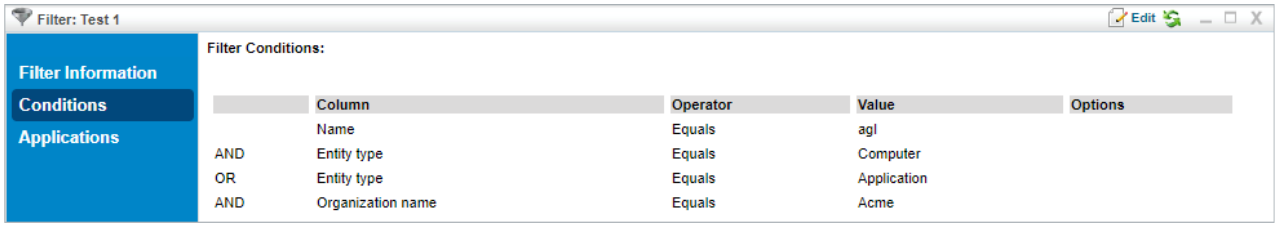
Understanding Complex Filters

A filter can be as simple as **Setting Equals 1**, but more complex filters can be used in reports or for access control.

The built-in filter editor can be used to add conditions one at a time to a filter. These filter conditions are added using the **AND** or **OR** logical operators. By default, the **AND** operator has higher precedence than the **OR** operator. The filter editor does not allow the user to override the precedence (typically done by adding parenthesis).

Example

You have the following filter set up:



The Conditions tab of a filter.

The filter in this example translates to:

```
Entity Name starts with agl AND Entity Type = Computer OR Entity Type = Application AND Organization name = Acme
```

Since the **AND** operator has higher precedence than the **OR** operator, the above filter means:

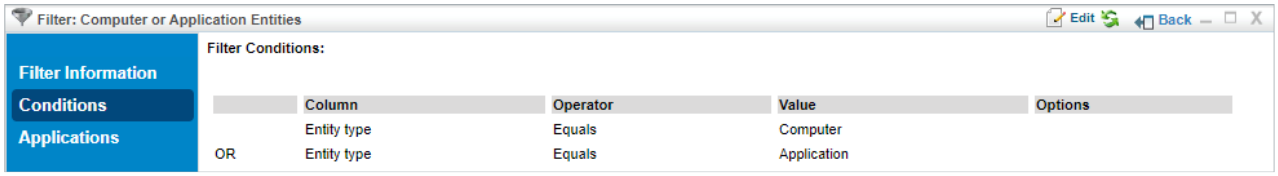
```
(Entity Name starts with agl AND Entity Type = Computer) OR (Entity Type = Application AND Organization name = Acme)
```

That is, the **AND** operations are performed first.

If you want this filter to evaluate as:

```
(Entity Name starts with agl) AND (Entity Type = Computer OR Entity Type = Application) AND (Organization name = Acme)
```

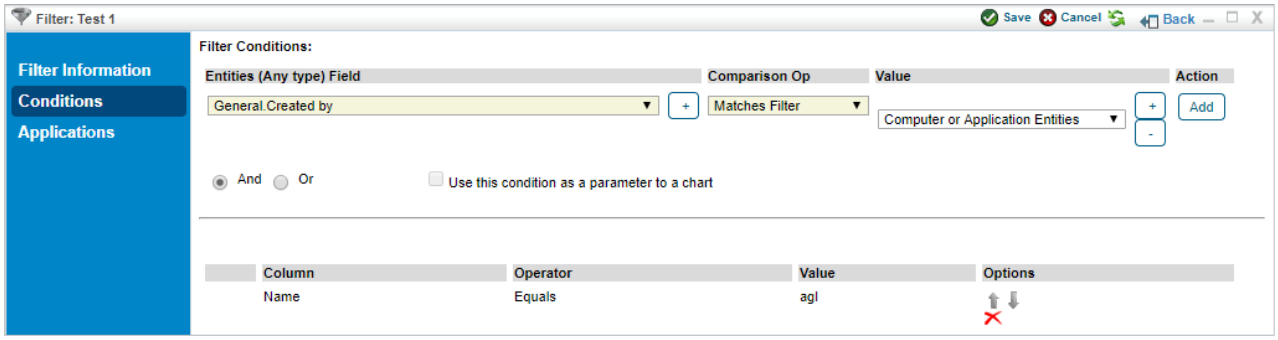
There is no way to do this directly by using the filter editor. You must do this using the **Matches Filter** operator. To implement the above filter, you must build a Computer or Application Entities filter for the condition `(Entity Type = Computer OR Entity Type = Application).`



A Computer or Application Entities filter.

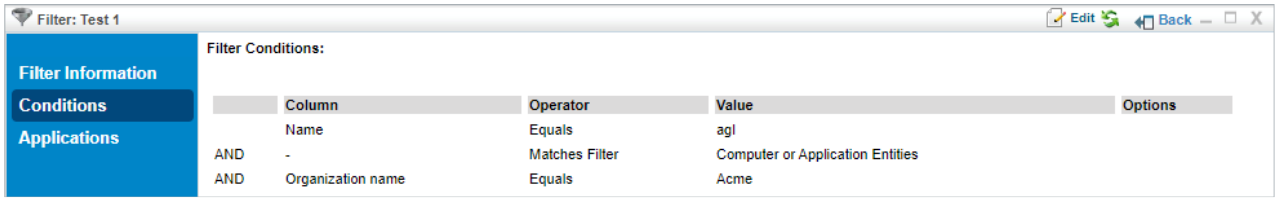
The original filter will use the Computer or Application Entities filter using the **Matches Filter** operator.

First, add the **Name Equals agl** condition. Use the **Matches Filter** operator to add the Computer or Application Entities filter. Note that a dummy entry must be selected in the first dropdown of the filter editor. In this case, **Created By** is selected, which is ignored by the server.



Adding the Matches Filter operator.

Add **Organization name Equals Acme**. The filter will now look like this:



The filter with the Matches Filter operator added.

Internally, the server surrounds the filter condition of the **Matches Filter** operator with parenthesis. So, this will translate to:

```
(Entity Name starts with agl)AND(Computer or Application Entities) AND (Organization name = Acme)
```

Which is effectively similar to the filter that you set out to construct:

```
(Entity Name starts with agl) AND (Entity Type = Computer OR Entity Type = Application) AND (Organization name = Acme)
```

This can be taken further by using **Matches Filter** operator within the filters used by another **Matches Filter** operator.