



# Azure File Sync Service

Azure File Sync Service is a cloud service provided by Microsoft Azure that allows you to centralize your file shares in Azure Files while keeping the flexibility, performance, and compatibility of an on-premises file server. Here's an overview of its key features and benefits:

## Key Features

1. **Centralized File Share in Azure:** Azure File Sync allows you to store your files in Azure Files, which provides cloud storage with the ability to mount file shares to on-premises or cloud-based Windows servers.
2. **Caching and Syncing:** It enables you to cache several Azure file shares on an on-premises Windows Server or on Azure VMs. This provides local performance with cloud-scale.
3. **Multi-Site Access:** You can sync the same set of files across multiple Windows Servers, allowing for multi-site access and ensuring that changes made on one server are synchronized with all others.
4. **Tiering:** Azure File Sync uses cloud tiering, where frequently accessed files are cached locally while less frequently accessed files are tiered to Azure Files. This helps optimize the use of local storage resources.
5. **Backup and DR:** By centralizing file storage in Azure, Azure File Sync simplifies backup and disaster recovery. The data in Azure Files can be backed up and restored using Azure Backup.
6. **Integration with Azure:** It integrates well with other Azure services, including Azure Backup for data protection and Azure Monitor for monitoring and alerts.

## Benefits

1. **Cost Efficiency:** By tiering cold data to Azure Files, you reduce the need for extensive local storage, thereby reducing costs.
2. **Scalability:** Azure File Sync allows you to scale out and manage file shares across multiple locations easily.
3. **Data Centralization:** It helps centralize data management by keeping a master copy in the cloud, simplifying data management and access control.
4. **Improved Performance:** Local caching ensures that frequently accessed files are available with low latency, providing users with faster access times.
5. **Ease of Management:** The service simplifies the management of distributed file systems, with centralized management and deployment of file shares.



## Use cases of file sync:

1. **Branch Office File Sharing:** Imagine a company with multiple branch offices spread across different locations. Each branch office needs access to a common set of files, such as policies, templates, or shared documents. By using Azure File

Sync, the company can deploy local file servers at each branch office, synchronized with a centralized Azure file share. This ensures that employees at each branch have fast access to the files they need, while also centralizing management and ensuring data consistency across all locations.

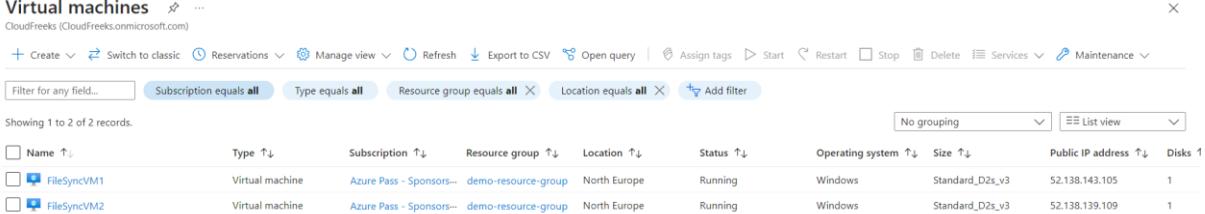
2. **Cross-Platform Collaboration:** In a scenario where teams are spread across various geographic locations and are working on different platforms (Windows, Linux, macOS), Azure File Sync can provide a unified file storage solution. Teams can access the same set of files from both on-premises Windows servers and Azure VMs, ensuring seamless collaboration regardless of location or platform.
3. **Backup and Disaster Recovery:** Azure File Sync simplifies backup and disaster recovery processes for organizations by centralizing file storage in Azure Files. Instead of managing backups for each individual file server, administrators can rely on Azure Backup to protect the data stored in Azure Files. In the event of a disaster or data loss, files can be easily restored from Azure Backup, minimizing downtime and ensuring business continuity.
4. **Hybrid Cloud Environments:** For organizations transitioning to the cloud, Azure File Sync can serve as a bridge between on-premises infrastructure and cloud storage. Companies can gradually migrate their file servers to Azure Files while maintaining on-premises access and performance through local caching. This hybrid approach allows organizations to leverage the scalability and cost-efficiency of cloud storage without disrupting existing workflows or investments in on-premises infrastructure.
5. **Media and Entertainment Industry:** In industries such as media and entertainment, where large files (e.g., videos, graphics, design files) are frequently shared and accessed by multiple users, Azure File Sync can help optimize storage and access. By tiering cold data to Azure Files, organizations can free up local storage capacity on high-performance storage tiers for frequently accessed files, while still providing seamless access to less frequently accessed files stored in Azure.
6. **Healthcare Data Management:** Healthcare organizations deal with vast amounts of sensitive patient data that must be securely stored and accessed by authorized personnel. Azure File Sync can help healthcare providers centralize and secure their file storage infrastructure while ensuring compliance with data privacy regulations. By syncing on-premises file servers with Azure Files, healthcare organizations can enhance data security, streamline access controls, and simplify data management processes.

**In this lab, we're setting up Azure File Sync Service to synchronize files between on-premises Windows servers and Azure Files storage. The end goal is to demonstrate how Azure File Sync can centralize file storage, improve accessibility and performance, enable multi-site access, simplify backup and disaster recovery, and integrate with other Azure services. Through step-by-step instructions, we're deploying virtual machines, creating storage accounts and file shares, installing the Azure File Sync agent, configuring sync groups and endpoints, and observing file**

**synchronization in action. Ultimately, we aim to showcase the practical implementation and benefits of Azure File Sync for organizations managing distributed file systems.**

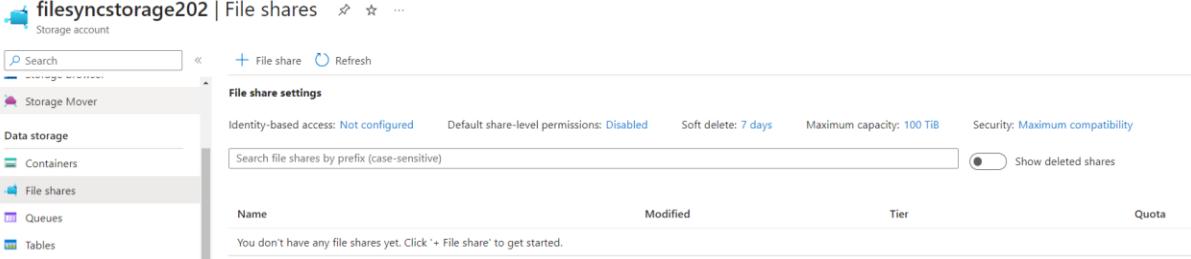
## To begin with the Lab:

1. In this lab you need to create two virtual machines based on Windows Server 2022.



Name	Type	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address	Disk
FileSyncVM1	Virtual machine	Azure Pass - Sponsors...	demo-resource-group	North Europe	Running	Windows	Standard_D2s_v3	52.138.143.105	1
FileSyncVM2	Virtual machine	Azure Pass - Sponsors...	demo-resource-group	North Europe	Running	Windows	Standard_D2s_v3	52.138.139.109	1

2. Once the machines are up and running, then you need to create a storage account. Also, if you have a storage account then you can use that too.
3. Now after the deployment of the storage account you need to open it and from the left pane choose file share. Then create a file share.



4. Then you just need to give it a name and then turn off the backup and create your file share.

## New file share ...

Basics    Backup    Review + create

Name \*

fileshare120

Access tier \*

Transaction optimized



### Performance

Maximum IO/s ⓘ 20000

Maximum capacity 100 TiB

To use the SMB protocol with this share, check if you can communicate over port 445. These scripts for [Windows clients](#) and [Linux clients](#) can help. Learn how to [circumvent port 445 issues](#).

Basics    **Backup**    Review + create

Azure Backup protects your file shares from accidental deletion or modification with granular restore and at-scale management capabilities. [Learn more ↗](#)

Enable backup



## Azure File Sync

Add to Favorites

Microsoft | Azure Service

★ 3.7 (27 ratings)

Plan

Azure File Sync

Create

6. Then you just need to choose your resource group and give it a name after that create your file sync.

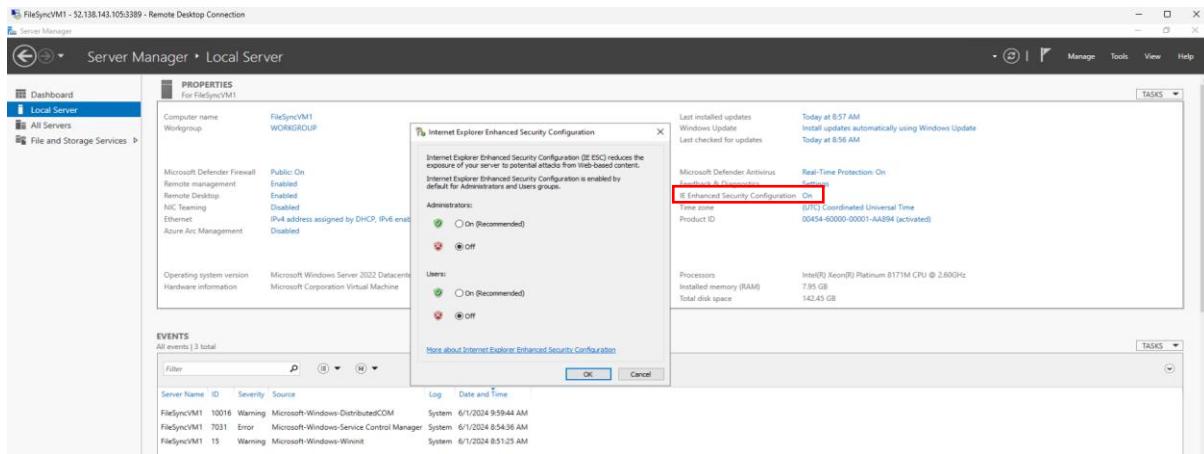
Azure File Sync in combination with Azure file shares allows you to centralize your organization's file shares in Azure, while keeping the flexibility, performance, and compatibility of an on-premises file server. [Learn more](#)



Deploying this storage sync service resource will allow you to transform your Windows Server into a quick cache for Azure file shares with optional cloud tiering and multi-server sync functionality. Keep in mind that servers registered to different storage sync service resources cannot exchange data with each other. It's best to register all servers to the same storage sync service if they will ever have a need to sync the same Azure file share.

Subscription *	Azure Pass - Sponsorship
Resource group *	demo-resource-group
Storage sync service name *	filesync122
Region *	North Europe

- Now you need to download the RDP file of any one of your VM and login to that. In the VM you need to go to local servers and turn off the IE enhanced security configuration.



- Then you need to open the Edge browser and download the file sync agent. For that you need to paste the link mention below.

<https://www.microsoft.com/en-us/download/details.aspx?id=57159>

- Here you need to download the WS\_2022 agent as we have the Windows server 2022 with us. Once the file is downloaded then you need to install it.

## Choose the download you want

<input type="checkbox"/> File Name	Size
<input type="checkbox"/> Microsoft Azure File Sync - License Terms.docx	15.3 KB
<input type="checkbox"/> StorageSyncAgent_WS2012R2.msi	50.8 MB
<input type="checkbox"/> StorageSyncAgent_WS2016.msi	50.8 MB
<input type="checkbox"/> StorageSyncAgent_WS2019.msi	50.8 MB
<input checked="" type="checkbox"/> StorageSyncAgent_WS2022.msi	50.8 MB

**Download**

Total size: 50.8 MB

10. Then you need to come back to the Portal and open the File sync service. In that go to Sync groups and create a group.

The screenshot shows the Azure Storage Sync Service portal. At the top, there's a header with the service name and a 'Sync groups' button. Below the header is a search bar and some navigation links ('Create a sync group', 'Refresh', 'Give feedback'). On the left, there's a sidebar with 'Settings' (Network, Locks) and 'Sync' (Sync groups, Registered servers). The 'Sync groups' item is currently selected. The main content area displays a message: 'Sync group name' and 'No Sync groups to display'.

11. Then you need to give it a name and then choose your storage account and your filer share. Then just hit on create.

Start by specifying an Azure file share to sync with - this is the sync group's cloud endpoint.

You can specify a folder on your servers you want to sync later.

[Learn more](#)

Sync group name \*

groupA



Cloud endpoint

Subscription \*

Azure Pass - Sponsorship



Storage account \*

Select storage account

/subscriptions/6e13e5d6-4287-42a8-b80f-9... ✓

Azure File Share

fileshare120



12. So this Sync group created two things one is the group itself and the other is the cloud endpoint. This cloud endpoint is the place where our data is going to be stored.

---

✓ Cloud endpoint creation succeeded X

Cloud endpoint 'fileshare120'

a few seconds ago

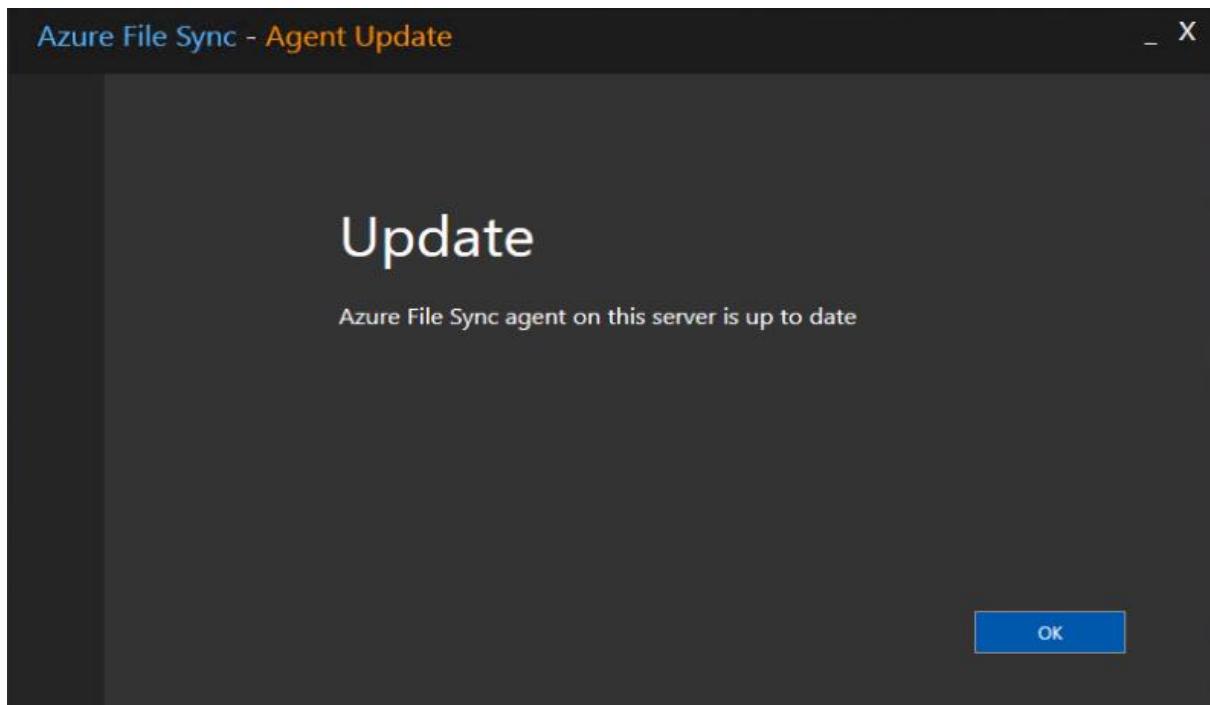
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✓ Sync group creation succeeded X

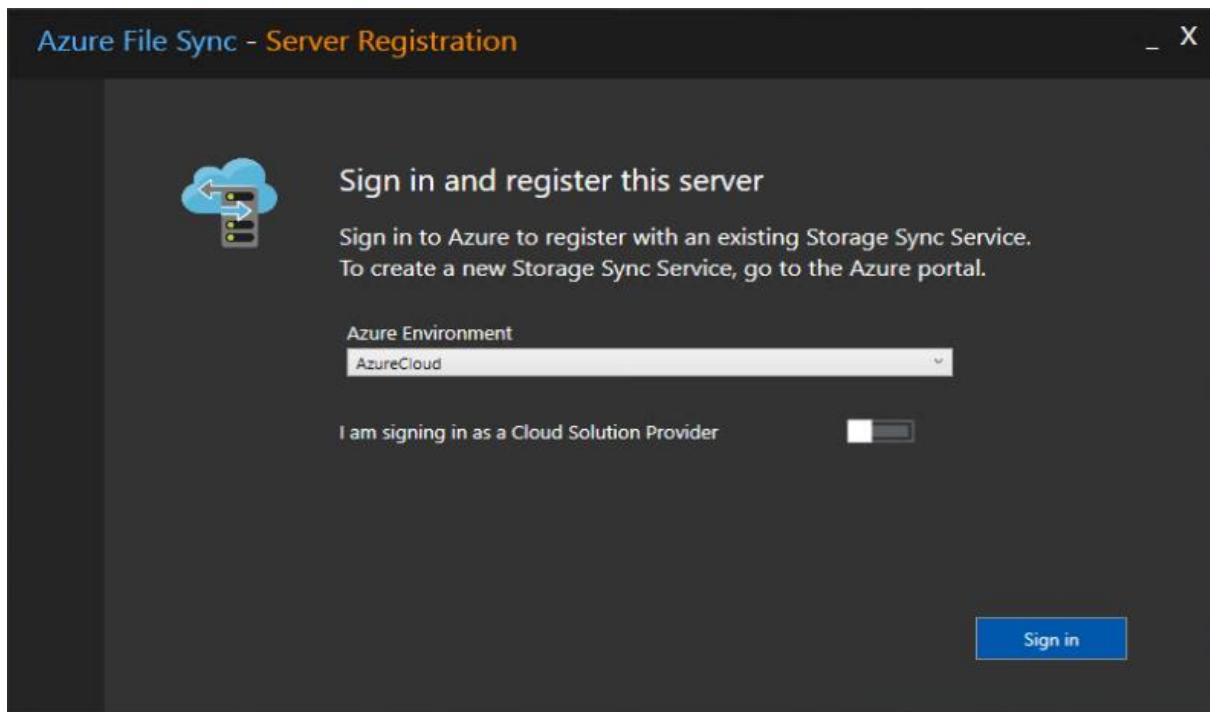
Sync group 'groupA'

a few seconds ago

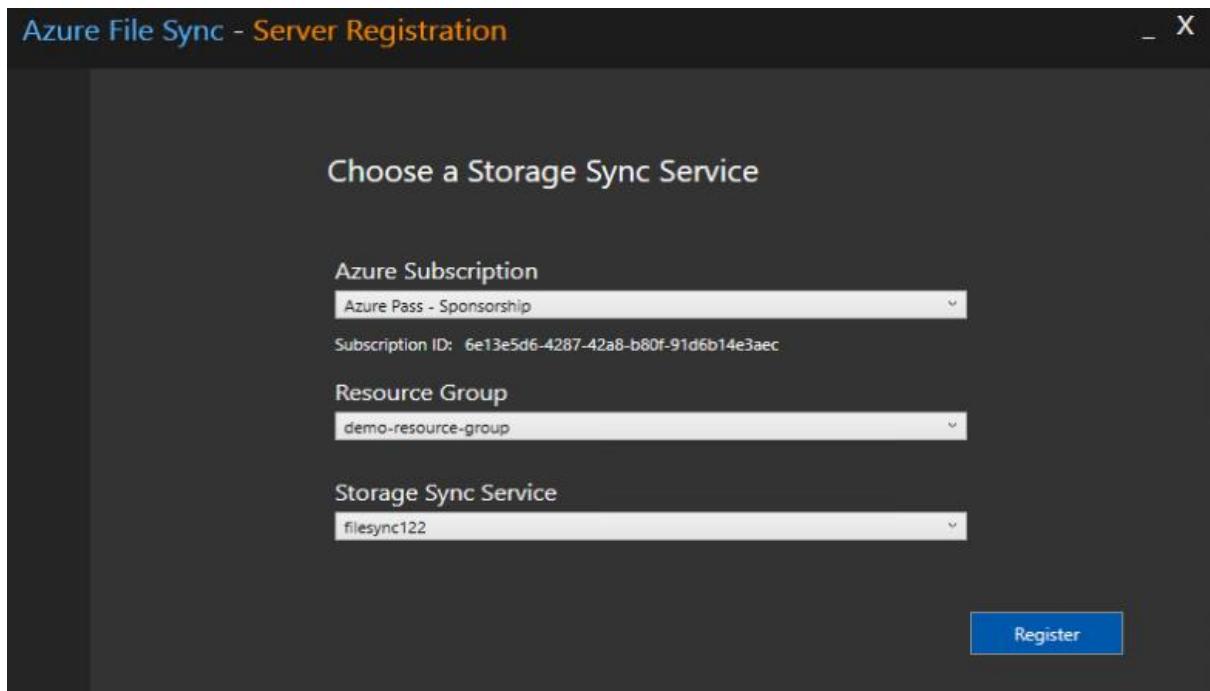
13. Now go back to your VM here you will see that your agent has been installed, now you need to configure it. Click on OK.



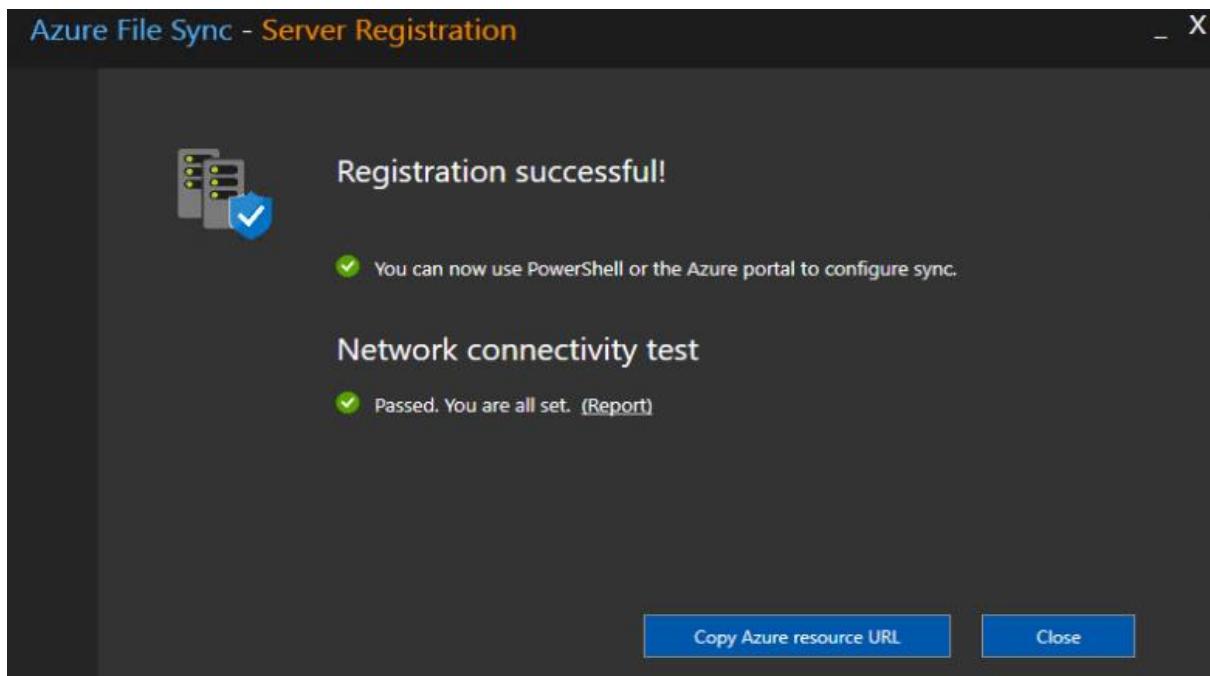
14. Then it will ask you to sign in.



15. Once you have signed in then it will ask you to choose your subscription and your resource group then the sync service. Then click on register.



16. Once your registration is complete then you need to click on close.



17. Now you need to do the same steps as above in your other VM. After that when you are done come back to file sync service, the navigate to Registered servers.
18. Here you will see both of your VMs registered. So, that agent on that server has actually gone ahead and registered both of the virtual machines, as registered servers as part of the file sync service.

The screenshot shows the 'Registered servers' section of the Azure Storage Sync Service. It includes a search bar, tags, settings, network, locks, sync groups, and a 'Getting Started' link. A red box highlights the 'Registered servers' link. The main area displays a table with columns: Server Name, State, Type, Operating System, Agent Version, and Last seen. Two servers are listed: FileSyncVM1 and FileSyncVM2, both marked as 'Online'.

Server Name	State	Type	Operating System	Agent Version	Last seen
FileSyncVM1	Online	Server	Windows Server 2022	17.2	1/6/2024, 3:48:20 pm
FileSyncVM2	Online	Server	Windows Server 2022	17.2	1/6/2024, 3:54:50 pm

19. So, now what we want to do is that we want to ensure that we have the ability to sync the files from our servers onto the file share.
20. Now you need to open both of your VMs one by one and in your C drive and create a folder named with data.
21. By doing this we are saying whatever the file is present in this data folder will get synced in between the VMs.

The screenshot shows the Windows File Explorer interface on FileSyncVM1. The left sidebar shows 'This PC' selected. The main area shows a list of folders in the 'Windows (C:)' drive, including 'data' which is highlighted with a blue selection bar.

Name	Date modified	Type	Size
Packages	6/1/2024 8:52 AM	File folder	
PerfLogs	5/8/2021 8:20 AM	File folder	
Program Files	6/1/2024 10:07 AM	File folder	
Program Files (x86)	5/10/2024 9:39 PM	File folder	
Temp	5/10/2024 9:51 PM	File folder	
Users	6/1/2024 9:59 AM	File folder	
Windows	6/1/2024 8:52 AM	File folder	
WindowsAzure	6/1/2024 8:54 AM	File folder	
<b>data</b>	6/1/2024 10:44 AM	File folder	

The screenshot shows the Windows File Explorer interface on FileSyncVM2. The left sidebar shows 'This PC' selected. The main area shows a list of folders in the 'Windows (C:)' drive, including 'data' which is highlighted with a blue selection bar.

Name	Date modified	Type	Size
Packages	6/1/2024 8:55 AM	File folder	
PerfLogs	5/8/2021 8:20 AM	File folder	
Program Files	6/1/2024 10:18 AM	File folder	
Program Files (x86)	5/10/2024 9:39 PM	File folder	
Temp	5/10/2024 9:51 PM	File folder	
Users	6/1/2024 10:16 AM	File folder	
Windows	6/1/2024 8:55 AM	File folder	
WindowsAzure	6/1/2024 8:58 AM	File folder	
<b>data</b>	6/1/2024 10:45 AM	File folder	

22. Now in your File sync service go to group A and open it, then you need to create a server endpoint.

The screenshot shows the Azure portal interface for managing sync groups. In the top left, it says 'groupA Sync group'. Below that is a search bar and navigation links for Overview, Monitoring, Status, and Metrics. The main area is titled 'Cloud endpoint' and lists one item: 'fileshare120' connected to 'filesyncstorage202'. The status is 'Provisioned' with a green checkmark. To the right, there's a 'Change enumeration' link and a note about completion on 6/1/2024 at 3:39:29 PM. Below this is a section for 'Server endpoints' with a red box around the '+ Add server endpoint' button. Other columns include 'Server name + path', 'Health', 'Persistent sync errors', 'Upload to cloud', 'Download to server', and 'Cloud tiering space savings'.

23. Now you need to choose your file sync VM1 and give the path of your data folder which is in the C drive of your VM. Then hit on create.

Registered Server \*

FileSyncVM1

Path \*

C:\data

Files from this server path have been brought to the cloud via DataBox or other means of seeding the cloud endpoint (Azure file share) in this sync group.

i This option supports DataBox and DataBox Heavy. DataBox Disk is not supported.

Cloud Tiering

Disabled

! You may be trying to create a server endpoint on the server's system volume. Please note that you will not be able to enable cloud tiering on the system volume.

Give feedback

Create Cancel

24. Similarly, you need to add another endpoint for file sync VM2 and create it.

## Registered Server \*

FileSyncVM2

## Path \*

C:\data



Files from this server path have been brought to the cloud via DataBox or other means of seeding the cloud endpoint (Azure file share) in this sync group.

**i** This option supports DataBox and DataBox Heavy. DataBox Disk is not supported.

## Cloud Tiering

Disabled



You may be trying to create a server endpoint on the server's system volume. Please note that you will not be able to enable cloud tiering on the system volume.

Give feedback

**Create**

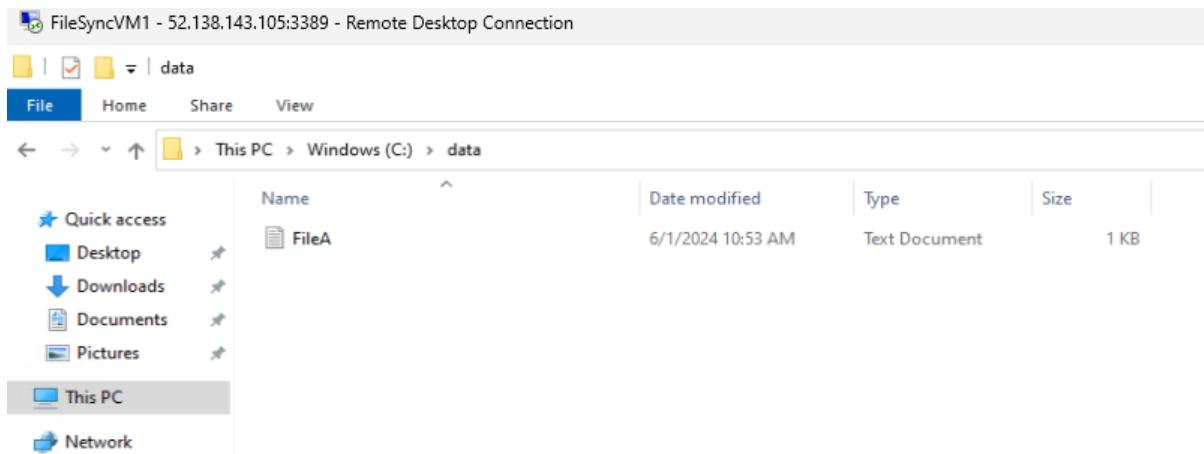
**Cancel**

25. Below you can see that we have both of the endpoints in place but still their health status is pending so, we need to wait until they get healthy.

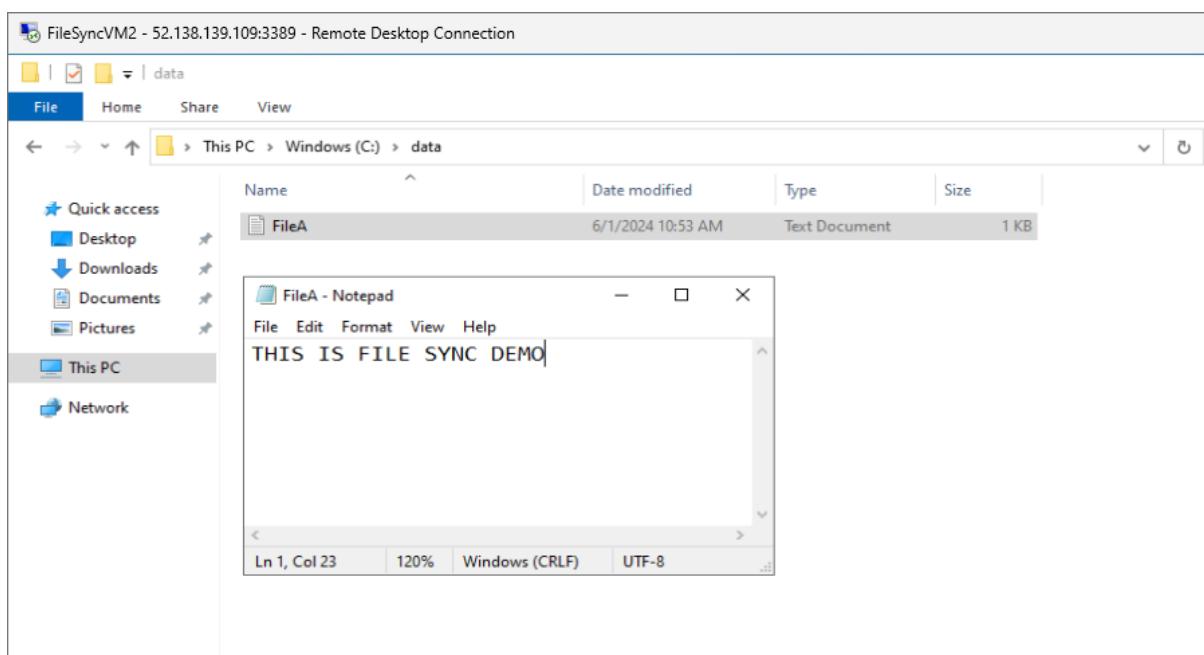
Server name + path	Health	Persistent sync errors	Upload to cloud	Download to server	Cloud tiering space savings
FileSyncVM1 + C:\data	Pending	0	Waiting for initial upload to start	Waiting for initial download to start	Disabled
FileSyncVM2 + C:\data	Pending	0	Waiting for initial upload to start	Waiting for initial download to start	Disabled

Server name + path	Health	Persistent sync errors	Upload to cloud	Download to server	Cloud tiering space savings
FileSyncVM1 + C:\data	Healthy	0	Complete on 6/1/2024, 4:23:07 PM	Complete on 6/1/2024, 4:23:30 PM	Disabled
FileSyncVM2 + C:\data	Healthy	0	Complete on 6/1/2024, 4:20:16 PM	Complete on 6/1/2024, 4:23:11 PM	Disabled

26. So, what you can do is go to your file sync VM1 and go to the data folder then open notepad create a basic file with some random text, and save it here.



27. Now, after a minute or two, if you go to file sync VM2 and open the data folder, you will see the file here as well because it automatically gets synced.



28. Now if you go to your storage account, and then go to the file share and open it and then go to browse then you will see your file here too.

A screenshot of the Azure Storage Explorer interface. The left sidebar shows "filesyncstorage202 | File shares > fileshare120 | Browse". The main area shows a list of files in the "fileshare120" share:

Name	Type	Size
.SystemShareInformation	Directory	
FileA.txt	File	22 B

At the top, there are navigation buttons for "Search", "Connect", "Upload", "Add directory", "Refresh", "Delete share", "Change tier", and "Edit quota". A message "Authentication method: Access key (Switch to Microsoft Entra user account)" is displayed.

29. So, over here what's happening is that the files are being synced now across the service, wired that Azure file synced service, and is going ahead and making use of a central file share for the storage of files.

30. Once you are done the delete all of your resources.