AKS Backup

Advanced Conversational Engagement

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Objective:

The goal is to create a scheduled backup for **Application namespaces** and **Presistent Volumes** (**PVs**) in AKS, with retention policy of 7 days, enabling the ability to restore from backups in case of downtime or corruption.

It provides where you can control the backups from single namespace to the entire cluster.

Prerequisites:

   Backup extension

   Blob Storage Account

   Backup Vault

   Required Roles and permissions

   Providers:- Microsoft.KubernetesConfiguration, Microsoft.DataProtection and TrustedAccessFuture in Microsoft.ContainerService

Configuration Steps:

- During the backup extension installation we need to specify the RG, Storage Account and Blob Container Name to be used to store cluster backups.
- The backup extension will create a new namespace called dataprotection-mircrosoft being created and pods being scheduled within it. (If POD unable to schedule check the network policy in dataprotection-mircrosoft and allow ingress and egress connection to the dataprotection-mircrosoft namespace.
- Configure the backup policy with the schedule time and the number of retention days.
- When adding a data source, you can choose which namespaces to backup - or you can select "All (including future namespaces)", which is my recommendation. Additionally, you can add labels to filter resources, and you can selectively backup or ignore the whole cluster scope, cluster secrets, and persistent volumes.
- We can see backup progress status in Azure Portal.

Jobs (last 7 days)			View all
Operation	❌ Failed	🔄 In progress	✅ Completed
Scheduled Backup	0	0	**6**
On-demand backup	0	0	**1**
Restore	0	0	0

Restore:-

Backup of AKS enable you to restore both the original AKS cluster (that was backed up) and an alternate AKS cluster. AKS backup allows you to perform a full restore and item level restore.

- We can restore back to the original cluster, or to a different cluster (To prepare for the restoration, the backup extension needs to be running in the target cluster)
- We can restore the backup in its entirety, or selectively restore specific items (such as namespaces, services, deployments, etc.)

1. **Cluster Downtime Response:** If the AKS cluster experience downtime, we need to create the infrastructure using our base AKS pipeline, After that, we will configure the AKS backup extension with a separate storage account and restore the application namespace including all the components from the backup without services redeployment.

2. **Application Team Restore Request:** If the application team requests the restoration of the entire namspace or particualar component for any reason, we will proceed to restore it using the backup.

Cost:-

Per Namespace 11.06€