



AssetWorX Tree Views



APPLICATION NOTE

October 2015

Description: Guide to the AssetWorX Tree Views feature.

Introduction

AssetWorX Tree Views are a new feature in GENESIS64 version 10.9. They allow the user to specify different views for the Asset Tree and display those tree views in any runtime client.

Configuration

AssetWorX Tree Views are configured in Workbench Desktop. Each tree view consists of tree view rules, which represent the new hierarchy levels for the asset tree. Each rule has a type.

A rule type can be:

- **Real** – All of the items at the specified level.
- **Virtual** – Items at the specified level filtered by the value of a specified static equipment property, asset object property (such as name, description or display name), or expression.
- **Filter** – Filters out items on specified Level, based on specified Expression (similar to Real Rule Type, but hides items not satisfying the condition in the Tree View). This expression must output a Boolean value of true or false.

NOTE: When using a Virtual Filter, the database caching must be disabled for the static equipment property being used.

When setting up the different rule types on an AssetWorX Tree View, one aspect to consider is the hierarchy of AssetWorX. For example, if you have created a rule (Real or Filter) which is looking at a specific level, the other rules beneath it must respect AssetWorX's Equipment Hierarchy.

Take the default AssetWorX configuration as an example. If you created a Real rule with the level set to Site, any rule below this rule would only be able to look at properties underneath the Site level.

Runtime

Runtime visualization is provided by the Asset Navigator control, which can be shown in GraphWorX64. In order to visualize a specific tree view, enter the Tree View name into the TreeViewName property in the Property Grid for the Asset Navigator control. The TreeViewName property can be found in the "Misc" category.

Using AssetWorX Tree Views

This example will build upon the sample AssetWorX configuration included with GENESIS64.

Under each Control Module-level asset (named "Heating Control", "Ingredient Selector" and "Pump control") create these equipment properties:

- **Color** – a Static value of String data type.
- **Location** – a Static value of String data type.

Fill in the Color equipment property value for each Control Module instance with either "Green" or "Red". For the Location property, put either "Station A" or "Station B". In the end, each Control Module asset will have both a Color and a Location property.

Control Modules by Color

Now we will define our first AssetWorX Tree View called "Control Module by Color":

1. Add a new Rule with the Rule Type set to Virtual.
 - a. Set the "Rule at Level" to Control Module.
 - b. Set the "Filtering & Grouping" to Equipment Property and manually specify value of "Color" (without quotes) into the text box underneath.
2. Add a new Rule of Type Real underneath the previous rule.
 - a. Set "Rule at Level" to Control Module.
 - b. Uncheck the "Use full names when grouped" checkbox.
3. Add an AssetWorX Navigator into GraphWorX64, and set the TreeViewName property to "Control Module by Color".
4. When you put the display into runtime, you should get a similar result to the screenshot below (it depends on the value of the Color Equipment Property that you defined on the different modules):

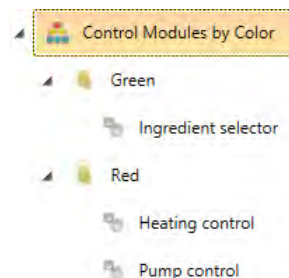


Figure 1 - Control Modules by Color Tree View



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In this example, we told AssetWorX to generate a Tree View where the first level in the tree is based on the Equipment Property called Color. Then we added in a Real rule to show the Control Module Assets that had that Equipment Property defined. Based on the value of that property, the Assets were filtered into the two different values, either Green or Red.

To enhance the Tree View we created, we are going to change the rules created to show different information in the Tree View. Go back to Workbench and bring up the window for the Tree View.

1. On the first level rule (the Virtual at Control Module Level) change the Filter & Grouping to Expression, and enter the following expression:

```
IF {{EquipmentProperty.Color}} == "Green"  
THEN "All green items"  
ELSE "All non-green items"
```

NOTE: Make note of the specific syntax of {{<ObjectType>.<ObjectName>}} where object type can be either EquipmentProperty or ObjectProperty.

2. On the second level rule (the Real at the Control Module Level) check the "Use full names when grouped" checkbox.

Now go back to your client, and refresh the AssetWorX tree by right clicking the tree in runtime, and choose "Refresh" from the context menu. You can also take the GraphWorX64 display out of runtime and then put it back into runtime to refresh the display. You should see a similar tree to the screenshot below:

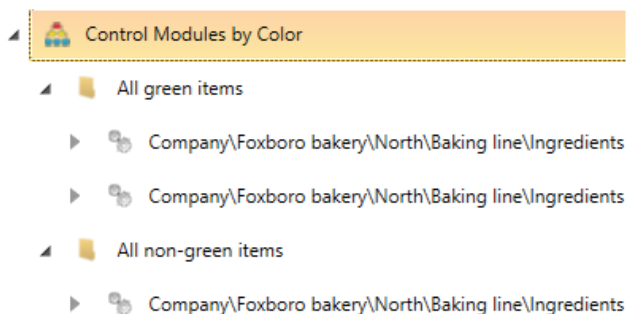


Figure 2 - Control Modules by Color Tree View adjusted

Only Green Control Modules by Location

Now we will create a new AssetWorX Tree View that uses the Expression rule type:

1. Add new Real rule as the topmost rule.
 - a. Set the "Rule at Level" to Unit.

2. Add new Virtual rule as a child rule of rule created in previous step.
 - a. Set the "Rule at Level" to Control Module
 - b. Set "Filtering & Grouping" to Equipment Property and manually specify value of "Location" (without quotes) into text box underneath.
3. Add a new Real rule as a child rule of rule created in the previous step.
 - a. Set the "Rule at Level" to Equipment Module.
 - b. Uncheck the "Use full names when grouped" checkbox.
4. Add new Filter rule as a child rule of rule created in the previous step.
 - a. Set the "Rule at Level" to Control Module
 - b. Specify following Expression:

```
IF {{EquipmentProperty.Color}} == "Green"  
THEN true  
ELSE false
```

After following the steps above and refreshing the AssetWorX Navigator, you should see a similar result to the image below.

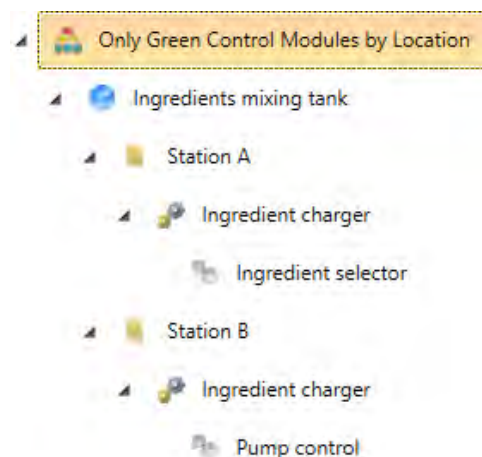


Figure 3 - Only Green Control Modules by Location Tree View