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Windows Server 2008: Configuring Distributed File Systems (DFS)

- By <u>Dave Lawlor</u>
- August 7, 2008

Topics Mentioned Operating System(s): <u>Server 2008</u>

In my article on <u>Installing Distributed File Systems</u>, I discussed what DFS was and the benefits it could provide to an organization. If you have not read it or need a review please check out that article before proceeding.

Back already? Good, let's move on!

There are two parts we will be configuring in this article the first will be DFS NameSpace and then we will move on to the DFS Replication.

Configure DFS NameSpace on Windows Server 2008

The DFS NameSpace will be the client facing aspect of DFS and what really makes life easier for the end users. Having a common namespace across your enterprise for the users to share files will cut down on support calls and make collaboration on documents a breeze.

Let's go ahead and configure a DFS Namespace through the DFS Management MMC Snap-In.

1. Open DFS Management Snap-in.



2. In the left pane click on Namespaces and then in the right column click New Namespace...



3. In the **New Namespace Wizard**, the first thing it wants to see is your server that will host the Namespace. In this case it will be the domain controller that I installed DFS on, so let's go ahead and enter that name in **TESTDOMAIN** and then click **Next**.

🍓 New Namespace Wizard		
Namespace S	erver	
Steps:	Enter the name of the server that will host the namespace. The server you specify	
Namespace Server	will be known as the namespace server.	
Namespace Name and Settings	Server.	
Namespace Type	TESTDOMAIN Browse	
Review Settings and Create Namespace		
Confirmation		
	For more information about namespace server requirements, see <u>QFS</u> Management Help	
	< Previous Next A	Cancel

4. The next window is **Namespace Name and Settings**, and it is asking for the name of the namespace. Depending on if this is a standalone install or a domain, this is the name that will be after the server or domain name. In this case I am going to type the namespace **Sharedfiles**.

Notice when you type in the name the **Edit Settings** button becomes live. This is because the wizard will create the shared folder. You can modify the settings it uses at this time by clicking **Edit Settings**.

🐏 New Namespace Wizard	A REAL PROPERTY OF THE OWNER WATER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNER OWNER OWNER OWNER OWNER OWNER O	
Namespace N	ame and Settings	
Steps:	Enter a name for the namespace. This name will appear after the server or domain	
Namespace Server	name in the namespace path, such as \\Server\Name or \\Domain\Name.	
Namespace Name and Settings	Name:	
Namespace Type	Sharedfiles	
Review Settings and Create Namespace	Example: Public	
Confirmation	If necessary, the wizard will create a shared folder on the namespace server. To modify the settings of the shared folder, such as its local path and permissions, click Edit Settings.	
	Edit Settings	
	< Previous Next >	Cancel

5. You can now edit the following settings:

Local path of share folder Shared folder permissions

I am going to go with **Administrators have full access; Other users have read and write permissions**. If you select **Custom** you can choose specific groups and users and give them specific rights. Click **Ok** when you are done choosing permissions, then click **Next**.

Edit Settings	×
Namespace server:	
TESTDOMAIN	
Shared folder:	
Sharedfiles	
Local path of shared folder:	
C:\DFSRoots\Sharedfiles	Browse
Shared folder permissions:	
$\ensuremath{\mathbb{C}}$ All users have read and write permissions	
C Administrators have full access; other users have rea permissions	id-only
 Administrators have full access; other users have rea permissions 	id and write
O Use custom permissions: Customize	
ок 👌	Cancel

6. Next comes the Namespace Type, there are two choices: **Domain-based namespace** or **Stand-alone namespace**. There are some big difference between the two so let's take a quick look at them now:

- Domain-based namespace Stored on one or more servers and in Active Directory Domain Services. Increased scalability and access-based enumeration when used in Server 2008 mode.
- Stand-alone namespace It is stored only on a single namespace server, for redundancy you have to use a failover cluster.

I am going to go with **Domain-based namespace in Windows Server 2008 mode** and you can see the preview is going to be **ADExample.com** **Sharedfiles**, once your choice is made click on **Next**.

New Namespace Wizard		
Namespace Ty	уре	
Steps: Namespace Server Namespace Name and Settings Namespace Type Review Settings and Create Namespace Confirmation	Select the type of namespace to create. Domain-based namespace A domain-based namespace is stored on one or more namespace servers and in Active Directory Domain Services. You can increase the availability of a domain-based namespace by using multiple servers. When created in Windows Server 2008 mode, the namespace supports increased scalability and access-based enumeration. E Enable Windows Server 2008 mode Preview of domain-based namespace: DivDECremole com/Stareoffile	
	Stand-alone namespace A stand-alone namespace is stored on a single namespace server. You can increase the availability of a stand-alone namespace by hosting it on a failover cluster. Preview of stand-alone namespace:	
	INTESTDOMAIN/Sharedfiles For more information about namespace types and scalability guidelines, see DES Management Help,	ancel

7. The next screen lets you review the choices you just made, if they are correct go ahead and click Create.

🚰 New Namespace Wizard		.02
Review Settin	gs and Create Namespace	
Steps: Namespace Server Namespace Name and Settings	You selected the following settings for the new namespace. If the settings are correct, click Create to create your new namespace. To change a setting, click Previous, or select the appropriate page in the orientation pane. Namespace settings:	
Review Settings and Create Namespace	Namespace Namespace name: \\ADExample.com\Sharedfiles Namespace type: Domain (Windows Server 2008 mode)	
Confirmation	Namespace server: TESTDOMAIN Root shared folder: A shared folder will be created if one does not exist. Local path of namespace shared folder: C\DFSRoots\Sharedfiles Permissions for namespace shared folder: Administrator full control, everyone read/write	
	< Previous Create R Cance	el _

8. Next you will see a screen telling you that the namespace is being created. After a few minutes you should see the status of Success, and then click Ok.

ବ New Namespace Wizard			_10 ×
Confirmation			
Steps:			
Namespace Server	You have successfully comple	eted the New Namespace Wizard.	
Namespace Name and Settings			
Namesnace Type	Tacke Errors		
Review Settings and Create	Task	Status	
Namespace	Create namespace.	Success	
Confirmation			
	1		
			Close 💦

9. Now in DFS Management Snap-in you can see the Namespace we just created.

The Action View Window Help	<u>_16</u> 2
DFS Management Namespaces Name Replaces Name Domain System Volume	Actions Hamespaces Image: New Namespace Add Namespaces to Displ Delegate Management P View New Window from Here Export List Help VADExample.com\Sharedf Add Namespace Server Delegate Management P Remove Namespace from New Window from Here Delegate Management P Remove Namespace from New Window from Here Delegate Management P Refresh Properties Help

10. Let's go ahead and quickly create a folder. Right click on the namespace and click New Folder.

PFS Management	the second s	_IO ×
S File Action View Window	neb	<u>_10 ×</u>
CES Management	Namespaces	Actions
Contraction Contraction Contraction Contraction Contraction Contraction Contraction Contraction Contraction Contraction	Name VADExample.com\Stanselfine Vew Folder Add Namespace Set Yer Delegate Management Permissions, Remove Namespace from Display New Window from Here Delete Refresh Properties	Namespaces New Namespace Add Namespaces to Displ Delegate Management P View New Window from Here Export List I Help
	Heb	\\ADExample.com\Sharedf
4 N		X Delete Refresh Propertes Help

11. Now type the name of the folder you want. In this case I am going to be very original and type **Folder1**, but hopefully you will use something more descriptive when the time comes.

Below the Name field you will see a space that shows you a preview of the Namespace with this new folder. Also under that you will see **Folder Targets**. This allows you to point this folder at a shared folder already on your network.

That way you don't have to migrate files over, but be warned; if you setup these target folders there is no replication, so if that share goes down for any reason users will not be able to access that data. Go ahead and click **Ok**.

New Folder	×
Name:	
Folder1	
Preview of namespace:	
\\ADExample.com\Sharedfiles\Folder1	
Folder targets:	
Add Edit Remove	
For more information about namespace folders, see <u>DFS Management</u> <u>Help</u>	
OK Cancel	

12 You will now see in the DFS Management Snap-in Folder1 under the namespace we just created.



Configure DFS Replication on Windows Server 2008

Ok now that we have a Namespace configured and we have placed a folder in that namespace let's setup replication with another server in the domain to make sure that users can always get their data and we don't get any complaints!

1. Open DFS Management Snap-in.

2. In the left pane go ahead and right click on Replication and then left click on New Replication Group.

UPS Mana	gement	Replication	Actions
Kemespaces Kemespaces		Name Domain System Volume	Replication
	Add Repication Groups to Delegate Management Pen Disable Topology Verification	Displayive missions on	Delegate Management P Disable Topology Verifica View
View New Window from Here Export List			New Window from Here
	Help		R Heb

3. Your first choice is: if you want a Multipurpose replication group or Replication group for data collection.

In most cases you will want the Multipurpose replication group, but in some cases where you wanted to grab data from a remote server and bring it to a centralized backup server the group collection would help. In our case we are going to use **Multipurpose replication group**, and click **Next**.



4. Next we are going to set the name of the replication group; the only limit is that the group must be unique for the domain it servers. In our case let's use **testrep** for the group name. After typing it in click **Next**.

New Replication Group W	/izard omain	
Steps: Replication Group Type Name and Domain	Type a name and domain for the replication group. The name of the replication group must be unique in the domain that hosts the replication group.	
Replication Group Members Topology Selection Hub Members	Name of replication group: Testrep Optional description of replication group:	
Hub and Spoke Connections Replication Group Schedule and Bandwidth	Testing Replication	
Primary Member Folders to Replicate Review Settings and Create Replication Group Confirmation	Domain: ADExample.com	,
	< Previous Next >	Cancel

5. Next we are going to add the group members. Click Add and enter the name of the servers that are going to be members of this group. In my case it is going to be **TSTest** and **TESTDOMAIN**; after they are entered click **Next**.

hew Replication Group W	lizard			
Replication G	iroup Members			
Steps: Click Add and then select two or more servers that will become members of the replication group.				
Name and Domain	Members:			
Replication Group Members	Server	Domain		
Topology Selection	TSTEST	ADExample.com		
Hub Members	LEST DOMANY	AL-Example com		
Hub and Spoke Connections				
Replication Group Schedule and Bandwidth				
Primary Member				
Folders to Replicate				
Review Settings and Create Replication Group				
Confirmation				
		1		
	Add Re	move		
				NE II.
			< Previous N	lext Cancel
				v

6. In the next page we are going to choose the Topology for the group. Since we only have two servers we will be defaulted to **Full Mesh** which will work in this example. On this page you will also see an explanation of the other topologies if you need them. Click **Next**.



7. Replication Schedule is next on the list to configure. There are A LOT of option here for every bandwidth budget and the ability to limit it to certain days and times. I am going to leave the default since we are just in my virtual lab, but you may need different settings based on your server locations and connections. Once set, click **Next**.

Mew Kepikation Group w	izaru	
Replication G	croup Schedule and Bandwidth	
Steps: Replication Group Type Name and Domain Replication Group Members Topology Selection Replication Group Schedule and Bandwidth Primary Member Folders to Replicate Review Settings and Create Replication Group Confirmation	Select the replication schedule and bandwidth to be used by default for all new connections in the replication group.	Cancel

8. Primary member is now the next thing to be set. This is to set the authoritative member for the **INITIAL** replication. In our case we will use **TESTDOMAIN**, and then click **Next**.

New Replication Group V	fizard	<u>_ 0 ×</u>
Primary Mem	ber	
Steps: Replication Group Type Name and Domain Replication Group Members Topology Selection	Select the server that contains the content you want to replicate to other members. This server is known as the primary member. Primary member: TESTDOMAIN The folders to be replicated already exist on multiple servers, the folders and	
Primary Member	files on the primary member will be authoritative during initial replication.	
Review Settings and Create Replication Group Confirmation		
	For more information about the primary member and authoritative content, see <u>DFS Management Help</u>	Creat

9. Now we can setup the folders we want to replicate to the other server.

Click **Add** and you will be prompted for the folders information. In this case I am going to choose to replicate the folder we used in the last example **Folder1**. Note that you can always change permissions on the replication target by selecting **Custom Permissions**, or you can leave them as is by leaving it at **Existing Permissions**.

I am going to enter all the info, click **Ok** and then click **Next** as that is the only folder I am replicating.

Add Folder to Replicate			X
Member:			
TESTDOMAIN			_
Local path of folder to replicate:			
C:\DFSRoots\Sharedfiles\Folder1		Browse	1
Example: C:\Documents			
Select or type a name to represent this replication group. This name is known	folder on all m as the replicat	nembers of the ed folder name.	
Folder1			_
O Use custom name:			_
J Example: Documents			
Select the NTFS permissions for the re	plicated folder	:	_
 Existing permissions 			
C Custom permissions:	Edit Permissior	1S	
Permissions <<	ок 🔓	Cancel	

Steps: Replication Group Type Name and Domain	To select a folder on the primar members of the replication grou Replicated folders:	ry member that you want to rep ap, click Add.	plicate to other	
Replication Group Members	Local Path	Replicated Folder Name	NTFS Permissions	
Topology Selection	C:\DFSRoots\Sharedfiles\F,	. Folder1	Use existing per	
Replication Group Schedule and Bandwidth				
Primary Member				
Folders to Replicate				
ocal Path of Folder1 on Other Members				
Review Settings and Create				
replication Group				
	Add Edit	Bernove		

10. Next you must set the local path for the replicated folder on the other server. It is by default disabled, so highlight the partner server and click **Edit**. Select **Enable** and then browse and you can navigate to a folder you have already created or create one in the desired location.

After you're done you can click **Ok**, and if that is your only partner server click **Next**.

Edit	×
General	
Member:	
TSTEST	
Select the initial status of the replicated folder on this member.	
Membership status:	
C Disabled	
The replicated folder will not be stored on this member.	
© Enabled	
Keep the following folder synchronized with other members.	
Local path of folder:	
C:\repdata\folder1 Browse	
Example: C:\Data	
OK Cancel	

Steps: Replication Group Type	To enter the loc members of the	al path where the replicated fo replication group, click Edit.	ider will be stored on the other	
Name and Domain	Primary r	nember:	TESTDOMAIN	
Replication Group Members	Primary r	nember local path:	C:\DFSRoots\Sharedfiles\Folder1	
Topology Selection	Member details:			
Replication Group Schedule	Member	Local Path		
and Bandwidth	TSTEST	C:/vepdata/folder1		
Primary Member				
Folders to Replicate				
Local Path of Folder1 on Other Members				
Review Settings and Create				
veplication Group				
ontimation				

11. Next you can review your settings and then click **Create**; after a few seconds you should go to a Confirmation page where you will see a success messages for each step. After review click **Close**.

Review Settings and Create Replication Group Steps: You selected the following settings for the new replication group. To ch Replication Group Type Name and Domain Previous, or select the appropriate page in the orientation pane. Replication Group Members Replication Group Name: testrep Replication Group Schedule and Bandwidth Replication Group Description: Testing Replication Primary Member Domain of Replication Group; ADExmedia comp	p. If the settings are ange a setting, click t.
Steps: You selected the following settings for the new replication group correct, click Create to create the new replication group. To ch Previous, or select the appropriate page in the orientation pane Name and Domain Replication Group Members Replication group settings: Topology Selection Replication Group Name: testrep and Bandwidth Replication Group Description: Testing Replication Primary Member Domain of Replication Group; ADExmanded comp	p. if the settings are lange a setting, click t
Topology Selection Replication Group Name: testrep Replication Group Schedule and Bandwidth Replication Group Description: Testing Replication Primary Member Domain of Replication Group: Domain of Replication Group: ADExample.com	
Local Path of Folder1 on Other Members Review Settings and Create Replication Group	À
Confirmation Full mesh List of connections (2): TESTDOMAIN -> TSTEST TSTEST -> TESTDOMAIN Default Connection Schedule: Replicate continuously with Full bandwidth	< Previous Create Cancel

hew Replication Group Wiz	ard		
Confirmation			
Steps: Replication Group Type Name and Domain Replication Group Members	You have successfully completed the N	lew Replication Group Wizard.	
Topology Selection Replication Group Schedule and Bandwidth Primary Member Folders to Replicate Local Path of Folder1 on Other Members Review Settings and Create Replication Group Confirmation	Task Create replication group. Dreate members. Set permissions on replicated folders. Create replicated folder. Create membership objects. Create connections.	Status Success Success Success Success Success Success	
			Close

12. After that you will see a popup window telling you:

"Replication will not begin until the configuration is picked up by the members of the replication group. The amount of time this takes depends on Active Directory Domain Services replication latency as well as the polling interval".

Basically the meaning of this is that if you specified remote servers in different sites, you will have to wait until Active Directory replicates the data out with their next sync. Click **Ok** to get passed this.



Now that we have configured the namespace and setup replication let's take a look at how it would be used by our ever grateful end users.

- 1. Click start.
- 2. Type in the domain and namespace, in our case it was \\ADExample.com\Sharedfiles and hit Enter.



3. You should get an explorer window with the Folder1 in the center pane.



Remember this has been the very basic structure of DFS and depending on your need and environment you can create very robust namespaces and replication.

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About the Author

Dave Lawlor (MCTS, MCP, A+) has been working in the IT field since leaving the U.S. Army in 1996. Working his way up from printer hardware repair to running a corporate datacenter for a multinational corporation, Dave has seen many environments throughout the years. Focusing on web sites and search engine optimization the last few years, with the release of Server 2008 it has renewed his passion for the Wintel platform and server technologies. David also runs Windows-Server-Training.com where he posts free videos and walk-throughs for a variety of server technologies. David currently works as a freelance technical consultant and writer for a variety of companies in the Chicago area.

Author's Website: http://www.DaveLawlor.com

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Comments



Posted by Ron Opp on September 19, 2008, 12:00 pm

How would you get the ADExample.com/sharedfiles to stay? So the user does not have to run this every time they need access.



Posted by big on March 18, 2011, 3:17 am

Very good howto, but I've a doubt on step 11 "Configure DFS NameSpace" you've created a folder, I did too and I called folder1 in the same time, I also added two folder target, the first is on server1\shareA and the second is server2\shareB (there aren't any errors) but when I Try to access with my computer to \\my.mamespace.com\share\folder1 I only see the contents of server1\shareA. The permissions are ok if I remove server1\shareA folder, I could see server2\shareB. I'm not interested to replication now.

I don't know if it is my fault, or I'm not understood well Microsoft documentation



Posted by Kervin on March 26, 2011, 10:56 am

Thanks. It worked perfectly !!!



Posted by Trey on June 6, 2012, 7:15 am

Replication isn't working. I keep getting this error: The replicated folder has an invalid path. I get this error on the Server I am replicating to. I have tried repointing the local path on that server but the same error comes back.

Post a comment

Name *	
E-mail *	
Web site	

XHTML: You can use these tags: <abbr title=""> <acronym title=""> <blockquote cite=""> <cite> <code> <del datetime=""> <i> <q cite=""> <strike>

Comment

Submit Comment

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