Microsoft

Azure Backup Solutions

- Azure Backup Labs

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Document Revision

Change Record

Date	Author	Version	Change Reference
May 12 2017	Patrick Mandemaker		Updated corrections from Anthony

Reviewers

Name	Version Approved	Position	Date

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Introduction

Azure Backup is a simple and reliable cloud integrated backup as a service. In this lab, you will learn how to create an Azure Backup Vault, and then use this vault to first backup an Azure IaaS VM and then files from a Windows 10 client VM. You will then restore the backed-up files and restore the entire IaaS VM

Estimated time to complete this lab

60 minutes

Objectives

During this lab, you will learn how to use Azure Backup to:

- Protect heterogeneous environments.
- Respond proactively to changing business needs.
- Simplify IT management.
- Gain immediate, actionable insights.
- Provide all-in-one cloud management.
- Protect guests and workloads.

Prerequisites

- Finished the OMS Log Analytics Lab and have that environment ready.

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Note regarding pre-release software

Portions of this lab may include software that is not yet released, and as such may still contain active or known issues. While every effort has been made to ensure this lab functions as written, unknown or unanticipated results may be encountered as a result of using pre-release software.

Note regarding user account control

Some steps in this lab may be subject to user account control. User account control is a technology which provides additional security to computers by requesting that users confirm actions that require administrative rights. Tasks that generate a user account control confirmation are denoted using a shield icon. If you encounter a shield icon, confirm your action by selecting the appropriate button in the dialog box that is presented.

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Activity 1: Getting Started with Azure Backup

Estimated time to complete this activity

30 minutes

Objectives

In this activity, you will create a Recovery Service Vault in Azure.

You will then Backup one Windows and one Linux VM.

Exercise 1: Create a Recovery Service Vault and Backup VMs

In this exercise, you will create a Recovery Services Vault that we can use for all types of Azure Backup and for Azure Site Recovery.

- You can use an existing vault, but it's recommended to use a newly created fault for this exercise.
- We also strongly recommend that you use InPrivate browsing to ensure that you are not automatically logged on with other credentials during the registration / activation process.

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Create a new Recovery Services Vault

In this task, you will create a Recovery Services Vault.

1. On the Internet Explorer Favorites Bar, click **Azure Portal**.

   📌 The Microsoft Azure Portal will open from http://portal.azure.com.

2. Sign in with the credentials you created in the OMS Log Analytics Lab.
3. In Azure Portal search for **Recovery Services**.
4. Click **Add**
   Name: **BackupLab**
   Subscription: **the one use in OMS Log Analytics Lab**
   Resource group: **omslab**
   Location: **West Europe**
5. Click **Create**

   The recovery Vault will now be created. Wait until this is finished before continuing the next steps.

Backup Virtual Machines running in Azure with IaaS Backup

1. In Azure Portal, search for Recovery Services and open the vault called **BackupLab** by clicking on it.
2. Under **Getting Started** click **backup**
3. Select **Azure** as the location where the workload runs and type to backup is **Virtual Machines**.
4. Click ok
5. Create a new Backup Policy.
   Policy name: **backuplab**
   Change the settings as you like and click ok.
6. Select the **spfarm-sp** and the **LinuxContoso** VMs and click ok.

Alternatively, you can also go to Virtual Machines in Azure Portal, and click backup from there.

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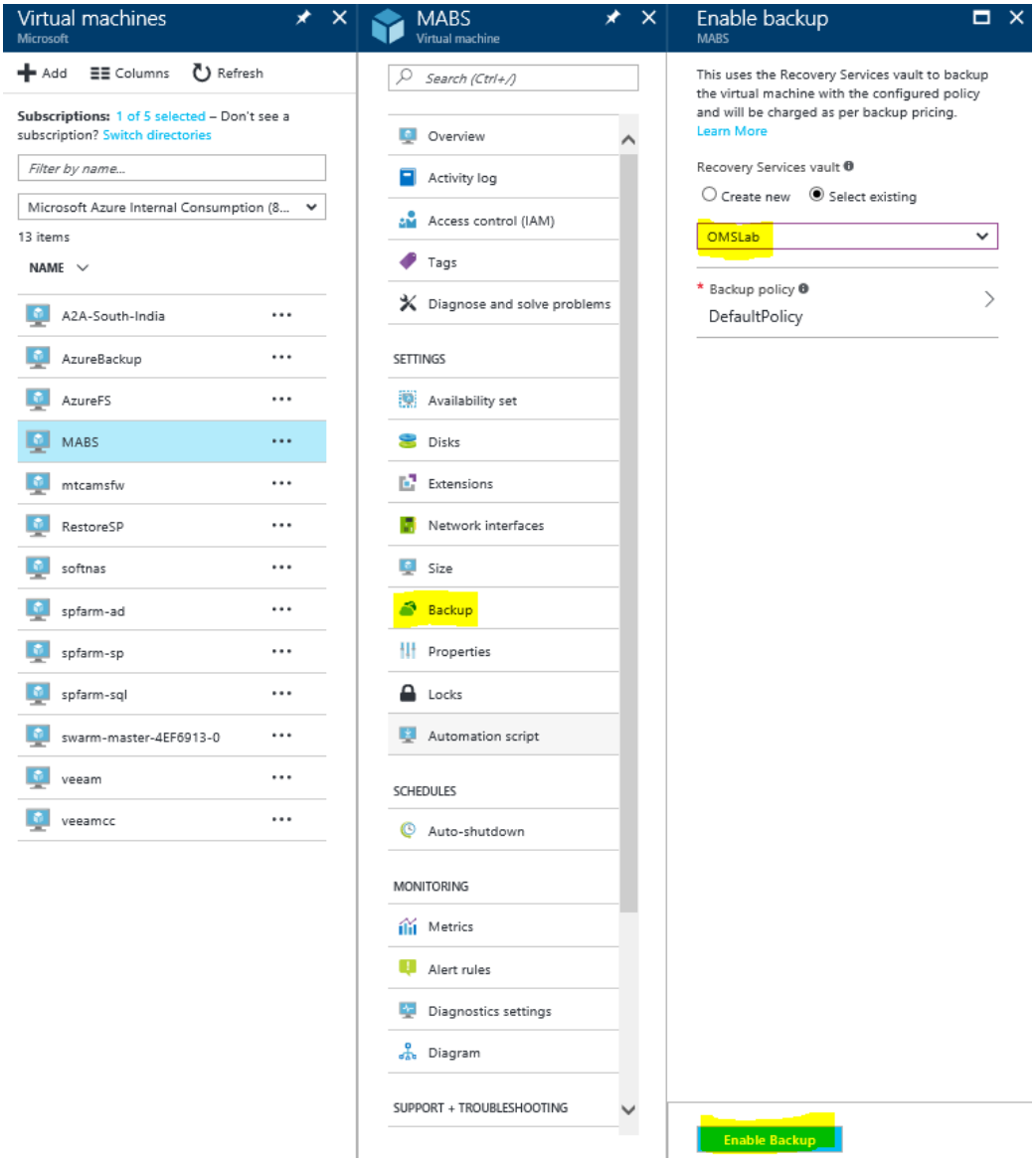

Wait until the deployment is ready, after that two virtual machines will be protected.

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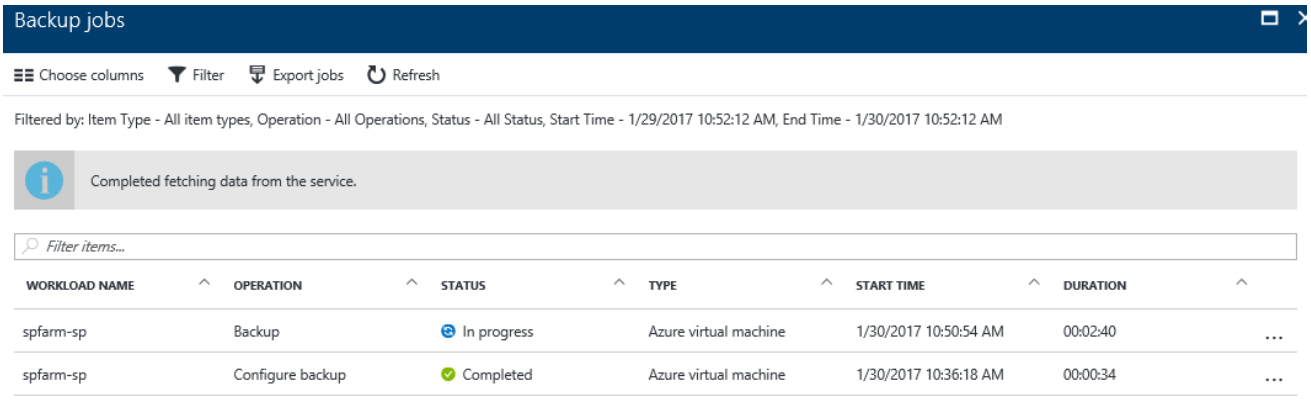
Create an on-demand backup

In this task, you will create an on-demand backup, based on the configured backup policy

1. Open the **BackupLab Recovery Services Vault**
2. Find **Protected Items**, and click **Backup items.**
3. Select the spfarm-sp, and click **Backup now** in the top bar.
4. Select a desired retention and click **Backup**.

    📌 The backup will start.

To monitor the backup in the Recovery Services Vault, click **Jobs** under **Monitoring and Reports** and click **Backup Jobs**



Activity 2: Restore an IaaS backup

Estimated time to complete this activity

30 minutes

Objectives

In this activity, you will restore a Virtual Machine from backup.

Exercise 1: Restore a Virtual Machine with IaaS Backup

In this task, you will restore a complete VM from the on-demand backup.

Make sure the backup from previous step is successful.

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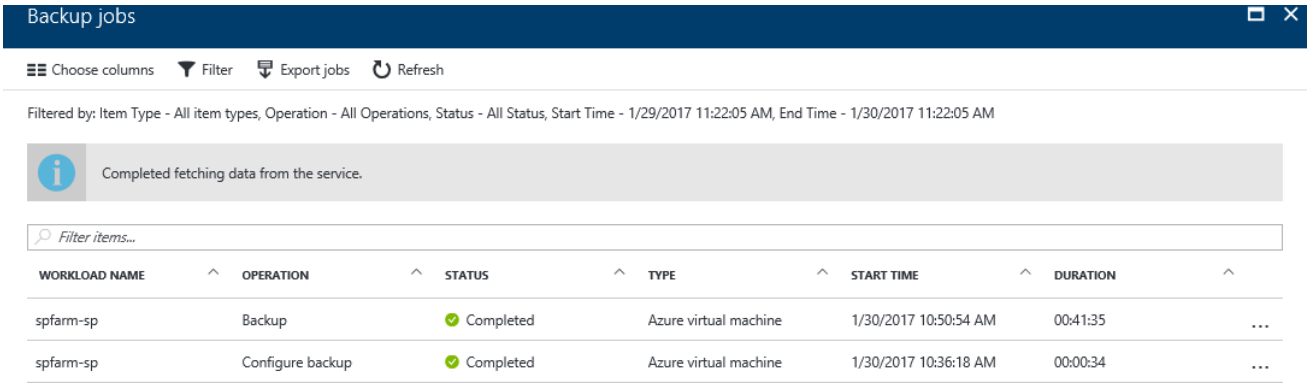

1. Open the **BackupLab** Recovery Services Vault
2. Under **protected items**, open **Backup items**.
3. Select **spfarm-sp**
4. Click Restore VM
5. Select the restore point and click ok. Note the consistency of the snapshot Crash, vs application vs file-system consistent.
6. In the restore configuration chose:
   Restore Type: **Create Virtual Machine**
   Restore machine name: **RestoreSP**
   Resource Group: **omslab**
   leave the rest default and click then **restore**.
7. Monitor the restore job, and after the job is successful find the restored VM.

Exercise 2: File Recovery (Item Level Recovery) from an IaaS backup

In this task, you will restore files and folders (Item Level Recovery) from an IaaS backup.
Make sure the backup from previous step is successful.

At the moment of writing Item Level Restore is in preview. You can enable this by the following PowerShell command:

```
"Register-AzureRmProviderFeature -FeatureName "ItemLevelRecovery" -ProviderNamespace Microsoft.RecoveryServices"
```

You can use the script EnableILR.ps1. Make sure you add your subscription ID in the PowerShell script.

1. Open the **BackupLab** Recovery Services Vault
2. Under **protected items**, open **Backup items**.
3. Select **spfarm-sp**
4. Click **File Recovery**
5. Select the recovery point
6. Click **Download script**

The recovery script will be downloaded. Save this script to a location of choice.

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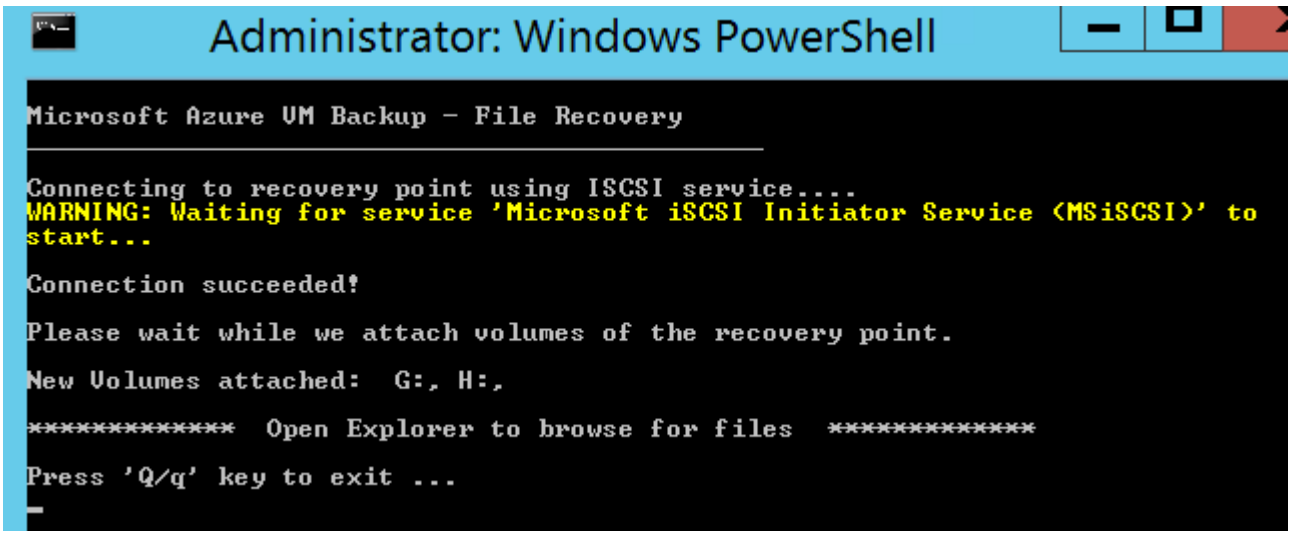
7. Open in another tab http://portal.azure.com, find **spfarm-ad** and click connect. Login using your credentials.
8. Copy the downloaded script to the desktop of the **spfarm-ad** server and run the script.

Note the script is connecting to the backup snapshot by iSCSI. The output will show the drive letters from where you can restore files and folders.



9. Explore the drives and press q to quit the script.
10. Go back to Azure Portal and click Dismount Disk. Wait until it says, 'dismount successful'

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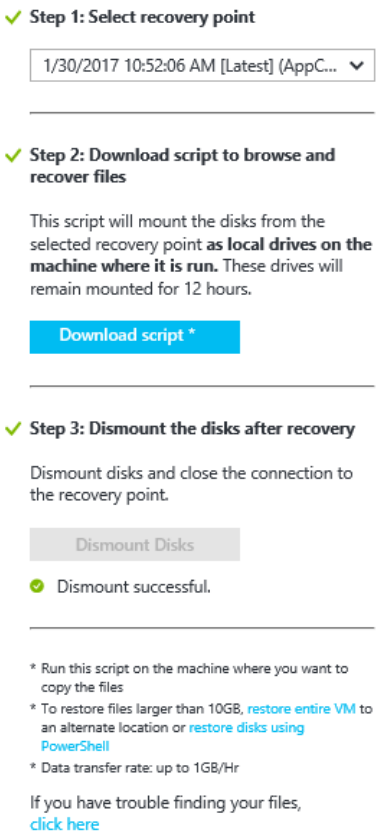

Activity 2: Backup and Restore Files and Folders by Azure Files and Folders Backup

Estimated time to complete this activity

30 minutes

Objectives

This activity will show you how to backup and restore files and folders

Exercise 1: Files and Folder Backup

In this exercise, you will learn how to setup Files and Folder backup in Azure

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Setup the environment

In this task, you will create a Virtual Machine that can be used for Microsoft Azure Backup Server

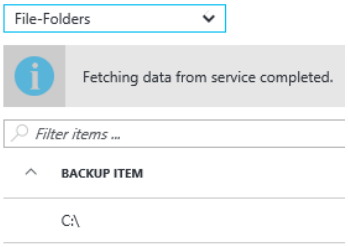
1. In Azure Portal, search for Recovery Services and open the vault called **BackupLab** by clicking on it.
2. Under **Getting Started** click **backup**
3. Select **On-premises** as the location where the workload runs and type to backup is **Files and folders**.
4. Click on "**Click here to prepare your infrastructure for backup to Azure**".
5. Download the **Recovery Agent** and the **Vault Credentials**.
6. Install the **MARS Agent** on your laptop or machine that can reach Azure.
7. After the installation, the MARS Agent will ask for the Vault Credentials to register to the **BackupLabs Vault;** click on "**Proceed to Registration**". Click "**Browse**" and provide the location of the saved backup vault credentials file. Finish the installation, generate the Passphrase and save the passphrase to a save location.

Backup Files and folders to Azure

1. Create a folder called **c:\backup** and add some small files**.**
2. Launch Microsoft Azure Backup on the computer you used in the previous step.
3. On the right side (Actions tile), click schedule backup.
4. Click **browse** and browse to **c:\backup**
5. Follow the wizard and look at configurable items.
6. After the wizard is finished, on the right side of the screen click **Back Up Now**.

Restore Files and folders from Azure

1. Make sure the above backup is finished.
2. Open Azure Portal http://portal.azure.com and select the **BackupLabs Recovery Vault**.
3. Under **Protected Items**, open **Backup Items**.
4. In the dropdown list pick File-folder



5. Here you can see the recovery points for files and folders.
6. Return to the machine you took the backup from and delete c:\backup
7. Open **Microsoft Azure Backup**.
8. On the right side, click **Recover Data**

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9. In the wizard, you can see that with the proper recovery passphrase and a successful registration to the vault with the vault credentials you can restore files and folders. Pick the option "This server…" and click **next**.
10. Browse for files,
11. Select the volume,
12. Select a recovery point,
13. Finish the wizard. The files and folder from the backup will be restored.

Activity 3: Backup and Restore Using Microsoft Azure Backup or Data Protection Manager. (MABS & DPM)

Estimated time to complete this activity

60 minutes

Objectives

This activity will show you Microsoft Azure Backup Server to backup and restore workloads to and from Azure.

Exercise 1: Microsoft Azure Backup

In this exercise, you will learn how to setup Microsoft Azure Backup Server.

Setup a Virtual Machine for Microsoft Azure Backup Server (MABS)

In this task, you will create a Virtual Machine that can be used for Microsoft Azure Backup Server

1. In the Azure Portal, open **Virtual Machines**.
2. Click **Add**
3. Select **Windows Server** and from the blade that opens, select **Windows 2012 R2 Datacenter.** Click **Create.**
   Name: **MABS**
   VM Disk Type: **HDD**
   User name: **AdAministrator**
   Password: **Passw0rd2017!**
   Resource group: **omslab**
   Size: **D1_V2**
   Leave the rest default
   Click **ok** to create
4. Wait for the deployment to finish. Usually this takes a couple minutes.

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5. In Azure Portal go to Virtual Machines and click on the **MABS** Virtual Machine.
6. Under Settings, click Disks and click Attach New.
   Name: **MABSData**
   Type: **HDD**
   Size: **1023**
   Press **ok**.
7. Go back to the Virtual Machines blade, click MABS and click connect. Logon to the MABS server.
8. Open disk manager
9. Select the attached disk (usually disk 2) and make sure it's online. Do not create a volume!
10. Join this VM to the **contoso.com** domain.
11. Open server manager, click **Add roles and features**. In features select .**NET Framework 3.5 Features.** Finish the wizard.

Download Microsoft Azure Backup Server (MABS) and Vault Credentials

1. Make sure you logon to the MABS server as a domain administrator (contoso\adadministrator) and not as a local adadministrator user.
2. In the MABS server go to http://portal.azure.com (You might want to disable IE Enhanced Security)
3. Open the **BackupLabs Recovery Vault.**
4. Under **Getting Started** click **Backup**
5. Select **On-premises** as the location where the workload runs and type to backup **Select all.**
   If you already have System Center Data Protection Manager running, select that option. In this case, you download an add on, which will extend DPM to Azure. For now, we will go for the MABS option.
6. Download **Microsoft Azure Backup Server** from the link in the wizard.
7. Download the **Vault Credentials**
8. Download the **latest updates**
9. Click ok twice.

Install Microsoft Azure Backup Server (MABS) and attach it to the Azure Recovery Vault

1. Install MABS by clicking the executable
2. During the installation choose **Microsoft Azure Backup**
3. During the installation do the prerequisites checker and continue if everything is ok.
4. During the installation pick "**Install new Instance of SQL server with this setup"**, and click **check and install.**

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5. Password: **Passw0rd2017!**
6. During the MARS agent phase (Microsoft Azure Recovery Services Agent) point to the downloaded vault credentials. Make sure the time and time zone are set correctly. When the time zone isn't the same as the machine where we downloaded the credentials from or the time is wrong we might get an error message.
7. Generate a Passphrase and make sure you save the file on a save location. Read the message on the screen.
8. Finish the wizard and installation. This will take a while…

Back up a Server with Microsoft Azure Backup Server

In this task, you will back up a server with Microsoft Azure Backup Server

1. On the MABS server open **MABS** by clicking on the icon on the desktop.
2. Open Management in the bottom.
3. Chose "Install agents"
4. Note you can select the desired servers to push the agent too. For now we won't push the Agents.
5. In MABS click **Management,** click **Disks** and click **Add**
6. Select the disk we added earlier (usually Disk 2) and add the disk and press ok.
7. Note that the disk is now used as a DPM Storage Pool for short term protection.
8. In MABS click **Protection**
9. Click **New** in the top of the screen.
10. Click **next**, select **Servers** and click **next** again
11. Select **All Shares, All SQL Servers, Under All Volumes the c:\ drive** and **System Protection**
12. Give the Protection Group a Name: **MABS Server**
13. Follow the wizard, but in the Select the data source you want to protect online part, only select the **Computer\System Protection (System State)** part, so we don't need to wait too long for this Lab to finish.
14. As soon as you see one of the items is Green/Ok we can continue the lab, but of course only the ok/green items are available for restore.

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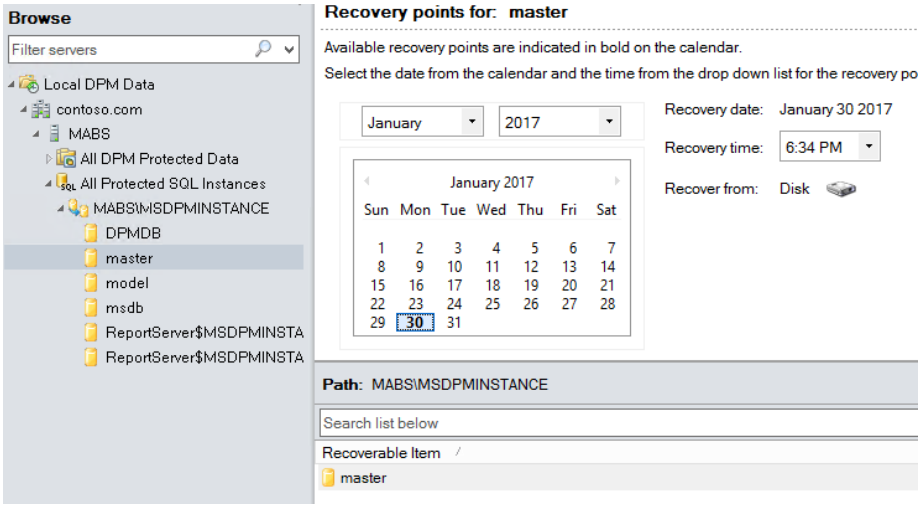
Protection Group Member	Type	Protection Status
Protection Group: MABS (Total members: 9)		
Computer: MABS.contoso.com		
\\MABS.contoso.com\MTATempStore$	Share	Replica creation in progress
C:\	Volume	Replica creation in progress
Computer\System Protection\System State	System State	Replica creation in progress
MABS\MSDPMINSTANCE\DPMDB	SQL Data	Replica creation in progress
MABS\MSDPMINSTANCE\master	SQL Data	OK
MABS\MSDPMINSTANCE\model	SQL Data	Replica creation in progress
MABS\MSDPMINSTANCE\msdb	SQL Data	Replica creation in progress
MABS\MSDPMINSTANCE\ReportServer$MSDPMINSTANCE	SQL Data	Replica creation in progress
MABS\MSDPMINSTANCE\ReportServer$MSDPMINSTANCETempDB	SQL Data	Replica creation in progress

Restore with Microsoft Azure Backup Server

In this task, you will restore from Azure by using Microsoft Azure Backup Server.

1. In Microsoft Azure Backup Server click **Recovery.**
2. Under Browse, find the item you'd like to restore



3. Select the item, in above example master, and click **Recover**.
4. The **Recover Wizard** will show. In **Select Recover Type**, select **copy to a network folder** as we don't want to overwrite the MABS Database for now.
5. Browse to the local server, click c:\ and press **next**.

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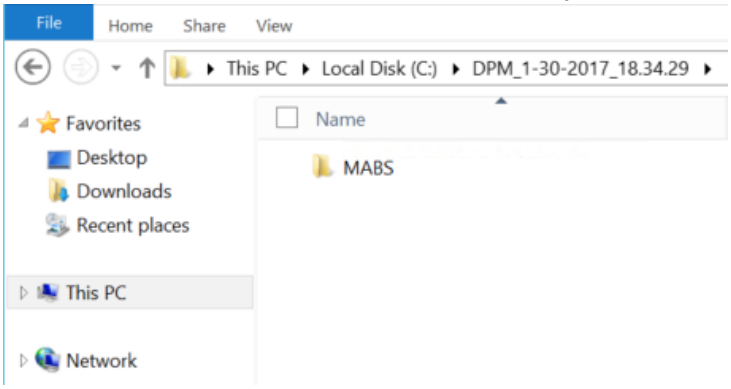
6. Finish the wizard, and find the restored item on your c:\ drive.



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