

## IMM spreads for Integrated Market Makers (IMM) Group

The prominent tasks of IMM spreads are Receiving market data from a source, transforming it into the required format and Developing an application, which helps the client to view, analyze and operate on the data.

- **Receiving market data from a source, transforming it into the required format:** Special databases are required to store the large number of data generated in different exchanges across the world.

So our data source must be fast and informative and we rely on Spryware's Market Information Server (MIS) to do the work for us. It is the latest and fastest in the low-latency market place.

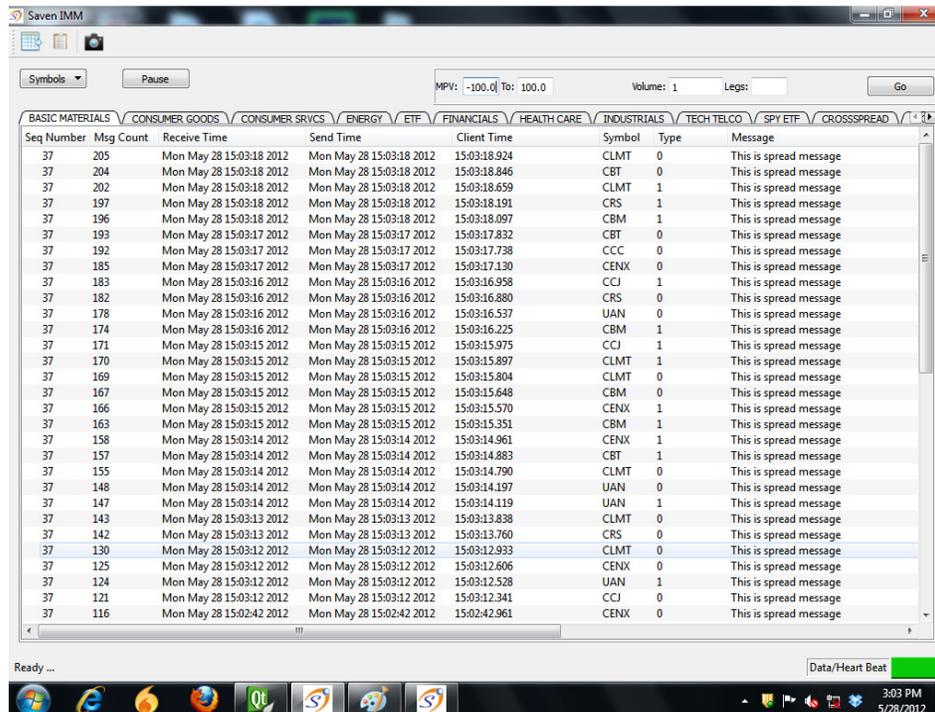
It is a direct market access appliance that takes in direct exchange data feeds, normalizes the data into a standardized format, databases the information, and then distributes the data to clients. After getting connected to the Spryware's server we acquire the data in a standard format. We have to change it into the required format by using Spryware's API.

- **Analyze and operate the data:** The acquired data though in the required format is too large and not classified. So build an application which enables the client to see and analyze only that data which the client wants to. It should provide the tools which helps the client in making informative decisions. It should contain all the features required to the client.

### Technology:

The languages used in the development of IMM spreads application are

- Qt 4.8.0, Qt Creator 2.3 & Qt Creator 2.4 (Qt is a cross-platform application development framework).
- The applications developed using Qt framework can be deployed across Windows, Mac, Linux, Symbian phones and Nokia N9 Smartphone.
- C++



Seq Number	Msg Count	Receive Time	Send Time	Client Time	Symbol	Type	Message
37	205	Mon May 28 15:03:18 2012	Mon May 28 15:03:18 2012	15:03:18.924	CLMT	0	This is spread message
37	204	Mon May 28 15:03:18 2012	Mon May 28 15:03:18 2012	15:03:18.846	CBT	0	This is spread message
37	202	Mon May 28 15:03:18 2012	Mon May 28 15:03:18 2012	15:03:18.659	CLMT	1	This is spread message
37	197	Mon May 28 15:03:18 2012	Mon May 28 15:03:18 2012	15:03:18.191	CRS	1	This is spread message
37	196	Mon May 28 15:03:18 2012	Mon May 28 15:03:18 2012	15:03:18.097	CBM	1	This is spread message
37	193	Mon May 28 15:03:17 2012	Mon May 28 15:03:17 2012	15:03:17.832	CBT	0	This is spread message
37	192	Mon May 28 15:03:17 2012	Mon May 28 15:03:17 2012	15:03:17.738	CCC	0	This is spread message
37	185	Mon May 28 15:03:17 2012	Mon May 28 15:03:17 2012	15:03:17.130	CENX	0	This is spread message
37	183	Mon May 28 15:03:16 2012	Mon May 28 15:03:16 2012	15:03:16.958	CCJ	1	This is spread message
37	182	Mon May 28 15:03:16 2012	Mon May 28 15:03:16 2012	15:03:16.880	CRS	0	This is spread message
37	178	Mon May 28 15:03:16 2012	Mon May 28 15:03:16 2012	15:03:16.537	UAN	0	This is spread message
37	174	Mon May 28 15:03:16 2012	Mon May 28 15:03:16 2012	15:03:16.225	CBM	1	This is spread message
37	171	Mon May 28 15:03:15 2012	Mon May 28 15:03:15 2012	15:03:15.975	CCJ	1	This is spread message
37	170	Mon May 28 15:03:15 2012	Mon May 28 15:03:15 2012	15:03:15.897	CLMT	1	This is spread message
37	169	Mon May 28 15:03:15 2012	Mon May 28 15:03:15 2012	15:03:15.804	CLMT	0	This is spread message
37	167	Mon May 28 15:03:15 2012	Mon May 28 15:03:15 2012	15:03:15.648	CBM	0	This is spread message
37	166	Mon May 28 15:03:15 2012	Mon May 28 15:03:15 2012	15:03:15.570	CENX	1	This is spread message
37	163	Mon May 28 15:03:15 2012	Mon May 28 15:03:15 2012	15:03:15.351	CBM	1	This is spread message
37	158	Mon May 28 15:03:14 2012	Mon May 28 15:03:14 2012	15:03:14.961	CENX	1	This is spread message
37	157	Mon May 28 15:03:14 2012	Mon May 28 15:03:14 2012	15:03:14.883	CBT	1	This is spread message
37	155	Mon May 28 15:03:14 2012	Mon May 28 15:03:14 2012	15:03:14.700	CLMT	0	This is spread message
37	148	Mon May 28 15:03:14 2012	Mon May 28 15:03:14 2012	15:03:14.197	UAN	0	This is spread message
37	147	Mon May 28 15:03:14 2012	Mon May 28 15:03:14 2012	15:03:14.119	UAN	1	This is spread message
37	143	Mon May 28 15:03:13 2012	Mon May 28 15:03:13 2012	15:03:13.838	CLMT	0	This is spread message
37	142	Mon May 28 15:03:13 2012	Mon May 28 15:03:13 2012	15:03:13.760	CRS	0	This is spread message
37	130	Mon May 28 15:03:12 2012	Mon May 28 15:03:12 2012	15:03:12.933	CLMT	0	This is spread message
37	125	Mon May 28 15:03:12 2012	Mon May 28 15:03:12 2012	15:03:12.606	CENX	0	This is spread message
37	124	Mon May 28 15:03:12 2012	Mon May 28 15:03:12 2012	15:03:12.528	UAN	1	This is spread message
37	121	Mon May 28 15:03:12 2012	Mon May 28 15:03:12 2012	15:03:12.341	CCJ	0	This is spread message
37	116	Mon May 28 15:02:42 2012	Mon May 28 15:02:42 2012	15:02:42.961	CENX	0	This is spread message

### IMMSpreads application displaying data generated by the Simulator

#### Spreads

One of the most important data type among the data acquired is the spread type. Capture ISE spread message and its spread type. Spread is an options position established by purchasing one option and selling another option of the same class but of a different series.

#### Displaying the data in GUI

To enhance the speed of the application we use threading for displaying the data. By concurrently running the process on different threads we can simultaneously display data in different tabs of the application at greater speeds.

#### IMM Spreads Features

- Displays the information about each spread in perfectly aligned columns such as Message Count, Spread Message, Bid/Ask prices, Spread type etc...
- The spreads can be sorted on the basis of data displayed in each column.

- Spreads corresponding to symbols of a sector are displayed in a single tab.
- Pause and resume the data flow whenever required.
- After pausing the flow of data, import the displayed data to an excel file for further analysis.
- The data can also be copied as a text file to the clip board.

**Data Simulator**

- Sends Random data to the server and displays this data in a list.
- Data can be loaded from a valid text file and sent to the server.
- The flow of data can be paused or resumed.
- It shows the number of messages sent to the server.