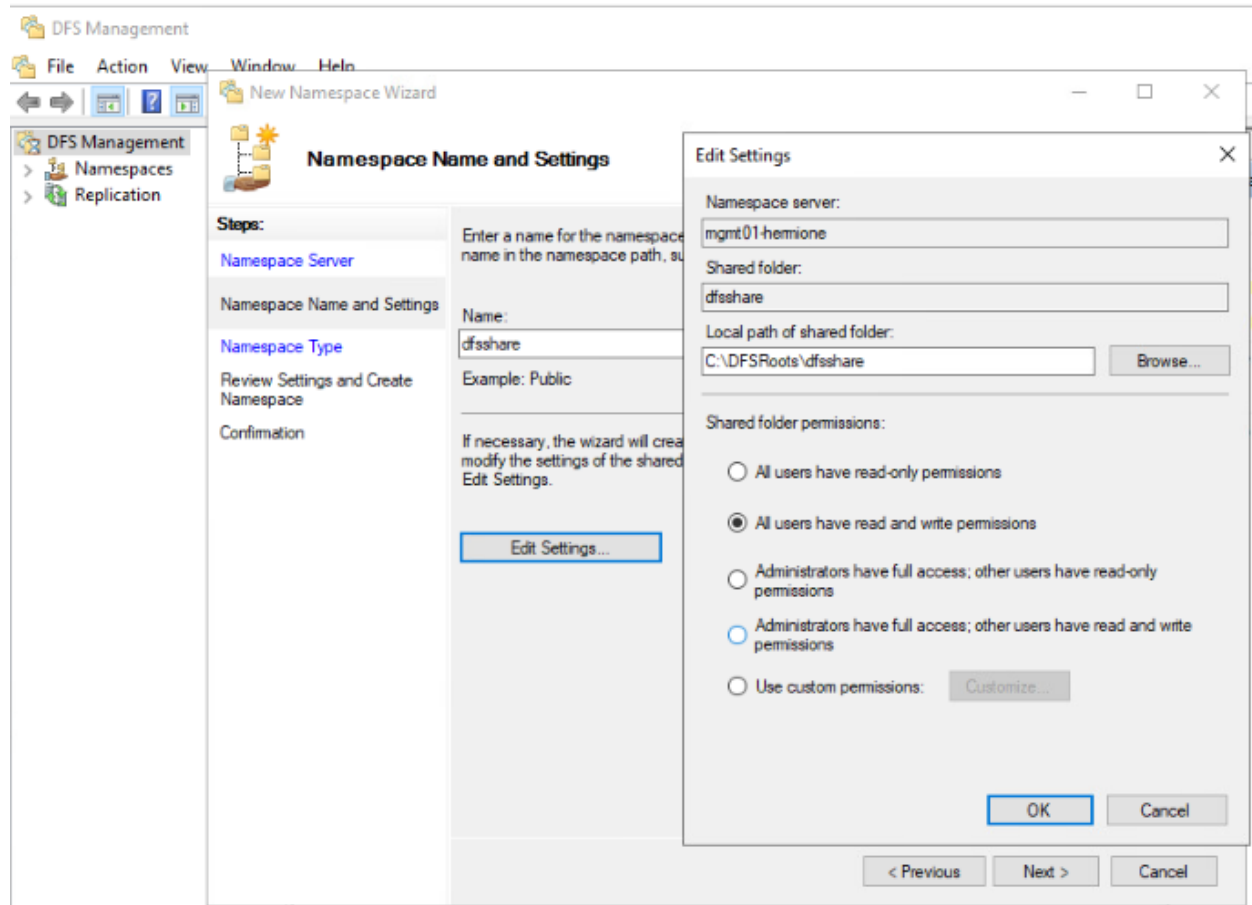
Add DFS Replication server role to both DFS1 and DFS2. Open the DFS Management Console under file & storage services on MGMT01.



Configure DFS Namespace

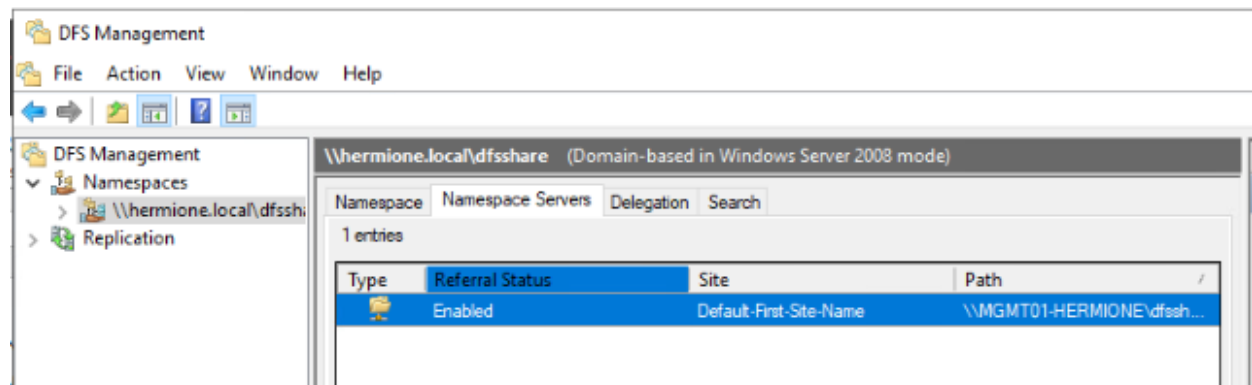
Create a new DFS Namespace on MGMT01, making it a namespace server.

Name the namespace "dfsshare", editing the share permissions to allow all users read & write to a local path of C:\DFSRoots\dfshare for a domain-based namespace. See screenshot below.



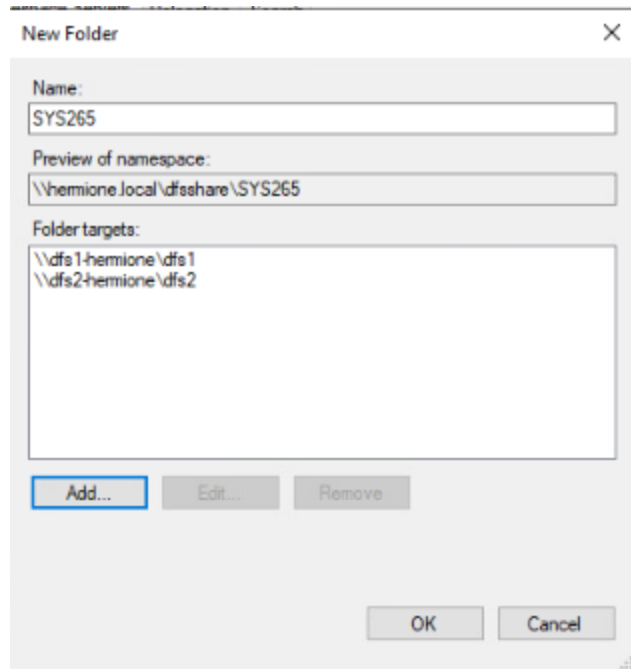
Select a domain-based namespace to create. When finished, your domain-based DFS Namespace should look like below:

Deliverable 2. Screenshot showing your domain-based DFS namespace with MGMT01 as a nameserver.

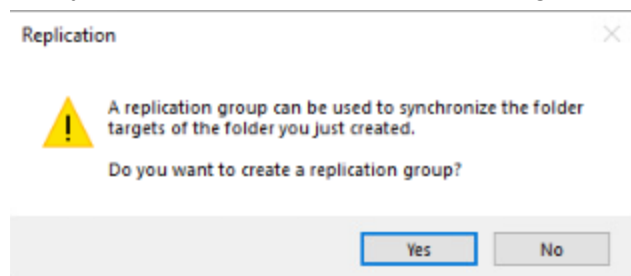


Creating a folder in the DFS Namespace

Create a new folder in your DFS Namespace called “SYS265”, and add Folder Targets from DFS1 and DFS2.



Yes, you will want to create a replication group to sync the folder targets.



Which then prompts to create a Replicate Folder for DFS Replication:

Replicate Folder Wizard

Replication Group and Replicated Folder Name

Steps:

- Replication Group and Replicated Folder Name
- Replication Eligibility
- Primary Member
- Topology Selection
- Hub Members
- Hub and Spoke Connections
- Replication Group Schedule and Bandwidth
- Review Settings and Create

The wizard will create a replication group that contains the servers that host the folder targets. Review the suggested group and folder names, and edit them if necessary.

Replication group name:

Replicated folder name:

Make certain to add both DFS1 & DFS2 to the DFS Replication Group:

Replicate Folder Wizard

Replication Eligibility

Steps:

- Replication Group and Replicated Folder Name
- Replication Eligibility
- Primary Member
- Topology Selection
- Hub Members
- Hub and Spoke Connections
- Replication Group Schedule and Bandwidth
- Review Settings and Create

The wizard has evaluated the folder targets to determine whether they can participate in DFS Replication. See the Eligibility column below for details.

Details:

Folder Target	Eligibility
\\dfs1-hermione\dfs1	Add as DFS Replication member
\\dfs2-hermione\dfs2	Add as DFS Replication member

Primary Member

Primary Member

Select the server that contains the content you want to replicate to other folder targets. This server is known as the primary member.

Primary member:

i If the folders to be replicated already exist on multiple servers, the folders and files on the primary member will be authoritative during initial replication.



Please read the part re: primary member. Now, read it again and then write that down on your arm for good luck.

Full Mesh with default settings to connect all DFS parties involved.

☒ Full mesh

In this topology, each member replicates with all other members of the replication group. This topology works well when there are ten or fewer members in the replication group.



All things in life should be green with checkmarks:



You have successfully completed the Replicate Folder Wizard.

Tasks

Errors

Task	Status
Create replication group.	Success
Create members.	Success
Update folder security.	Success
Create replicated folder.	Success
Create membership objects.	Success
Update folder properties.	Success
Create connections.	Success



To size the staging folder quota large enough to prevent replication from slowing or stopping, you must take into account the size of the files to be replicated. For more information, see the [staging folder optimization guidance](#).

Back on WKS01, you should be able to access the test file three ways: DFS1's share, DFS2's share, and via the new SYS265 DFS share:

Windows PowerShell

```
PS C:\Users\hermione.granger-adm> whoami
hermione\hermione.granger-adm
PS C:\Users\hermione.granger-adm> hostname
wks01-hermione
PS C:\Users\hermione.granger-adm> ls \\hermione.local\dfsshare\SYS265

Directory: \\hermione.local\dfsshare\SYS265

Mode                LastWriteTime         Length Name
----                -
-a-----         2/26/2020   8:10 AM             32 dfs1.txt

PS C:\Users\hermione.granger-adm> ls \\dfs1-hermione\dfs1

Directory: \\dfs1-hermione\dfs1

Mode                LastWriteTime         Length Name
----                -
-a-----         2/26/2020   8:10 AM             32 dfs1.txt

PS C:\Users\hermione.granger-adm> ls \\dfs2-hermione\dfs2

Directory: \\dfs2-hermione\dfs2

Mode                LastWriteTime         Length Name
----                -
-a-----         2/26/2020   8:10 AM             32 dfs1.txt

PS C:\Users\hermione.granger-adm> _
```

💣 Hey, what happened to dfs2.txt on dfs2?!

Create dfs-share1.txt on \\your name.local\dfs share\SYS265

Deliverable 3. Screenshot of WKS01 showing creation and access to dfs-share1.txt using three shared paths: DFS1's share, DFS2's share, and via the new DFS share.

```
PS C:\Users\hermione.granger-admin> echo "DFSSHARE FILE1" >> \\hermione.local\dfsshare\SYS265\dfs-share1.txt
PS C:\Users\hermione.granger-admin> ls \\hermione.local\dfsshare\SYS265

Directory: \\hermione.local\dfsshare\SYS265

Mode                LastWriteTime         Length Name
----                -
-a----            2/26/2020   9:42 AM             34 dfs-share1.txt
-a----            2/26/2020   8:10 AM             32 dfs1.txt

PS C:\Users\hermione.granger-admin> ls \\dfs1-hermione\dfs1

Directory: \\dfs1-hermione\dfs1

Mode                LastWriteTime         Length Name
----                -
-a----            2/26/2020   9:42 AM             34 dfs-share1.txt
-a----            2/26/2020   8:10 AM             32 dfs1.txt

PS C:\Users\hermione.granger-admin> ls \\dfs2-hermione\dfs2

Directory: \\dfs2-hermione\dfs2

Mode                LastWriteTime         Length Name
----                -
-a----            2/26/2020   9:42 AM             34 dfs-share1.txt
-a----            2/26/2020   8:10 AM             32 dfs1.txt
```

Time to Break Things

In vSphere, disable the Network on DFS1. Then on WKS01, attempt to access the same 3 shares through file explorer or powershell:

Deliverable 4. Screenshot showing DFS1 down while DFS2's share and the DFS share available.

```
Windows PowerShell
PS C:\Users\hermione.granger-adm> ls \\dfs2-hermione\dfs2

Directory: \\dfs2-hermione\dfs2

Mode                LastWriteTime         Length Name
----                -
-a-----          2/26/2020   9:42 AM             34 dfs-share1.txt
-a-----          2/26/2020   8:10 AM             32 dfs1.txt

PS C:\Users\hermione.granger-adm> ls \\hermione.local\dfsshare\SYS265

Directory: \\hermione.local\dfsshare\SYS265

Mode                LastWriteTime         Length Name
----                -
-a-----          2/26/2020   9:42 AM             34 dfs-share1.txt
-a-----          2/26/2020   8:10 AM             32 dfs1.txt

PS C:\Users\hermione.granger-adm> ls \\dfs1-hermione\dfs1
ls : Cannot find path '\\dfs1-hermione\dfs1' because it does not exist.
At line:1 char:1
+ ls \\dfs1-hermione\dfs1
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (\\dfs1-hermione\dfs1:String) [Get-ChildItem], ItemNotFoundException
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.GetChildItemCommand

PS C:\Users\hermione.granger-adm>
```

Deliverable 5. a) Explain briefly why DFS1's local share is down and DFS2's share & the DFS share are online? b) Also briefly explain why when the dfs share is initially assessed that only one of your test files appears?

Conduct the following tests.

- With DFS1 still down, add a file to \\dfs2\dfs2 called dfs2-test2.txt
- Re-run the ls test above on both \\dfs2\dfs2 and on \\yourname.local\dfsshare\sys265
- Reconnect DFS1 and do the ls test on \\dfs1\dfs1

Deliverable 6. Provide a screenshot that illustrates this test

```
Windows PowerShell
PS C:\Users\hermione.granger-adm> echo "DFS TEST 2 on DFS2" >> \\dfs2-hermione\dfs2\dfs2-test2.txt
PS C:\Users\hermione.granger-adm> ls \\dfs2-hermione\dfs2

Directory: \\dfs2-hermione\dfs2

Mode                LastWriteTime         Length Name
----                -
-a-----          2/26/2020   9:42 AM             34 dfs-share1.txt
-a-----          2/26/2020   8:10 AM             32 dfs1.txt
-a-----          2/26/2020   9:56 AM             42 dfs2-test2.txt

PS C:\Users\hermione.granger-adm> ls \\hermione.local\dfsshare\sys265

Directory: \\hermione.local\dfsshare\sys265

Mode                LastWriteTime         Length Name
----                -
-a-----          2/26/2020   9:42 AM             34 dfs-share1.txt
-a-----          2/26/2020   8:10 AM             32 dfs1.txt
-a-----          2/26/2020   9:56 AM             42 dfs2-test2.txt

PS C:\Users\hermione.granger-adm> echo "RECONNECT DFS1 NOW AND HANGOUT FOR A MINUTE"
RECONNECT DFS1 NOW AND HANGOUT FOR A MINUTE
PS C:\Users\hermione.granger-adm> ls \\dfs1-hermione\dfs1

Directory: \\dfs1-hermione\dfs1

Mode                LastWriteTime         Length Name
----                -
-a-----          2/26/2020   9:42 AM             34 dfs-share1.txt
-a-----          2/26/2020   8:10 AM             32 dfs1.txt
-a-----          2/26/2020   9:56 AM             42 dfs2-test2.txt

PS C:\Users\hermione.granger-adm>
```