

Pragmatix Trade Router

Version 1.7.7 Release Notes

27 May 2009

Introduction

This document describes the changes and improvements in the Pragmatix Trade Router software with respect to the previous version, 1.7.6.

The Trade Router version number is shown in the application's startup screen. Alternatively, you can see the version number in the Help/About window.

New Features

Extensive Exchange Simulation

Paper trading has now been incorporated in the Trade Router. Any connection offering a price stream can be used for this kind of trading; for example, an Interactive Brokers connection or an ESignal data connection.

Engines created on a data-only connection (like ESignal) are usually of the 'Price Data Engine' type. As soon as Exchange Simulation is enabled for that connection, the engines defined appear as regular Trade Engines on which paper trading can be done.

Bid and Ask spread

In order to simulate trading as closely as possible, bid and ask prices are used in the order matching process. In case a data connection doesn't provide those prices, bid and ask are calculated from the last trading price by adding/subtracting a predefined spread value from the last trading price. The spread distance is defined in ptr.exe.config, for example:

```
<add key="SimulatedBidSpreadFractions" value="1" />  
<add key="SimulatedAskSpreadFractions" value="1" />
```

The size is defined in *fractions*, which is the minimal price movement of the underlying instrument. For example, with a "1" value and a minimal price movement of 0.05, the bid/ask prices will be calculated at 1*0.05 above and below the last traded price, rendering a total bid/ask spread of 0.10.

If a value is missing in ptr.exe.config, a spread of 0 will be used.

Bid and Ask size

Besides bid and ask prices, also their *sizes* are used in fill calculations. If bid and ask size are unavailable, they are considered to be infinite.

Order confirmation and fill delay

In order to mimic an exchange as closely as possible, order create/modify/cancel requests will be confirmed after a predefined minimum delay. Also fills will suffer from a predefined minimum delay.

The delays can be specified in ptr.exe.config:

```
<add key="SimulatedConfirmDelay" value="250" />
<add key="SimulatedFillDelay" value="850" />
```

These values are expressed in milliseconds.

If either of these settings is missing, default values of 150 and 800 milliseconds will be used, respectively.

Order types and processing

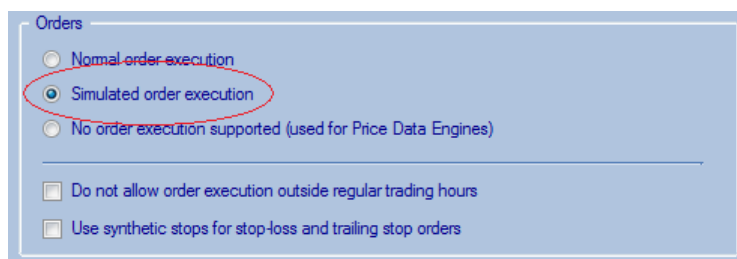
Order types supported are market, limit and stop (market if touched) orders.

These are the basic rules for fills:

- Market orders are filled instantly, in one single fill (that is, after the predefined fill delay).
A buy order will have the current ask price as its fill price, except when the order size exceeds the current ask size. In that case, the remainder of the order is filled at a price one *fraction*¹ higher than the current ask price, and the average fill price is adjusted accordingly.
A sell order will have the current bid price as its fill price, except when the order size exceeds the current bid size. In that case, the remainder of the order is filled at a price one *fraction* lower than the current bid price, and the average fill price is adjusted accordingly.
- Limit orders are filled whenever the bid/ask price reaches the limit price. If the order size is larger than the bid/ask size, the order is only partially filled; the remainder will be filled as soon as a new bid/ask comes in that satisfies the limit price (again, limited by the bid/ask size at that moment).
- Stop orders work the same as market orders, but the fill will only occur when the last traded price touches or exceeds the stop price.

Paper trading via an Interactive Brokers (via TWS) connection

Use the 'Edit Interactive Brokers connection' window to enable simulated order execution.



Note that this option replaces an earlier version of Interactive Brokers paper trading, where only market orders were simulated².

¹ A *fraction* is one 'step' in minimal price movement of the underlying instrument.

² In case you wish to edit connectIB.XX.config manually: The setting 'BlockOrders' has become obsolete and may be removed.

Paper trading via other connections

Edit the connectXX.YY.config file, creating/setting the following entry:

```
<add key="OrderExecution" value="simulated" />
```

OrderExecution is a new, generic entry in any connectXX.YY.config file. In fact, four possible values can be used:

- normal: orders are passed on to the broker;
- simulated: orders processing is simulated;
- unsupported: this connection only supports a data stream, engines created for this connection are Price Data Engines;
- forbidden: any order submission will lead to an error message.

If the OrderExecution entry is missing, the default value of normal will be used.

Paper trading: Limitations

Paper trading can only be done on connections that receive data 'natively'. Hence, if you use Trade Engines (on a broker connection) combined with Price Data Engines (on a data-only connection), you cannot use the broker connection's Trade Engines for simulated trading. However, when you set the OrderExecution attribute to simulated for the data-only connection, its Price Data Engines will appear as Trade Engines, ready to be paper-traded.

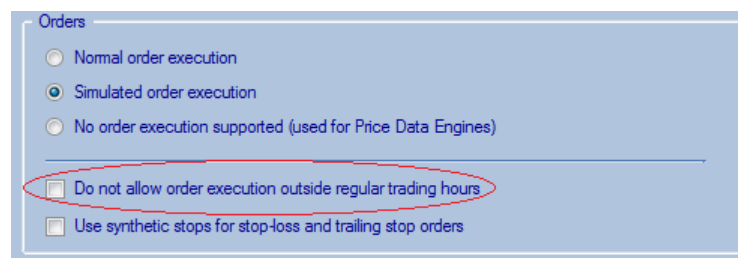
Interactive Brokers: Improved RTH-handling

Exchanges normally only allow trading to occur during Regular Trading Hours (RTH). Some exchanges, however, can execute orders outside RTH. If you want to prevent your orders from executing outside RTH, you can indicate this in your trading.

This feature already existed in the past, but has now been implemented more consistently.

Trader Workstation-based connections

Use the 'Edit Interactive Brokers connection' window to prevent orders from being executed outside RTH:



Check the box indicated to prevent trading outside RTH.

FIX-based connections

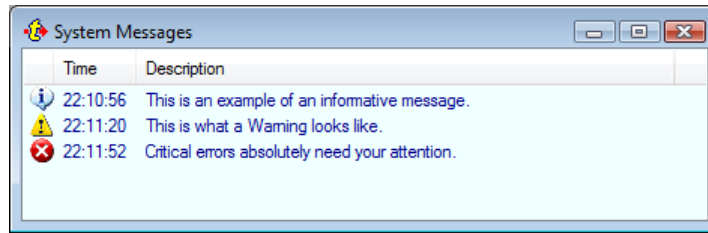
Edit the connectFIX.*.config file and edit/create the following setting:

```
<!-- Force order execution to occur only within Regular Trading Hours?, default="no" -->  
<add key="RegularTradingHoursOnly" value="yes" />
```

If you set the value to yes, your orders will be submitted with the remark that execution is allowed only within RTH.

'System Messages' window improved

The System Messages window used to have two buttons in the lower part of the window, 'Clear' and 'Close'. These buttons have been removed in order to maximise the space available for the messages in the window. In order to clear the messages, right-click in the window and select 'Clear' from the context menu that appears.



Note that the icons accompanying the messages have received a more appealing visual style.

Bug fixes

Calculation of open Profit and Loss

Until now, open P&L was rounded internally to 2 decimals. When trading instruments with prices of 3 or more decimal places, this would lead to unnecessary loss of precision. This has now been corrected; no more unnecessary rounding takes place.

Last Price	Open P/L
105,519	-0,021

The incorrectly rounded price was also passed on onto the Front End applications. Also here, rounding is now correct.