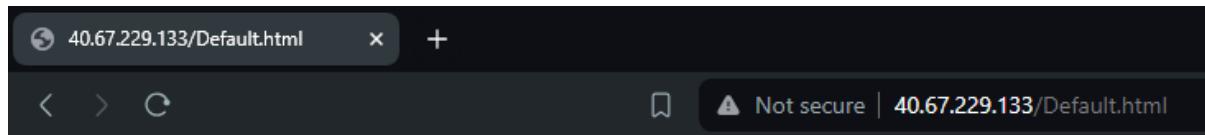




Azure Virtual Machine Backup

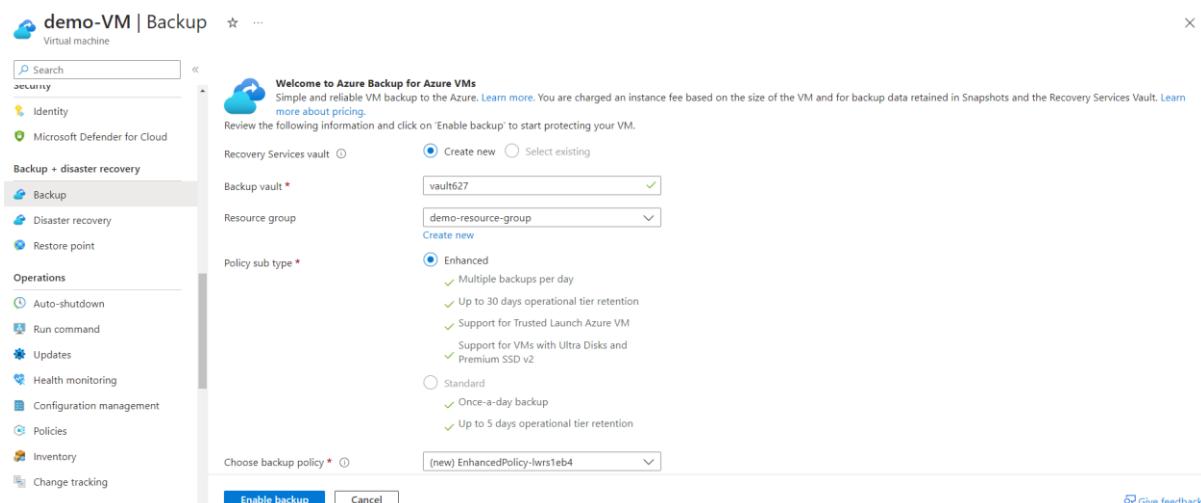
In this lab, we are setting up Azure Backup for a Windows Server 2022 VM running IIS. The end goal is to ensure that we can back up the VM and its data, and be able to restore files or the entire VM in case of data loss or corruption. This setup helps in disaster recovery and maintaining data integrity for critical applications running on the VM.

1. For this lab you should have a Virtual Machine with IIS installed on it. The VM should be based on Windows Server 2022.
2. Now below you can see that our web page is running as expected.



This is the server demo-VM

3. In your VM from the left pane go to Backup and here you can see it is creating a vault for you. Here you just have to click on Enable Backup.



4. After deployment if you come back to your VM and then to backup then you will see that your Pre-check is passed but your last backup status is still pending.
5. Now you are going to click on Backup Now.

[Backup now](#) [Restore VM](#) [File Recovery](#) [Stop backup](#) [Resume backup](#) [Delete backup data](#) [Restore to Secondary Region](#) [Undelete](#) [Feedback](#)

Try our new Business Continuity Center for the at scale BCDR management of your resources protected across Azure Backup and Site Recovery. →

[JSON View](#)

[Essentials](#)

Recovery services vault : vault627	Backup Pre-Check : Passed
Subscription (move) : Azure Pass - Sponsorship	Last backup status : Warning (Initial backup pending)
Subscription ID : 6e13e5d6-4287-42a8-b80f-91d6b14e3aec	Backup policy : EnhancedPolicy-lwrs1eb4 (Enhanced)
Alerts (in last 24 hours) : View alerts	Oldest restore point : -
Jobs (in last 24 hours) : View jobs	Included disk(s) : All disks

Recovery points

This list is filtered for last 30 days of recovery points. To recover from recovery point older than 30 days, as well as vault-archive, [click here](#).

Long term recovery points can be moved to vault-archive. To move all 'recommended recovery points' to vault-archive tier, [click here](#).

CRASH CONSISTENT	APPLICATION CONSISTENT	FILE-SYSTEM CONSISTENT
0	0	0

Creation time ↑↓ Consistency Recovery type

No restore points available.

- Below you can see that it is giving you the retain date for your backup. Then just go ahead and enable the backup.

Backup now

...
demo-VM

Retain backup till * ⓘ

06/28/2024 Calendar

- Now you have to wait for at least one hour until it creates a snapshot for your backup. But after 10-15 minutes you will see that your snapshot is ready but it will take some more time until it gets fully prepared.

[Backup now](#) [Restore VM](#) [File Recovery](#) [Stop backup](#) [Resume backup](#) [Delete backup data](#) [Restore to Secondary Region](#) [Undelete](#) [Feedback](#)

Try our new Business Continuity Center for the at scale BCDR management of your resources protected across Azure Backup and Site Recovery. →

[JSON View](#)

[Essentials](#)

Recovery services vault : vault627	Backup Pre-Check : Passed
Subscription (move) : Azure Pass - Sponsorship	Last backup status : Success 1/1/2001, 5:30:00 am
Subscription ID : 6e13e5d6-4287-42a8-b80f-91d6b14e3aec	Backup policy : EnhancedPolicy-lwrs1eb4 (Enhanced)
Alerts (in last 24 hours) : View alerts	Oldest restore point : 29/5/2024, 6:28:39 pm (25 minute(s) ago)
Jobs (in last 24 hours) : View jobs	Included disk(s) : All disks

Recovery points

This list is filtered for last 30 days of recovery points. To recover from recovery point older than 30 days, as well as vault-archive, [click here](#).

Long term recovery points can be moved to vault-archive. To move all 'recommended recovery points' to vault-archive tier, [click here](#).

CRASH CONSISTENT	APPLICATION CONSISTENT	FILE-SYSTEM CONSISTENT
0	1	0

Creation time ↑↓ Consistency Recovery type

29/5/2024, 6:28:39 pm Application Consistent Snapshot ...

- Also if you go to all resources there you will see that you have a service for recovery services vault which gets created when you create your backup. Go to this service.

All resources ⚡ ...
CloudFreaks (CloudFreaks.onmicrosoft.com)

+ Create Manage view Refresh Export to CSV Open query Assign tags Delete

Filter for any field... Subscription equals all Resource group equals all Type equals all Location equals all Add filter

No grouping List view

Name ↑	Type ↑	Resource group ↑	Location ↑	Subscription ↑
AzureBackup_demo-VM_158331283766139	Restore Point Collection	AzureBackupRG_northeurope_1	North Europe	Azure Pass - Sponsorship
demo-VM	Virtual machine	demo-resource-group	North Europe	Azure Pass - Sponsorship
demo-VM-ip	Public IP address	demo-resource-group	North Europe	Azure Pass - Sponsorship
demo-VM-nsg	Network security group	demo-resource-group	North Europe	Azure Pass - Sponsorship
demo-VM-vnet	Virtual network	demo-resource-group	North Europe	Azure Pass - Sponsorship
demo-vm140_21	Network Interface	demo-resource-group	North Europe	Azure Pass - Sponsorship
demo-VM_OsDisk_1_998c72fdad08441a97c52bf79fd68473	Disk	DEMO-RESOURCE-GROUP	North Europe	Azure Pass - Sponsorship
NetworkWatcher_northeurope	Network Watcher	NetworkWatcherRG	North Europe	Azure Pass - Sponsorship
storage15420	Storage account	demo-resource-group	North Europe	Azure Pass - Sponsorship
vault627	Recovery Services vault	demo-resource-group	North Europe	Azure Pass - Sponsorship

9. Then go to backup jobs here you can see the progress of your jobs.

vault627 | Backup Jobs ⚡ ...
Recovery Services vault

Search Choose columns Filter Export jobs Refresh Feedback

Filtered by: Item Type - All, Operation - All, Status - All, Start Time - 28/5/2024, 6:57:04 pm, End Time - 29/5/2024, 6:57:04 pm

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All data fetched from the service.

Filter items ...

Workload name ↑	Operation	Status	Type	Start time ↑	Total Duration ↑
demo-VM	Backup	In progress	Azure Virtual Machine	29/5/2024, 6:28:35 pm	00:28:29
demo-VM	Configure backup	Completed	Azure Virtual Machine	29/5/2024, 5:34:50 pm	00:00:30

< Previous Page 1 of 1 Next >

10. After some time if you refresh the page of your recovery service vault then you'll see that your backup is completed in around 42 minutes.

vault627 | Backup Jobs ⚡ ...
Recovery Services vault

Search Choose columns Filter Export jobs Refresh Feedback

Filtered by: Item Type - All, Operation - All, Status - All, Start Time - 28/5/2024, 7:12:14 pm, End Time - 29/5/2024, 7:12:14 pm

Try our new Business Continuity Center for the at scale BCDR management of your resources protected across Azure Backup and Site Recovery.

All data fetched from the service.

Filter items ...

Workload name ↑	Operation	Status	Type	Start time ↑	Total Duration ↑	Details
demo-VM	Backup	Completed	Azure Virtual Machine	29/5/2024, 6:28:35 pm	00:42:14	View details
demo-VM	Configure backup	Completed	Azure Virtual Machine	29/5/2024, 5:34:50 pm	00:00:30	View details

< Previous Page 1 of 1 Next >

11. Also, if you go back to your VM there you can see that the status has been changed. Now as you see, we have options to recover our file and restore our VM. For now, we will look at how we can recover our file if something happens to our VM.

[Backup now](#) [Restore VM](#) [File Recovery](#) [Stop backup](#) [Resume backup](#) [Delete backup data](#) [Restore to Secondary Region](#) [Undelete](#) [Feedback](#)

Try our new Business Continuity Center for the at scale BCDR management of your resources protected across Azure Backup and Site Recovery.

Essentials

Recovery services vault : vault627	Backup Pre-Check : Passed
Subscription (move) : Azure Pass - Sponsorship	Last backup status : Success 29/5/2024, 6:28:35 pm
Subscription ID : 6e13e5d6-4287-42a8-b80f-91d6b14e3aec	Backup policy : EnhancedPolicy-lwrs1eb4 (Enhanced)
Alerts (in last 24 hours) : View alerts	Oldest restore point : 29/5/2024, 6:28:39 pm (44 minute(s) ago)
Jobs (in last 24 hours) : View jobs	Included disk(s) : All disks

Recovery points

This list is filtered for last 30 days of recovery points. To recover from recovery point older than 30 days, as well as vault-archive, [click here](#).

Long term recovery points can be moved to vault-archive. To move all 'recommended recovery points' to vault-archive tier, [click here](#).

CRASH CONSISTENT	APPLICATION CONSISTENT	FILE-SYSTEM CONSISTENT
0	1	0
Creation time ↑↓	Consistency	Recovery type
29/5/2024, 6:28:39 pm	Application Consistent	Snapshot and Vault-Standard
...		

File Restore

- First, we are going to stop our VM. Then we will click on file recovery.
- Now you have to select a restore point.

Home > demo-VM | Backup >

File Recovery ...

demo-VM

Step 1: Select restore point

Restore point * No restore point selected [Select](#)

Select restore point

demo-VM

Start Date 05/15/2024	End Date 05/29/2024	Recovery point consistency All restore points
CRASH CONSISTENT	APPLICATION CONSISTENT	FILE-SYSTEM CONSISTENT
Time 29/5/2024, 6:28:39 pm	Consistency Application Consistent	Recovery Type Snapshot and Vault-Standard

- Now we are going to download the executable file it will help to recover the file in our laptop.

File Recovery

demo-VM

Step 1: Select restore point

Restore point *

29/5/2024, 6:28:39 pm

Select

Step 2: Download script to browse and recover files

This script will mount the disks from the selected recovery point **as local drives on the machine where it is run**. These drives will remain mounted for 12 hours.

Download Executable *

Requires password to run



Step 3: Unmount the disks after recovery

Unmount disks and close the connection to the recovery point.

Unmount Disks

* Run this script on the machine where you want to copy the files

* To restore files larger than 10GB, [restore entire VM](#) to an alternate location or [restore disks using PowerShell](#)

* Data transfer rate: up to 100GB/Hr

If you have trouble finding your files, [click here](#)

4. Then you will see that it is generating the script and the password.

File Recovery

demo-VM

Please wait...

Generating script and password... Your download will start within a minute. You will require this password to run the script...

This script will mount the disks from the selected recovery point **as local drives on the machine where it is run**. These drives will remain mounted for 12 hours.

Download Executable *

5. Once it is ready you can download the file and you also have the password.

File Recovery

demo-VM

Download

Your script file is ready to download.

[Download](#)

[Cancel](#)

Step 2: Download script to browse and recover files

This script will mount the disks from the selected recovery point **as local drives on the machine where it is run**. These drives will remain mounted for 12 hours.

[Download Executable *](#)

Download completed.

Requires password to run

largedisk_0_demo-VM_1_ne_3322907911490473027_525875118040_0035e4...



Step 3: Unmount the disks after recovery

Unmount disks and close the connection to the recovery point.

[Unmount Disks](#)

6. Now you need to open PowerShell on your laptop and go to the folder where your file has been downloaded. After that you need to write the file name. For that just type the first letters and press the tab button on your keyboard.
7. After that you need to enter the password, copy that and paste it here and press enter.

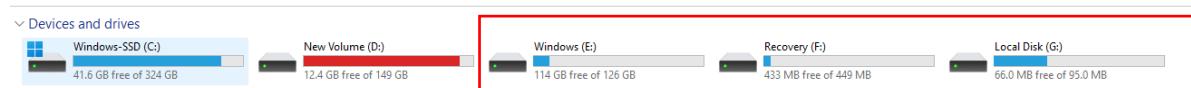
```
PS C:\Users\PULKIT> cd Downloads
PS C:\Users\PULKIT\Downloads> .\IaaSVMILRExForWindows.exe
```

```
PS C:\Users\PULKIT> cd Downloads
PS C:\Users\PULKIT\Downloads> .\IaaSVMILRExForWindows.exe
Please enter the password from the portal as is and press enter:
largedisk_0_demo-VM_1_ne_3322907911490473027_525875118040_0035e4519a7c462dbe22f2ec6064bc0203a7c0d40ed27a9dc1d9b6f465412
```

8. After 5-8 minutes you will see that the disk has been mounted.

```
Administrator: Windows PowerShell
Checking for OS Compatibility: DONE
Ensuring that the machine meets the requirements to run the recovery script.
Checking for network connectivity: DONE
Checking for required cipher suite: DONE
Checking for Large Disks: DONE
Checking for Storage Pools: DONE
Connecting to recovery point using iSCSI service....
iSCSI target prepared
connection succeeded
Please wait while we attach volumes of the recovery point.
***** Open Explorer to browse for files *****
After recovery, to remove the disks and close the connection to the recovery point, please click 'Unmount Disks' in step 3 of the portal.
1 recovery volumes attached
E:\Windows
Mounting ILR Disk to path
Mounting ILR Disk to path
***** Open Explorer to browse for files *****
After recovery, to remove the disks and close the connection to the recovery point, please click 'Unmount Disks' in step 3 of the portal.
Press 'q/q' key to exit ...
```

9. Now if you go to the file explorer in your laptop you will see below that I have 3 new drives other then C and D. The highlighted ones are the new.



10. If I go to the E drive I can see all the files which are in my VM.

Name	Date modified	Type
inetpub	29-05-2024 17:00	File folder
Packages	29-05-2024 16:56	File folder
PerfLogs	08-05-2021 13:50	File folder
Program Files	29-05-2024 17:00	File folder
Program Files (x86)	29-05-2024 17:00	File folder
Temp	11-05-2024 03:21	File folder
Users	29-05-2024 17:02	File folder
Windows	29-05-2024 17:01	File folder
WindowsAzure	29-05-2024 16:58	File folder

11. Also, at this location you will see the Default.html file too.

Name	Date modified	Type	Size
aspnet_client	29-05-2024 17:02	File folder	
Default	29-05-2024 17:03	Chrome HTML Do...	1 KB
iisstart	29-05-2024 17:00	Microsoft Edge H...	1 KB
iisstart	29-05-2024 17:00	PNG File	98 KB

12. Once you are done go back to the Portal and click on unmount disks.

Step 1: Select restore point

Restore point *

29/5/2024, 6:28:39 pm

Select

Step 2: Download script to browse and recover files

This script will mount the disks from the selected recovery point **as local drives on the machine where it is run**. These drives will remain mounted for 12 hours.

Download Executable *

✓ Download completed.

Requires password to run

largedisk_0_demo-VM_1_ne_3322907911490473027_525875118040_0035e4... 

Step 3: Unmount the disks after recovery

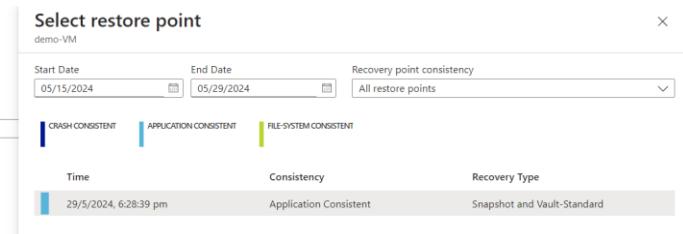
Unmount disks and close the connection to the recovery point.

Unmount Disks

Unmount in progress.

VM Restore

1. Now we are going to restore our VM. For that, we are going to click on Restore VM.
2. Then we need to select the restore point.



Time	Consistency	Recovery Type
29/5/2024, 6:28:39 pm	Application Consistent	Snapshot and Vault-Standard

3. Now in the restore configuration you have to choose new and in the restore type choose create new virtual machine.
4. Then you have to choose your virtual network and your staging location you have to choose a storage account and then click on restore.
5. In case if you don't have any storage with you now go to market place create a storage account then come back.

Restore configuration

- Create new
 Replace existing

 To create an alternate configuration when restoring your VM (from the following menus), use PowerShell cmdlets.

Restore Type * ⓘ	<input type="text" value="Create new virtual machine"/>
Virtual machine name * ⓘ	<input type="text" value="new-VM"/>
Subscription * ⓘ	<input type="text" value="Azure Pass - Sponsorship"/>
Resource group * ⓘ	<input type="text" value="demo-resource-group"/>
Virtual network * ⓘ	<input type="text" value="demo-VM-vnet (demo-resource-group)"/>
Subnet * ⓘ	<input type="text" value="default"/>
Staging Location * ⓘ	<input type="text" value="storage15420 (StandardLRS)"/> Can't find your storage account?

6. After 2 minutes you can see that our new VM has been launched.

All data fetched from the service.						
Workload name ↑↓	Operation	Status	Type	Start time ↑↓	Total Duration ↑↓	Details
demo-VM	Restore	 Completed	Azure Virtual Machine	29/5/2024, 7:54:46 pm	00:02:12	View details
demo-VM	Backup	 Completed	Azure Virtual Machine	29/5/2024, 6:28:35 pm	00:42:14	View details
demo-VM	Configure backup	 Completed	Azure Virtual Machine	29/5/2024, 5:34:50 pm	00:00:30	View details

7. Below you can see our new VM.

The screenshot shows the Azure portal interface for a virtual machine named 'new-VM'. The left sidebar contains navigation links for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Connect, Networking, Settings, and Disks. The main content area displays the 'Overview' tab for the VM. The 'Essentials' section includes fields for Resource group (demo-resource-group), Status (Running), Location (North Europe (Zone 1)), Subscription (Azure Pass - Sponsorship), Subscription ID (6e13e5d6-4287-42a8-b80f-91d6b14e3aec), Availability zone (1), Operating system (Windows (Windows Server 2022 Datacenter)), Size (Standard D2s v3 (2 vcpus, 8 GiB memory)), Public IP address (dynamic), Virtual network/subnet (demo-VM-vnet/default), DNS name (dynamic), Health state (green), Time created (29/5/2024, 2:25 pm UTC), and Tags (edit, Add tags). Below the essentials, there are tabs for Properties, Monitoring, Capabilities (8), Recommendations (1), and Tutorials. The 'Virtual machine' tab is selected.

8. Once you are done now, we are going to delete our services. For that, you need to follow a certain procedure.
9. First go to properties and click on soft delete and security settings then disable soft delete for clouds.

The screenshot shows the Azure portal interface for a Recovery Services vault named 'vault627'. The left sidebar contains navigation links for Recovery services vault, Tags, Diagnose and solve problems, Settings (Identity, Networking, Properties, Locks), Getting started (Backup, Site Recovery), Protected items (Backup items, Replicated items), Manage (Backup policies), and Metrics. The main content area displays the 'Properties' tab for the vault. The 'Security Settings' section includes fields for Multi-User Authorization for Backup (now generally available), Backup Credentials (Download), Security Level (Poor), Immutable vault (Not enabled), Multi-User Authorization (Update), Soft Delete and security settings (Update), Encryption Settings (Update), and Security PIN. The 'Soft Delete and security settings' section is highlighted with a red box. Within this section, the 'Enable soft delete for cloud workloads' checkbox is checked and also highlighted with a red box. Other settings include Enable soft delete and security settings for hybrid workloads (checked), Soft delete retention period (14 days), and Enable Always-on soft delete (unchecked).

10. Then you need to go backup items and choose virtual machines.

Getting started

- Backup
- Site Recovery

Protected items

- Backup items** (selected)
- Replicated items

Manage

- Backup policies
- Backup Infrastructure
- Site Recovery infrastructure
- Recovery Plans (Site Recovery)
- Backup Reports

BACKUP MANAGEMENT TYPE	BACKUP ITEM COUNT
Azure Virtual Machine	1
Azure Backup Agent	0
Azure Backup Server	0
DPM	0
Azure Storage (Azure Files)	0
SQL Database in Azure VM	0
SAP HANA in Azure VM	0

11. Then choose to stop the backup. After that you need to choose delete backup data and the give your VM name.

All data fetched from the service.

Name	Resource Group	Backup Pre-Check	Last Backup Status	Latest restore point	Details
demo-VM	demo-resource-group	Passed	Success	29/5/2024, 6:28:39 pm	View details <ul style="list-style-type: none"> Backup now Restore VM File Recovery Stop backup Delete backup data Resume backup Undelete

Stop Backup

demo-VM

Stop backup level *

Info: You may have data in vault-archive. Deletion of data that hasn't aged enough can result in additional cost. To know more, [click here](#).

Info: This option will stop all scheduled backup jobs and delete backup data. [Learn More](#).

Type the name of backup item *

Reason *

Comment

12. Once the backup is deleted then go ahead and delete your vault. After that delete all resources.