

Simulating an ILM policy

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Simulating an ILM policy

You should simulate a proposed policy on test objects before activating the policy and applying it to your production data. The simulation window provides a standalone environment that is safe for testing policies before they are activated and applied to data in the production environment.

What you'll need

- You must be signed in to the Grid Manager using a supported browser.
- · You must have specific access permissions.
- You must know the S3 bucket/object-key or the Swift container/object-name for each object you want to test, and you must have already ingested those objects.

About this task

You must carefully select the objects you want the proposed policy to test. To simulate a policy thoroughly, you should test at least one object for each filter in each rule.

For example, if a policy includes one rule to match objects in bucket A and another rule to match objects in bucket B, you must select at least one object from bucket A and one object from bucket B to test the policy thoroughly. If the policy includes a default rule to place all other objects, you must test at least one object from another bucket.

When simulating a policy, the following considerations apply:

- After you make changes to a policy, save the proposed policy. Then, simulate the behavior of the saved proposed policy.
- When you simulate a policy, the ILM rules in the policy filter the test objects, so you can see which rule was
 applied to each object. However, no object copies are made and no objects are placed. Running a
 simulation does not modify your data, rules, or the policy in any way.
- The Simulation page retains the objects you tested until you close, navigate away from, or refresh the ILM Policies page.
- Simulation returns the name of the matched rule. To determine which storage pool or Erasure Coding profile is in effect, you can view the Retention Diagram by clicking the rule name or the more details icon .
- If S3 Versioning is enabled, the policy is only simulated against the current version of the object.

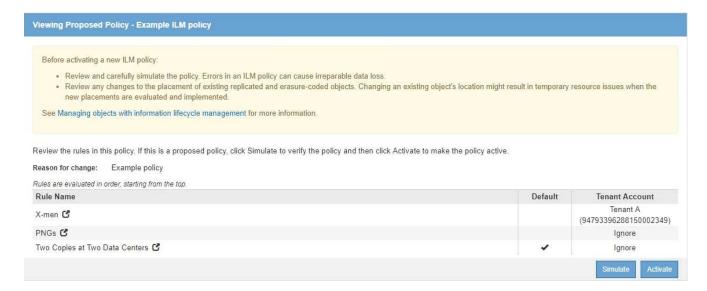
Steps

1. Select and arrange the rules, and save the proposed policy.

The policy in this example has three rules:

Rule Name	Filter	Type of Copies	Retention			
X-men	Tenant AUser metadata (series=x-men)	2 copies at two data centers	2 years			

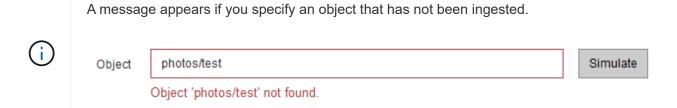
Rule Name	Filter	Type of Copies	Retention
PNGs	Key ends with .png	2 copies at two data centers	5 years
Two Copies Two Data Centers	None	2 copies at two data centers	Forever



2. Click Simulate.

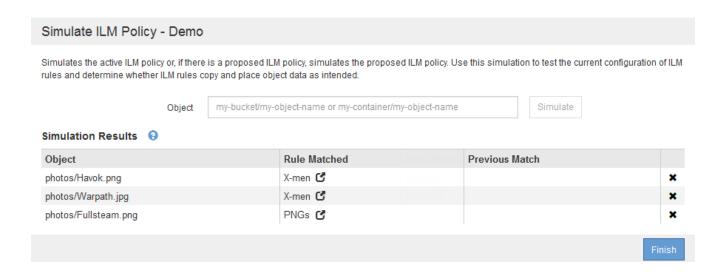
The Simulation ILM Policy dialog box appears.

3. In the **Object** field, enter the S3 bucket/object-key or the Swift container/object-name for a test object, and click **Simulate**.



4. Under **Simulation Results**, confirm that each object was matched by the correct rule.

In the example, the <code>Havok.png</code> and <code>Warpath.jpg</code> objects were correctly matched by the X-men rule. The <code>Fullsteam.png</code> object, which does not include <code>series=x-men</code> user metadata, was not matched by the X-men rule but was correctly matched by the PNGs rule. The default rule was not used because all three objects were matched by other rules.



Examples for simulating ILM policies

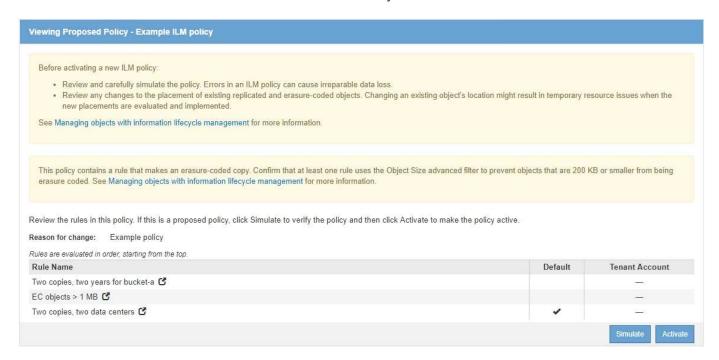
These examples show how you can verify ILM rules by simulating the ILM policy before activating it.

Example 1: Verifying rules when simulating a proposed ILM policy

This example shows how to verify rules when simulating a proposed policy.

In this example, the **Example ILM policy** is being simulated against the ingested objects in two buckets. The policy includes three rules, as follows:

- The first rule, **Two copies, two years for bucket-a**, applies only to objects in bucket-a.
- The second rule, **EC objects** > 1 MB, applies to all buckets but filters on objects greater than 1 MB.
- The third rule is the default rule and does not include any filters.



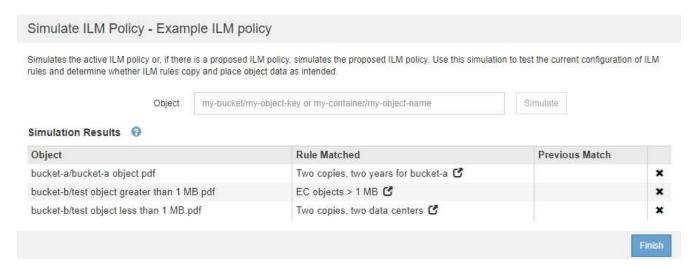
Steps

1. After adding the rules and saving the policy, click **Simulate**.

The Simulate ILM Policy dialog box appears.

2. In the **Object** field, enter the S3 bucket/object-key or the Swift container/object-name for a test object, and click **Simulate**.

The Simulation Results appear, showing which rule in the policy matched each object you tested.



3. Confirm that each object was matched by the correct rule.

In this example:

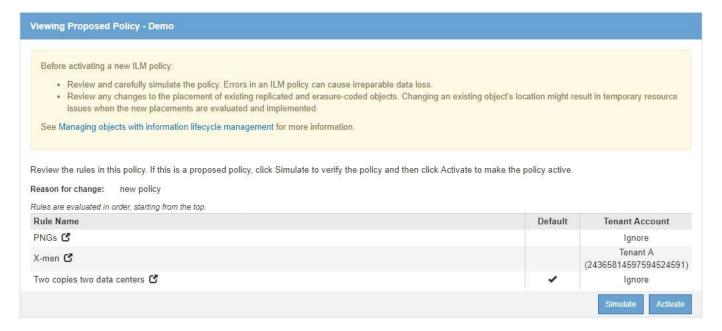
- a. bucket-a/bucket-a object.pdf correctly matched the first rule, which filters on objects in bucket-a.
- b. bucket-b/test object greater than 1 MB.pdf is in bucket-b, so it did not match the first rule. Instead, it was correctly matched by the second rule, which filters on objects greater than 1 MB.
- c. bucket-b/test object less than 1 MB.pdf did not match the filters in the first two rules, so it will be placed by the default rule, which includes no filters.

Example 2: Reordering rules when simulating a proposed ILM policy

This example shows how you can reorder rules to change the results when simulating a policy.

In this example, the **Demo** policy is being simulated. This policy, which is intended to find objects that have series=x-men user metadata, includes three rules, as follows:

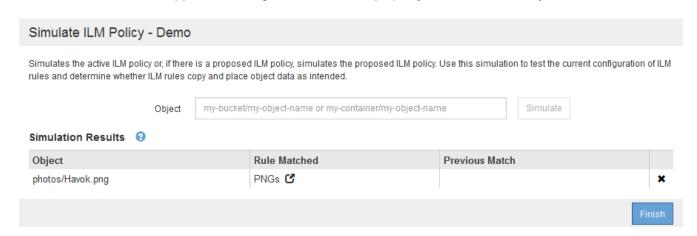
- The first rule, PNGs, filters for key names that end in .png.
- The second rule, **X-men**, applies only to objects for Tenant A and filters for series=x-men user metadata.
- The last rule, **Two copies two data centers**, is the default rule, which matches any objects that do not match the first two rules.



Steps

- 1. After adding the rules and saving the policy, click Simulate.
- 2. In the **Object** field, enter the S3 bucket/object-key or the Swift container/object-name for a test object, and click **Simulate**.

The Simulation Results appear, showing that the Havok png object was matched by the PNGs rule.



However, the rule that the Havok.png object was meant to test was the X-men rule.

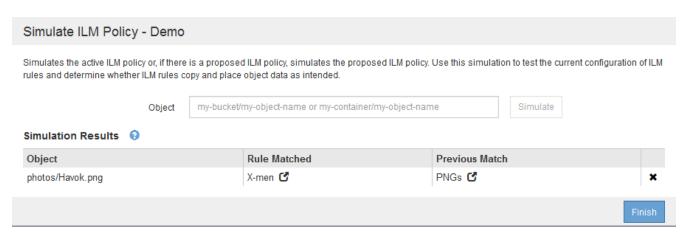
- 3. To resolve the issue, reorder the rules.
 - a. Click Finish to close the Simulate ILM Policy page.
 - b. Click **Edit** to edit the policy.
 - c. Drag the **X-men** rule to the top of the list.

Configure ILM Policy Create a proposed policy by selecting and arranging rules. Then, save the policy and edit it later as required. Click Simulate to verify a saved policy using test objects. When you are ready, click Activate to make this policy the active ILM policy for the grid. Name Demo Reason for change Reordering rules when simulating a proposed ILM policy Rules 1. Select the rules you want to add to the policy. 2. Determine the order in which the rules will be evaluated by dragging and dropping the rows. The default rule will be automatically placed at the end of the policy and cannot be moved. → Select Rules Default Rule Name **Tenant Account** Actions X-men C Tenant A (48713995194927812566) × PNGs C × Two copies, two data centers & ×

d. Click Save.

4. Click Simulate.

The objects you previously tested are re-evaluated against the updated policy, and the new simulation results are shown. In the example, the Rule Matched column shows that the <code>Havok.png</code> object now matches the X-men metadata rule, as expected. The Previous Match column shows that the PNGs rule matched the object in the previous simulation.





If you stay on the Configure Policies page, you can re-simulate a policy after making changes without needing to re-enter the names of the test objects.

Example 3: Correcting a rule when simulating a proposed ILM policy

This example shows how to simulate a policy, correct a rule in the policy, and continue the simulation.

In this example, the **Demo** policy is being simulated. This policy is intended to find objects that have series=x-men user metadata. However, unexpected results occurred when simulating this policy against the

Beast.jpg object. Instead of matching the X-men metadata rule, the object matched the default rule, Two copies two data centers.

Simulates the active ILM policy or, if there is a proposed ILM policy, simulates the proposed ILM policy. Use this simulation to test the current configuration of ILM rules and determine whether ILM rules copy and place object data as intended. Object my-bucket/my-object-name or my-container/my-object-name Simulation Results Object Rule Matched Previous Match photos/Beast.jpg Two copies two data centers Finish

When a test object is not matched by the expected rule in the policy, you must examine each rule in the policy and correct any errors.

Steps

- 1. For each rule in the policy, view the rule settings by clicking the rule name or the more details icon on any dialog box where the rule is displayed.
- 2. Review the rule's tenant account, reference time, and filtering criteria.

In this example, the metadata for the X-men rule includes an error. The metadata value was entered as "x-men1" instead of "x-men."

X-men			
Ingest Behavior: Tenant Account: Reference Time: Filtering Criteria:	Balanced 06846027571548027538 Ingest Time		
Matches all of the follo	owing metadata:		
User Metadata	series	equals	x-men1
Retention Diagram:			
Trigger	Da	y 0	
All Stora	age Nodes		
Duration		Forever	
			Close

- 3. To resolve the error, correct the rule, as follows:
 - If the rule is part of the proposed policy, you can either clone the rule or remove the rule from the policy and then edit it.
 - If the rule is part of the active policy, you must clone the rule. You cannot edit or remove a rule from the active policy.

Option	Description
Cloning the rule	a. Select ILM > Rules.
	b. Select the incorrect rule, and click Clone .
	c. Change the incorrect information, and click Save .
	d. Select ILM > Policies.
	e. Select the proposed policy, and click Edit .
	f. Click Select Rules.
	g. Select the check box for the new rule, uncheck the check box for the original rule, and click Apply .
	h. Click Save .
Editing the rule	a. Select the proposed policy, and click Edit .
	b. Click the delete icon x to remove the incorrect rule, and click Save .
	c. Select ILM > Rules.
	d. Select the incorrect rule, and click Edit .
	e. Change the incorrect information, and click Save .
	f. Select ILM > Policies.
	g. Select the proposed policy, and click Edit .
	h. Select the corrected rule, click Apply , and click Save .

4. Perform the simulation again.



Because you navigated away from the ILM Policies page to edit the rule, the objects you previously entered for simulation are no longer displayed. You must re-enter the names of the objects.

In this example, the corrected X-men rule now matches the Beast.jpg object based on the series=x-men user metadata, as expected.

Simulate ILM Policy - Demo

Simulates the active ILM policy or, if there is a proposed ILM policy, simulates the proposed ILM policy. Use this simulation to test the current configuration of ILM rules and determine whether ILM rules copy and place object data as intended.

Object my-bucket/my-object-name or my-container/my-object-name

Simulation Results

Object Rule Matched Previous Match

photos/Beast.jpg X-men

K-men

Finish

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