



# **Managing and monitoring groups**

## **Active IQ Unified Manager**

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# Managing and monitoring groups

You can create groups in Unified Manager to manage storage objects.

## Understanding groups

You can create groups in Unified Manager to manage storage objects. Understanding the concepts about groups and how group rules enable you to add storage objects to a group will help you to manage the storage objects in your environment.

### What a group is

A group is a dynamic collection of heterogeneous storage objects (clusters, SVMs, or volumes). You can create groups in Unified Manager to easily manage a set of storage objects. The members in a group might change, depending on the storage objects that are monitored by Unified Manager at a point in time.

- Each group has a unique name.
- You must configure a minimum of one group rule for each group.
- You can associate a group with more than one group rule.
- Each group can include multiple types of storage objects such as clusters, SVMs, or volumes.
- Storage objects are dynamically added to a group based on when a group rule is created or when Unified Manager completes a monitoring cycle.
- You can simultaneously apply actions on all the storage objects in a group such as setting thresholds for volumes.

### How group rules work for groups

A group rule is a criterion that you define to enable storage objects (volumes, clusters, or SVMs) to be included in a specific group. You can use condition groups or conditions for defining group rule for a group.

- You must associate a group rule to a group.
- You must associate an object type for a group rule; only one object type is associated for a group rule.
- Storage objects are added or removed from the group after each monitoring cycle or when a rule is created, edited, or deleted.
- A group rule can have one or more condition groups, and each condition group can have one or more conditions.
- Storage objects can belong to multiple groups based on group rules you create.

### Conditions

You can create multiple condition groups, and each condition group can have one or more conditions. You can apply all the defined condition groups in a group rule for groups in order to specify which storage objects are included in the group.

Conditions within a condition group are executed using logical AND. All the conditions in a condition group must be met. When you create or modify a group rule, a condition is created that applies, selects, and groups only those storage objects that satisfy all conditions in the condition group. You can use multiple conditions within a condition group when you want to narrow the scope of which storage objects to include in a group.

You can create conditions with storage objects by using the following operands and operator and specifying the required value.

Storage object type	Applicable operands
Volume	<ul style="list-style-type: none"><li>• Object name</li><li>• Owning cluster name</li><li>• Owning SVM name</li><li>• Annotations</li></ul>
SVM	<ul style="list-style-type: none"><li>• Object name</li><li>• Owning cluster name</li><li>• Annotations</li></ul>
Cluster	<ul style="list-style-type: none"><li>• Object name</li><li>• Annotations</li></ul>

When you select annotation as an operand for any storage object, the “Is” operator is available. For all other operands, you can select either “Is” or “Contains” as operator.

- Operand

The list of operands in Unified Manager changes based on the selected object type. The list includes the object name, owning cluster name, owning SVM name, and annotations that you define in Unified Manager.

- Operator

The list of operators changes based on the selected operand for a condition. The operators supported in Unified Manager are “Is” and “Contains”.

When you select the “Is” operator, the condition is evaluated for exact match of operand value to the value provided for the selected operand.

When you select the “Contains” operator, the condition is evaluated to meet one of the following criteria:

- The operand value is an exact match to the value provided for the selected operand
- The operand value contains the value provided for the selected operand

- Value

The value field changes based on the operand selected.

## Example of a group rule with conditions

Consider a condition group for a volume with the following two conditions:

- Name contains “vol”
- SVM name is “data\_svm”

This condition group selects all volumes that include “vol” in their names and that are hosted on SVMs with the name “data\_svm”.

## Condition groups

Condition groups are executed using logical OR, and then applied to storage objects. The storage objects must satisfy one of the condition groups to be included in a group. The storage objects of all the condition groups are combined. You can use condition groups to increase the scope of storage objects to include in a group.

## Example of a group rule with condition groups

Consider two condition groups for a volume, with each group containing the following two conditions:

- Condition group 1
  - Name contains “vol”
  - SVM name is “data\_svm” Condition group 1 selects all volumes that include “vol” in their names and that are hosted on SVMs with the name “data\_svm”.
- Condition group 2
  - Name contains “vol”
  - The annotation value of data-priority is “critical” Condition group 2 selects all volumes that include “vol” in their names and that are annotated with the data-priority annotation value as “critical”.

When a group rule containing these two condition groups is applied on storage objects, then the following storage objects are added to a selected group:

- All volumes that include “vol” in their names and that are hosted on the SVM with the name “data\_svm”.
- All volumes that include “vol” in their names and that are annotated with the data-priority annotation value “critical”.

## How group actions work on storage objects

A group action is an operation that is performed on all the storage objects in a group. For example, you can configure volume threshold group action to simultaneously change the volume threshold values of all volumes in a group.

Groups support unique group action types. You can have a group with only one volume health threshold group action type. However, you can configure a different type of group action, if available, for the same group. The rank of a group action determines the order in which the action is applied to storage objects. The details page of a storage object provides information about which group action is applied on the storage object.

## Example of unique group actions

Consider a volume A that belongs to groups G1 and G2, and the following volume health threshold group actions are configured for these groups:

- `Change_capacity_threshold` group action with rank 1, for configuring the capacity of the volume
- `Change_snapshot_copies` group action with rank 2, for configuring the Snapshot copies of the volume

The `Change_capacity_threshold` group action always takes priority over the `Change_snapshot_copies` group action and is applied to volume A. When Unified Manager completes one cycle of monitoring, the health threshold related events of volume A are re-evaluated per the `Change_capacity_threshold` group action. You cannot configure another volume threshold type of group action for either G1 or G2 group.

## Adding groups

You can create groups to combine clusters, volumes, and storage virtual machines (SVMs) for ease of management.

### Before you begin

You must have the Application Administrator or Storage Administrator role.

### About this task

You can define group rules to add or remove members from the group and to modify group actions for the group.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Groups** tab, click **Add**.
3. In the **Add Group** dialog box, enter a name and description for the group.
4. Click **Add**.

## Editing groups

You can edit the name and description of a group that you created in Unified Manager.

### Before you begin

You must have the Application Administrator or Storage Administrator role.

### About this task

When you edit a group to update the name, you must specify a unique name; you cannot use an existing group name.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Groups** tab, select the group that you want to edit, and then click **Edit**.

3. In the **Edit Group** dialog box, change the name, description, or both for the group.
4. Click **Save**.

## Deleting groups

You can delete a group from Unified Manager when the group is no longer required.

### Before you begin

- None of the storage objects (clusters, SVMs, or volumes) must be associated with any group rule that is associated with the group that you want to delete.
- You must have the Application Administrator or Storage Administrator role.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Groups** tab, select the group that you want to delete, and then click **Delete**.
3. In the **Warning** dialog box, confirm the deletion by clicking **Yes**.

Deleting a group does not delete the group actions that are associated with the group. However, these group actions will be unmapped after the group is deleted.

## Adding group rules

You can create group rules for a group to dynamically add storage objects such as volumes, clusters, or storage virtual machines (SVMs) to the group. You must configure at least one condition group with at least one condition to create a group rule.

### Before you begin

You must have the Application Administrator or Storage Administrator role.

### About this task

Storage objects that are currently monitored are added as soon as the group rule is created. New objects are added only after the monitoring cycle is completed.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Group Rules** tab, click **Add**.
3. In the **Add Group Rule** dialog box, specify a name for the group rule.
4. In the **Target Object Type** field, select the type of storage object that you want to group.
5. In the **Group** field, select the required group for which you want to create group rules.
6. In the **Conditions** section, perform the following steps to create a condition, a condition group, or both:



To create....	Do this...
A condition	<ol style="list-style-type: none"> <li>Select an operand from the list of operands.</li> <li>Select either <b>Contains</b> or <b>Is</b> as the operator.</li> <li>Enter a value, or select a value from the available list.</li> </ol>
A condition group	<ol style="list-style-type: none"> <li>Click <b>Add Condition Group</b></li> <li>Select an operand from the list of operands.</li> <li>Select either <b>Contains</b> or <b>Is</b> as the operator.</li> <li>Enter a value, or select a value from the available list.</li> <li>Click <b>Add condition</b> to create more conditions if required, and repeat steps a through d for each condition.</li> </ol>

- Click **Add**.

## Example for creating a group rule

Perform the following steps in the Add Group Rule dialog box to create a group rule, including configuring a condition and adding a condition group:

- Specify a name for the group rule.
- Select the object type as storage virtual machine (SVM).
- Select a group from the list of groups.
- In the Conditions section, select **Object Name** as the operand.
- Select **Contains** as the operator.
- Enter the value as `svm_data`.
- Click **Add condition group**.
- Select **Object Name** as the operand.
- Select **Contains** as the operator.
- Enter the value as `vol`.
- Click **Add condition**.
- Repeat steps 8 through 10 by selecting **data-priority** as the operand in step 8, **Is** as the operator in step 9, and **critical** as the value in step 10.
- Click **Add** to create the condition for the group rule.

## Editing group rules

You can edit group rules to modify the condition groups and the conditions within a condition group to add or remove storage objects to or from a specific group.

## Before you begin

You must have the Application Administrator or Storage Administrator role.

## Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Group Rules** tab, select the group rule that you want to edit, and then click **Edit**.
3. In the **Edit Group Rule** dialog box, change the group rule name, associated group name, condition groups, and conditions as required.



You cannot change the target object type for a group rule.

4. Click **Save**.

## Deleting group rules

You can delete a group rule from Active IQ Unified Manager when the group rule is no longer required.

## Before you begin

You must have the Application Administrator or Storage Administrator role.

## About this task

When a group rule is deleted, the associated storage objects will be removed from the group.

## Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Group Rules** tab, select the group rule that you want to delete, and then click **Delete**.
3. In the **Warning** dialog box, confirm the deletion by clicking **Yes**.

## Adding group actions

You can configure group actions that you want to apply to storage objects in a group. Configuring actions for a group enables you to save time, because you do not have to add these actions to each object individually.

## Before you begin

You must have the Application Administrator or Storage Administrator role.

## Steps

1. In the left navigation pane, click **Storage Management > Groups**.

2. In the **Group Actions** tab, click **Add**.
3. In the **Add Group Action** dialog box, enter a name and description for the action.
4. From the **Group** menu, select a group for which you want to configure the action.
5. From the **Action Type** menu, select an action type.

The dialog box expands, enabling you to configure the selected action type with required parameters.

6. Enter appropriate values for the required parameters to configure a group action.
7. Click **Add**.

## Editing group actions

You can edit the group action parameters that you configured in Unified Manager, such as the group action name, description, associated group name, and parameters of the action type.

### Before you begin

You must have the Application Administrator or Storage Administrator role.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Group Actions** tab, select the group action that you want to edit, and then click **Edit**.
3. In the **Edit Group Action** dialog box, change the group action name, description, associated group name, and parameters of the action type, as required.
4. Click **Save**.

## Configuring volume health thresholds for groups

You can configure group-level volume health thresholds for capacity, Snapshot copies, qtree quotas, growth, and inodes.

### Before you begin

You must have the Application Administrator or Storage Administrator role.

### About this task

The volume health threshold type of group action is applied only on volumes of a group.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Group Actions** tab, click **Add**.
3. Enter a name and description for the group action.

4. From the **Group** drop-down box, select a group for which you want to configure group action.
5. Select **Action Type** as the volume health threshold.
6. Select the category for which you want to set the threshold.
7. Enter the required values for the health threshold.
8. Click **Add**.

## Deleting group actions

You can delete a group action from Unified Manager when the group action is no longer required.

### Before you begin

You must have the Application Administrator or Storage Administrator role.

### About this task

When you delete the group action for the volume health threshold, global thresholds are applied to the storage objects in that group. Any object-level health thresholds that are set on the storage object are not impacted.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Group Actions** tab, select the group action that you want to delete, and then click **Delete**.
3. In the **Warning** dialog box, confirm the deletion by clicking **Yes**.

## Reordering group actions

You can change the order of the group actions that are to be applied to the storage objects in a group. Group actions are applied to storage objects sequentially based on their rank. The lowest rank is assigned to the group action that you configured last. You can change the rank of the group action depending on your requirements.

### Before you begin

You must have the Application Administrator or Storage Administrator role.

### About this task

You can select either a single row or multiple rows, and then perform multiple drag-and-drop operations to change the rank of group actions. However, you must save the changes for the re-prioritization to be reflected in the group actions grid.

### Steps

1. In the left navigation pane, click **Storage Management > Groups**.
2. In the **Group Actions** tab, click **Reorder**.

3. In the **Reorder Group Actions** dialog box, drag and drop the rows to rearrange the sequence of group actions as required.
4. Click **Save**.

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