



GENESIS64 - Commanding Configuration and Runtime



APPLICATION NOTE

September 2013

Description: A guide to using powerful commands in GENESIS64 applications.

OS Requirement: Vista x64/ Windows 7 x64/ Windows 8 x64/ Windows Server 2008 x64/ Windows Server 2008 R2 x64/ Windows Server 2012

General Requirement: Basic knowledge of GENESIS64 and its architecture. Familiarity with the application note *GENESIS64 – Commanding Introduction*.

Introduction

The main purpose of Commanding is to provide users with a simple way to monitor their asset structures with minimum development effort. Commanding also provides a way to accomplish actions that were previously only possible with JScript .NET, which was not supported in the Silverlight version of ICONICS applications.

You can take advantage of Commanding in ICONICS client applications and controls such as GraphWorX64, AssetWorX, AlarmWorX64 Viewer, TrendWorX64 Viewer, AnalytiX Viewers, and others.

This document will show you how to configure Commanding and how to use it in runtime operations. There are two ways of configuring and using commanding. First is to assign your commands to Equipment Classes or Assets in AssetWorX provider in Workbench-SL and invoke them via the AssetWorX Navigator. Second is to define and execute your commands in GraphWorX64 similarly to Pick actions.

For further information about the concept of Commanding and its architecture you should read application note entitled *GENESIS64 – Commanding Introduction*.

Defining commands in AssetWorX

For this example we will use the sample AssetWorX configuration database that is installed along with GENESIS64.

- 1) Open Workbench-SL in Internet Explorer.
- 2) Select the AssetWorX provider and **expand the tree** at least down to Company level.
- 3) Click on the Foxboro bakery equipment and you should see its properties. In order to assign a command to the equipment click on the **Commands tab** and press **Add**.

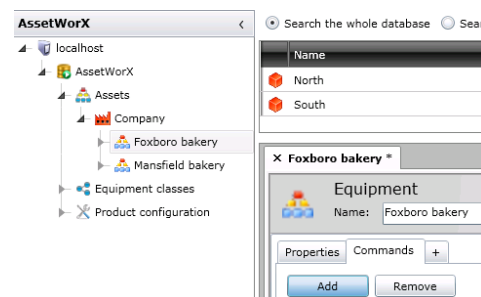


Figure 1 - Adding Command in Workbench-SL

- 4) You can select the appropriate command in the Command dropdown box. Depending on which command you select different parameters will be populated below the Products checkboxes.
- 5) Select the **Load Graphics Display** command.

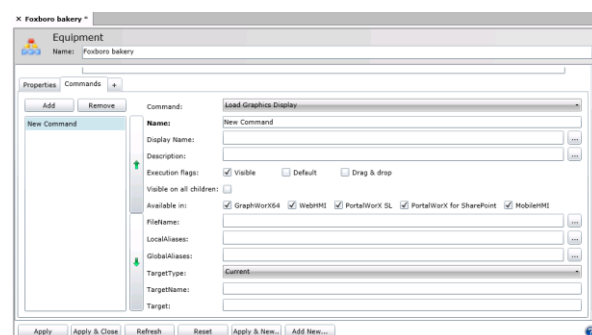


Figure 2 - Command Configuration Panel

- 6) In order to understand our next configuration steps we should understand all the shown properties. Let us start with the **execution flags**:
 - **Visible** – whether the command will be visible in the AssetWorX Navigator. If it is not visible it can still be executed by a drag & drop operation or as a default command.
 - **Default** – the command will be highlighted in the AssetWorX Navigator and it will be executed when that asset gets selected. Note that you have to specify a target for default commands. You may use wildcards such as asterisks in the Target field to target multiple objects. Note that you can setup multiple default commands for a single asset.
 - **Drag & drop** – you will be able to drag this equipment to an object and the command will be executed if applicable. This operation ignores the Target property.
- 7) The property entitled **Visible on all children** determines whether the command will be inherited by all children.



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- 8) The last general property, **Available in**, affects visibility of the command in various clients that might host the AssetWorX Navigator.
- 9) The following properties are command type specific. Since we selected the Load Graphic Display command these four parameters appear:
 - FileName – specify the display file name
 - LocalAliases – option to define local aliases for the display
 - GlobalAliases – option to define global aliases for the display
 - TargetType – Type of the target display to load display in
 - TargetName – Name of the target display to load graphical display in
 - Target – the registered name of your target object. You can use asterisks as wildcards to target multiple objects. If you leave this field empty then the user can pick a target in runtime. Right-click this asset in the AssetWorX Navigator during runtime to choose from a list of available objects for the command.
- 10) For our demonstration purposes create two Load Graphics Display commands with the properties listed in the Table 1. Leave the default setting for properties that are not listed in the table or if there is no value in the appropriate cell.

Table 1 - Properties of Sample Load Graphics Display Commands

Name	Load Display 1	Load Display 2
Execution flags	Default Drag & drop Visible	Visible
FileName	Display1.gdfoxs	Display2.gdfoxs
Target	Details	

- 11) We have successfully defined our first two commands. Let us define one more. This time the command should be of Set Filter type.
- 12) Make it Visible, Default and Visible on all children.
- 13) For the FilterName type in Filter1 and target all objects by typing "*" without quotation marks into the Target field.

NOTE: The visible order of commands in the AssetWorX provider reflects the execution order of the commands. You can re-arrange the commands using the available arrows.

Our configuration in AssetWorX provider has been completed. Now we are going to have a look how the commands can be used.

Using the AssetWorX Navigator in GraphWorX64

The AssetWorX Navigator can be hosted in various client applications such as GraphWorX64 or PortalWorX-SL. In this document we will focus on the GraphWorX64 environment.

- 1) Open GraphWorX64 in configuration mode.
- 2) From the Controls ribbon, select and insert an AssetWorX Navigator, an AlarmWorX64 Viewer, a GridWorX64 Viewer, and a GraphWorX64 Viewer.
- 3) Select all the controls and make sure that the properties CommandingEnabled and DragAndDropCommanding in Misc – Commanding category are set to True. This will register the controls in FrameWorX server for commanding and allow them to receive Drag & Drop commands.

Misc - Commanding	
CommandingEnabled	True
DragAndDropCommandingEnabled	True
CommandingDisplayName	
MaxCommandScope	Process

Figure 3 - Commanding Enabled Property

- 4) If you want to target your controls individually you have to give them unique names. Select the AlarmWorX64 Viewer and type "AlarmControl1" without the quotation marks into the (Name) property. Then "GridControl1" for GridWorX64 Viewer and "Details" for GraphWorX64 Viewer.

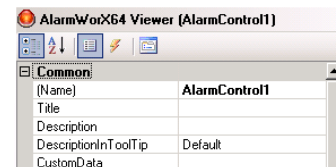


Figure 4 - Giving Name to AlarmWorX64 Viewer Control

NOTE: If you have multiple controls of the same name, all of them will receive commands targeted to that name that apply to that type of control. For instance, if you have a GraphWorX64 Viewer and an AlarmWorX64 Viewer both entitled "Details" the Set Filter command will only apply to the AlarmWorX64 Viewer while Load Graphics Display command will only apply to the GraphWorX64 Viewer.

- 5) Create a filter in AlarmWorX64 Viewer called "**Filter1**" but do not enable it. Configure the filter to only display alarms with severity higher than 500.

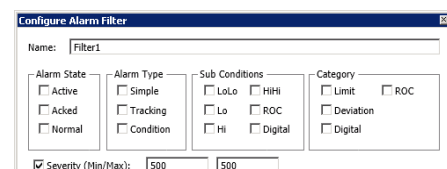


Figure 5 - Creating Filter in AlarmWorX64 Viewer



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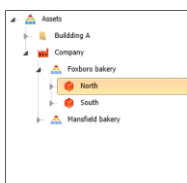
- 6) Do the same in GridWorX64 Viewer. Configure the filter to only display records where EmployeeID=1.

NOTE: If you are not familiar with these two controls you should consult the help files, resources available on installation disks, or the Customer Connection Portal for more information.

- 7) Save your display as a Silverlight Display named "**Display0.gdfoxs**".
- 8) Create two other Silverlight displays with some objects and save them as "**Display1.gdfoxs**" and "**Display2.gdfoxs**" into the same folder.

NOTE: The displays do not have to be Silverlight versions to use Commanding. Commanding works equally in both "standard" and Silverlight GraphWorX64 display versions.

- 9) Open the "**Display0.gdfoxs**" display again and enter runtime.
- 10) Expand the tree in AssetWorX Navigator so as you can select **Foxboro bakery** and its child assets. Click on any of its children, like North. You'll see that only the "Filter1" command will be applied. We did not configure any commands specifically on North, but we did set the Filter1 command to be "**Visible on all children**" objects, so it is also available to children of Foxboro bakery



Time / Date	Tag	Priority	Type	Quality	Description
7/2/2012 11:11 AM	Core Temp	500	HI	Good	Core temperature is...
7/2/2012 11:16 AM	Critical Mass	500	HI	Good	Critical Mass is ok.
7/2/2012 11:12 AM	MMOBeltSwitch	500	Digital	Good	Belt number one on.
7/2/2012 11:12 AM	MMOBeltTemp	500	Digital	Good	Belt number one on.
7/2/2012 11:12 AM	MMOCoreTemp	500	HI	Good	Core temperature is...
7/2/2012 11:12 AM	MMOCoreTemp	500	Digital	Good	Core temperature is...
7/2/2012 11:12 AM	MMOFlow	500	HI	Good	Flow rate is 10 L/min.
7/2/2012 11:12 AM	MMOFlow	500	Digital	Good	Flow rate has reach...
7/2/2012 11:12 AM	MMOInternalPressure	500	HI	Good	Internal pressure is...

EmployeeID	Lastname	Firstname	Title	TitleOfCourtesy
	Davillo	Nancy	Sales Representative	Ms.

Figure 6 - Using AssetWoX Navigator to Command other Controls in GraphWorX64

- 11) Manually disable the filters on the AlarmWorX64 Viewer and the GridWorX64 Viewer so you can see the full effect of the next step.
- 12) Select **Foxboro bakery**. When you select it all default commands will be executed; **Filter1 will be applied** in all controls in our display because of the asterisk in the Target property of that command, and **Display 1 will be loaded** into the GraphWorX64 Viewer entitled "Details" because it matches the Target of that command.
- 13) Right-click on Foxboro bakery. This will open the list of all defined and allowed commands. In our case, you should see Filter1 and Load Display 2. The Load Display 2 command does not have a specific target defined in the AssetWorX provider, so clicking on it opens another list with all possible targets. Select it and pick **Details** to see it open in the Details GraphWorX64 Viewer.

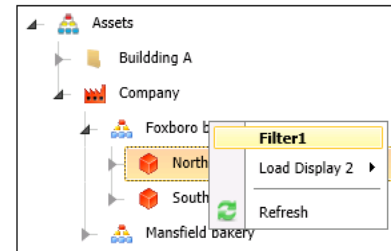


Figure 7 - Right-click Menu Showing Commanding Options

- 14) Note that while you are in runtime you may also drag and drop Foxboro bakery or any other object with a drag and drop command to any of your control in order to send all applicable commands to these objects, regardless the name specified in its Target property.

NOTE: Visibility of commands and assets in the AssetWorX Navigator is also affected by security settings. For further information consult the application note entitled *AssetWorX - Security*.

Defining Commands in GraphWorX64

So far we used the AssetWorX infrastructure to define and run our Commands, but we can also define and save commands in GraphWorX64 displays.

- 1) Go into configuration mode.
- 2) Add a button to the display and then go to the Dynamics panel to see the **Pick Action** for this button.
- 3) The list of commands is divided into two parts: **Local Commands** and **Global Commands**. Local Commands are the same sort of standard pick actions that existed in previous versions of GraphWorX64. Global Commands are new in Commanding.

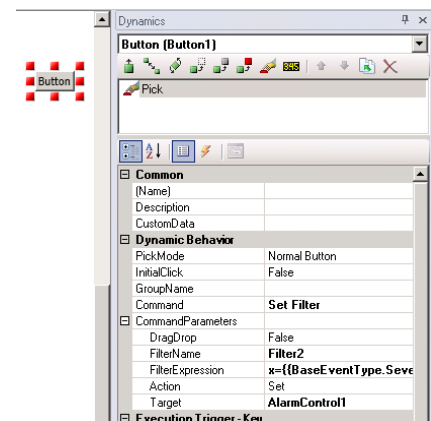


Figure 8 - Creating Commanding Button in GraphWorX64



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- 4) Select the **Set Filter** command so we can see how it works compared to our AssetWorX commands. Notice that the configurable parameters are fewer in GraphWorX64. You will not have to define any options that are native to AssetWorX and do not apply in GraphWorX64.

NOTE: If you set the DragDrop property to True you will be able to execute the command with a Drag and Drop operation only.

- 5) Type "**Filter2**" for the FilterName and select the "**AlarmControl1**" target name from Target drop down list. You could also type in the name manually.
- 6) Since we did not define "Filter2" in AlarmControl1 yet we can take advantage of the FilterExpression field of the pick action to define the filter here. Type the following expression into FilterExpression. This will only show records with a Severity of 900.

```
x={{BaseEventType.Severity}} == 900
```

- 7) Go to runtime.
- 8) Click on the button and **Filter2 will be applied** to "AlarmControl1" object. If it did not exist it will be created.
- 9) You can see that the filter was actually added to the filter list of the AlarmControl1. Right-click on the AlarmWorX64 Viewer and select Filters to see the new Filter2.