Understanding more about annotations

Active IQ Unified Manager

NetApp
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Understanding the concepts about annotations helps you to manage the events related to the storage objects in your environment.

What annotations are

An annotation is a text string (the name) that is assigned to another text string (the value). Each annotation name-value pair can be dynamically associated with storage objects using annotation rules. When you associate storage objects with predefined annotations, you can filter and view the events that are related to them. You can apply annotations to clusters, volumes, and storage virtual machines (SVMs).

Each annotation name can have multiple values; each name-value pair can be associated with a storage object through rules.

For example, you can create an annotation named “data-center” with the values “Boston” and “Canada”. You can then apply the annotation “data-center” with the value “Boston” to volume v1. When an alert is generated for any event on a volume v1 that is annotated with “data-center”, the generated email indicates the location of the volume, “Boston”, and this enables you to prioritize and resolve the issue.

How annotation rules work in Unified Manager

An annotation rule is a criterion that you define to annotate storage objects (volumes, clusters, or storage virtual machines (SVMs)). You can use either condition groups or conditions for defining annotation rules.

- You must associate an annotation rule to an annotation.
- You must associate an object type for an annotation rule; only one object type can be associated for an annotation rule.
- Unified Manager adds or removes annotations from storage objects after each monitoring cycle or when a rule is created, edited, deleted, or reordered.
- An annotation rule can have one or more condition groups, and each condition group can have one or more conditions.
- Storage objects can have multiple annotations. An annotation rule for a particular annotation can also use different annotations in the rule conditions to add another annotation to already annotated objects.

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 an annotation rule of an annotation in order to annotate storage objects.

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 an annotation rule, a condition is created that applies, selects, and annotates only those storage objects that meet all the 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 annotate.

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	• Object name • Owning cluster name • Owning SVM name • Annotations
SVM	• Object name • Owning cluster name • Annotations
Cluster	• Object name • Annotations

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. When you select the “Is” operator, the condition is evaluated for an exact match of the operand value with 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 of the selected operand.
- The operand value contains the value provided for the selected operand.

Example of an annotation rule with conditions

Consider an annotation rule with one condition group for a volume with the following two conditions:

- Name contains “vol”
- SVM name is “data_svm”

This annotation rule annotates all volumes that include “vol” in their names and that are hosted on SVMs with the name “data_svm” with the selected annotation and the annotation type.

Condition groups

Condition groups are executed using logical OR, and then applied to storage objects. The storage objects must meet the requirements of one of the condition groups to be annotated. The storage objects that meet the conditions of all the condition groups are annotated. You can use condition groups to increase the scope of storage objects to be annotated.

Example of an annotation rule with condition groups

Consider an annotation rule with two condition groups for a volume; each group contains the following two conditions:

- Condition group 1

    - Name contains “vol”
    - SVM name is “data_svm” This condition group annotates 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” This condition group annotates all volumes that include “vol” in their names and that are annotated with the data-priority annotation value as “critical”.

When an annotation rule containing these two condition groups is applied on storage objects, then the following storage objects are annotated:

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

Description of predefined annotation values

Data-priority is a predefined annotation that has the values Mission critical, High, and Low. These values enable you to annotate storage objects based on the priority of data that they contain. You cannot edit or delete the predefined annotation values.

- **Data-priority:Mission critical**

  This annotation is applied to storage objects that contain mission-critical data. For example, objects that contain production applications can be considered as mission critical.

- **Data-priority:High**

  This annotation is applied to storage objects that contain high-priority data. For example, objects that are hosting business applications can be considered high priority.

- **Data-priority:Low**

  This annotation is applied to storage objects that contain low-priority data. For example, objects that are on secondary storage, such as backup and mirror destinations, might be of low priority.