

# FUJITSU Cloud Service S5

## Installation and Configuration DFS Replication Services on Windows 2008 Server

This "Use Case" covers the deployment of Microsoft DFS (Distributed File System) services on the FUJITSU Cloud Service S5.

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### Introduction

This "Use Case" covers the deployment of Microsoft DFS (Distributed File System) services on the FUJITSU Cloud Service S5. The use of DFS may be particularly beneficial in order to provide additional fault tolerance and maintainability within client file sharing infrastructures.

**The Microsoft** Distributed File System (DFS) is a set of client and server services that allow an organization using Microsoft Windows servers to organize many distributed SMB file shares into a distributed file system. DFS provides location transparency and redundancy to improve data availability in the face of failure or heavy load by allowing shares in multiple different locations to be logically grouped under one folder, or DFS root ([http://en.wikipedia.org/wiki/Distributed\\_File\\_System\\_\(Microsoft\)](http://en.wikipedia.org/wiki/Distributed_File_System_(Microsoft))).

DFS has two major logical components. First, DFS namespaces provide an abstraction layer for SMB network file shares, allowing one logical network path to be served by multiple physical file servers. Second, DFS supports the replication of data between the servers, using using "DFS Replication" (DFSR) in Server 2003 R2, Server 2008, and later versions.

There are two ways of implementing DFS on a server:

**Standalone DFS namespace** allows for a DFS root that exists only on the local computer, and thus does not use Active Directory. A Standalone DFS can only be accessed on the computer on which it is created. It doesn't offer any fault tolerance and cannot be linked to any other DFS. This is the only option available on Windows NT 4.0 Server systems. Standalone DFS roots are rarely encountered because of their limited utility.

**Domain-based DFS namespace** stores the DFS configuration within Active Directory, the DFS namespace root is accessible at \\domainname\<dfsroot> or \\fq.domain.name\<dfsroot>. The namespace roots do not have to reside on domain controllers, they can reside on member servers, if domain controllers are not used as the namespace root servers, then multiple member servers should be used to provide full fault tolerance.

This Use Case will focus on the latter implementation, Domain-based DFS namespace and will implement a multi-master configuration with near real time replication.

### Deployment Considerations

There are a number of factors that need to be considered when deploying a DFS replication architecture:

- Folder Structures, Access Control and Permissions
- Replication Mode – realtime, scheduled or ad-hoc
- Bandwidth Allocation – Full or restricted

Further information on the DFS service is available here: [http://technet.microsoft.com/en-us/library/cc732863\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc732863(WS.10).aspx)

### Assumptions

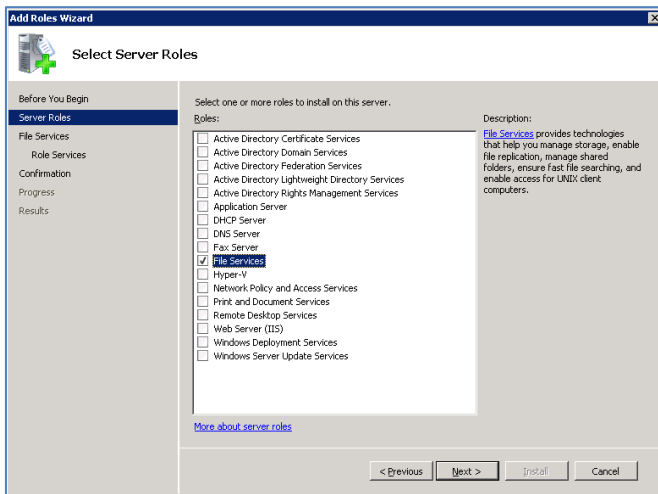
- User Account, Certificate and connectivity to the FUJITSU Cloud Service S5.
- Familiarity with the FUJITSU Cloud Service S5 Portal basic configuration and administration tasks.
- Familiarity with the FUJITSU Cloud Service S5 Portal System Manager and Design Studio.
- Familiarity with Windows Server and Domain Configuration & Administration
- A Windows AD Domain exists within the VSYS

**VSYS Server Reference Configuration utilised for this Example**

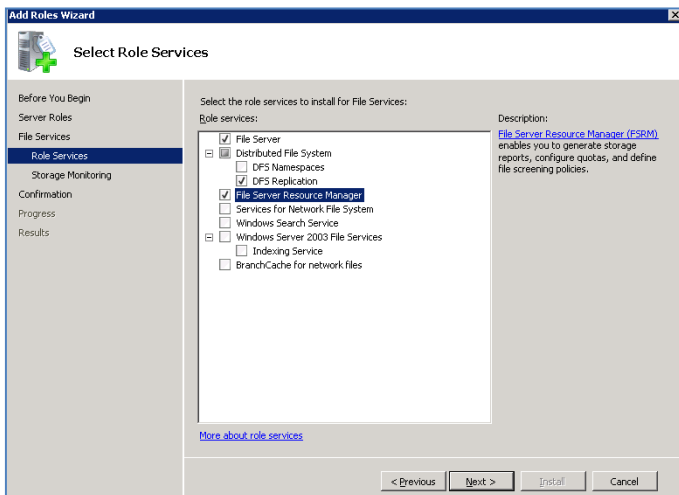
Server	Zone	Configuration	OS	Role	Private IP Address
W2K8_DC	DMZ	Standard	W2K8 R2 64bit	Primary Domain Controller (FUJITSU Cloud Service S5demo.com)	172.16.20.12
W2K8_DFS1	SECURE1	Standard plus 20GB Disk	W2K8 R2 32bit	Domain Controller, DFS	172.16.21.15
W2K8_DFS2	SECURE1	Standard plus 20GB Disk	W2K8 R2 32bit	Domain Member, DFS	172.16.21.16

**Adding the File Services Role**

1. Login to the primary DFS Server (W2K8-DFS1) as Administrator
2. Start → Administrative Tools → Server Manager → Add Roles → Next
3. Select File Services → Next



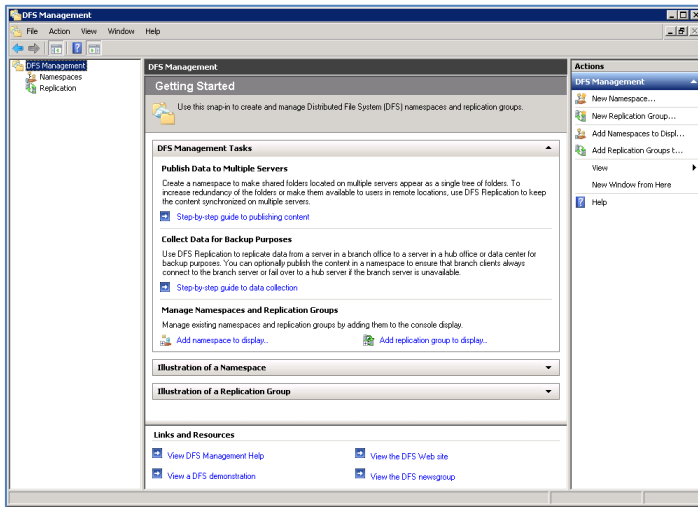
4. Select Next
5. Select DFS Replication and File Server Resource Manager (optional for managing quotas, reports etc)



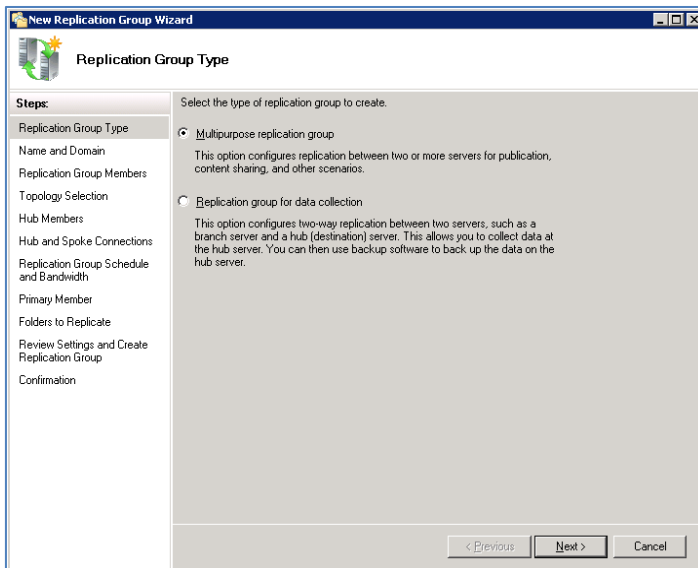
6. Select Next
7. Select the Data Drive (D: if configured) for Storage Usage Monitoring
8. Select Next and Set Storage Report Options
9. Select Next → Install → Close
10. Repeat Steps 2-9 for the Secondary DFS Server (W2K8-DFS2) after logging in as Administrator

## Configuring DFS Replication

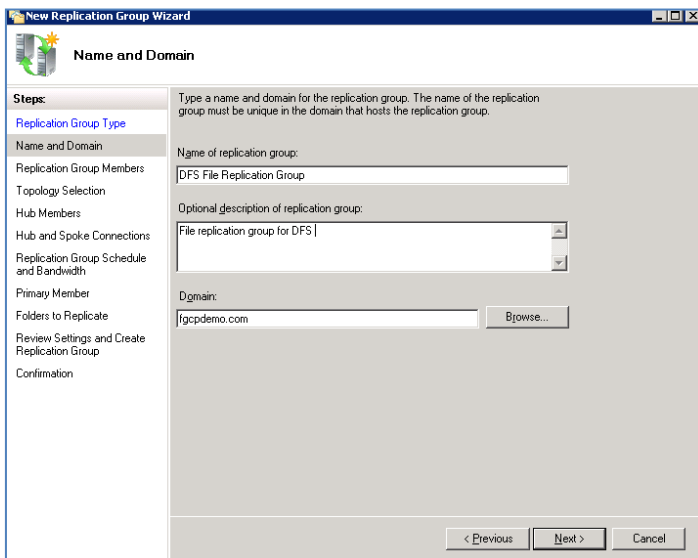
1. Select Start → Administrative Tools → DFS Management



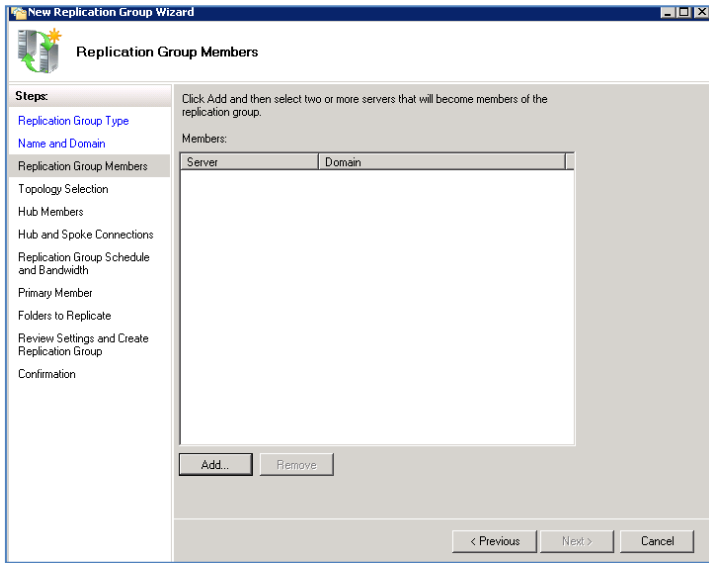
2. Select New Replication Group → Multipurpose Replication Group



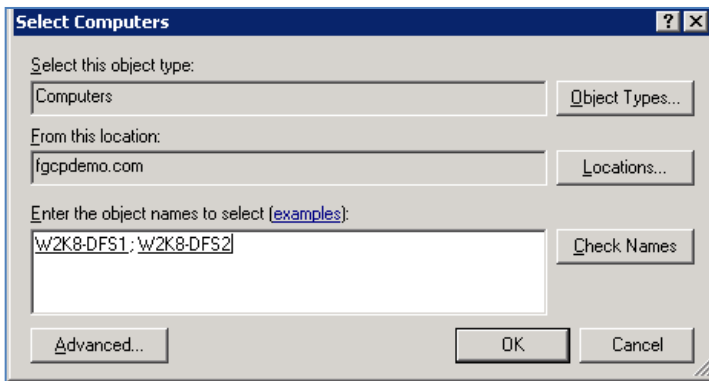
3. Select Next and enter the Name of replication group, Optional description of replication group and Domain (in this example FUJITSU Cloud Service S5demo.com)



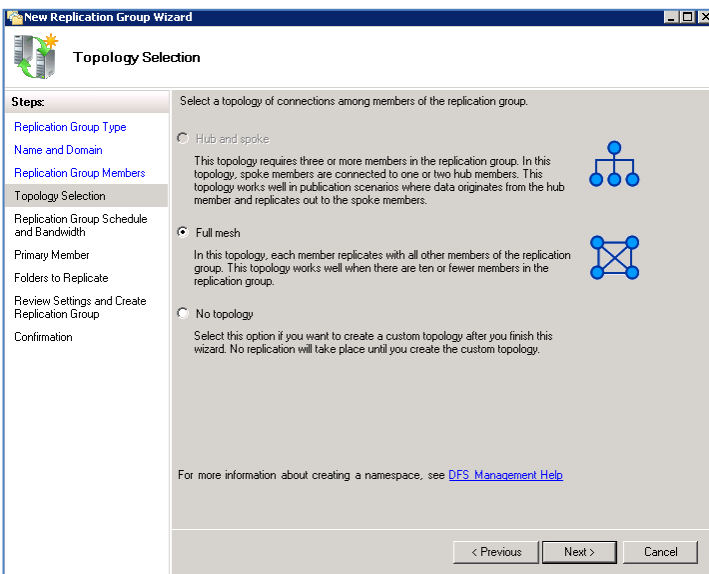
4. Select Next → Add



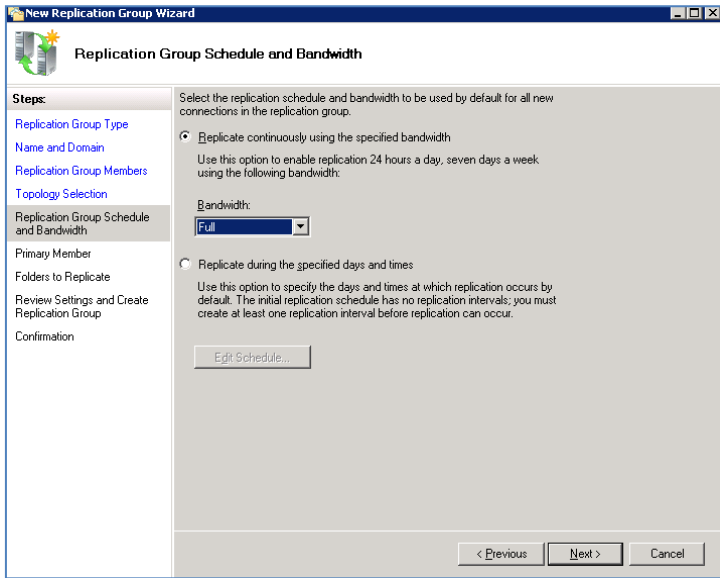
5. Enter the object names to select (in this case, W2K8-DFS1 & W2K8-DFS2) and select Check Names



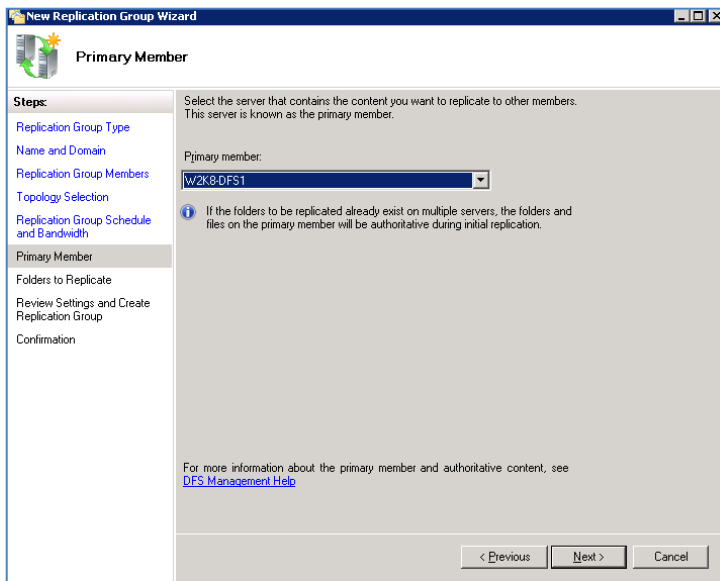
6. Select OK → Next → Full Mesh



7. Select Replicate continuously using the specified bandwidth (in this example, continuous replication and Full Bandwidth)

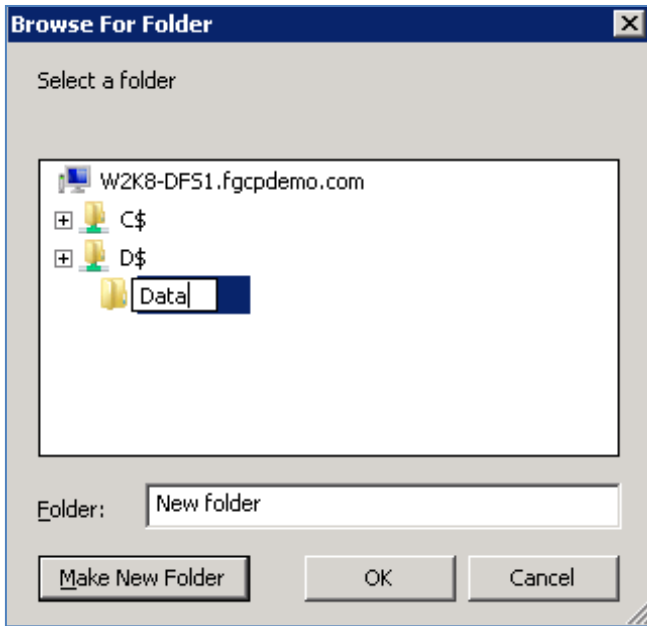


8. Select Next and specify the Primary member (in this case W2K8-DFS1)

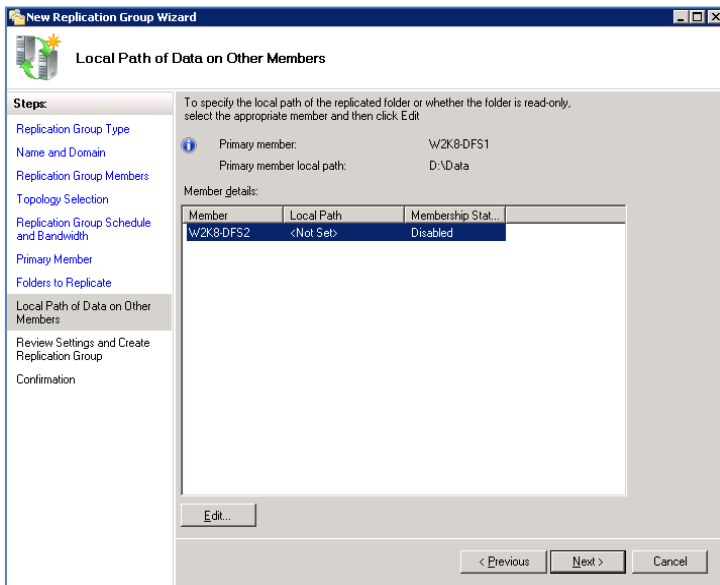


9. Select Next → Add → Browse

10. Select D\$ → Make New Folder and enter Data as the folder name



11. Select OK → OK → Next

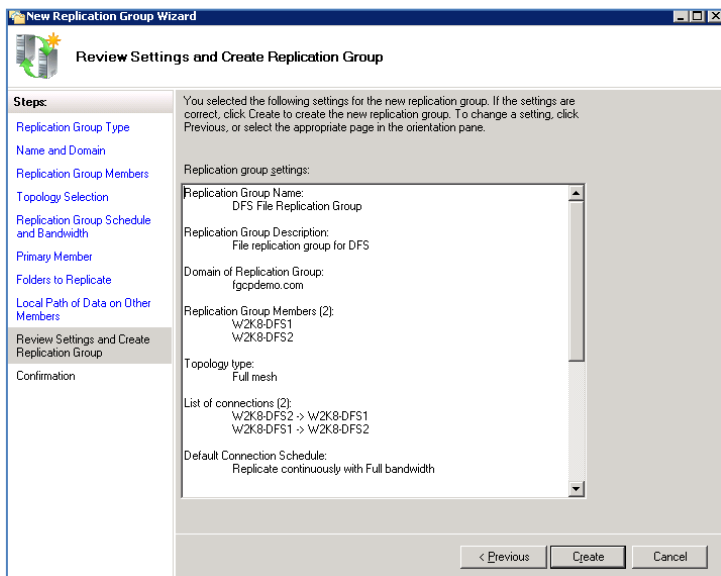


12. Select Edit → Enabled → Browse

13. Select D\$ → Make New Folder and enter Data as the folder name

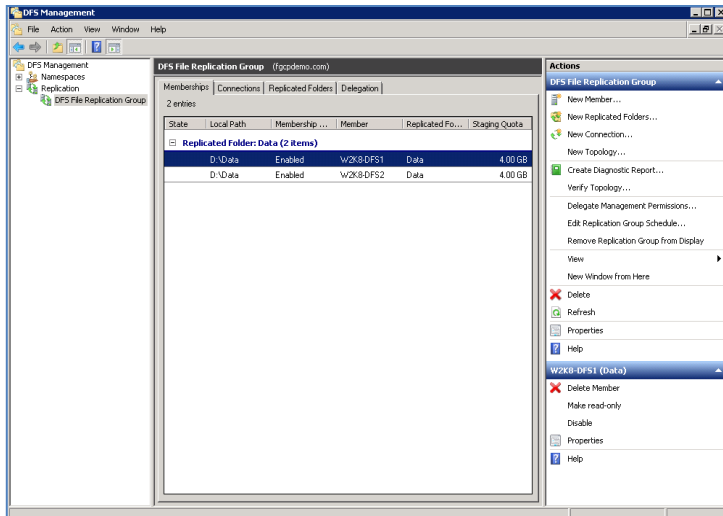


14. Select OK → Next



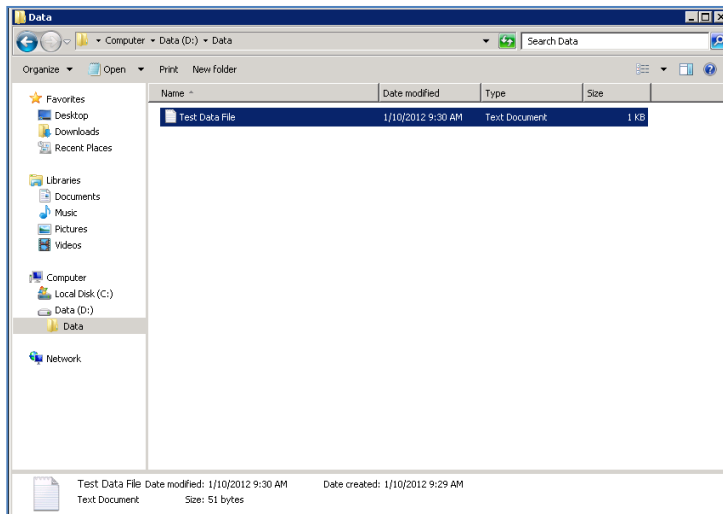
15. Select Create → Close → OK

- The Replication Group has now been created and is ready for use



### Testing DFS Replication

- On the secondary replication partner (in this case W2K8-DFS2) create some test content



- Check on the primary server (in this case W2K8-DFS1) to verify successful replication.
- Repeat the process and create test content on the primary partner to verify replication to the secondary.

**DFS Replication is now installed, configured and is ready to user.**

#### Contact

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