

Description: A scripting guide demonstrating how to interact with the TrendWorX64 Viewer control.

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. It includes examples of how to add a new pen, delete or modify an existing pen and toggle legend using GraphWorX64 Scripting.

This document assumes that you have read the *GraphWorX64 Scripting – Quick Start* application note.

These simple examples will show some important concepts, like how to get a reference to a TrendWorX64 Viewer control. This is very similar to the procedure for getting a reference to other controls as well. You'll also learn about how the TrendWorX64 Viewer is structured and how to interact with its elements.

Feel free to experiment with the other available methods. You can find these by using the Intelli-sense built into the Script Editor, or by browsing the GENESIS64 API Reference Help.

Preparing the display

To create this example, we will need a display containing a TrendWorX64 Viewer control with a plot and a button. You will not be able to add pens to your control unless it contains at least one plot.

It is very important that the trend viewer control, chart and its plot have unique names. Our scripts will use this name to identify which trend viewer to interact with (in case there is more than one on a display). The names can be assigned in the Advanced tab of the respective item.



Figure 1 – TrendWorX64 Viewer called “TWX” with a plot called “Plot1”

Add Pen script

We create a new pen and define its properties.

```
var pen : Ico.Twx.TwxChartPen = new Ico.Twx.TwxChartPen();
pen.RangeAxis.ShowTitle = true;
pen.Name = "Pen1";
pen.Stroke = new SolidColorBrush(Colors.Blue);
```

Next, we define the data source and connection parameters.

```
pen.DataSource = "hh:\\Configuration\\Signals:Sine";
pen.ConnectionParameters = "version=2;usagetype=2;aggregatetype=";
```

Having created a pen with connection parameters we need to get a reference to our TrendWorX64 Viewer where we want the pen to be added. Also we have to specify the appropriate plot (series).

```
var control : Ico.Twx.TwxViewControl =
ThisDocument.GetElementByName("TWX");
var series : Ico.Twx.TwxSeries = new Ico.Twx.TwxSeries();
control.SelectedView.Series.Add(series);
```

Finally we just add the pen.

```
series.Pens.Add(pen);
```

The code is complete. We can save our display, go to runtime mode, then press the button add our new pen.

NOTE: Wait a moment if you do not see the pen immediately. It may need a few seconds to begin drawing its line.

Final Code for Add Pen Script

Your final code should look something like the code on the next page:

```
function Pick1_CommandExecuted(sender : System.Object, cmdArgs : Ico.Gwx.CommandExecutionEventArgs)
{
    var pen : Ico.Twx.TwxChartPen = new Ico.Twx.TwxChartPen();
    pen.RangeAxis.ShowTitle = true;
    pen.Name = "Pen1";
    pen.Stroke = new SolidColorBrush(Colors.Blue);

    pen.DataSource = "hh:\\Configuration\\Signals:Sine";
    pen.ConnectionParameters = "version=2;usagetype=2;aggregatetype=";

    var control : Ico.Twx.TwxViewControl = ThisDocument.GetElementByName("TWX");
    var series : Ico.Twx.TwxSeries = new Ico.Twx.TwxSeries();
    control.SelectedView.Series.Add(series);

    series.Pens.Add(pen);
}
```

Edit Pen Script

First we need to get a reference to our TrendWorX64 Viewer and the concerned pen.

```
var control : Ico.Twx.TwxViewControl = ThisDocument.GetElementByName("TWX");
var pen : Ico.Twx.TwxChartPen
pen = control.FindPen("Pen1");
```

Next we may modify the properties such as color or stroke thickness in this example.

```
pen.Stroke = new SolidColorBrush(Colors.Red);
pen.StrokeThickness = 5;
```

Export Pen Samples

First we need to get a reference to our TrendWorX64 Viewer and the concerned pen.

```
var control : Ico.Twx.TwxViewControl = ThisDocument.GetElementByName("TWX");
var pen : Ico.Twx.TwxChartPen = control.FindPen("Pen1");
```

Next we can access the data samples.

```
var data = pen.GetDataInWindow();
```

Then we can export all samples to a text file. Make sure the path exists.

```
var sb : System.Text.StringBuilder = new System.Text.StringBuilder();
sb.Append("Timestamp, Value\n");
if (data != null)
{
    for (var i : int; i < data.Count; ++i)
    {
        sb.Append(data[i].Timestamp);
```

```
        sb.Append(", ");
        sb.Append(data[i].Value);
        sb.Append("\n");
    }
}
System.IO.File.WriteAllText("c:\\Test\\Export.csv", sb.ToString());
```

Delete Pen Script

First we need to get a reference to our TrendWorX64 Viewer and the concerned pen.

```
var control : Ico.Twx.TwxViewControl = ThisDocument.GetElementByName("TWX");
var pen : Ico.Twx.TwxChartPen
pen = control.FindPen("Pen1");
```

When removing pen we also need to get reference of the series where the plot is located.

```
var series : Ico.Twx.TwxSeries;
series = control.FindSeries("Plot1");
```

Then we can delete our pen.

```
series.Pens.Remove(pen);
```

Toggle Legend Script

Get reference to your control and chart.

```
var control : Ico.Twx.TwxViewControl = ThisDocument.GetElementByName("TWX");
var chart : Ico.Twx.TwxChartComponent
chart = control.FindChartComponent("Chart1");
```

Toggle the legend visibility.

```
chart.ShowLegend = !chart.ShowLegend;
```