# Azure Backup & Restore – Demo

In this demo, we are going to see how to backup and restore a azure VM using Recovery Service Vault (RSV) service and it's out of the box feature.

Azure VM – Backup & Restore using "RSV" service

1. Create an azure window VM.
2. Login to VM and Create some folder/files.
3. Create RSV with default options in azure portal.
4. Once its created, click "Backup" from RSV's overview page.
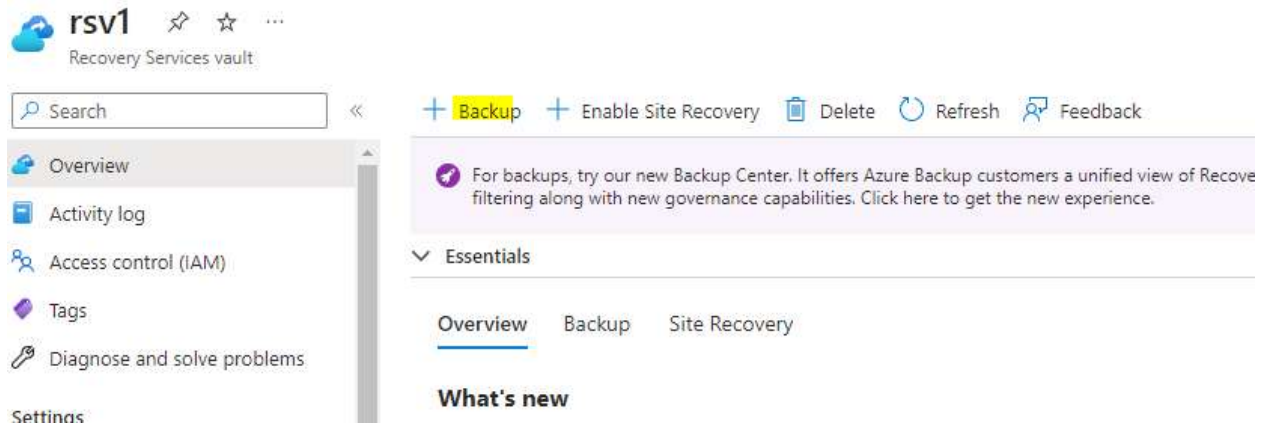
5. Update the replication from LRS to ZRS or GRS as needed, from below given link. And then, select "Virtual machine" from backup dropdown.

6. Create a custom policy to take the backup of VM every day like 10:00 PM EST as shown below.

Dashboard > Microsoft.RecoveryServicesV2-1679618622688 | Overview > rsv1 > Backup Goal >

Configure backup ...

rsv1

Policy sub type *	⦿ Standard	◯ Enhanced
	✓ Once a day backup	✓ Multiple backups per day
	✓ 1-5 days operational tier	✓ 1-30 days operational tier
	✓ Vault tier	✓ Vault tier
	ZRS resilient snapshot tier	✓ ZRS resilient snapshot tier
	Support for Trusted Azure VM	✓ Support for Trusted Azure VM

Backup policy * ⓘ

DefaultPolicy ∨

Create a new policy

ⓘ The list contains the policies pertaining to the selected policy sub type. Learn more.

Policy details

Full backup

Backup frequency
Daily at 10:30 AM UTC

Instant restore
Retain instant recovery snapshot(s) for 2 day(s)

Retention of daily backup point
Retain backup taken every day at 10:30 AM for 30 Day(s)

Enable backup   Download a template for automation

Create policy

Azure Virtual Machine

Recovery points can be automatically moved to the vault-archive tier using backup policy. Learn more. →

Policy name ⓘ

vm-backup-daily10pmEST-policy ✓

Backup schedule

Frequency *

Daily ∨

Time *

10:00 PM ∨

Timezone *

(UTC-05:00) Eastern Time (US & Canada) ∨

Instant restore ⓘ

Retain instant recovery snapshot(s) for

2 ✓ Day(s) ⓘ

Retention range

☑ Retention of daily backup point

At

10:00 PM ∨

For

7 ✓ Day(s)

☐ Retention of weekly backup point

OK

7. Add your VM in the "backup" list

Home > rsv1 > Backup Goal >

Configure backup ···
rsv1

Policy details

Full backup
Backup frequency
Daily at 9:30 PM Eastern Standard Time

Instant restore
Retain instant recovery snapshot(s) for 2 d

Retention of daily backup point
Retain backup taken every day at 9:30 PM

Virtual machines

Name	Re
No virtual machines selected.	

[Add]

ⓘ **OS Disk only backup** option allows you to backup Azure Virtual Machine with only O
can use Selective disk backup feature through enhanced policy. Learn more

Select virtual machines

ⓘ Discovering virtual machines that can be backed up, are in the same region as

🔍 Filter items by name

Virtual machine name	Res
☐ vm1	rg-

< Previous Page 1 ∨ of 1 Next >

8. Enable the "backup" clicking "Enable backup" button.

Configure backup ···
rsv1

Policy details

Full backup
Backup frequency
Daily at 9:30 PM Eastern Standard Time

Instant restore
Retain instant recovery snapshot(s) for 2 day(s)

Retention of daily backup point
Retain backup taken every day at 9:30 PM for 7 Day(s)

Virtual machines

Name	Resource group	OS disk only
vm1	rg-azure-backup-restore	☐

[Add]

ⓘ **OS Disk only backup** option allows you to backup Azure Virtual Machine with only OS disk and exclude all the data disks. You
can use Selective disk backup feature through enhanced policy. Learn more

Enable backup   Download a template for automation

9. Once its done and VM backup is taken (lets say backup has been completed at 10 PM EST – please expect some time to complete VM backup job),

Workload name ↑↓	Operation	Status	Type	Start time ↑↓	Total Duration ↑↓	Details
vm1	Backup	✅ Completed	Azure Virtual Machine	3/23/2023, 9:14:42 PM	00:33:39	View details
vm1	Configure backup	✅ Completed	Azure Virtual Machine	3/23/2023, 9:12:38 PM	00:00:41	View details

10. You can check all backup items in RSV as shown below.

11. Login to VM again and make some changes on the files you created in step#2 at around 10:15 PM EST.
12. Assuming there is a disaster and you are unable login to VM or even access files from that VM at around 10:30 PM EST. Now you go back and restore from the VM backup taken at 10 PM EST and ensure that you have file content until 10:00 PM EST as that was when last backup taken successfully.
13. From step#10 screenshot, click on "Azure Virtual machine"; you will be taken to below screen.

14. Click on "Restore VM" from above screenshot and then you will be asked to select the "restore point" which is nothing but which time taken backup you want to restore.

15. Select the "restore point" time and click Ok.
16. You will get 2 options for restore configuration.
    I.   Create New → This will create a new VM
    II.   Replace Existing → This will replace the existing VM from which you took backup.
17. Lets go with "replace" option so that you can verify the result as stated in step#12. Go ahead and select "Replace Existing" and click "Restore"

Restore Virtual Machine ...
vm1

Restore configuration

○ Create new
● Replace existing

ⓘ The disk(s) from the selected restore point will replace the disk(s) in your exisiting VM. Learn more about In-Place Restore.

Staging location is the temporary location used during the in-place restore. The list populates as the staging location is the storage account in the same subscription as the vault.

Staging Location * ⓘ   sa9azuredemo (StandardRAGRS) ⌄

Can't find your storage account ?

ⓘ The identities listed here are based on the MSI configurations in the corresponding Recovery services vault. Learn more.

Identities ⓘ   ⦿ Disabled

Restore

18. Ensure to stop your VM before above step; you will get below error otherwise.

Home > ConfigureProtection-1679620353846 | Overview > rsv1 | Backup items > Backup Items (Azure Virtual Machine) >

Restore Virtual Machine ...
vm1

❌ Validation failed. Click here for more details. →

Restore configuration

Error details   ×
IaasVM restore validation errors

Error code	UserErrorVmNotShutDown
Message	VM needs to be in deallocated state for performing replace disks operation
Recommendations	Please shut down the VM, and retry

19. You can now see "Restore" operation in progress. This is also you've to monitor from "Backup Jobs" blade only. There is no as such "Restore jobs" option to monitor restore option.

20. If you click on "View details" you will get to know more details about any jobs.

Home > ConfigureProtection-1679620353846 | Overview > rsv1 | Backup Jobs >

Restore   ...
vm1

○ Refresh   ✕ Cancel   ⬆ Deploy Template   ⧰ Feedback

Job details

Job Type	Replace disks
Target VM Name	
Target Storage Account Name	sa9azuredemo
Recovery point time	3/24/2023 1:16:25 AM
Target resource group	rg-azure-backup-restore
Activity ID	3b9a9ba7-d986-43e6-8880-463eb3b6902e

Job status

Job progress

99% completed (00:02:00 remaining)

21. Status of the job will become "completed" once restoration is complete.

22. Start and login to VM and verify if you got right backup as expected in step 12.

Backup VM

Difference b/n taking backup of VM from it's out of the box option and RSV is, RSV is like central place to schedule multiple VMs, Azure File shares, etc.,

1. Go to your VM and select "backup" from left side blade and click on "Backup now".

2. You can monitor backup progress by clicking "View job"

vm1 | Backup ☆ ⋯
Virtual machine

🔍 Search ≪

🔒 Locks

Operations

✖ Bastion

🕐 Auto-shutdown

☁ Backup

☁ Disaster recovery

⚙ Updates

🗂 Inventory

🗃 Change tracking

💻 Automanage

📋 Configuration management (Preview)

⚙ Policies

🔲 Run command

⤵ Backup now   ↺ Restore VM   ↺ File Recovery   ⊘ Stop backup   ↻ Resume backup   🗑 Delete backup data   ↺ Restore to Secondary Region

ℹ For backups, try our new Backup Center. It offers Azure Backup customers a unified view of Recovery Services Vaults used for backup in Azure. It also provides improved s filtering along with new governance capabilities. Click here to get the new experience.

∧ Essentials

Recovery services vault : rsv1
Subscription (move)   : CloudzDevOps-Training
Subscription ID   : 6e636a88-0376-4c2e-8e2b-802913740787
Alerts (in last 24 hours) : View alerts
Jobs (in last 24 hours)   : View jobs

Backup Pre-Check   : ✅ Passed
Last backup status : ⚠ Warning (Initial backup pending)
Backup policy   : DailyPolicy-daily9-30pmEST
Oldest restore point : -

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
0

APPLICATION CONSISTENT
0

FILE-SYSTEM CONSISTENT
0

Creation time ↑↓   Consistency   Recovery type

Backup Jobs ⋯

⊟ Choose columns   ▽ Filter   ⬆ Export jobs   ↻ Refresh   🗨 Feedback

Filtered by: Item Type - All, Operation - All, Status - All, Start Time - 3/22/2023, 9:18:23 PM, End Time - 3/23/2023, 9:18:23 PM

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✅ All data fetched from the service.

🔍 Filter items ...

Workload name ↑↓	Operation	Status	Type	Start time ↑↓	Total Duration ↑↓	Details
vm1	Backup	🔵 In progress	Azure Virtual Machine	3/23/2023, 9:14:42 PM	00:03:40	View details
vm1	Configure backup	✅ Completed	Azure Virtual Machine	3/23/2023, 9:12:38 PM	00:00:41	View details

< Previous   Page 1 ∨ of 1   Next >

3. Once backup is complete, you can restore it using "Restore VM" option.

4. Select the backup you want to restore from "Restore point"

5. You may now follow same steps starting from steps # 16 on above section (RSV)