TrendWorX64 Viewer – Custom Pen

APPLICATION NOTE

July 2011

Description: Guide to add and use custom pens via scripting into TrendWorX64 Viewer
OS Requirement: Windows Server 2003 x64/Vista x64/ Server 2008 x64/Windows 7 x64/ Server 2008 R2 x64
General Requirement: General knowledge of GraphWorX64 and its scripting capabilities; familiarity with the TrendWorX64 Viewer control.

Introduction

This guide will introduce you to writing scripts that interface with the TrendWorX64 Viewer and it will show you how to define Custom pen in TrendWorX64 Viewer using GraphWorX64 Scripting.

This document assumes that you have read the *GraphWorX64 Scripting – Quick Start* and *GraphWorX64 Scripting - Interacting with TrendWorX64 Viewer* application notes.

Preparing the display

To create this example we will need a display containing a TrendWorX64 Viewer control (there is no need to have pen), plus one button to trigger our script. Start GraphWorX64, create a new display and add those two elements to the display.

It is very important that the trend viewer control has a name. Our scripts will use this name to identify which trend viewer to interact with (in case there is more than one on a display). To name your trend viewer, double-click on it to open the properties then go to the Advanced tab. (You could also click once on the trend viewer and look at the Properties panel.) In the Common section fill in "Twx64Viewer" for the "(Name)" field.

Configure the button to perform the Run Script command and create a new function from the Events page. (The procedure for this is described in the GraphWorX64 Scripting – Quick Start" application note.)

Designing the Script

Before writing the actual code, let's review what we need to do in our script:

1. First, we need to get a reference to the TrendWorX64 Viewer control.
2. Then, we need to get a reference to its first tab.
3. From the tab, we take a reference to the chart.
4. From the chart, we take a reference to the series
5. From the series, we take a reference to the pen
6. Once we have the pen's reference, we can invoke the method to add multiple samples for this pen.

Writing the script

You will first need to add the IcoWPF.dll into the reference. To do this, in the script list action tree, select Edit reference, then click on an empty row and select the …, and then find IcoWPF.dll to add it into the list.

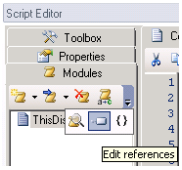

Figure 1 - Adding IcoWPF reference

Now that we know what needs to be done we can start writing the code to implement the script.

Using following approach we get a reference to the first pen of the series chart.

```
customPen = Ico.Twx.TwxChartPen(series.Pens[0]);
```

We are now ready to invoke the method add new sample for this pen.

```
customPen.Samples.Add(new
Ico.Twx.TwxDataSample(now, 10));
```

This method has two parameters - Timestamp and Value. In our case we used as TimeStamp current time (now = DateTime.UtcNow();) and as value parameter value 10.

If you want to use some another Timestamp you must insert timestamp in following format: **mm/dd/yyyy hh:mm:ss**.

The code is complete. We can save our display, go to runtime mode, then press the button and see four new samples added for the current time.
Here is the full code of the function we created in the previous section, along with some comments.

```
function CustomPen(sender : System.Object, cmdArgs : Ico.Gwx.CommandExecutionEventArgs)
{

    var viewer : Ico.Twx.TwxViewControl;
    var tab : Ico.Windows.Controls.MultipleTabItem;
    var chart : Ico.Twx.TwxChartComponent;
    var series : Ico.Twx.TwxSeries;
    var pen : Ico.Twx.TwxChartPen = new Ico.Twx.TwxChartPen();
    var config : Ico.Data.DataConnector.DataConnectorConfiguration;
    var customPen : Ico.Twx.TwxChartPen;

    // Get reference to the TWX64 Viewer
    viewer = Ico.Twx.TwxViewControl(ThisConfiguration.GetObjectByName("Twx64Viewer").ToDependencyObject());
    // Get reference to the 1st (currently the only one) tab
    tab = Ico.Windows.Controls.MultipleTabItem(viewer.Items[0]);
    // Get reference to the 1st (currently the only one) chart component
    view = Ico.Twx.TwxChartComponent(tab.Items[0]);
    // Get reference to the 1st series (series of line plot pens)
    series = Ico.Twx.TwxSeries(view.Series[0]);

    //add samples to custom pen

    now = DateTime.UtcNow();
    customPen = Ico.Twx.TwxChartPen(series.Pens[0]);
    customPen.Samples.Add(new Ico.Twx.TwxDataSample(now, 10));
    customPen.Samples.Add(new Ico.Twx.TwxDataSample(now, 20));
    customPen.Samples.Add(new Ico.Twx.TwxDataSample(now, 30));
    customPen.Samples.Add(new Ico.Twx.TwxDataSample(now, 40));

    }
```

Figure 1 – Full code of the custom pen definition