



Desktop-as-a-Service (DaaS) Using Windows Virtual Desktop (WVD) Business Continuity with Azure Backup

Prepared for:

Service Provider Partners

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1. Overview

This document is a walk-through of implementing [Azure Backup](#) (AzBackup) and Azure Files On-Demand within the new Windows Virtual Desktop (WVD) in Microsoft Azure. Data can be backed up and recovered at a granular level, including backup of files, folders, machine system state, and app-aware data backup. Azure Backup handles data at a more granular level than Azure Site Recovery.

Please be advised this information is provided to help understand/summarize this process and your enterprises' implementation may contain additional customizations and/or settings that ***might not*** be covered in this document.

2. Prerequisites

Azure & Windows Active Directory Prerequisites

Before getting started, **all** items listed below **must** be checked/validated to ensure the most basic requirements are in place to proceed with executing the remaining steps in this guide.

- An [Azure Active Directory](#)
- A Windows Server Active Directory in sync with Azure Active Directory. This can be enabled through:
 - Azure AD Connect
 - Azure AD Domain Services
- An Azure subscription, containing a virtual network that either contains or is connected to the Windows Server Active Directory
- A working Windows Virtual Desktop environment
- A file server within the subscription acting as the data source

General Best Practices

Since everyone's business and technical requirements vary across the board, it is always a good idea to familiarize yourselves with the standard best practices across the different Azure technologies & services.

- Please follow the guidance [here](#) to maintain a consistent naming convention across your resources, unless you are already using a naming system.
- [Azure security best practices and patterns](#)
- Azure Active Directory Hybrid Identity [best practices](#)
- [Azure identity management and access control security best practices](#)

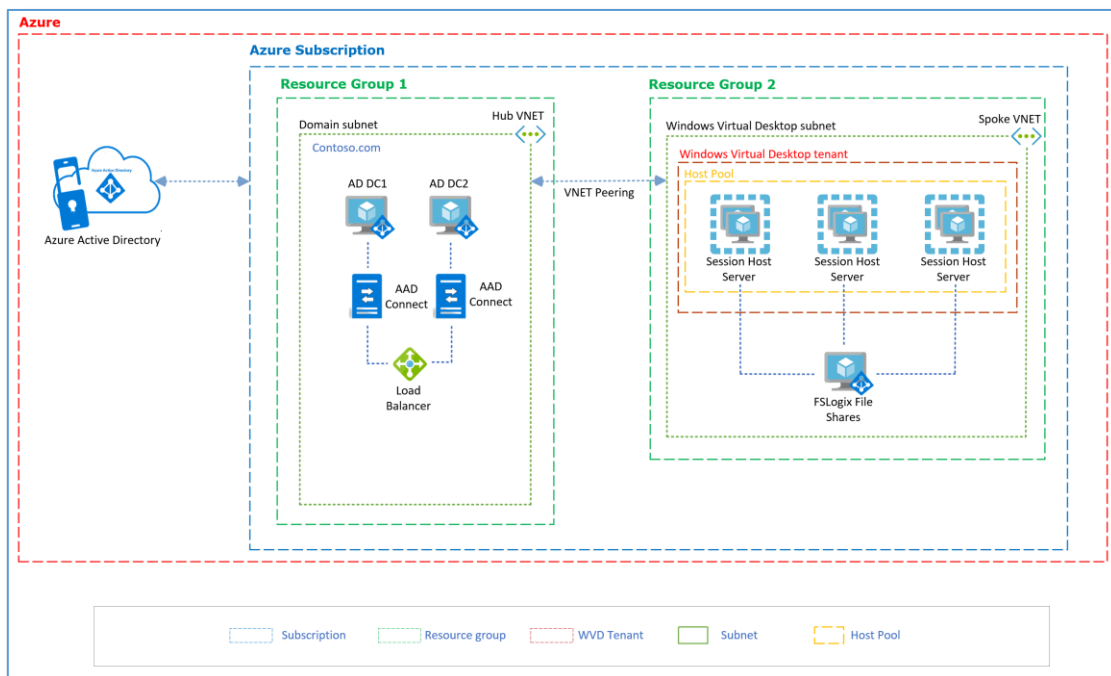
- Azure Networking & security [Best Practices](#)
- Azure Storage security [overview](#)
- [Best practices for Azure VM security](#)

Azure Networking

The recommendation is to design your Azure Networking using a [Hub-Spoke topology](#). Consider the HUB like a DMZ deployed with your Virtual network Gateways and other security/edge appliances like Firewalls Etc. while the Spoke will act as the backend zone where your session hosts servers are deployed to and is peered with the HUB. This is our design for this walk-through, so you'll need this already setup before proceeding.

Azure Architectural Diagram

Below is a diagram of the Azure environment that we'll use. It shows the objects created in Azure and their relationships within the environment. In this example, the company name will be Contoso.



3. OneDrive and Azure Files On-Demand for the Enterprise

OneDrive Files On-Demand has been designed from the ground up for enterprises. Files On-Demand leverages the Windows Fall Creators update to simplify the user experience with cloud storage and sync, bring the power of the cloud into Windows File Explorer, and dramatically limit the network

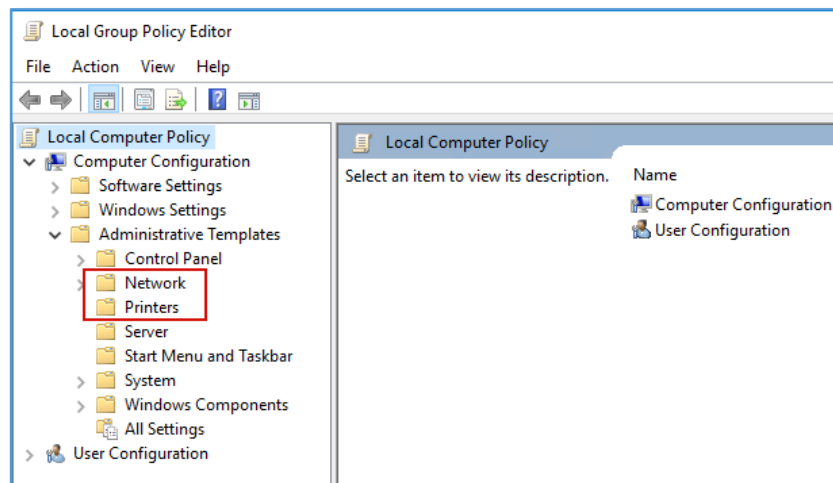
impact of sync on your corporate network. Since Files On-Demand already provides a backup feature, if enabled, we can exclude OneDrive and SharePoint files from our User Profile Disk backup strategy.

In our backup setup example below, we exclude the OneDrive files from the backup since we will have Files On-Demand enabled.

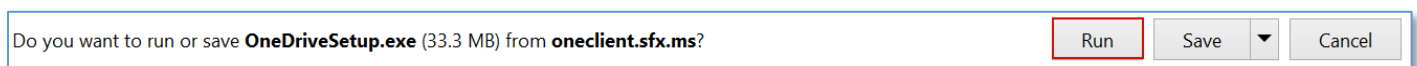
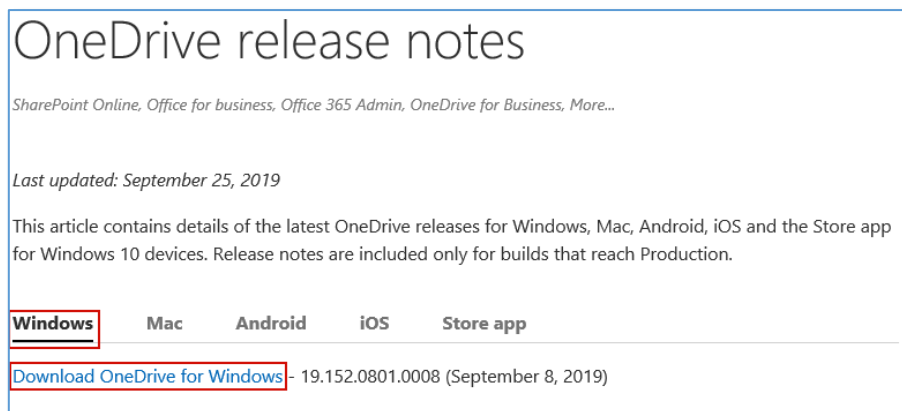
Enable Files On-Demand

To enable Files On-Demand, a Group Policy needs to be added for OneDrive. This policy will cause OneDrive to default to using online-only storage for designated users within the tenant.

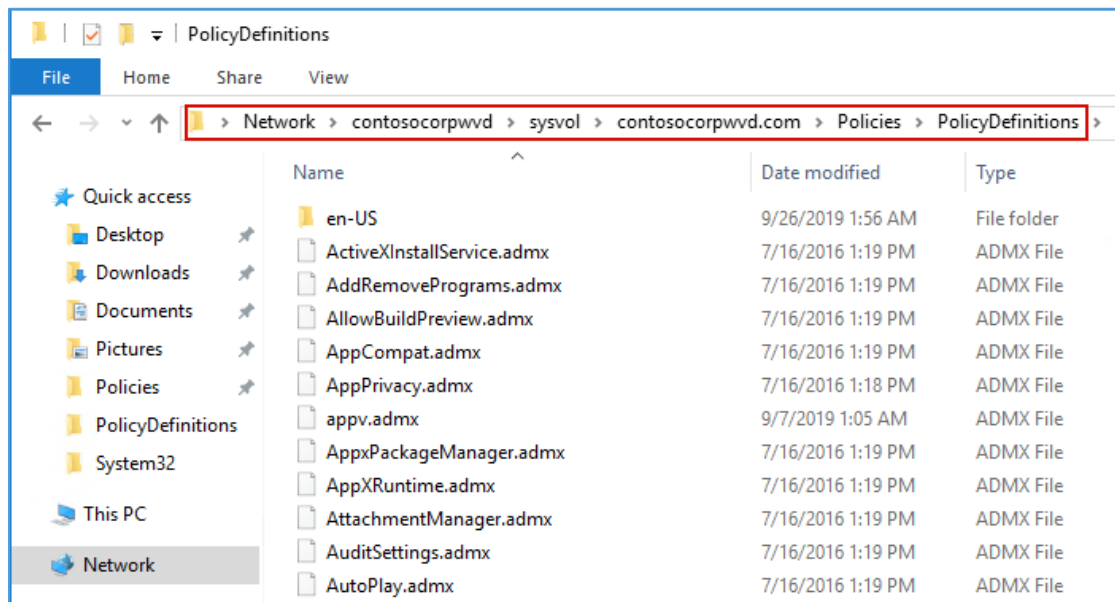
In our example, we're using Windows 2016 Server VMs for the domain controllers, and they don't have the OneDrive Group Policy Administrative Templates installed by default:



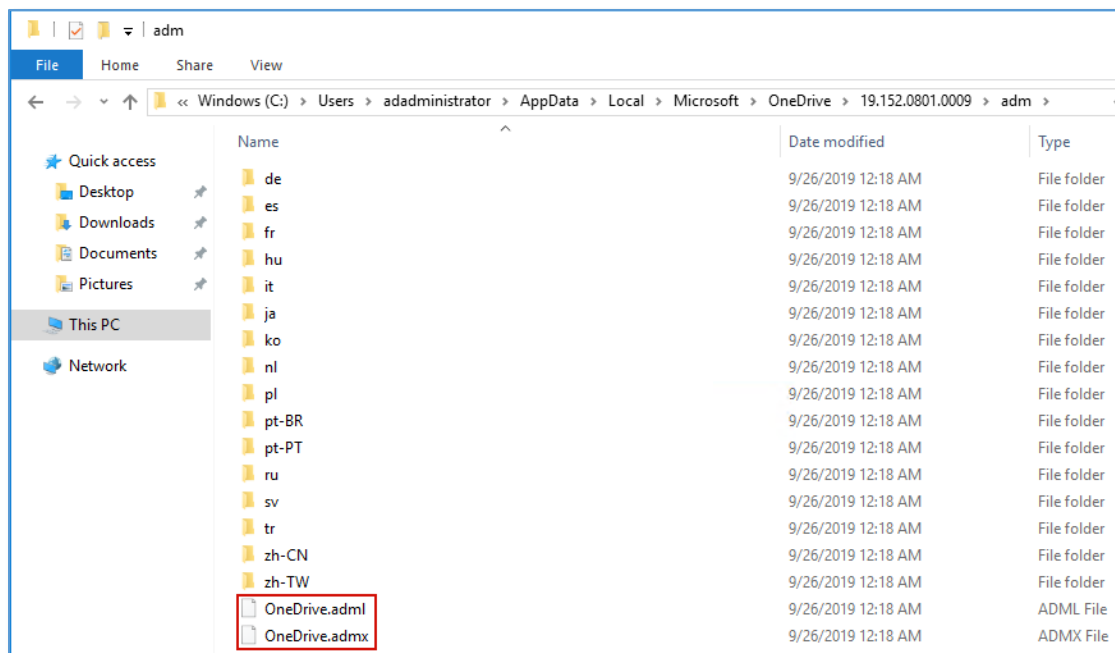
1. To get the policies, we need to **download** and **install** the [OneDrive sync client](#) to a DC:



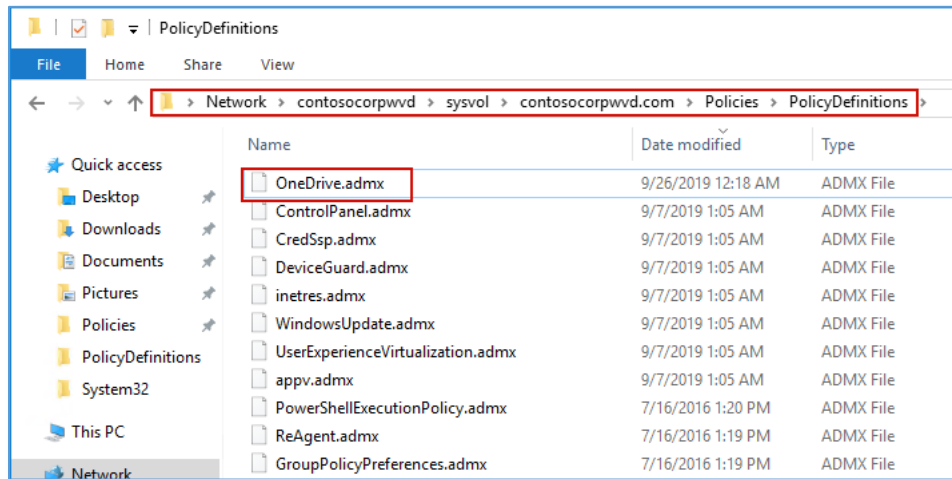
2. Now, we'll setup a Group Policy Central Store for the new policies to be located within. On a domain controller, **copy** the folder and contents **C:\Windows\PolicyDefinitions** to **\\[your domain]\sysvol\[your domain]\Policies:** (if it's not already there)



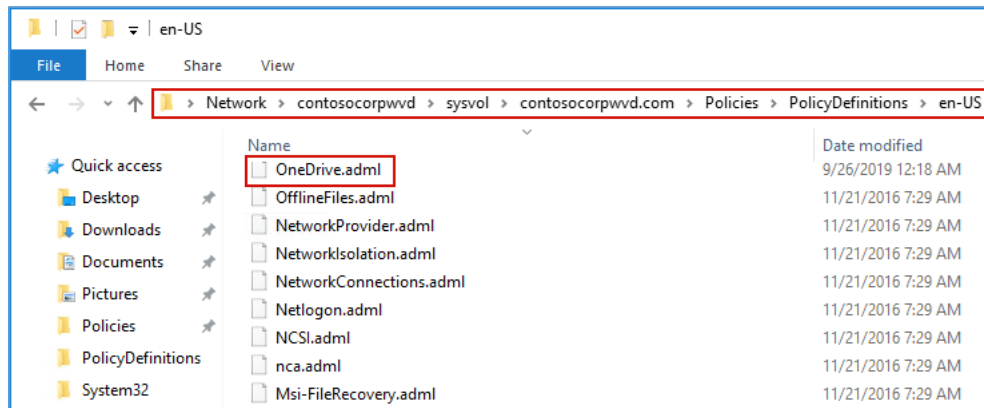
3. Browse to **%localappdata%\Microsoft\OneDrive\[BuildNumber]\adm**, (and to the subfolder for your language, as necessary) and **copy** the 2 files as shown:



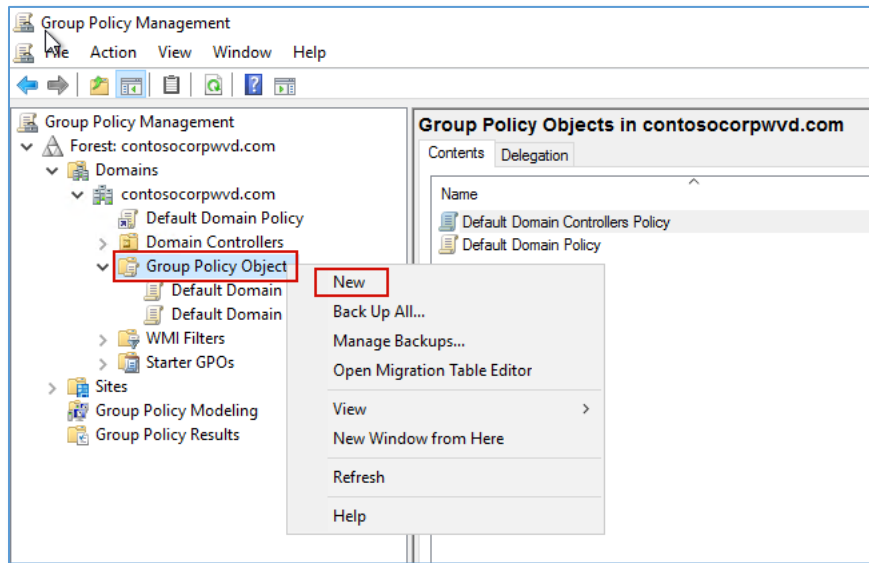
4. Paste the **OneDrive.admx** file into the **\\[your domain]\sysvol\[your domain]\Policies\PolicyDefinitions** folder:



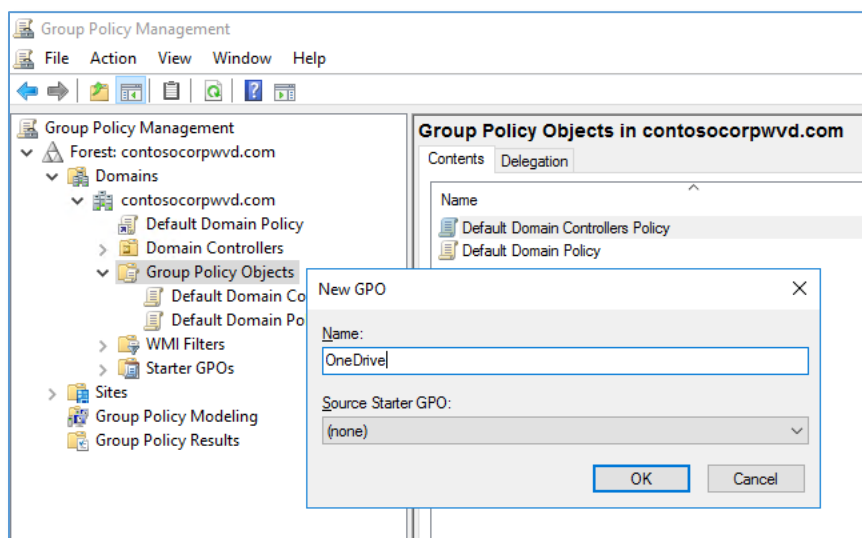
5. Paste the **OneDrive.adml** file into the sub-folder called **en-US**:



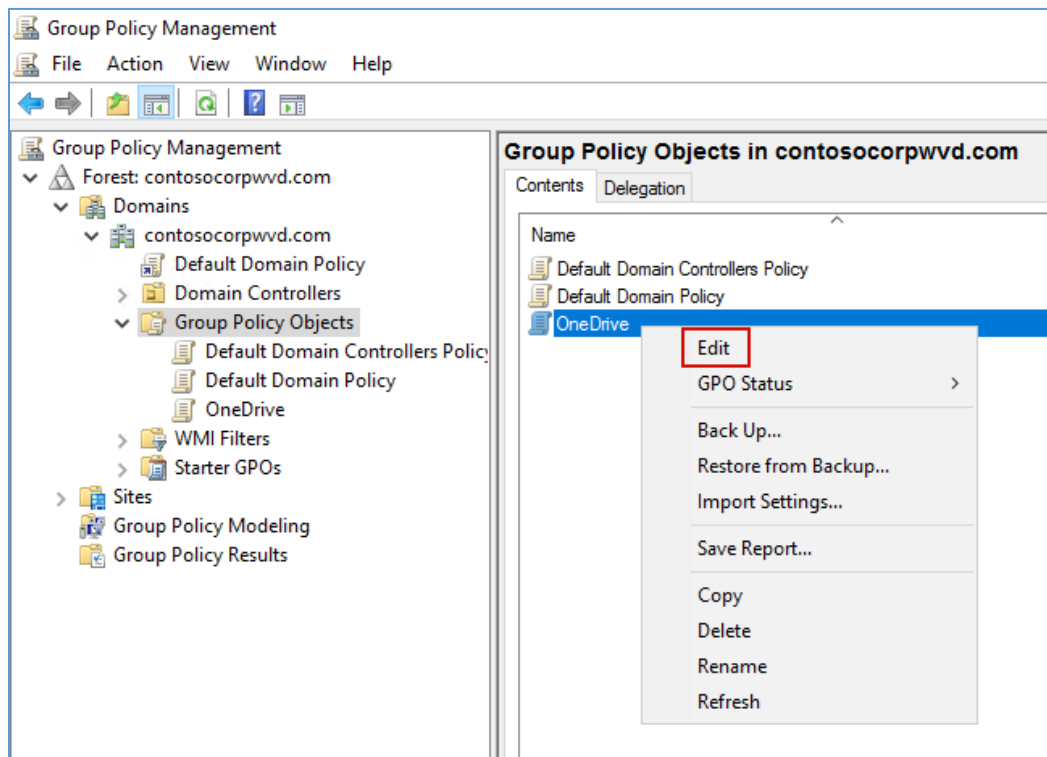
6. Using **gpmmc.msc**, create a new **OneDrive** Group Policy Object:



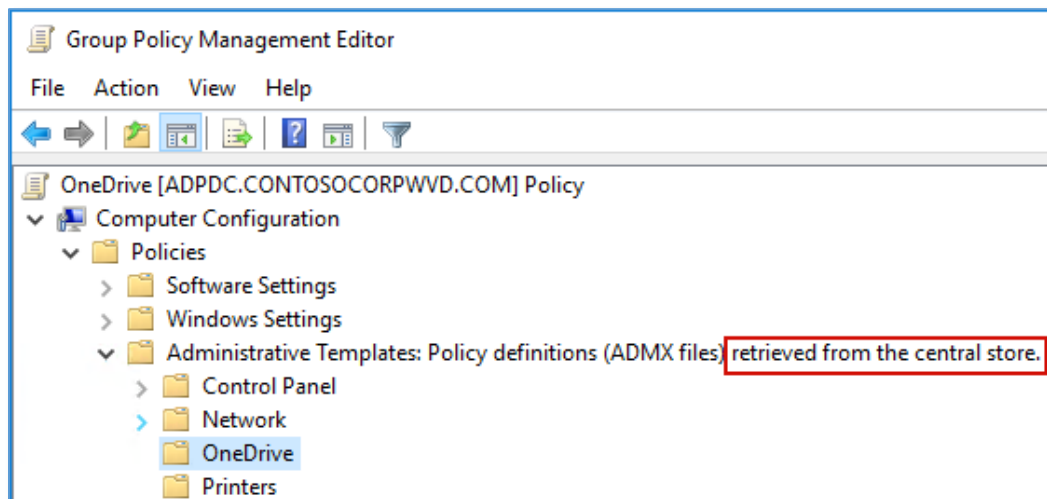
Name it...



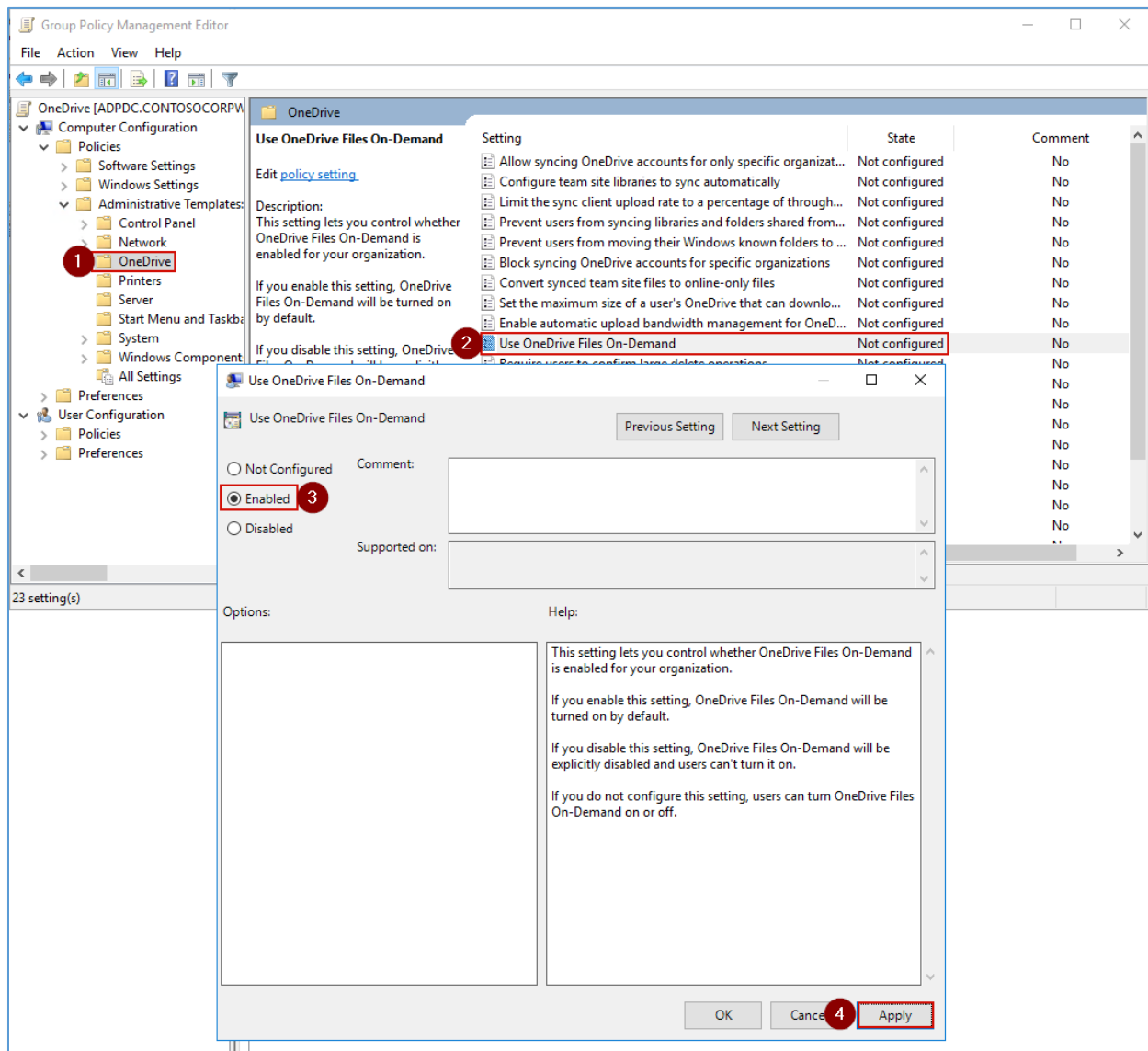
7. **Edit** the new OneDrive GPO:



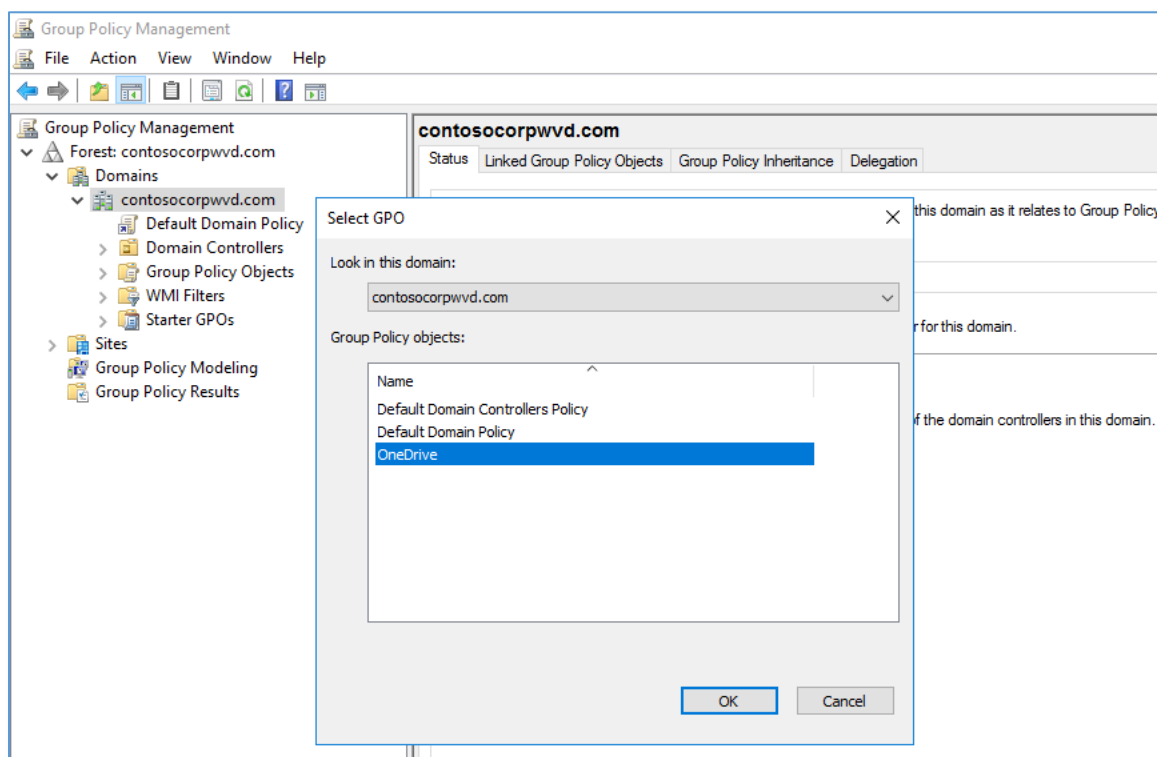
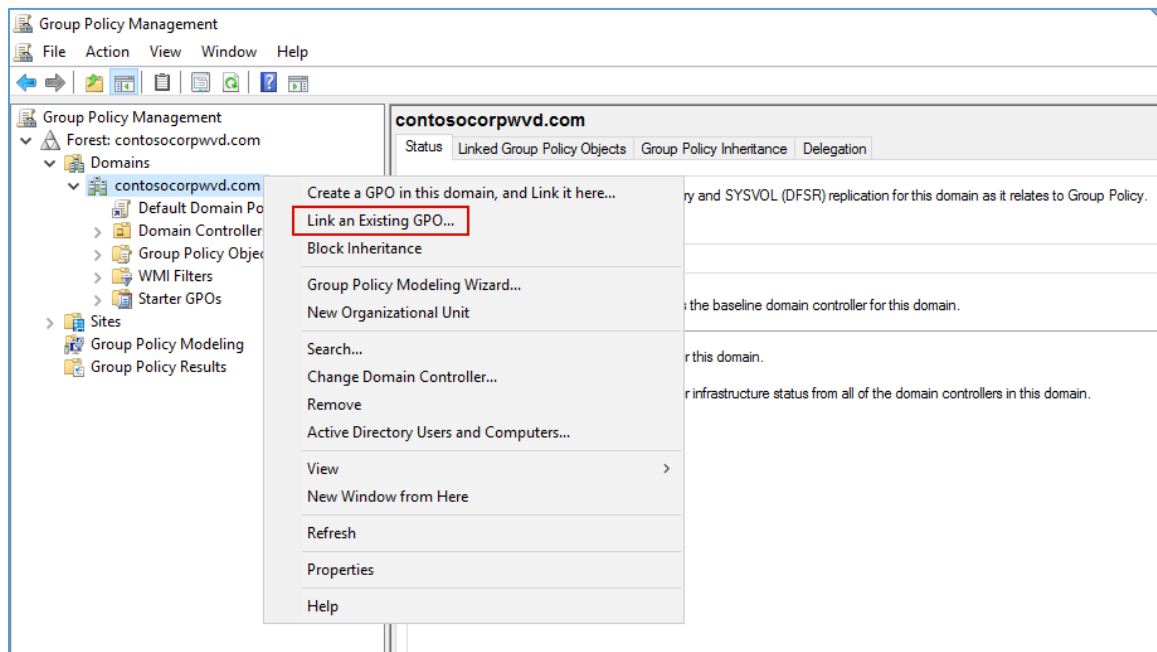
The editor indicates that we're now using the Central Store:



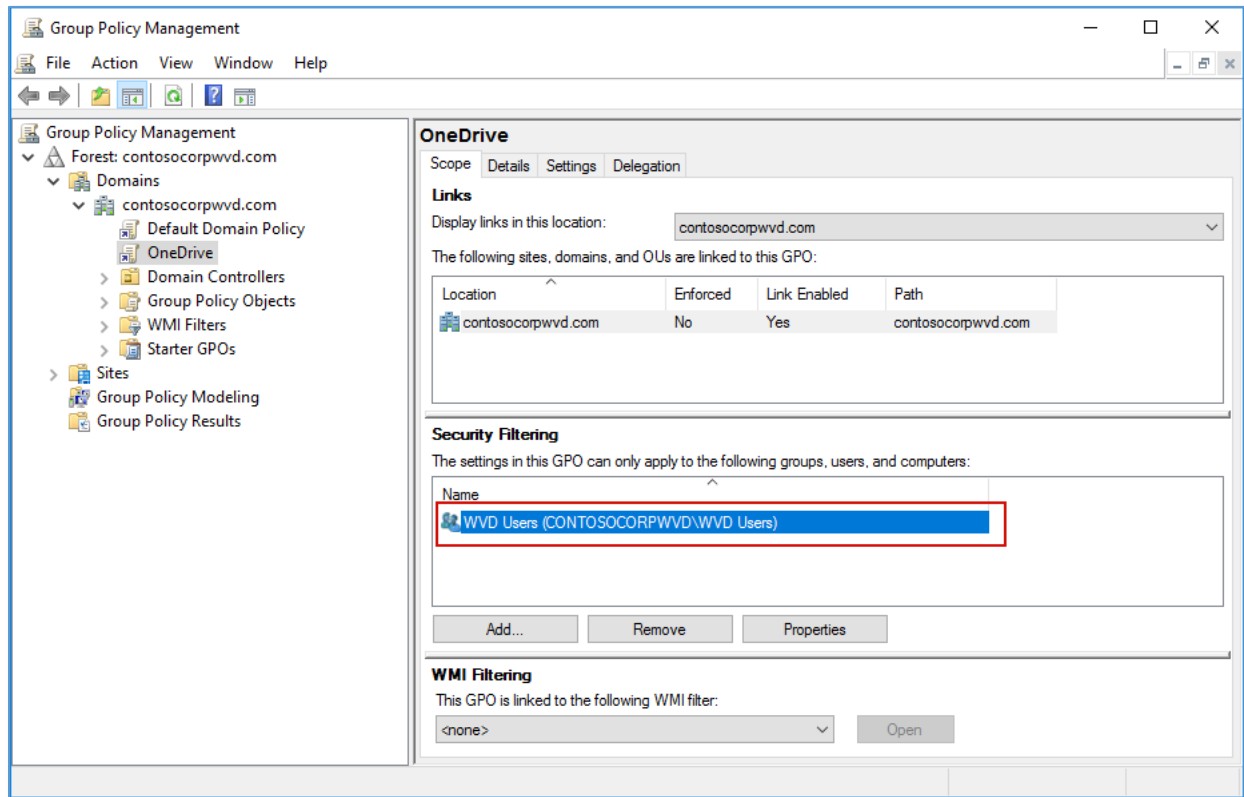
8. **Enable** "Use OneDrive Files On-Demand" policy and close the editor:



9. Right-click the domain name and **link** the new OneDrive GPO to the domain:



10. **Edit** the GPO scope to apply to only users in our **WVD Users** security group:



Done!

4. Setup Azure Backup

In this section we'll implement Azure Backup using Recovery Services. A Recovery Services vault is a storage entity in Azure that houses data. The data stored is typically copies of files, or configuration information for virtual machines. In our example, we're going to backup the UDP folder used by FSLogix for storing user profiles in persistent desktops in WVD.

Create a Recovery Services vault

We need to create the vault in any region, except the source region. We'll create a resource group in which to create the vault. In the example below, the resource group is named VMDRtoAzurePS and is created in the East Asia region.

- Log into your Azure subscription using the Connect-AzAccount cmdlet:

```
Azure PowerShell:  
Connect-AzAccount
```

- Select the Azure subscription you want to back up your data to. In our example we'll use the Contoso subscription:

Azure PowerShell:

```
Select-AzSubscription -SubscriptionName "Contoso Subscription"
```

- Create a resource group in which to create the Recovery Services vault and choose any region, except the source region. In our example, we'll use **ContosoRSVRG** & **East Asia**:

Azure PowerShell:

```
New-AzResourceGroup -Name "ContosoRSVRG" -Location "East Asia"
```

Result:

```
ResourceGroupName : ContosoRSVRG
Location           : eastasia
ProvisioningState  : Succeeded
Tags               :
ResourceId         : /subscriptions/...
```

- Create a Recovery services vault. We'll call ours **ContosoRSV**:

Azure PowerShell:

```
New-AzRecoveryServicesVault -Name "ContosoRSV" -Location "East Asia" -
ResourceGroupName "ContosoRSVRG"
```

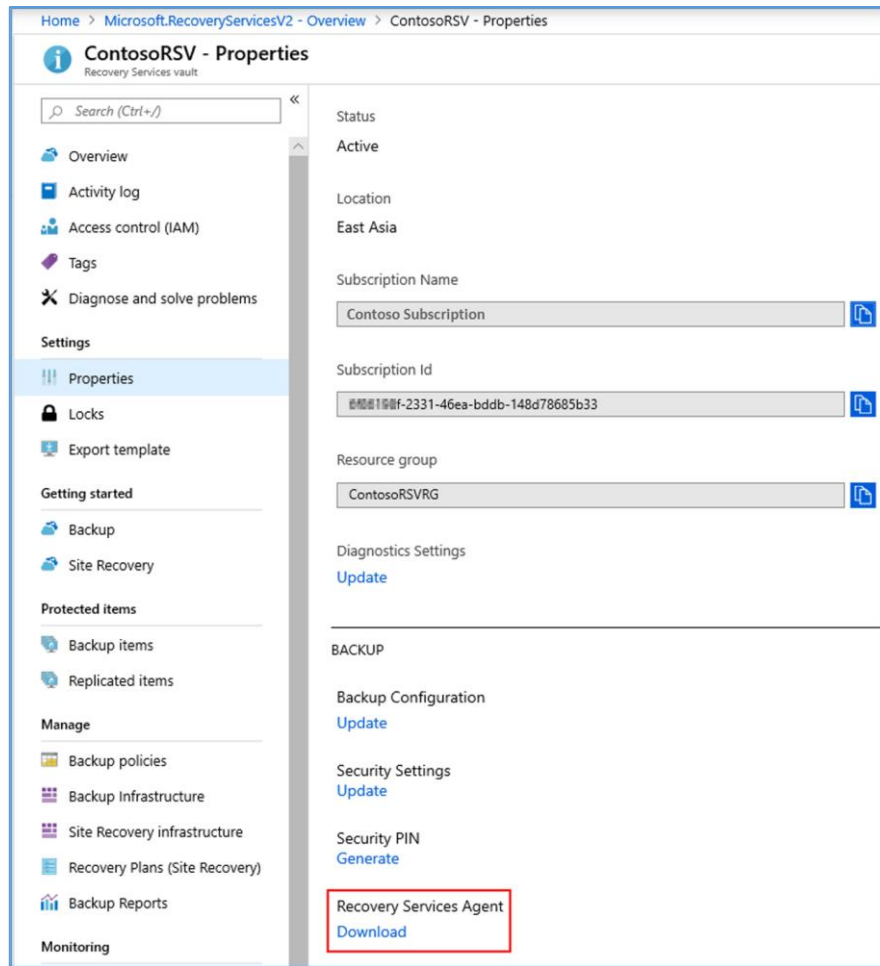
Result:

```
Name                : ContosoRSV
ID                  : /subscriptions/...
Type                : Microsoft.RecoveryServices/vaults
Location            : eastasia
ResourceGroupName   : ContosoRSVRG
SubscriptionId       : xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxxx
Properties           : Microsoft.Azure.Commands.RecoveryServices.ARSVaultProperties
```

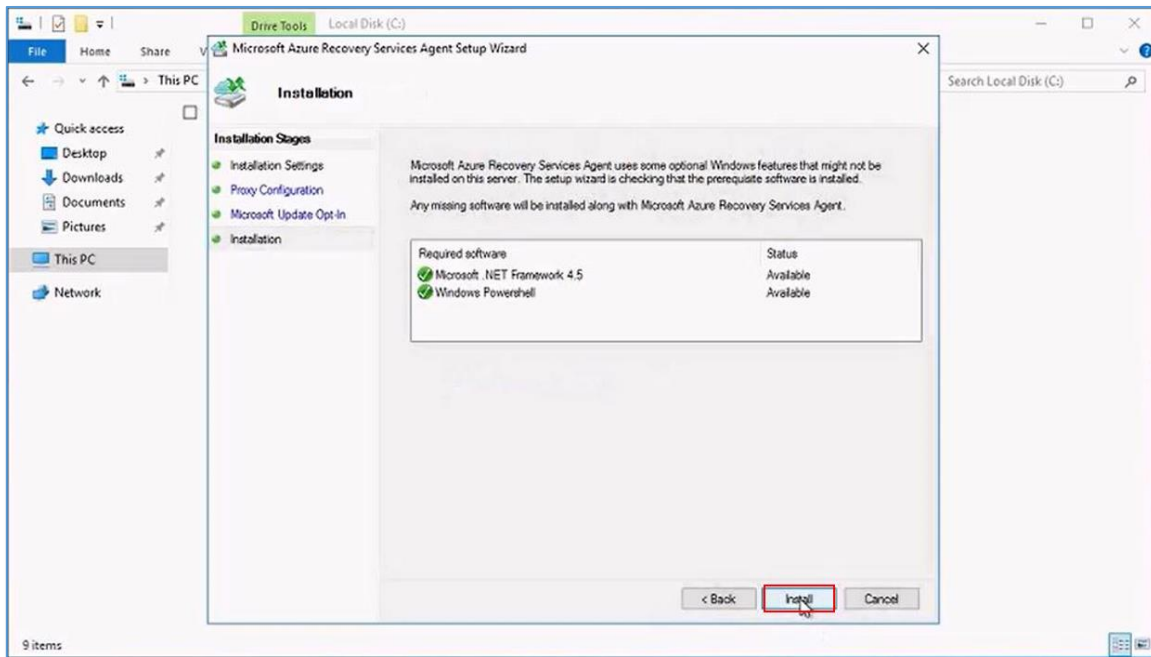
Install Recovery Service Agent on a File Server

Login to the Azure portal and click on the new **ContosoRSV** Recovery Services vault.

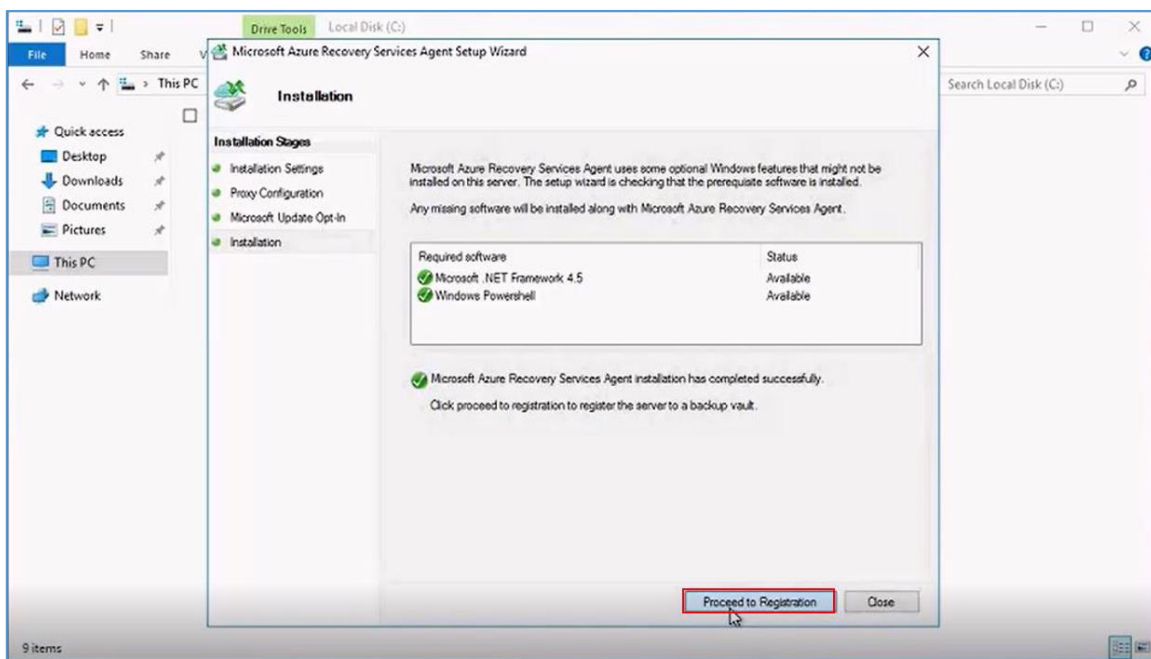
1. In **Settings** > **Properties**, download the **Recovery Services Agent** and **Backup credentials** file:



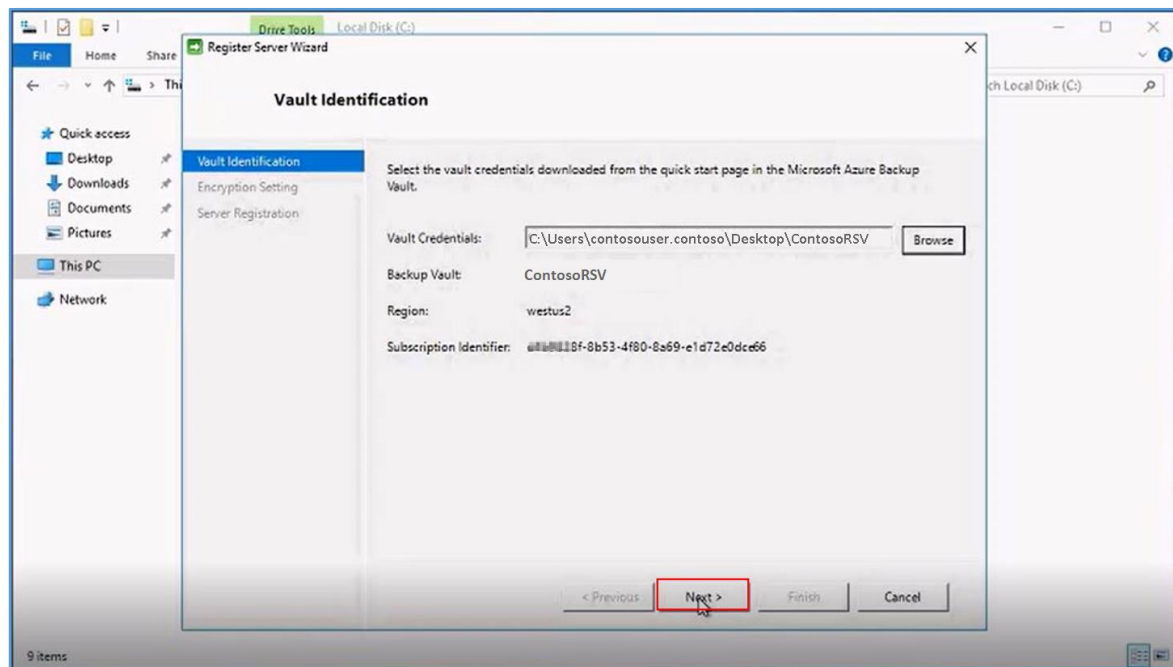
2. **Copy** the downloaded files to the Files Server with the data that needs to be backed up. In our example, we're using fs01.contoso.local.
3. On the file server, double-click the **MARSAgent** installer file, to start the installation wizard, then click **Install**:



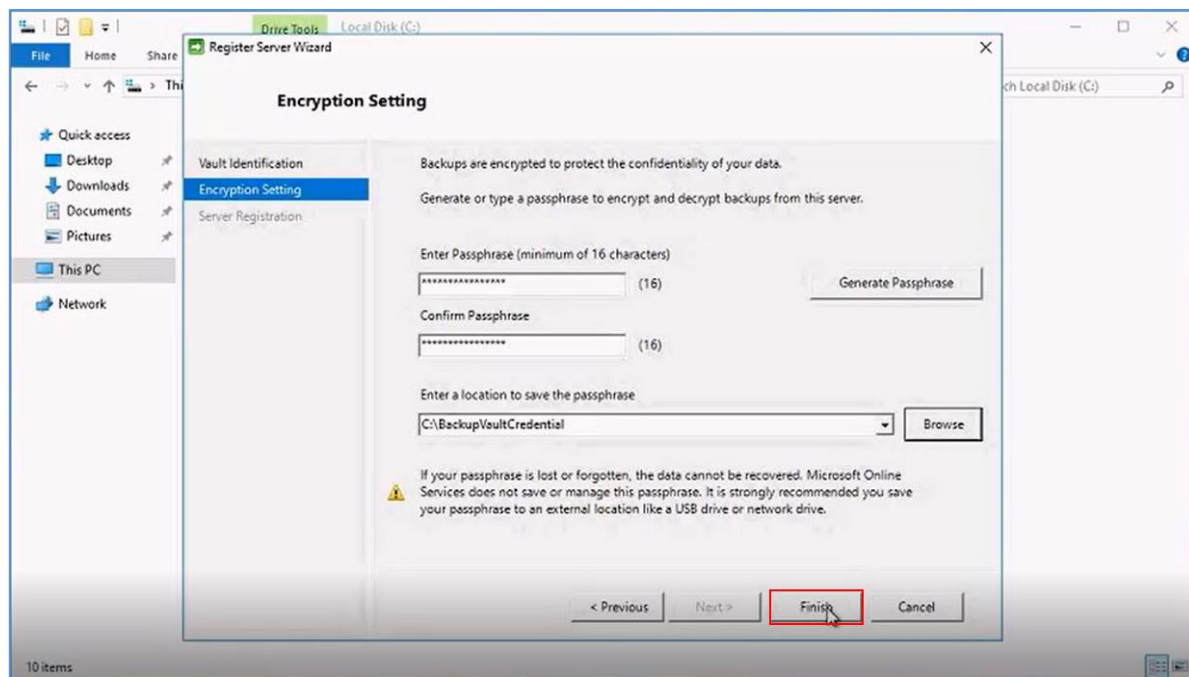
4. Click **Proceed to Registration**



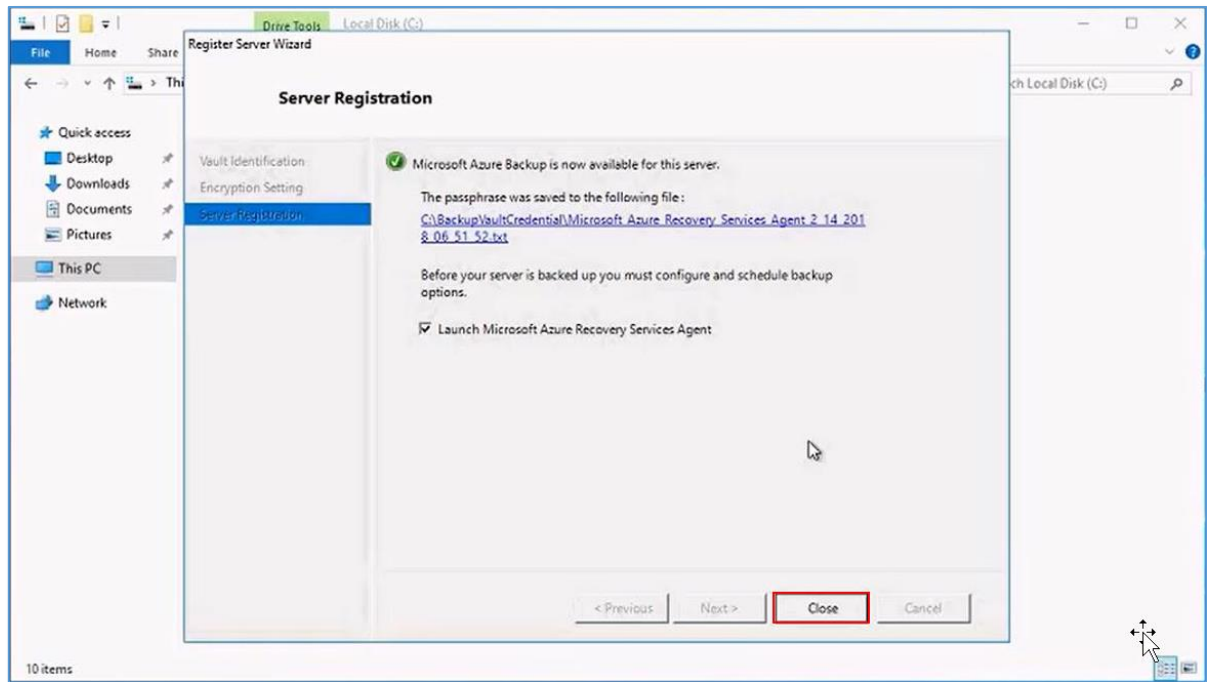
5. In **Vault Identification**, select the vault credentials downloaded from the quick start page in the Microsoft Azure Backup Vault



6. In **Encryption setting**, enter a paraphrase and save it to a secure location, then click **Finish**

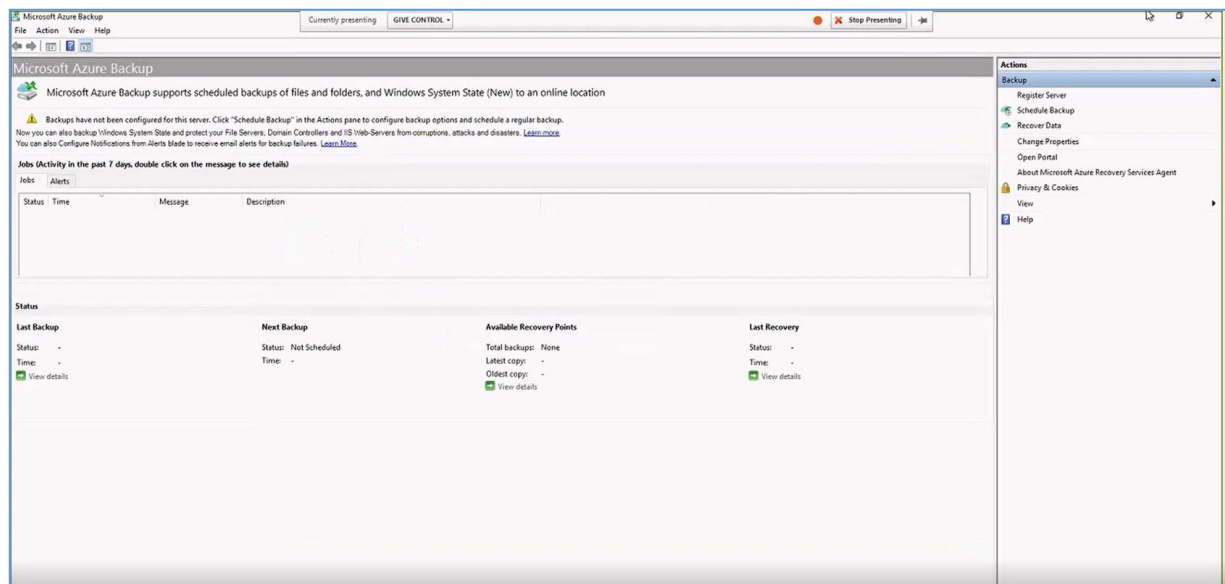


7. Check the **Launch Microsoft Azure Recovery Services Agent**, then click **Close**



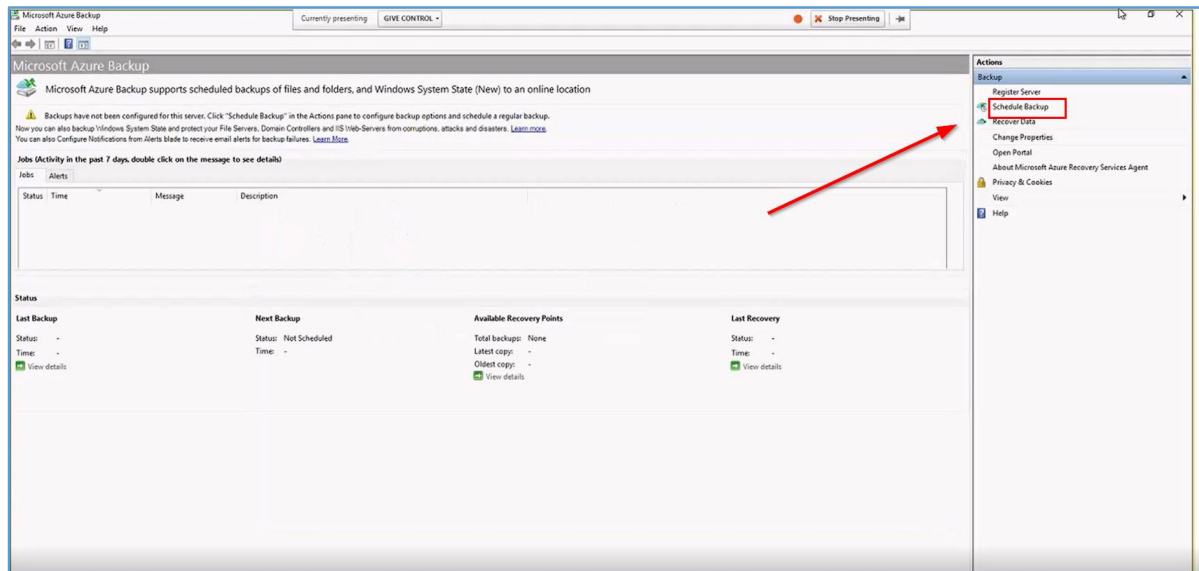
- Microsoft Azure Backup Agent is now installed.
- A Backup Agent icon is created on the desktop.

8. Double-click the Backup Agent icon to launch the **BackUp Agent Wizard**:

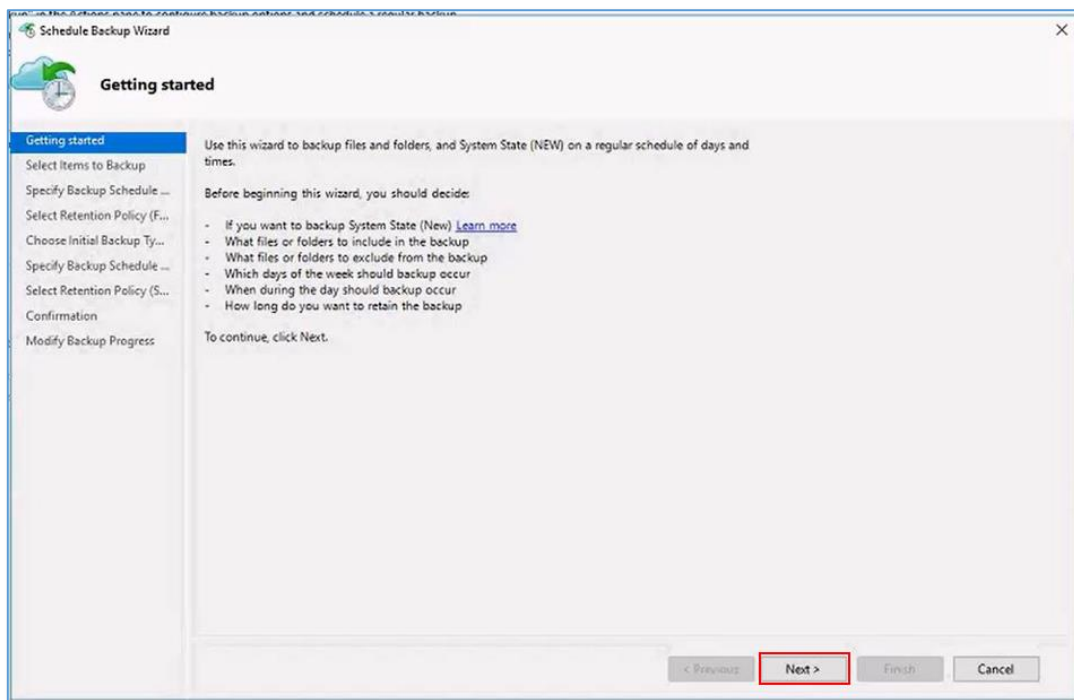


Schedule a Backup

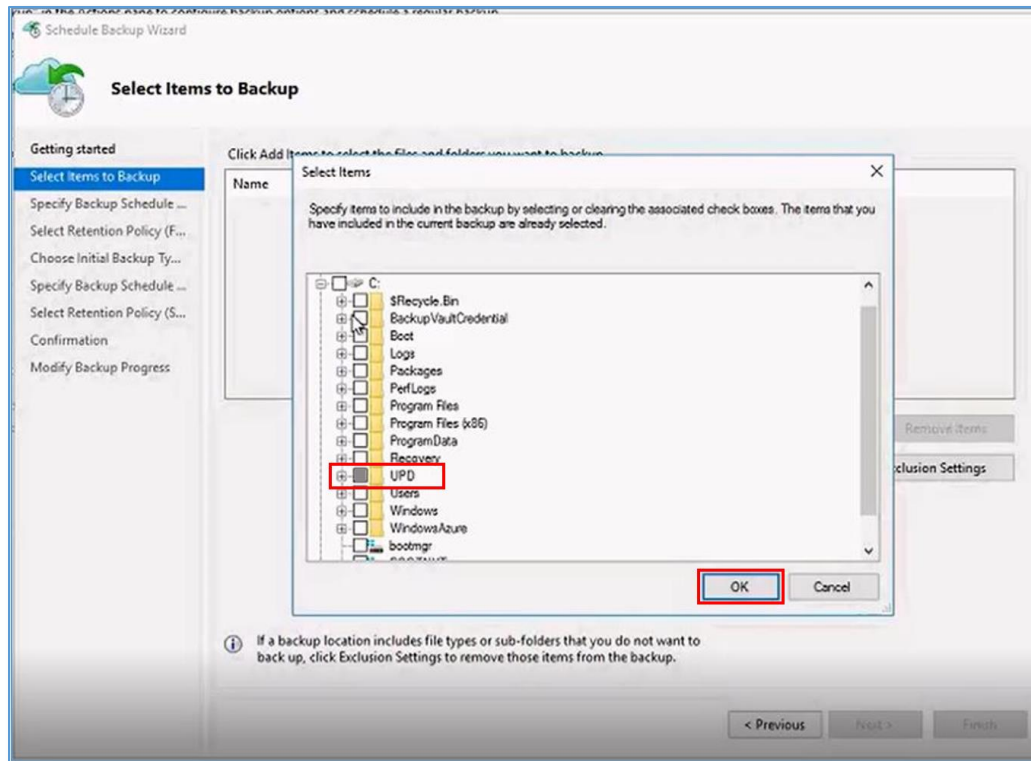
1. In the **Microsoft Azure Backup Agent**, click **Schedule Backup**



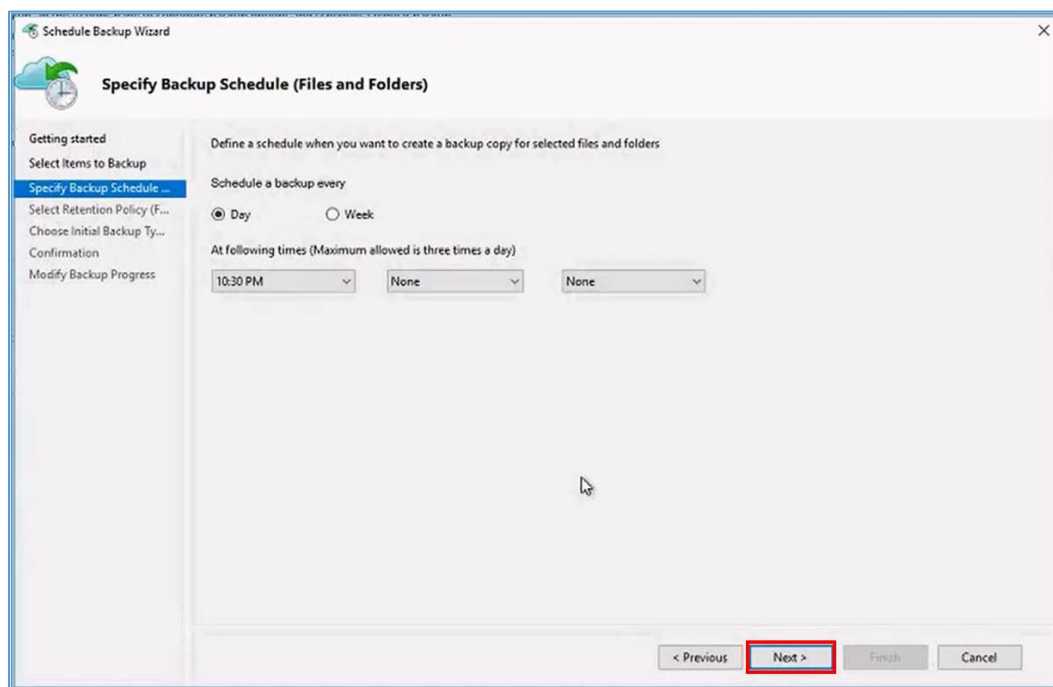
2. In the **Schedule Backup Wizard - Getting started** dialog, click **Next**



3. Select any folders that you want to backup into Azure. In our example, we'll backup the **UPD** folder. Expanding the UPD folder will allow you to de-select the OneDrive folders for each user. This keeps the backup footprint smaller.



4. Specify **Backup Schedule** parameters for the operation, then click **Next**:



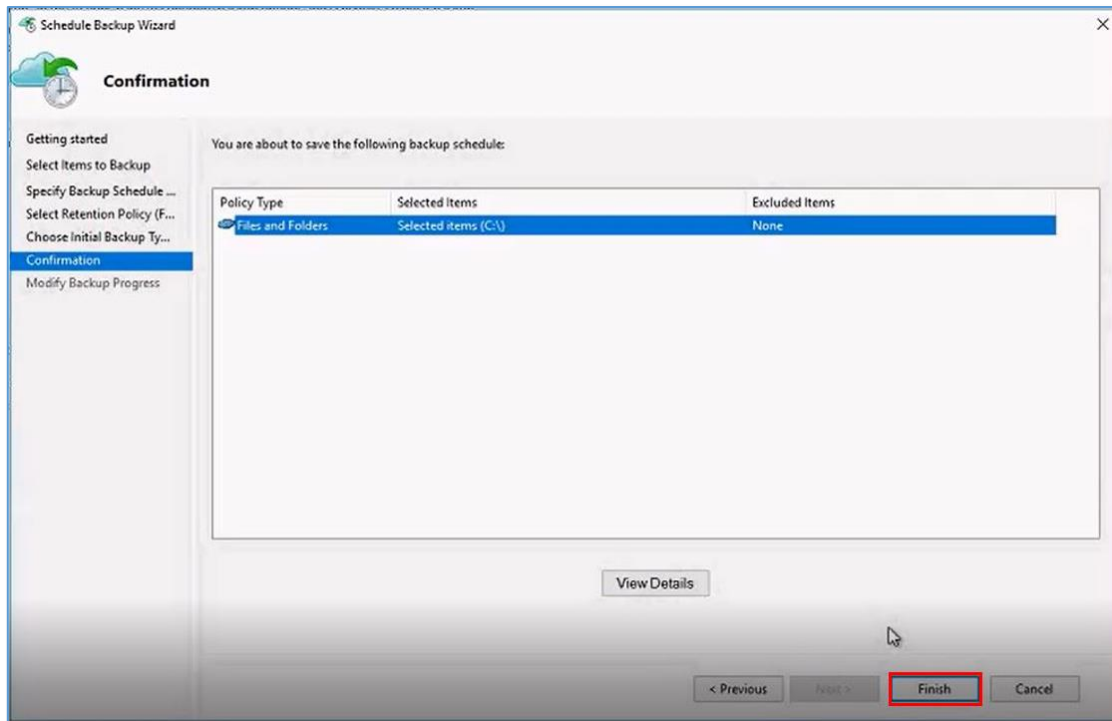
5. Select **Retention Policy** parameters for the operation

The screenshot shows the 'Select Retention Policy (Files and Folders)' window. The left sidebar lists the steps: 'Getting started', 'Select Items to Backup', 'Specify Backup Schedule...', 'Select Retention Policy (F...)' (highlighted), 'Choose Initial Backup Ty...', 'Confirmation', and 'Modify Backup Progress'. The main area is titled 'Specify the retention policy for the backup copy of files and folders'. It contains four sections: 'Daily Retention Policy' (checked), 'Weekly Retention Policy' (checked), 'Monthly Retention Policy' (checked), and 'Yearly Retention Policy' (checked). Each section has a 'Retain backup copies taken on' dropdown, a 'Modify' button, an 'At' time selector (all set to 12:00 AM), and a 'for' duration selector. The 'Daily' policy is set to 180 Days. The 'Weekly' policy is set to Saturday, 104 Weeks. The 'Monthly' policy is set to Saturday of Last Week, 60 Months. The 'Yearly' policy is set to Saturday of Last Week of March, 10 Years. At the bottom, there are buttons for '< Previous', 'Next >' (highlighted with a red box), 'Finish', and 'Cancel'.

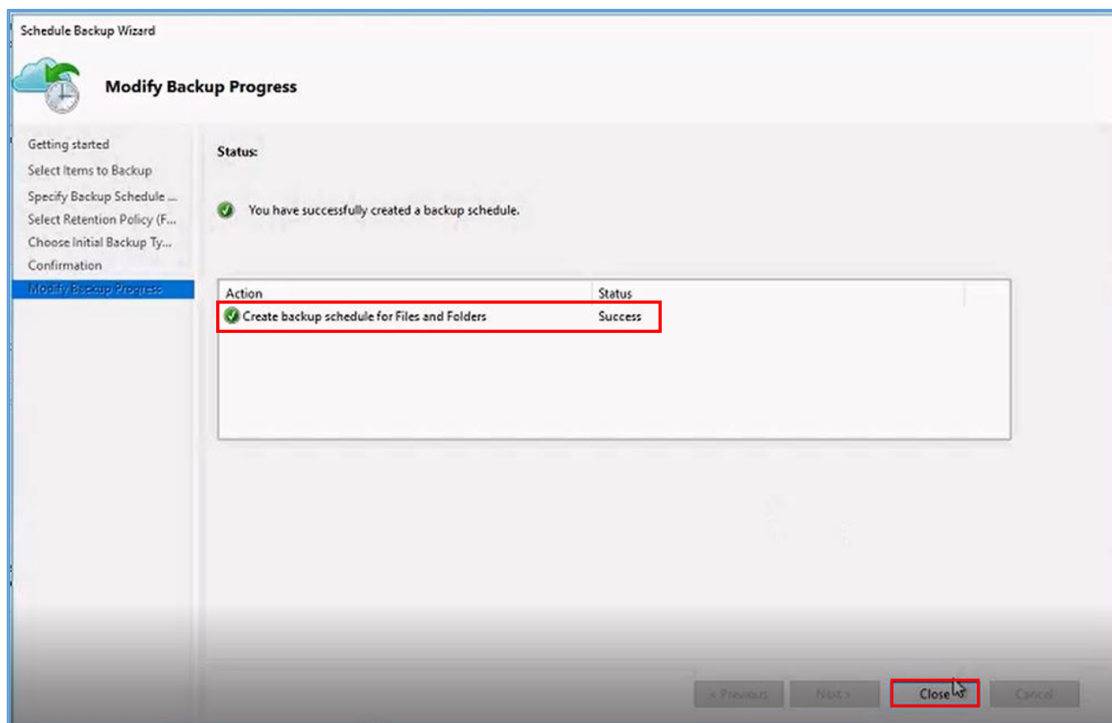
6) Choose **Initial Backup Type** for the operation. In our example, we'll select the default:

The screenshot shows the 'Choose Initial Backup Type (Files and Folders)' window. The left sidebar is the same as the previous window, with 'Choose Initial Backup Ty...' highlighted. The main area is titled 'Specify the option to be used by Azure Backup to create initial backup copy.' It has two radio buttons: 'Automatically over the network' (selected and highlighted with a red box) and 'Offline Backup'. Below the 'Offline Backup' option, there is a link to 'here' and a note: 'To create an offline backup, please read the instructions for the Import workflow here.' There are several input fields with 'Browse' buttons: 'Staging Location', 'Azure Publish Settings', 'Azure Import Job Name', 'Azure Subscription ID', 'Azure Storage Account', and 'Azure Storage Container'. At the bottom, there is a message: 'Offline Backup is not supported for System State backups.' and buttons for '< Previous', 'Next >' (highlighted with a red box), 'Finish', and 'Cancel'.

7) Confirm the selected files and folders, then click **Finish**

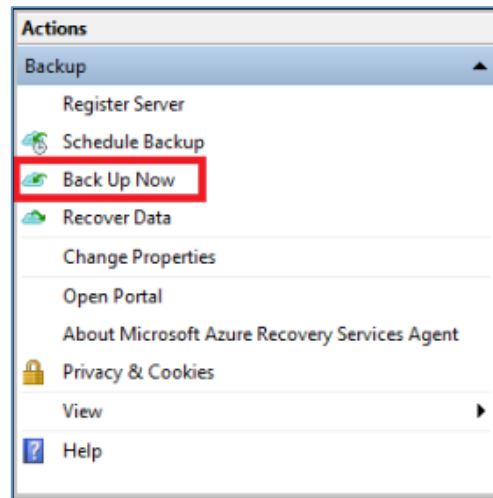


8) In **Modify Backup Progress**, see the progress of a backup operation, and click **Close** when a backup schedule is successfully created

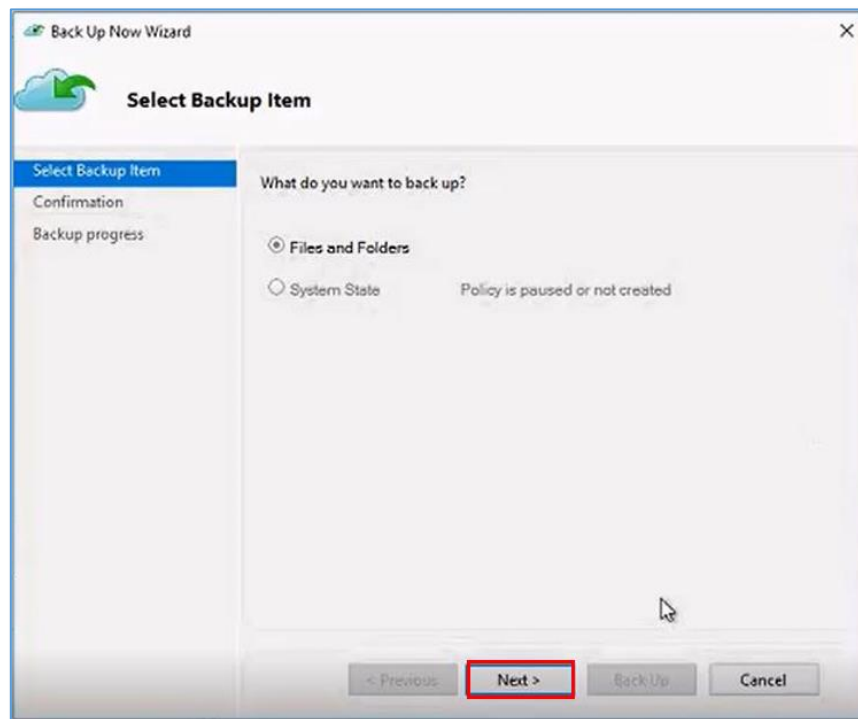


Trigger Dynamic Backup

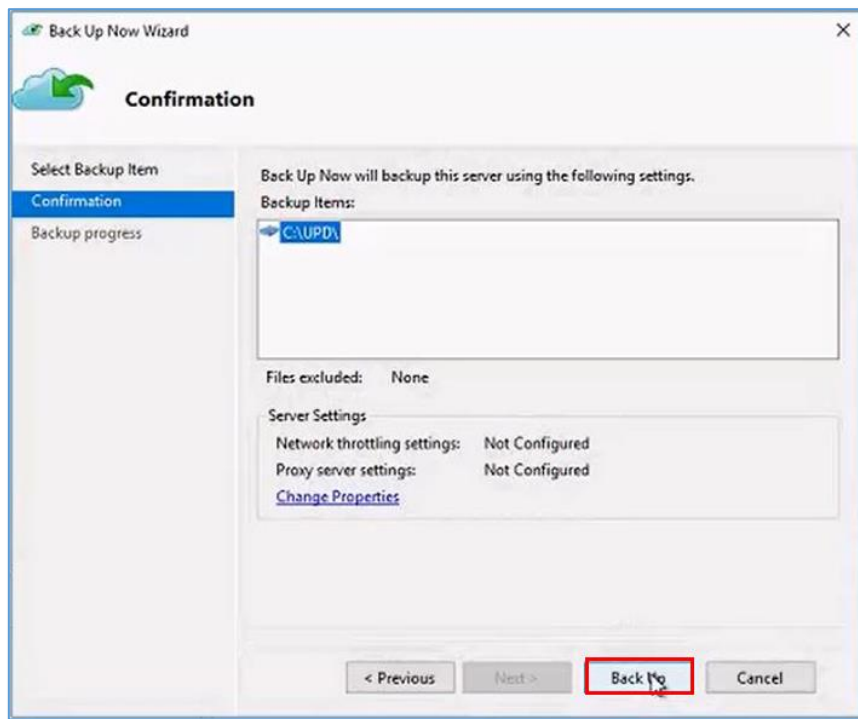
1) In **Microsoft Azure Backup Agent**, click **Back Up Now**, to take a forced back up for the purpose of testing:



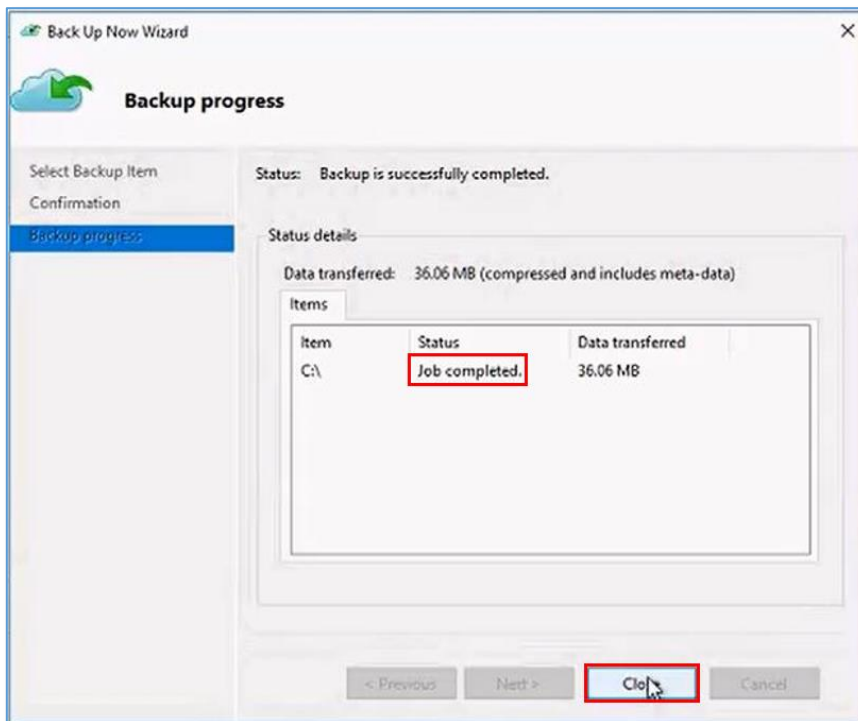
2) In the **Back Up Now Wizard** > **Select Backup item** > **Files and Folders**, then click **Next**



3) In **Confirmation**, check the location of files/folder to be backed up, and then click **Back Up**. For the purposes of this example, we are selecting our **C:\UPD** folder:



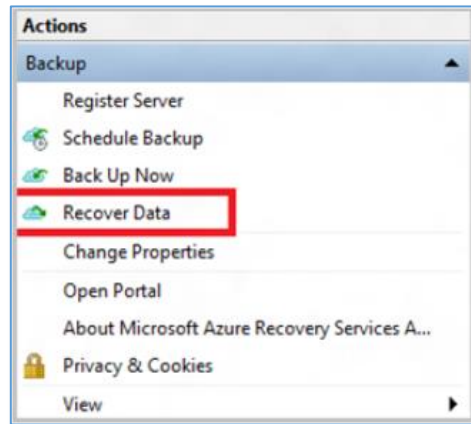
4) Check **Backup progress**, then click **Close** once the Backup is completed successfully



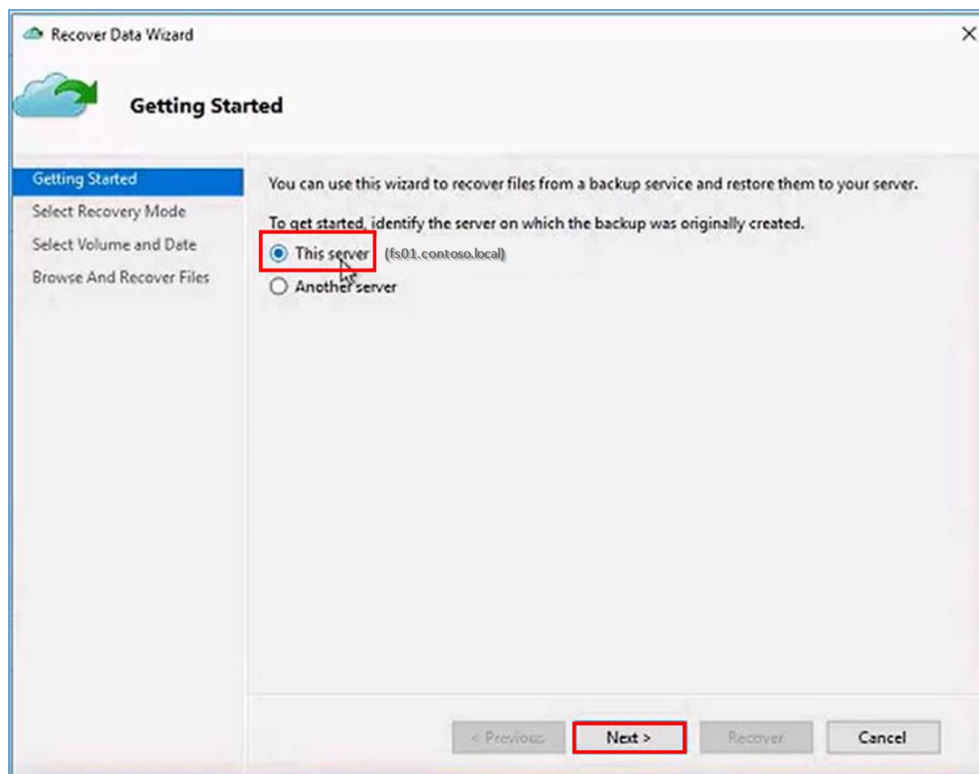
Recover Data Exercise

In this walk-through, we'll recover some files that were backed-up by the Azure Backup Agent.

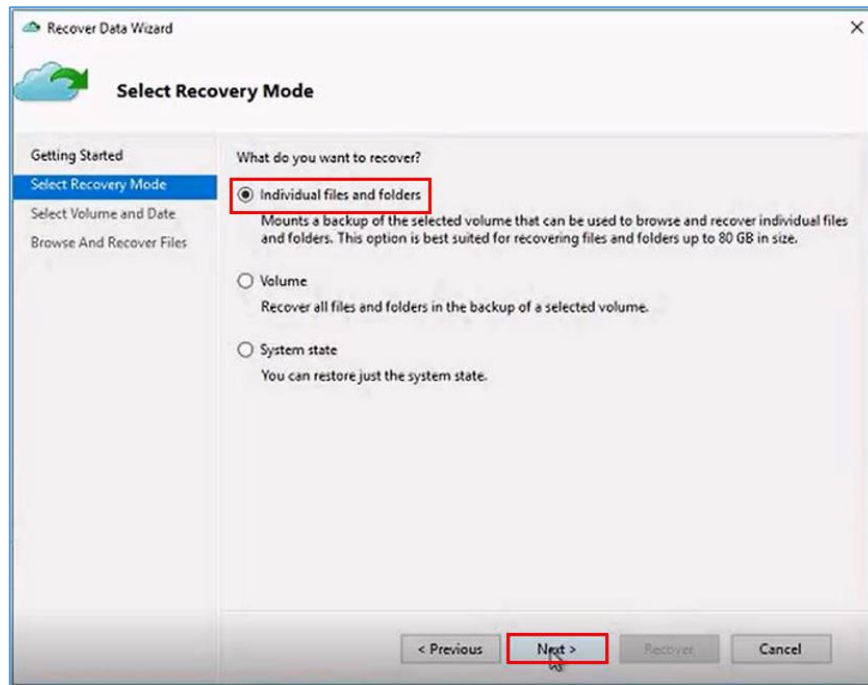
1. On the system that the backup was taken from, open the **Microsoft Azure Backup** snap-in and click **Recover Data**:



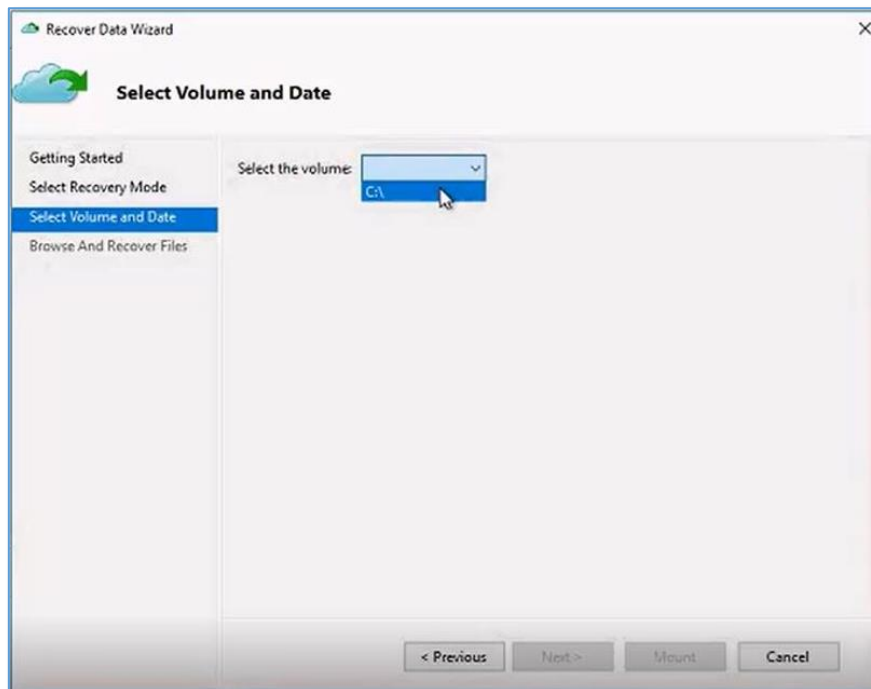
2. On the **Getting started** page> **This server**, click **Next**:



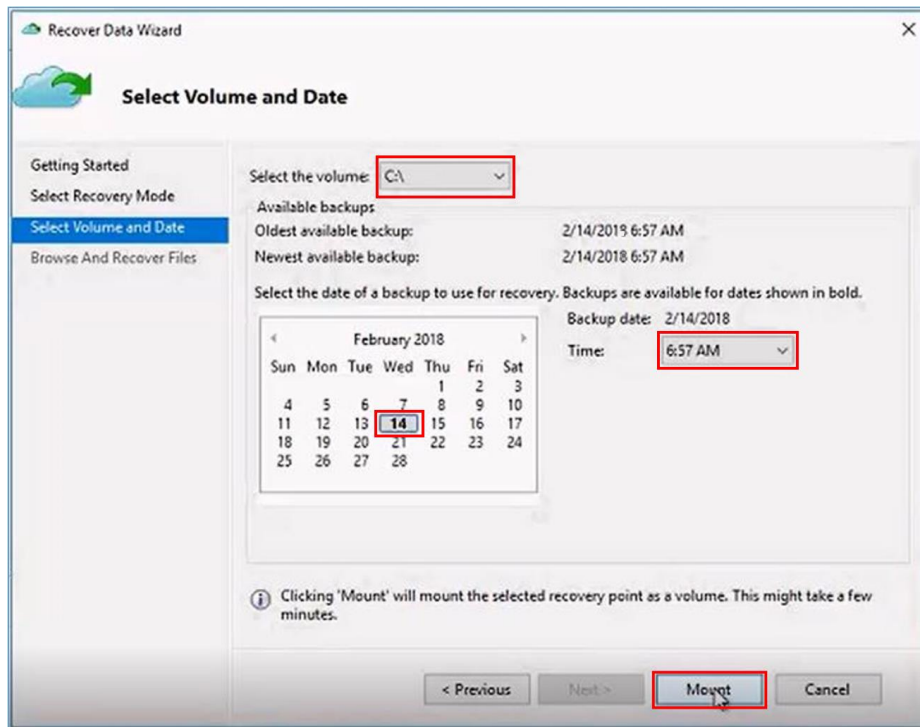
3. In **Select Recovery Mode** > **Individual files and folders**, click **Next**



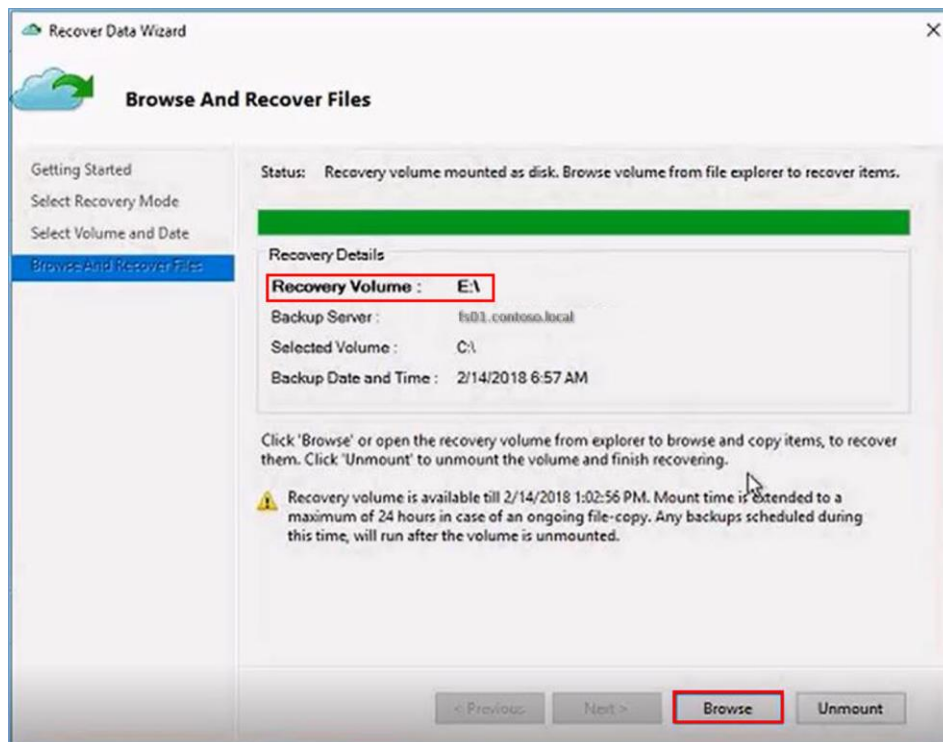
4. In Select **Volume and Date** select **C:** as the volume specified for the recovery point:



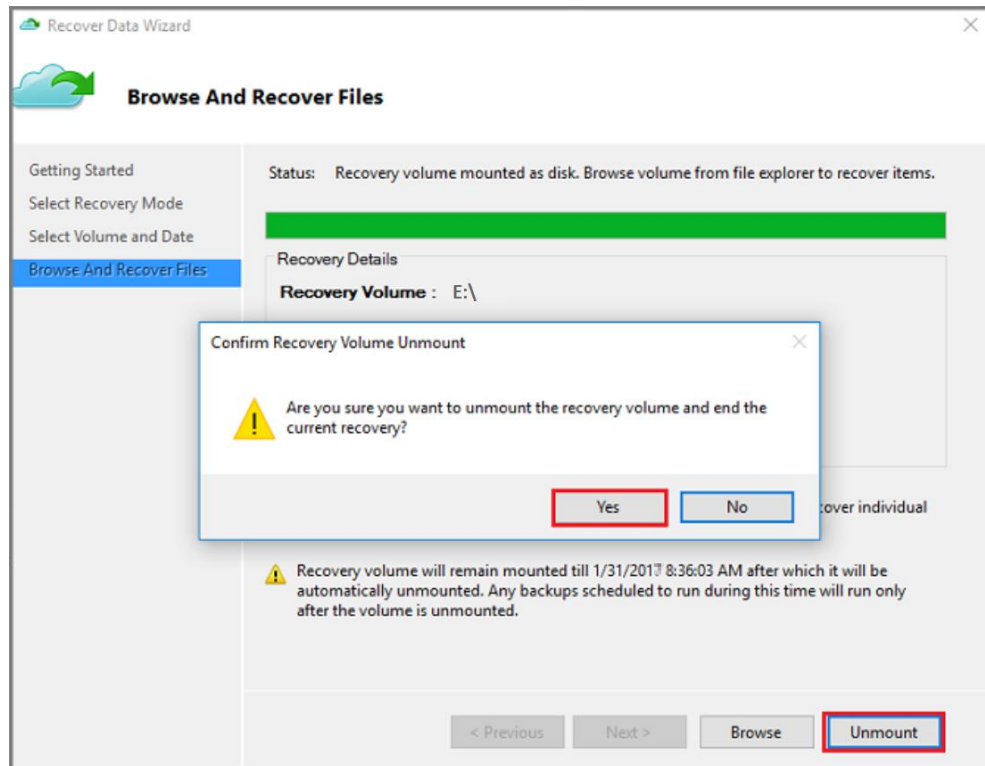
5. Select the **date and time** of the Backup to use for this recovery, then click **Mount**



6. Once the files have been recovered, click **Browse** to see the recovered files.



7. In Windows Explorer, copy the files and folders you want to restore to a different location, then click **Unmount**:



5. Additional Resources

- [Back up Windows machines with the Mars agent](#)

6. Support

Opening tickets

In case of an issue for Windows Virtual Desktop go to the Azure Portal and open a technical ticket based on your existing support plan at <https://azure.microsoft.com/en-us/support/create-ticket/>

Look for Service under **COMPUTE** and select **Windows Virtual Desktop-Preview**. You will find options to create tickets for the WVD service itself and for Office:

For Office issues you can file tickets during public preview in the Azure Portal when using Office in context of Windows Virtual Desktop.

Information you should provide for failed connection or management interactions when using the service:

- Use the diagnostics service to retrieve the **Activity ID** for failed connections or management interactions.
- Provide the approximate timeframe the issue happened

NOTE: This workflow will change post general availability.

Other resources you can leverage

Windows Virtual Desktop contains a number of knowledge articles as well as trouble shooting guides. Pay attention to the updated diagnostics chapter that provides Error scenarios you can mitigate: <https://docs.microsoft.com/azure/virtual-desktop/overview>

Exchange on our community forum on issues important to you for Windows Virtual Desktop: <https://techcommunity.microsoft.com/t5/Windows-Virtual-Desktop/bd-p/WindowsVirtualDesktop>

When setting up your environment you will be using other Azure Services. You can watch the health dashboard here to verify health state on any Azure service you are consuming: <https://azure.microsoft.com/en-us/status/>