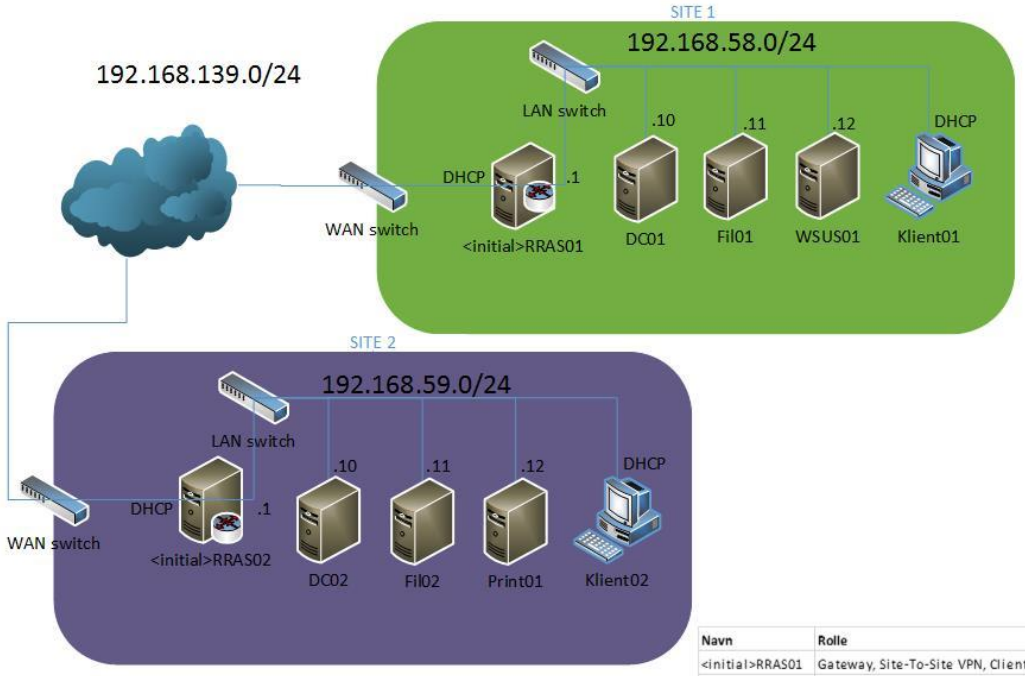
John Have Jensen

Installing and configuring Distributed File System (DFS)

In this guide, we will configure DFS with one namespace and replication of three shares between Fil01 and Fil02.

The advantages of DFS are:

- **Namespace**: Users must remember only one share name because all the different shares in the company can be collected under one DFS namespace, thus users need only to remember the share name of the namespace. (You can have more namespaces for different purposes)
- **Service Localization**: If a share is located on several locations (Folder Targets) the client will connect to the share with the lowest cost (The closest). (Uses Active Directory Sites and Services=Must be configured correctly)
- **Replication**: : If a share is located on several locations (Folder Targets) you can configure replication between them making the shared content synchronized. (Enables redundancy=If the local fileserver/share crashes, the client will connect to the online folder target with the second-lowest cost)



Navn	Rolle	Operativsystem
<initial>RRAS01	Gateway, Site-To-Site VPN, Client/server VPN	Server 2012 Standard
DC01	Domain Controller, DNS, DHCP, PKI	Server 2012 Standard
Fil01	Filserver	Server 2012 Standard
WSUS01	Windows Server Update Services Server	Server 2012 Standard
<initial>RRAS02	Gateway, Site-To-Site VPN, Client/server VPN	Server 2012 Standard
DC02	Domain Controller, DNS, DHCP	Server 2012 Standard
Fil02	Filserver	Server 2012 Standard
Print01	Printserver	Server 2012 Standard
Klient01	Workstation	Windows 8 Enterprise
Klient02	Workstation	Windows 8 Enterprise

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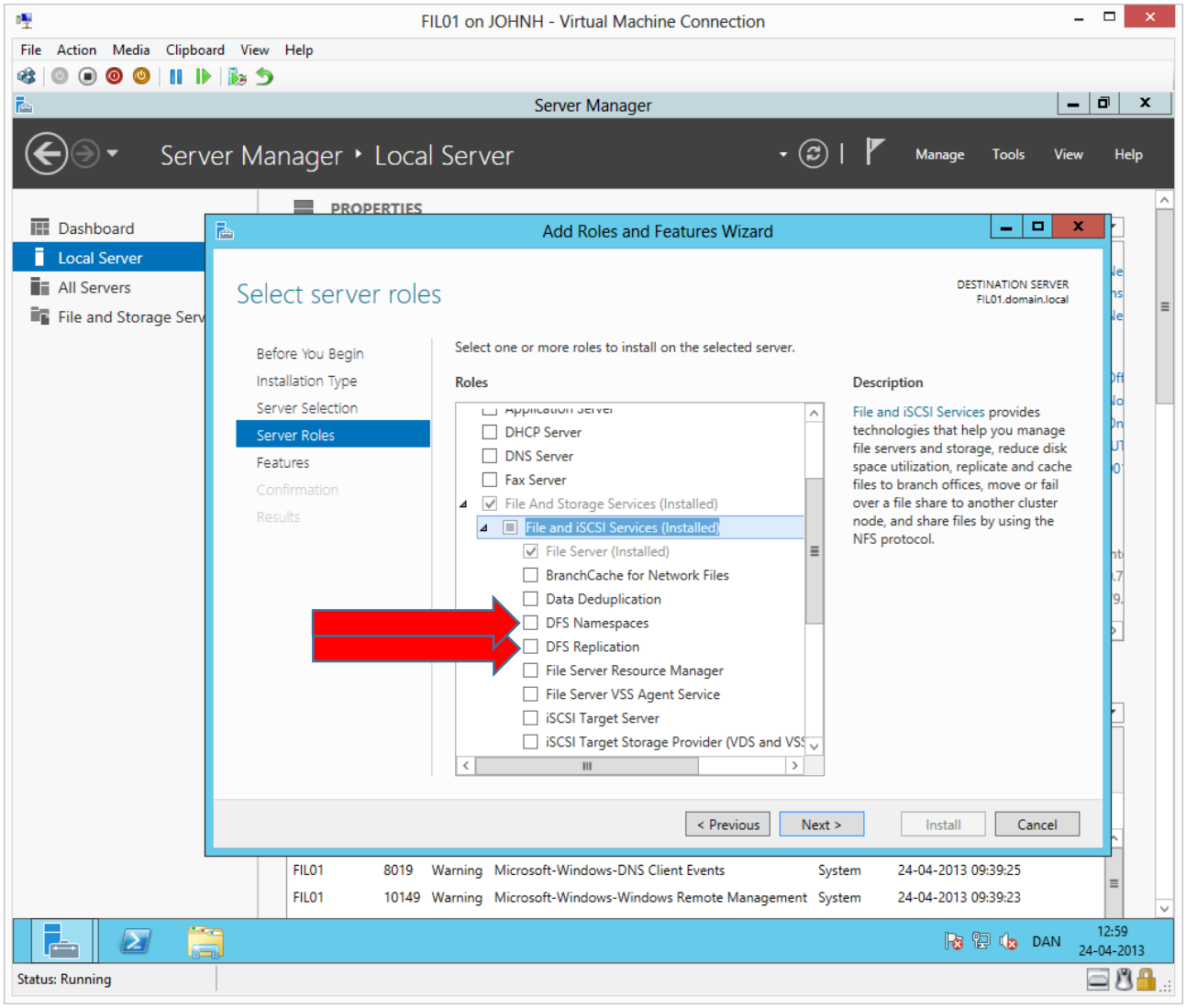
Installation of the roles DFS namespaces and DFS replication

The following steps must be done on both fileservers Fil01 and Fil02.



Add a new server role and add as above + accept proposed features.

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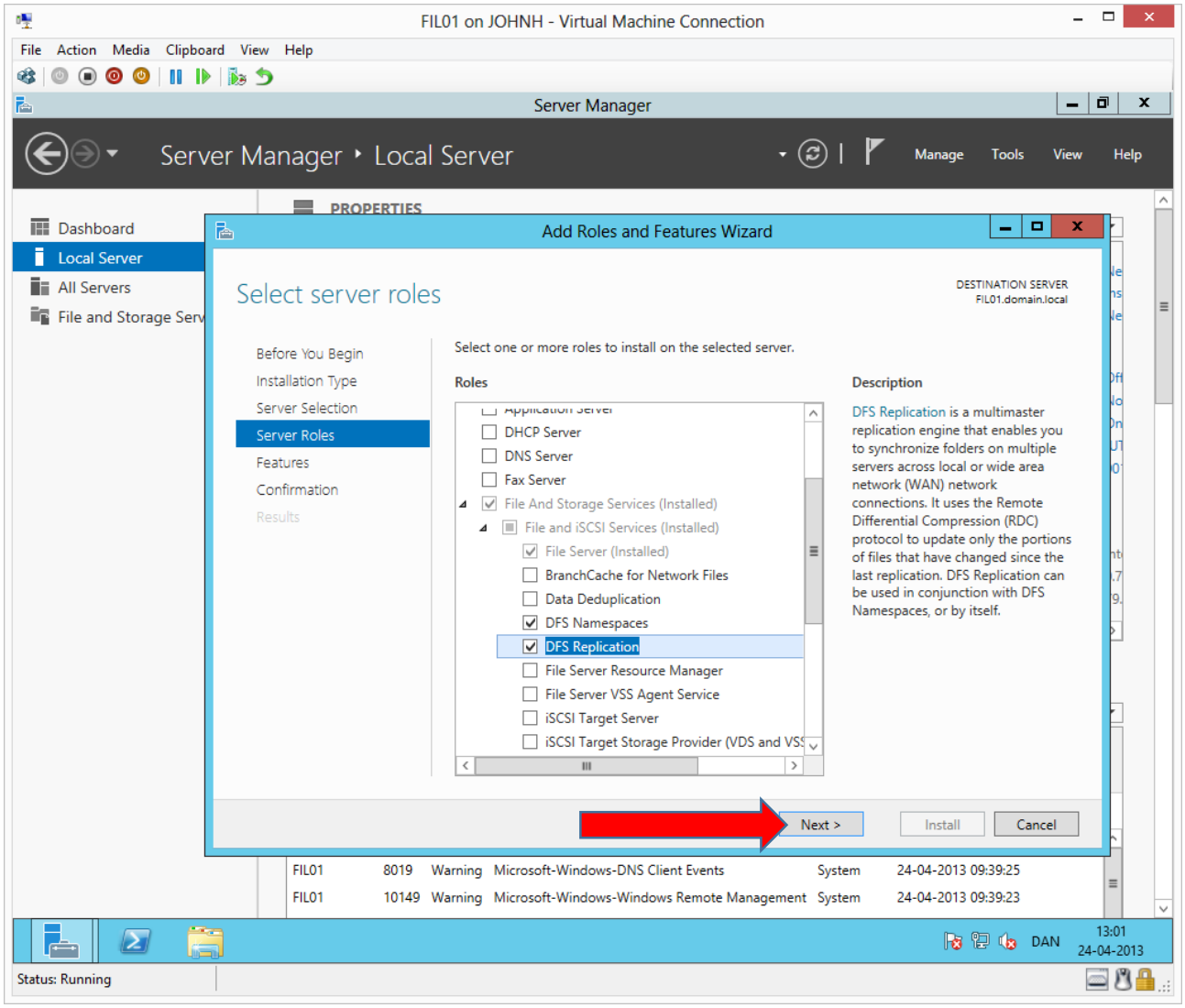

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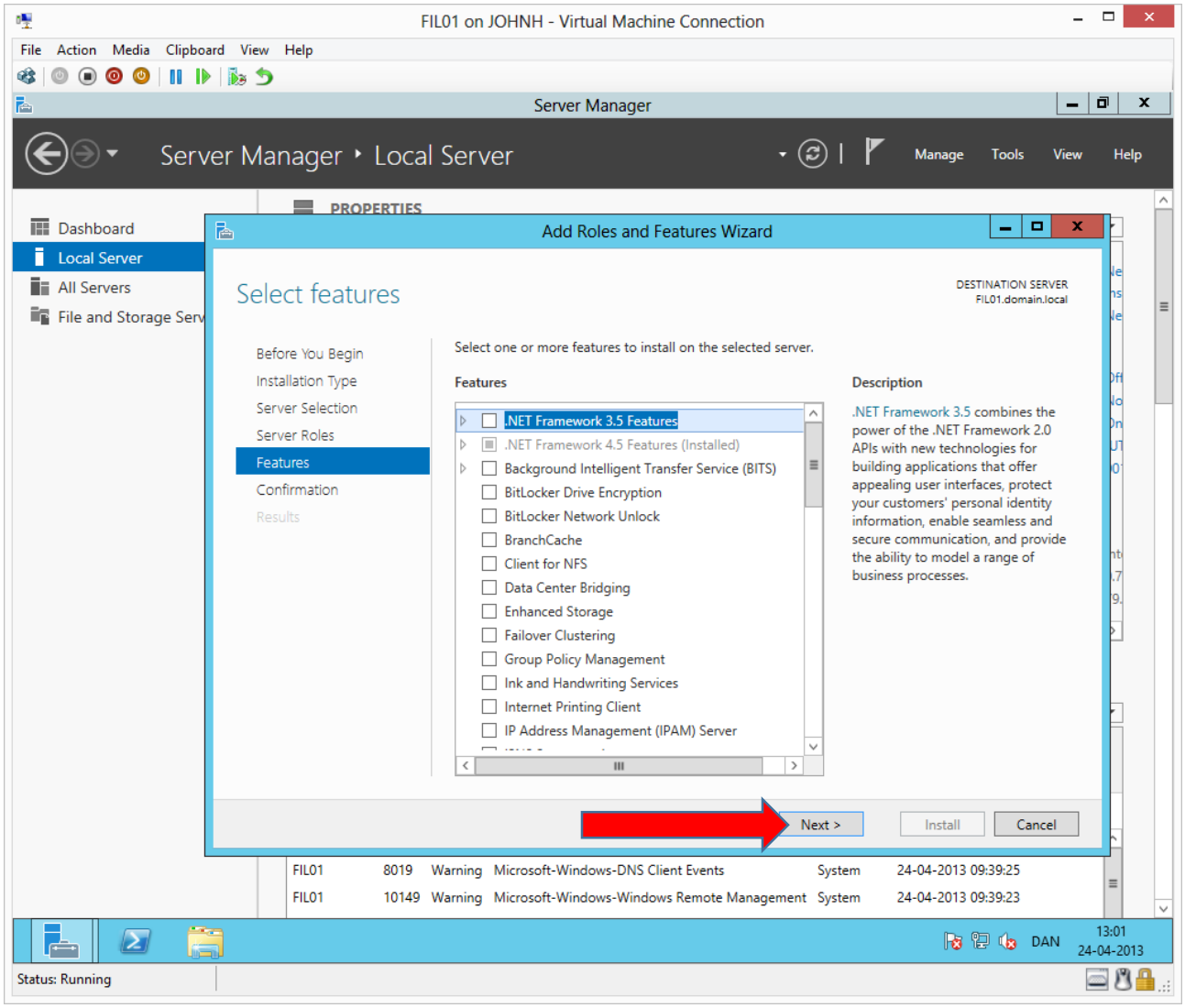

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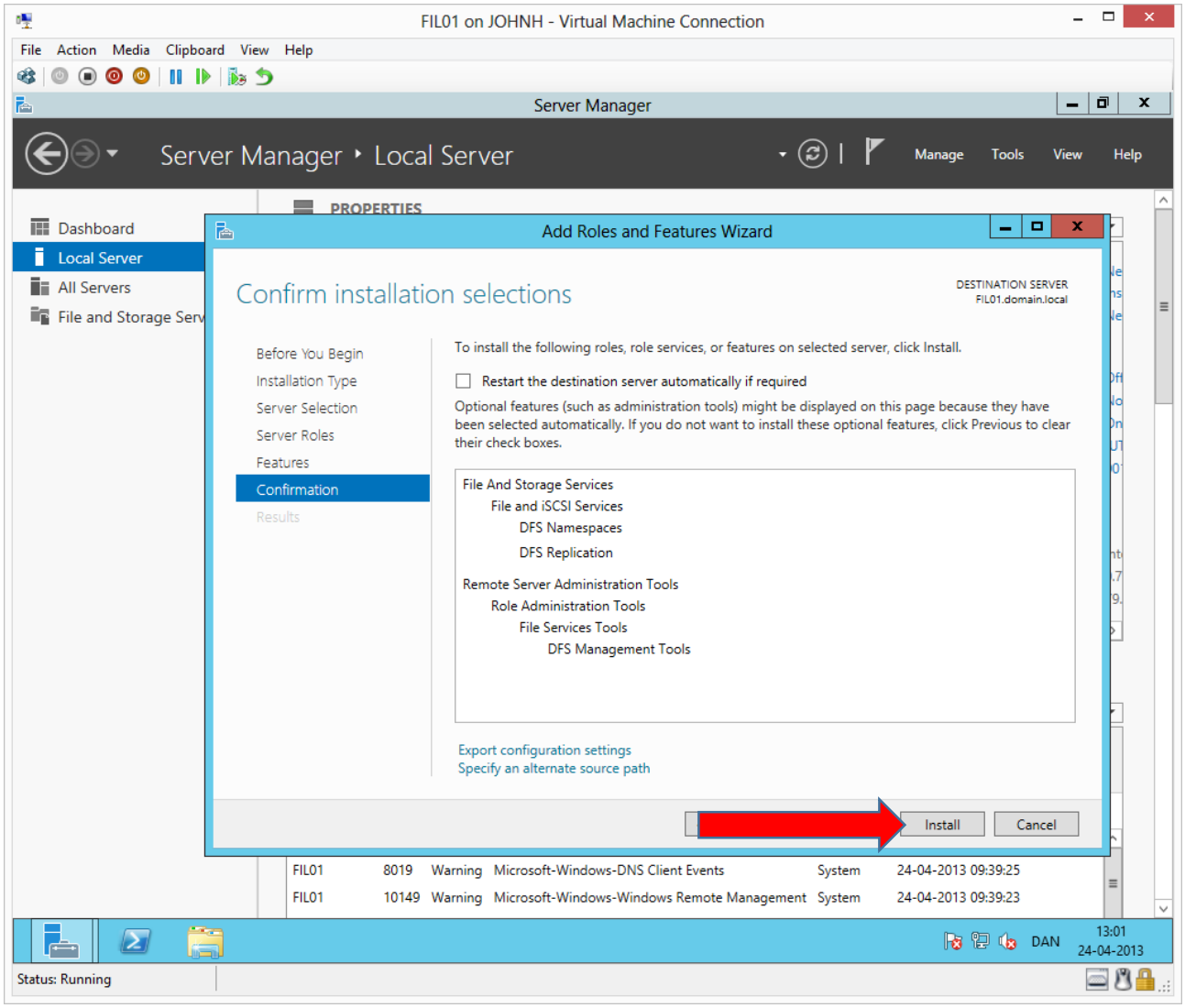

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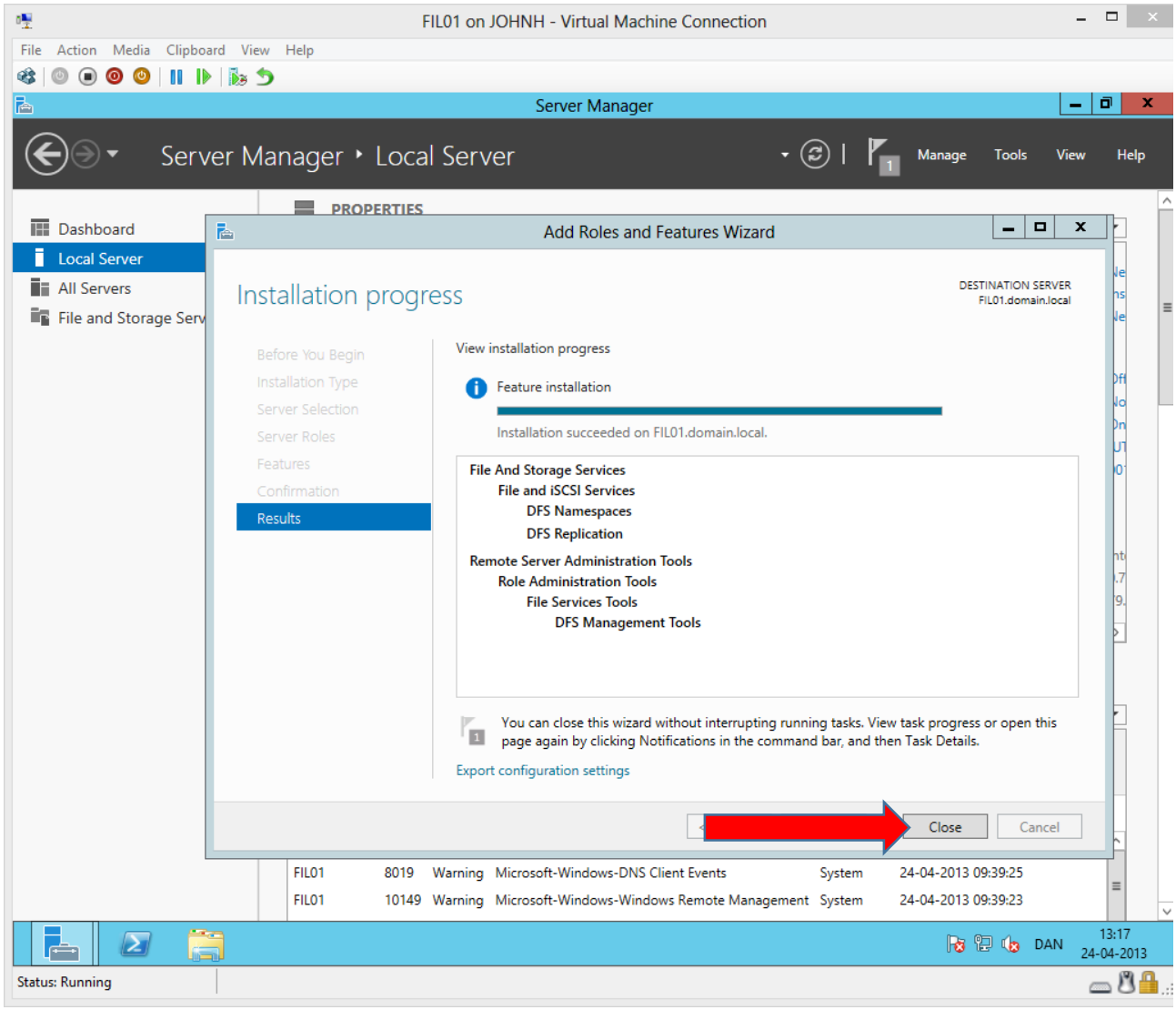
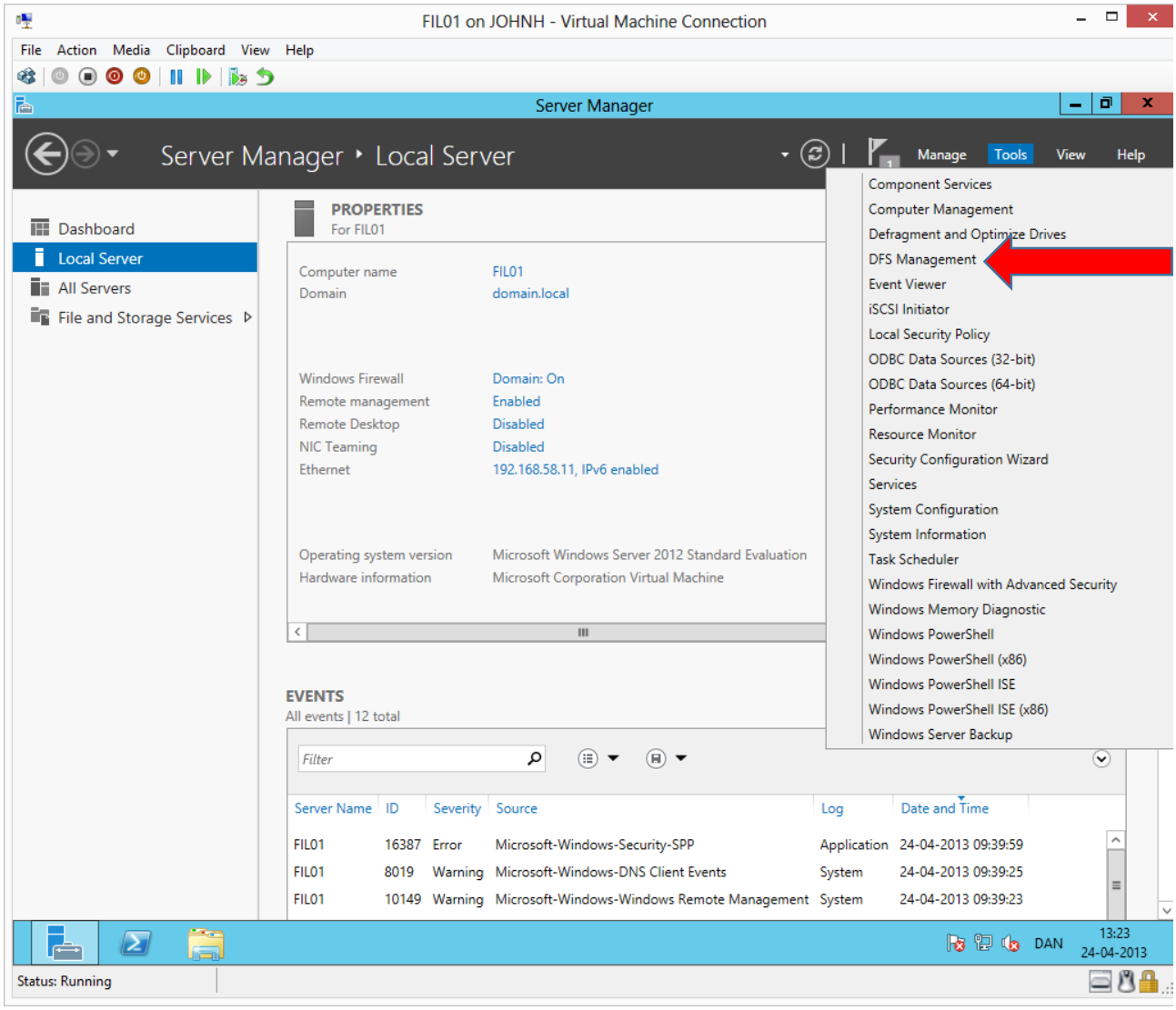
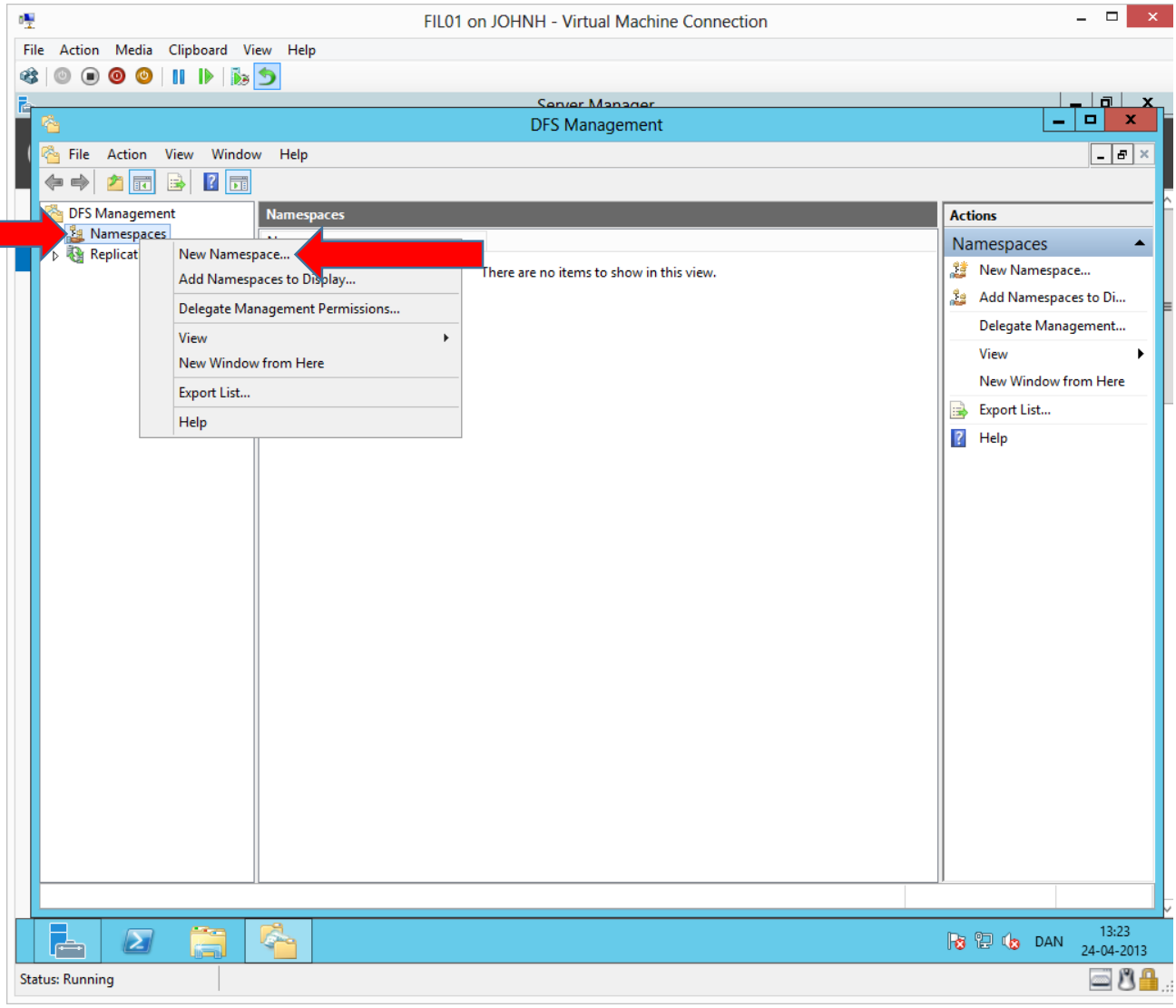


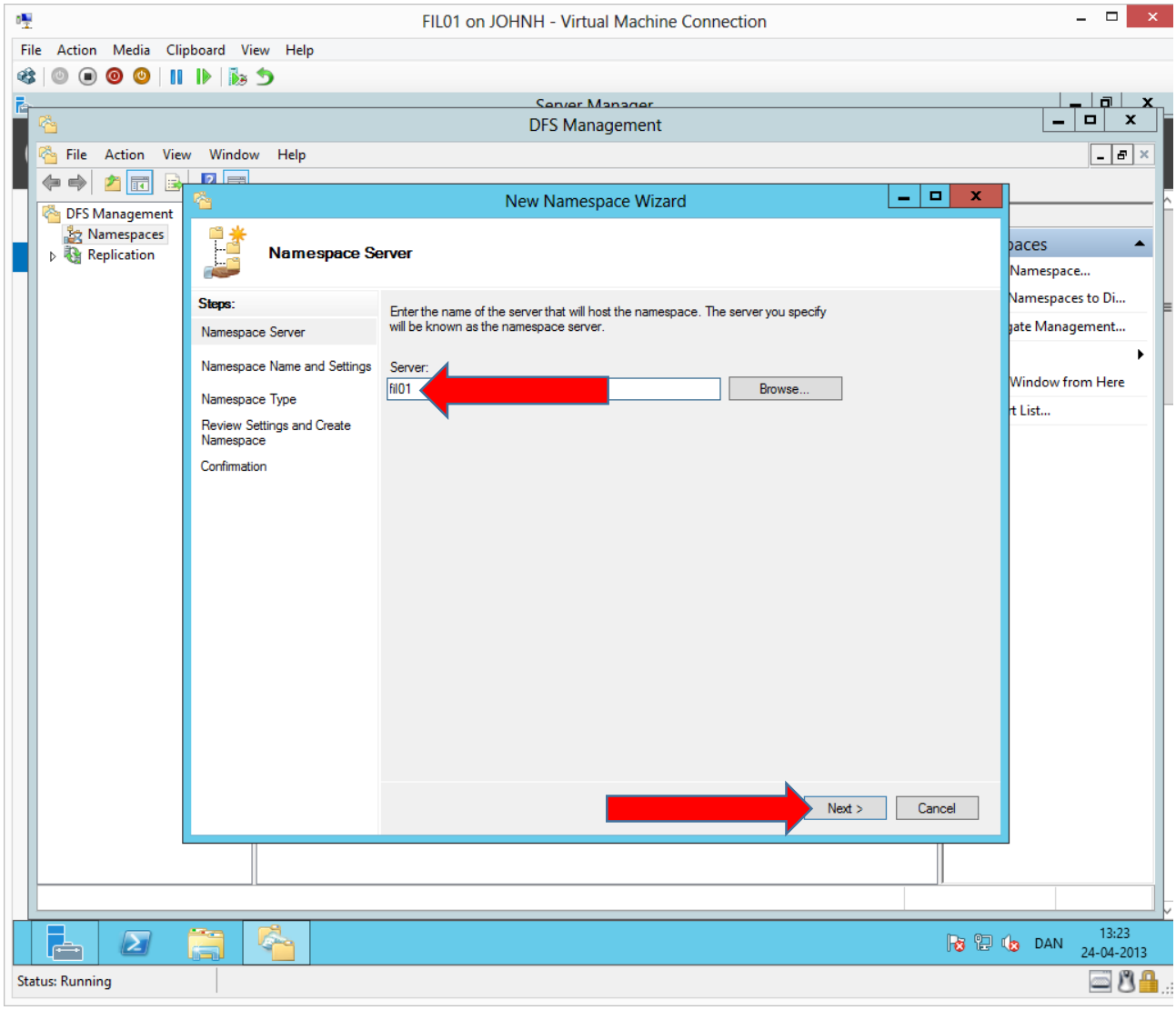
Creating a DFS namespace

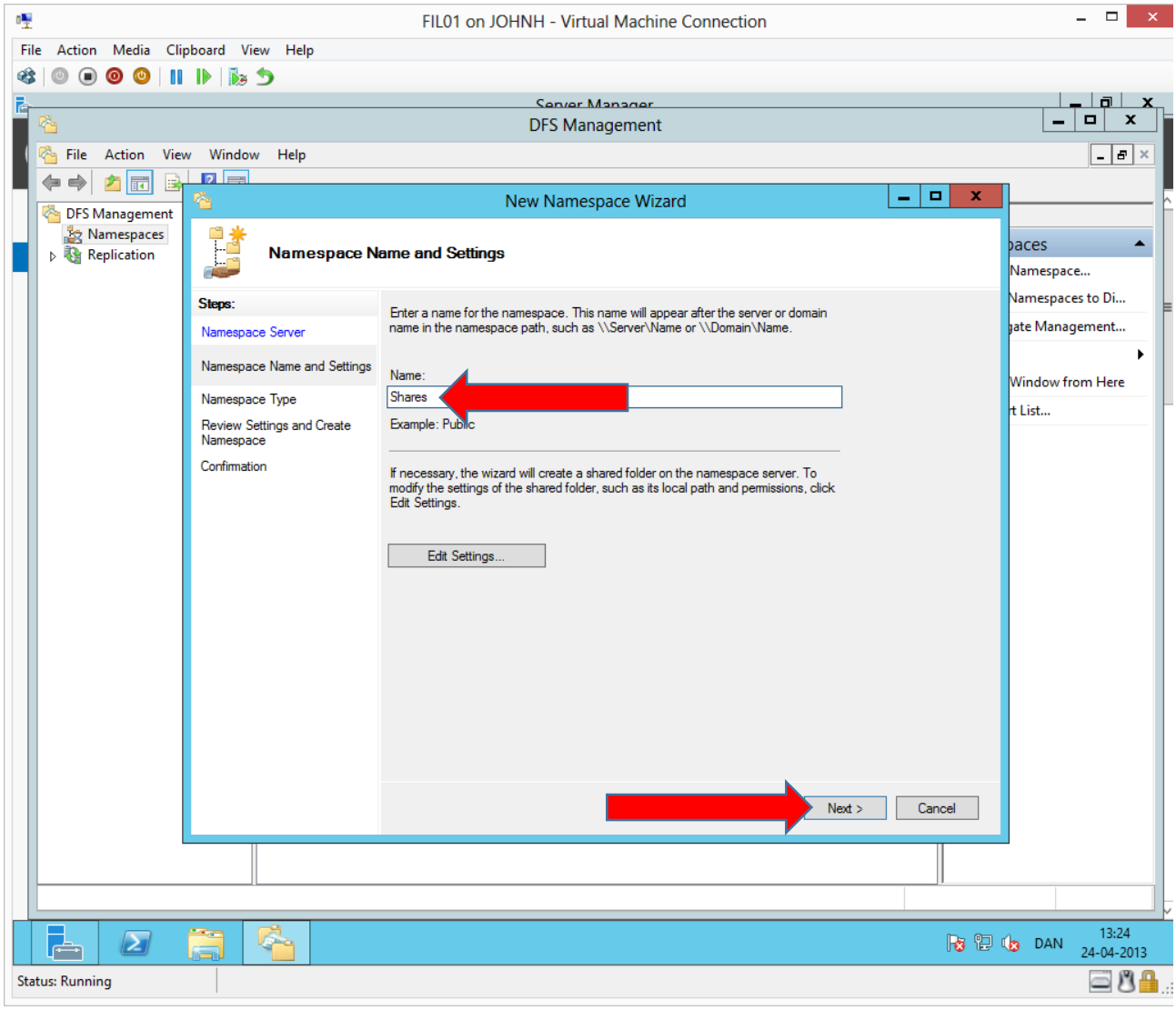
The rest of the DFS tasks can be completed from Fil01 as Fil02 can be configured from the snap-in on Fil01.





Right click **Namespaces→New Namespace…**


FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
DFS Management
File Action View Window Help
DFS Management
Namespaces
Replication
New Namespace Wizard
Namespace Server
Steps:
Namespace Server
Namespace Name and Settings
Namespace Type
Review Settings and Create Namespace
Confirmation
Enter the name of the server that will host the namespace. The server you specify will be known as the namespace server.
Server:
fil01
Browse...
Next >
Cancel
Namespace...
Namespaces to Di...
Window from Here
List...
DAN
13:23
24-04-2013
Status: Running



The namespace can be named any name. We will name the namespace **Shares**.

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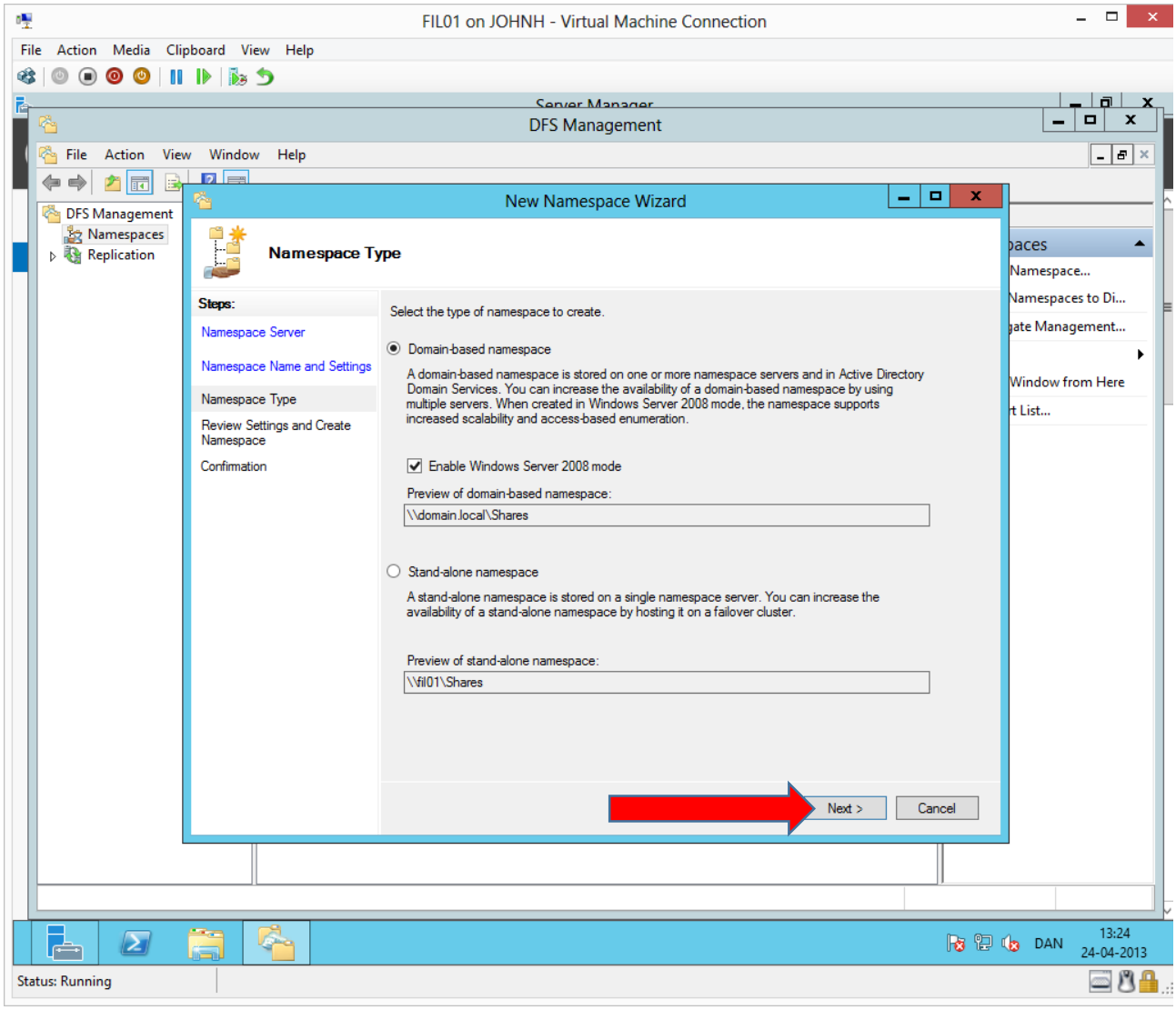

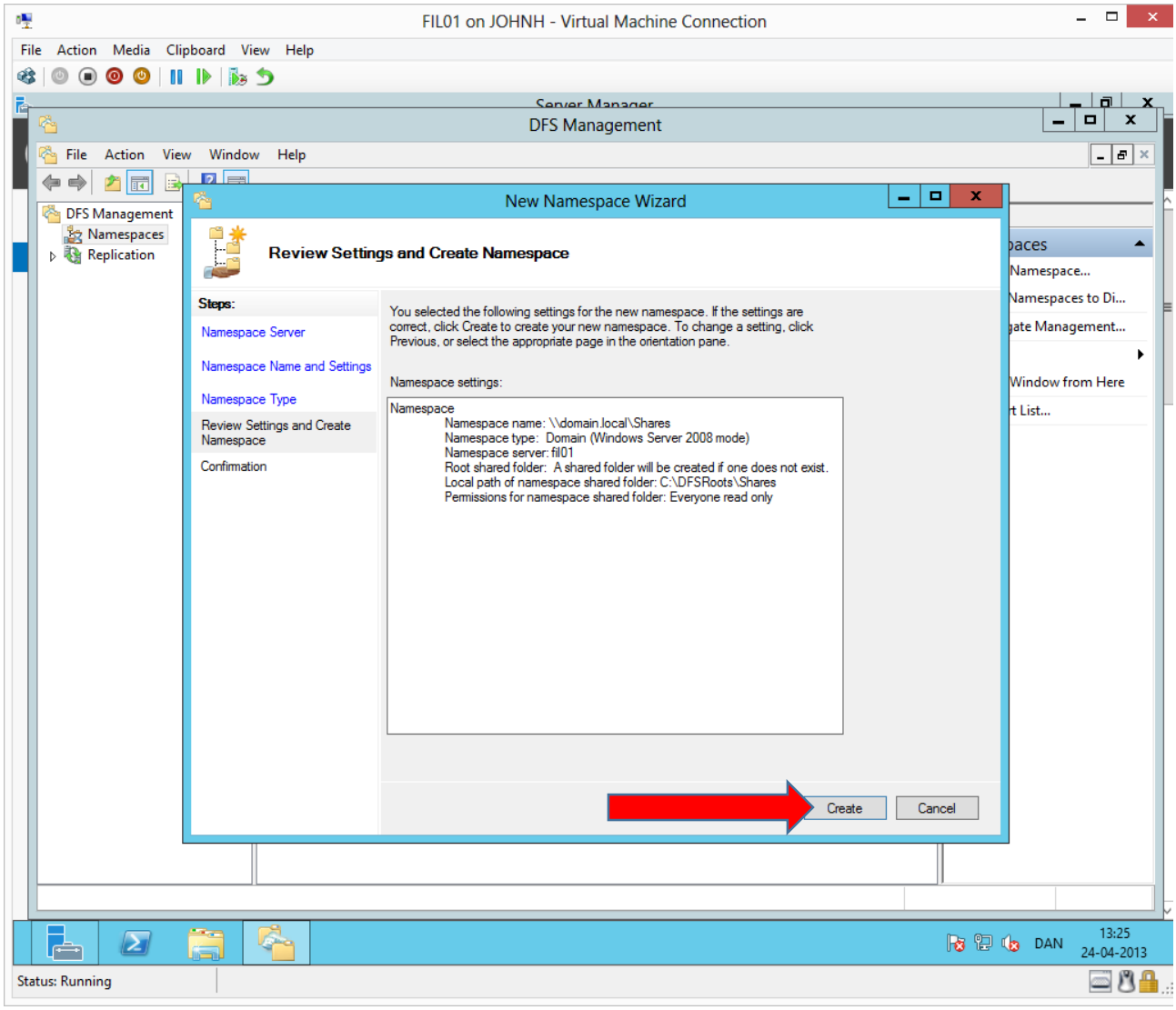

As we can see the DFS namespace is created as a share. In this share we must not create or change anything as it is administered automatically via DFS. It is a share, which collects other shares.

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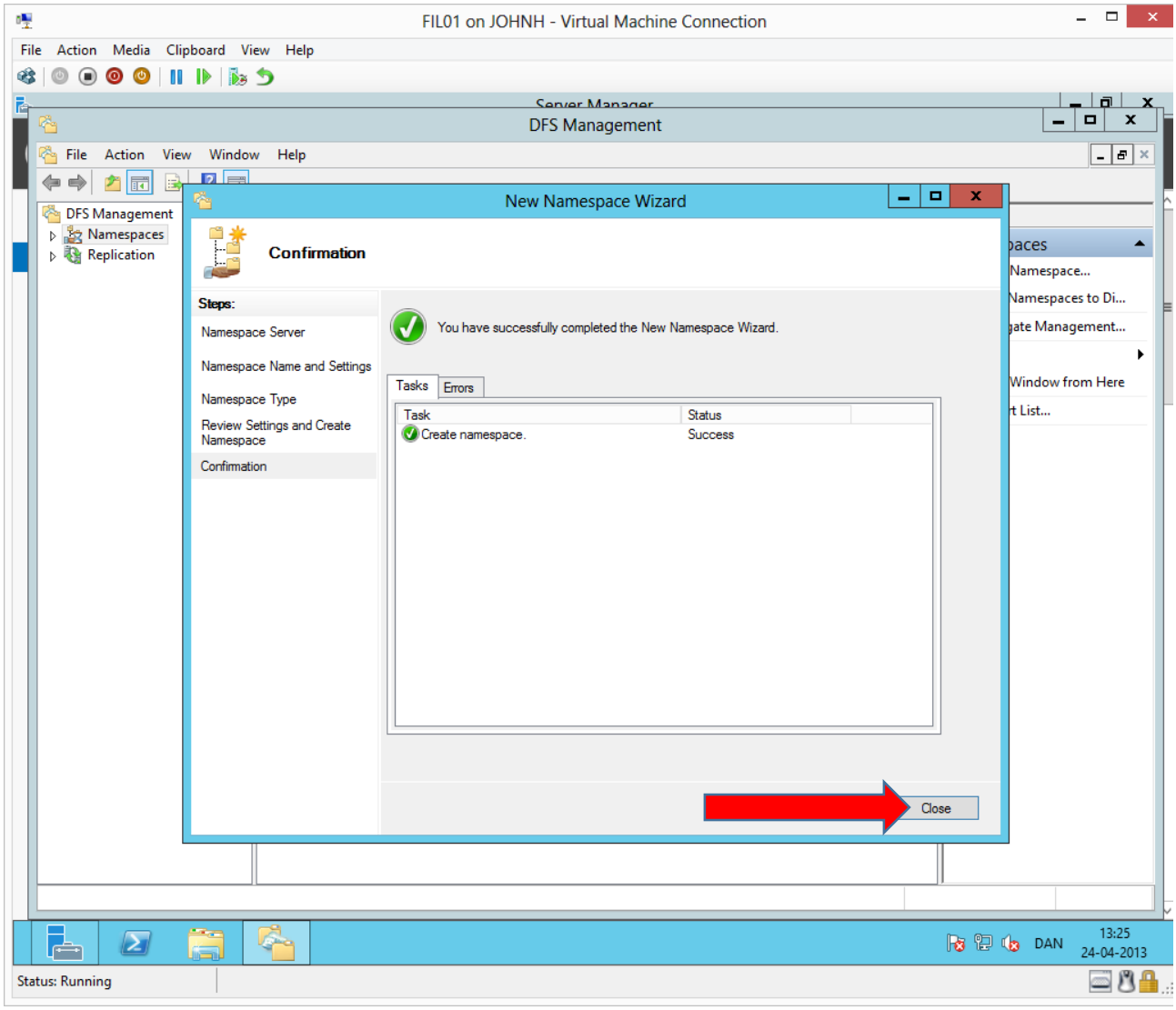
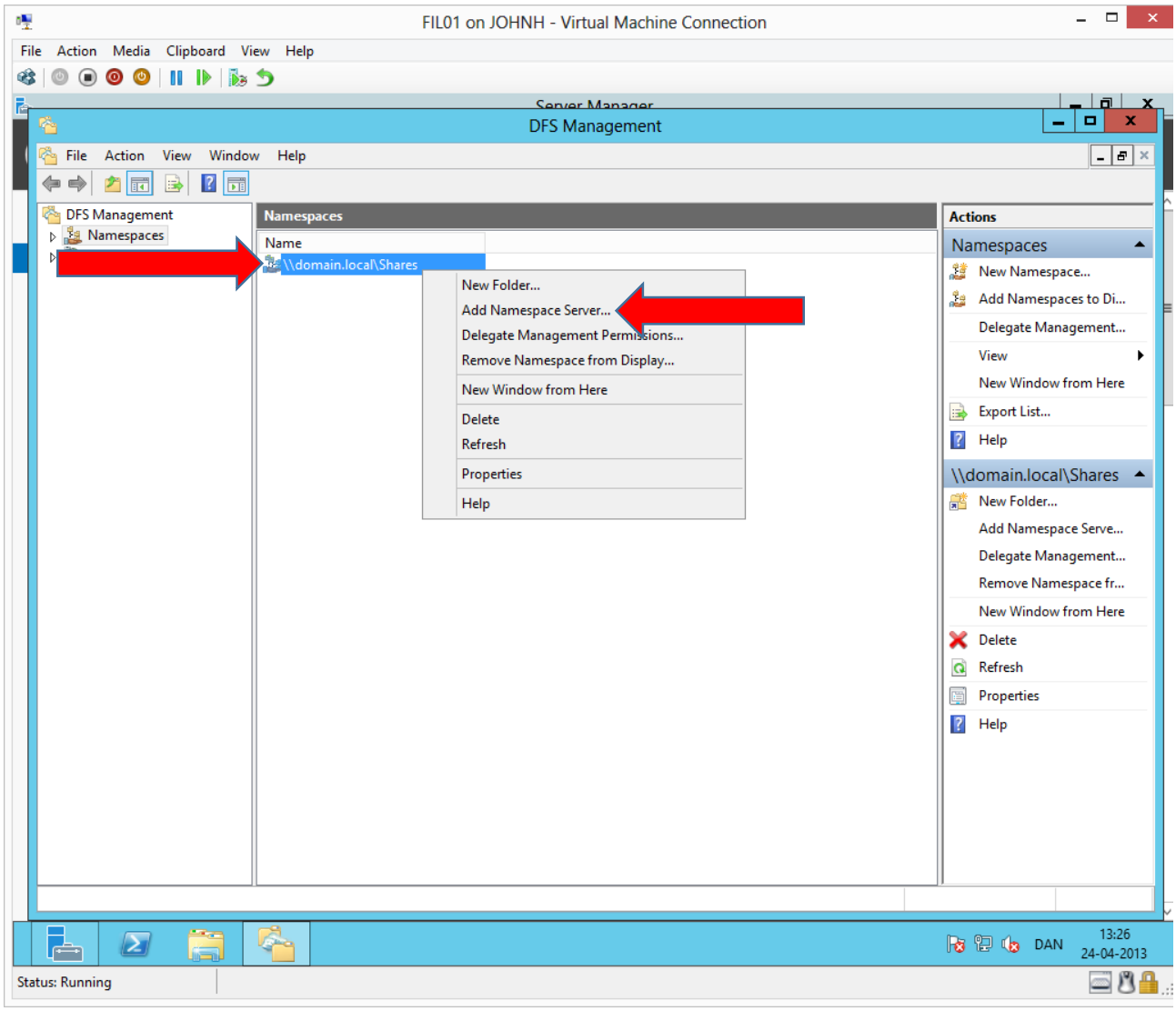


Tilføj namespace server



We will add Fil02 as a namespace server, making the namespace available if Fil01 crashes. Right click→**Add Namespace Server…**

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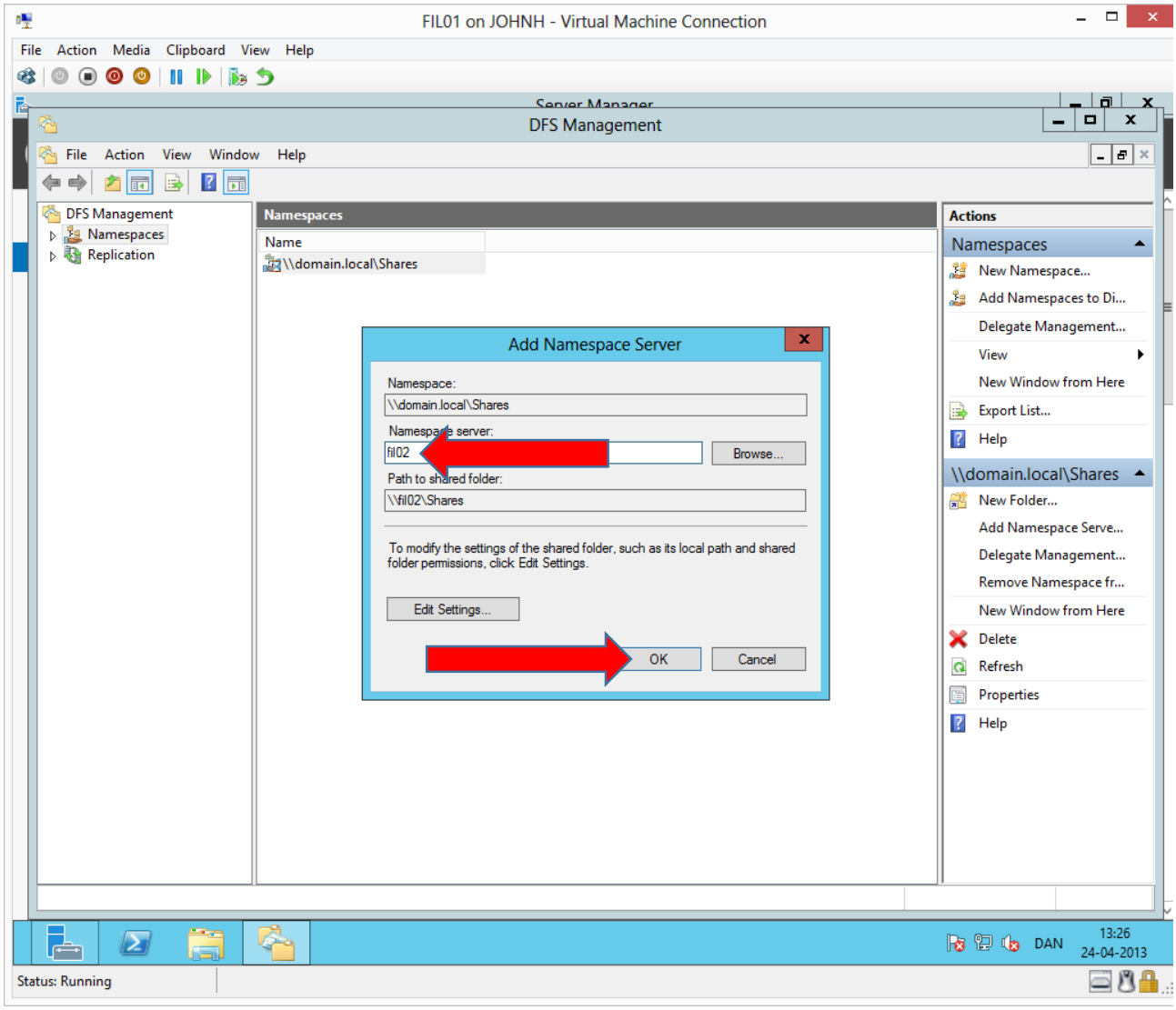
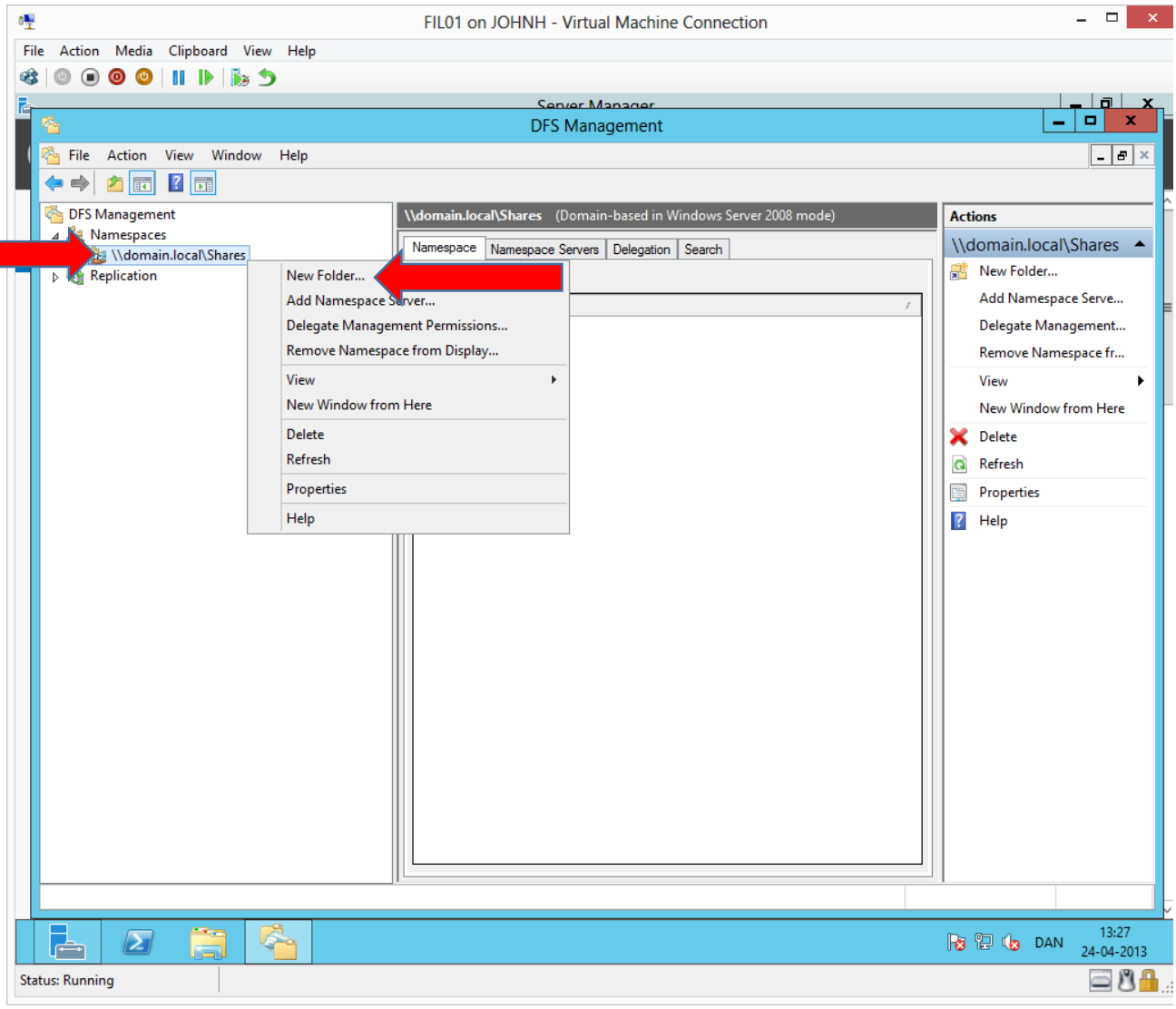
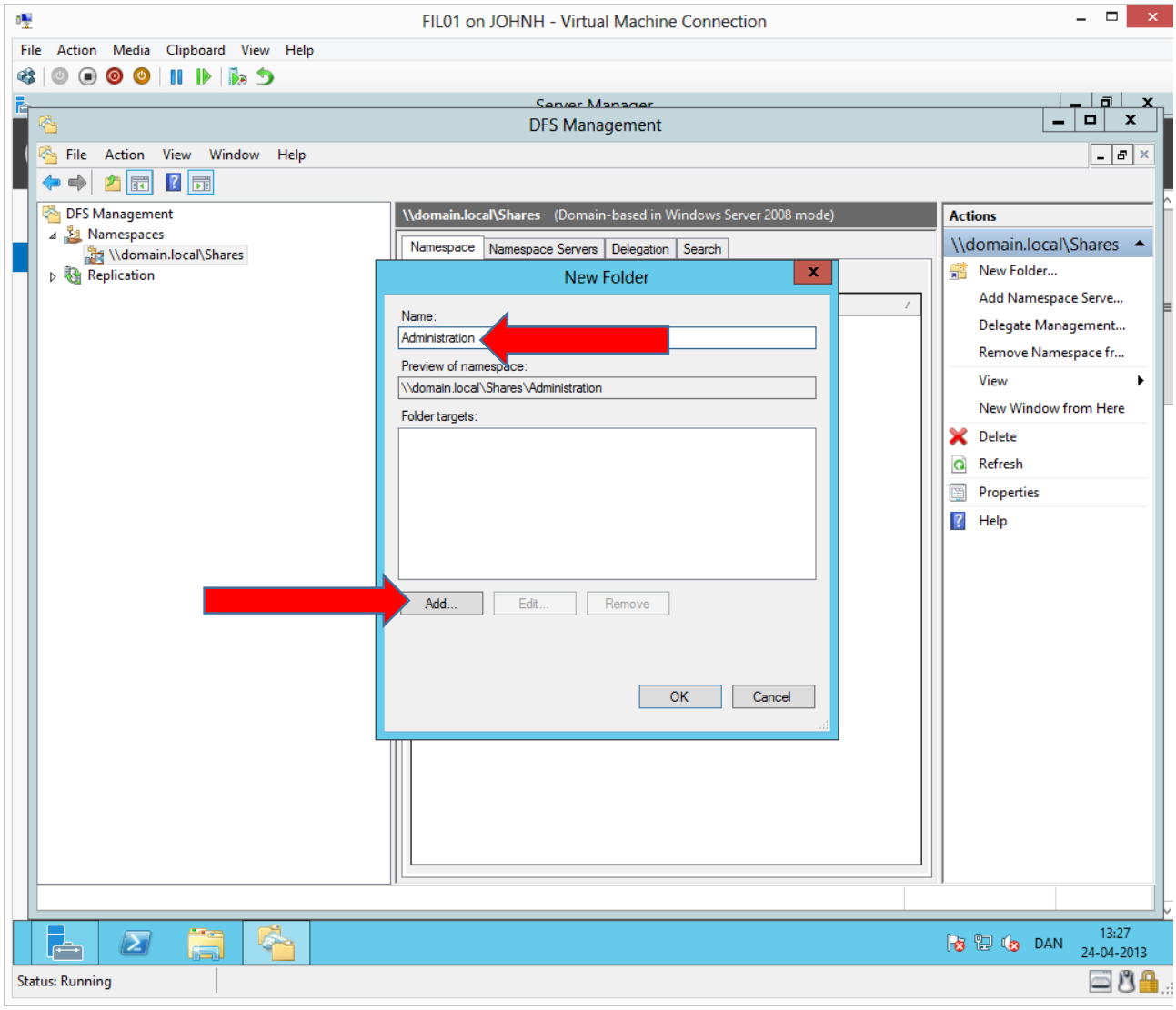


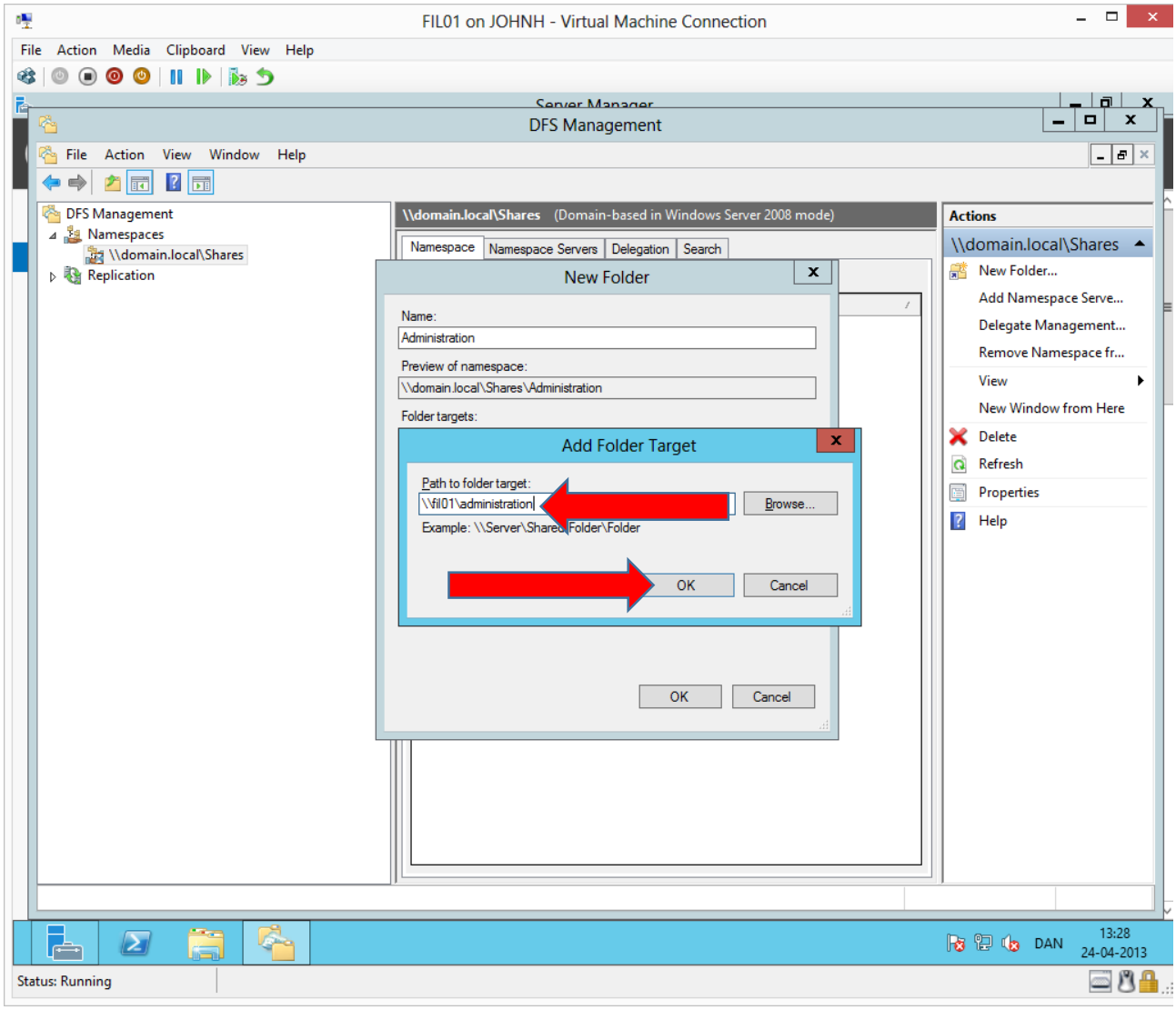
Configuring folder targets



Right click→**New Folder…**



We will create a DFS share for the Administration department. The share must be located on both Fil01 and Fil02, therefore both will be added as folder targets.



The share already exists on Fil01, we will just point at it.

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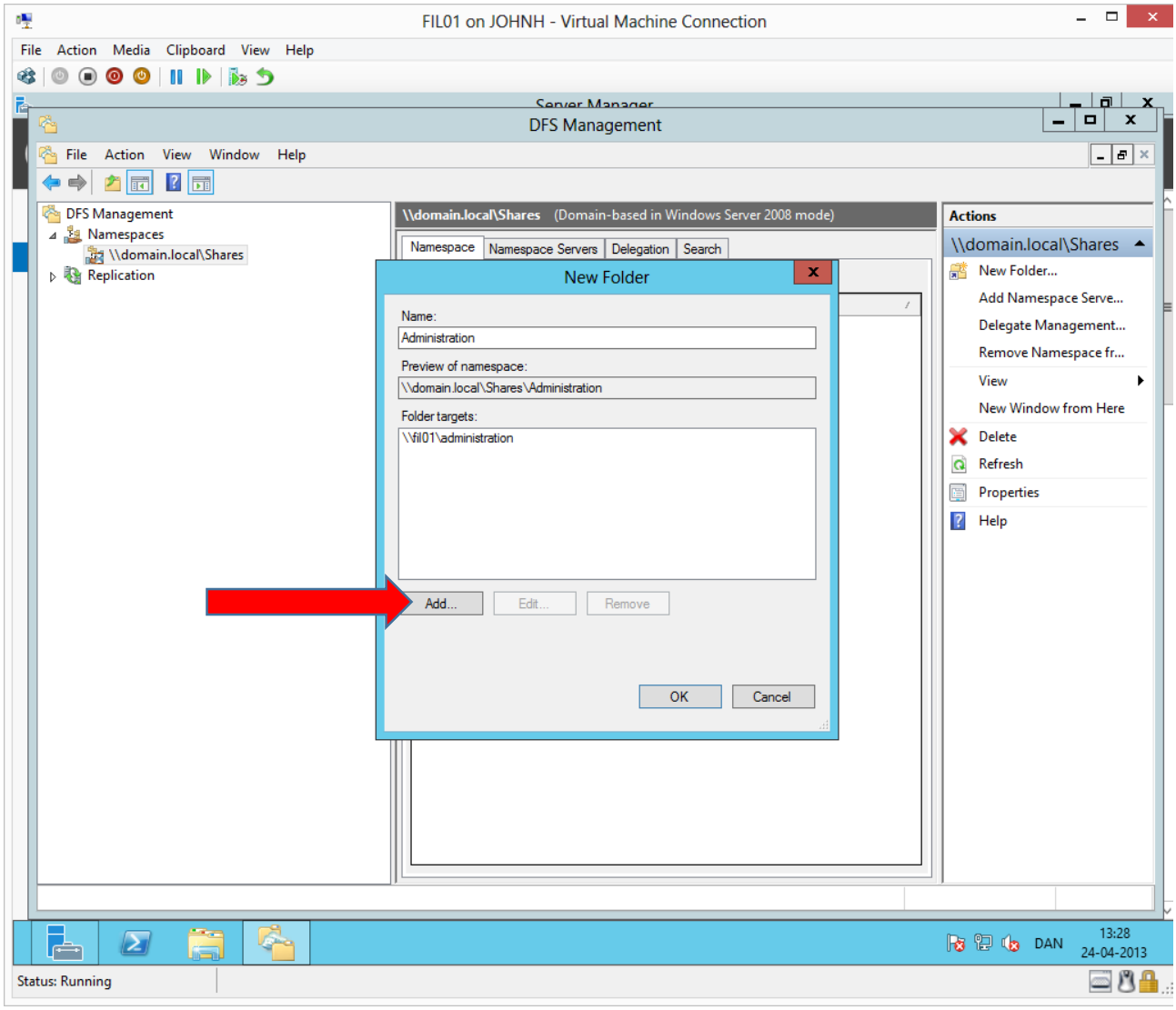
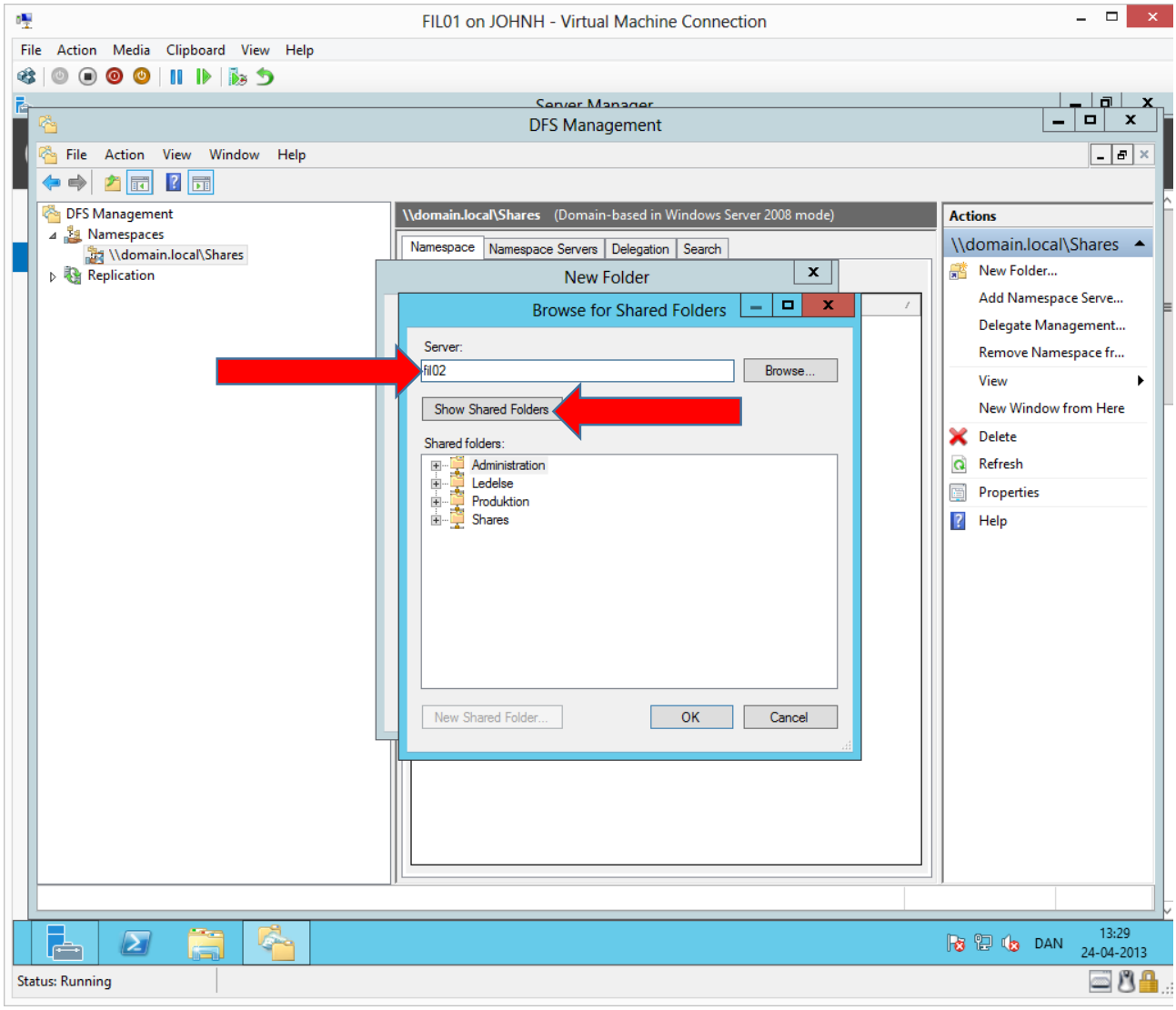
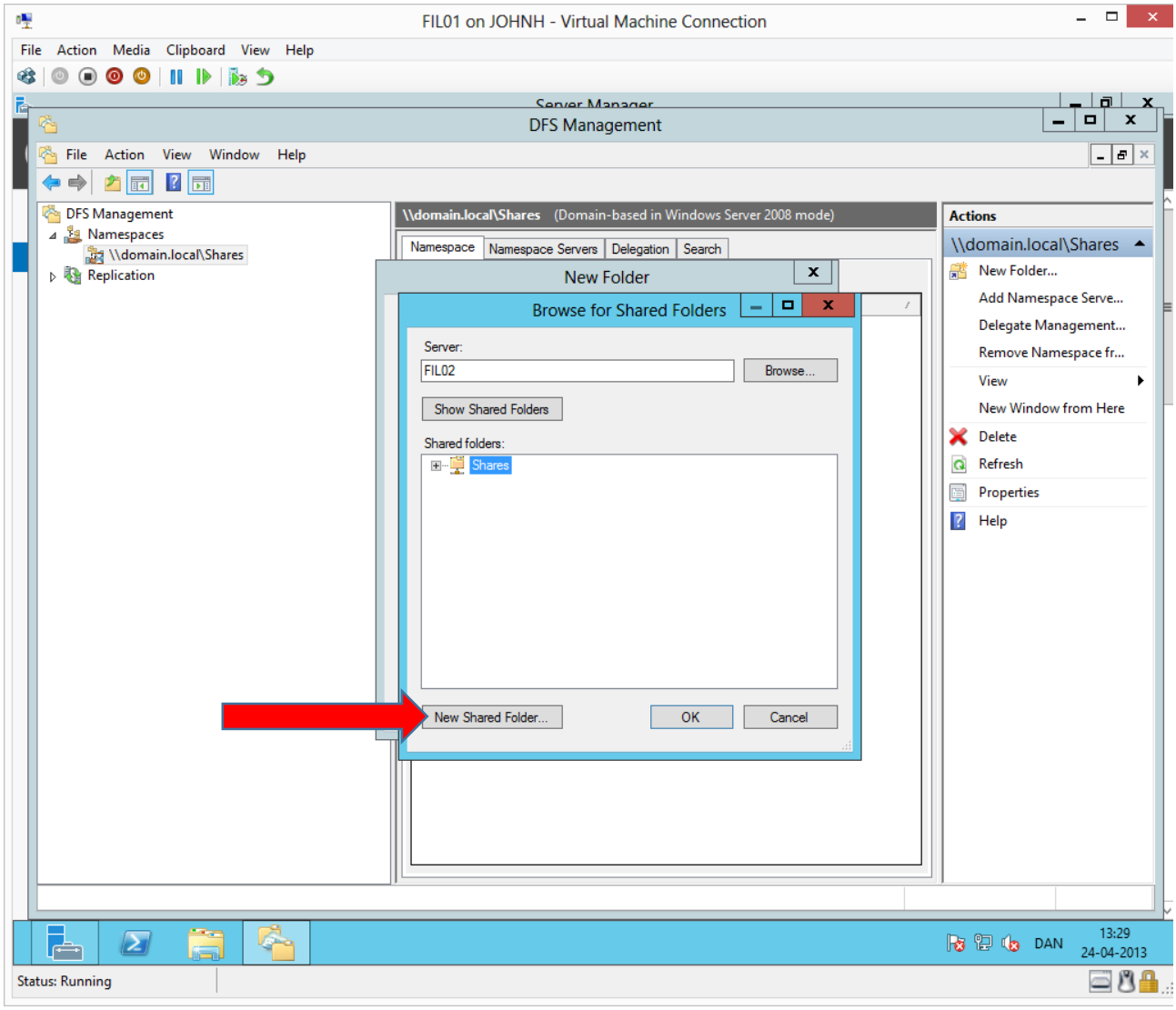
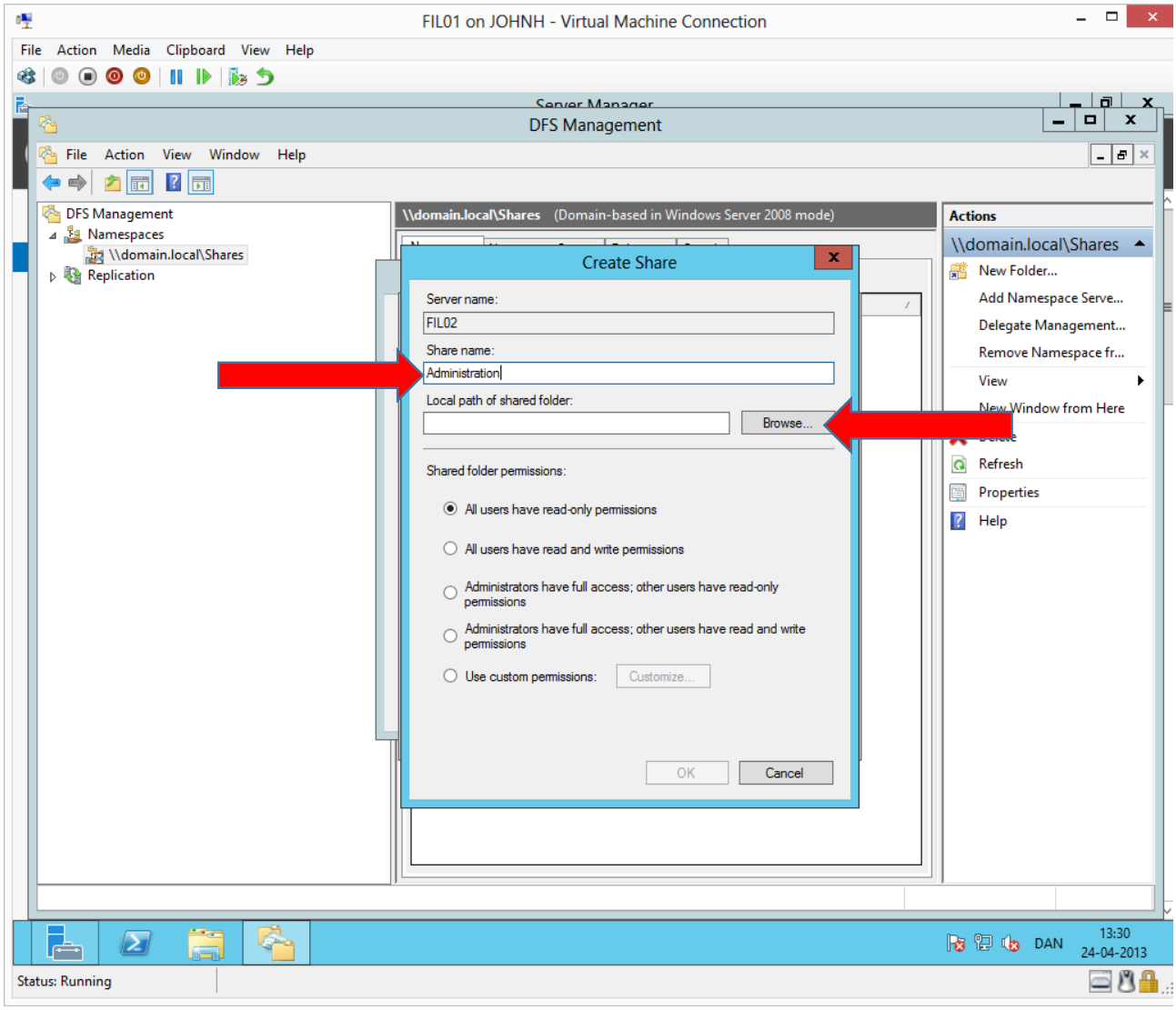




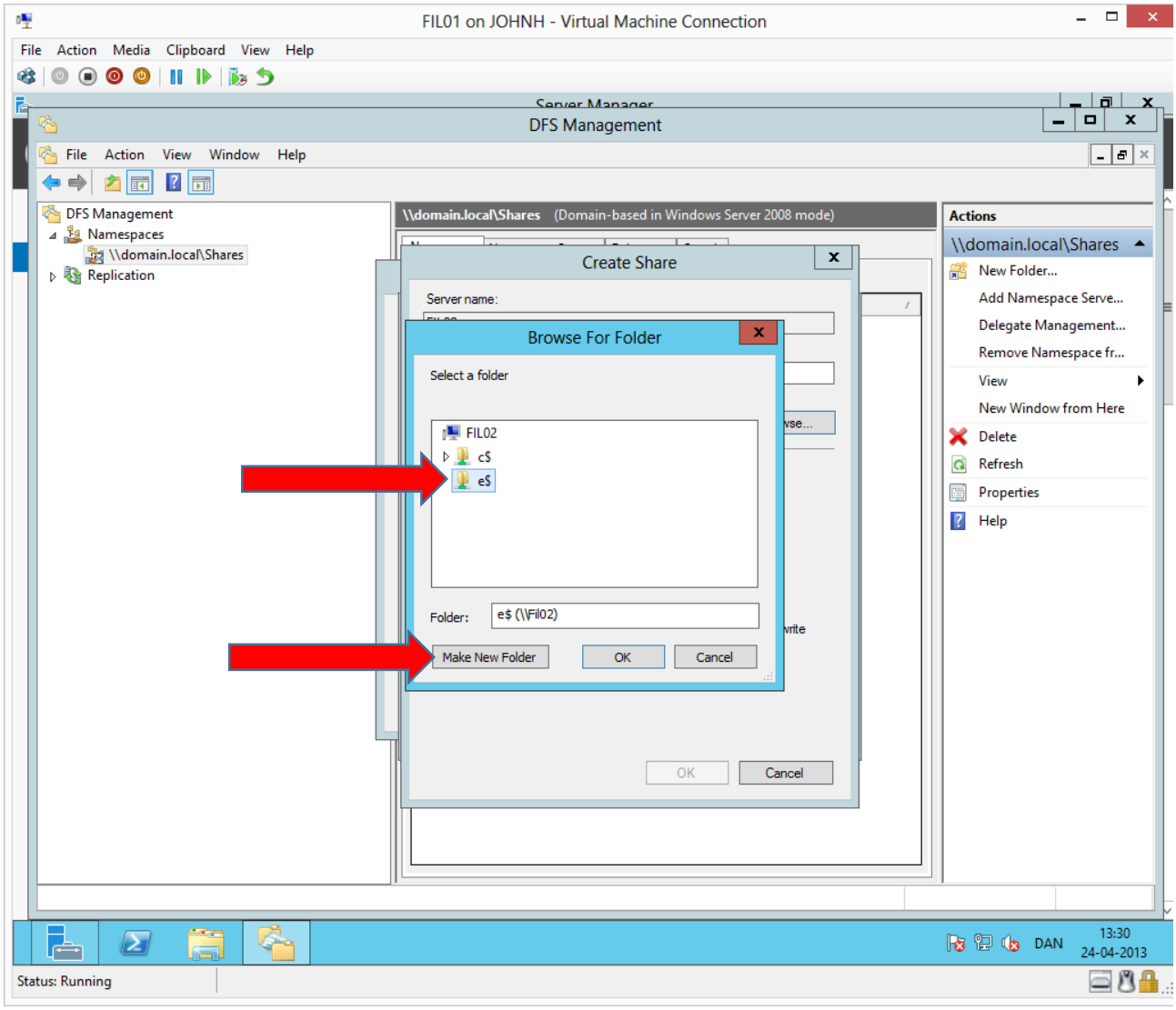
We will connect to Fil02 and look for existing shared folders.



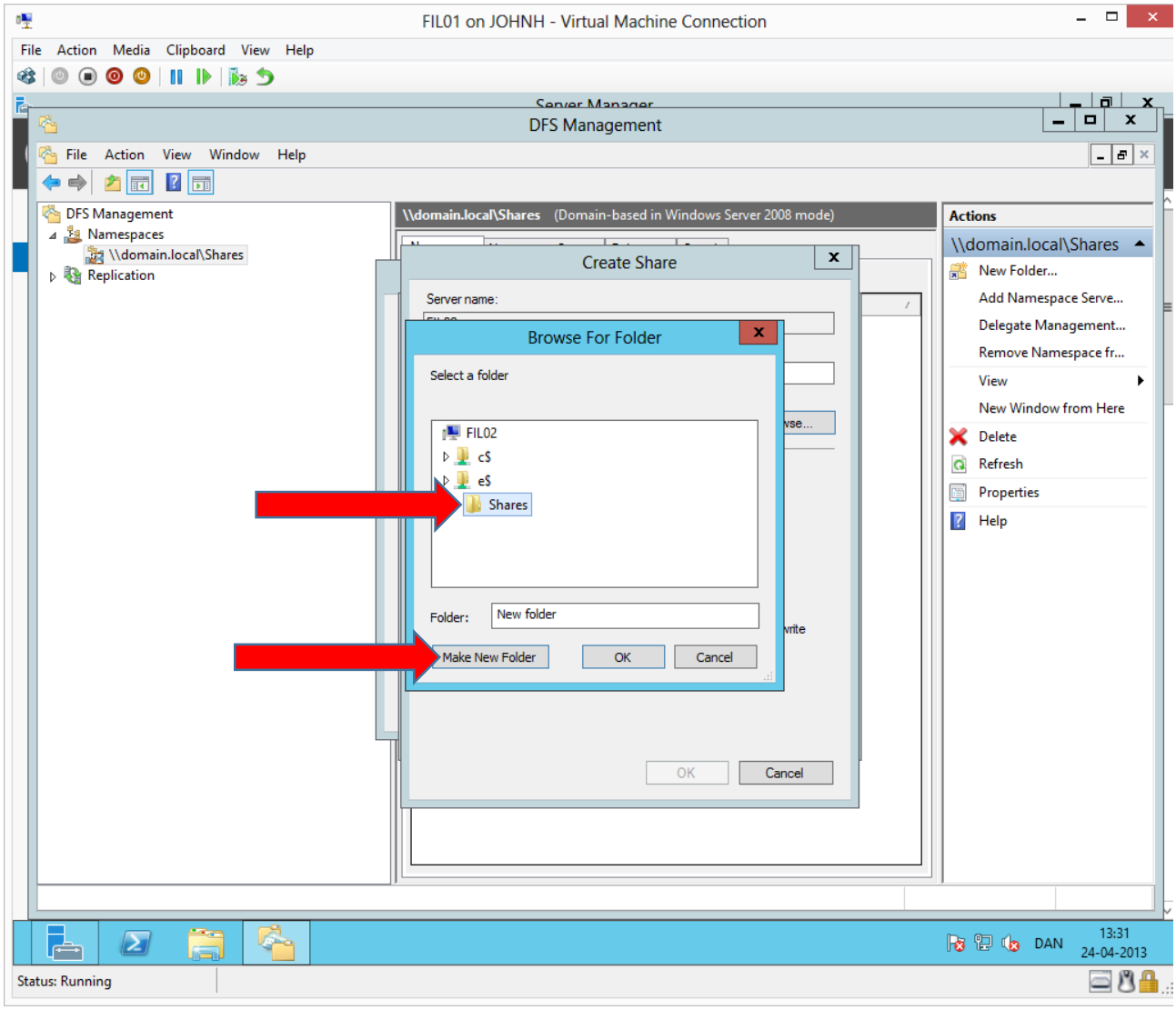
There is only one shared folder on Fil02, the recently created DFS namespace, that we named Shares. We must also create the shared folders of each department. This can be done the same way as done in a previous task, or you can do it from the DFS wizard. Here we will do it from the wizard.

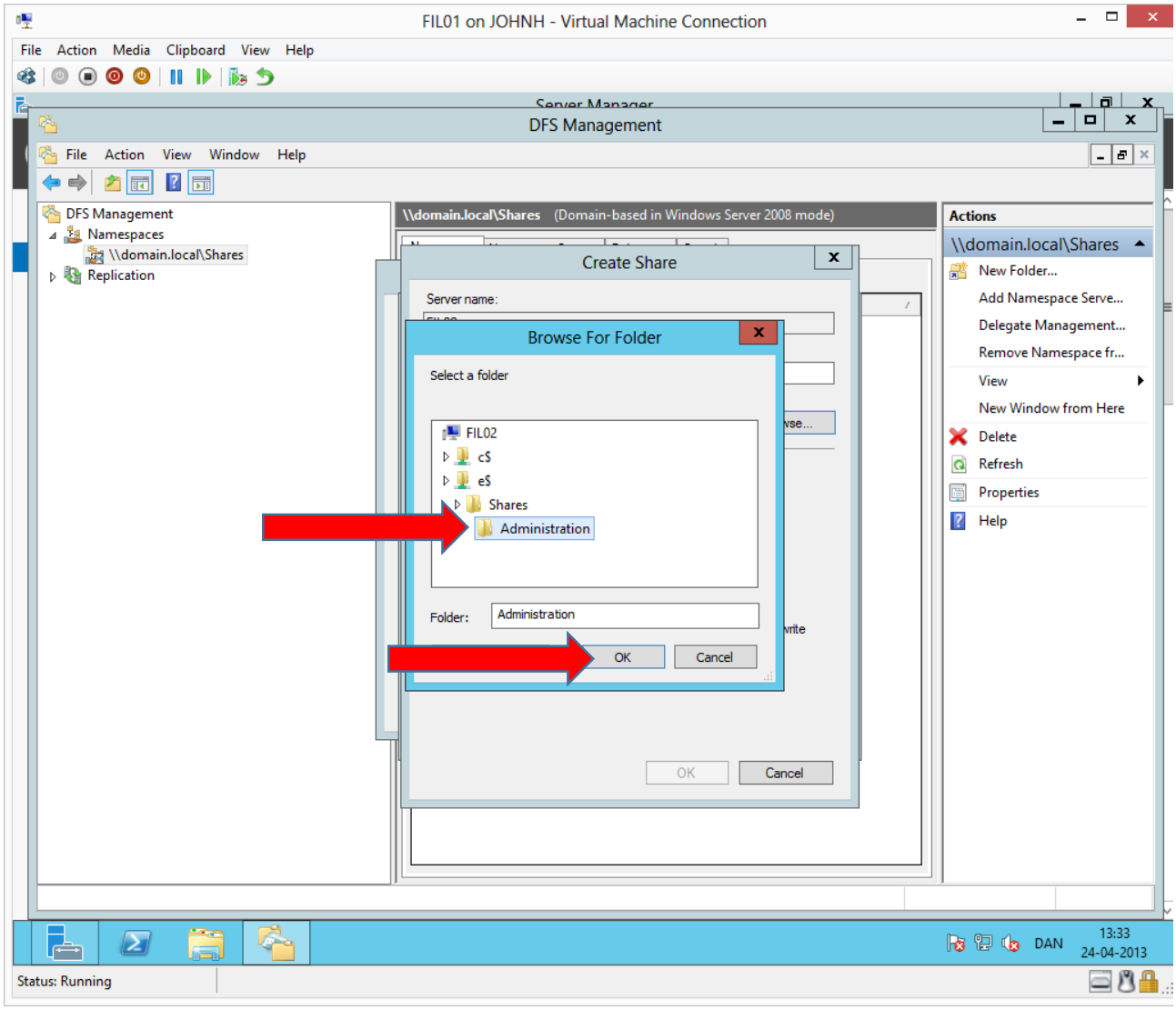


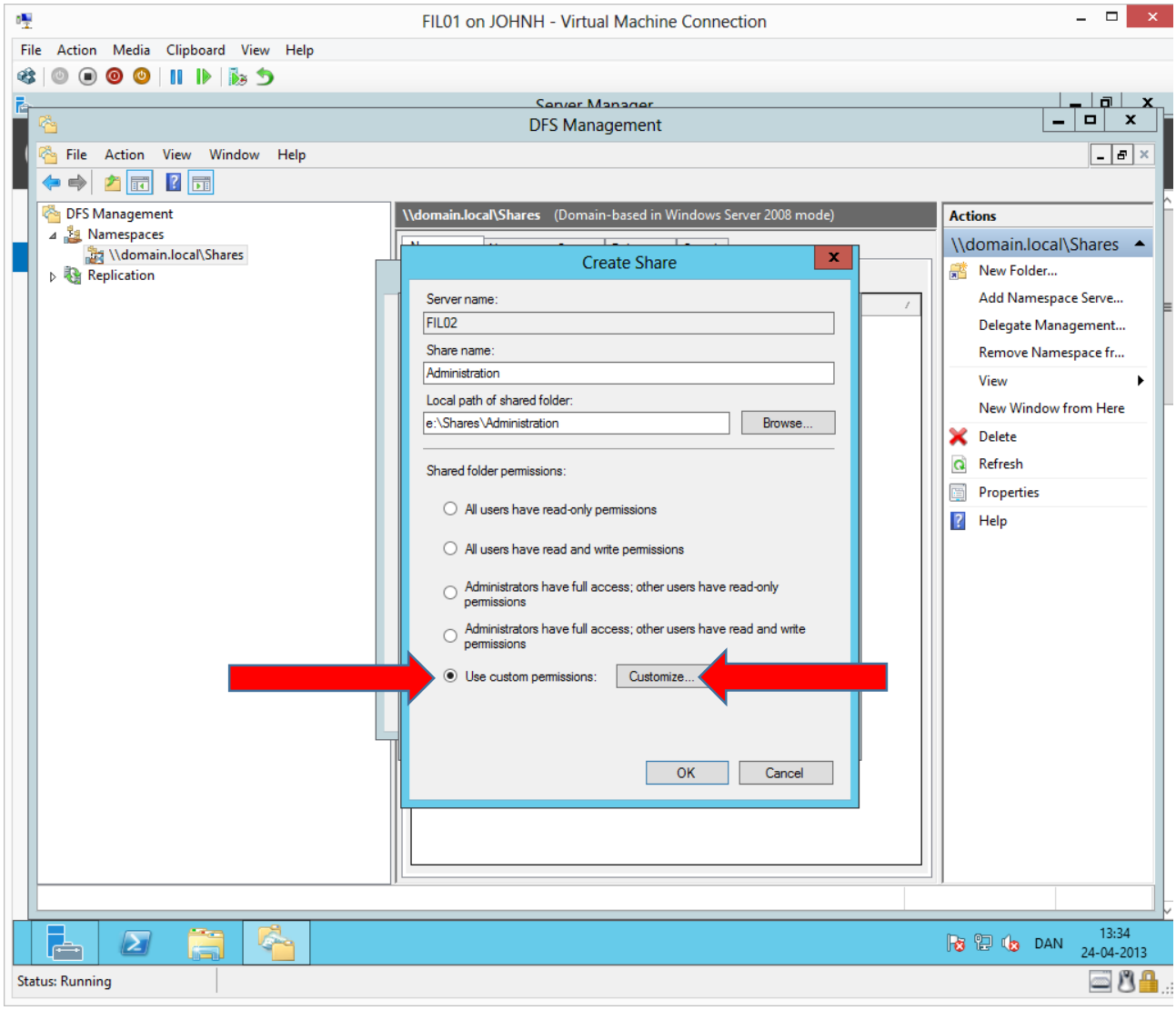
Firstly, we will make the Administration share.



We will make the same structure as on Fil01.


FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
DFS Management
File Action View Window Help
DFS Management
Namespaces
\\domain.local\Shares
Replication
\\domain.local\Shares (Domain-based in Windows Server 2008 mode)
Actions
\\domain.local\Shares
New Folder...
Add Namespace Serve...
Delegate Management...
Remove Namespace fr...
View
New Window from Here
Delete
Refresh
Properties
Help
Create Share
Server name:
Browse For Folder
Select a folder
FIL02
c$
e$
Shares
Folder:
New folder
Make New Folder
OK
Cancel
OK
Cancel
DAN
13:31
24-04-2013
Status: Running


FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
Server Manager
DFS Management
File Action View Window Help
DFS Management
Namespaces
\\domain.local\Shares
Replication
\\domain.local\Shares (Domain-based in Windows Server 2008 mode)
Actions
\\domain.local\Shares
New Folder...
Add Namespace Serve...
Delegate Management...
Remove Namespace fr...
View
New Window from Here
Delete
Refresh
Properties
Help
Create Share
Server name:
Browse For Folder
Select a folder
FIL02
c$
e$
Shares
Administration
Folder:
Administration
OK
Cancel
OK
Cancel
DAN
13:33
24-04-2013
Status: Running



To make the share permissions the same as on Fil01, we need to click **Customize…**

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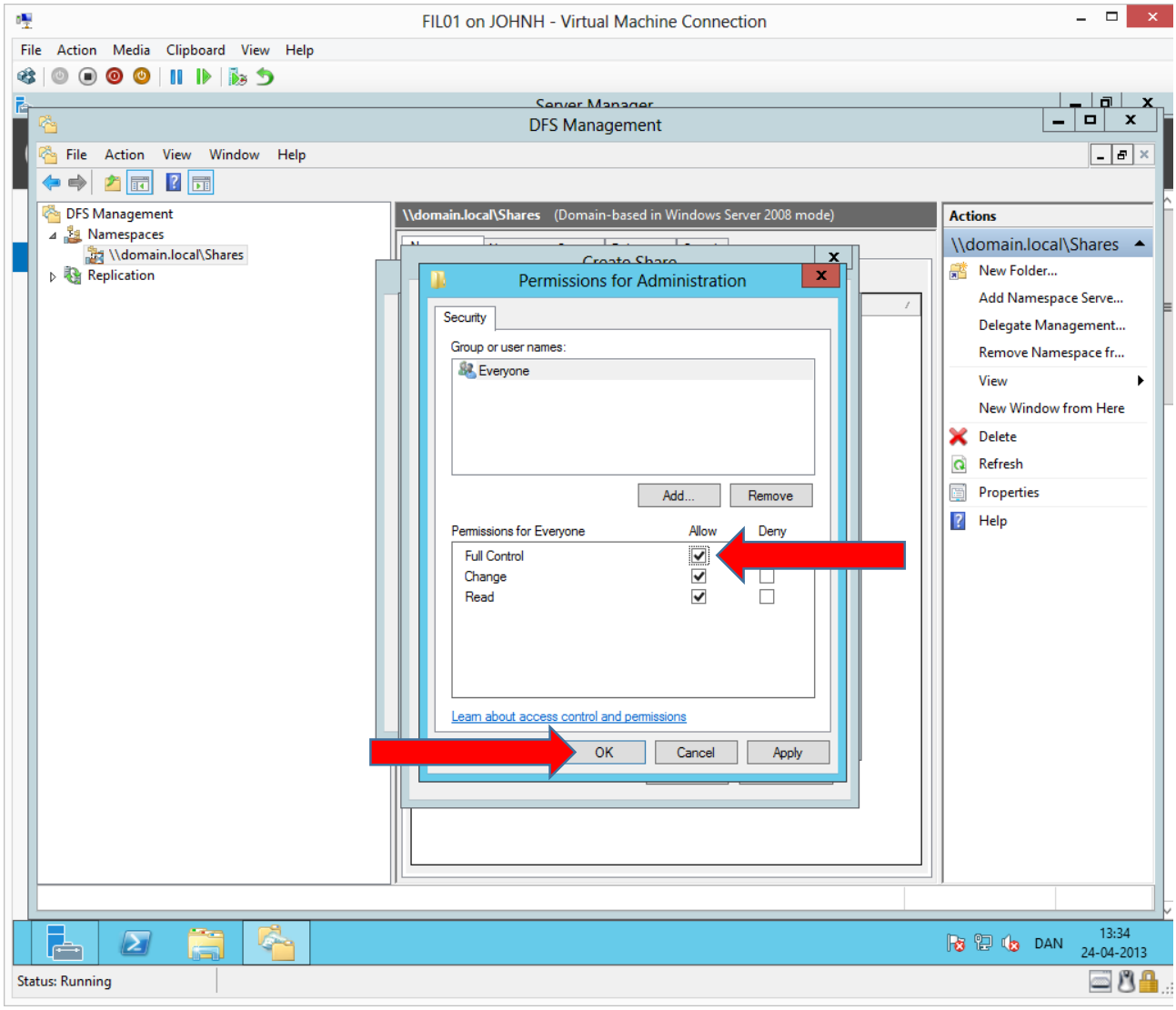
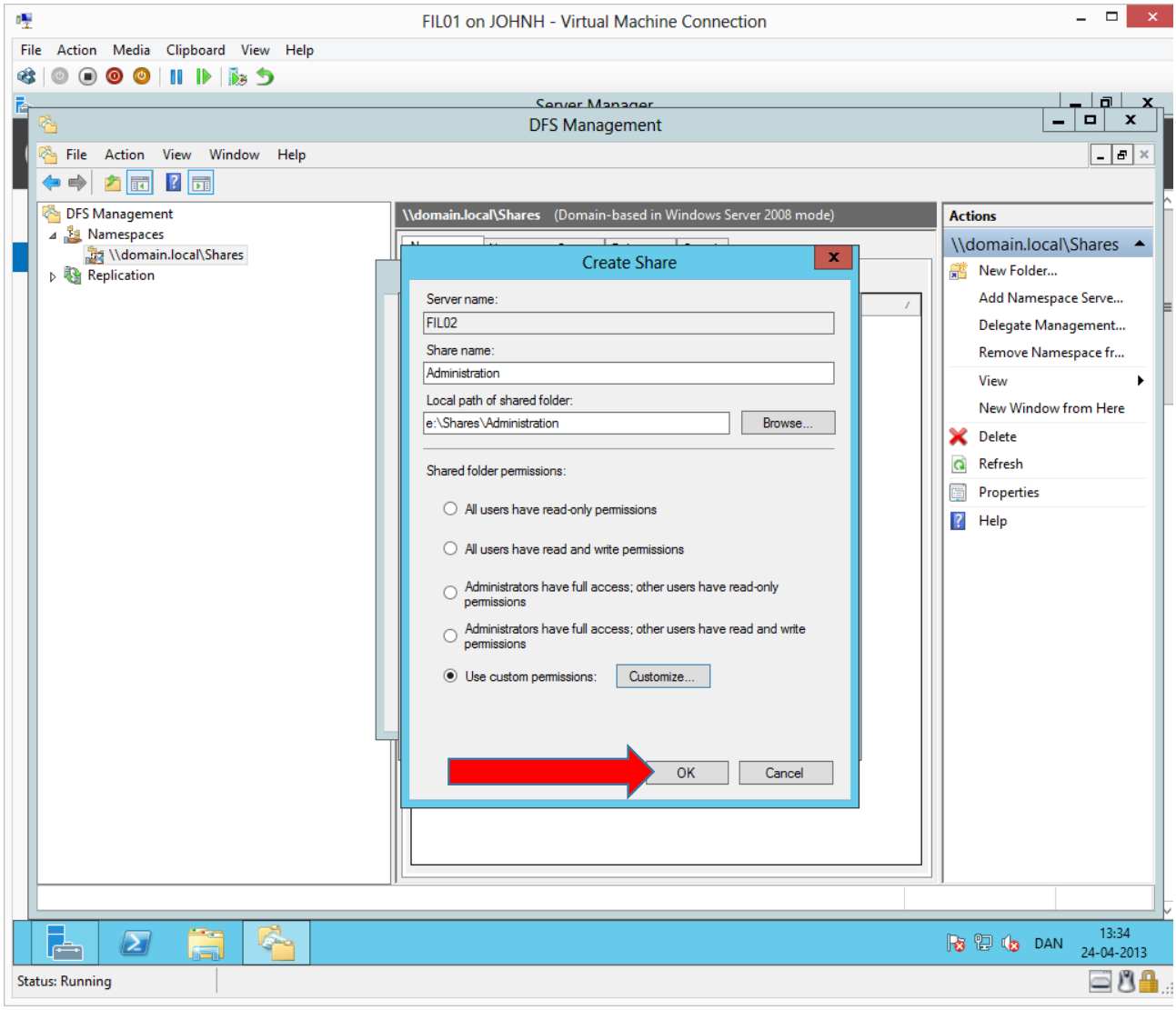
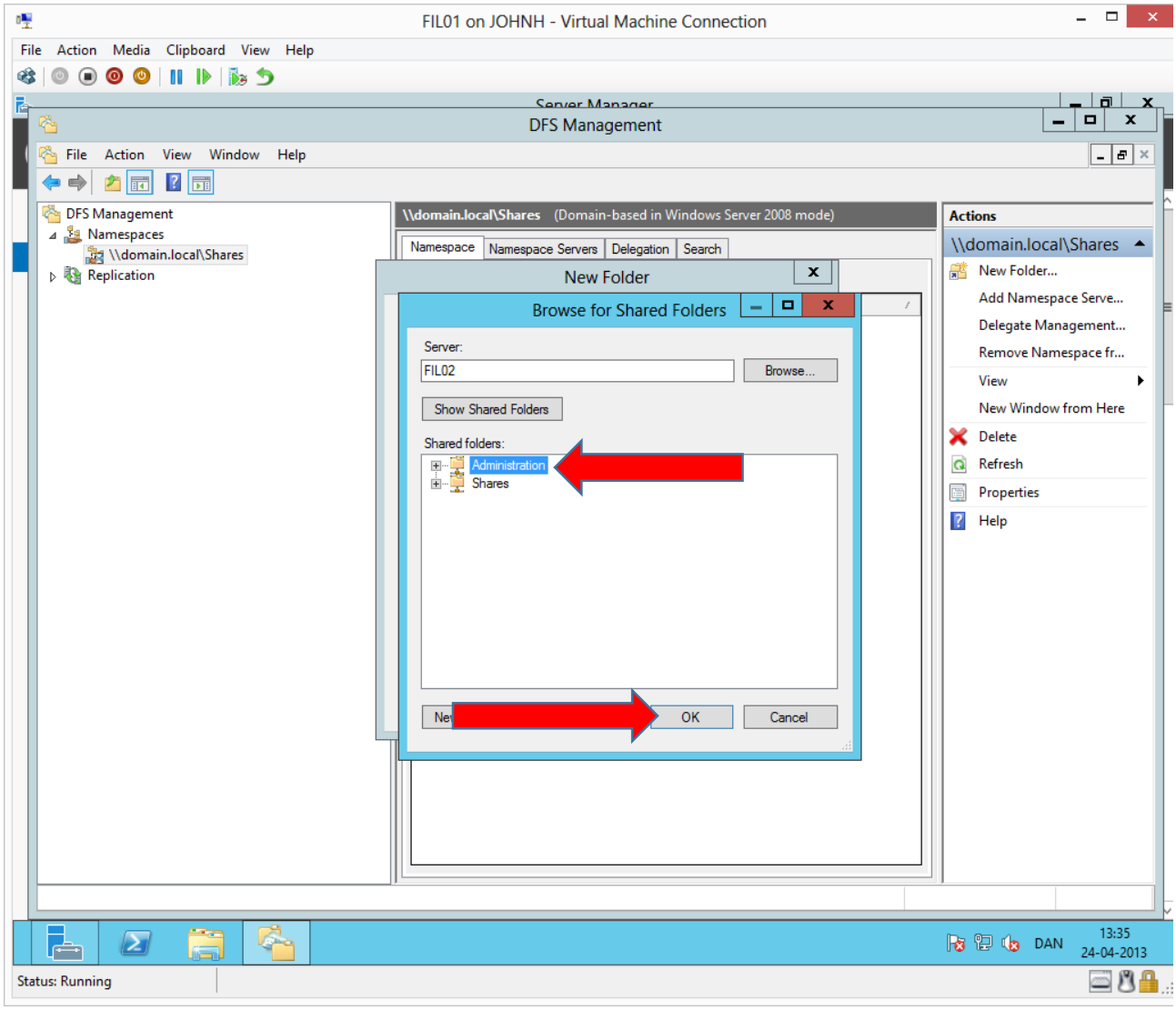
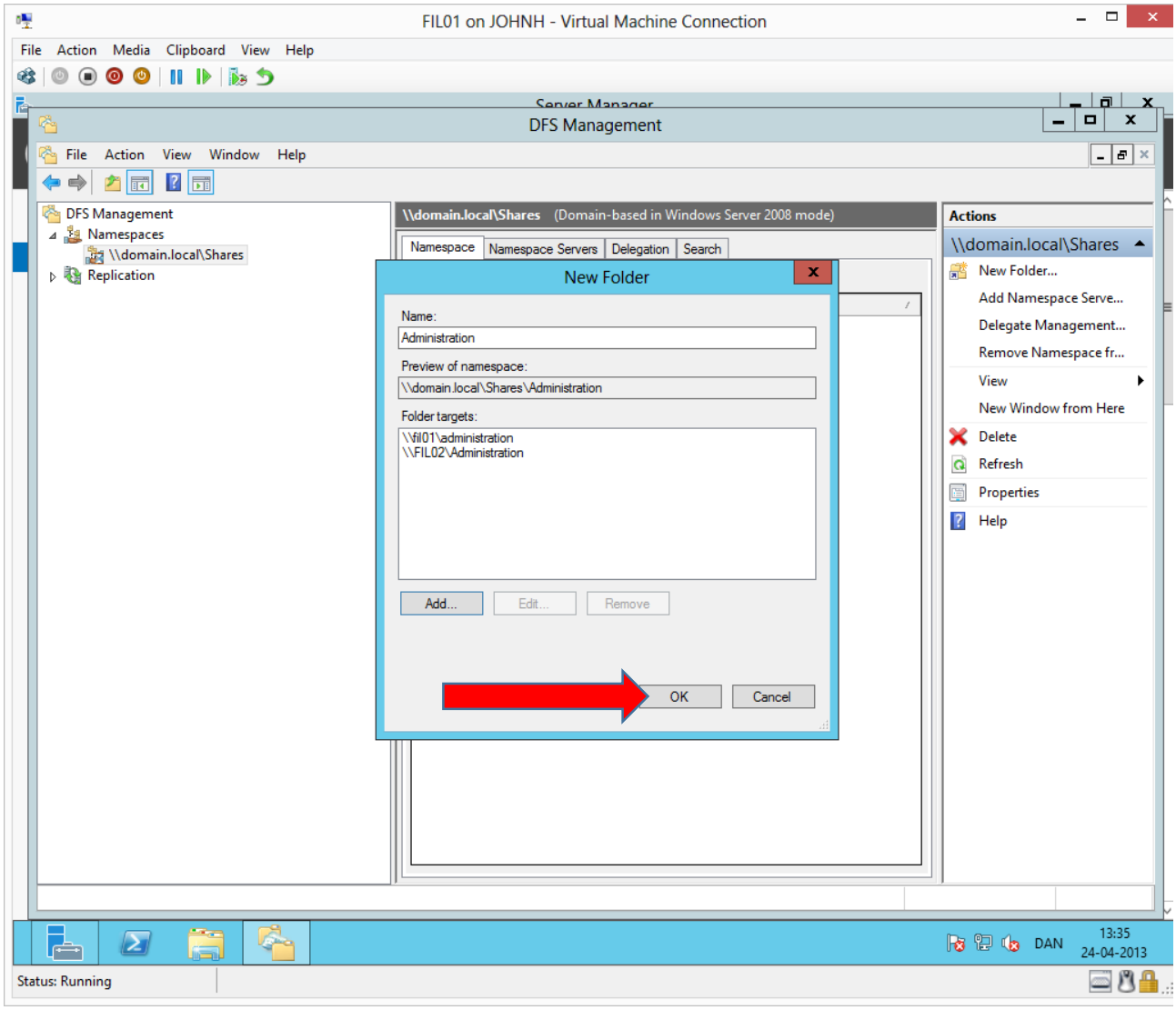



FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
Server Manager
DFS Management
File Action View Window Help
DFS Management
Namespaces
\\domain.local\Shares
Replication
\\domain.local\Shares (Domain-based in Windows Server 2008 mode)
Actions
\\domain.local\Shares
New Folder...
Add Namespace Serve...
Delegate Management...
Remove Namespace fr...
View
New Window from Here
Delete
Refresh
Properties
Help
Create Share
Server name:
FIL02
Share name:
Administration
Local path of shared folder:
e:\Shares\Administration
Browse...
Shared folder permissions:
All users have read-only permissions
All users have read and write permissions
Administrators have full access; other users have read-only permissions
Administrators have full access; other users have read and write permissions
Use custom permissions:
Customize...
OK
Cancel
DAN
13:34
24-04-2013
Status: Running

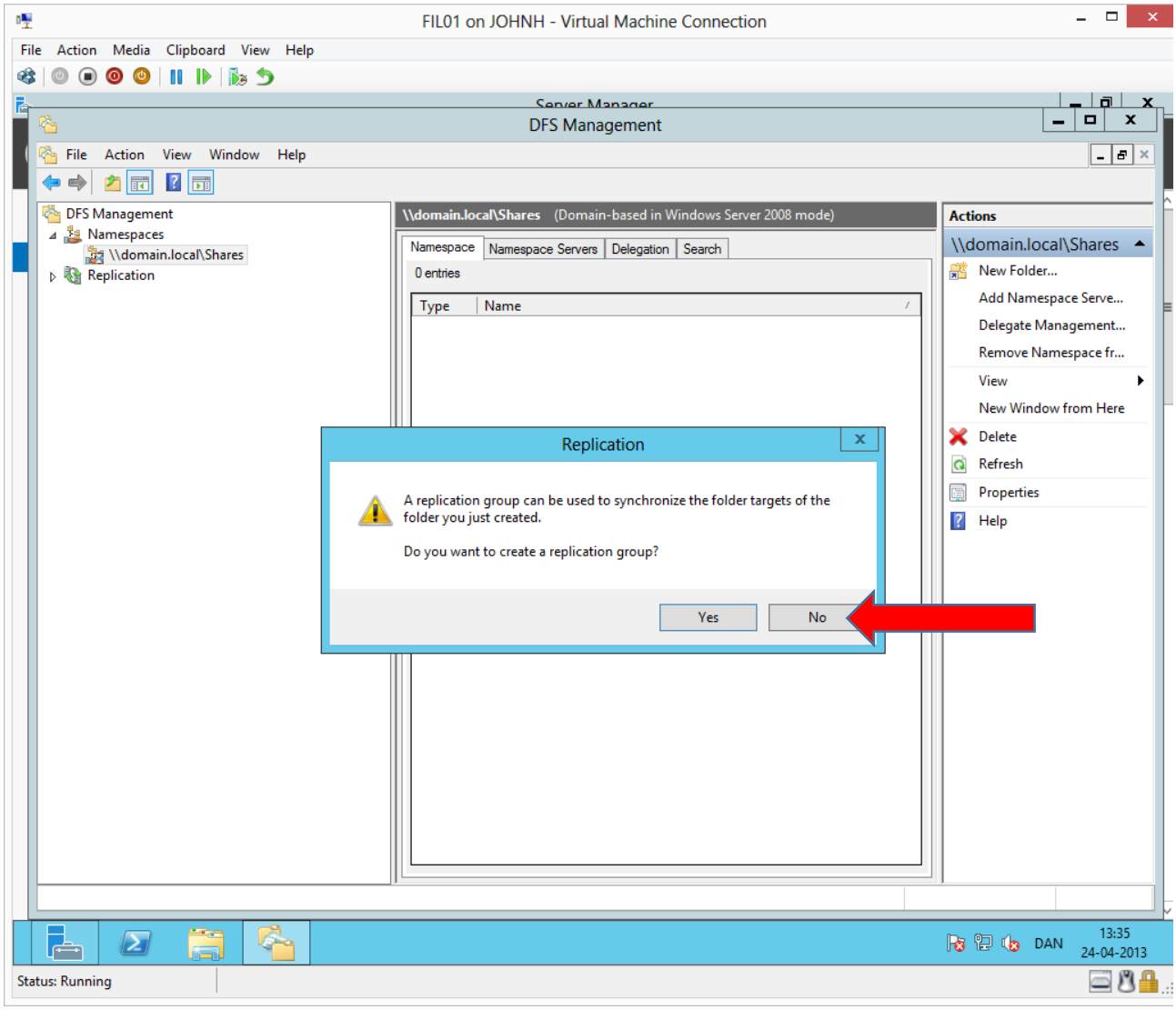


Now the administration share has been created on Fil02 with the same structure and share permissions as on Fil01. Click **OK** twice.

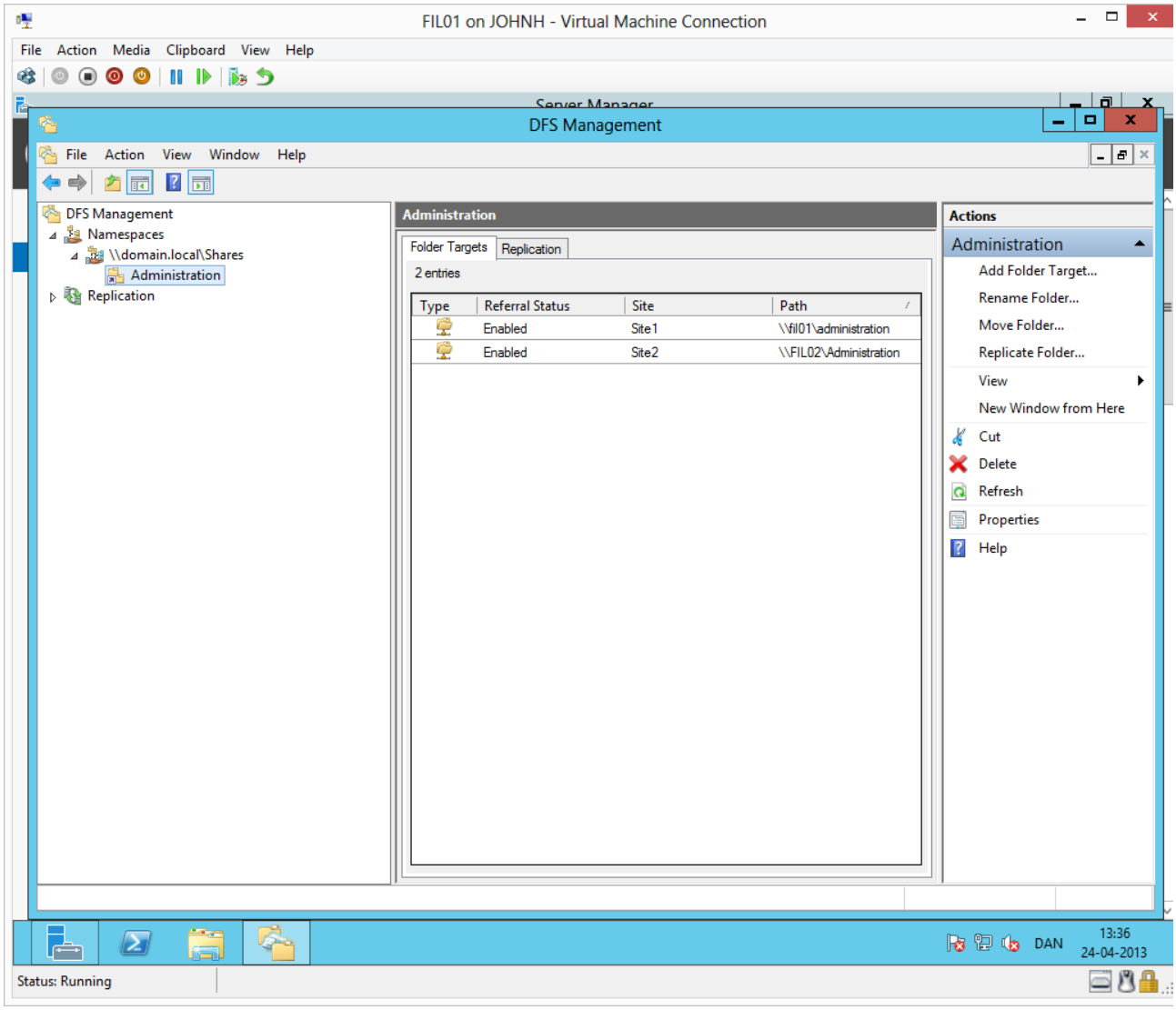


Here we can see the DFS share Administration has two folder targets: One on each fileserver in the two sites.

If a client connects to \\domain.local\shares\administration, the client will automatically be redirected to the fileserver in the client's local site, using service localization.

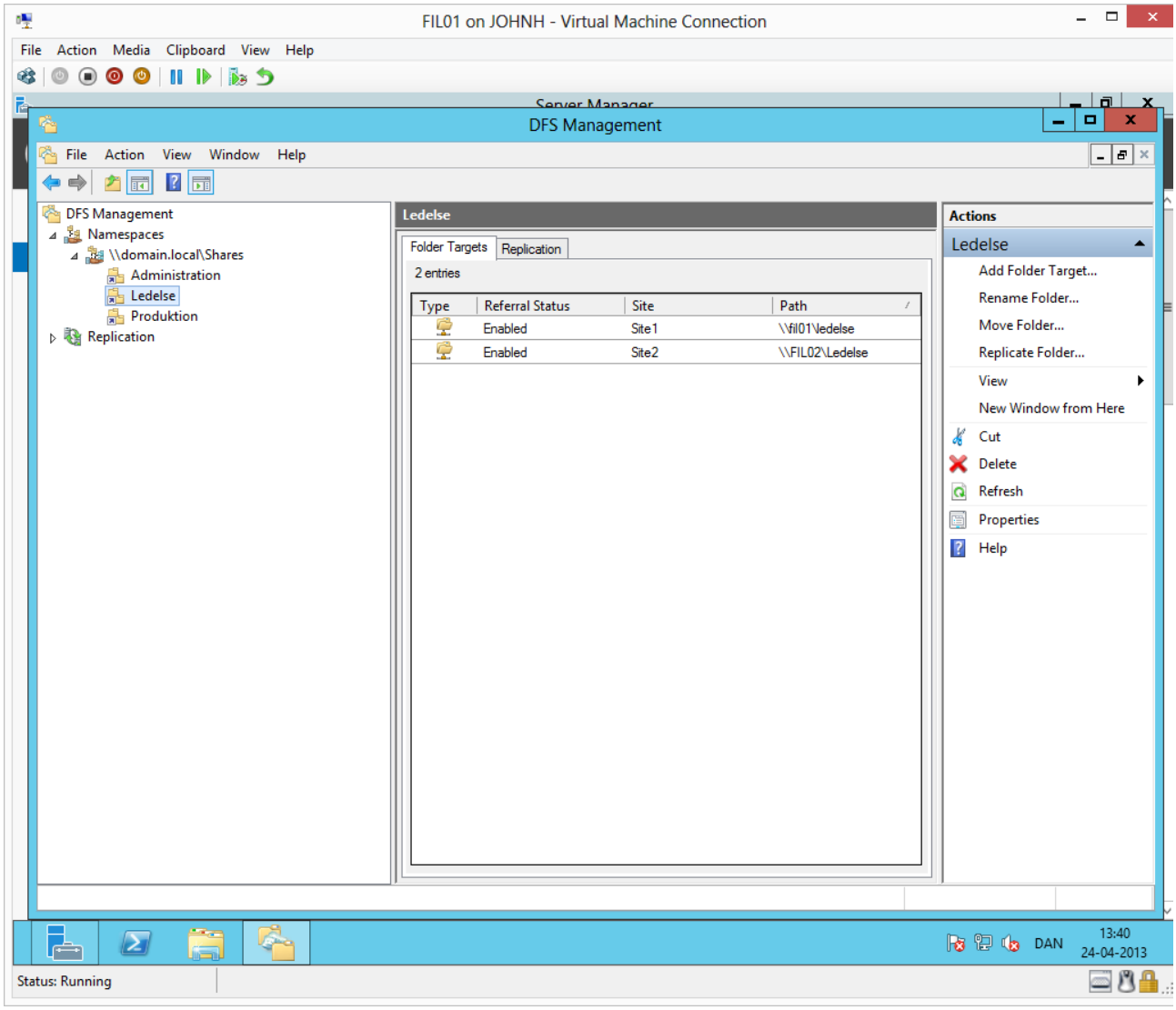


We will make a common replication group afterwards.

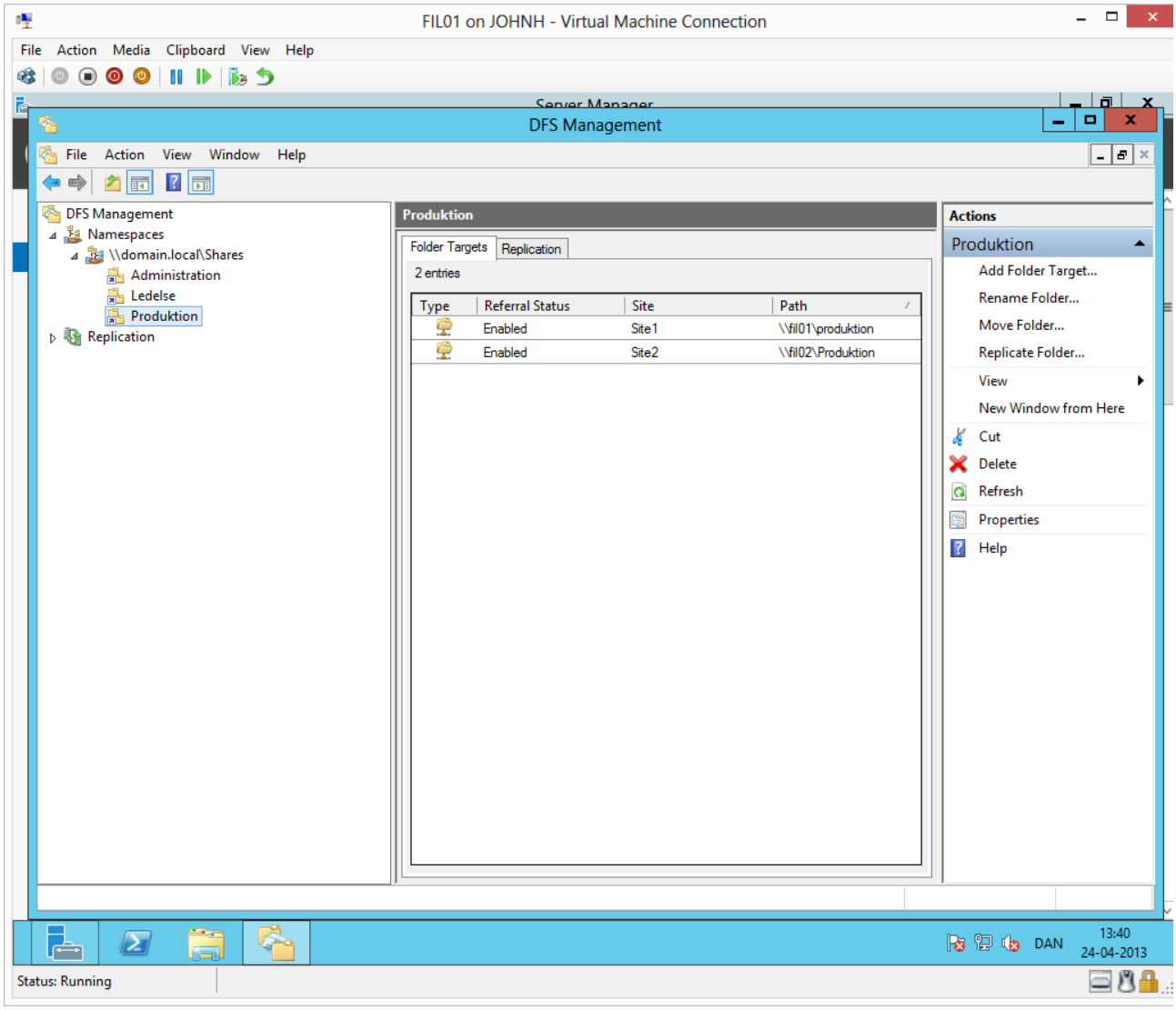


Here we can see the correct configuration of the DFS folder administration.

In the same way, create the two left DFS folders Ledelse (Management) and Produktion (Production) and their folder targets.



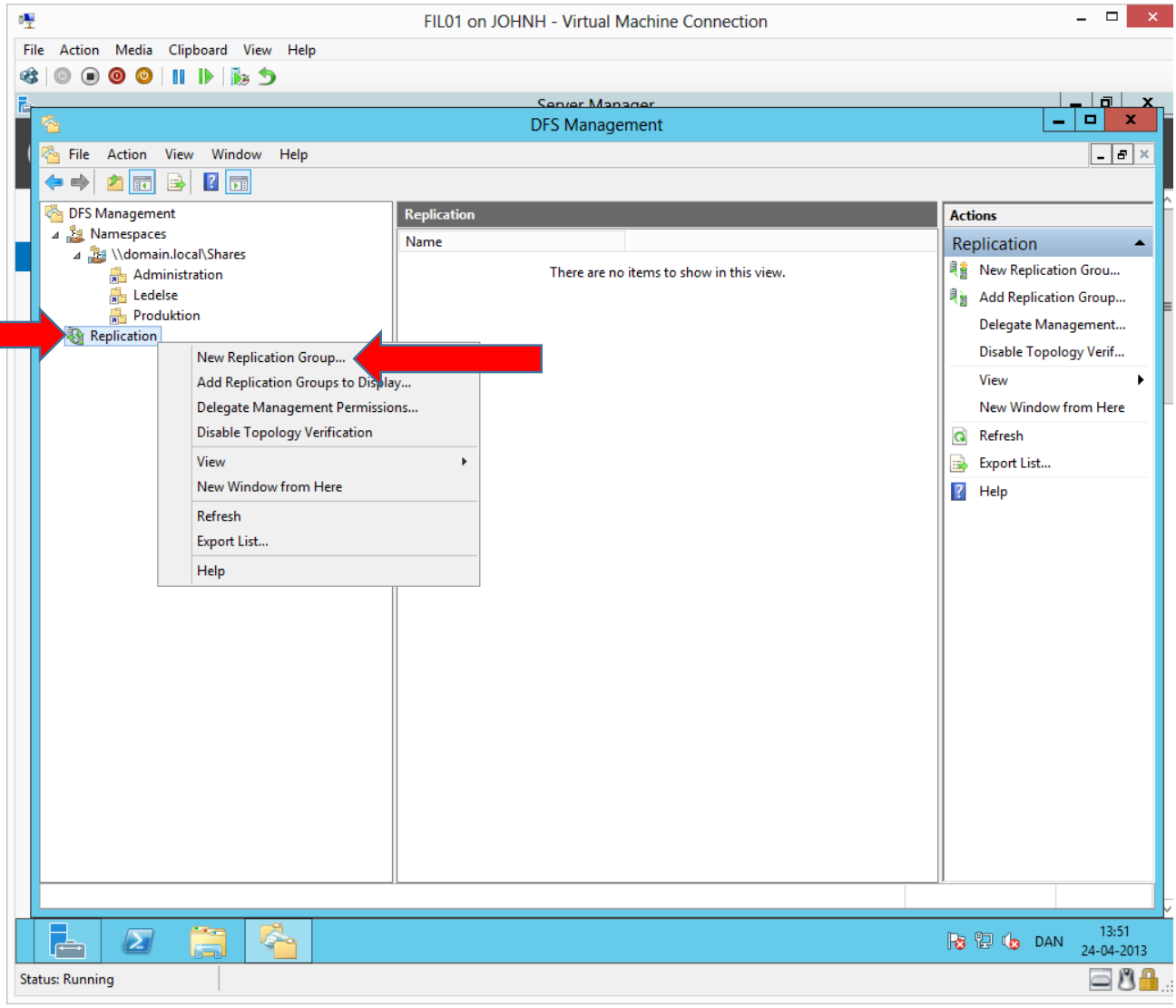
Here we can see the correct configuration of the DFS folder Ledelse (Management).



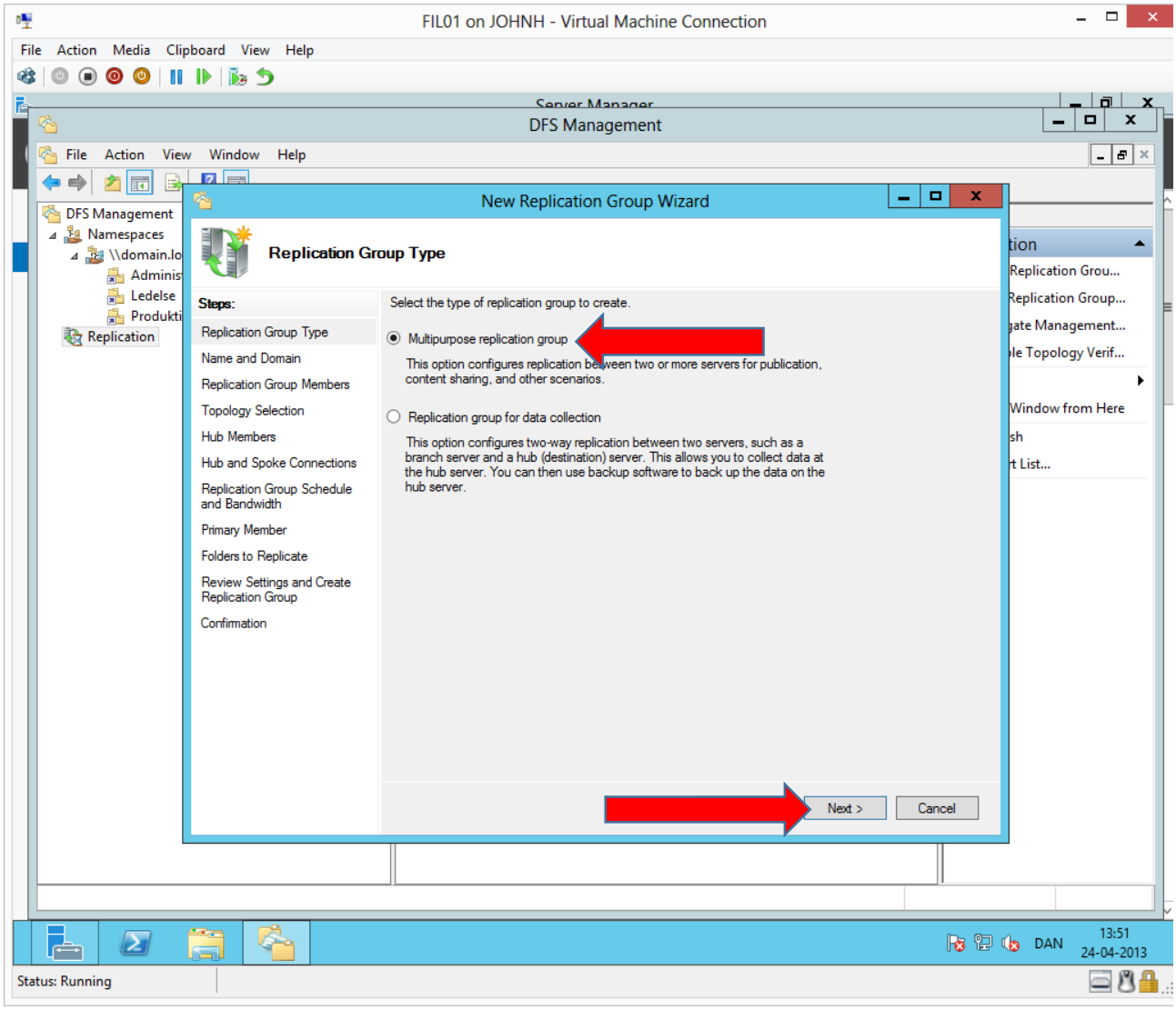
Here we can see the correct configuration of the DFS folder Produktion (Production).

Configuring DFS replication

To make the contents of the DFS folders with two folder targets synchronized, we will make them replicate.



Right click→**New Replication Group…**


FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
DFS Management
File Action View Window Help
DFS Management
Namespaces
Replication
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.
Next >
Cancel
DAN
13:51
24-04-2013
Status: Running

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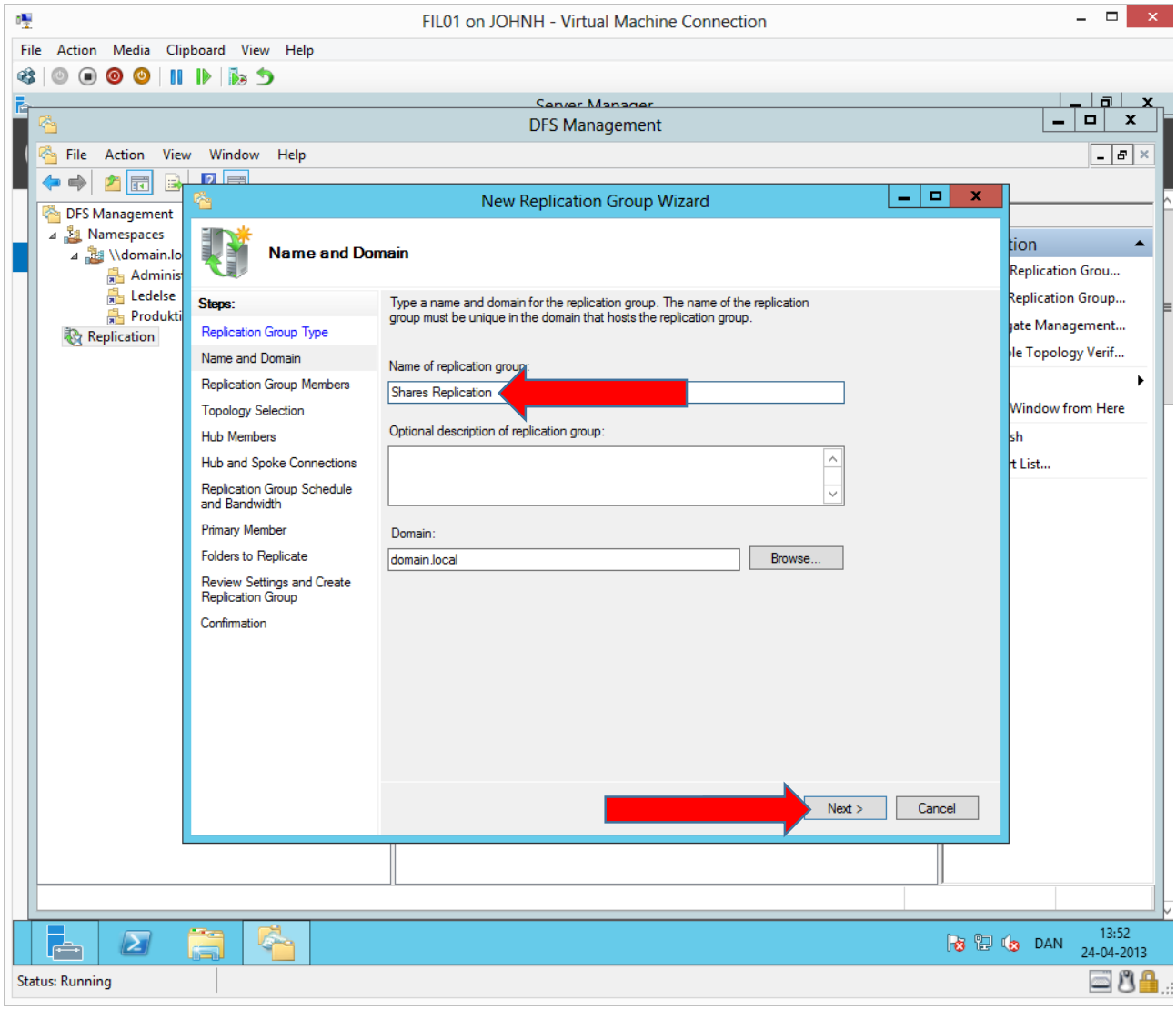

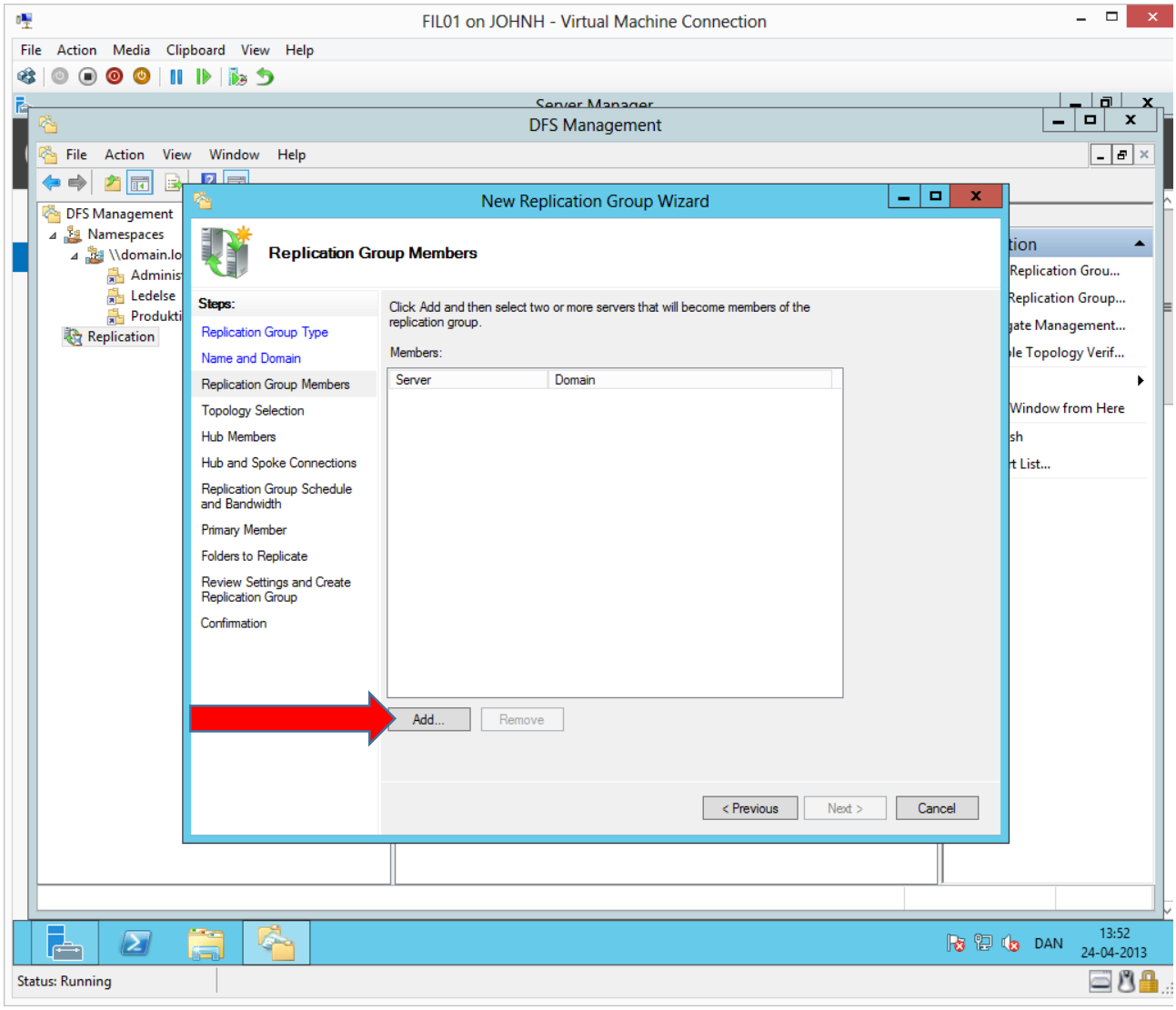

Add both fileservers.

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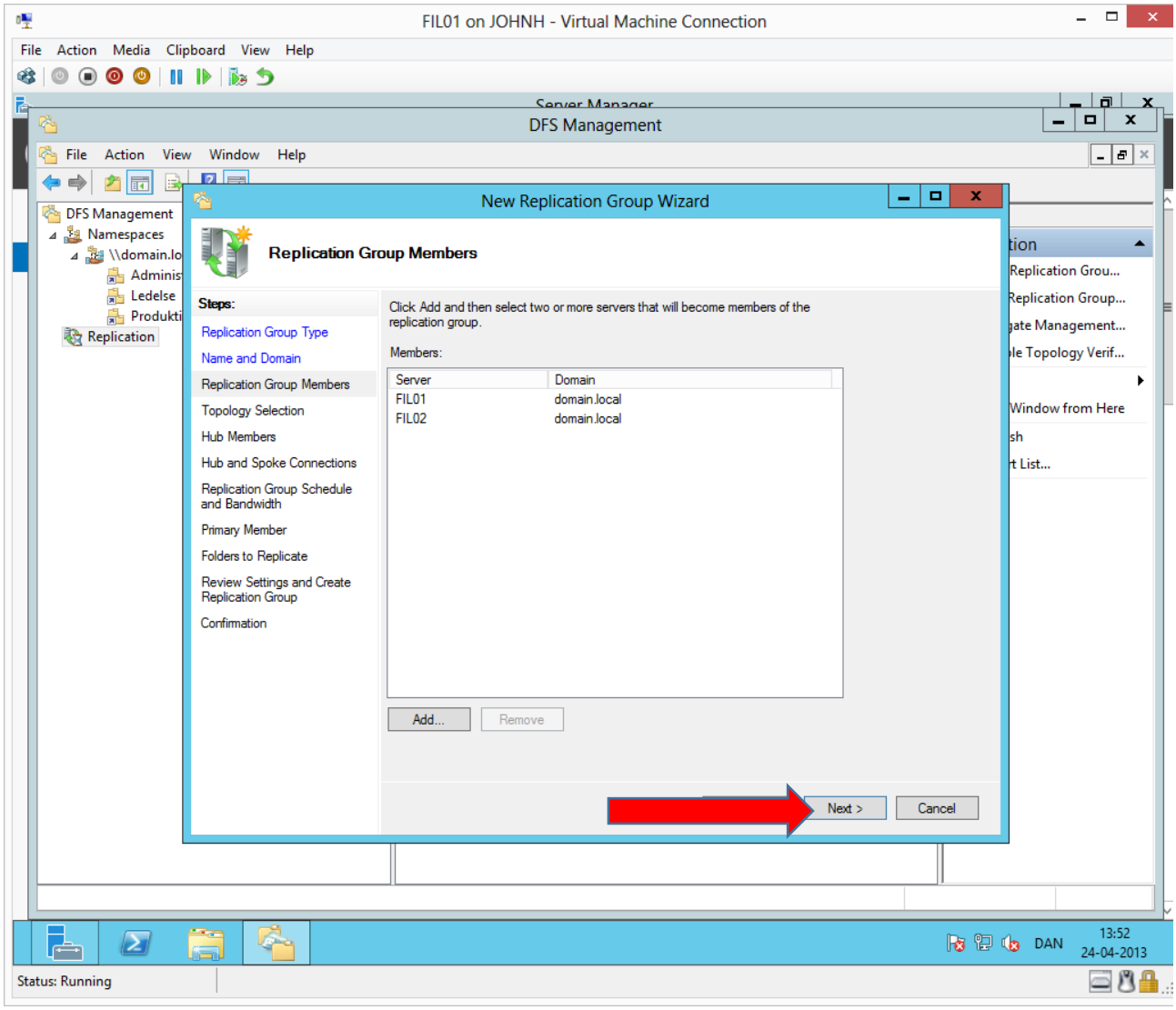
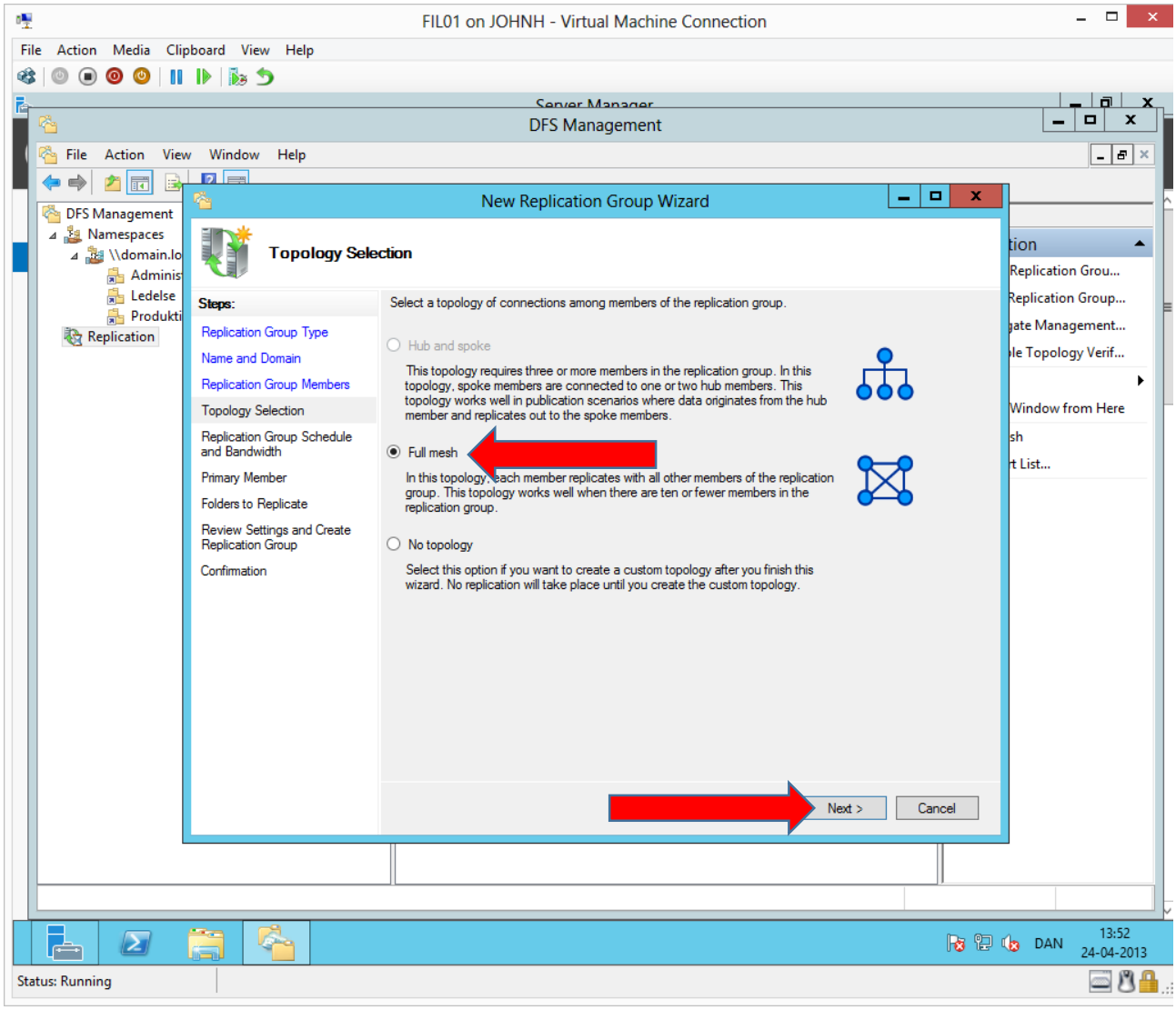
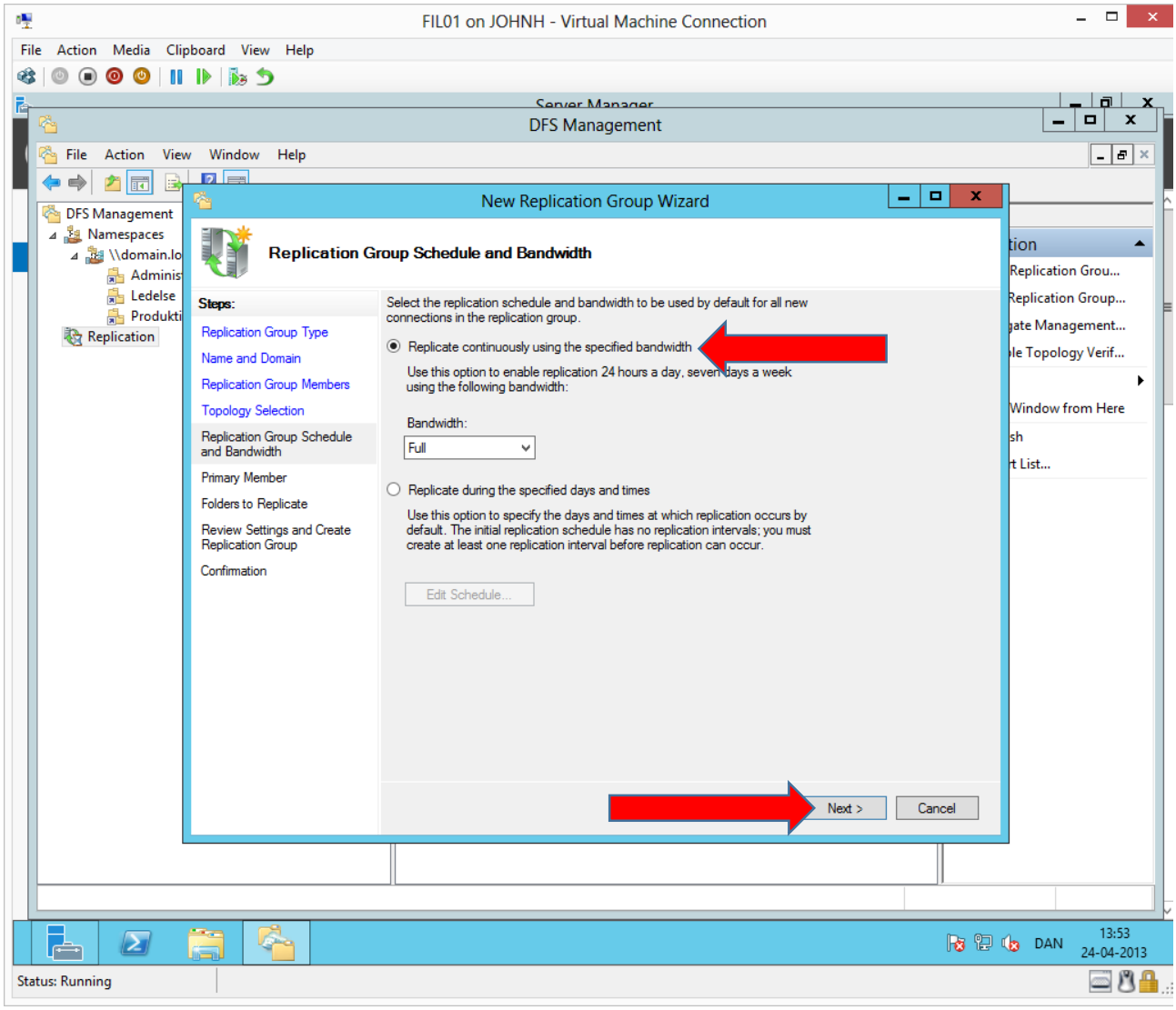
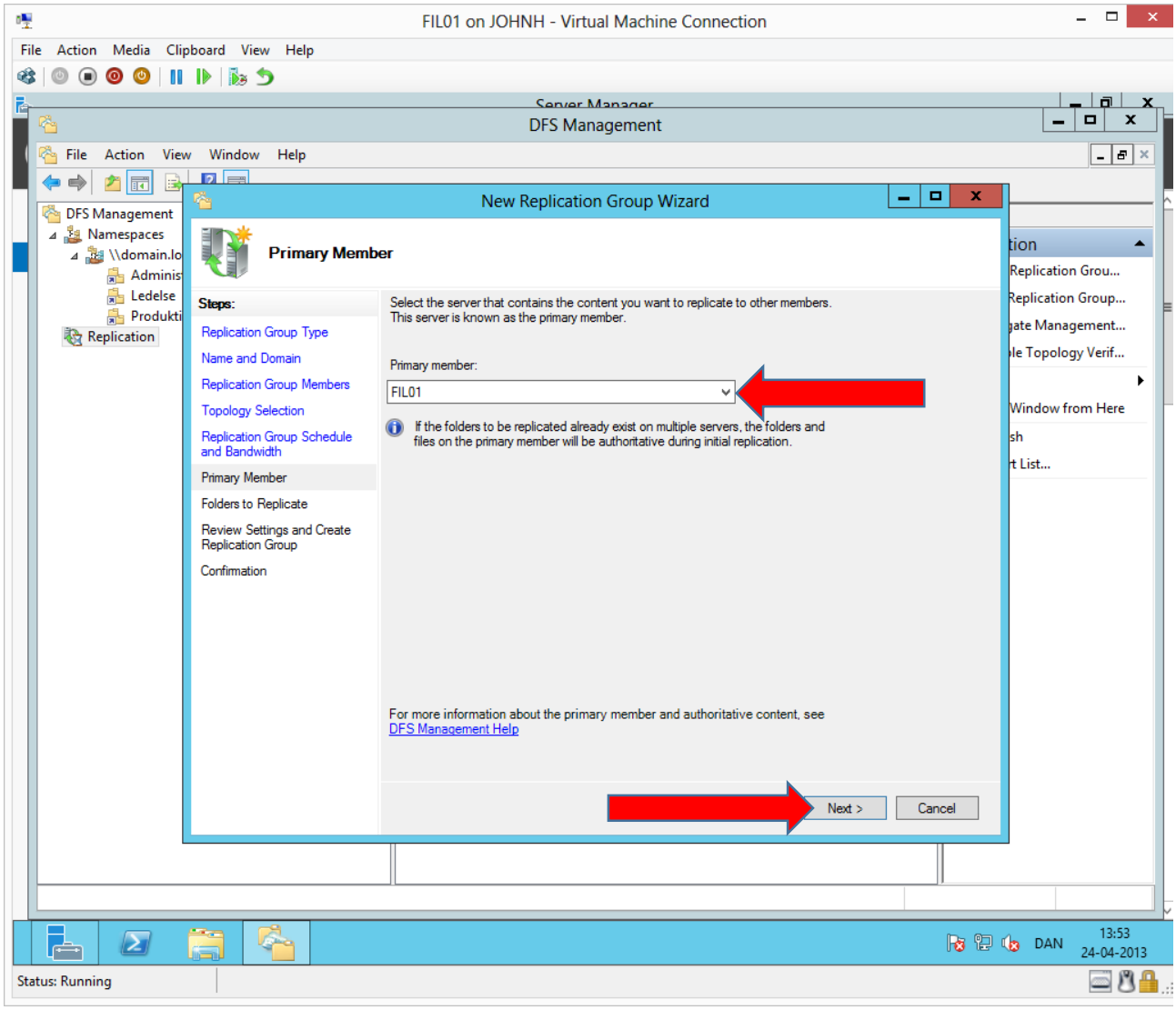
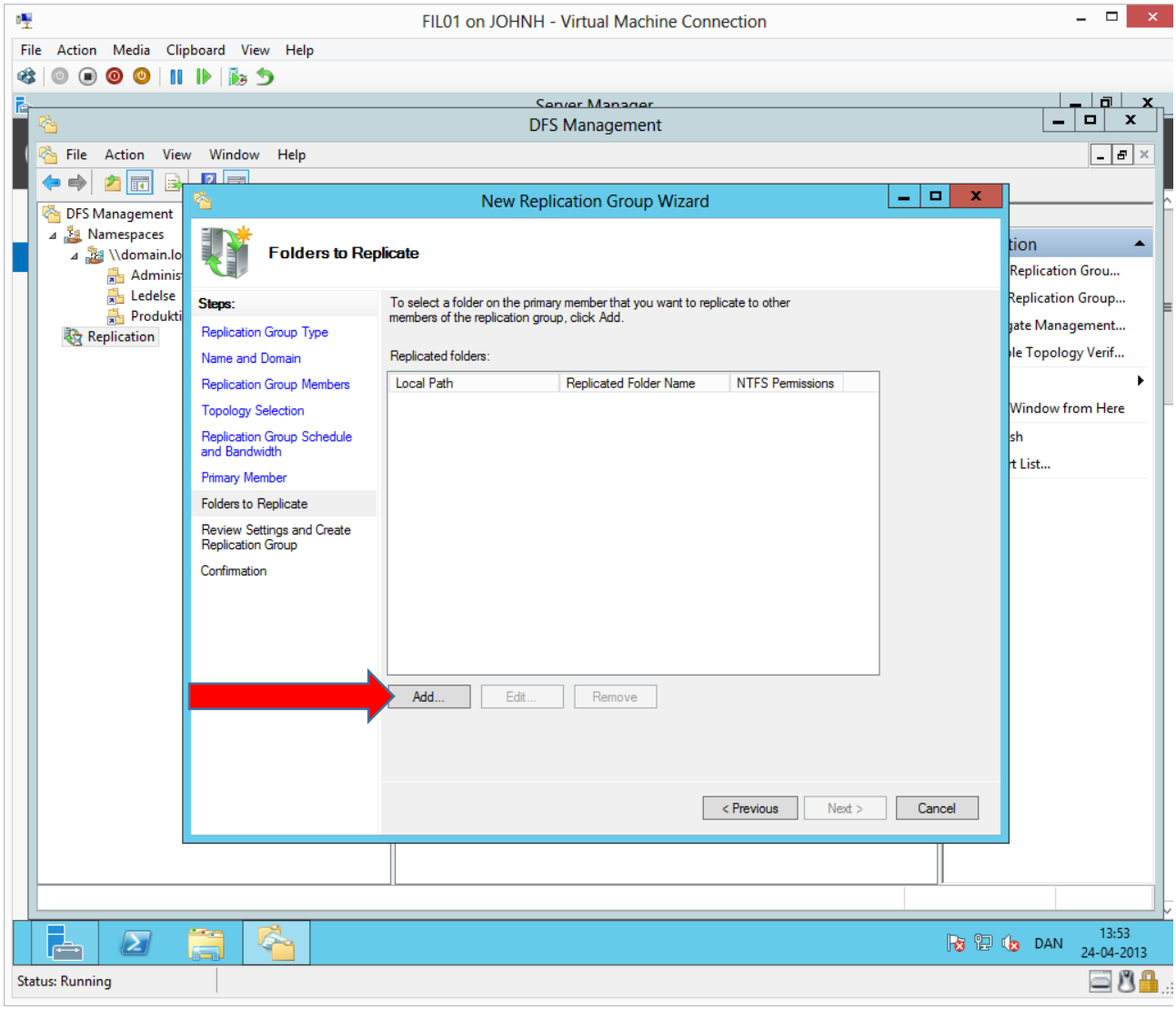



FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
DFS Management
File Action View Window Help
DFS Management
Namespaces
Replication
New Replication Group Wizard
Topology Selection
Steps:
Replication Group Type
Name and Domain
Replication Group Members
Topology Selection
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.
Next >
Cancel
DAN
13:52
24-04-2013
Status: Running

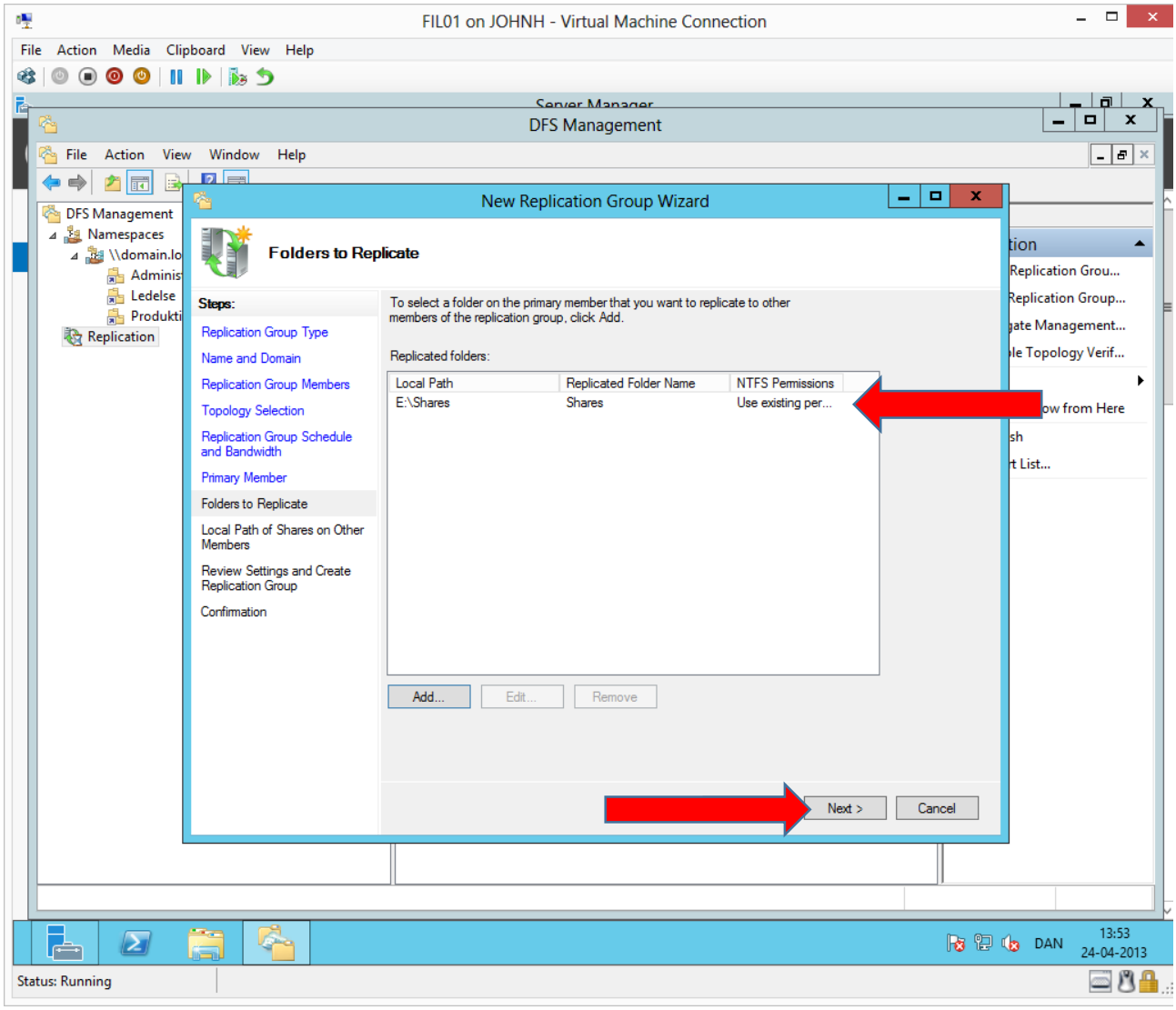

FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
DFS Management
File Action View Window Help
DFS Management
Namespaces
Replication
New Replication Group Wizard
Replication Group Schedule and Bandwidth
Steps:
Replication Group Type
Name and Domain
Replication Group Members
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.
Replicate continuously using the specified bandwidth
Use this option to enable replication 24 hours a day, seven days a week using the following bandwidth:
Bandwidth:
Full
Replicate during the specified days and times
Use this option to specify the days and times at which replication occurs by default. The initial replication schedule has no replication intervals; you must create at least one replication interval before replication can occur.
Edit Schedule...
Next >
Cancel
DAN
13:53
24-04-2013
Status: Running



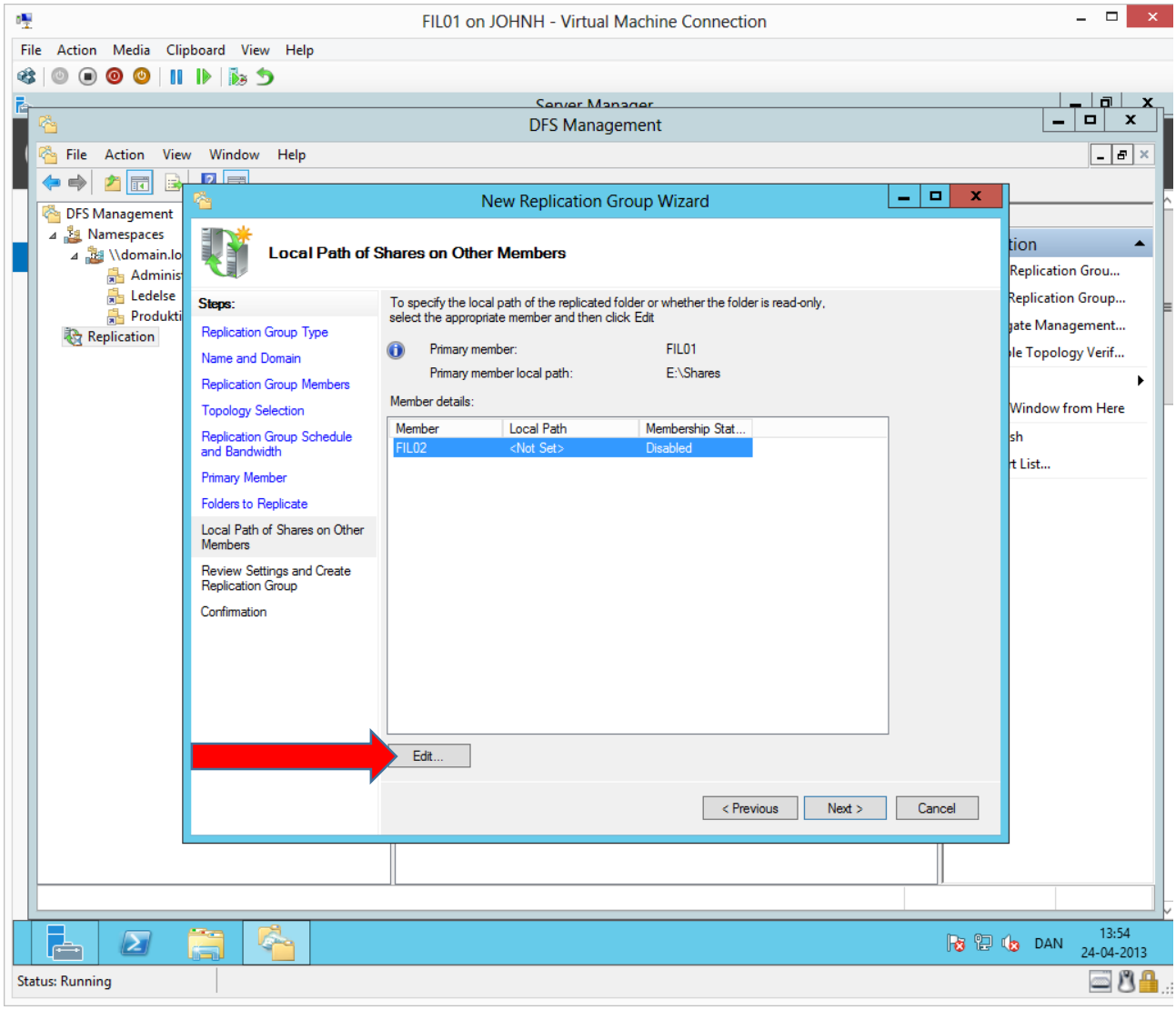
Only with the initial synchronization, a primary member is needed. In case of any conflicts, the primary member wins. After the initial synchronization, all replication members are primary and DFS resolves conflicts with ”Last Creator Wins” and ”Last Writer Wins”. (Notice in earlier versions of Windows Server it was ”First Creator Wins” and ”Last Writer Wins”.)



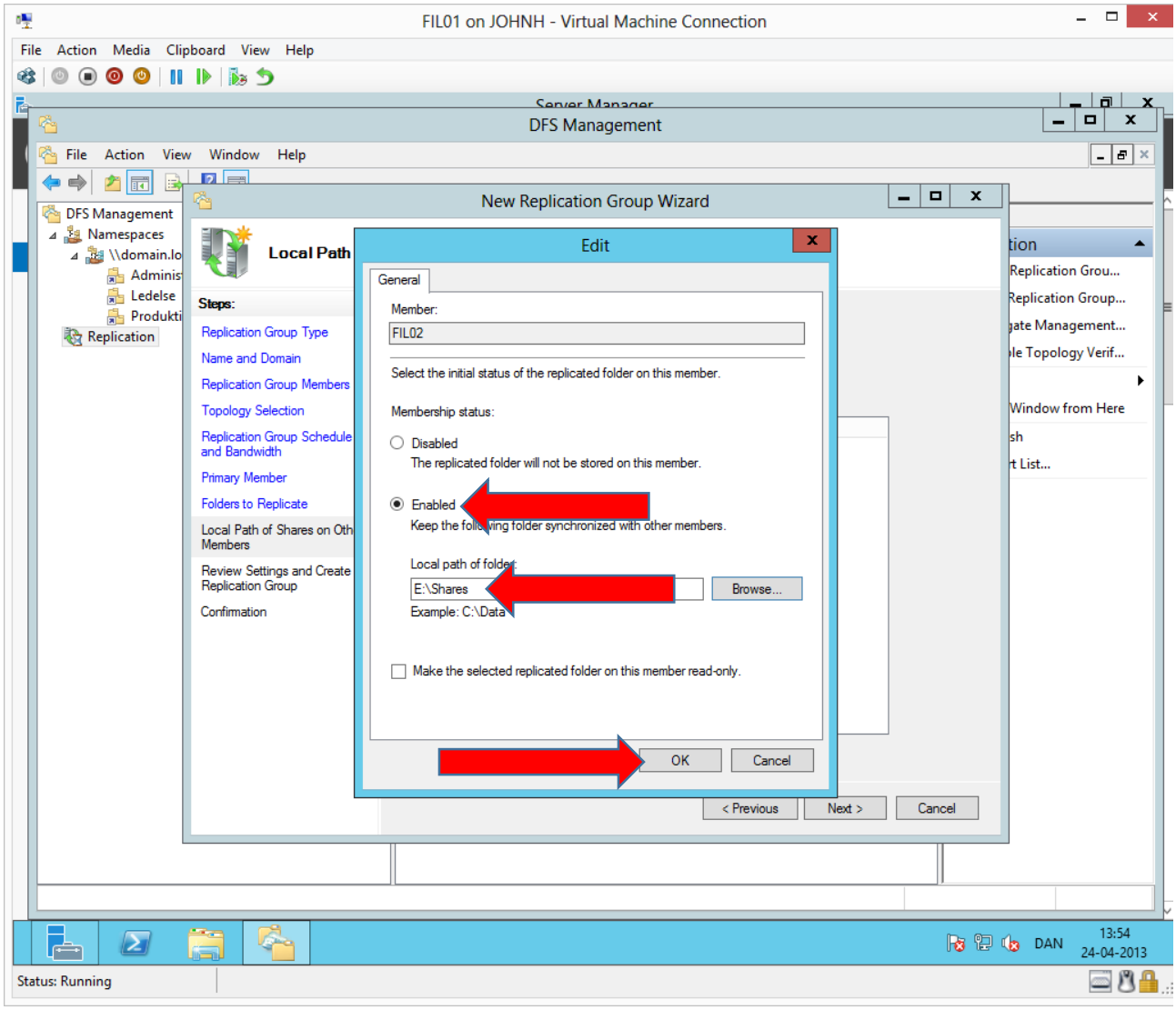
Which folders on the primary fileserver must be replicated.



We will point at the root folder, which contains all the shares.

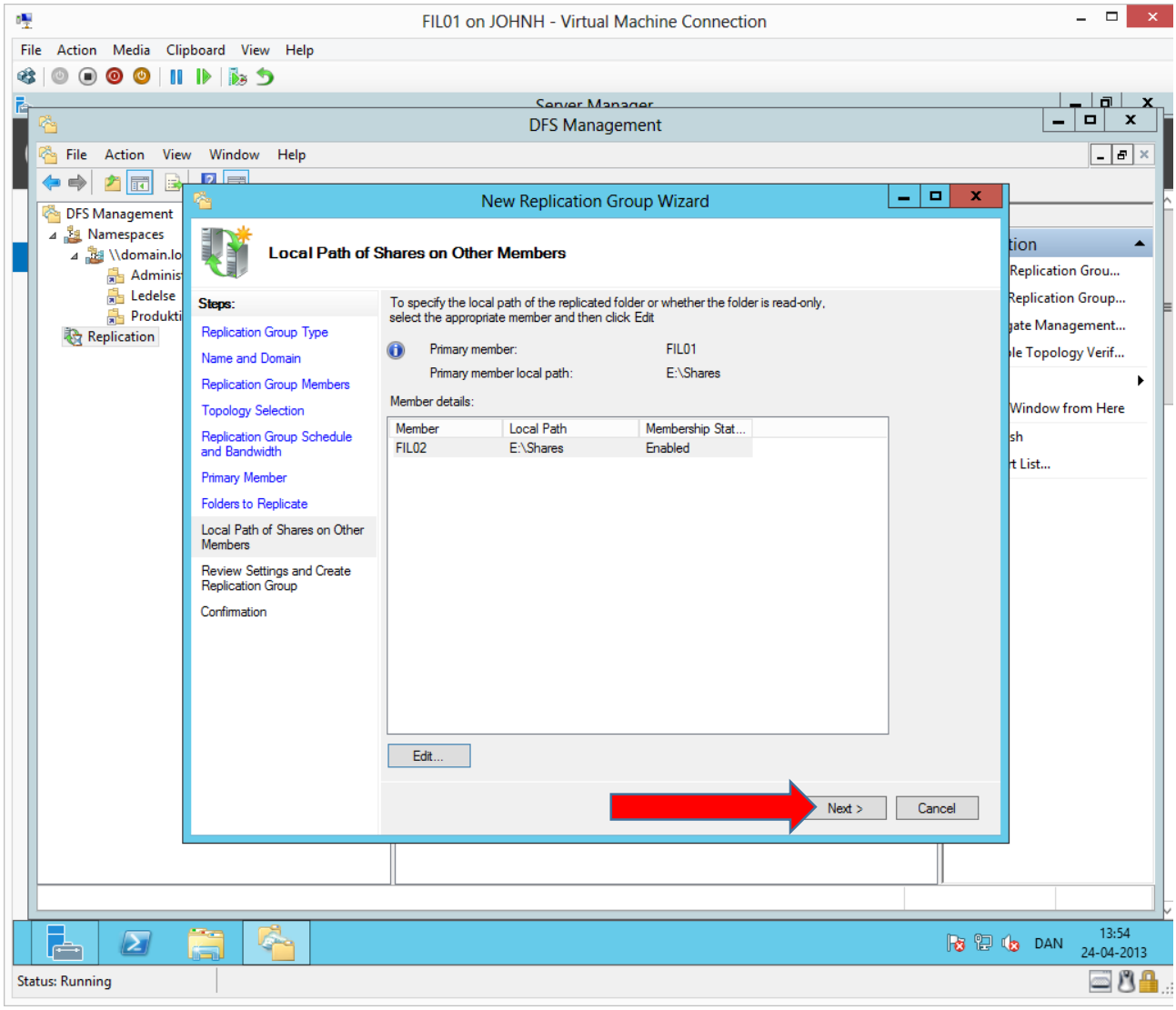


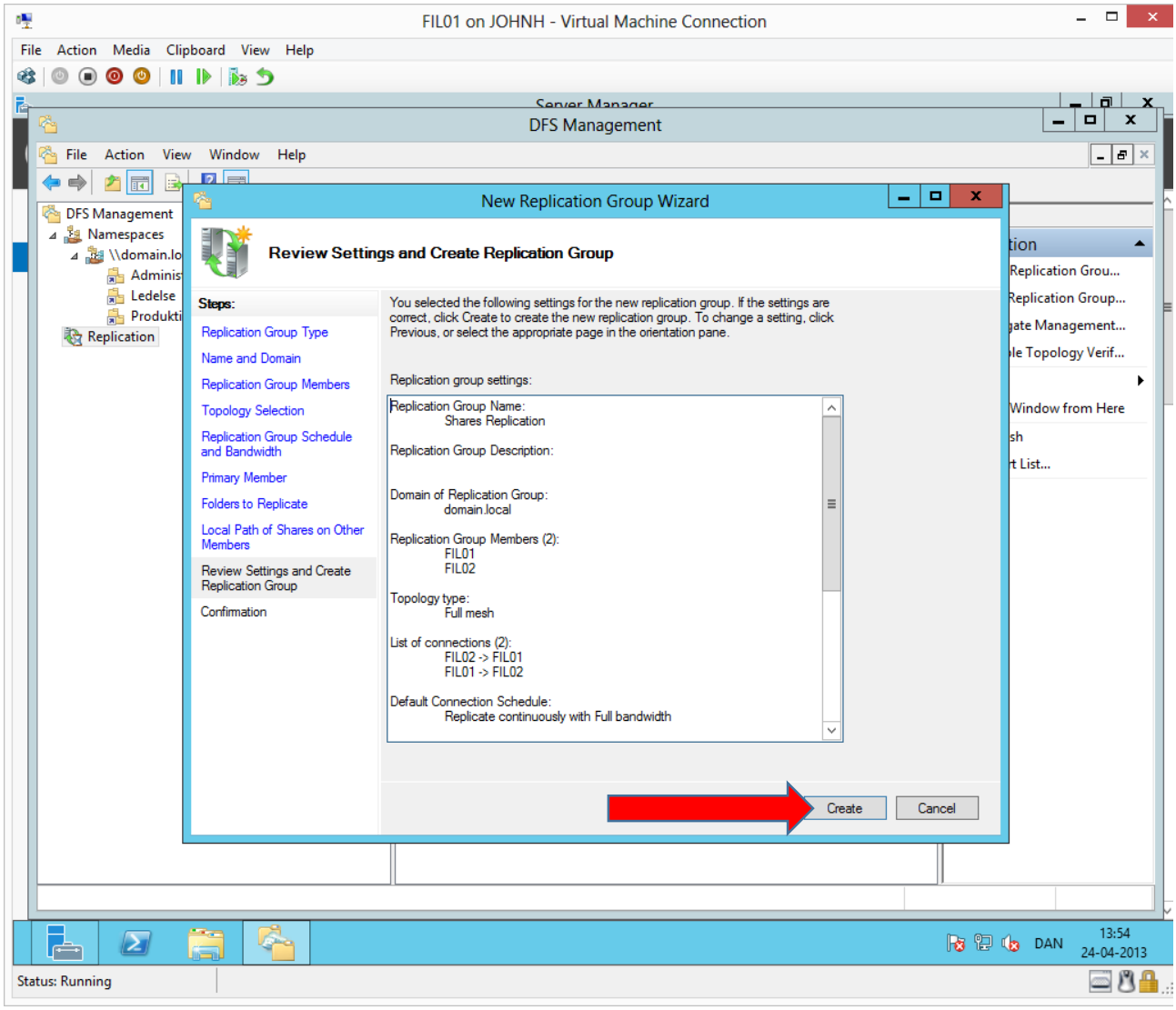
To which folder on the destination filserver do we wish to replicate.

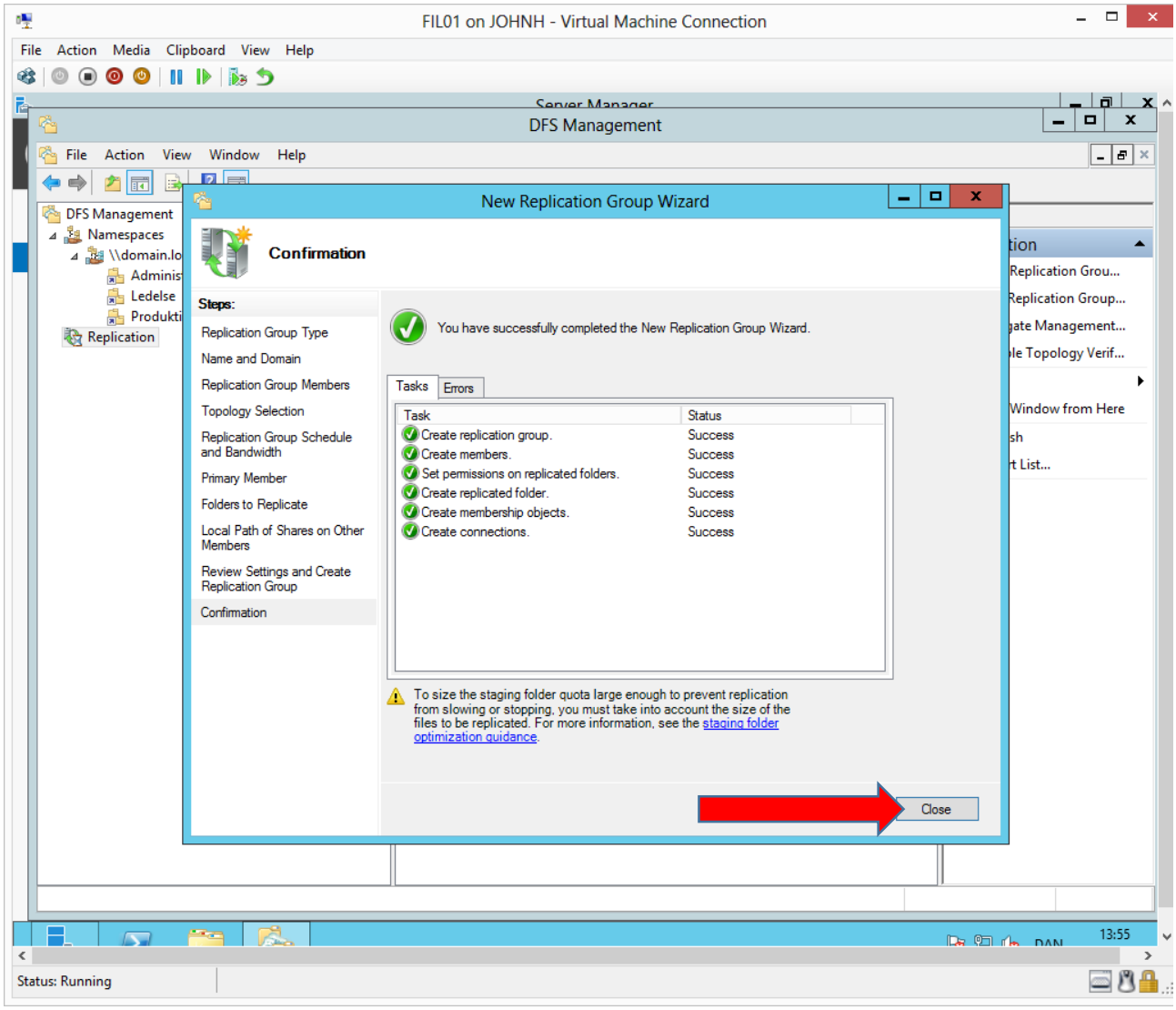


We will use the same structure and point at the root folder, which contains all the shares.

John Have Jensen




FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
Server Manager
DFS Management
File Action View Window Help
DFS Management
Namespaces
\\domain.lo
Replication
New Replication Group Wizard
Review Settings and Create Replication Group
Steps:
Replication Group Type
Name and Domain
Replication Group Members
Topology Selection
Replication Group Schedule and Bandwidth
Primary Member
Folders to Replicate
Local Path of Shares on Other Members
Review Settings and Create Replication Group
Confirmation
You selected the following settings for the new replication group. If the settings are correct, click Create to create the new replication group. To change a setting, click Previous, or select the appropriate page in the orientation pane.
Replication group settings:
Replication Group Name:
Shares Replication
Replication Group Description:
Domain of Replication Group:
domain.local
Replication Group Members (2):
FIL01
FIL02
Topology type:
Full mesh
List of connections (2):
FIL02 -> FIL01
FIL01 -> FIL02
Default Connection Schedule:
Replicate continuously with Full bandwidth
Create
Cancel
DAN
13:54
24-04-2013
Status: Running


FIL01 on JOHNH - Virtual Machine Connection
File Action Media Clipboard View Help
Server Manager
DFS Management
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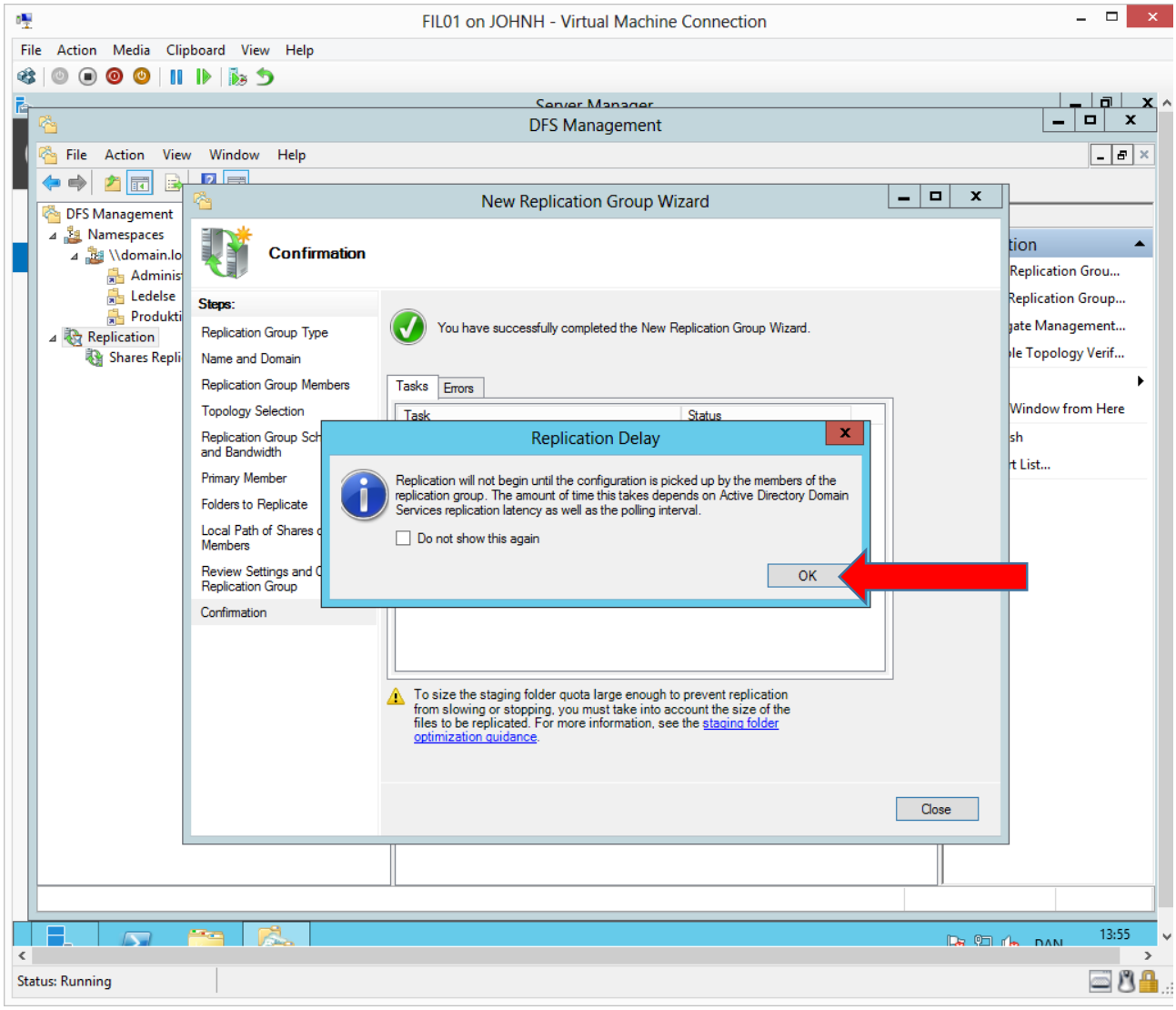
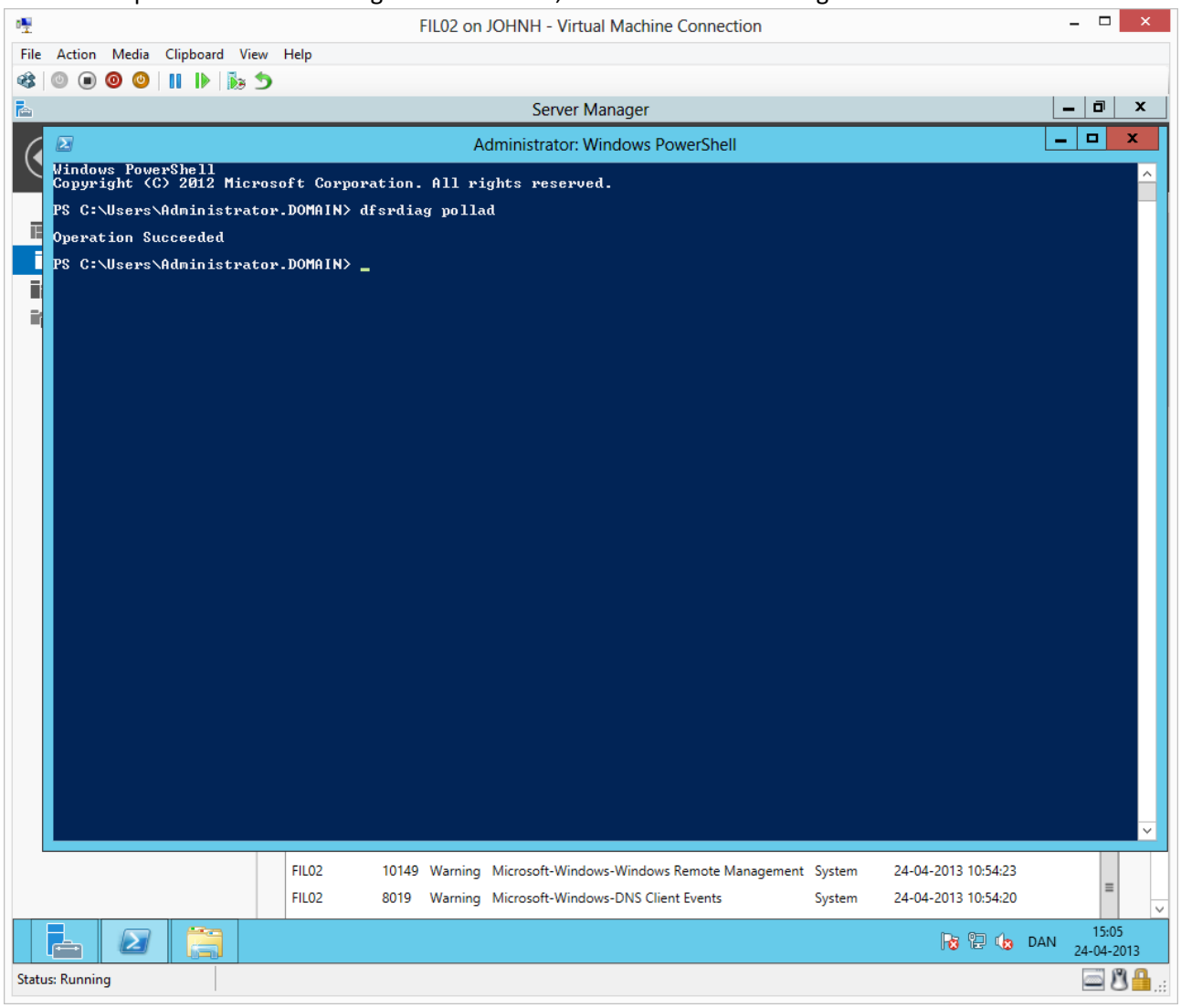
DFS Management
Namespaces
Replication
New Replication Group Wizard
Confirmation
Steps:
Replication Group Type
Name and Domain
Replication Group Members
Topology Selection
Replication Group Schedule and Bandwidth
Primary Member
Folders to Replicate
Local Path of Shares on Other Members
Review Settings and Create Replication Group
Confirmation
You have successfully completed the New Replication Group Wizard.
Tasks
Errors
Task
Status
Create replication group. Success
Create members. Success
Set permissions on replicated folders. Success
Create replicated folder. Success
Create membership objects. 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.
Close
13:55
Status: Running

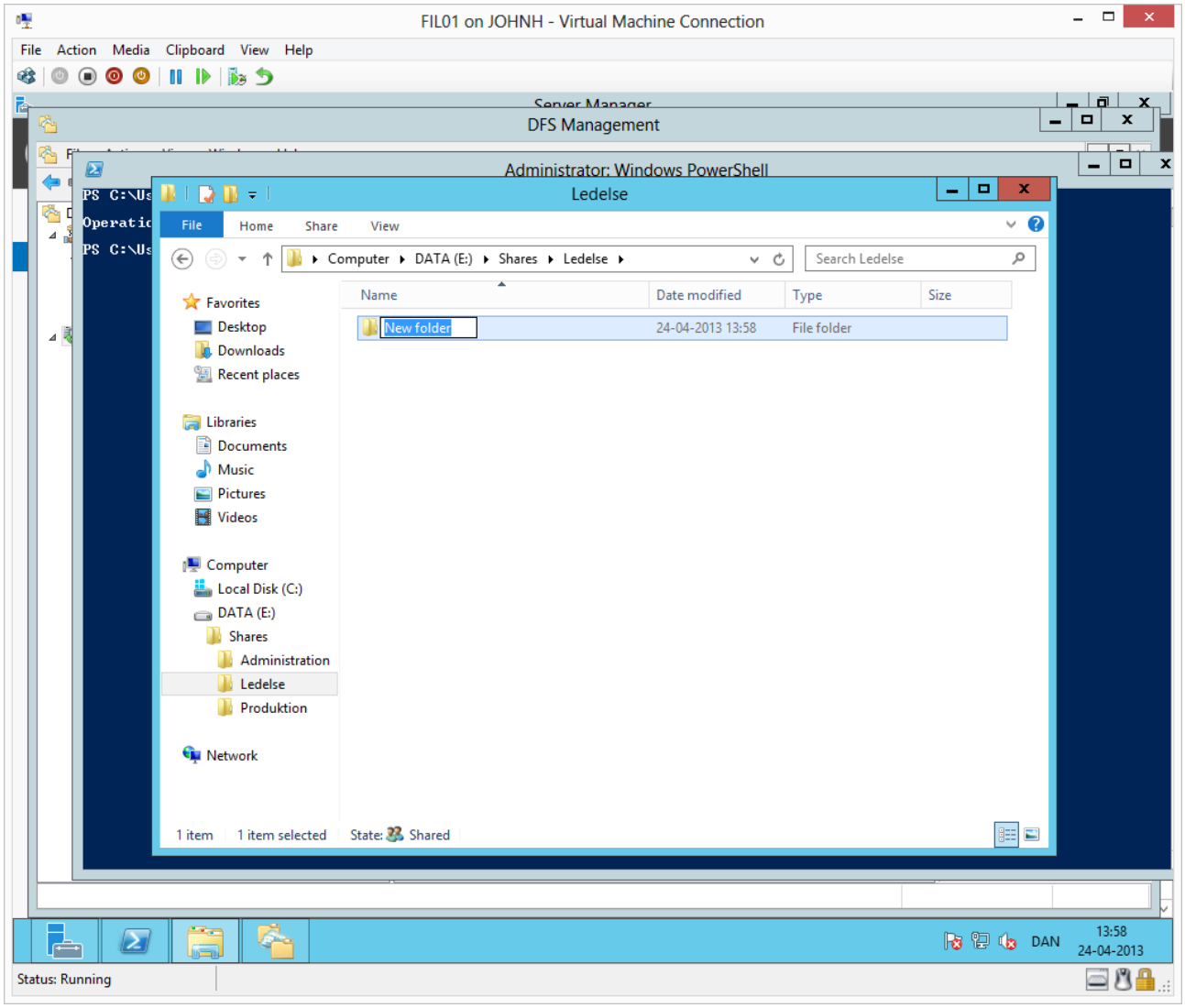


The fileservers saves and loads their DFS configuration from their local domain controller (Active Directory also uses sites for service localization) Therefore Fil02 can experience a delay before the DFS configuration is loaded because we made the DFS configuration on Fil01, which saves its configuration on DC01. When

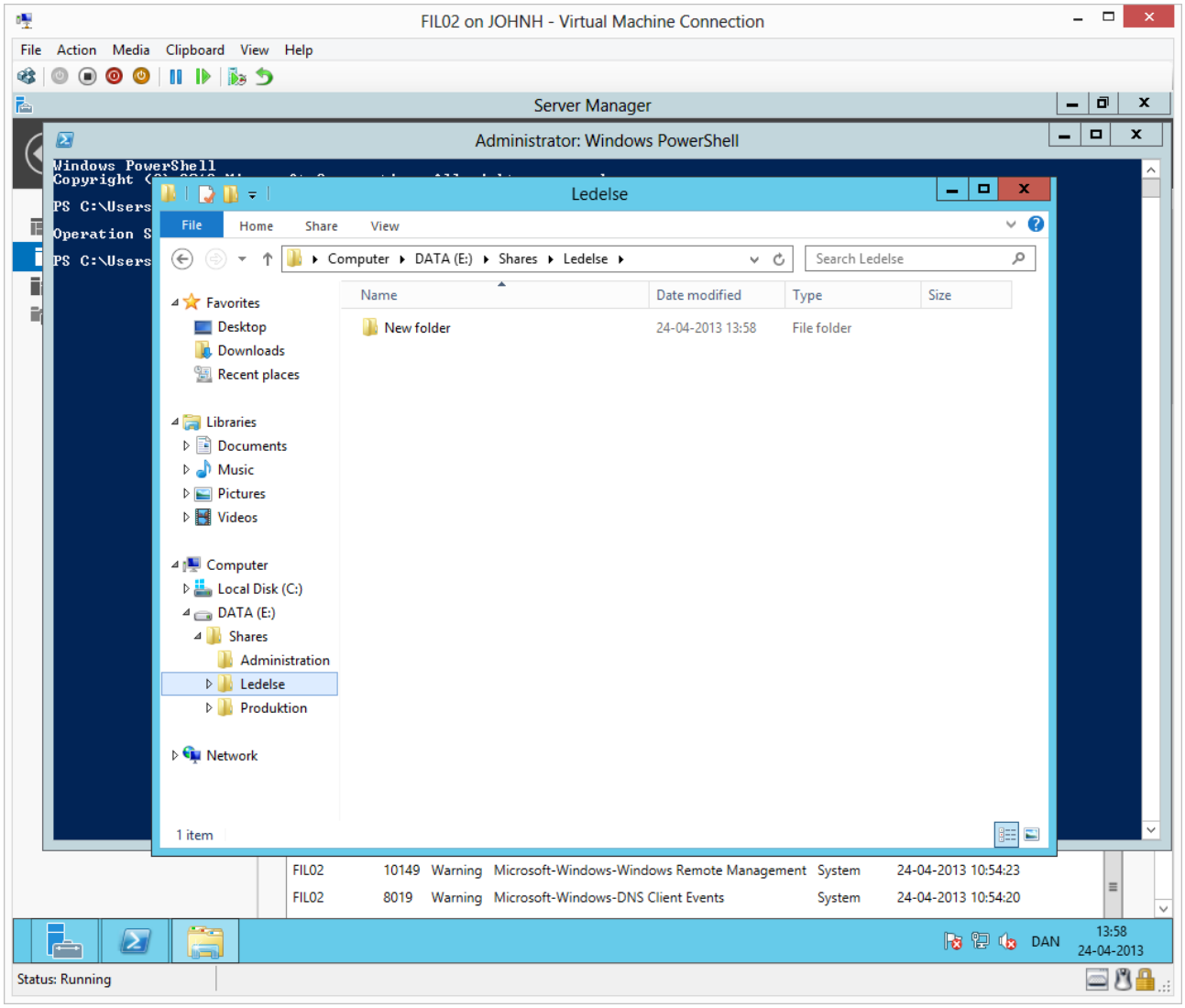
DC01 has replicated the DFS configuration to DC02, fil02 can load the configuration from DC02.



To hurry this process we can ask Fil02 to poll Active Directory for DFS changes (Must happen after Domain Controller replication)



Test the configuration by creating a folder or file in one of the shared folders.



The folder or file should automatically be replicated to the opposite fileserver. A refresh is necessary (F5).