

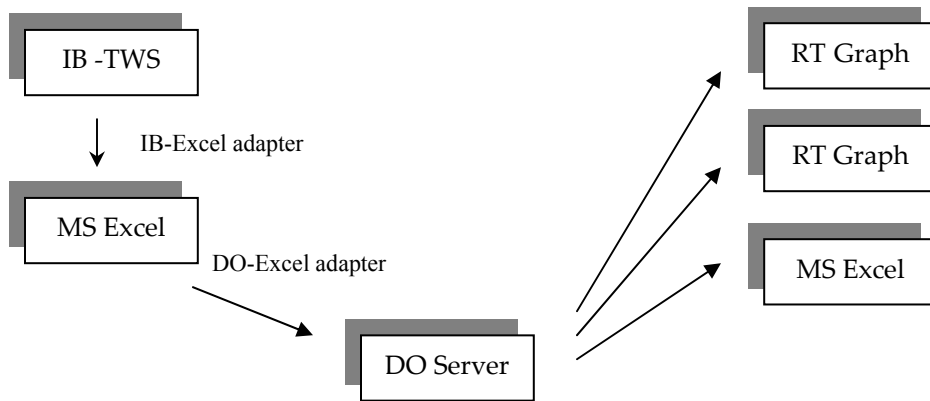


Real-time Graph

Microsoft Excel has numerous charting options, but all the options are only for “Static” data. If data keep changing, the resulting graph will not be stable. CyberXpert’s applications remove this limitation by providing an infrastructure for real-time graphing. If you are getting live feed from IB-TWS into a MS-Excel workbook using our IB-Excel adapter, in one more step, you can plot your important numbers (P&L, Delta, Spread, VaR, etc.,) in a graph.

Overview

Real-time graph application uses CyberXpert’s modular components. These components help you to scale your applications and reduce overhead on a single component.



DO Server (stands for DataOutreach Server) is a channel between publisher and subscriber. DOServer can be installed in a network server or in your personal computer.

DO-Excel adapter interfaces MS Excel and DOServer, using publish/subscribe technology. You can publish data from MS Excel, as well as receive data into MS Excel. (In the above diagram, you can see MS Excel on both sides of DOServer.)

RT Graph (stands for Real-time Graph) receives updates from DO Server and plots them in real-time. Here is a snap shot of daily P&L of a portfolio on 27th April 05, between 10:30 – 11:30AM.





Real-time Graph



Installation

The distribution package is a self-extraction binary file, can be run directly from your browser. Please note down your target directory. Henceforth, this directory is called “<Installed-directory>”.

At the end of installation, you will be prompted for installing MS Excel Add-In. Use automated installation. If your macro security level is set to “medium”, you will see a warning message on macro executions; please enable macro execution. If your security level is high, you have to install it manually; add “<Installed-directory>/DataOutreach_Client/DataOutreach.xla” to your MS Excel Add-In.

After successful installation, you will find an entry “Real-time Graph” in your “Programs” menu, having menu item for DataOutreach Server (icon: ), and Real-time Graph (icon: ).


Real-time graph uses java virtual machine (JVM). Please click on Real-time Graph, and within few seconds (allow 5 seconds) a screen with grids should appear. If you don’t see any window, please contact our support line.

Execution

Data is published from MSEXcel, and are subscribed by Real-time Graph applications.



1. Start DOServer

DO Server acts as a messenger between MS Excel and Real-time Graph applications. Only one instance of DO Server is required. When DO Server is running, either its window will be up or an icon  will displayed in the task bar or tray. If DO Server is not running, please start it (Start -> Programs -> Real-time Graph -> DO Server).

2. Publish Data from MS Excel workbook

Data is published from MS Excel, using cell formula “= do_publish (Topic, Item, Value)”. Consider “Topic” as a subject topic, e.g., Delta, Spread, Profit/Loss, Sector name. Item is some thing within the purview of the topic, e.g., instrument name(s) INTC, FH, FH/FG. There is no restriction on topic and item names. Please avoid using “~”, “|” and “=” characters.

Example: Pairs trading is a strategy where you consider two companies in the same line of business, long one and short the other. If you want to see all pair’s spread displayed in the graph, just define a topic as “Pair” and instruments used in the pair as “INTC/AMD”, “LEN/KBH” and “YHOO/GOOG” or two future contracts “ZF/ZN”.




Real-time Graph

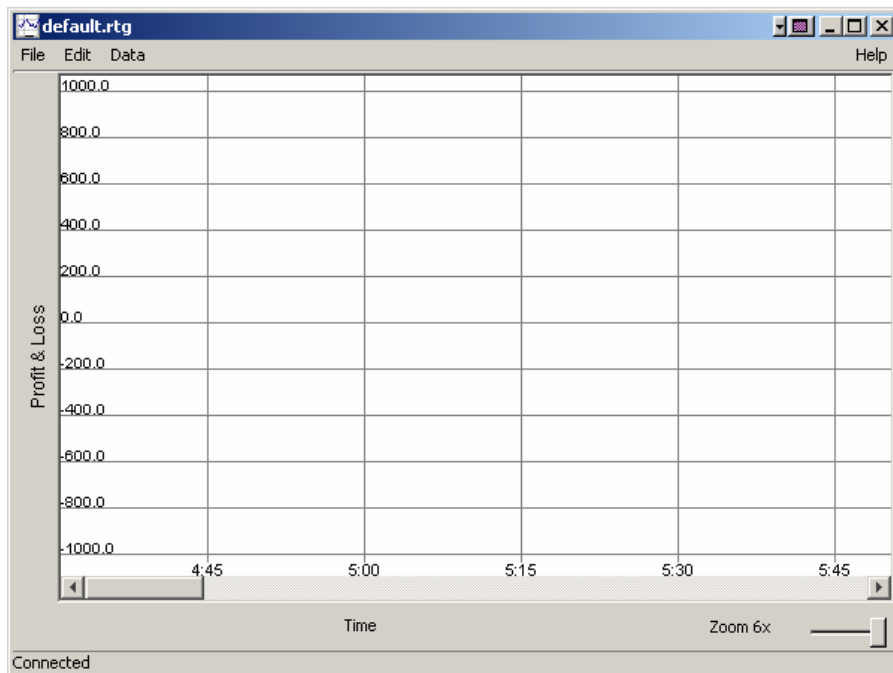
| | A | B | C | D | E |
|---|------|-----------------|------------------------|---------------|-------------------------------------|
| 1 | | <i>Position</i> | <i>Last</i> | <i>Spread</i> | <u><i>Send to RTGraph</i></u> |
| 2 | INTC | 1000 | =IB_subscribe(A2,C\$1) | | |
| 3 | AMD | -800 | =IB_subscribe(A3,C\$1) | =C3*B3+C2*B2 | =do_publish ("Pair", A2&"/"&A3, D3) |
| 4 | LEN | -1,200 | =IB_subscribe(A4,C\$1) | | |
| 5 | KBH | 400 | =IB_subscribe(A5,C\$1) | =C5*B5+C4*B4 | =do_publish ("Pair", A4&"/"&A5, D5) |
| 6 | YHOO | 12300 | =IB_subscribe(A6,C\$1) | | |
| 7 | GOOG | 3400 | =IB_subscribe(A7,C\$1) | =C7*B7+C6*B6 | =do_publish ("Pair", A6&"/"&A7, D7) |
| 8 | | | | | |

In the above table, we are publishing a computed value from MS Excel workbook to all subscribers. DataOutreach supports publications from VBA and stand-alone programs, but it is beyond our intended scope.

The function "do_publish(...)" returns 0 on success. If you see any number other than 0, it indicates an error communicating with DO Server. Restarting DO Server (step 1) may solve your problem.

3. Start Real-time Graph

Real-time Graph receives updates being published from MS Excel workbook. Start Real-time Graph by selecting "Start -> Programs -> Real-time Graph -> Real-time Graph" (icon: ). You will see a screen with grids as shown below. It has four menu items: File, Edit, Data and Help.





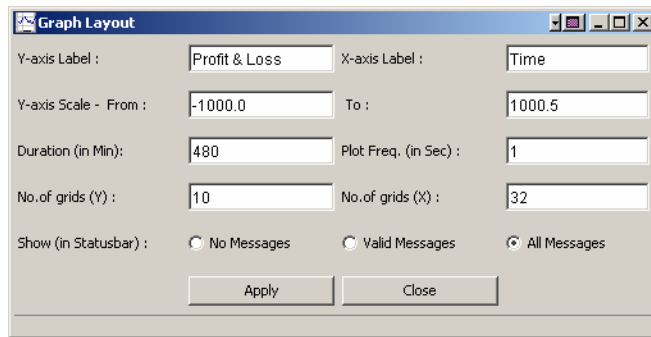
Real-time Graph

File Menu: A common menu used for storing and retrieving graph configurations.

- File -> New: Clears the working version and restarts with the default values.
- File -> Open: Opens a saved configuration.
- File -> Save: Saves the current configuration.
- File-> Save As: Saves the current configuration in a different file.
- File-> Exit: Quits the running instance.

Edit Menu: It has “Layout”, “Subscription”, “Line Color” and “Server Configuration” menu items.

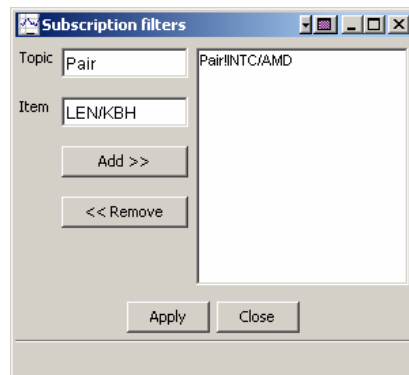
Layout: In layout window, you can change X-axis & Y-axis names, Y axis value range, X axis range (time range), update frequency and the number of grids to be displayed.



When you start an instance, the X-axis time starts from “Now” and goes up to “Now + Duration”. The duration is defaults to 480 min (8 hours). So, if you start at 9:30 AM, you can monitor till 5:30 PM. The plot frequency tells the application to update the screen every “x” seconds. A value less than one second may degrade your system performance. The default 1 sec is a reasonable value. The grids help you visually interpret the range. Too many grids may clutter your screen and too few may not give you a good traction.

You can monitor the messages, and other system error messages in the application’s task bar. Enable it only when you don’t see any update on the screen.

Subscriptions Menu: A subscription entry needs to be added to Real-time graph for receiving published values and plotting them on the screen. An entry can be made as follows:



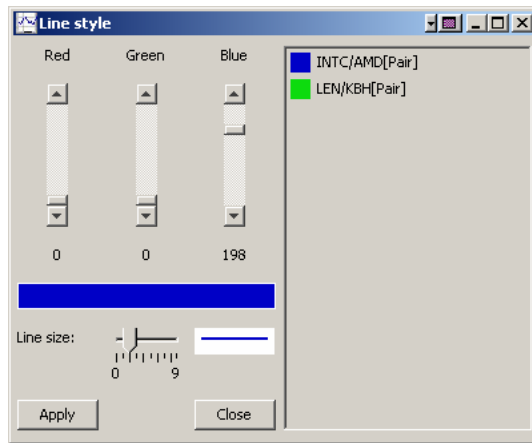


Real-time Graph

You can add individual subscriptions as “Topic: Pair” and “Item: INTC/AMD” or use wildcard in the place of an item as “Topic: Pair” and “Item: *”. If you use wildcard subscription, all published “Pair”s, will be plotted on the screen.

Click “Apply” and look for updates on the screen. A random color will be assigned to each subscription. You can change it by selecting “Line Color” menu.

Line Color: All new subscription requests will get a random color. You can change the colors by selecting the old color and manipulate the color controls.



Server Configuration: Please leave the settings as it is. It is used only when you are running a centralized DO Server, and publishing values from a stand-alone program.

Data menu is for screen display data operations.

Save updates, saves all updates you see on the screen to a file. A new file with suffix “.dat” will be created along with the configuration file.

Load updates, loads the saved updates.

Clear & Restart clears the current chart and restarts plotting. Start time is set to current time.

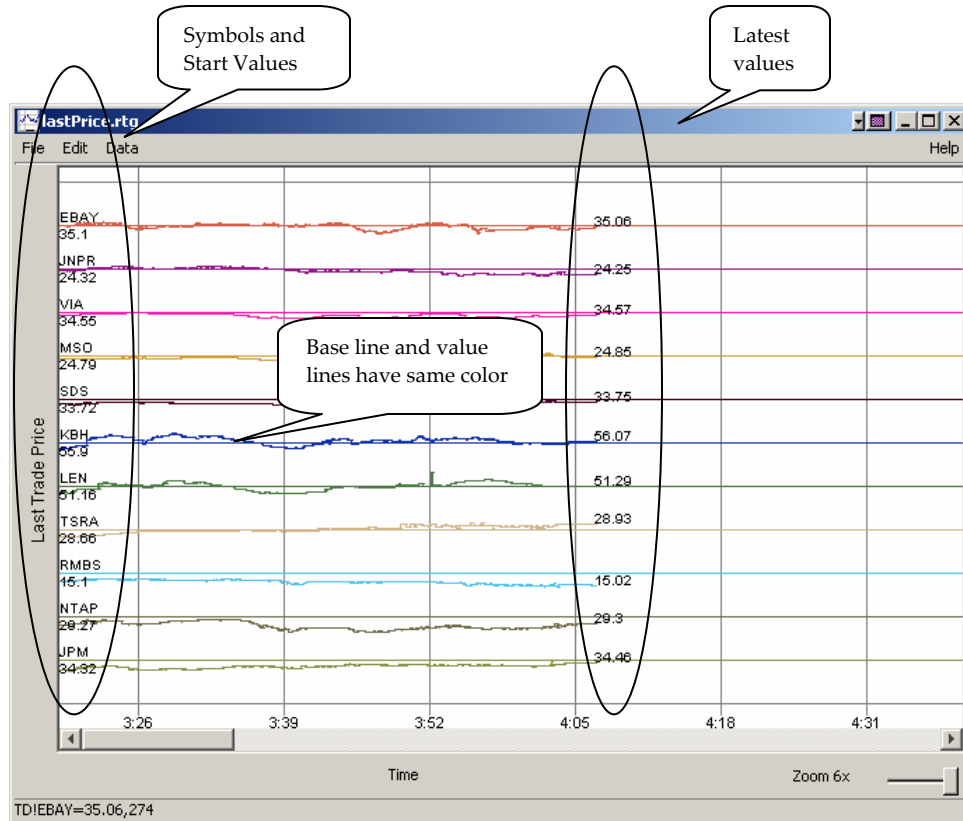
Save graph on exit, option enables you to save all updates and configuration when you exit.

Band view, helps you to view set of instruments next to each other, irrespective of their start value. Each row is dedicated for an instrument, and you can see the instrument name and it’s start value at the left side margin.

Real-time Graph

Display values, places the latest value near the line head. You don't have to go back and see values in your Excel workbook.

Screen snapshot when "Band view" & "Display values" are enabled.



Uninstall

- Select "Start -> Programs -> Real-time Graph -> Real-time Graph Uninstaller". This will uninstall Realtime Graph.
- Disable "DOClient" add-in in MS Excel. The entry will be removed by excel add-in Manager.

Thank you for using CyberXpert's solution. Feel free to email support@cyberxpert.com for any support issues & enhancements.

Wish you a Good Fortune.