Microsoft

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Azure Backup
Hands-on lab
-Microsoft Azure

Azure Backup

Lab Guide

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Version 2.0

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Document Revision

Change Record

Date	Author	Version	Change Reference
29-10-2018	Gino van Essen	0.1	Create document
30-10-2018	Stephan van de Kruis	0.2	Add Azure Backup content
30-10-2018	Gino van Essen	0.3	Add Site Recovery content
31-10-2018	Gino van Essen	1.0	Review document
4-2-2019	Stephan van de Kruis	1.1	Update document
15-10-2109	Gino van Essen	2.0	Update document

Name	Version Approved	Position	Date
Alex Scheepers	1.0	Product Manager	31-10-2018
Alex Scheepers	2.0	Product Manager	15-10-2019

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Introduction – Azure Backup

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 backup files and system state from a Windows client device. After the backup is finished, we will restore the backup-up files.

Estimated time to complete this lab

75 minutes

Objectives

During this lab, you will learn how to get started on Azure with Azure Backup to;

- Set-up your tenant using your Azure subscription.
- Create and manage Resource Groups and Storage Accounts
- Deploy a Recovery Vault
- Create a files and folders backup job
- Create a VM backup job
- Restore items from your Recovery Vault
- Extra - backup and restore Azure SQL database

Prerequisites

- Laptop/computer with Internet browser and WiFi connected
- Account with an Azure CSP Subscription

Student Materials

All student materials are available for download here:

https://github.com/Copaco/handsonlab/

Activity 1: Getting Started

Objectives

In this activity, you will configure the components necessary to perform this lab:

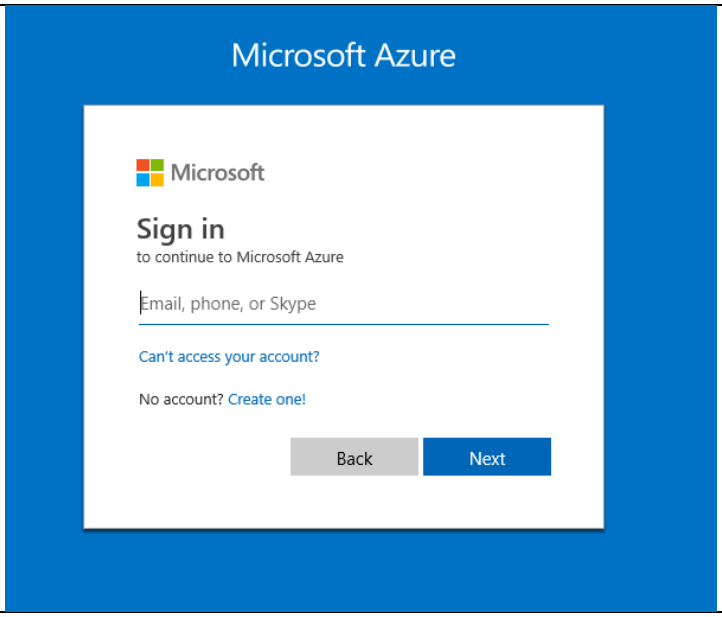
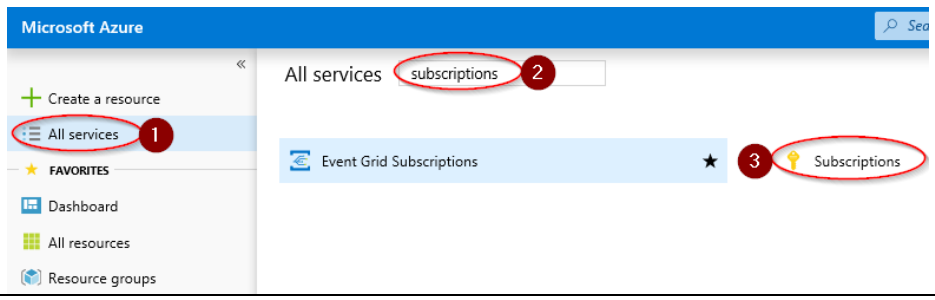
In this activity, you will validate the necessary access to perform this lab
• Login to your Azure CSP tenant
• Create a Resource Group
• Create a Recovery Services vault
• Create a Virtual Machine

After verifying your access, you will use the Azure tenant to create a Recovery Vault you can use to store your backups.

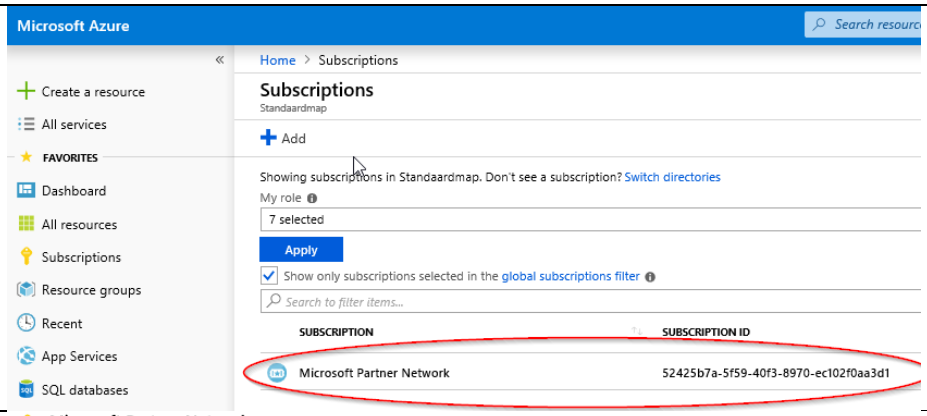
Estimated time to complete this activity

15 minutes

Exercise 1a: Login to Azure

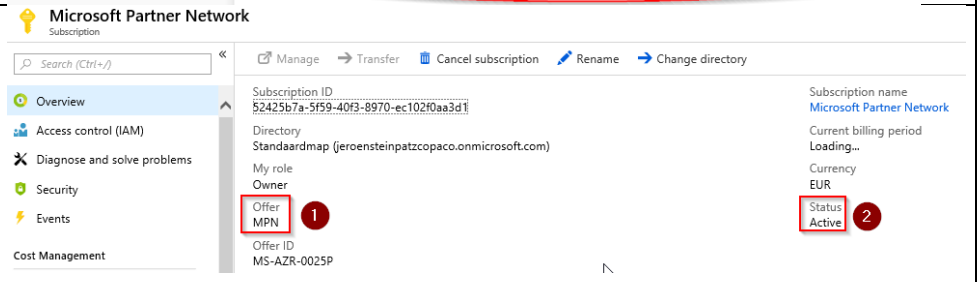
1. Using your **Work Account**, you can sign into the **Azure Portal** at: https://portal.azure.com	
2. Using the navigation bar on the left, use the **All services** menu to browse to the **Subscriptions** pane. The **Search** filter on the top will help you to find what you need.	

3. From the **Subscriptions** overview, click the active subscription.



4. In the Overview pane, check the Offer type for being either CSP, MPN, MSDN, OPEN or EA

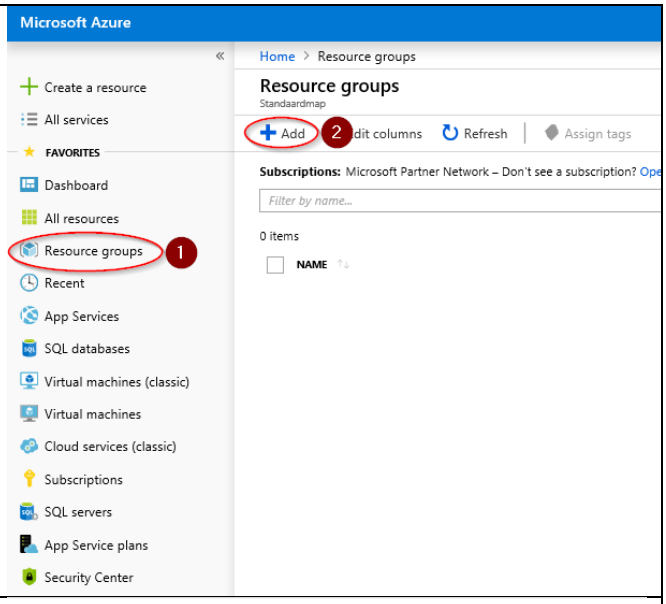
5. Check the **Status** for being Active.



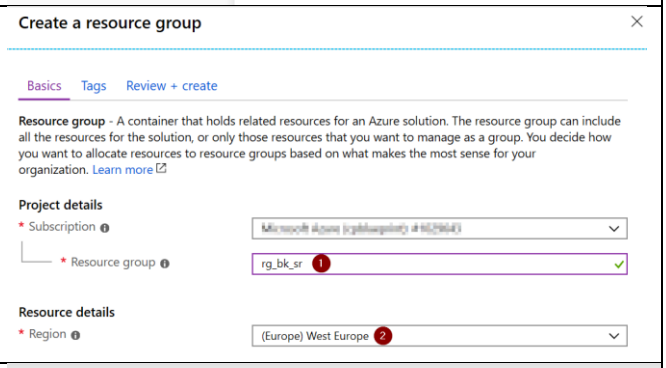
📌 We also strongly recommend that you use InPrivate browsing to ensure that you are not automatically logged on with other credentials during the registration / activation process.

Exercise 1b: Create a Resource Group

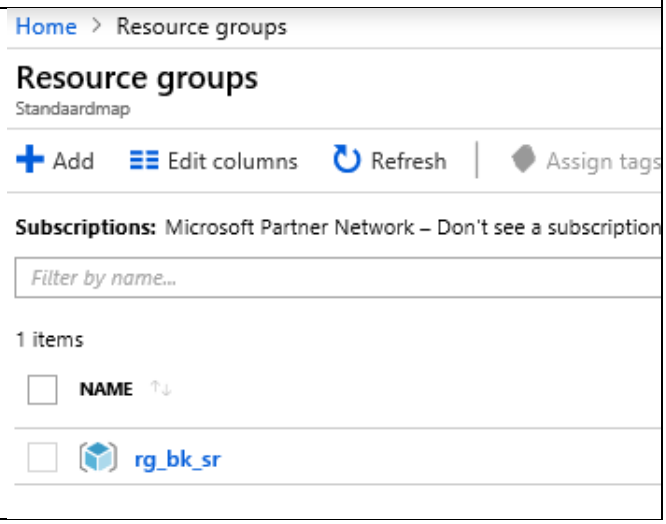
1. Click **Resource Groups**
2. Click **Add**



1. Add **Resource group name** "rg_bk_sr"
2. Select **Resource Group Location** "West Europe"
3. Click **Review + create**
4. Click **Create**

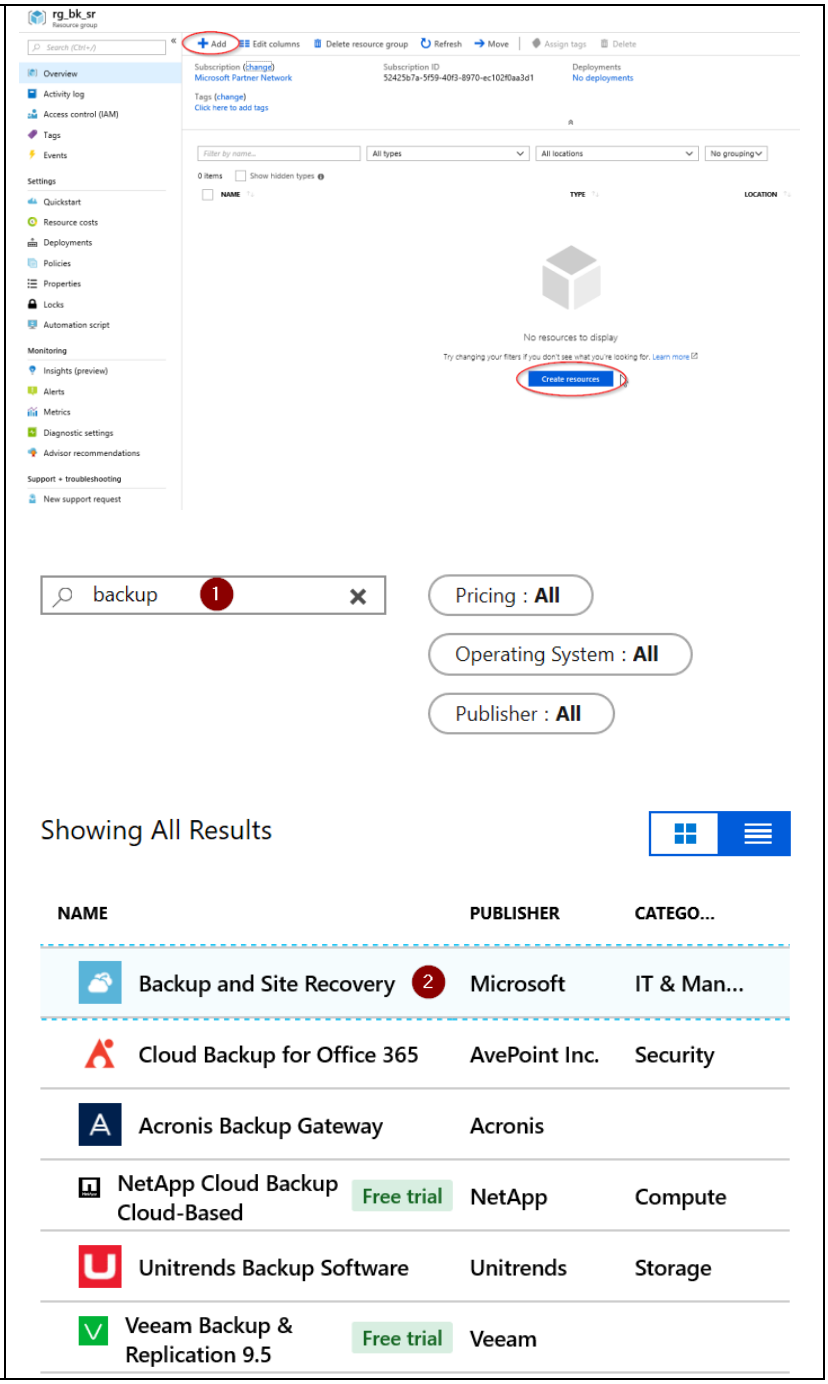


5. After a few moments, the Resource Group "rg_bk_sr" is created



Exercise 1c: Create a Recovery Services Vault

1. From the navigation pane, click **Add** or **Create Resources** and search for **Backup**

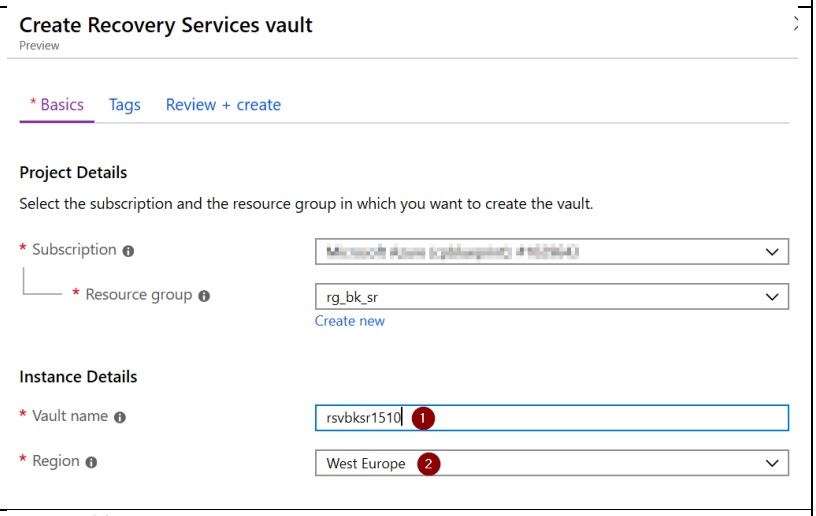


2. Click **Create**

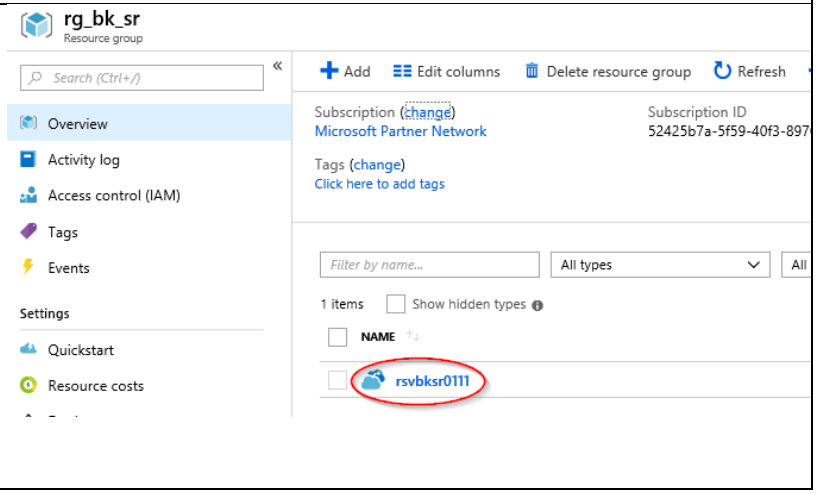
3. Fill in the parameters and click **Create**. Make sure you select the existing Resource Group we just created.

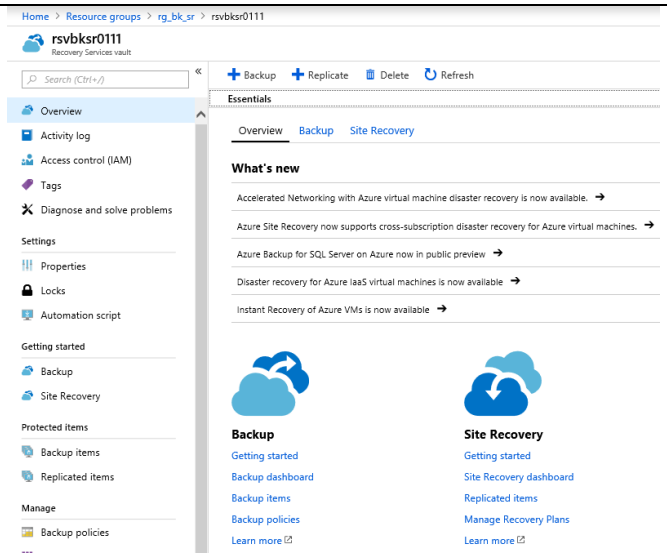
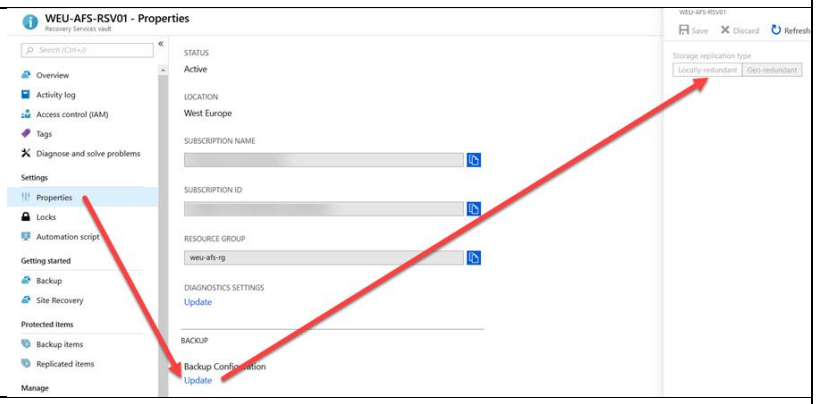
*Select CSP subscription
*Use unique vault name

4. Wait for the Vault to get deployed. You can check the status from the **Notifications** in the top bar.

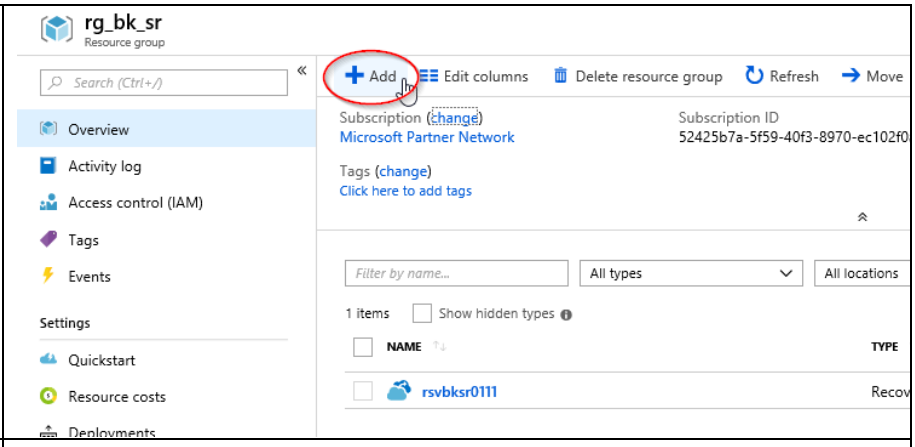
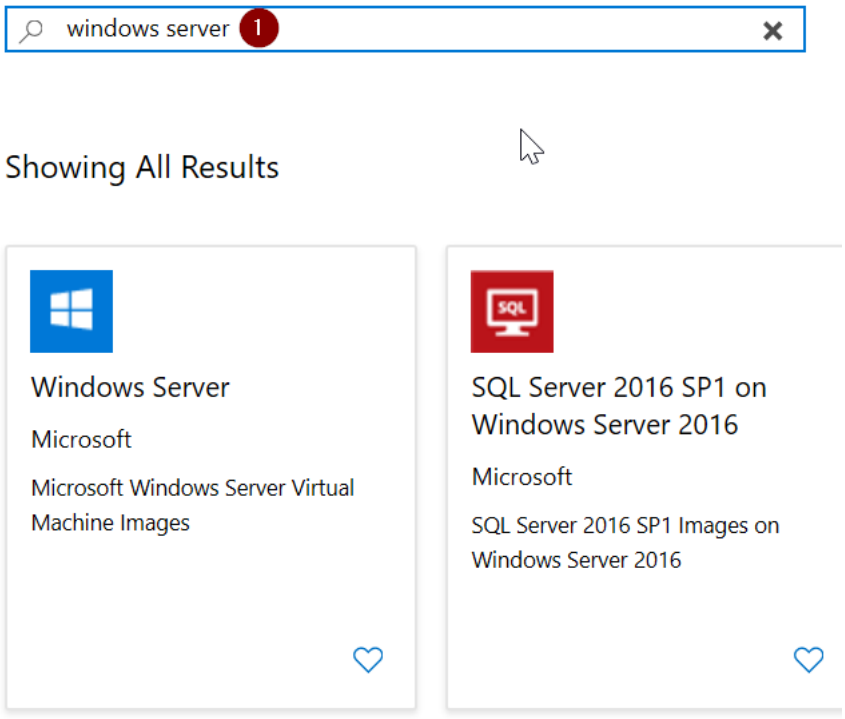


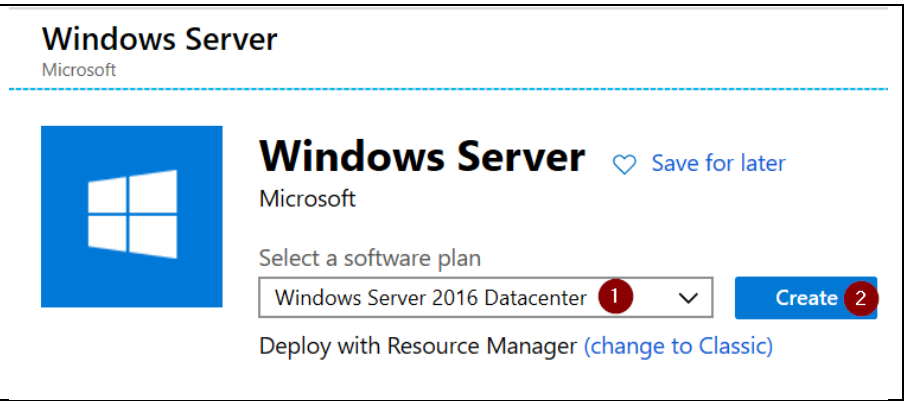
5. Open the **Recovery Services Vault** "rsvbksr0111" when it's ready, the **Overview** pane will show a dashboard



	
6. Using the navigation pane, browse to **Backup Infrastructure** and then **Backup Configuration**. 7. Make sure **Local Redundant Storage (LRS)** is selected. Click **Save**.	
8. You're done, we have created a Recovery Services Vault we can use to store the backups.	

Exercise 1d: Create a Azure Virtual Machine

1. Click **Add** to create a Virtual Machine Resource	
2. From the search box, search for **Windows Server** and select **Windows Server 2016 Datacenter**.	

3. Click **Create**	

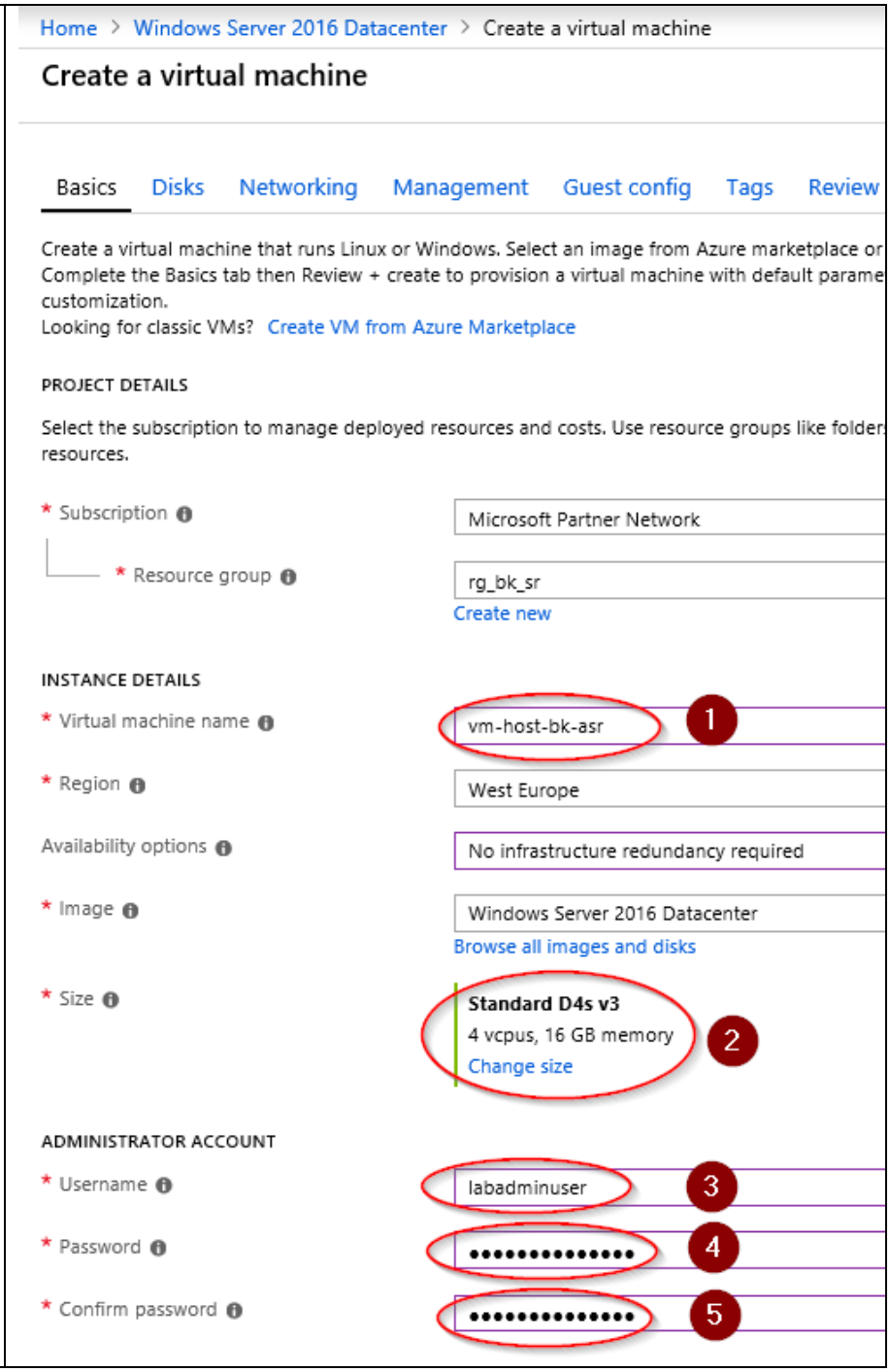
4. Add the parameters

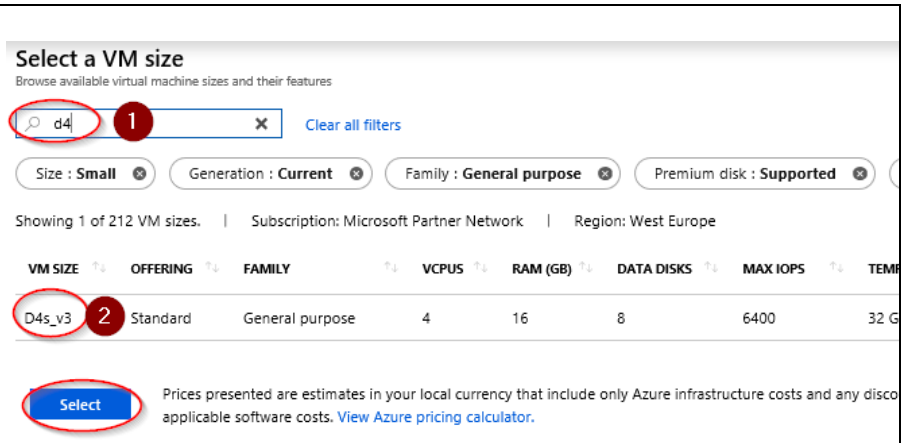
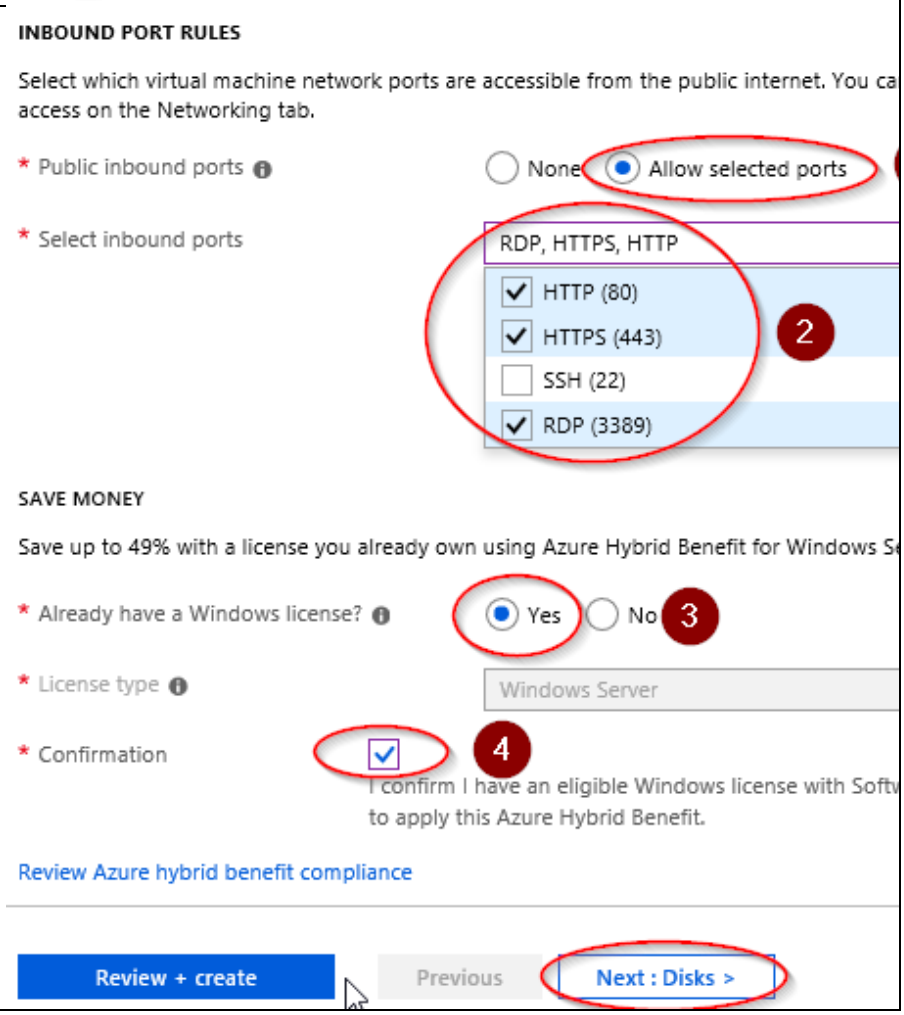
VM Name: vm-host-bk-asr

VM Size: D4s V3

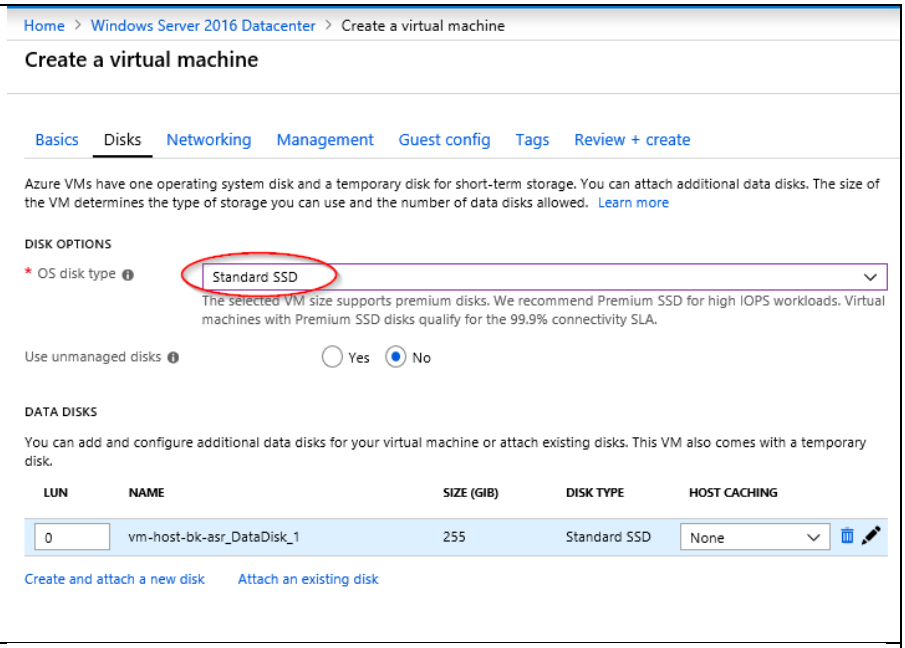
Username: labadminuser

Password: lab@Eindhoven0702



* Extra info VM Size D4s_v3	
Inboud Port Rules: HTTP HTTPS RDP **Save Money:** Yes Check box - Confirmation	

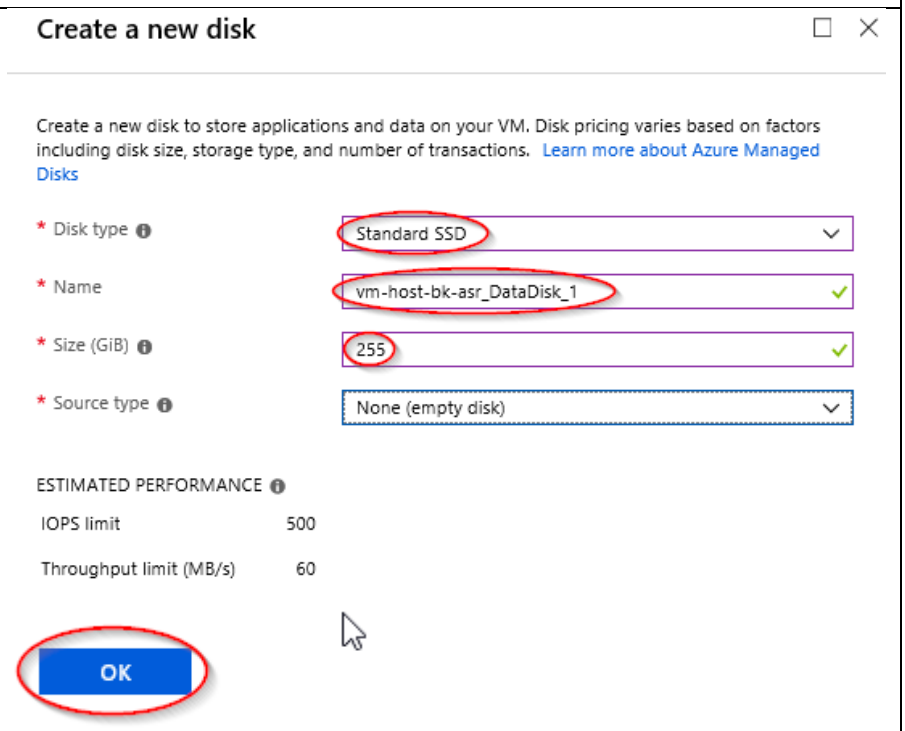
5. Select **Standard SSD**
6. Add **new Data Disk**



*Extra info new disk

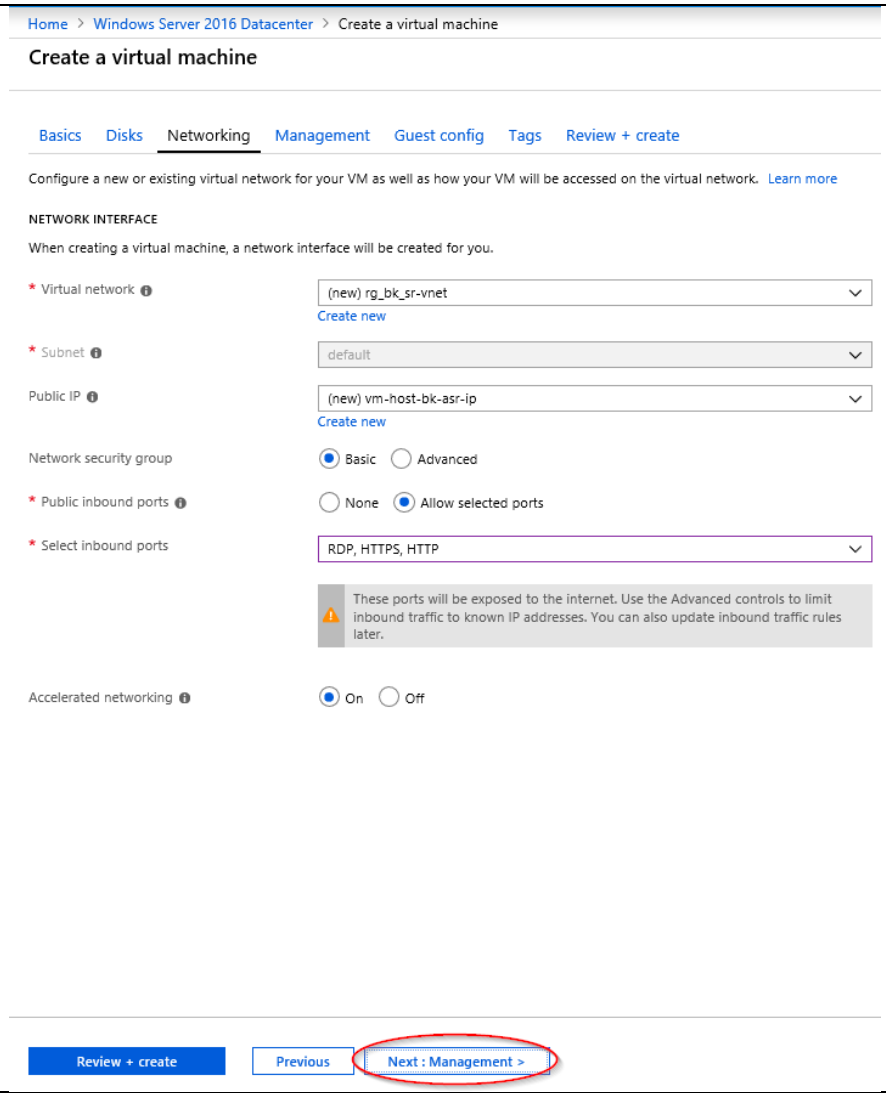
Disk type: Standard SSD
Name:
vm-host-bk-asr_DataDisk_1
Size: 255

Click **OK**



7. Click **Next : Networking >**

8. Click **next : Management >**



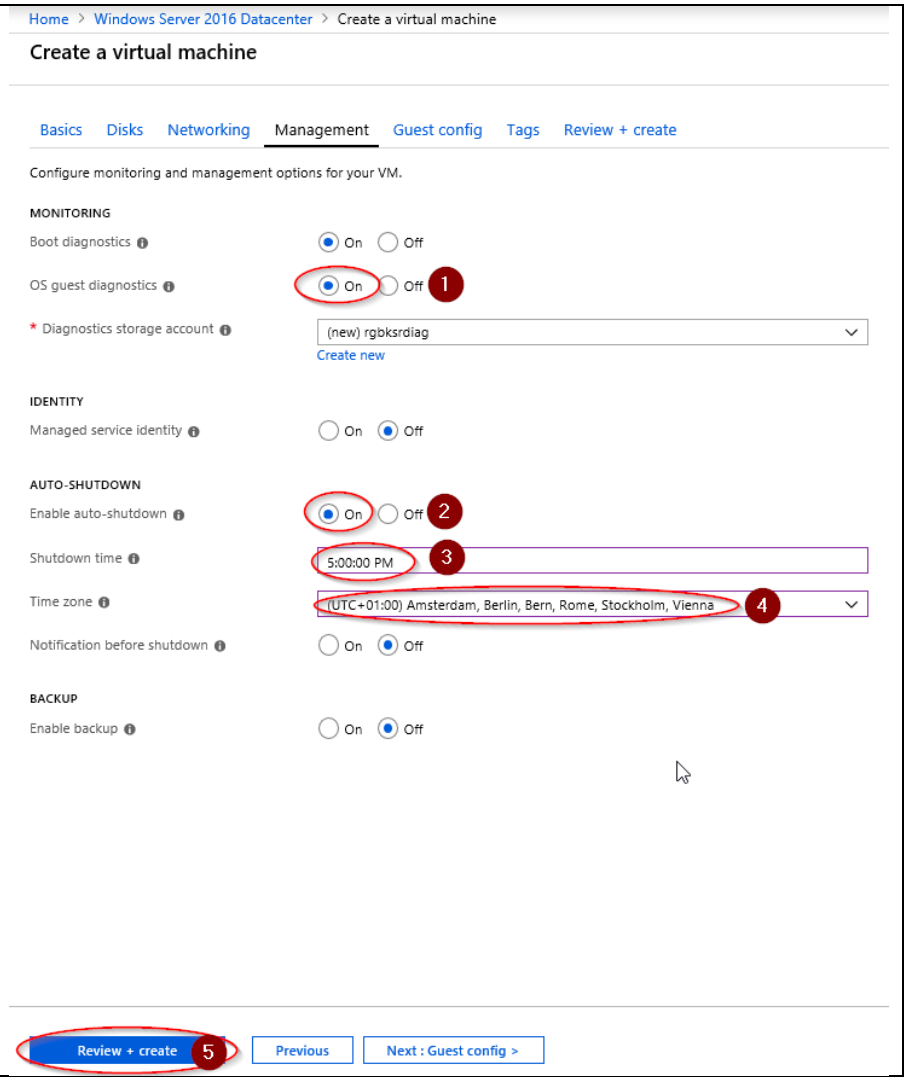
9. Select **OS guest diagnostics :** ON

   Select **Enable auto-shutdown :** On

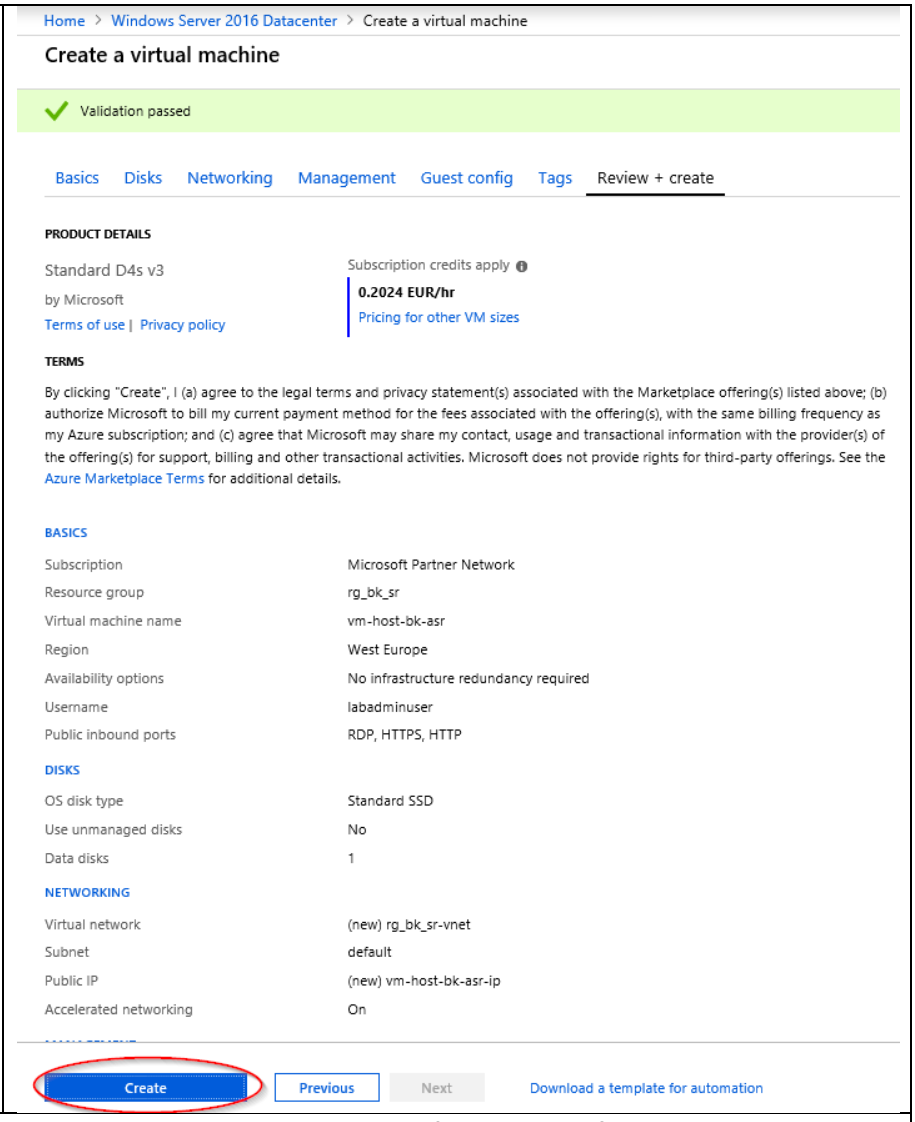
   Set **Shutdown time :** 5PM

   Set **Time Zone :** Amsterdam

10. Click **Review + Create**



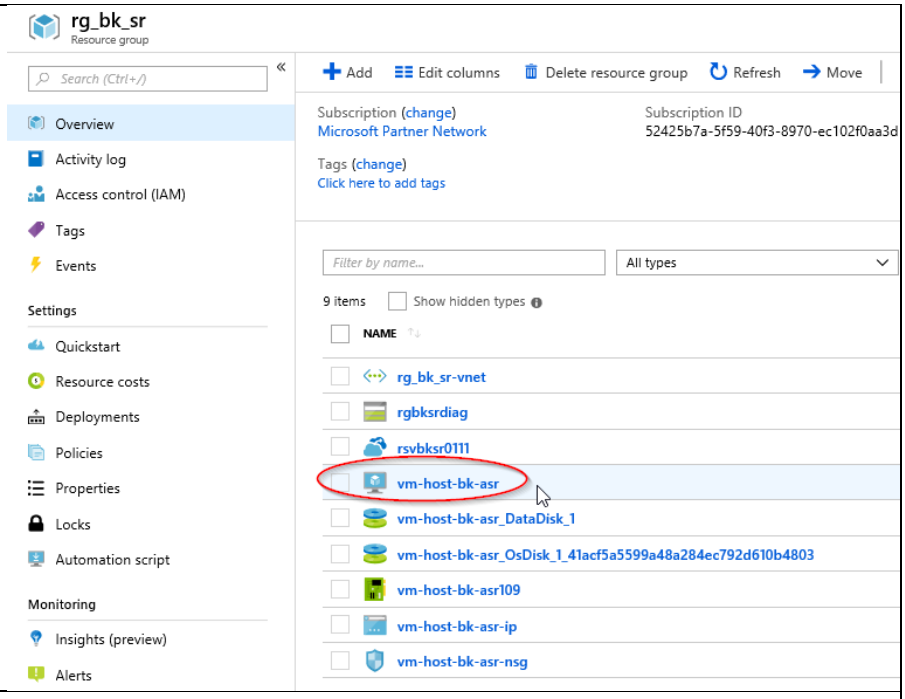
11. Review details and click **Create**



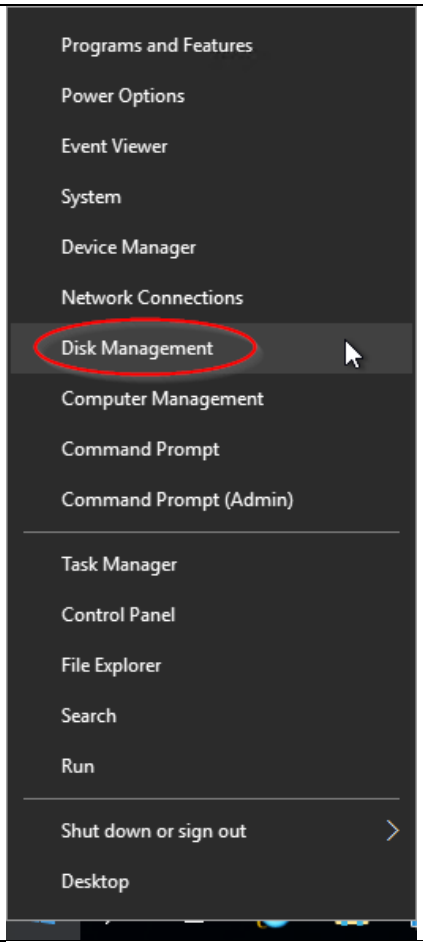
12. Wait for the VM to get deployed. You can check the status from the **Notifications** in the top bar.

13. You're done, we have created a Virtual Machine.

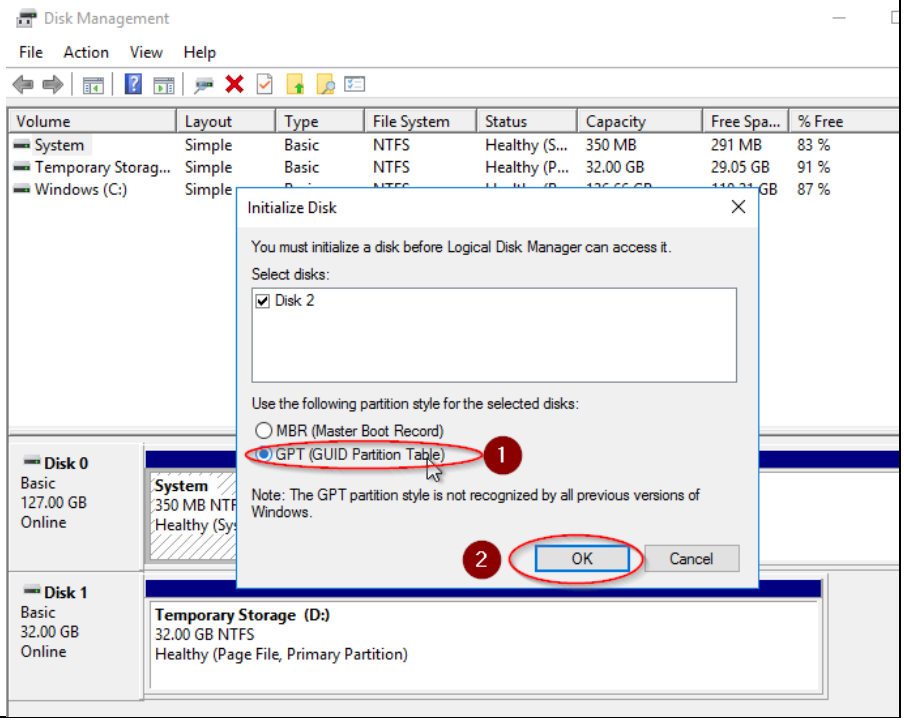
Exercise 1e: Configure Datadisk on HOST VM

1. From the navigation pane, go to **Resource Group** "rk_bk_sr" 2. Select **Virtual Machine** "vm-host-bk-asr"	
3. Click **Connect** and download RDP file. 4. Open RDP File from browser downloads	
5. Login to the VM with provided login credentials	

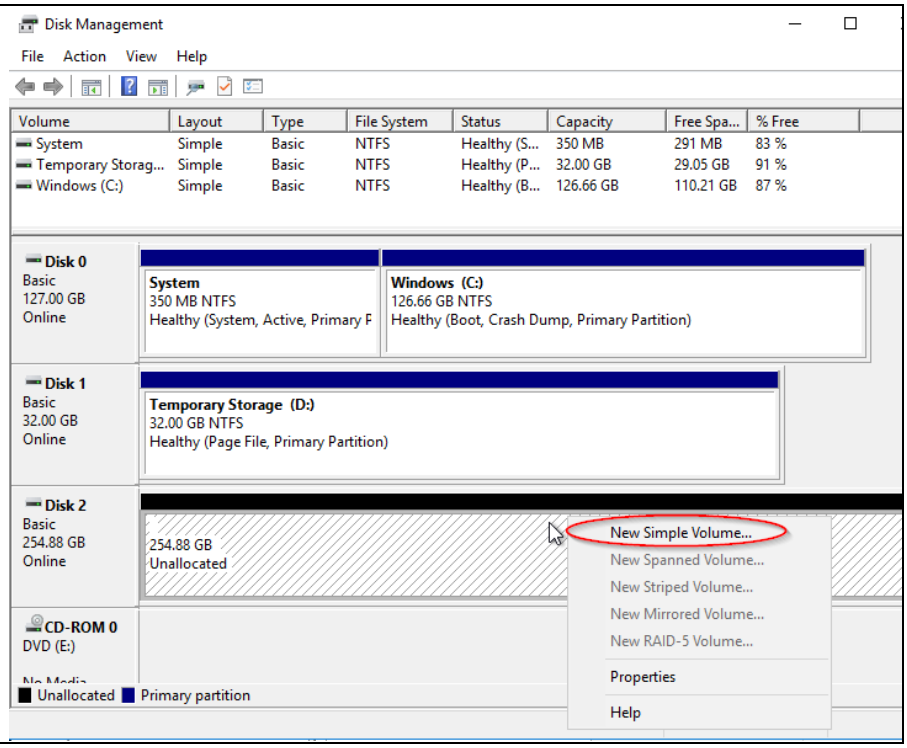
6. Go to **Disk Management**



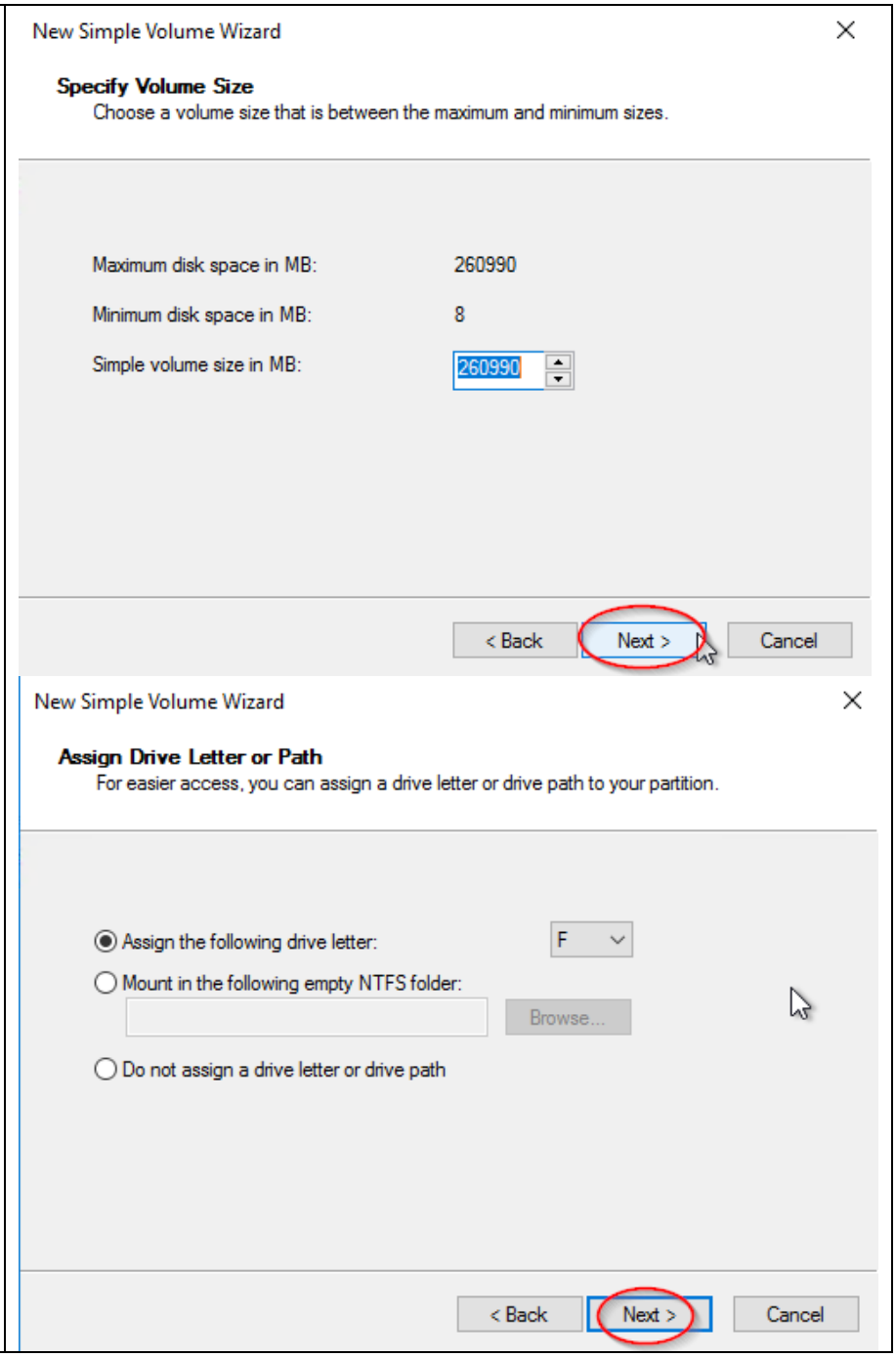
7. Select **GPT**
8. Click **OK**

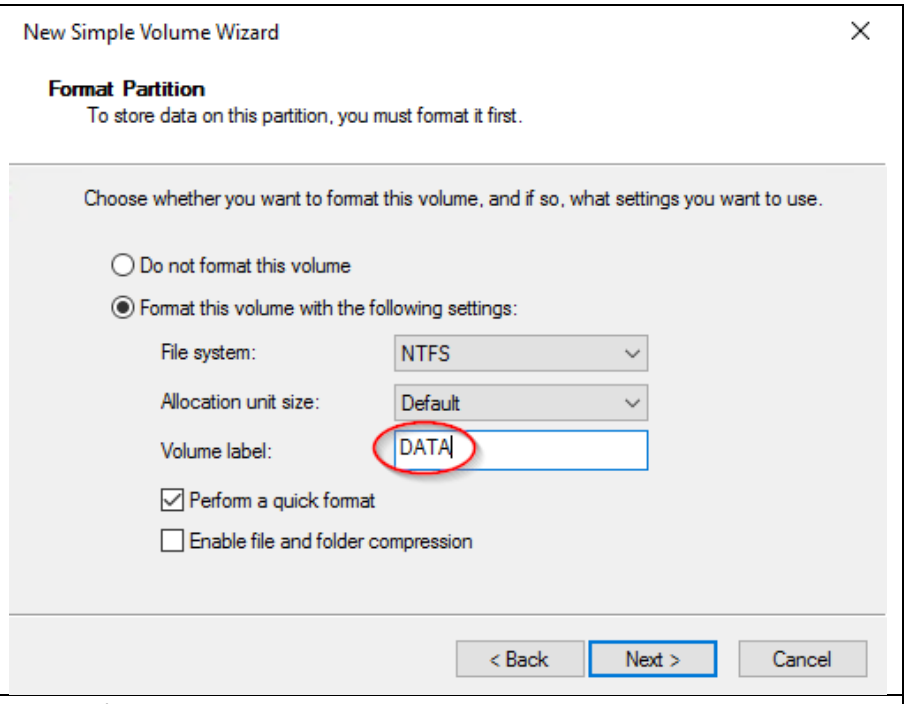


9. Right-click on the unallocated volume
10. Click **New Simple Volume**



11. Click Next
12. Assign the drive letter **F**, and click **Next**



13. Set **Volume Label:** DATA 14. Click **Next** 15. **Finish**	
16.	You're done, we have created a datadisk

Activity 2: Backup & Recovery

Estimated time to complete this activity

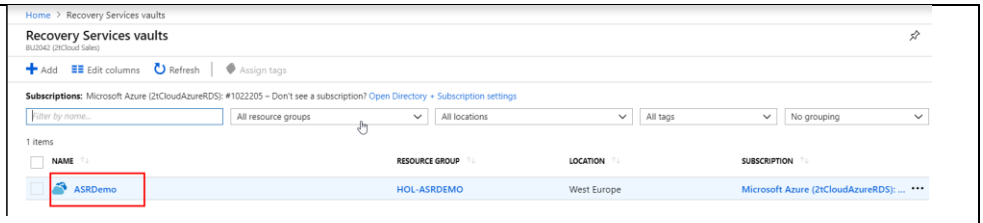
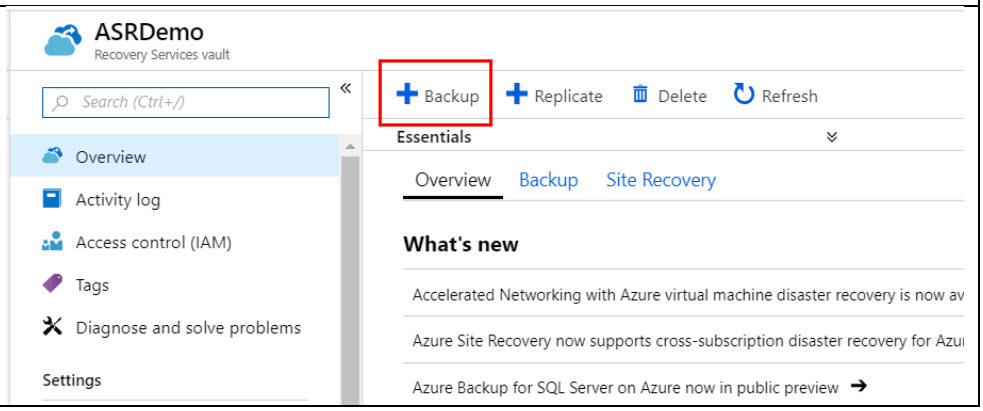
60 minutes

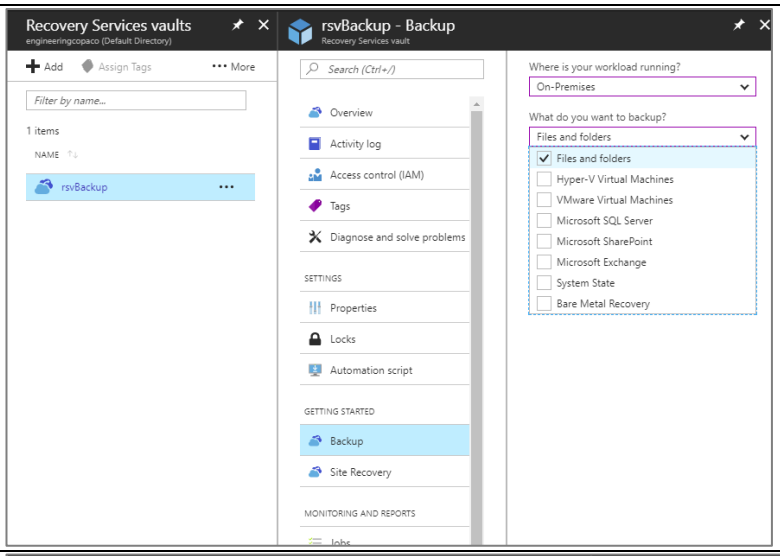
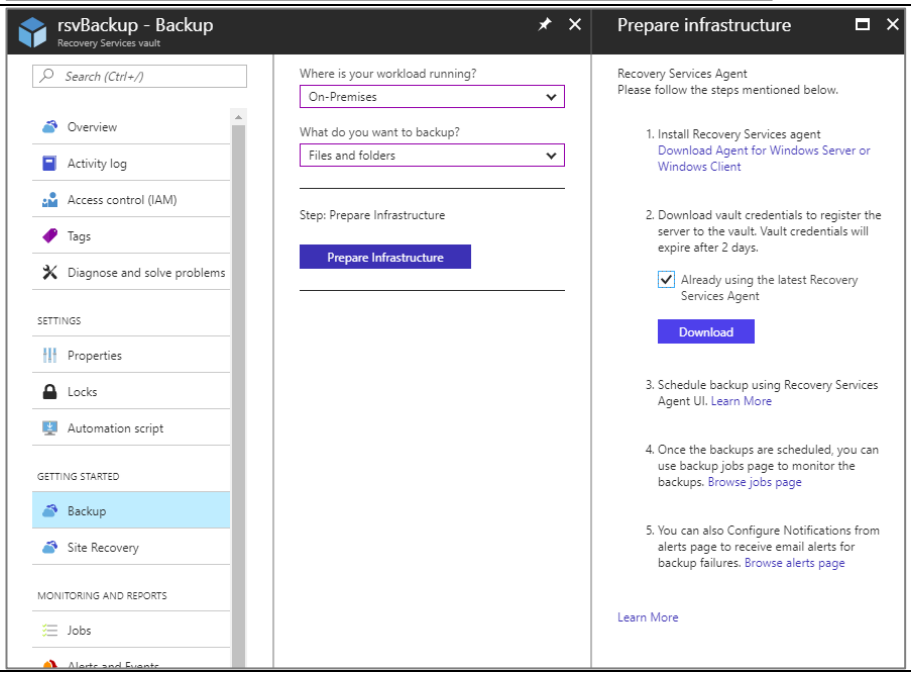
Objectives

In this activity, you will;

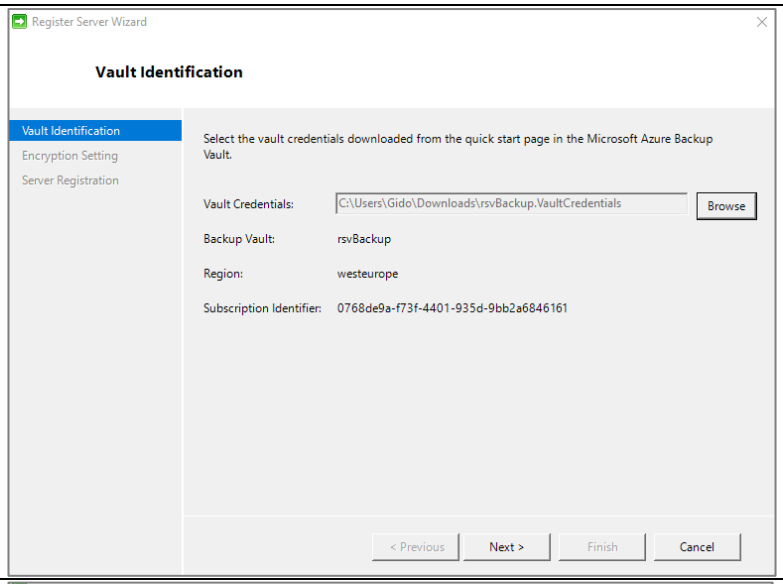
- Create a backup of your files using the Azure Recovery Agent
- Create a backup of your Azure Virtual Machine
- Perform a recovery of your files and folders using the Azure Recovery Agent
- Perform a recovery of your files and folders from your Azure Virtual Machine

Exercise 1: Create a backup of your files

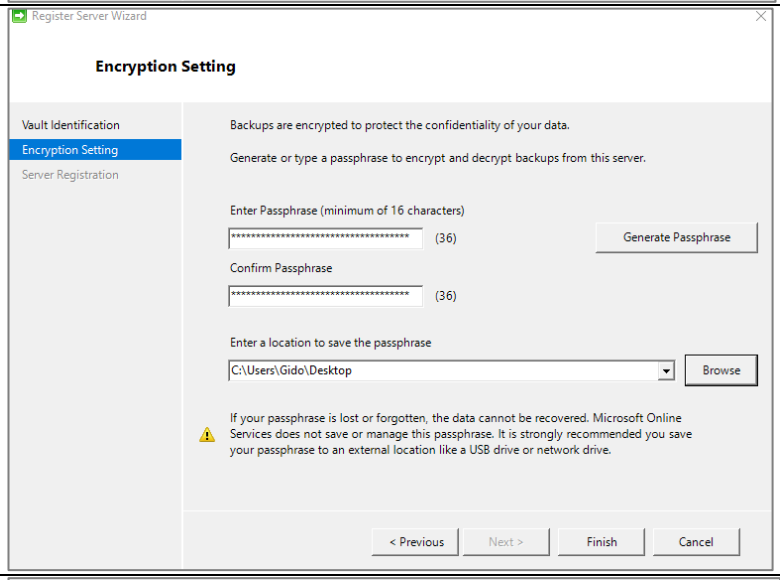
1. Login on the BK-SVR01, go to portal.azure.com and sign in. 2. From the **Azure Portal**, browse to your **Recovery Services Vault** from the Navigation pane 3. Select the created recovery vault	
4. Choose Backup	

5. Choose **On Premises** as the source of your backup and choose **Files and Folders** as the backup type	
6. Download the **Recovery Services Agent** with the link provided and **enable the checkbox** to confirm you have downloaded the agent.	
7. The **Download** button will become available, **save the Vault Credentials** to your local computer.	

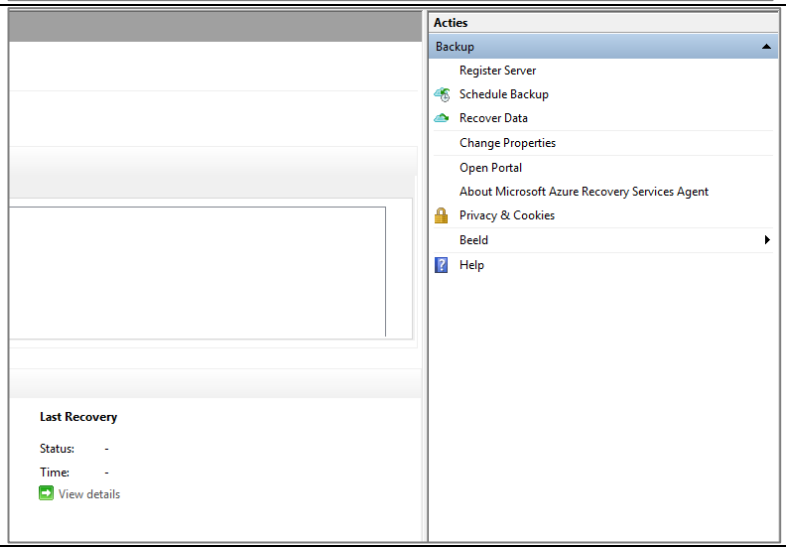
8. When the downloads are ready, **run the installer**. Use the defaults, until you are asked for identification of the Vault. Select the **Vault Credentials** file you downloaded.

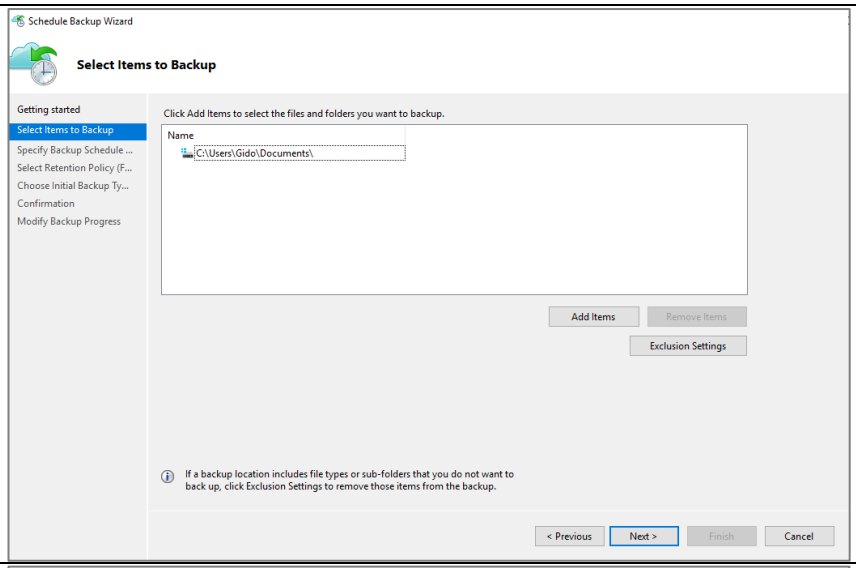
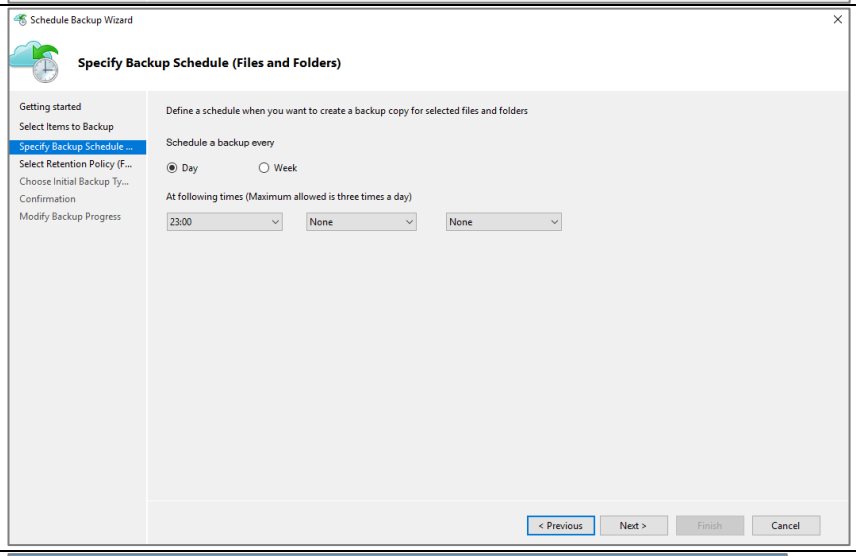
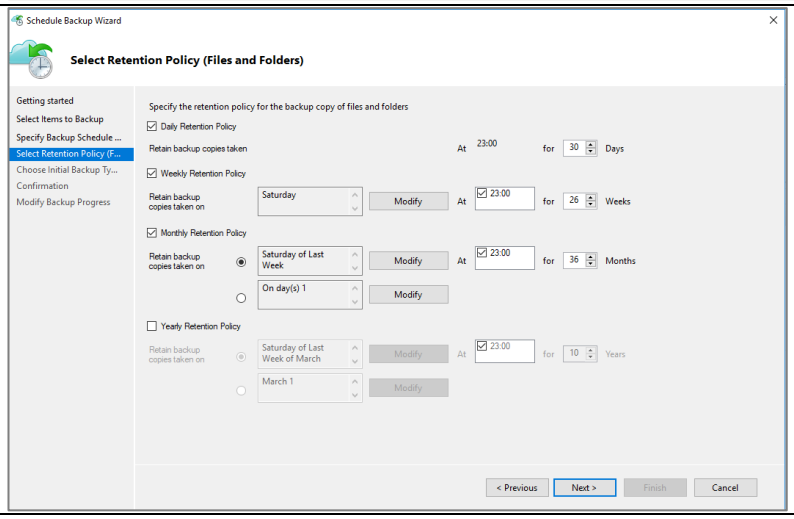


9. **Generate a Passphrase** (or choose one yourself). Save it to your computer.



10. Start **Microsoft Azure Backup** from the shortcut on your desktop
11. Schedule a backup from the action pane on the right.



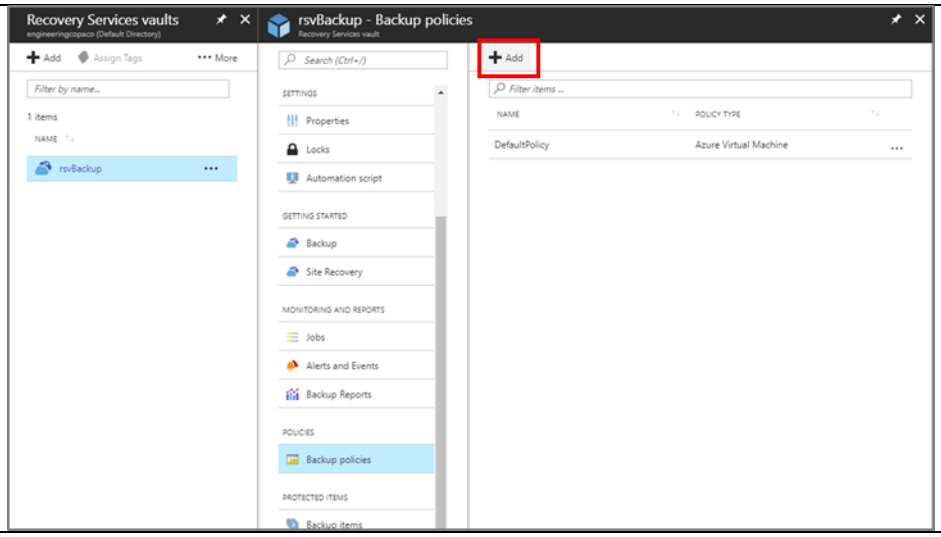
12. **Select** the items you want to backup. Make sure the selection only has a small amount of data, so you don't have to wait.	
13. Select how often and when the backup can take place. For instance, at **23.00**.	
14. Select the desired Retention Policy, for instance a. **Daily for 14 days** b. **Weekly for 4 weeks** c. **Monthly for 6 months** d. **No yearly backups**	
15. On the next screen, you can choose to make adjustments for an offline	

backup scenario. Accept the defaults for automatic configuration and proceed. 16. **Finish** the wizard and click Backup Now to do an instant backup. 17. As the backup is running, proceed with the next exercise. We will return to the results of this exercise when the job is finished.	

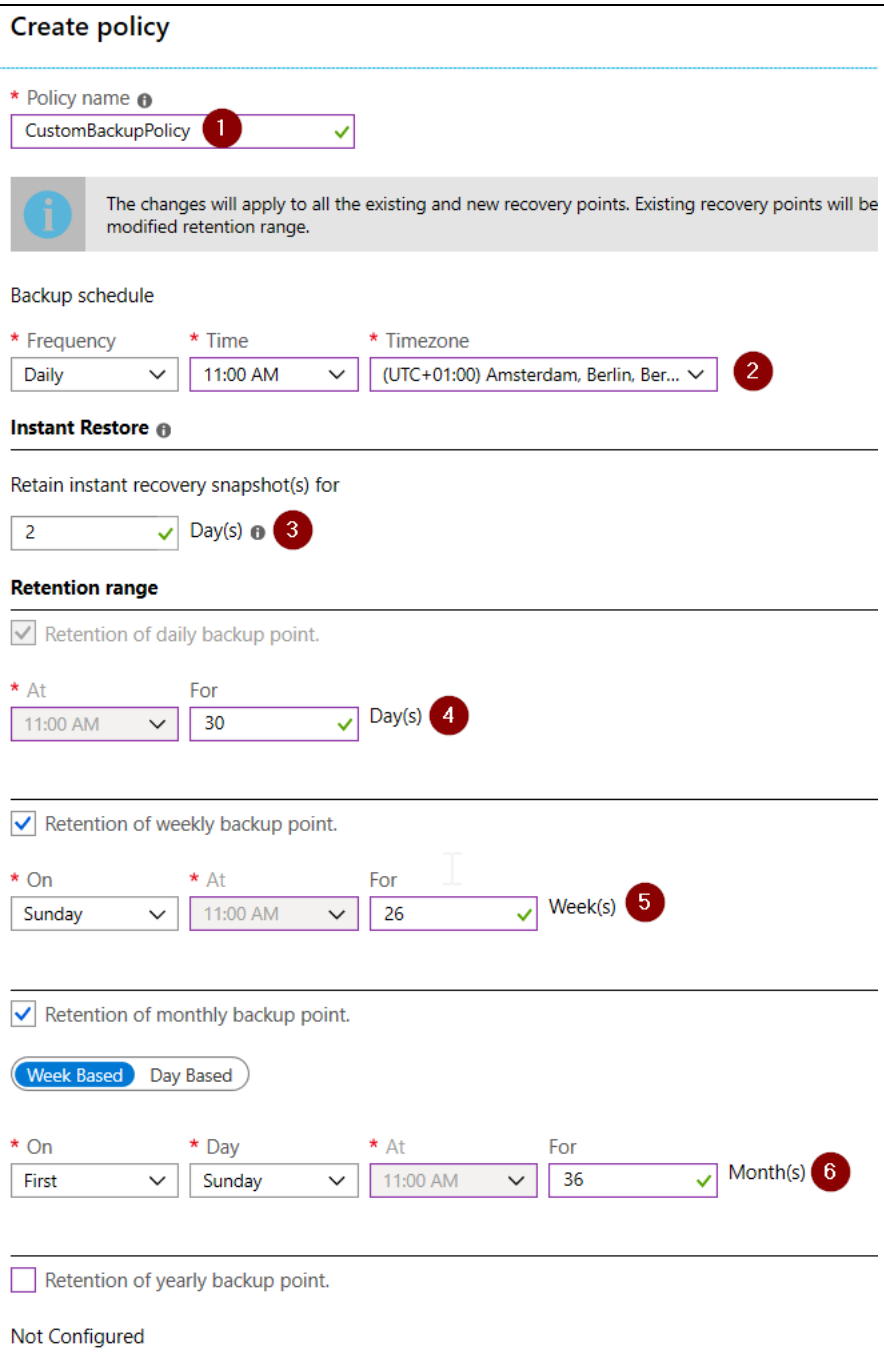
Exercise 2: Create a backup of your Azure Virtual Machine

In this exercise we are going to back up the host VM

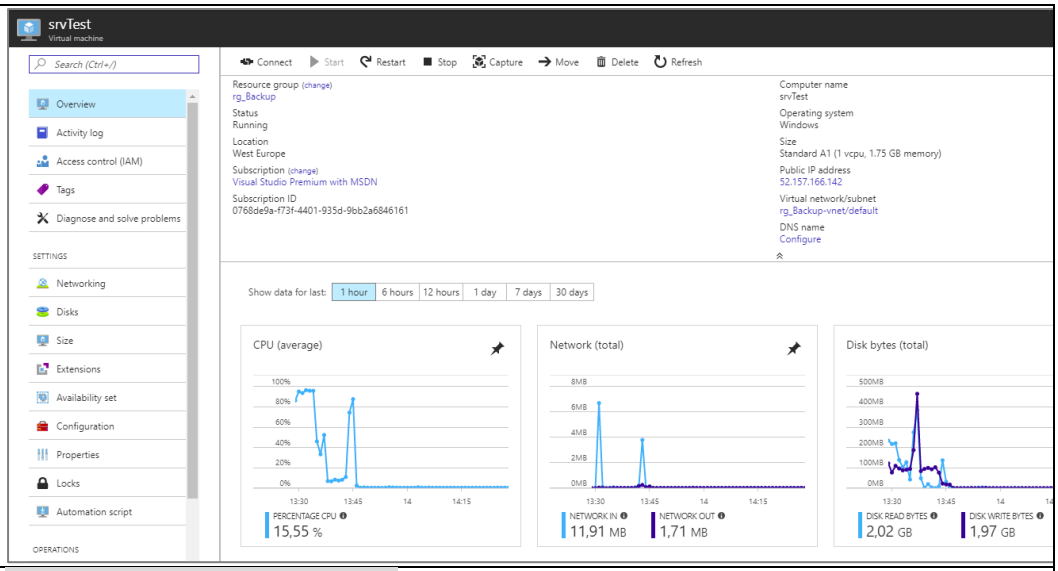
1. Go to the **Azure Portal** and browse to your **Recovery Services Vault**.
2. Open **Backup Policies** from the navigation pane. Add a new **Backup Policy**



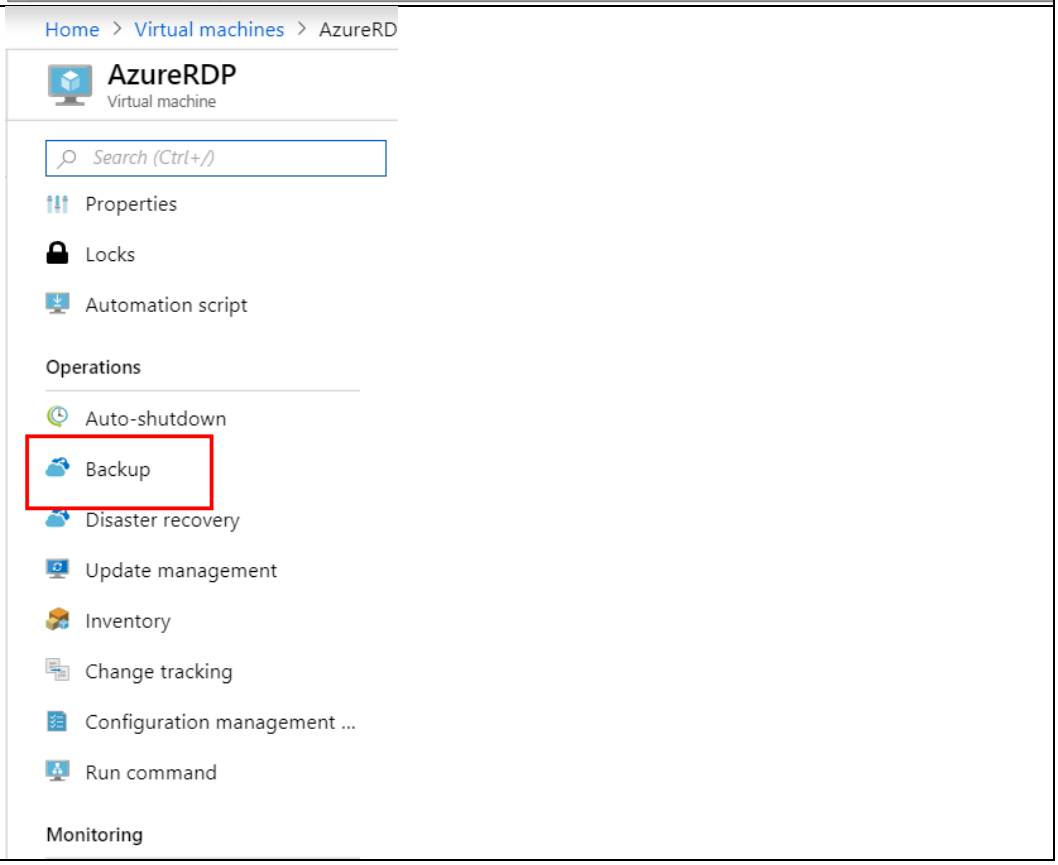
3. Choose Azure Virtual Machine
4. Use the following parameters;
    a. Name **CustomBackupPolicy**
    b. Frequency **Daily at 23:00**
    c. Instant Restore **2** days
    d. Daily retention **30** days
    e. Weekly retention **26** weeks
    f. Monthly retention **36** months
    g. Yearly retention **None**
5. **Create** the policy



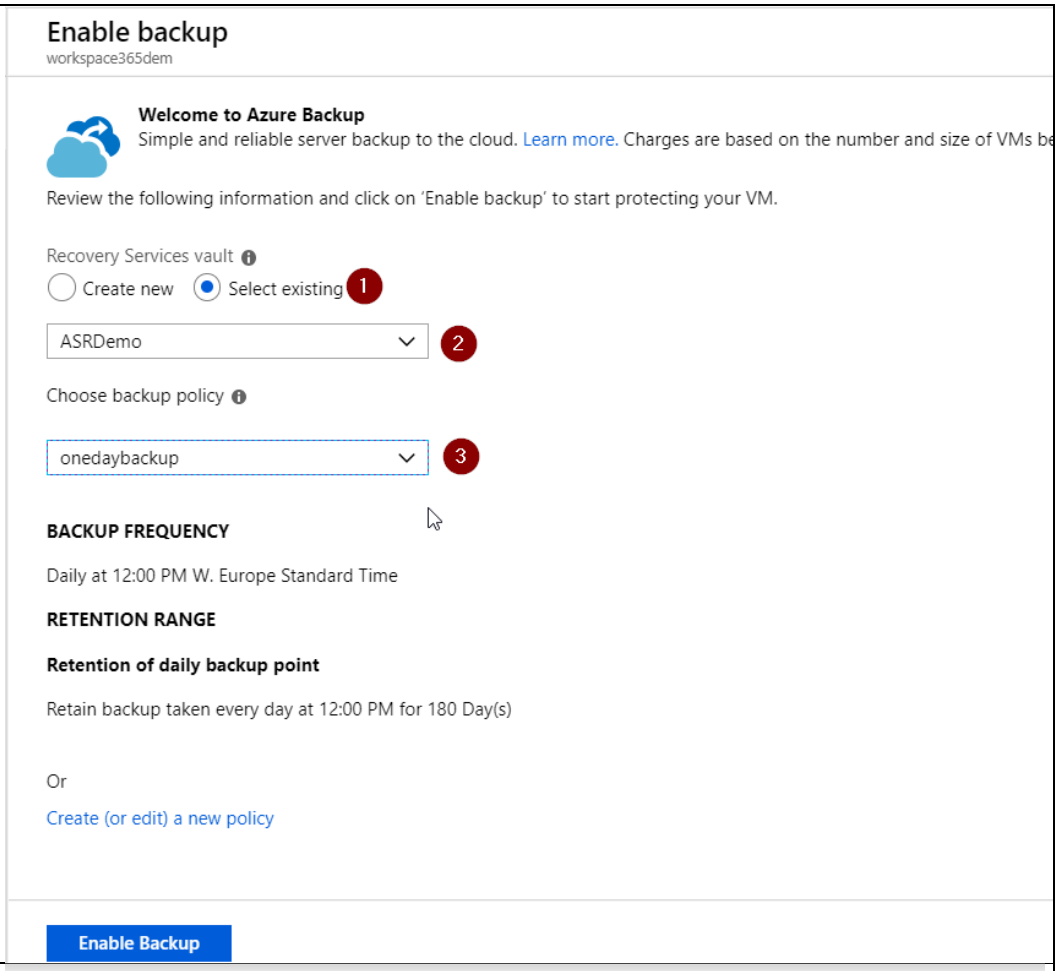
6. Browse to the **Resource Group** created before
7. Identify the **Virtual Machine** that was created in the previous exercise and select it to open the details. As you can see, it is running and the overview pane shows you basic insights on the VM.



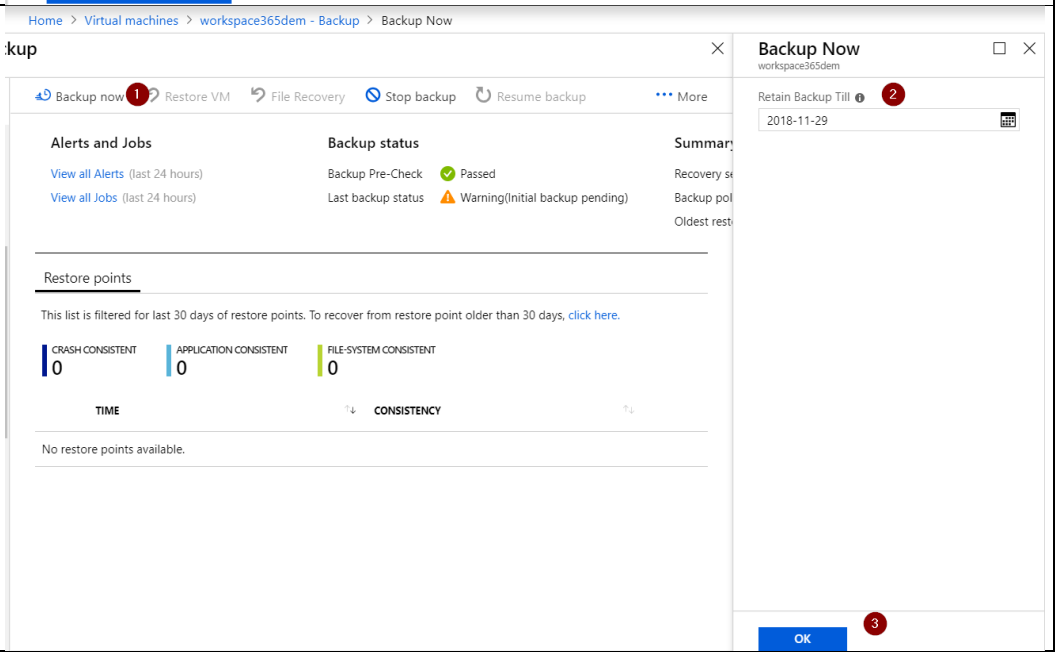
8. Select Backup

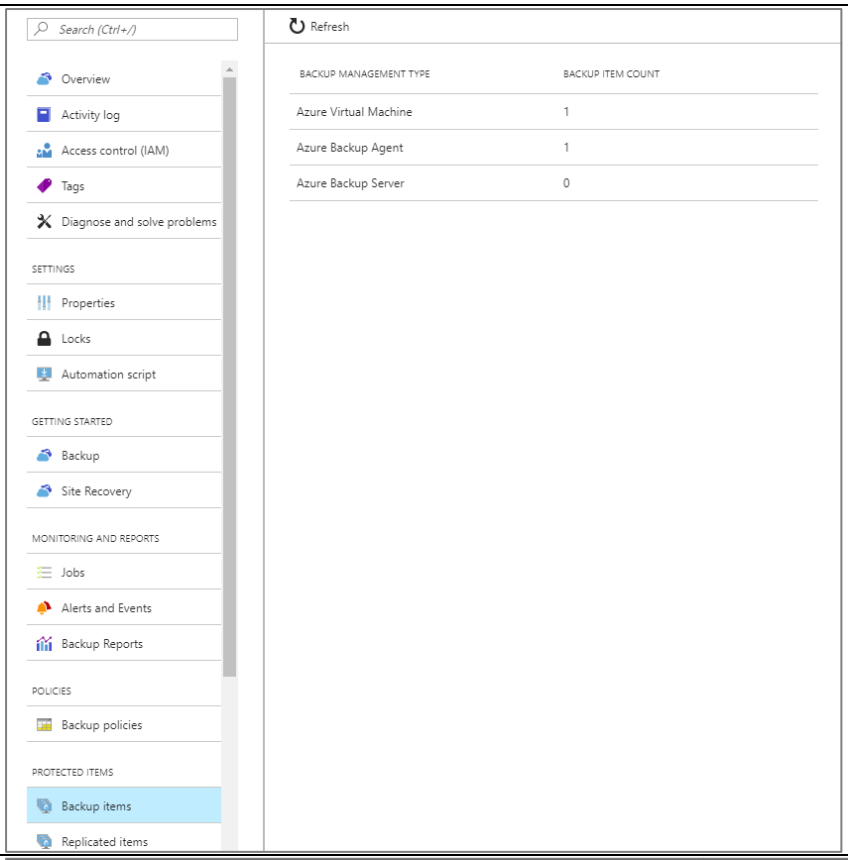
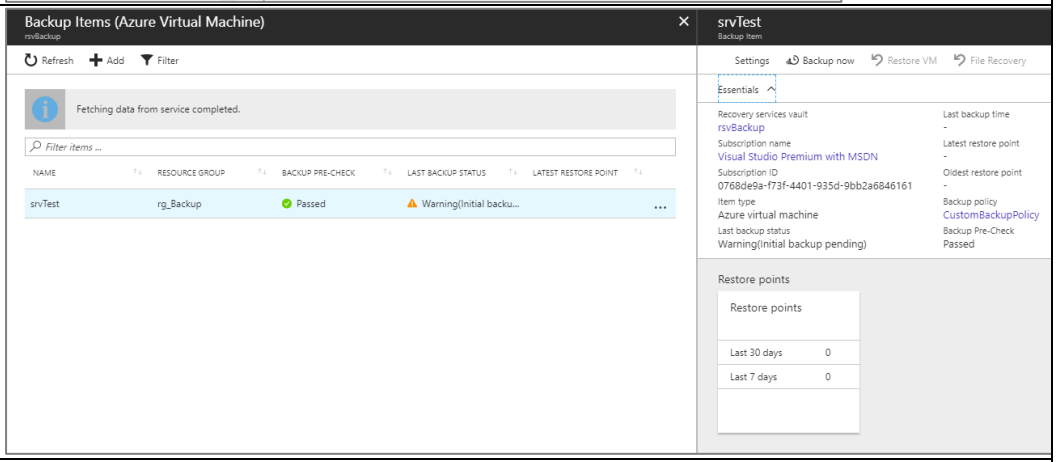


9. Select:
    a. Select Existing and choose the recovery vault you created
    b. Choose the backup policy you created
    c. And choose Enable Backup
10. Wait for the configuration to finish

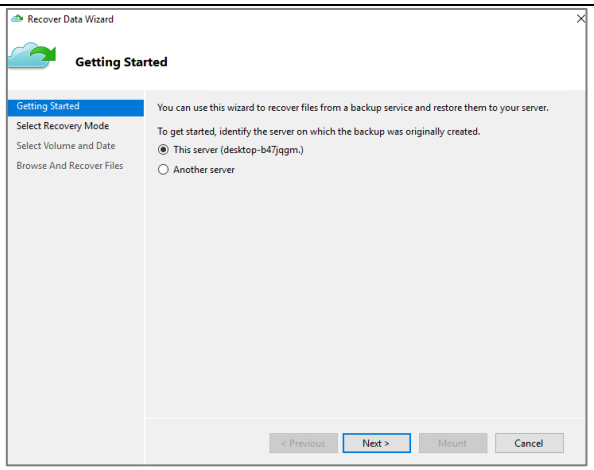
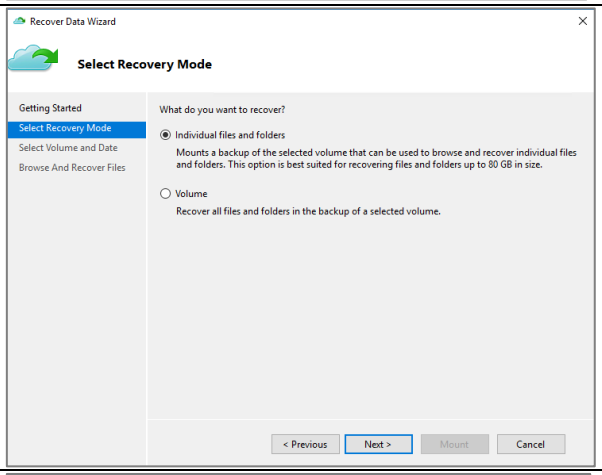
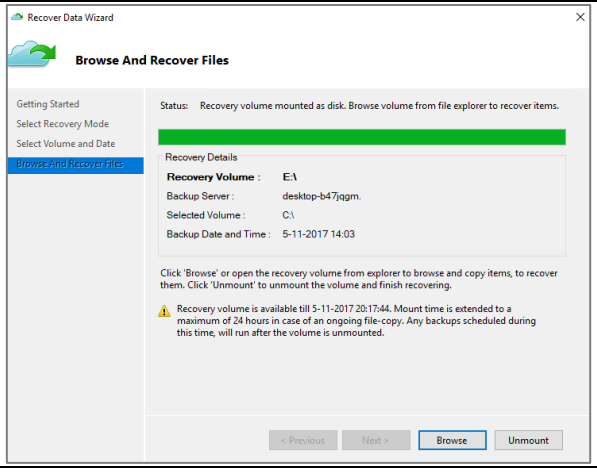


11. Open the Backup pane once again and click **Backup Now**. Select the desired retention and choose **Backup**.



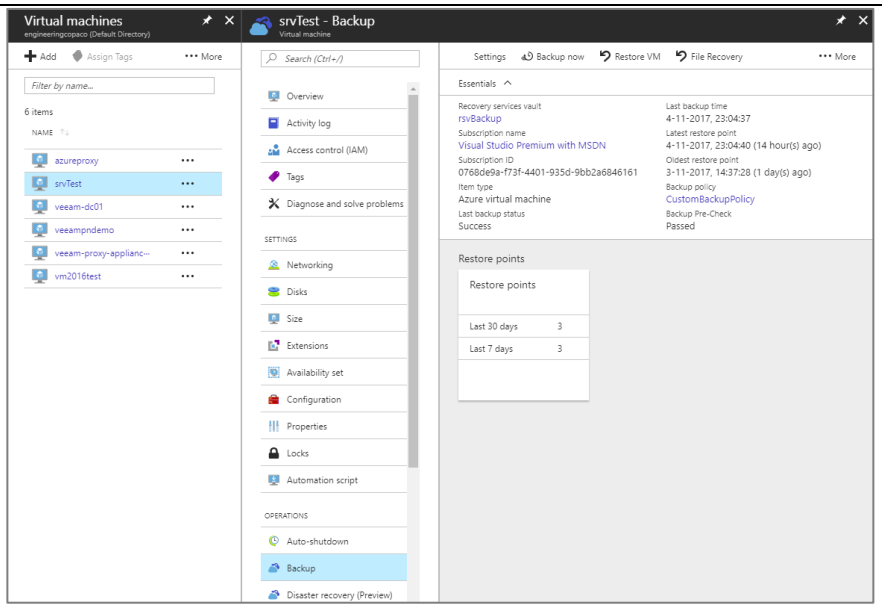
You can verify the job is running from the **Notification** button in the top right of the **Azure Portal**. For detailed information; 1. Open your **Recovery Services Vault** 2. Open **Backup Items** under **Protected Items**. Please note the **Azure Virtual Machine** Count has gone up.	
3. Click on it to get detailed information	
4. Proceed to the next exercise. While the backup of your Virtual Machine is running, we'll check on the backup of your Files and Folders that we started before.	

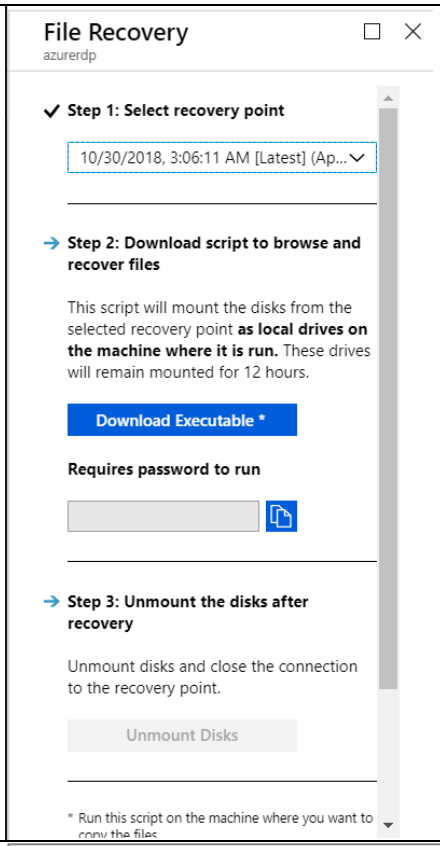
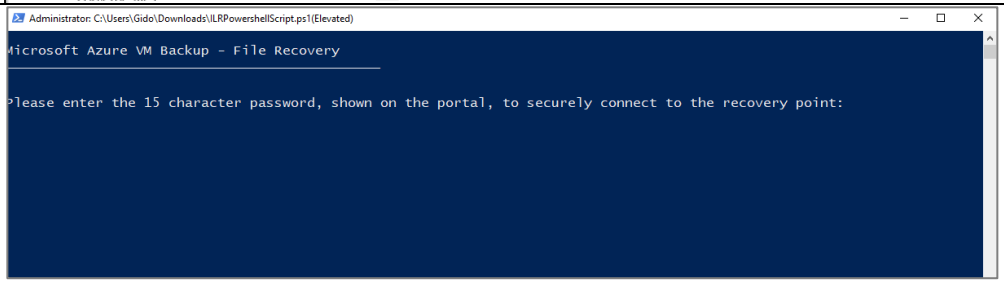
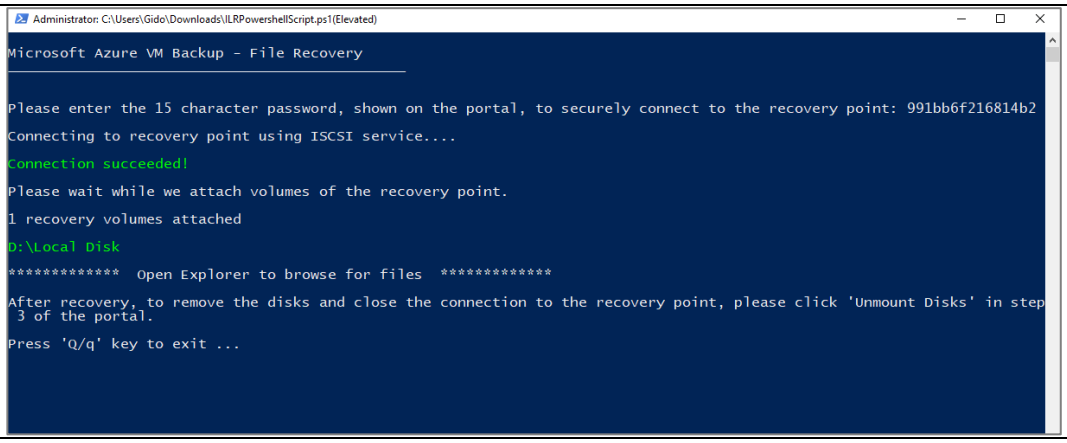
Exercise 3: Perform a recovery of your Files and Folders

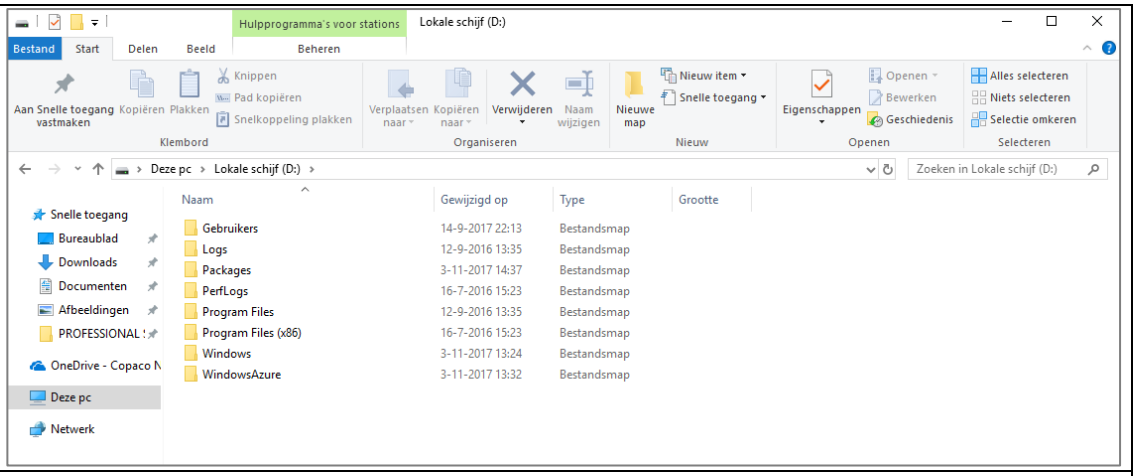
1. Start the **Microsoft Azure Backup** shortcut on your desktop of the BK-SVR01 2. Start the **Microsoft Azure Backup** shortcut on your desktop. 3. The **Jobs overview** will show you if your backup job was successful. From the **Action pane** on the right, choose to **Recover Data**. From the **Getting Started wizard**, choose to **Recover from this server**	
4. Choose to restore individual **Files and Folders** and select **C:** as the volume	
5. From the calendar, **select the restore point** just created. Click **Mount**	
6. When the volume is mounted, you can click **Browse** to recover file by using the copy and paste options from **Windows Explorer**. Try to recover your files.	

7. When finished, click **Unmount** from the Recover Data Wizard.	

Exercise 4: Perform a recovery of your VM files

1. From the **Resource Group**, open your Virtual Machine. From there, select **Backup** to see the backup state of this machine. Check the **Last Backup State**, it should now show successful.	
2. Please note it is possible to restore the full VM from here. However, this activity is not included in this lab. Instead, for this exercise, open **File Recovery**.	

3. Select **Recovery Point** and click **Download Executable** 4. **Copy** the password to clipboard	
5. Browse the executable on your local computer. Right click to **Run as Administrator**	
6. **Paste** (or type) the password from clipboard when asked. Please wait while the Recovery Point is mounted.	

7. From the **Windows Explorer**, the Recovery Point is mounted as a drive letter (D:\)	
8. Try to browse the Recovery Point and **copy** some files to your local drive. 9. When done, click **Unmount Disks** from the Azure Portal. After some time, the drive mapping on your local machine will disappear.	
	You're done, we have created the backups and restored files and folders.

This is the end of the lab.

Activity 3: Clean-up

Objectives

In this activity, you will;

- Remove the Azure resources created in this lab

The resources we deployed will consume CSP resources and credits. As they are only there for testing purposes, you can safely remove them.

1. From the **Azure Portal**, navigate to your **Resource Group**
2. Open the **Recovery Services vault** and delete the **backup items** and **Replicated Items**
3. Delete the **Recovery Services vault**
4. From the **Azure Portal**, navigate to your **Resource Group**
5. From the **Overview** pane, click **Delete Resource Group**
6. Make sure you selected the correct Resource Group and confirm this by typing the name when asked.
7. Click to **Delete** to confirm. Check the status from the **Notifications** in the top right of the Azure Portal.

(Extra) Activity 4: Backup and restore Azure SQL Database

Estimated time to complete this activity

45 minutes

Objectives

In this activity, you will;

- Create a backup of your Azure SQL database
- Perform a recovery of your Azure SQL database

1. Open url : https://docs.microsoft.com/nl-nl/learn/modules/backup-restore-azure-sql/ 2. Click **Start**	
3. Finish module	

Extra resources / links:

Pricing

https://azure.microsoft.com/en-us/pricing/calculator/

https://azure.microsoft.com/pricing/details/backup

Op deze website kunt u eenvoudig Backup-pricing berekenen.

Design & Implementation

https://docs.microsoft.com/azure/backup/
Dit document bevat algemene informatie omtrent Azure Backup

https://docs.microsoft.com/azure/backup/backup-mabs-protection-matrix

Support matrix voor Azure Backup Server

https://docs.microsoft.com/azure/backup/backup-mabs-protection-matrix

Recovery Services Vault overview

https://docs.microsoft.com/azure/backup/backup-azure-recovery-services-vault-overview

Extra screenshots: troubleshooting