

The Distributed File System (DFS) technologies offer wide area network (WAN)-friendly replication as well as simplified, highly available access to geographically dispersed files. The Distributed File System role service consists of two child role services:

- DFS Namespaces
- DFS Replication

DFS offers the following benefits:

Shared folders on a network appear in one hierarchy of folders created by a DFS Root with links. This simplifies user access.

Fault tolerance is an option by replicating shared folders. Uses the Microsoft File Replication Service (FRS).

Load balancing can be performed by distributing folder access across several servers.

There are two DFS models as follows:

Standalone

No Active Directory implementation

Can implement load balancing, but replication of shares is manual

DFS Root cannot be replicated

DFS accessed by \\Server_Name.Domain_Name\DFS_Root_Name

Choose a stand-alone namespace if any of the following conditions apply to your environment:

- Your organization does not use Active Directory Domain Services (AD DS).
- You need to create a single namespace with more than 5,000 DFS folders in a domain that does not meet the requirements for a domain-based namespace (Windows Server 2008 mode).
- You want to increase the availability of the namespace by using a failover cluster.

Domain-based

Available only to members of a domain

Can implement fault tolerance by Root and Link replication and load balancing, and replication of links and root is automatic

DFS accessed by \\Domain_Name\DFS_Root_Name

Choose a domain-based namespace if any of the following conditions apply to your environment:

- You want to ensure the availability of the namespace by using multiple namespace servers.
- You want to hide the name of the namespace server from users. Choosing a domain-based namespace makes it easier to replace the namespace server or migrate the namespace to another server.

DFS Topology:

The DFS root (a table of contents)

Main container that holds links to shared folders

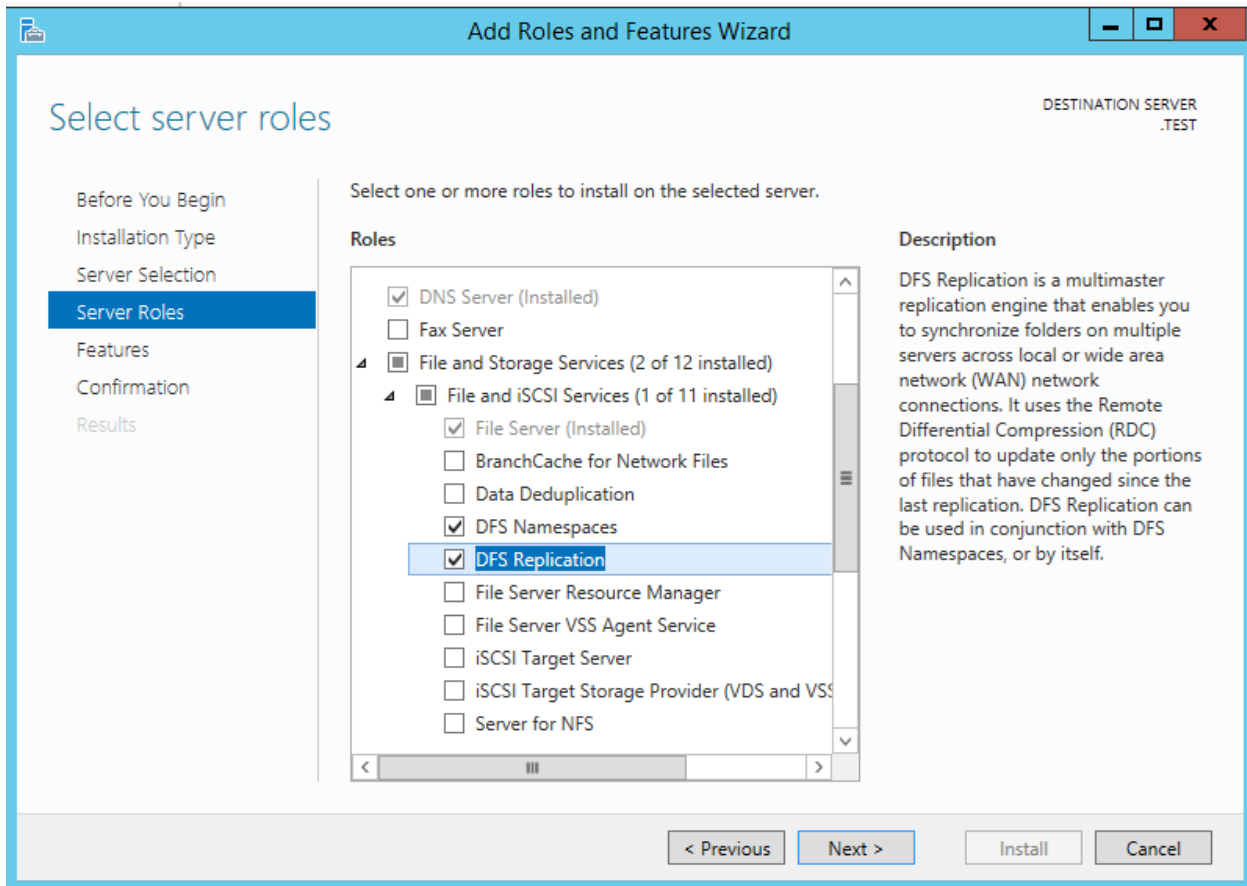
Folders from all domain computers appear as if they reside in one main folder

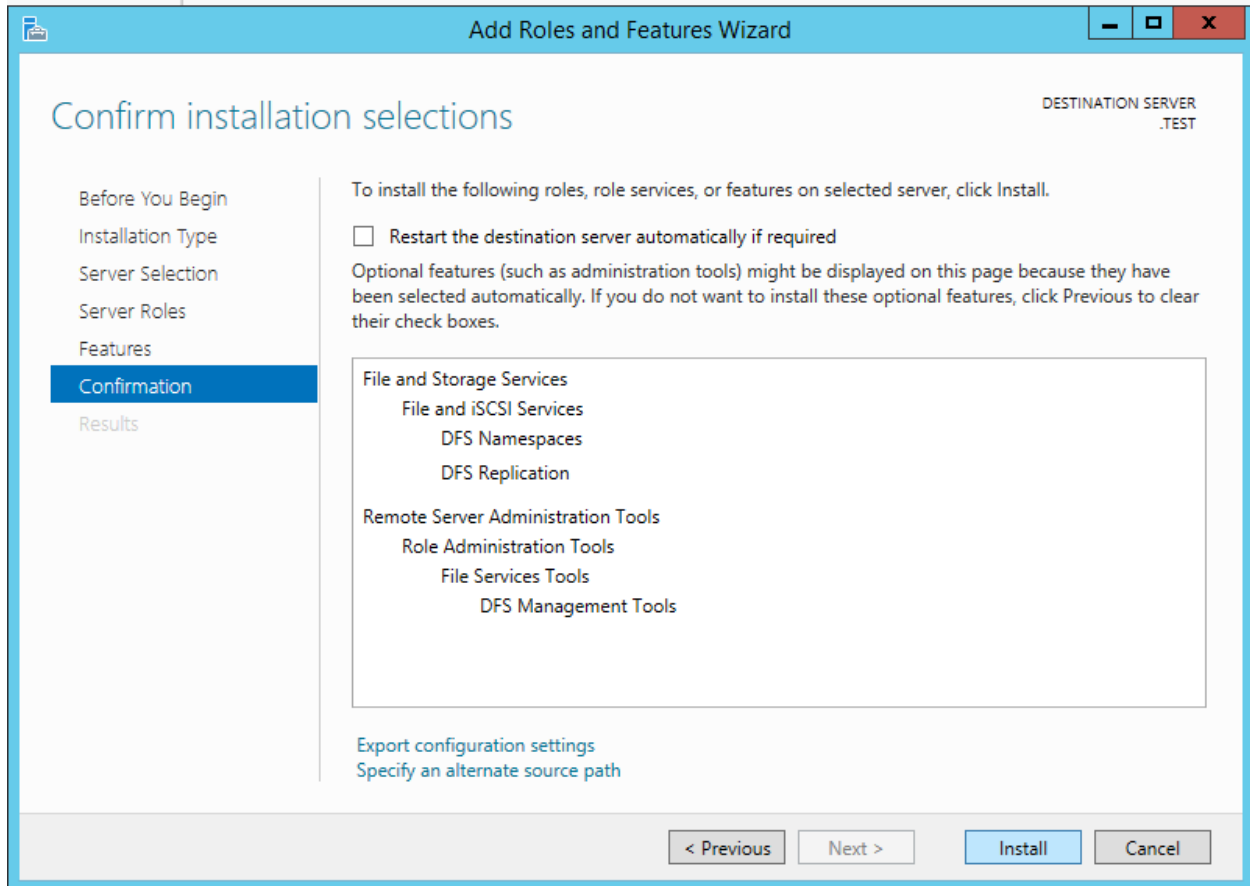
DFS links (pointers to shares)

Designated access path between the DFS root and shared folders

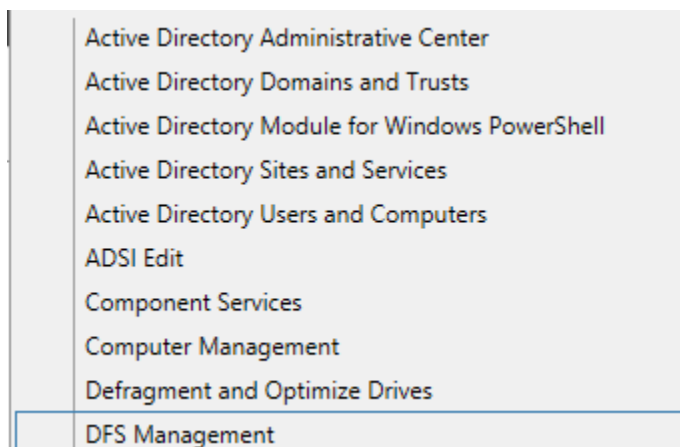
Replica sets (targets (duplicated shares))

Set of shared folders that is replicated to one or more servers in a domain





Device Setup Manager	Enables the ...		Manual (Trig...	Loc
DFS Namespace	Enables you...	Running	Automatic	Loc
DFS Replication	Enables you...	Running	Automatic	Loc



DFS Management

- Namespaces
- Replication

DFS Management

Getting Started

Use this snap-in to create and manage Distributed File System (DFS) namespaces and replication groups.

DFS Management Tasks

Publish Data to Multiple Servers

Create a namespace to make shared folders located on multiple servers appear as a single tree of folders. To increase redundancy of the folders or make them available to users in remote locations, use DFS Replication to keep the content synchronized on multiple servers.

Collect Data for Backup Purposes

Use DFS Replication to replicate data from a server in a branch office to a server in a hub office or data center for backup purposes. You can optionally publish the content in a namespace to ensure that branch clients always connect to the branch server or fail over to a hub server if the branch server is unavailable.

Manage Namespaces and Replication Groups

Manage existing namespaces and replication groups by adding them to the console display.

- Add namespace to display...
- Add replication group to display...

Illustration of a Namespace

Actions

- DFS Management
- New Namespace...
- New Replication Group...
- Add Namespaces to Di...
- Add Replication Group...
- View
- New Window from Here
- Help

DFS Management

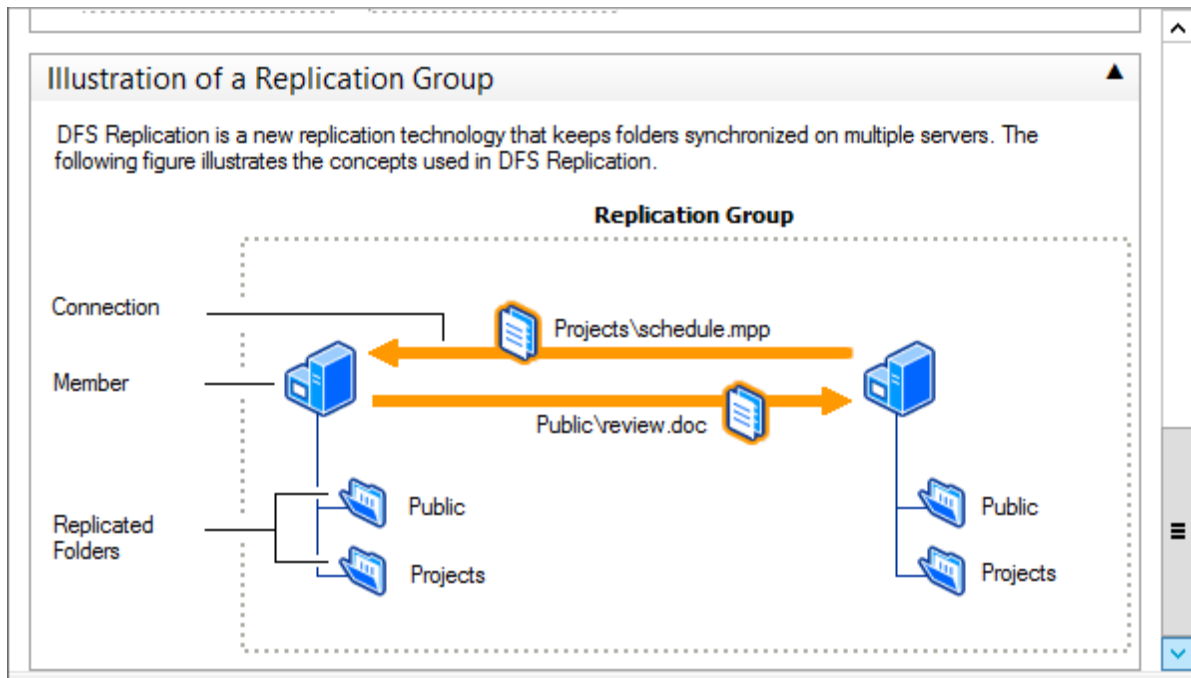
Getting Started

Use this snap-in to create and manage Distributed File System (DFS) namespaces and replication groups.

Illustration of a Namespace

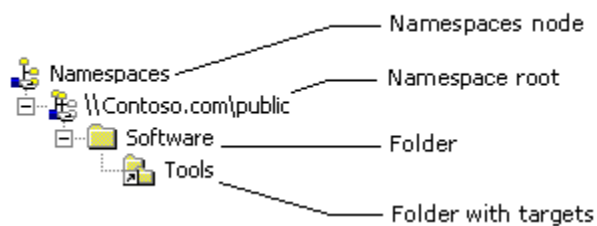
A namespace is a virtual view of shared folders on different servers. The following figure illustrates the components of a namespace.

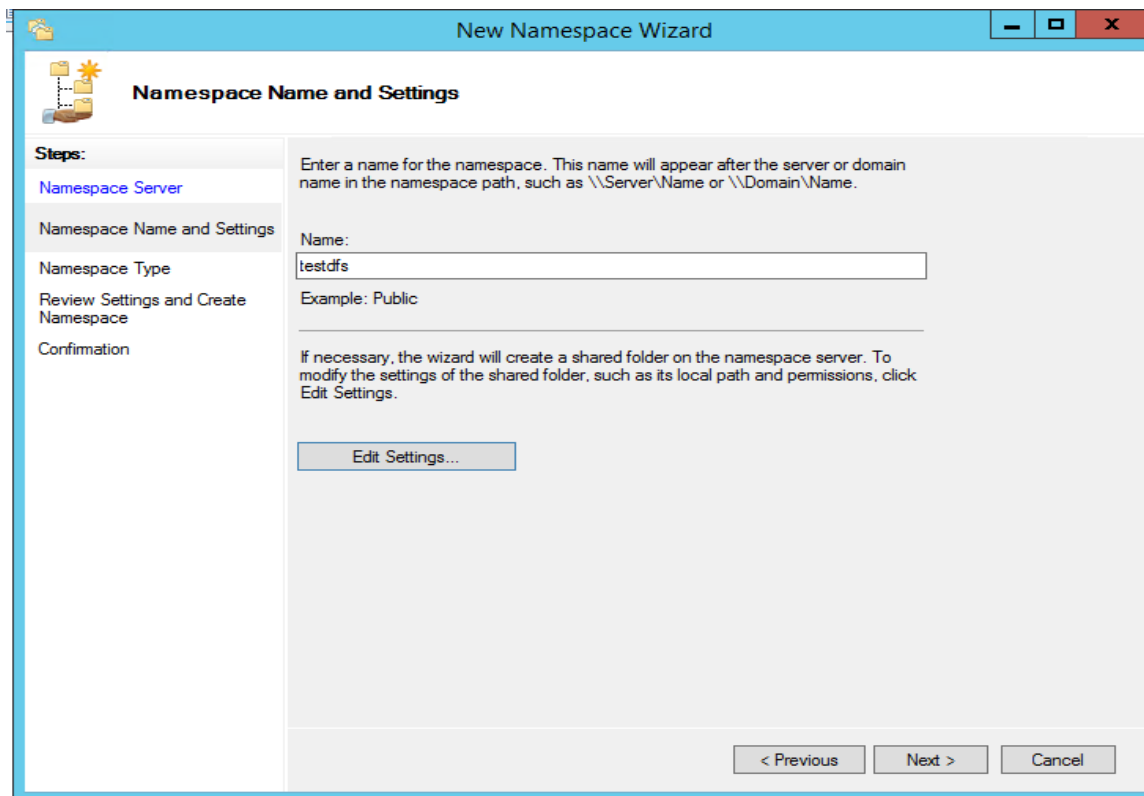
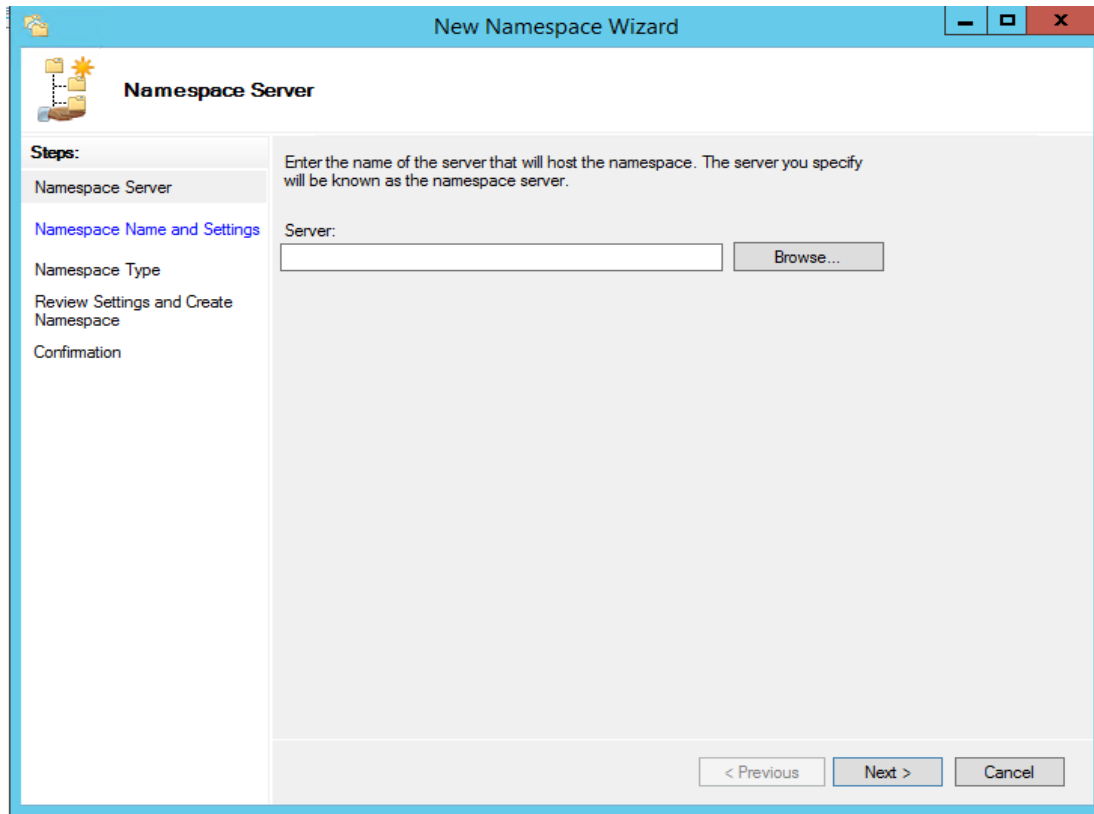
The diagram shows a 'Namespace' on the left, represented by a tree of folders on a server icon. Arrows point from specific folders in the namespace to a 'Folder Targets' section on the right, which contains three server icons. This illustrates how a single namespace can point to multiple physical servers for redundancy and availability.

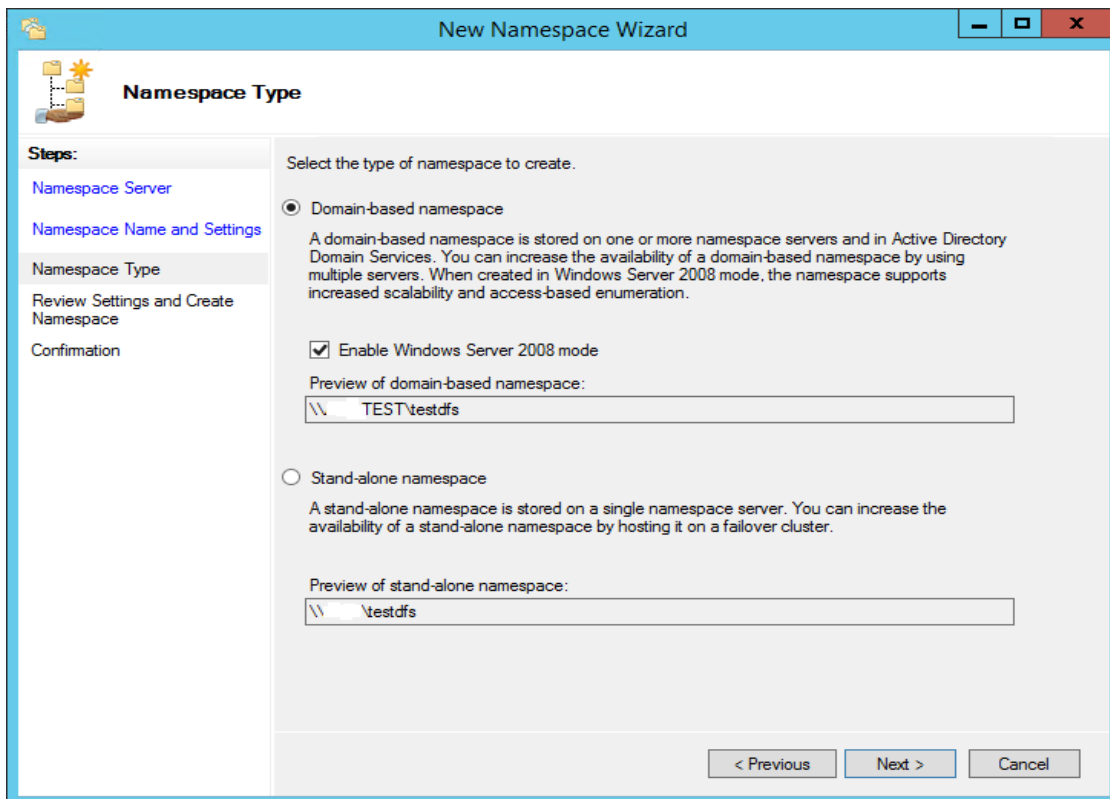
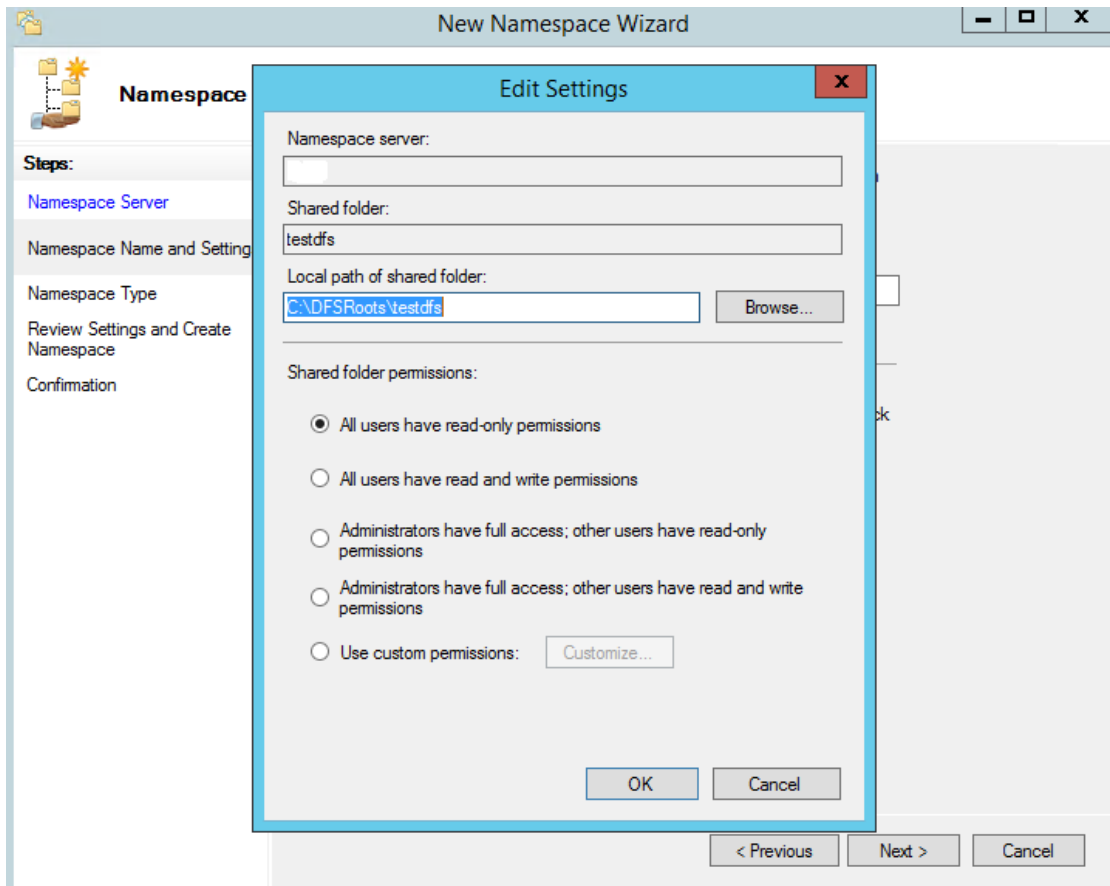


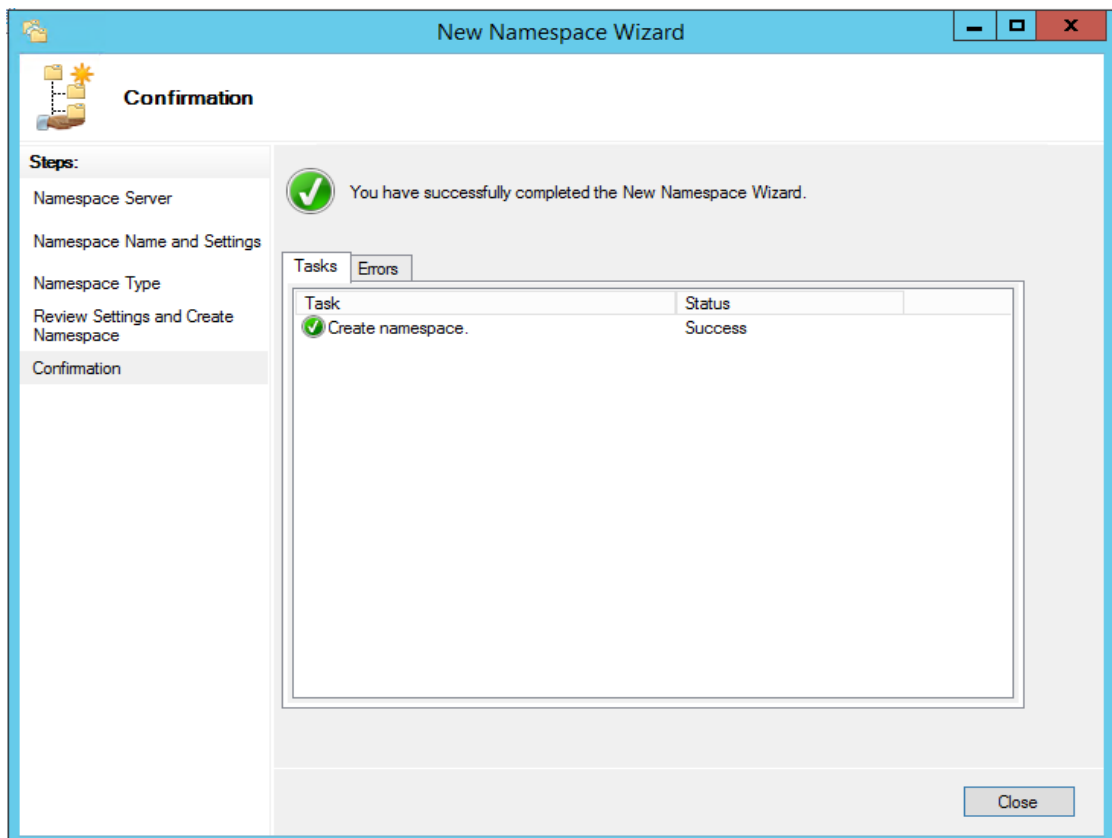
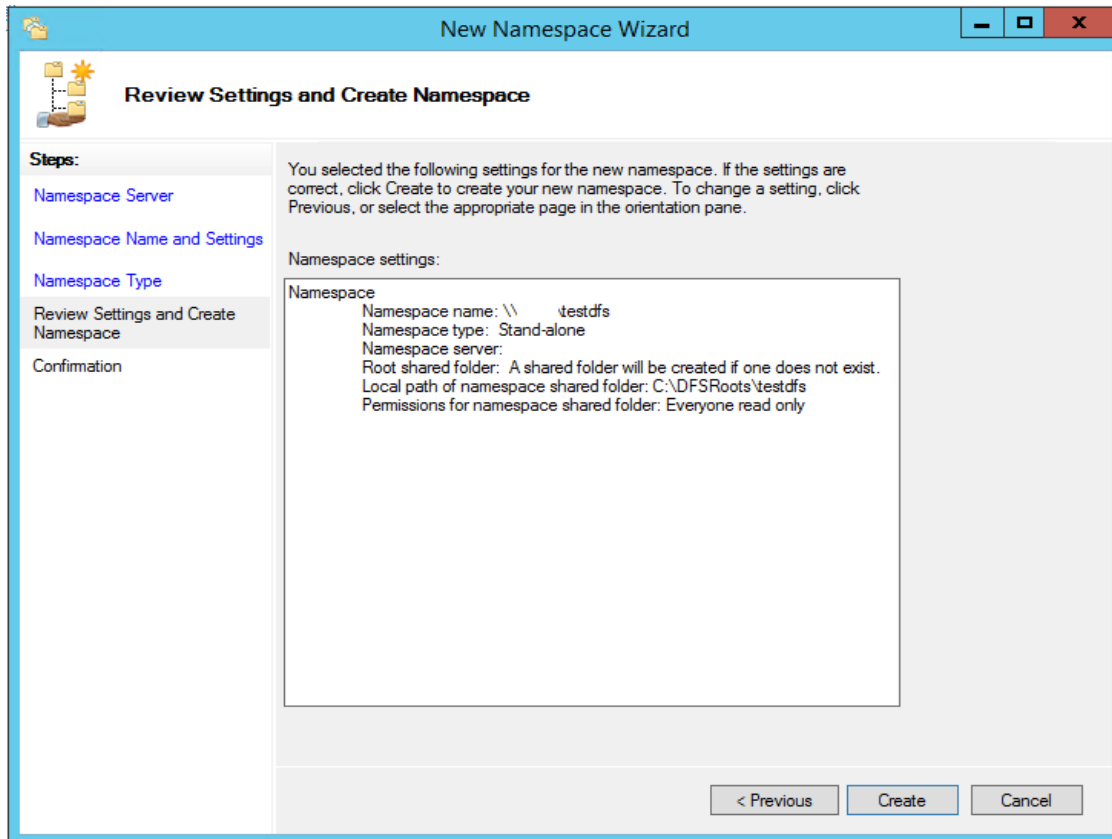
Namespaces node

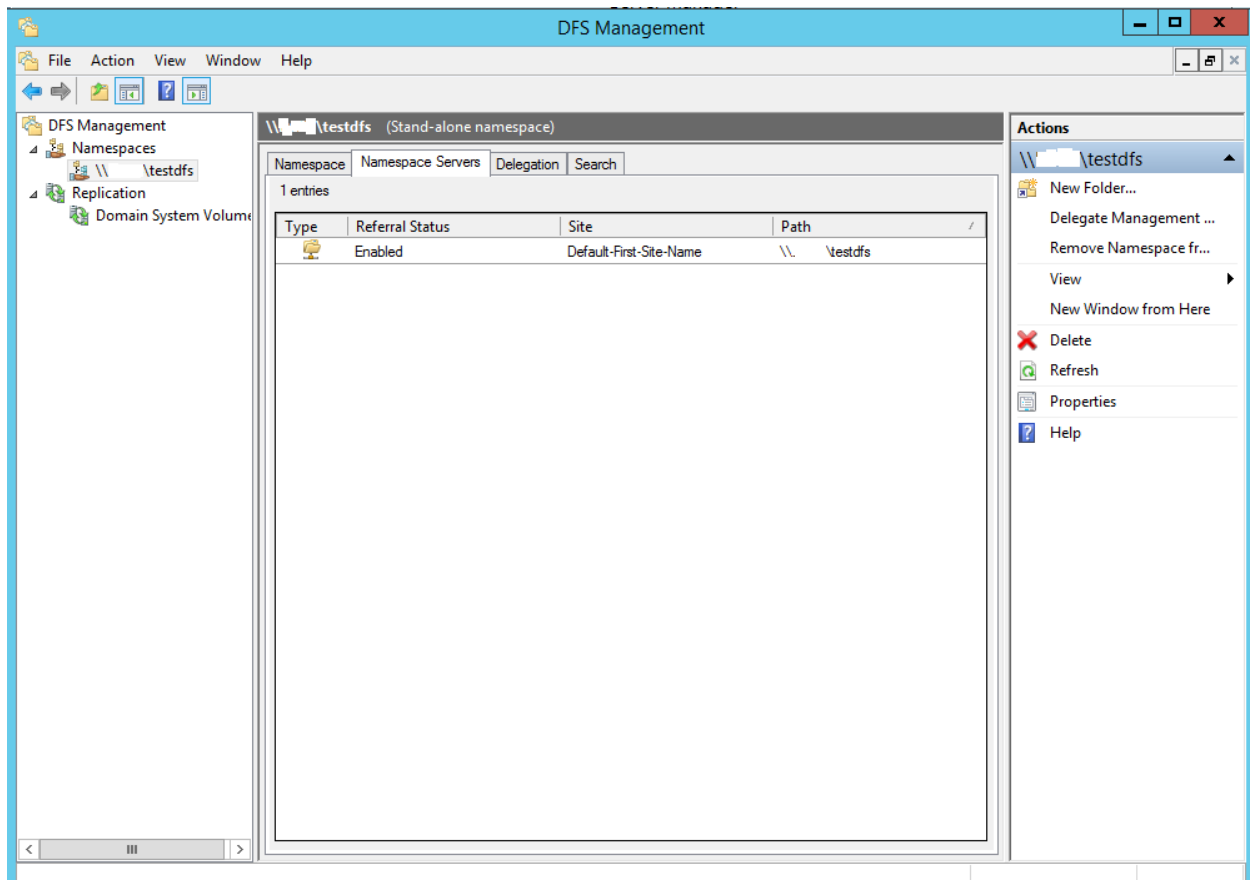
The following figure shows the elements under the Namespaces node in the console tree.





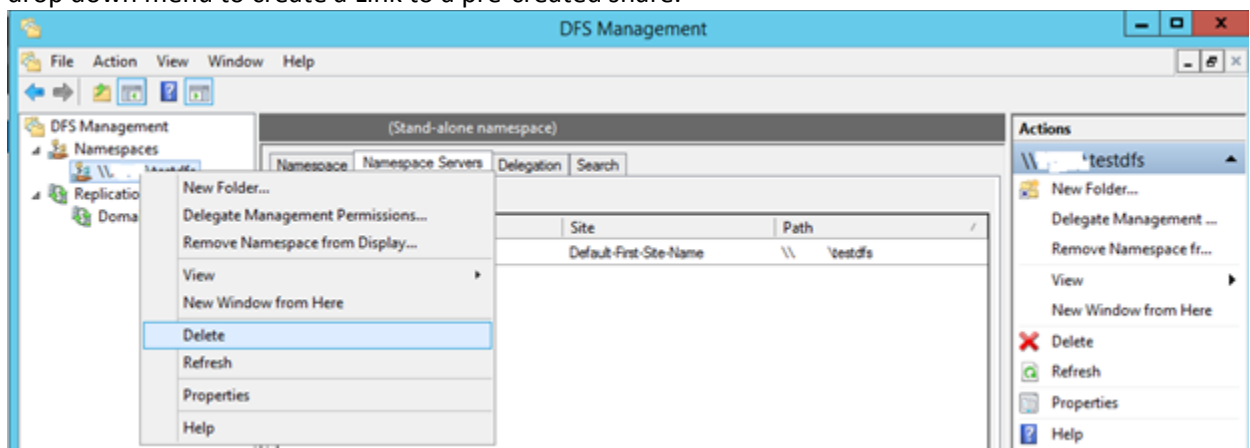


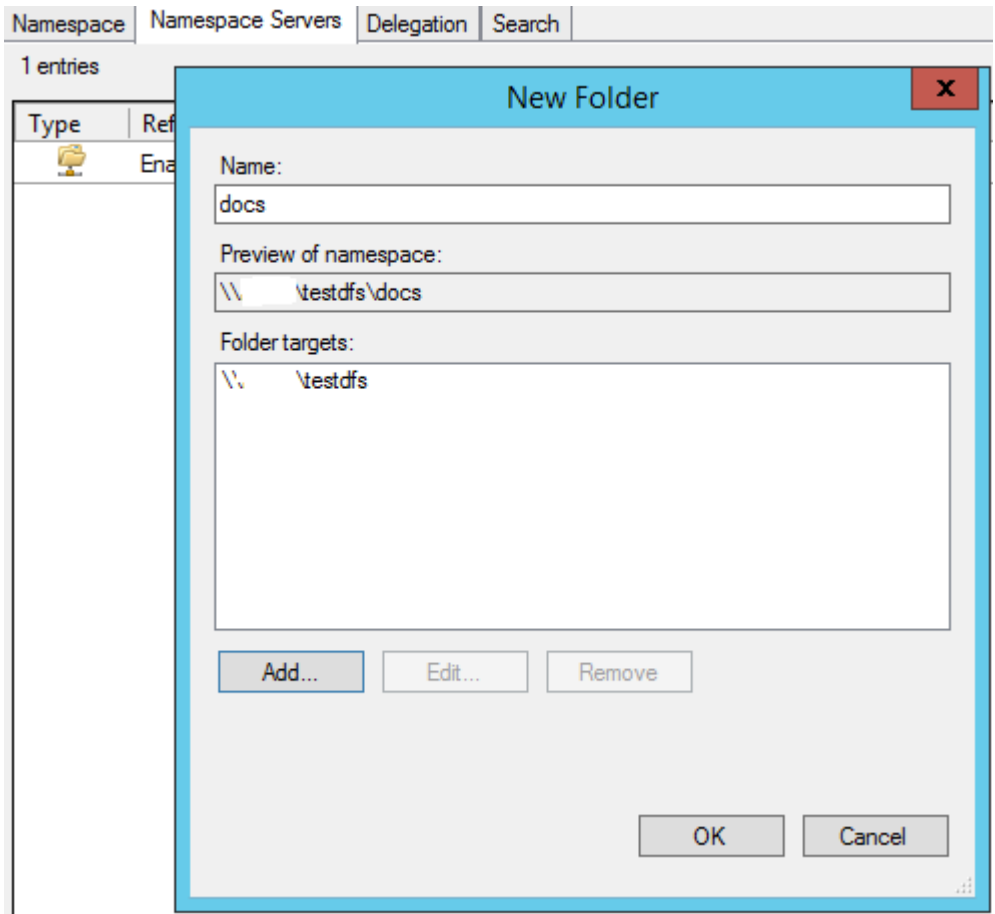




Creating Links:

With a bare base DFS structure in place, now head back to DFS Management to add in some pre-created shared folders to it. This will provide a single point of reference to these shares (called Links) for users on the LAN. In the DFS console, right click on the DFS namespace root and select "New Folder" from the drop down menu to create a Link to a pre-created share.





Replication node

The following figure shows the elements under the Replication node in the console tree.



New Replication Group Wizard

Replication Group Type

Steps:

- Replication Group Type
- Name and Domain
- Replication Group Members
- Topology Selection
- Hub Members
- Hub and Spoke Connections
- Replication Group Schedule and Bandwidth
- Primary Member
- Folders to Replicate
- Review Settings and Create Replication Group
- Confirmation

Select the type of replication group to create.

Multipurpose replication group
This option configures replication between two or more servers for publication, content sharing, and other scenarios.

Replication group for data collection
This option configures two-way replication between two servers, such as a branch server and a hub (destination) server. This allows you to collect data at the hub server. You can then use backup software to back up the data on the hub server.

< Previous Next > Cancel

New Replication Group Wizard

Name and Domain

Steps:

- Replication Group Type
- Name and Domain
- Replication Group Members
- Topology Selection
- Hub Members
- Hub and Spoke Connections
- Replication Group Schedule and Bandwidth
- Primary Member
- Folders to Replicate
- Review Settings and Create Replication Group
- Confirmation

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.

Name of replication group:

Optional description of replication group:

Domain:

< Previous Next > Cancel

New Replication Group Wizard

Replication Group Members

Steps:

- Replication Group Type
- Name and Domain
- Replication Group Members**
- Topology Selection
- Hub Members
- Hub and Spoke Connections
- Replication Group Schedule and Bandwidth
- Primary Member
- Folders to Replicate
- Review Settings and Create Replication Group
- Confirmation

Click Add and then select two or more servers that will become members of the replication group.

Members:

Server	Domain
DC	TEST
DC	TEST

Add... Remove

< Previous Next > Cancel

New Replication Group Wizard

Topology Selection


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 a topology of connections among members of the replication group.


Hub and spoke

This topology requires three or more members in the replication group. In this topology, spoke members are connected to one or two hub members. This topology works well in publication scenarios where data originates from the hub member and replicates out to the spoke members.



Full mesh

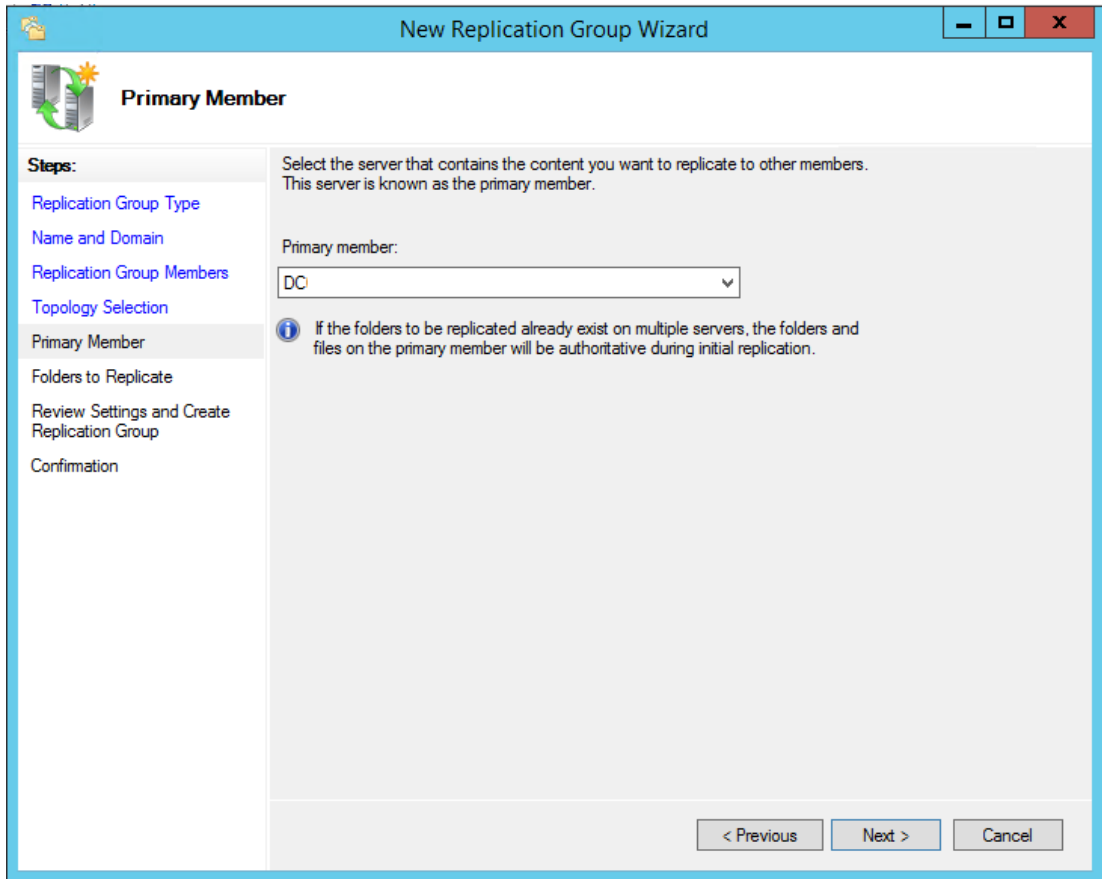
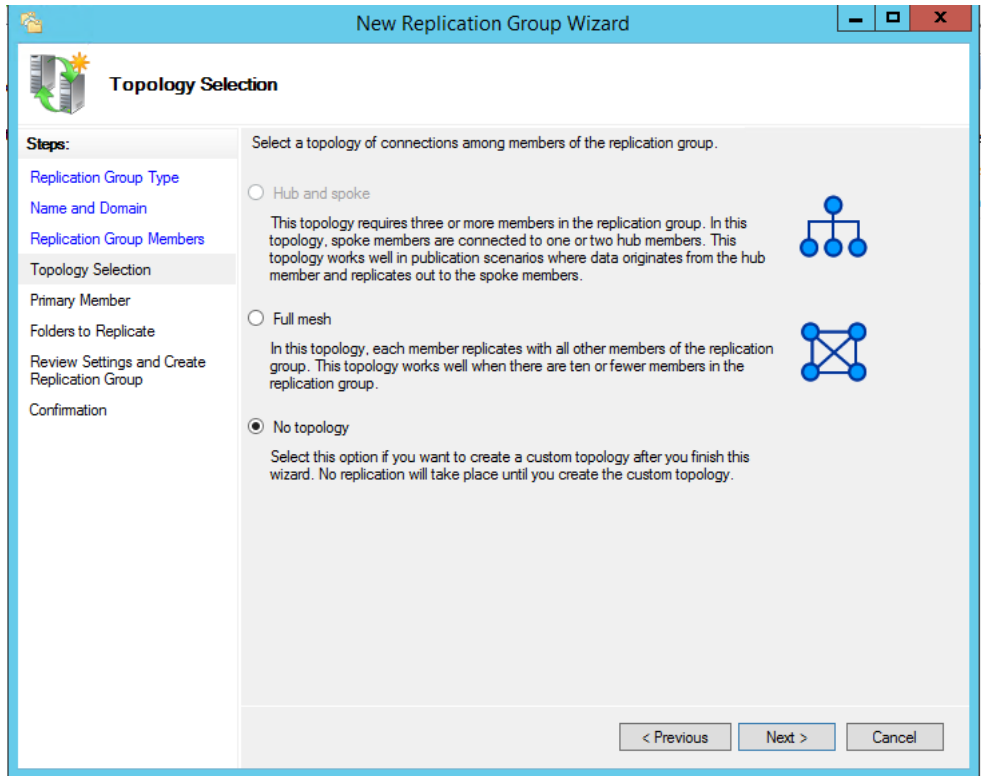
In this topology, each member replicates with all other members of the replication group. This topology works well when there are ten or fewer members in the replication group.

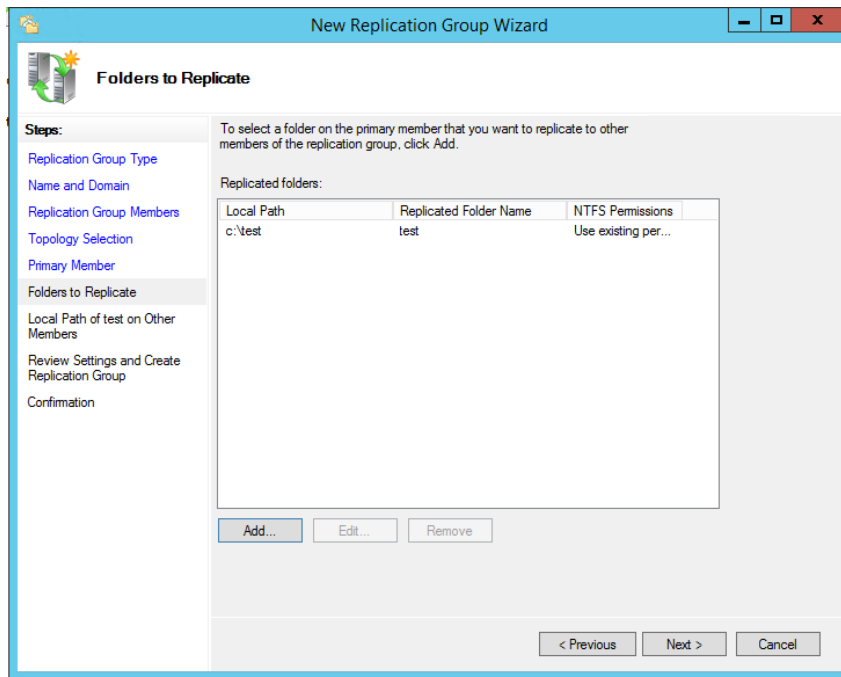
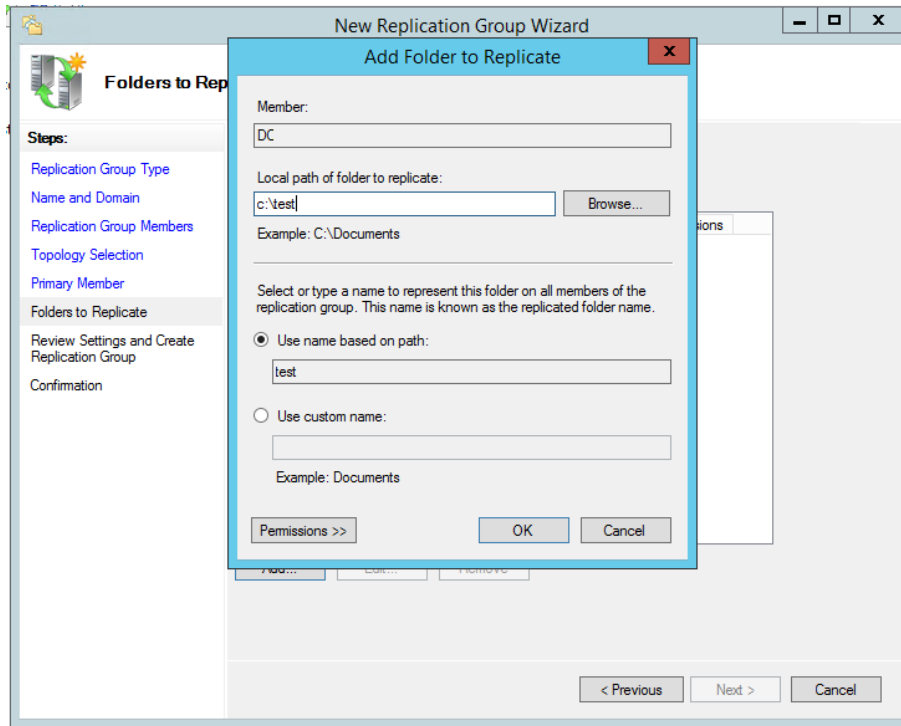


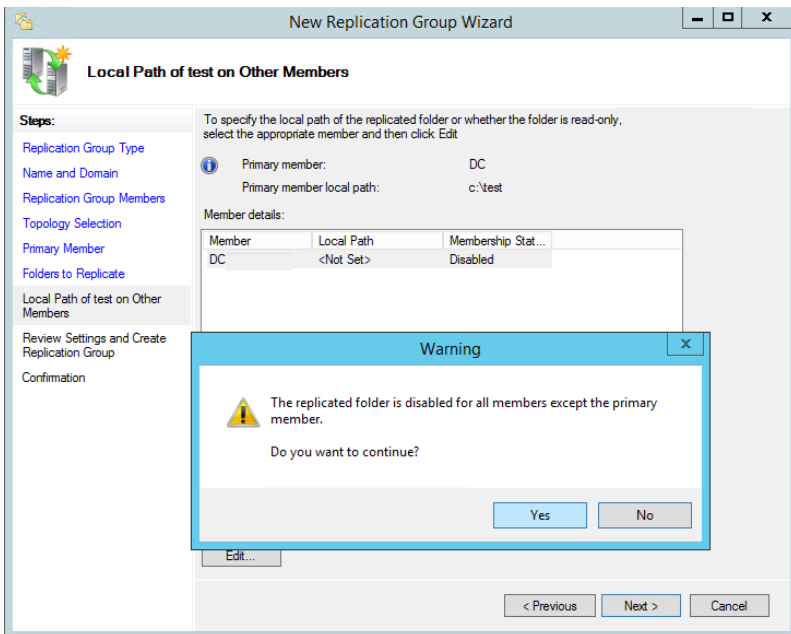
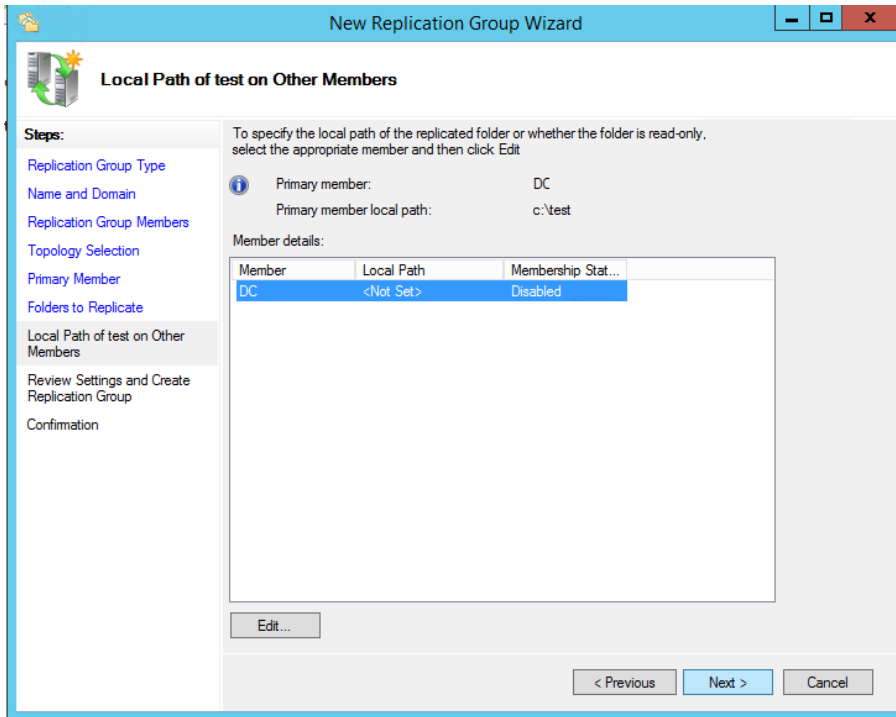
No topology

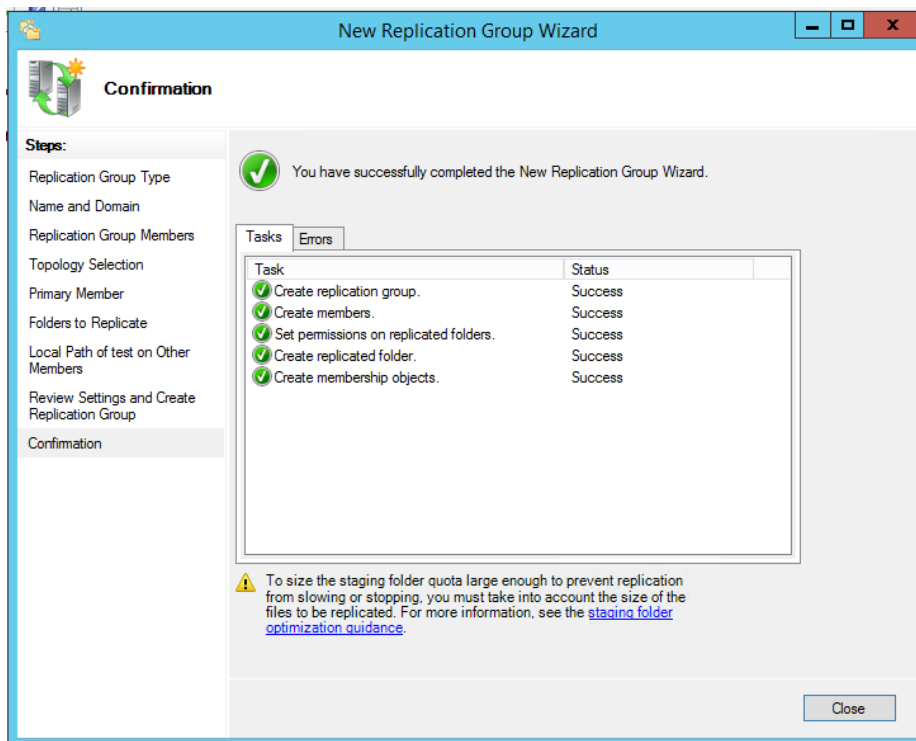
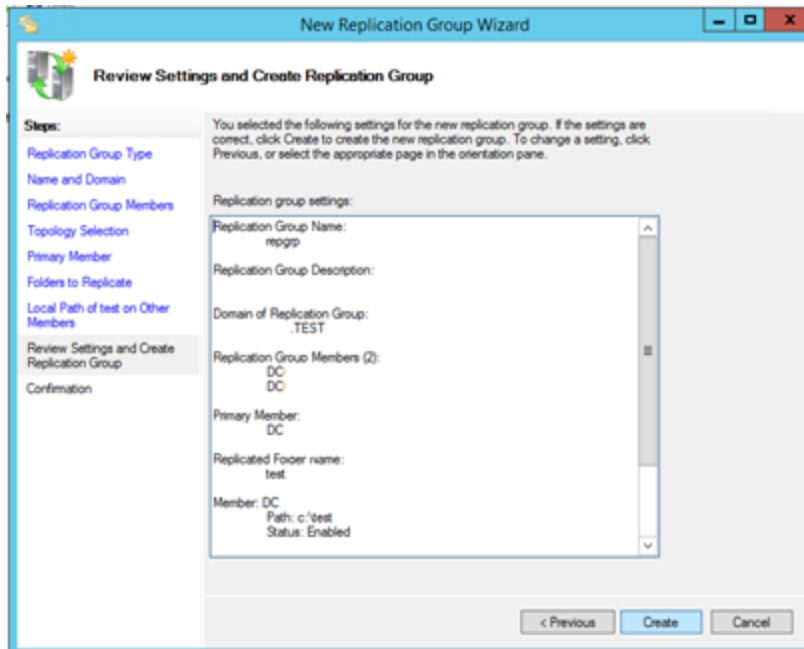
Select this option if you want to create a custom topology after you finish this wizard. No replication will take place until you create the custom topology.

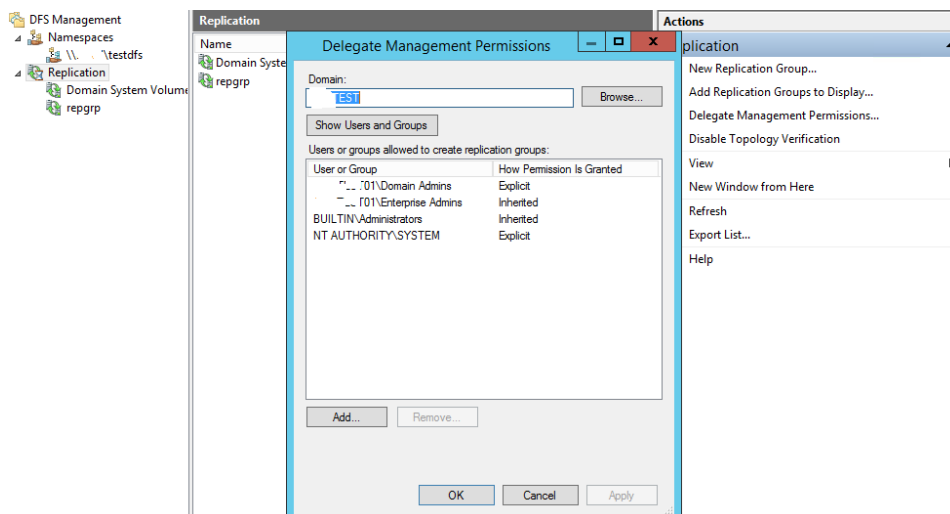
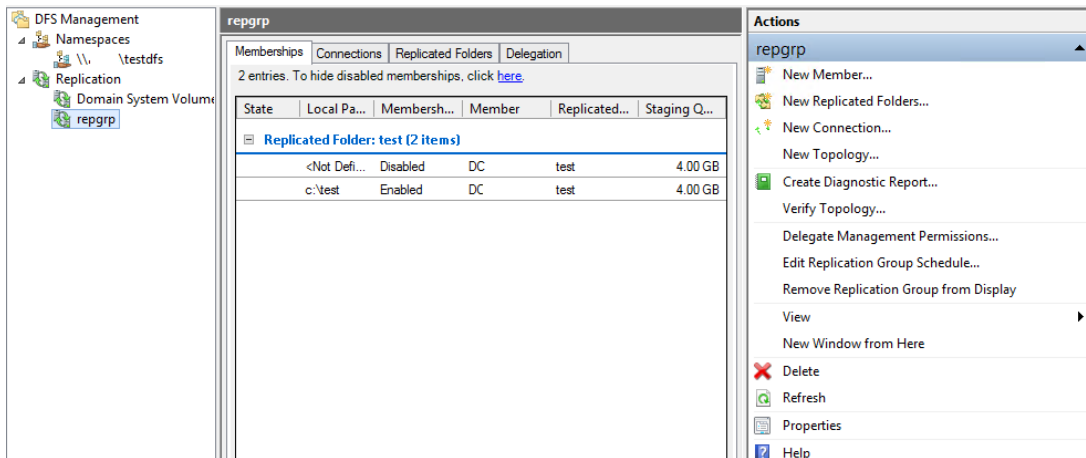
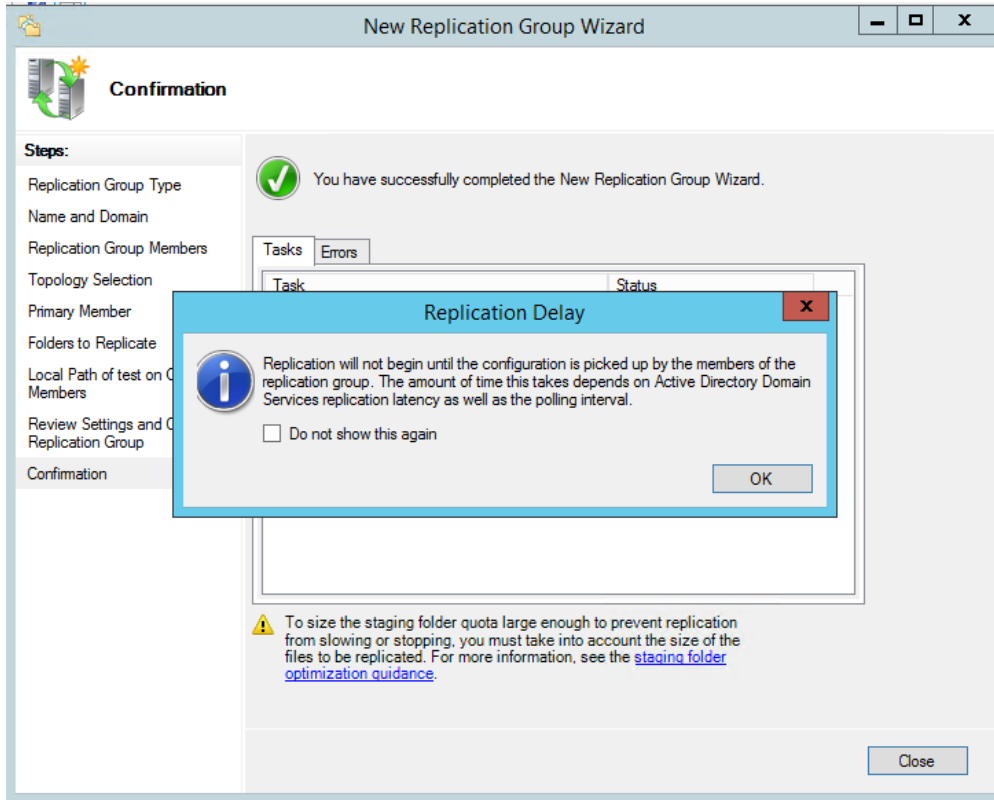
< Previous Next > Cancel











DFS Management

- Namespaces
 - testdfs
- Replication
 - Domain System Volume
 - reppgr

reppgr

Memberships | Connections | Replicated Folders | Delegation

0 entries

State	Sending...	Sending...	Connec...	Receivi...	Receivi...	Schedu...
-------	------------	------------	-----------	------------	------------	-----------

Actions

- reppgr
- New Member...
- New Replicated Folders...
- New Connection...
- New Topology...
- Create Diagnostic Report...
- Verify Topology...
- Delegate Management Permissions...
- Edit Replication Group Schedule...
- Remove Replication Group from Display
- View
- New Window from Here
- Delete
- Refresh
- Properties
- Help

DFS Management

- Namespaces
 - testdfs
- Replication
 - Domain System Volume
 - reppgr

reppgr

Memberships | Connections | Replicated Folders | Delegation

1 entries

State	Replicated Folder	Publication Status	Namespace Path
	test	Not Published	

Actions

- reppgr
- New Member...
- New Replicated Folders...
- New Connection...
- New Topology...
- Create Diagnostic Report...
- Verify Topology...
- Delegate Management Permissions...
- Edit Replication Group Schedule...
- Remove Replication Group from Display
- View
- New Window from Here
- Delete
- Refresh
- Properties

DFS Management

- Namespaces
 - testdfs
- Replication
 - Domain System Volume
 - reppgr

reppgr

Memberships | Connections | Replicated Folders | Delegation

3 entries

User or Group	How Permission Is Granted
...;ST01\Domain Admins	Explicit
;T01\Enterprise Admins	Inherited
NT AUTHORITY\SYSTEM	Explicit

Actions

- reppgr
- New Member...
- New Replicated Folders...
- New Connection...
- New Topology...
- Create Diagnostic Report...
- Verify Topology...
- Delegate Management Permissions...
- Edit Replication Group Schedule...
- Remove Replication Group from Display
- View
- New Window from Here
- Delete
- Refresh
- Properties
- Help