



Using StorageGRID information lifecycle management with FabricPool data

StorageGRID

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Using StorageGRID information lifecycle management with FabricPool data

If you are using FabricPool to tier data to StorageGRID, you must understand the requirements for creating StorageGRID information lifecycle management (ILM) rules and an ILM policy to manage FabricPool data. You must ensure the ILM rules that apply to FabricPool data are not disruptive.

 FabricPool has no knowledge of StorageGRID ILM rules or policies. Data loss can occur if the StorageGRID ILM policy is misconfigured.

To learn more: [Manage objects with ILM](#)

ILM guidelines for FabricPool data

Review these guidelines to ensure that your ILM rules and ILM policy are suitable for FabricPool data and your business requirements. If you are already using StorageGRID ILM, you might need to update your active ILM policy to meet these guidelines.

- You can use any combination of replication and erasure-coding rules to protect cloud tier data.

The recommended best practice is to use 2+1 erasure coding within a site for cost-efficient data protection. Erasure coding uses more CPU, but significantly less storage capacity, than replication. The 4+1 and 6+1 schemes use less capacity than 2+1, but at the cost of lower throughput and less flexibility when you add Storage Nodes during grid expansion.

- Each rule applied to FabricPool data must either use erasure coding or it must create at least two replicated copies.



An ILM rule that creates only one replicated copy for any time period puts data at risk of permanent loss. If only one replicated copy of an object exists, that object is lost if a Storage Node fails or has a significant error. You also temporarily lose access to the object during maintenance procedures such as upgrades.

- Do not use an ILM rule that will expire or delete FabricPool cloud tier data. Set the retention period in each ILM rule to "forever" to ensure that FabricPool objects are not deleted by StorageGRID ILM.
- Do not create rules that will move FabricPool cloud tier data out of the bucket to another location. You cannot use ILM rules to archive FabricPool data to tape using an Archive Node or use a Cloud Storage Pool to move FabricPool data to Glacier.



Using Cloud Storage Pools with FabricPool is not supported because of the added latency to retrieve an object from the Cloud Storage Pool target.

- Starting with ONTAP 9.8, you can optionally create object tags to help classify and sort tiered data for easier management. For example, you can set tags only on FabricPool volumes attached to StorageGRID. Then, when you create ILM rules in StorageGRID, you can use the Object Tag advanced filter to select and place this data.

Example ILM policy for FabricPool data

Use this simple example policy as a starting point for your own ILM rules and policy.

This example assumes you are designing the ILM rules and an ILM policy for a StorageGRID system that has four Storage Nodes at a single data center in Denver, Colorado. The FabricPool data in this example uses a bucket named `fabricpool-bucket`.

 The following ILM rules and policy are only examples. There are many ways to configure ILM rules. Before activating a new policy, simulate the proposed policy to confirm it will work as intended to protect content from loss.

To learn more: [Manage objects with ILM](#)

Steps

1. Create a storage pool named **DEN**. Select the Denver site.
2. Create an Erasure Coding profile named **2 plus 1**. Select the 2+1 erasure-coding scheme and the **DEN** storage pool.
3. Create an ILM rule that applies only to the data in `fabricpool-bucket`. This example rule creates erasure-coded copies.

Rule definition	Example value
Rule Name	2 plus 1 erasure coding for FabricPool data
Bucket Name	<code>fabricpool-bucket</code> You could also filter on the FabricPool tenant account.
Advanced Filtering	Object Size (MB) greater than 0.2 MB. Note: FabricPool only writes 4 MB objects, but you must add an Object Size filter because this rule uses erasure coding.
Reference Time	Ingest Time
Placement	From day 0 store forever
Type	Erasure coded
Location	DEN (2 plus 1)
Ingest Behavior	Balanced

4. Create an ILM rule that will create two replicated copies of any objects not matched by the first rule. Do not select a basic filter (tenant account or bucket name) or any advanced filters.

Rule definition	Example value
Rule Name	Two replicated copies
Bucket Name	<i>none</i>
Advanced Filtering	<i>none</i>
Reference Time	Ingest Time
Placement	From day 0 store forever
Type	Replicated
Location	DEN
Copies	2
Ingest Behavior	Balanced

5. Create a proposed ILM policy and select the two rules. Because the replication rule does not use any filters, it can be the default (last) rule for the policy.
6. Ingest test objects into the grid.
7. Simulate the policy with the test objects to verify the behavior.
8. Activate the policy.

When this policy is activated, StorageGRID places object data as follows:

- The data tiered from FabricPool in `fabricpool-bucket` will be erasure coded using the 2+1 erasure-coding scheme. Two data fragments and one parity fragment will be placed on three different Storage Nodes.
- All objects in all other buckets will be replicated. Two copies will be created and placed on two different Storage Nodes.
- The erasure-coded and replicated copies will be maintained in StorageGRID until they are deleted by the S3 client. StorageGRID ILM will never delete these items.

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