

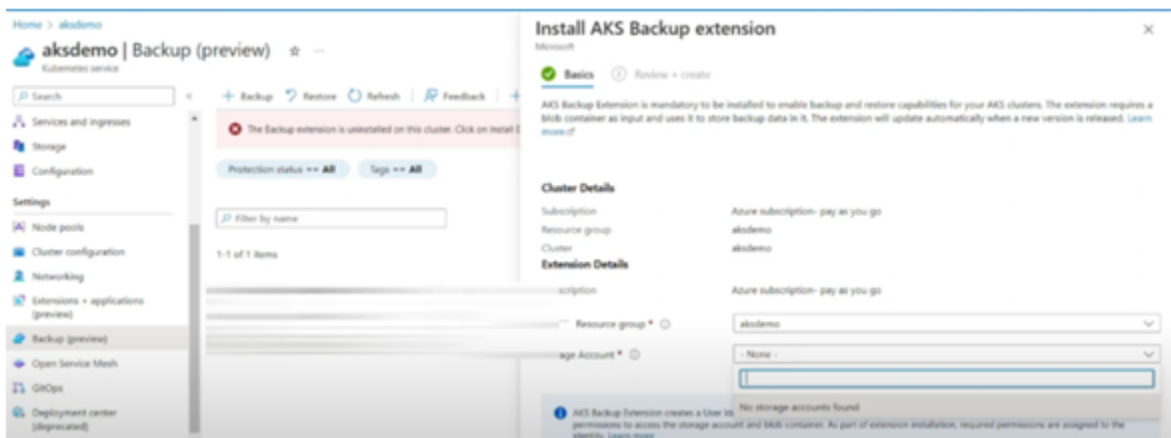
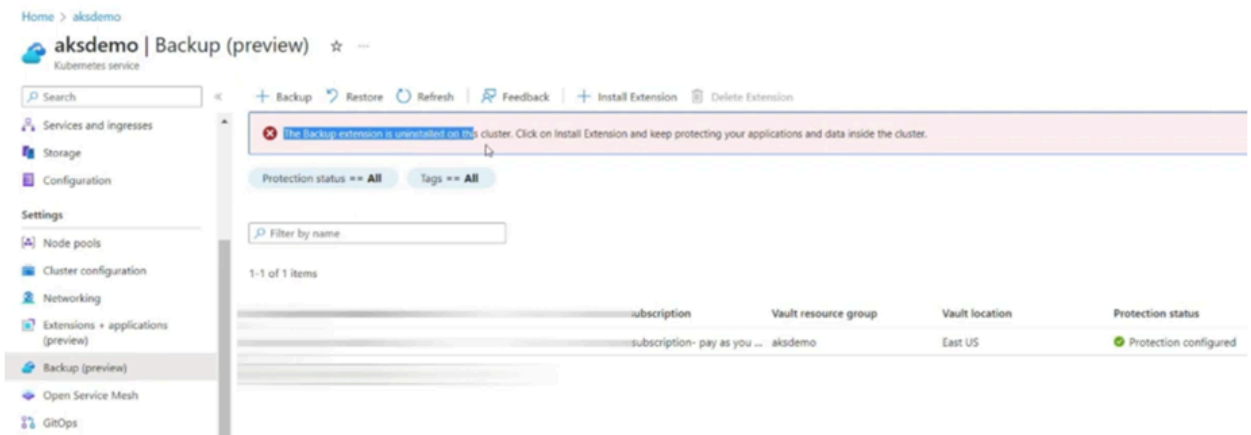
Submitted By: Arifa

## 🚀 Backing Up AKS Cluster – Step-by-Step Guide! 📁☁️

Ensuring Azure Kubernetes Service (AKS) workloads are safe and recoverable is crucial. Here's a quick and effective way to enable and manage backups for AKS cluster using Azure Backup:

### ♦ Step 1: Prepare Environment

- Head over to AKS cluster in the Azure Portal
- Under *Settings*, click on **Backup**
- Install the **AKS Backup Extension**



### ♦ Step 2: Set Up Storage

- Create a **Storage Account**
- Inside the storage account, create a **Blob Container**

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Home > Storage accounts > Create a storage account

Basics Advanced Networking Data protection Encryption Tags Review

Resource group \* (New) akidemobackup [Create new](#)

**Instance details**

If you need to create a legacy storage account type, please click [here](#).

Storage account name \* akibackup

Region \* (US) East US [Deploy to an edge zone](#)

Performance \* ☒ Standard: Recommended for most scenarios (general-purpose v2 account)  
☐ Premium: Recommended for scenarios that require low latency.

Redundancy \* Geo-redundant storage (GRS)

Successfully created storage container  
Successfully created storage container 'backup'.

Home > akibackupdemo\_7681342007069 | Overview > akibackupdemo

aksbackupidemo | Containers

Search containers by prefix  ☐ Show deleted containers

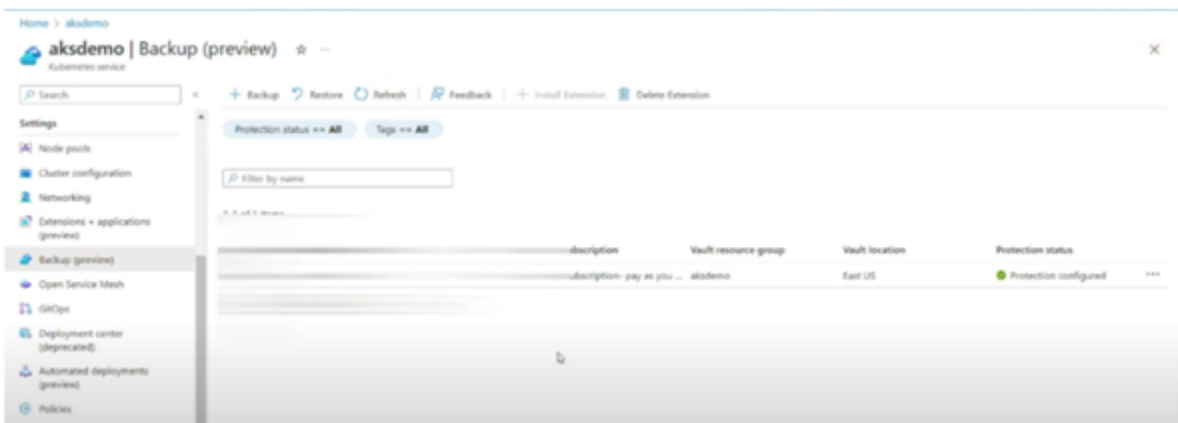
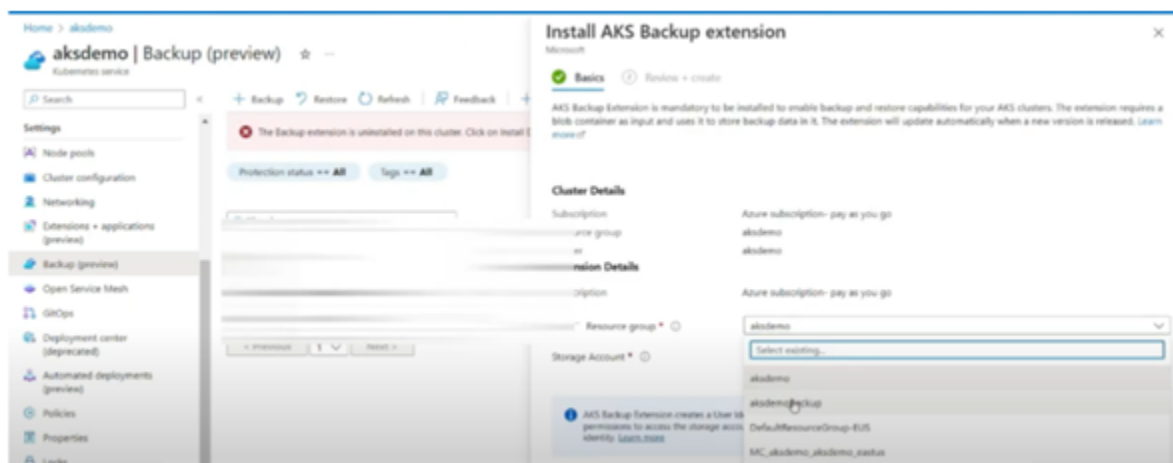
Name	Last modified	Public access level	Lease state
<input type="checkbox"/> Storge	4/13/2023, 4:57:26 AM	Private	Available
<input type="checkbox"/> backup	4/13/2023, 4:57:55 AM	Private	Available

Successfully created storage container  
Successfully created storage container 'backup'.

### ◆ Step 3: Configure Backup

- Back in the AKS cluster, under Backup, install the extension if not already done
- Create a **Backup Vault**
- Click **Grant Permission** and wait ~60 seconds
- Proceed to create a **Backup Policy**

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Home > aksdemo | Backup (preview) > Configure Backup >

Create Backup Vault

Data Protection

Basics Vault Properties Tags Review + create

A backup vault is a storage entity in Azure that houses data and lets you organize your backups. [Learn more](#)

PROJECT DETAILS

Select the subscription and the resource group in which you want to create the vault.

Subscription \*

Azure subscription- pay as you go

Resource Group \*

aksdemo

[Create new](#)

INSTANCE DETAILS

Backup vault name \*

backupvault

Region \*

East US

Backup storage redundancy \*

Locally-redundant

Storage redundancy cannot be changed after protecting items to the vault. Geo-redundant storage provides the highest level of data durability, followed by Zonally-redundant storage and then Locally-redundant storage. The costs are proportionate to the durability guarantees. Review the trade-offs between lower cost and higher data durability that is best for your scenario. [Learn more](#)

Home > aksdemo | Backup (preview) >

Configure Backup

Use Azure Backup to protect Kubernetes workloads and application data by configuring backup and restore of your AKS Clusters [Learn more](#)

Vault \*

backupvault

[Change vault](#) [Create vault](#)

Selected backup vault details

Subscription

Azure subscription- pay as you go

Resource group

aksdemo

Location

East US

Backup storage redundancy

Locally-redundant

The Backup Vault and AKS Cluster to be backed up should be within same region. [Learn more](#)

Additional datasource scope

Kubernetes services \*

aksdemo

[Select Kubernetes cluster](#)

Trusted Access and/or Role Permissions are missing for the selected cluster. Click on Grant Permissions.

[Grant Permissions](#) [Revalidate](#)

Selected kubernetes service details

Subscription

Azure subscription- pay as you go

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Home > akademo | Backup (preview) >

Configure Backup

Use Azure Backup to protect Kubernetes workloads and application data by configuring backup and restore of your AKS Clusters [Learn more](#)

Vault \*

backupvault

[Change vault](#) [Create vault](#)

Selected backup vault details

Subscription

Azure subscription- pay as you go

Resource group

akademo

Location

East US

Backup storage redundancy

Locally-redundant

❗

The Backup Vault and AKS Cluster to be backed up should be within same region. [Learn more](#)

Additional datasource scope

Kubernetes services \*

akademo

Select Kubernetes cluster

❗

Insufficient Access and/or Role Permissions are missing for the selected cluster. [Click on Grant Permissions](#)

[Grant Permissions](#) [Revalidate](#)

Selected kubernetes service details

Home > akademo | Backup (preview) >

Configure Backup

Datasource type

Kubernetes Services (preview)

Use Azure Backup to protect Kubernetes workloads and application data by configuring backup and restore of your AKS Clusters [Learn more](#)

Vault \*

backupvault

[Change vault](#) [Create vault](#)

Selected backup vault details

Subscription

Azure subscription- pay as you go

Resource group

akademo

Location

East US

Backup storage redundancy

Locally-redundant

❗

The Backup Vault and AKS Cluster to be backed up should be within same region. [Learn more](#)

Additional datasource scope

Kubernetes services \*

akademo

Select Kubernetes cluster

Home > akademo | Backup (preview) >

Configure Backup

🟢 Basics

1

Backup policy

2

Datasources

3

Review + configure

Backup policy \*

Create new

--- Waiting for 57 seconds to revalidate  
Role assignment is in progress, please wait...

🟢 All permissions Granted successfully  
Click next to proceed further.

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Home > aksdemo [Backup (preview)] > Configure Backup >

## Create Backup Policy

Backup vault

① Basics ② Schedule + retention ③ Review + create

### Basics

Policy name backup  
Datatype Kubernetes Services (Preview)  
Subscription Azure subscription- pay as you go  
Location eastus  
Vault backupvault

### Schedule and Retention

Backup schedule [Go to + Select](#)

Retention settings (in the order of priority) ①

Retention rules Operational data store

Default	7 Days	<a href="#">View details</a>
---------	--------	------------------------------

Home > aksdemo [Backup (preview)] >

## Configure Backup

① Basics ② Backup policy ③ Data sources ④ Review + configure

Backup policy \*  [Create new](#)

Backup frequency Every 4 hours

Retention settings (in the order of priority) ①

Retention rules	Operational data store	
Default	7 Days	<a href="#">View details</a>




Creating policy: backup  
Operation successful

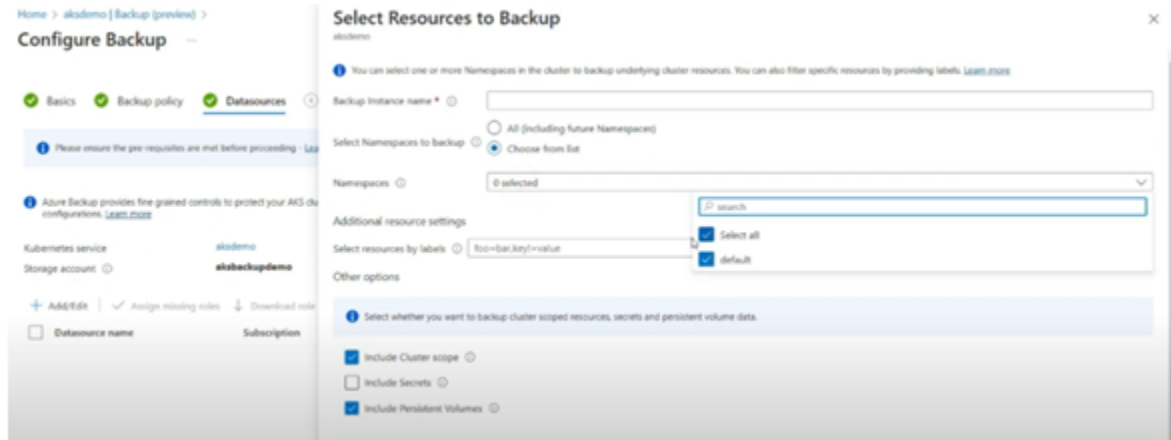
🎯 You can choose to back up:

- The entire cluster (including future namespaces)
- Specific namespaces
- Resources selected via **labels**

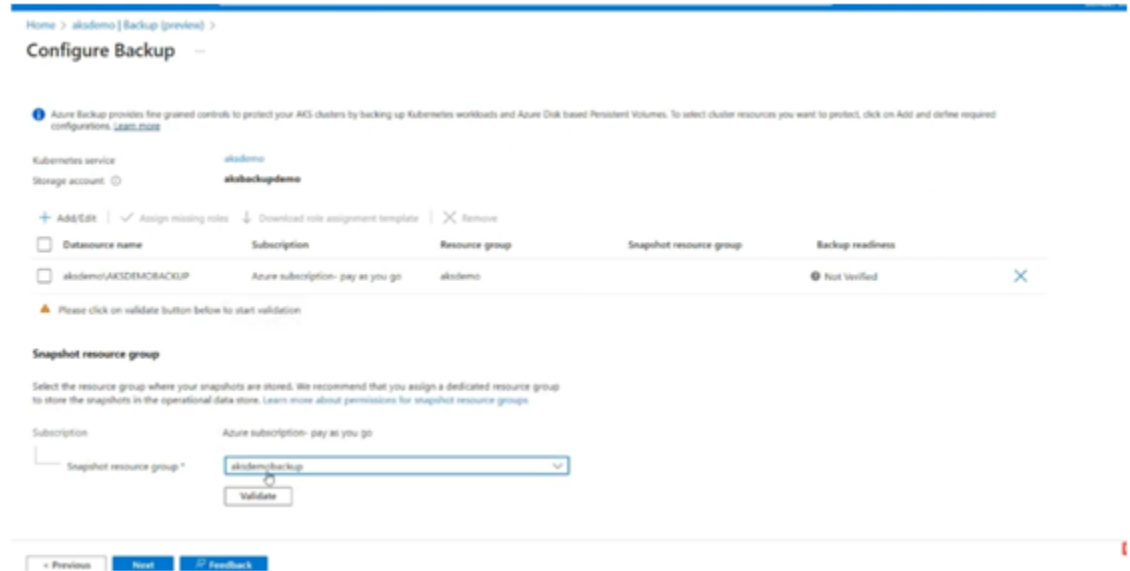
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## Backup Options Include:

- Secrets 
- Persistent Volumes 
- Cluster-scoped resources 



The screenshot shows the 'Configure Backup' page in the Azure portal. The 'Datasources' tab is selected. The 'Select Resources to Backup' section is visible, showing options to select namespaces and resources. The 'Include Cluster scope' checkbox is checked, and the 'Include Persistent Volumes' checkbox is also checked. The 'Include Secrets' checkbox is unchecked.



The screenshot shows the 'Configure Backup' page in the Azure portal. The 'Snapshot resource group' section is visible, showing a table with columns for Datasource name, Subscription, Resource group, Snapshot resource group, and Backup readiness. The 'Validate' button is highlighted.

Datasource name	Subscription	Resource group	Snapshot resource group	Backup readiness
akdemo/AKSDMOBACKUP	Azure subscription- pay as you go	akdemo		Not Verified

Home > aksdemo | Backup (preview) >

## Configure Backup

1 Azure Backup provides fine-grained controls to protect your AKS clusters by backing up Kubernetes workloads and Azure Disk based Persistent Volumes. To select cluster resources you want to protect, click on Add & configurations. [Learn more](#)

Kubernetes service aksdemo  
Storage account akshbackupdemo

+ Add/edit | ✓ Assign missing roles | Download role assignment template | X Remove

Datasource name	Subscription	Resource group	Snapshot resource group	Backup readiness
aksdemo\AKSDemoBACKUP	Azure subscription- pay as you go	aksdemo	akshdemobackup	Role assignment not done <a href="#">View details</a> X

For Role assignment error under 'Backup readiness' column, please select the corresponding data source(s) by checking on the check box and click on 'Assign missing roles' to continue. In case if you do not have permission to grant access to the selected data source(s), use 'Download role assignment template' option. For more details, click on 'view details' on the error message under Backup readiness column.

### Snapshot resource group

Select the resource group where your snapshots are stored. We recommend that you assign a dedicated resource group to store the snapshots in the operational data store. [Learn more about permissions for snapshot resource group](#)

Subscription Azure subscription- pay as you go

Snapshot resource group \* akshdemobackup

Revalidate

\*\*\* Initializing deployment...

Initializing template deployment to resource group 'aksdemo'.

\*\*\* Role assignment is in progress

Role assignment is in progress, please wait...

Home > aksdemo | Backup (preview) >

## Configure Backup

✓ Basics | ✓ Backup policy | ✓ Datasources | Review + configure

1 Please clear selected resources before changing data source type

Datasource type Kubernetes Services (Preview)

Vault \* backupvault ✓  
[Change vault](#) [Create vault](#)

### Selected backup vault details

Subscription	Azure subscription- pay as you go
Resource group	aksdemo
Location	East US
Backup storage redundancy	Locally-redundant

The Backup Vault and AKS Cluster to be backed up should be within same region. [Learn more](#)

### Additional datasource scope

Kubernetes services \* aksdemo  
[Select Kubernetes cluster](#)

### Selected kubernetes service details

Subscription	Azure subscription- pay as you go
--------------	-----------------------------------

[Previous](#) [Next](#) [Feedback](#)

## Notifications

More events in the activity log → [Dismiss all](#)

\*\*\* Revalidating

Running

Validation is in progress. We will be doing 3 retries. If the validation still fails any of these resources, please wait for a few minutes and retry validation.

a few seconds ago

✓ Deployment succeeded

Deployment 'Microsoft.DataProtection.GrantPermissions' to resource group 'aksdemo' was successful.

[Go to resource](#) [Go to resource group](#)

a few seconds ago

✓ Creating policy: backup

Operation successful.

6 minutes ago

✓ All permissions Granted successfully

Click next to proceed further.

6 minutes ago

✓ Deployment succeeded

Deployment 'Microsoft.DataProtection.CreateVault' to resource group 'aksdemo' was successful.

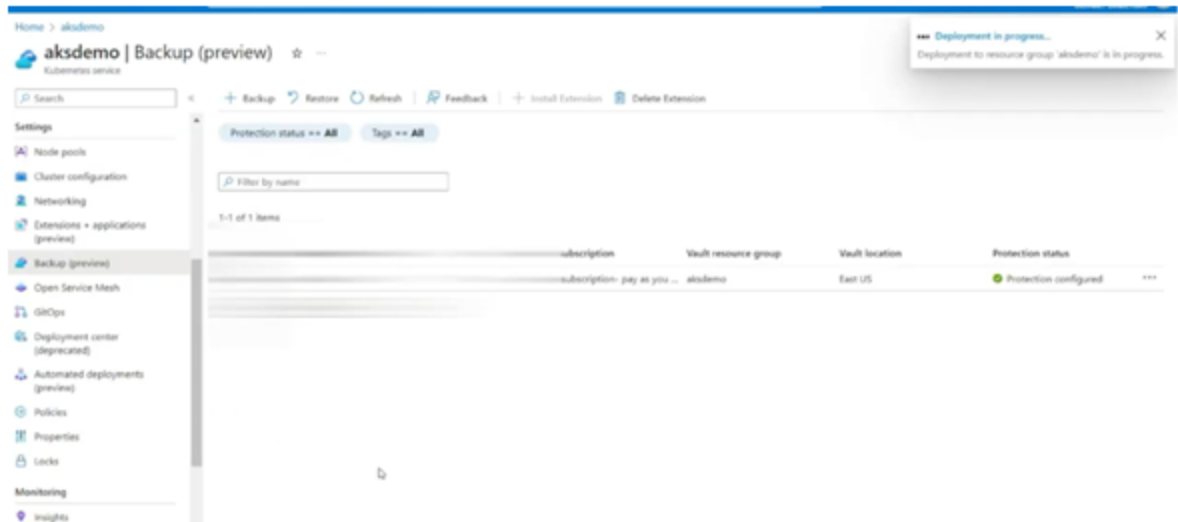
[Go to resource](#) [Go to resource group](#) to activate Windows.

9 minutes ago

✓ Deployment succeeded



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⚙️ **Remember to assign missing roles and validate.**

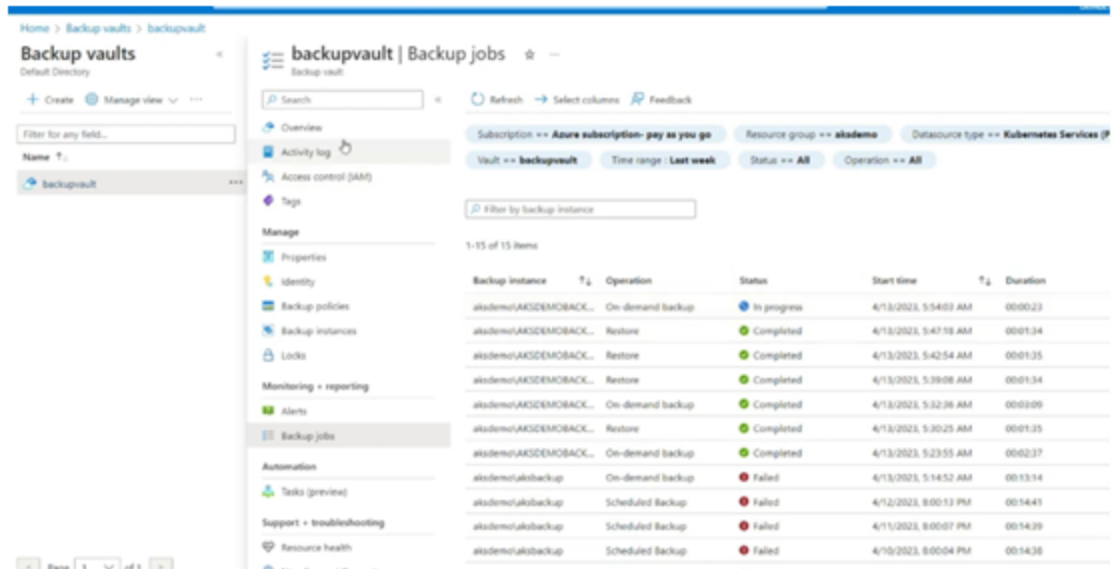
Installing the AKS backup extension also creates a namespace:

`dataprotection-microsoft`

📊 **Monitoring:**

- Go to **Backup Vault**
- Click on **Backup Jobs** to track backup status

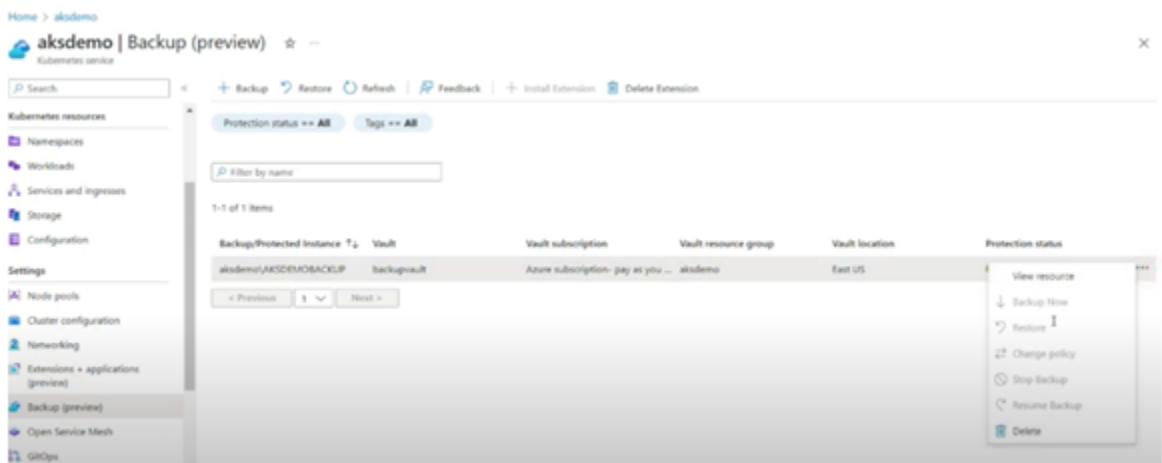
Submitted By: Arifa



Backup instance	T2	Operation	Status	Start time	T2	Duration
akademolAKSDEMOBACK...		On-demand backup	In progress	4/13/2023, 5:54:03 AM		00:00:23
akademolAKSDEMOBACK...		Restore	Completed	4/13/2023, 5:47:18 AM		00:01:34
akademolAKSDEMOBACK...		Restore	Completed	4/13/2023, 5:42:54 AM		00:01:35
akademolAKSDEMOBACK...		Restore	Completed	4/13/2023, 5:39:08 AM		00:01:34
akademolAKSDEMOBACK...		On-demand backup	Completed	4/13/2023, 5:32:36 AM		00:03:09
akademolAKSDEMOBACK...		Restore	Completed	4/13/2023, 5:30:25 AM		00:01:35
akademolAKSDEMOBACK...		On-demand backup	Completed	4/13/2023, 5:23:55 AM		00:02:37
akademolaksbackup		On-demand backup	Failed	4/13/2023, 5:14:52 AM		00:13:14
akademolaksbackup		Scheduled Backup	Failed	4/12/2023, 8:00:13 PM		00:14:41
akademolaksbackup		Scheduled Backup	Failed	4/11/2023, 8:00:07 PM		00:14:39
akademolaksbackup		Scheduled Backup	Failed	4/10/2023, 8:00:04 PM		00:14:38

## Restore Time!

- Delete test resources and perform a **restore** from the backup
- Navigate to: AKS Cluster → Backup → Restore
- Select the Kubernetes service, validate, and proceed



Backup/Protected Instance	Vault	Vault subscription	Vault resource group	Vault location	Protection status
akademolAKSDEMOBACKUP	backupvault	Azure subscription- pay as you ...	akademol	East US	<div><div>View resource</div><div>Backup Now</div><div>Restore</div><div>Change policy</div><div>Stop Backup</div><div>Resume Backup</div><div>Delete</div></div>

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Home > akademo [Backup (preview)] >

## Restore

① Basics ② **Restore point** ③ Restore parameters ④ Review + restore

Restore Point \*   
[Select restore point](#)

Data store Operational



Home > akademo [Backup (preview)] >

## Restore

① Basics ② **Restore point** ③ Restore parameters ④ Review + restore

Restore Point \*   
[Select restore point](#)

Data store Operational

### Select restore point

Time period: Last 30 days

Creation time	Backup type	Data store	Expiry time
4/13/2023, 5:56:27 AM	Incremental	Operational	
4/13/2023, 5:33:02 AM	Incremental	Operational	
4/13/2023, 5:25:54 AM	Incremental	Operational	

Select

Cancel

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Home > akodemo [Backup (preview)] >

Restore

Basics

Restore point

Restore parameters

Using Azure Backup you can restore your Kubernetes workloads a cluster as target. You also have the ability to restore your entire cluster.

The target AKS cluster should have Backup Extension installed to

Select Target cluster

No service selected  
Select Kubernetes service

Select Kubernetes service

Filter for any field...

Resource group equals all

Type equals Kubernetes service

Location equals East US

Add filter

Show hidden types

No grouping

Name ↑	Type ↑	Resource group ↑	Location ↑	Subscription ↑
akodemo	Kubernetes service	akodemo	East US	Azure subscription

Previous

Next Review < restore >

Select

Cancel