

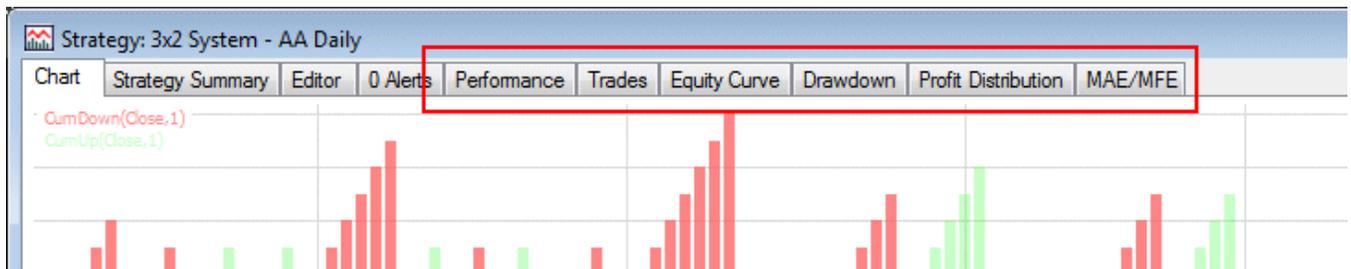
Creating Performance Visualizers in Wealth-Lab Pro®

Introduction

This article describes how you can program your own Performance Visualizer in any .NET language and development platform. Performance Visualizers (PV's) are .NET classes that descend from the standard Windows Forms **UserControl** class, and implement the **IPerformanceVisualizer** interface supplied in the WealthLab assembly.

"Performance Visualizers" appear in Wealth-Lab Pro® as tabs in the Strategy window. Each Performance Visualizer portrays the trading strategy's performance in a unique way. The following Performance Visualizers ship with Wealth-Lab Pro:

- Performance
- Trades
- Equity Curve
- Drawdown
- Profit Distribution
- by Period (Portfolio Simulation backtests only)
- by Symbol (multi-symbol backtests only)
- MAE/MFE



Building a Performance Visualizer

You can use any .NET 2.0 development platform and any .NET language to develop a new PV. Custom PV's should be created in their own .NET class library assembly (DLL). When the assembly is placed in the Wealth-Lab Pro folder, Wealth-Lab Pro will discover the PV's the next time it is launched. You can then make the new PV's available by "turning them on" in the WL Pro Preferences.

To build a Performance Visualizer, perform the following steps:

- Create a Class Library project in Visual Studio (or some other .NET development platform).
- Add a reference to the **WealthLab.dll** assembly in your project's References section. This assembly contains classes in the WealthLab namespace.
- Create a new class that derived from **System.Windows.Forms.UserControl**. This provides the user interface for your PV, and you can place other Windows Forms controls onto this surface as needed.
- Implement the **IPerformanceVisualizer** interface (described below). This interface contains methods that WL Pro will call to feed information to your PV, which can then compute and display its results on the UserControl.

To test your Performance Visualizer, do the following:

- Drop your **Performance Visualizer Assembly** (created above) into the Wealth-Lab Pro installation folder.
- Execute Wealth-Lab Pro.
- Open the Preferences dialog. Your PV(s) should be visible in the list of available PVs.
- Check the boxes next to your PV(s) to turn them on.
- Open a Strategy Window and click a symbol. Your PV(s) should now be generated and appear as tabs in the Strategy window along with all of the standard PV's.

IPerformanceVisualizer Interface

Your custom PV will implement the IPerformanceVisualizer interface with the methods and properties below:

void CreateVisualization([SystemPerformance](#) performance, [IVisualizerHost](#) visHost)

Wealth-Lab Pro calls this method whenever the PV needs to regenerate and display its results after a new backtest. The **SystemPerformance** object passed here contains the complete data from the backtest, including a list of Positions (trades), and an Equity Curve. See the [SystemPerformance Reference](#) for details on this class. The **IVisualizerHost** interface passed here contains an instance of this interface that you can save and call later to interact with WL Pro from within your PV. The IVisualizerHost interface is described below.

string TabText

For this property you should return the value of the text that should appear in the PV's tab in the Strategy Window.

void EnableControls(**bool** enable)

Wealth-Lab Pro will call this method when user interface controls in your PV should be enabled or disabled.

[VisualizerAppliesTo](#) AppliesTo

Override this property to describe when your PV should be available in Wealth-Lab Pro, depending on position sizing settings and whether the backtest was run on a single symbol or multiple symbols. The following values are available here, and can be AND'ed together as appropriate:

- SingleSymbol
- MultiSymbol
- RawProfit (RawProfit back-testing mode)
- PortfolioSim (Portfolio Simulation back-testing mode)
- All (this simply AND's all of the above values together)

string Description

Override this property to return a description of the PV. This description is displayed when the user clicks the PV in the Preferences dialog.

bool SupportClipboardCopy

Override this property to indicate whether the PV supports copying to the clipboard.

void CopyToClipboard()

If you indicated that your PV supports clipboard copy, Wealth-Lab Pro will call this method when the user selects Copy to Clipboard and your PV has the focus. Implement this method by copying whatever relevant data your PV contains to the clipboard.

bool SupportsPrint

Override this property to indicate whether the PV supports printing.

void Print()

If you indicated that your PV supports printing, WL Pro will call this method when the user selects Print and your PV has the focus. Implement this method by printing the PV's contents.

IVisualizerHost Interface

During the call to **CreateVisualization**, described above, your PV is passed an instance of this IVisualizerHost interface. You can save this instance to a local variable and call its methods in response to user actions within your PV's user interface. The following methods are available:

void SelectSymbol(**string** symbol)

You can call this method to cause WL Pro to "select" and chart a specific symbol that was part of a multi-symbol backtest. Call this when, for example, the user double clicks on a symbol in a list of symbols that were included in the backtest.

void SelectPosition(**Position** position)

You can call this method to cause WL Pro to center the chart on a particular Position (trade).

void CopyListViewToClipboard(**ListView** lv)

This is a support method that you can use in your implementation of CopyToClipboard above. It copies the contents of a standard Windows.System.Forms.ListView to the clipboard.