Morningstar Markets℠ Commodities Edition

- Overview
- Requirements
- Logging In
- Web-Desktop
- Technical Indicators
- Data
- Quick Start Guide

Overview

Morningstar Markets Commodities Edition is a browser based charting and market data tool. Bringing together historical data with real-time data feeds, Morningstar Markets provides a comprehensive view of the market data. The Chart, Quote, and Table, provide various ways to see the data along-side News, Economic Calendar Events, and Weather Info. Morningstar Markets is a web and cloud-based product leveraging current technologies such as HTM5 to enrich the user-experience.

PRINT PDF

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- Overview
- Requirements
- Logging In
- Web-Desktop
- Technical Indicators
- Data
- Quick Start Guide

Requirements

- Supported Browser- The following browsers are officially supported at this time:
  - Google Chrome / Safari (Webkit)
  - Firefox 3.6 and higher
  - Internet Explorer 9 and higher

- Valid Morningstar Commodity issued log-in

PRINT PDF

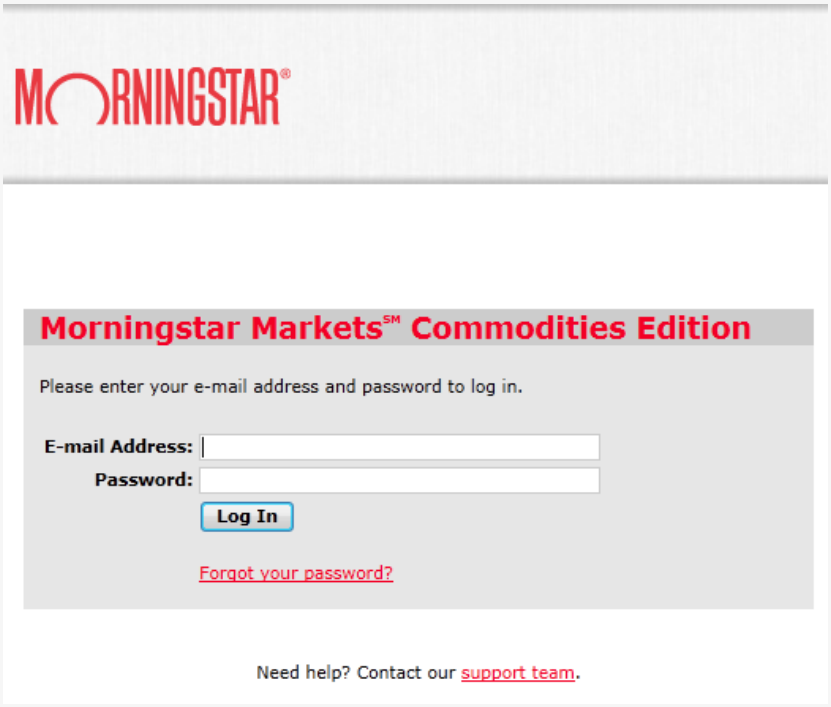
- Overview
- Requirements
- Logging In
- Web-Desktop
- Technical Indicators
- Data
- Quick Start Guide

Logging In

Users can access Morningstar Markets Commodities Edition by proceeding to the following link:

https://markets.morningstarcommodity.com

You will be prompted for a Morningstar Commodity Data issued log-in and password.

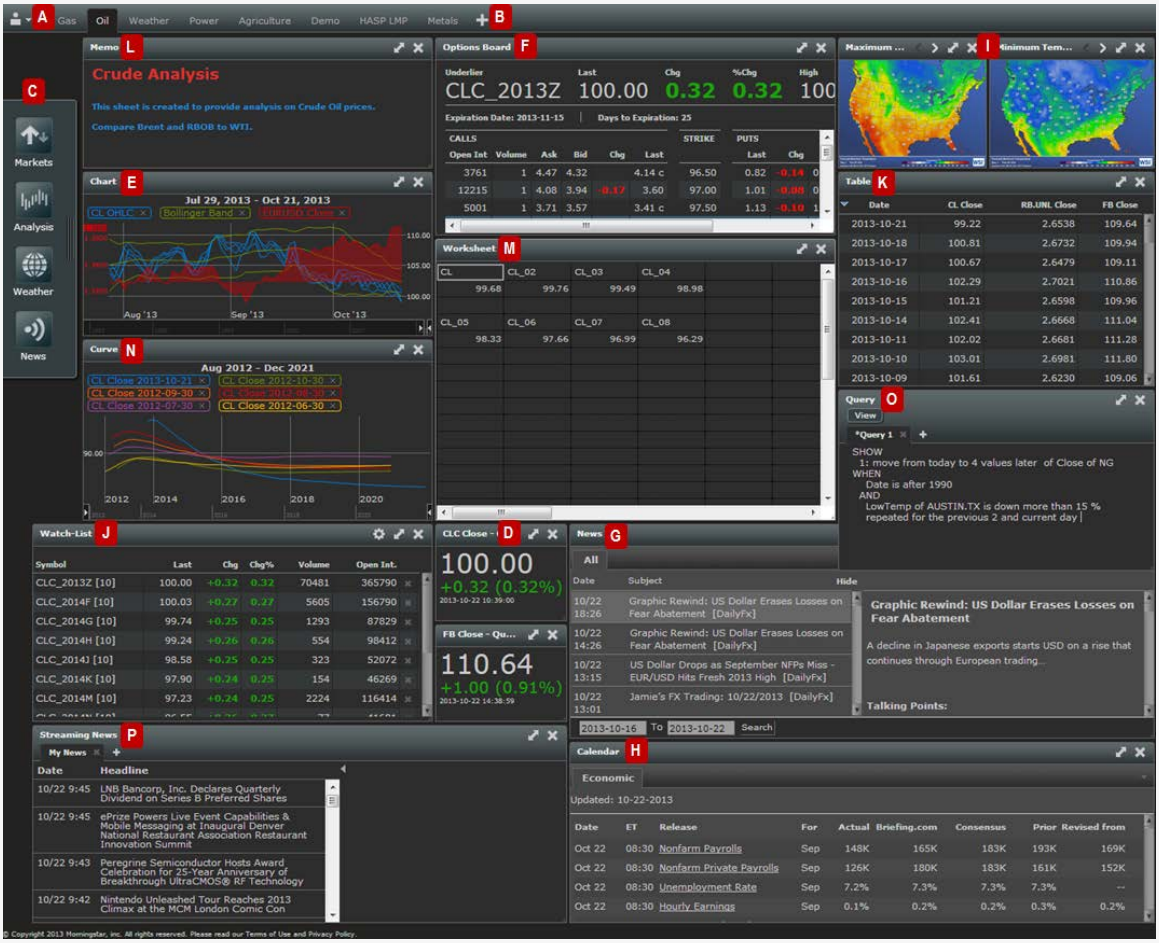


You should have received your log-in (email address) and password via email. If you have not received your log-in details, please contact commoditydata-support@morningstar.com.

Morningstar Markets℠ Commodities Edition

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - Interactive Search
- Technical Indicators
- Data
- Quick Start Guide

Web-Desktop

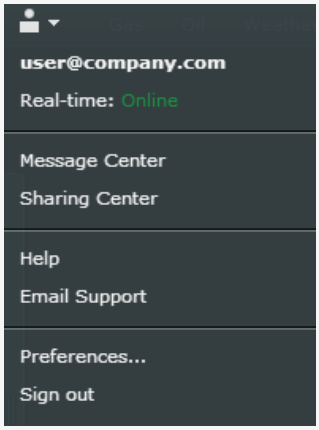


PRINT PDF

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - Interactive Search
- Technical Indicators
- Data
- Quick Start Guide

PRINT PDF

A. User Menu



User Name

user name that is currently logged in. example: user@company

Real Time Feed Status

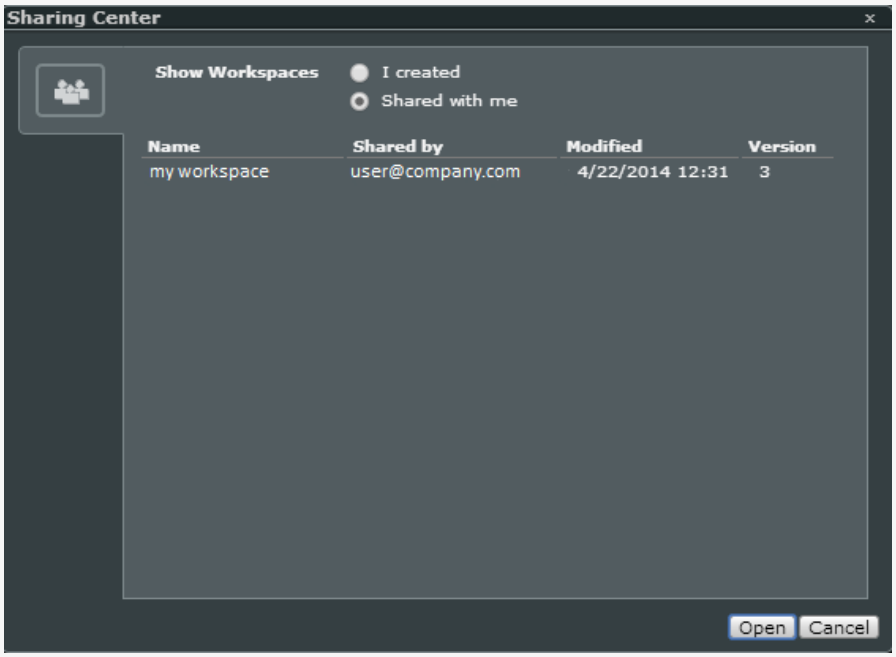
A green 'Online' display will indicate that the web-desktop is connected to the real-time data feed service and is actively able to receive data to subscribed real-time (or delayed) quotes.

Message Center

The message center will show any workspaces that another user has sent with you. Click on the "paper clip" icon to add the workspace to the tabs.

Sharing Center

The Sharing center will show any workspaces that another user has shared with you. The Sharing center will display the workspaces you have created and the ones that have been shared with you. There is also a version number to see how many times the workspace has been updated.



Help

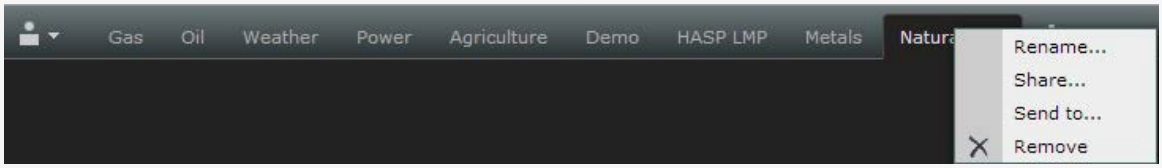
	Help will direct you to related online documentation as well us updates on new features and major bug Fixes **Email Support** Email support directly for any assistance they can provide. **Preferences** Allows a user to select a Light or Dark 'Theme'. **Sign Out Option** Clicking on this option will direct you to an exit page confirming your session has ended. There will be a link to go back to the sign in page. Upon signing in, the Web-Desktop should preserve any windows which open prior to signing out.

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - Interactive Search
- Technical Indicators
- Data
- Quick Start Guide

PRINT PDF

B. Tabs

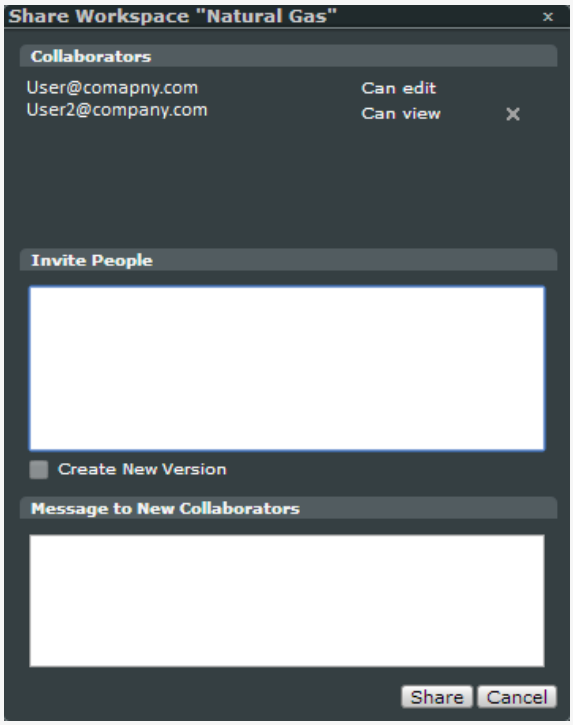
Similar to a web browser, tabs allow a user to create and view multiple layouts without opening a new browser session.



New Tab
A new tab can be easily added by clicking on the '+' icon and entering a workspace name for the tab.

Rename Tab
Right-click and select "Rename...". Rename the tab to the desired workspace name.

Share Tab
Share a workspace by right-clicking and selecting "Share...". Invite users that will recieve updates when you make changes to a workspace. The user will be notified with a "number 1" icon above the workspace name whenever a workspace has been updated.



Send Tab
Send a workspace by right-clicking and selecting "Send to..." then enter the recipients Login ID.

Remove Tab
Remove workspace

Workspace tabs can also be re-arranged is various orders by clicking and dragging them to the specified location.

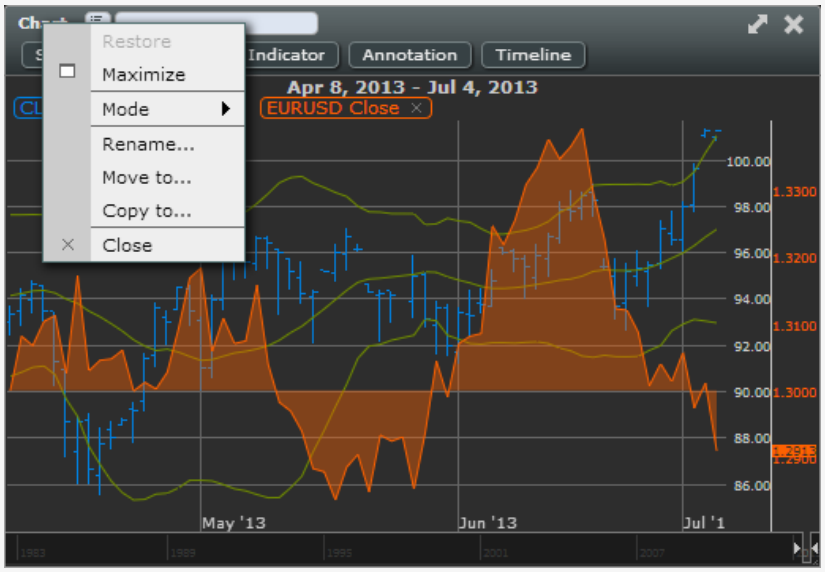
- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
    - ***Markets***
      - Watchlist
      - Options Board
      - Worksheet
      - Quotes
    - ***Analysis***
      - Chart
      - Curve
      - Seasonal
      - Query
      - Javascript Formula
      - R Formula
      - Table
      - Memo
      - Custom Image
    - ***Weather***
      - Weather
    - ***News***
      - Streaming News
      - News
      - Calendar
      - nteractive Search
      - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

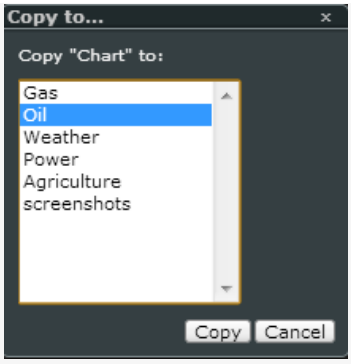
C. Widget Menu

The widget menu consists of a group of widgets that can be added to the workspace window. The widget menu is designed as a toolbar drawer so that it can expand and collapse to offer more space in the workspace environment.

Once widgets are placed and created in the workspace, they can also be moved or copied to other tabs. Right-click on the widget title and select "move to..." or "Copy to...".



Then select which tab the widget should be moved or copied to.


Copy to...
Copy "Chart" to:
Gas
Oil
Weather
Power
Agriculture
screenshots
Copy
Cancel

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
    - nteractive Search
    - cal Indicators
- Data
- Quick Start Guide

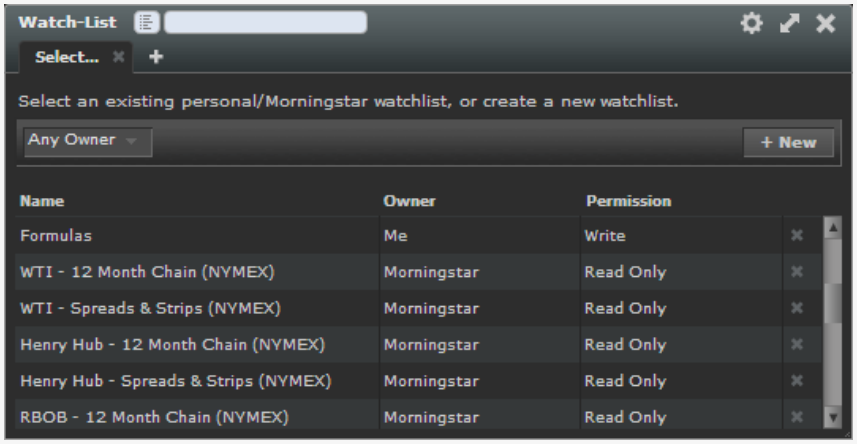
PRINT PDF

J. Watchlist

The Watchlist offers access to market and security analysis in one click. The Watchlist provides different formats and can be configured to monitor securities or portfolios of a user's choice.

View Watchlist
Create Watchlist
Watchlist Headers
Multiple Data Types
Adding Consecutive Contracts
Drag/Drop to Charts
Create Formulas
Create Categories & Comments

- Name - the name of the watchlist
- Owner - the creator of the watchlist
- Permission - ability to Read Only (cannot edit) or Write (edit) the watchlist. A **"Morningstar"** Owner created list can be edited by adding symbols to its Watchlist, but the edit will not be saved once a user logs out and returns. Only edits to a **"Me"** owner watchlist will save.



View Watchlist

Simply click on the name of a watchlist to view the contents

Create New Watchlist

To create a watchlist, click on the "+ New" button and provide a name for the watchlist. This name will appear in the list. In the white symbol field in the top left corner, type in the symbol that is to be added to the list. Use the double arrow to open the "tree view" which gives access to a database of symbols. Select the symbol from the tree view and click "Select" to add the symbol to the watchlist.

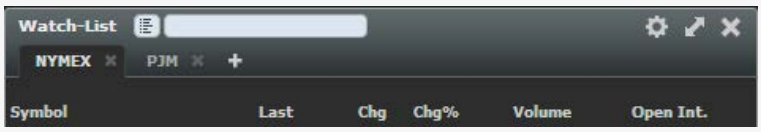
Watchlist Headers

There are 5 header categories for displaying data depending on the type of data selected:

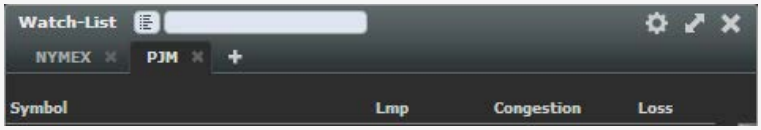
1. Futures
2. Futures B/A
3. Futures H/L
4. Power

5. Formulas

Example of headers for Futures data:



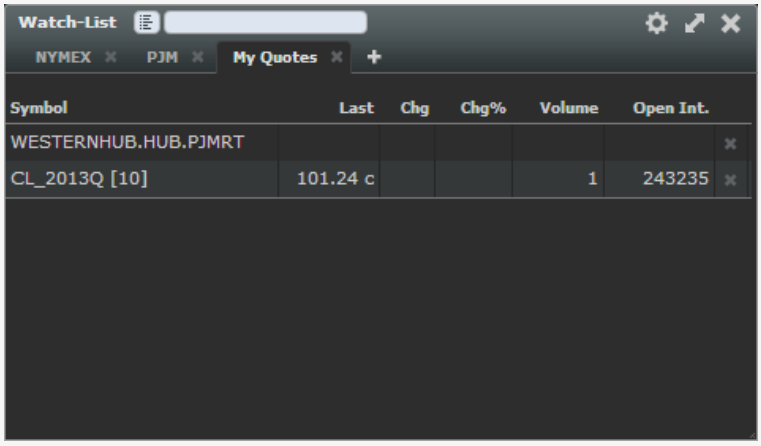
Example of headers for Power data:



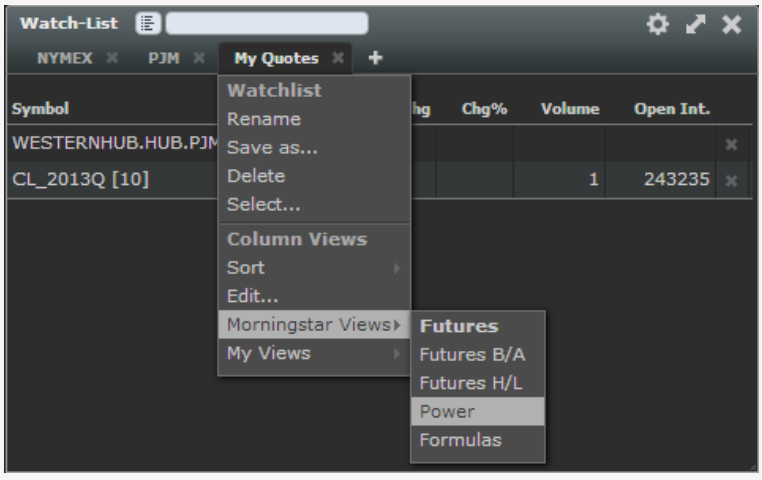
Multiple data types

When having multiple data types in the same watchlist, the application will choose the header of the first data type entered.

For example, in the screenshot below the first symbol entered was "CL" which is a Futures symbol. The last symbol entered is "WESTERNHUB.HUB.PJMRT" which is an Electricity symbol. The 'Futures header' is displayed since a Futures symbol was the first symbol entered. No data will appear for the Electricity symbol.

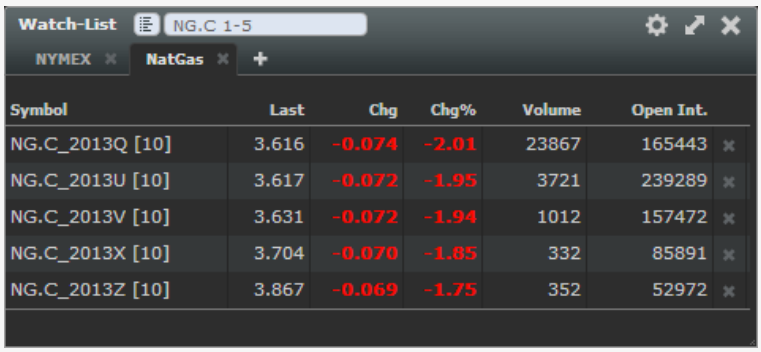


To view the Electricity data, click on the watchlist name, for example, "My Quotes". Scroll down to "Morningstar Views" and select "Power".



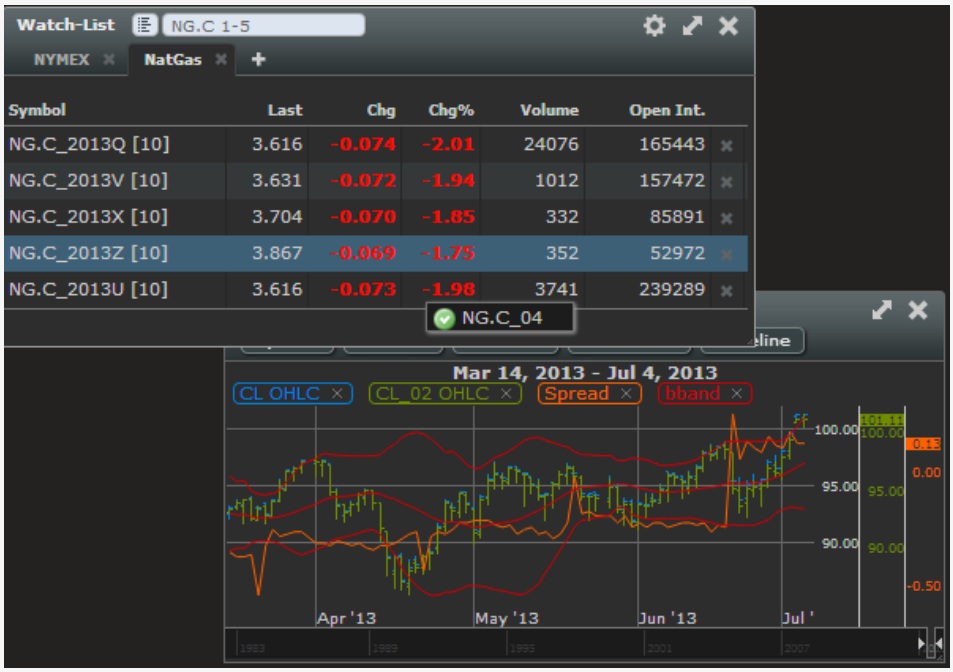
Add Consecutive Contracts

In the watchlist, you can add multiple contracts by stating the symbol followed by a range of contract numbers. For example, in order to get the first 5 contracts for Henry Hub Natural Gas, the syntax is: NG.C 1-5.



Drag / Drop to Charts

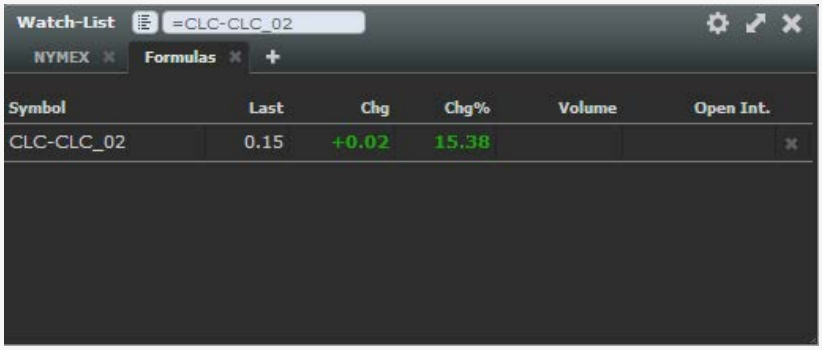
The watchlist has a drag and drop feature that allows a user to drag a symbol from the watchlist and drop it into the charts view.



Create formulas

Simple algebraic formulas can be created by typing them out in the symbol field starting with the equal '=' sign.

Below is an example of a front/back spread for Crude Oil.



Field Level formulas, Including support for ISO data within formulas. Variables that are available are below:

Field	Variables to use in Forumula / Symbol
LastPrice	lastprice, last, close (Or leave it empty.)
Lmp	lmp,LmpVal, LmpVal5Min
Congestion	cong, MarCostCong , MarCostCong5Min, CostOfCongestion
Loss	loss,MarCostLoss,MarCostLoss5Min, CostOfLosses
Load	load
Bid Price	bid, bidprice
Ask Price	ask, askprice
Bid Size	bidsize
Ask Size	asksize
High Price	high, highprice
Low Price	low,lowprice
Open Price	open, openprice
Volume	volume, vol
Prev Volume	prevvolume, prevvol
Open Interest	openint, openinterest
VWAP	vwap
Size	size

Example Usage:

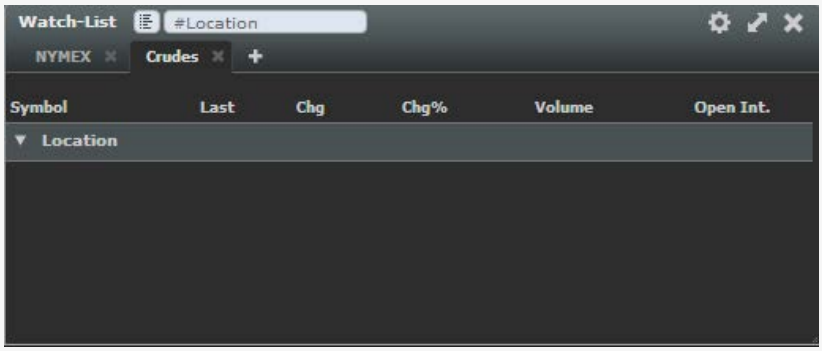
=CLC-CLC_02 (spread of the last)
=CLC high - CLC_02 high (spread of the high)
=NYM.COAL_2013F * (-.3) + WESTERNHUB.HUB.PJMRT LmpVal (Sample Dark Spread)

Create Categories and Comments

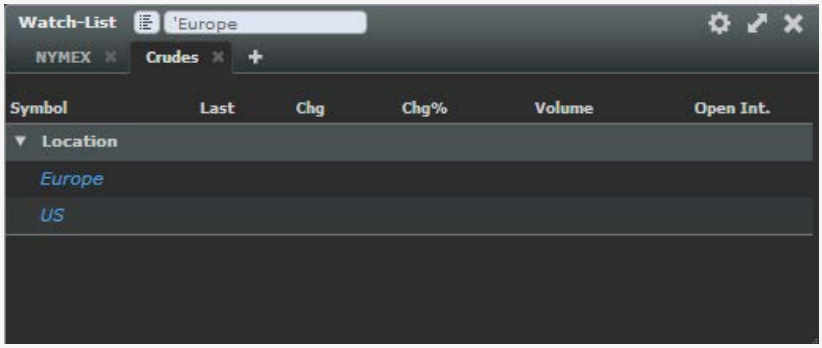
The watchlist has the ability to categorize symbols within the same watchlist.

Start by creating a new watchlist.

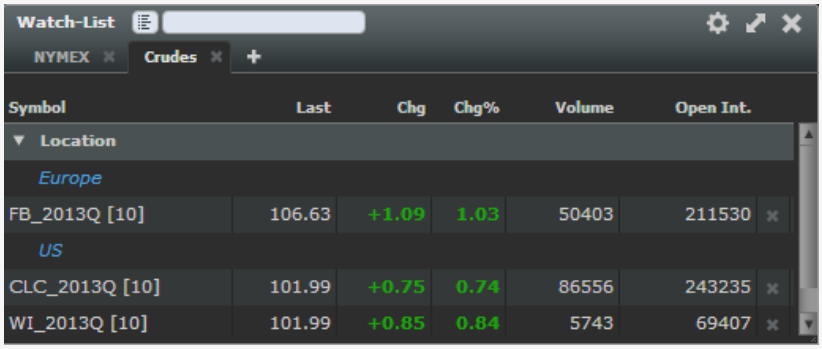
In the symbol field, type in the category name with the pound '#' sign in front of the text, for example, #Location. The category will be labeled.



Add Comments by typing a single quote sign in front of the text, for example, 'US or 'Europe.



Add symbols, then drag them into the respective locations.

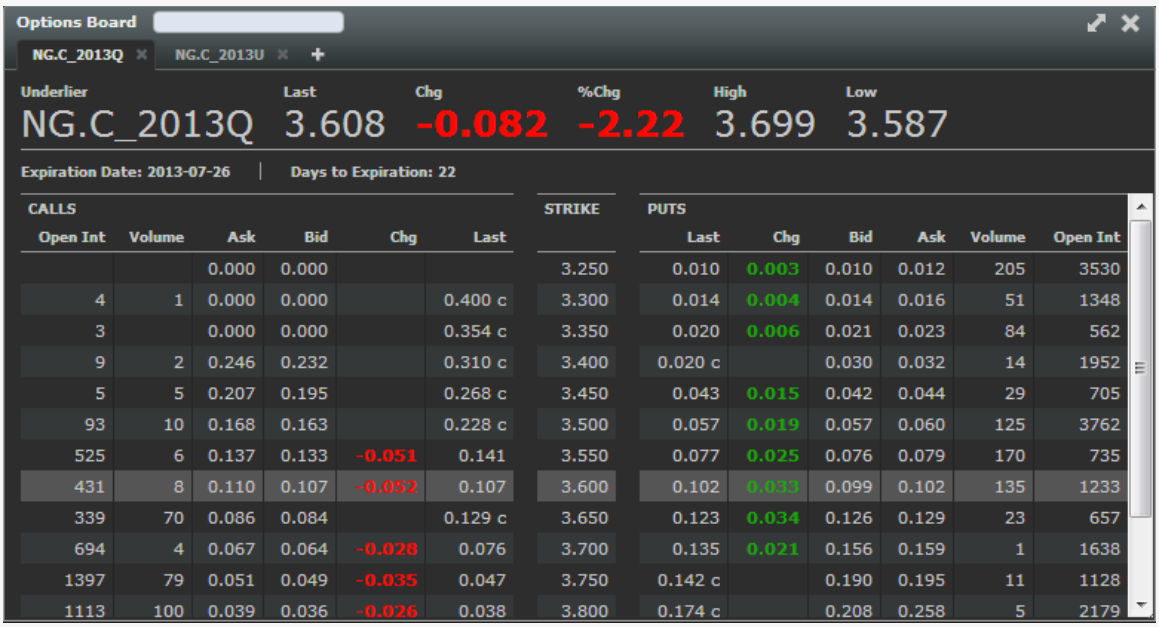


- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
    - nteractive Search
    - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

F. Options

The Options Board offers a predefined Call/Put layout for Futures Options. By default the Options Board will display 15 strikes at the money. This setting is configurable to display more/less at the money strikes or if preferred all strikes.



CALLS						STRIKE	PUTS					
Open Int	Volume	Ask	Bid	Chg	Last		Last	Chg	Bid	Ask	Volume	Open Int
		0.000	0.000			3.250	0.010	0.003	0.010	0.012	205	3530
4	1	0.000	0.000		0.400 c	3.300	0.014	0.004	0.014	0.016	51	1348
3		0.000	0.000		0.354 c	3.350	0.020	0.006	0.021	0.023	84	562
9	2	0.246	0.232		0.310 c	3.400	0.020 c		0.030	0.032	14	1952
5	5	0.207	0.195		0.268 c	3.450	0.043	0.015	0.042	0.044	29	705
93	10	0.168	0.163		0.228 c	3.500	0.057	0.019	0.057	0.060	125	3762
525	6	0.137	0.133	-0.051	0.141	3.550	0.077	0.025	0.076	0.079	170	735
431	8	0.110	0.107	-0.052	0.107	3.600	0.102	0.033	0.099	0.102	135	1233
339	70	0.086	0.084		0.129 c	3.650	0.123	0.034	0.126	0.129	23	657
694	4	0.067	0.064	-0.028	0.076	3.700	0.135	0.021	0.156	0.159	1	1638
1397	79	0.051	0.049	-0.035	0.047	3.750	0.142 c		0.190	0.195	11	1128
1113	100	0.039	0.036	-0.026	0.038	3.800	0.174 c		0.208	0.258	5	2179

Columns viewed and order can be customized per tab. Available fields within the Option Board are:

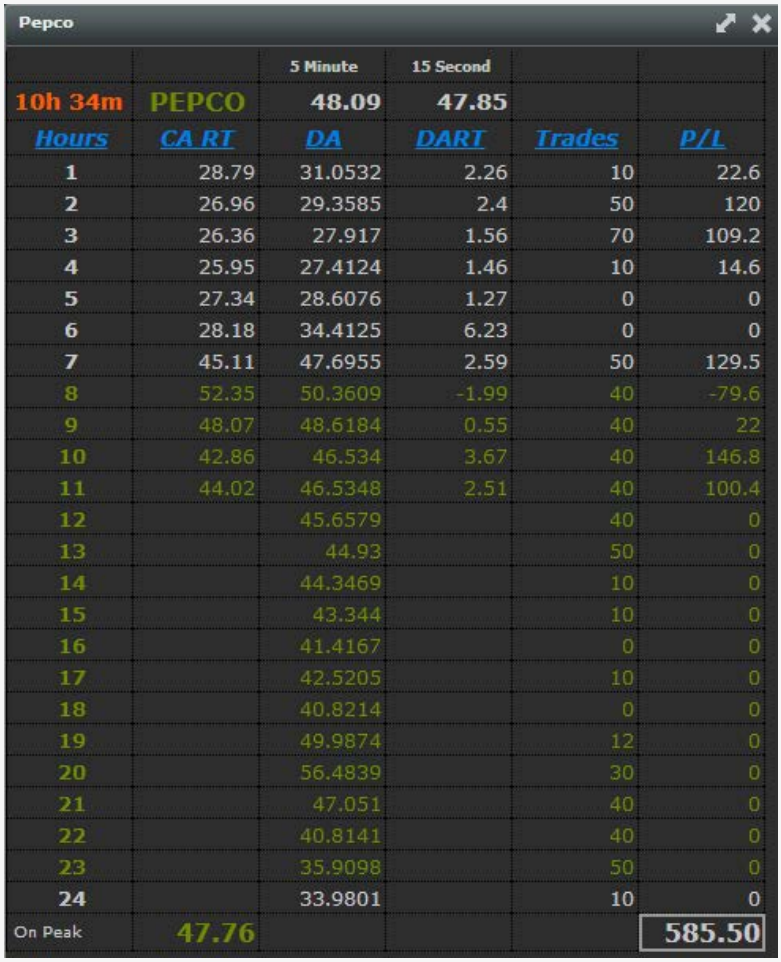
- DTE
- Option Int
- Volume
- Ask
- Ask Size
- Bid
- Bid Size
- Prev Settle
- Open
- High
- Low
- Last
- Chg
- % Chg

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

M. Worksheet

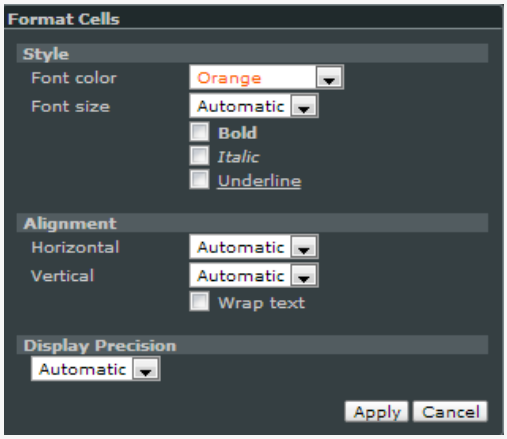
The worksheet acts as a spreadsheet which acts similar to Microsoft Excel. The worksheet allows a user to display data as well as do calculations on rows and columns.



Pepco

		5 Minute	15 Second		
10h 34m	PEPCO	48.09	47.85		
Hours	CA RT	DA	DART	Trades	P/L
1	28.79	31.0532	2.26	10	22.6
2	26.96	29.3585	2.4	50	120
3	26.36	27.917	1.56	70	109.2
4	25.95	27.4124	1.46	10	14.6
5	27.34	28.6076	1.27	0	0
6	28.18	34.4125	6.23	0	0
7	45.11	47.6955	2.59	50	129.5
8	52.35	50.3609	-1.99	40	-79.6
9	48.07	48.6184	0.55	40	22
10	42.86	46.534	3.67	40	146.8
11	44.02	46.5348	2.51	40	100.4
12		45.6579		40	0
13		44.93		50	0
14		44.3469		10	0
15		43.344		10	0
16		41.4167		0	0
17		42.5205		10	0
18		40.8214		0	0
19		49.9874		12	0
20		56.4839		30	0
21		47.051		40	0
22		40.8141		40	0
23		35.9098		50	0
24		33.9801		10	0
On Peak	47.76				585.50

Format Cells



Supported Text

Users can enter text by putting focus on a cell and starting to type. The entered value is converted to a data-type, if possible. Supported data-types are Number, Date and Formula.

Supported Number formats are (where ## represents any number of digits 0-9):
? #
? -#
? #.#
? -#.#
? .#
? -.#

Supported Date formats are:
? yyyy-mm-dd
? yyyy-mm-dd HH:mm
? yyyy-mm-dd HH:mm:ss
? m/d
? m/d/yy

Formulas and Operators

Entered like text, but first character must be =. Formulas can be a simple function call or an arithmetic operation using multiple functions and/or cell references.
Formulas support the following operators:
a. Numbers: +, -, *, /, %
b. Dates: +, -
c. Text: &
d. Boolean: !=, =, ==, <, >, <=, >=, and, or

We support arithmetic operations on date values, such as:
? =today() - 1d
? =today() + 13h + 55m
? =today() + 13:55
? =truncate(now(), 1h) - 3h

Functions

All functions begin with an equal "=" sign.
All examples in brackets "[]" denotes an optional parameter.

Clock Functions
Date Functions
Number Functions
Text Functions
Boolean Functions
Data Functions

Clock functions

`today()` returns Date : refreshes once a day;

- `=today()` - returns the current date
- `=today()-1` - returns yesterday's date

`now([Number])` returns Date : refreshes once per minute. This function has an optional argument that represents the refresh rate, in minutes (default is 1 minute).

- `=now(1)` - Refresh the time every minute - YYYY-MM-DD HH:MM
- `=now(2)` - Refresh the time every 2 minutes YYYY-MM-DD HH:MM

Date functions

A1	B1

2012-10-28 10:15	2013-10-28 10:15

`date(String)` returns Date : Converts the String argument into a Date;

- =date(A1) - 10/28/2012
- =date(B1) - 10/28/2013

`date(Date)` returns Date : Truncates the time value (equivalent to truncate(Date, 1))
- =date(A1) - 10/28/2012 (removes the timestamp)
- =date(B2) - 10/28/2013 (removes the timestamp)

`date(Number, Number, Number [, Number [, Number [, Number ]]])` returns Date : Returns a date object that corresponds to the provided arguments (year, month, day, hour, minute, second);
- =date(2012,1,15) - will return 2012-1-15
- =date(2013,10,27) - will return 2013-10-27

`time(String)` returns Number : Converts a recognize time format into a JavaScript date-time value. This function returns zero (0) if the String format is not recognized;
- =time(10:10) - 10h 10m
- =time(A1) - .42708333333

`time(Date)` returns Number : Returns the numeric time portion of date;
- =time(2013-1-15 10:10) - 10h 10m
- =time(A1) - 10h 15m

`time(Number [, String])` returns String : Converts a numeric time value into a human-readable String. This function takes an optional String argument to overwrite the default format. The only formats available at the time of this writing are "h:mm" and "h:mm:ss".
- =time(A1) - 10h 15m (where A1 = .4270833333)

`year(Date)` returns Number : 4-digit year;
- =year(A1) - 2012

`month(Date)` returns Number : month (1-12)
- =month(A1) - 10

`day(Date)` returns Number : day of month
- =day(A1) - 28

`dayOfWeek(Date)` returns Number : day of the week (0-6) (0=Sunday - 6=Saturday)
- =dayOfWeek(A1) - 1

`hours(Date)` returns Number : hours of day (0-23)
- =hours(A1) - 10

`hours(Number)` returns Number : a numeric value that represents the given number of hours in JavaScript date-time code
- =hours(A1) - .00034593 (Where A1 = .4566030)

`minutes(Date)` returns Number : minutes of the hour (0-59)
- =minutes(A1) - 15

`minutes(Number)` returns Number : a numeric value that represents the given number of minutes in JavaScript date-time code
- =minutes(A1) - .000296585 (Where A1 = .42708333)

`seconds(Date)` returns Number : seconds of the minute (0-59)
- =seconds(A1) - 27 (Where A1 = 10/28/2013 10:15:27)

`seconds(Number) returns Number` : a numeric value that represents the given number of seconds in JavaScript date-time code

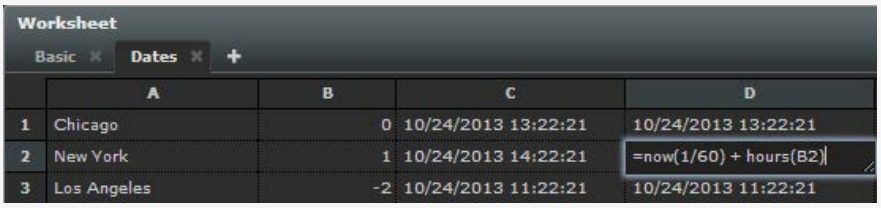
- `=seconds(A1)` - .00000123934 (Where A1 = .427083333)

below is an example of how to use date functions to set time zones.

Worksheet

Basic | Dates | +

	A	B	C	D
1	Chicago	0	10/24/2013 13:22:21	10/24/2013 13:22:21
2	New York	1	10/24/2013 14:22:21	=now(1/60) + hours(B2)
3	Los Angeles	-2	10/24/2013 11:22:21	10/24/2013 11:22:21



Number functions

`truncate(Number [, Number]) returns Number` : a number truncated to the specified number of decimals. The 2nd argument defaults to zero (no decimals).

- `=truncate(10.234)` - 10

`round(Number [, Number]) returns Number` : a number rounded to the specified number of decimals. The 2nd argument defaults to zero (no decimals).

- `=round(1.7)` - 2

`abs(Number) returns Number` : returns the absolute value of the argument.

- `=abs(34)` - 34

`ceiling(Number) returns Number` : rounds up to the nearest whole number.

- `=ceiling(1.2)` - 2

`floor(Number) returns Number` : rounds down to the nearest whole number.

- `=ceiling(1.8)` - 1

Text functions

`concat(String...) returns String` : concatenates any number of string values into one string. This function takes a variable number of arguments (a.k.a. vararg).

	A
1	2012
2	10
3	28

- `=Concat(A1,"-",A2,"-",A3)` - 2012-10-28

Boolean functions

? `if(Boolean, Any, [Boolean, Any [...]] [, Any]) returns Any` : Evaluates the odd arguments (1, 3, 5, etc.) as a Boolean value (true/false) and if true, returns the subsequent argument. If none of the odd arguments evaluate to true, this function returns the last non-paired odd argument, or undefined if a non-paired argument is not specified.

Here are some examples:

? if (1 < 2, ⍰it works⍰, ⍰something wrong⍰) ? ⍰it works⍰

? if (2 < 1, ⍰something wrong⍰, ⍰it works⍰) ? ⍰it works⍰

? if (2 < 1, 1, 3 > 4, 2) ? undefined (or blank in the grid)

? if (2 < 1, 1, 3 > 4, 2, 3) ? 3

? `not(Boolean) returns Boolean` : Reverses the polarity of a Boolean value.

Data functions

These functions subscribe to real-time data and will pull history data as needed. Each time a new price arrives, a new

value is calculated, and, if different than the previous value, is cascaded to other cells and/or formulas.

`LastValue(symbol, column [, date])` returns Number. Returns the most recent price available for a symbol/column. If date is specified, this function returns the price associated with the specified timestamp.

- `=LastValue(�WESTERNHUB.HUB.PJMRT�, �LmpVal5Min�)` returns the last 5-minute price available;
- `=LastValue(�WESTERNHUB.HUB.PJMRT�, �LmpVal5Min�, today() + 13:55)`

`LastTimestamp(symbol, column)` returns Date. Returns the timestamp associated with the most recent price of a symbol/column.

- `=LastTimestamp("CLC","Close")` - will return the last time CLC quoted in the database

`PeriodAverage(symbol, column, startDate, endDate)` returns Number. Returns the average of all prices available within a given time period for symbol/column. (example: Onpeak average, monthly average)

- `=PeriodAverage("CLC","Close",A1,A2)` - Where A1 is the start date (2013-10-1), and A2 is the end date (=today()).

`PeriodCount(symbol, column, startDate, endDate)` returns Number. Returns the number of timestamps available within a given time period for symbol/column.

- `=PeriodCount("CLC","Close",A1,A2)` - Where A1 is the start date (2013-10-1), and A2 is the end date (=today()).

`PeriodLastValue(symbol, column, startDate, endDate)` returns Number. Returns the most recent price available for a symbol/column within a given time period.

- `=PeriodLastValue("WESTERNHUB.HUB.PJMRT","LmpVal",A1,A2)` - Where A1 is the start date (2013-10-1), and A2 is the end date (=today()).

`PeriodLastTimestamp(symbol, column, startDate, endDate)` returns Date. Returns the timestamp associated with the most recent price available for a symbol/column within a given time period.

- `=PeriodLastTimestamp("CLC","Close",A1,A2)` - Where A1 is the start date (2013-10-1), and A2 is the end date (=today()).

`Variation(symbol, column [, date])` returns Number. Returns the variation (or difference) between the most recent price available for a symbol/column, and the previous price available. If date is specified, this function returns the difference between the price associated with the specified timestamp and the previous price.

- `=Variation("CLC","Close",A1)` - Where A1 is the date (2013-10-1)

`PercentVariation(symbol, column [, date])` returns Number. Returns the variation (or difference) between the most recent price available for a symbol/column, and the previous price available, as a percentage value. If date is specified, this function returns the percent variation between the price associated with the specified timestamp and the previous price.

- `=PercentVariation("CLC","Close",A1)` - Where A1 is the date (2013-10-1)

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

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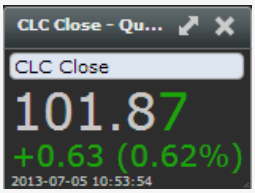
D. Quotes

The Quotes Window displays the real-time price for a specific symbol. Multiple Quote panels can be run to track the price of different instruments. The updated value is highlighted red or green upon update indicating a positive or negative move from the previous value. A move and % are also calculated and displayed. A time stamp at the update is also included.



- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

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E. Chart

The "Timeline" window displays all the various views of the data in one chart. Timeline combines the historical data, real-time data feed for the fullest range of flexibility. Timeline also lends itself to an interactive experience for zooming in and highlighting key components of the chart.

In the white field type in the symbol you wish to chart. Please note that all symbols should be in capital letters.

Allows a user to explore the database hierarchy. The explorer also provides a data preview for the symbol.

Live stream allows real-time updates on the chart for applicable symbols.(located in the timeline tab)

Configuration Ribbon for Chart- Each Tab has a separate set of configuration options on the symbol and chart level. Single Click on any tab (ex "Symbol Tab") will allow you to make configuration and will allow for the Configuration Ribbon to disappear upon clicking anywhere on the chart. Double-clicking will anchor the Configuration Ribbon so that it will continue to be shown as you interact and click elsewhere on the chart.

Interactive Legend - hover over a symbol to bring the graph into focus. Delete the symbol from the chart by click on the X to the right of the symbol. Additionally, you can right-click on a symbol in the legend to remove or send to a quote window.

Y-Axis - hover over each axis to bring the respective series into focus. Markers on each axis will indicate the current value as each update comes in. Additional Axis Options are available in the "Symbol" tab. Variations can be set to a percentage or absolute dollar amounts.

Date/Time Axis with Slider - drag either end of the slider (use arrows for reference) to expand the amount of history shown in the chart. Move the slider left or right to scan through the different date periods. Double click on any part of the Axis to center the slider at the desired position.

Symbol Tab

The symbol tab allows a user to change "Symbol", "Plot", "Axis", "Adjust" settings.

- Symbol
  - Column - Select the column such as OHLC, Close, Volume, or TotalOI

- Time Unit - choose between Automatic, Daily, or Intraday
- Alias - label of the symbol. Used as a reference to make formula calculations easier

- Plot
  - View in Chart - when checked, the chart will plot
  - Style - choose Between
    - Line - Connected data points which represent successive changes in value.
    - Mountain - or Area Graph; the area between the axis and line is emphasized with color
    - Baseline - A line serving as a basis, as for measurement, calculation, or location.
    - OHLC - or Bar Chart; Shows the Open, High, Low, and Close prices for a security, (can only be used with Column: OHLC)
    - OHLC Red/Green - Chart will distinguish Red(negative moves) and Green(positive moves).
    - Candlestick - Combination of a line-chart and bar chart used primarily to describe price movements for a security over time. (can only be used with Column: OHLC)
    - Candlestick Red/Green - Chart will distinguish Red(negative moves) and Green(positive moves).

- Y-Axis
  - Merge with - merge current symbol with another on a chart
  - Position - left or right axis
  - Percent Variation - converts actual price with percent move
  - Min/Max - scale

- Adjust
  - Time - Time Offset can be used to reference values of an symbol, forward or backwards, in time from the current date. Time Offset, for instance, is very helpful for comparing two symbols in different time zones. The + (forward) and - (backwards) indicate the offset direction of time. The time-unit menu is defaulted to "day" but may be changed by pulling down the menu and selecting a different time-unit. Select from Days, Hours, or minutes.
  - Round - The Round mode determines the precision in decimals that the symbol will be quoted in.
  - UOM - UOM or Units of Measure, allows a symbol to convert to various other units of measurement.

Formula Tab

The formula tab allows a user to create algebraic equations with the symbol labels.

- Formula
  - Formula - In the 'Symbol tab' section above, there are two symbols, CLC and HOC, which are represented by labels 'A' and 'B'. Using these labels, a user can create a simple spread by typing in 'A-B' in the formula field.
  - Name - The title of the formula or calculation. This title will be shown in the interactive legend.

- Plot
  - View in Chart - when checked, the chart will plot
  - Style - choose Between
    - Line - Connected data points which represent successive changes in value.
    - Mountain - or Area Graph; the area between the axis and line is emphasized with color
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    - Candlestick Red/Green - Chart will distinguish Red(negative moves) and Green(positive moves).
  - Fill - Fills the gaps between NaN points
    - To Next Value - connects the dots between the gap with the shortest line between two points
    - With Previous Value - connects the dot by drawing a horizontal line to the next point and connecting

- Y-Axis
  - Merge with - merge current symbol with another on a chart

- Position - left or right axis
- Percent Variation - converts actual price with percent move
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- Adjust
  - Time - Time Offset can be used to reference values of an symbol, forward or backwards, in time from the current date. The + (forward) and - (backwards) indicate the offset direction of time. The time-unit menu is defaulted to "day" but may be changed by pulling down the menu and selecting a different time-unit. Select from Days, Hours, or minutes.
  - Round - The Round mode determines the precision in decimals that the symbol will be quoted in.
  - UOM - UOM or Units of Measure, allows a symbol to convert to various other units of measurement.

- Add
  - Once you have your formula defined click "Add" to add the formula to the chart

- Replace
  - Use "Replace" when making any adjustments to an existing Formula

- New
  - User "New" if you need to create another formula after one has already been added

- Reset
  - User "Reset" to clear the forms in case you want to start configuring the formula from scratch

- Supported Formulas

  - **Basic Operators:**

Operator	Description
+	Add
-	Subract
*	Multiply
/	Divide
%	Remainder (modulo)
( )	Parenthesis; any logical group is allowed

  - **Advanced Operators:**

Function	Description	Example
pow	Returns the value of A to the power of y	pow(A,2)
abs	Returns the absolute value of A	abs(A)
log	Returns the natural logarithm (base E) of A	log(A)
min	Returns the number with the lowest value	min(A)
max	Returns the number with the highest value	max(A)
random	Returns a random number between A and Y. Rounding available. Example will return a random number between 0 and 10, to the nearest 2 decimal places	random(0,10,2)
round	Rounds A to the specified decimal places. Round(A,2) will round the series A to two decimal places.	round(A,2)

Indicator Tab

The Indicator tab allows a user to use one of many pre-created formula calculations.

- Indicator
  - Drop down menu - The drop down menu consists of various indicator formulas a user can use to analyze the data.
  - Name - The title of the Indicator. This name will be shown in the interactive legend.

- Parameters
  - Number of Points - The number represents the number of values being used in the calculation. For example: if you select "20", the calculation will represent the last 20 values.
  - Standard Deviation - The number of dispersion from the mean average

  - Plot
    - View in Chart - when checked, the chart will plot
    - Style - choose Between
      - Line - Connected data points which represent successive changes in value.
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      - To Next Value - connects the dots between the gap with the shortest line between two points
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  - Y-Axis
    - Merge with - merge current symbol with another on a chart
    - Position - left or right axis
    - Percent Variation - converts actual price with percent move
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  - Adjust
    - Time - Time Offset can be used to reference values of an symbol, forward or backwards, in time from the current date. The + (forward) and - (backwards) indicate the offset direction of time. The time-unit menu is defaulted to "day" but may be changed by pulling down the menu and selecting a different time-unit. Select from Days, Hours, or minutes.
    - Round - The Round mode determines the precision in decimals that the symbol will be quoted in.
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  - Add
    - Once you have your formula defined click "Add" to add the formula to the chart

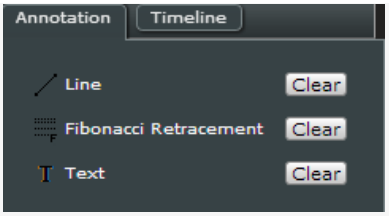
  - Replace
    - Use "Replace" when making any adjustments to an existing Formula

  - New
    - User "New" if you need to create another formula after one has already been added

  - Reset
    - User "Reset" to clear the forms in case you want to start configuring the formula from scratch

Annotation Tab

Annotation allows a user to draw straight trend lines or freehand trend lines.



- Line - create straight trend lines
- Fibonacci Retracement - create Fibonacci Retracement on the Chart
- Text - create comments at specific points on the Chart

Timeline Tab

The Timeline tab allows a user to select data history from a preset time range or from a freeform time range.

- Preset - select from Auto, 1d (1 day), 2d (2 day), 1w (1 week), 2w (2 weeks), 1mo (1 month), MTD (Month to date), QTD (Quarter to date), YTD (Year to date), 1yr (1 year) 5yr (5 year), 10yr (10 year)
- Freeform - input a start date and time to end date and time
- Live Stream - Plots data in real-time

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

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N. Curve

Curves are sets of data which represent today's market estimate of the price of a commodity at various points out into the future. The most basic curves are generated by charting settlement prices for the various delivery months of a commodity quoted on a futures exchange such as the NYMEX. You can also plot curves based on the current market view of future prices on any day for the history of a commodity.

In the white field type in the symbol you wish to chart. Please note that all symbols should be in capital letters.

Allows a user to explore the database hierarchy. The explorer also provides a data preview for the symbol.

Configuration Ribbon for Chart- Each Tab has a separate set of configuration options on the symbol and chart level. Single Click on any tab (ex "Symbol Tab") will allow you to make configuration and will allow for the Configuration Ribbon to disappear upon clicking anywhere on the chart. Double-clicking will anchor the Configuration Ribbon so that it will continue to be shown as you interact and click elsewhere on the chart.

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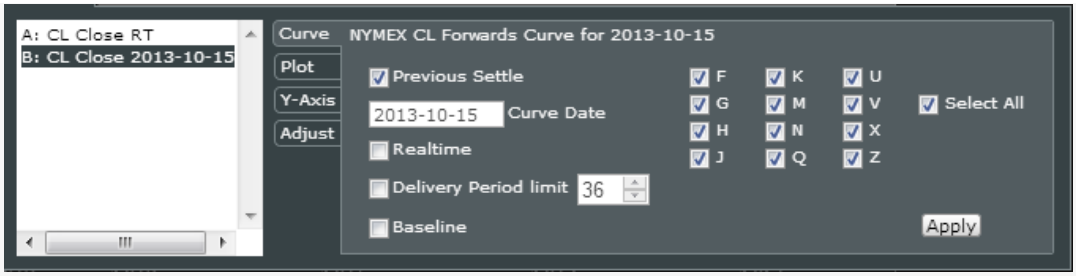
Y-Axis - hover over each axis to bring the respective series into focus. Markers on each axis will indicate the current value as each update comes in. Additional Axis Options are available in the "Symbol" tab. Variations can be set to a percentage or absolute dollar amounts.

Date/Time Axis with Slider - drag either end of the slider (use arrows for reference) to expand the amount of history shown in the chart. Move the slider left or right to scan through the different date periods. Double click on any part of the Axis to center the slider at the desired position.

Symbol Tab

The symbol tab allows a user to change "Symbol", "Plot", "Axis", "Adjust" settings.



- Curve
  - Previous Settle - Automatically return the previous day's settlements
  - Curve Date - Select a specific curve date
  - Realtime - Return curve data in Realtime
  - Delivery Period limit - Allows a user to limit the number of contracts by returning a partial curve
  - Baseline - Allows a user to set a benchmark that is used for measuring or comparing current and past values
  - Month Codes - Allows a user to select which monthly contracts should be included in the curve. Select all the curves or specify which monthly curves to plot

- Plot
  - View in Chart - when checked, the chart will plot
  - Style - choose Between
    - Line - Connected data points which represent successive changes in value.
    - Mountain - or Area Graph; the area between the axis and line is emphasized with color
    - Baseline - A line serving as a basis, as for measurement, calculation, or location.
  - Color - Select the color of the curve
  - Fill - Fills the gaps between NaN points
    - To Next Value - connects the dots between the gap with the shortest line between two points
    - With Previous Value - connects the dot by drawing a horizontal line to the next point and connecting

- Y-Axis
  - Merge with - merge current symbol with another on a chart
  - Position - left or right axis
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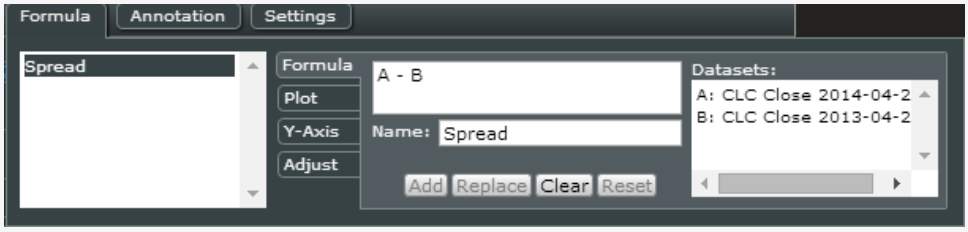
Formula Tab



The formula tab allows a user to create algebraic equations with the symbol labels.

- Formula
  - Formula - Use the Datasets to create formulas
  - Name - The title of the formula or calculation. This title will be shown in the interactive legend.

- Plot
  - View in Chart - when checked, the chart will plot
  - Style - choose Between
    - Line - Connected data points which represent successive changes in value.

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- Supported Formulas

  - **Basic Operators:**

Operator	Description
+	Add
-	Subract
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/	Divide
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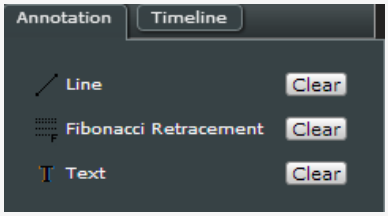
  - **Advanced Operators:**

Function	Description	Example
pow	Returns the value of A to the power of y	pow(A,2)
abs	Returns the absolute value of A	abs(A)
log	Returns the natural logarithm (base E) of A	log(A)
min	Returns the number with the lowest value	min(A)
max	Returns the number with the highest value	max(A)

random	Returns a random number between A and Y. Rounding available. Example will return a random number between 0 and 10, to the nearest 2 decimal places	random(0,10,2)
round	Rounds A to the specified decimal places. Round(A,2) will round the series A to two decimal places.	round(A,2)

Annotation Tab

Annotation allows a user to draw straight trend lines or freehand trend lines.



- Line - create straight trend lines
- Fibonacci Retracement - create Fibonacci Retracement on the Chart
- Text - create comments at specific points on the Chart

Settings Tab

Normalize all curves - allows a user to set all curves to the same time period.

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

Seasonal

Seasonality studies are commonly used as a research tool to analyze price patterns surrounding certain time periods. The seasonal chart allows for basic seasonal charting and charting of formulas like spreads.

Basic Seasonal Chart

1) Add a symbol
2) Select the season range

To edit the column or season range, click on the "Season" tab.
To hide formulas, click on the "formula" tab and uncheck the formulas.

Charting Formulas

Seasonal analysis can also be done on calculations such as spreads.

1) Add any calculation starting with the equal "=" sign.
   example: =CLC - CLC_02
   This is a basic front/back spread
2) Select the season range

To edit the column or season range, click on the "Season" tab.
To hide formulas, click on the "formula" tab and uncheck the formulas.

Note: Currently, Seasonal charting is only available for historical daily data.

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

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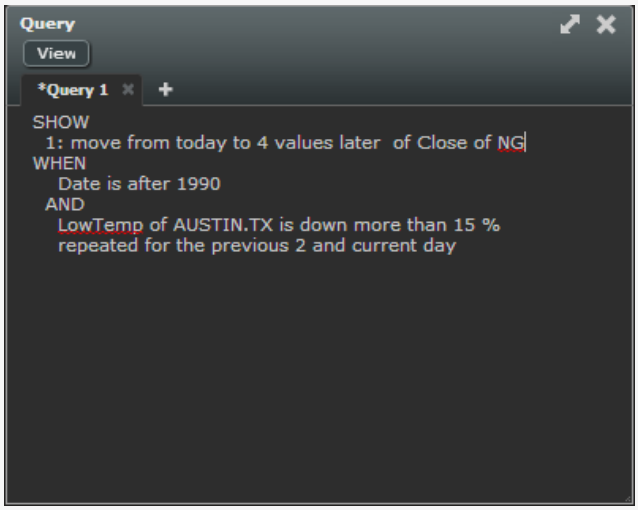
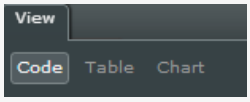
Query

The query window allows a user to create event-driven queries utilizing the Commodity DataServer query language.



View Code and Tables



To type or paste a Query, click on the "Code" button.
To query the data, click on the "table" or "Chart" button.

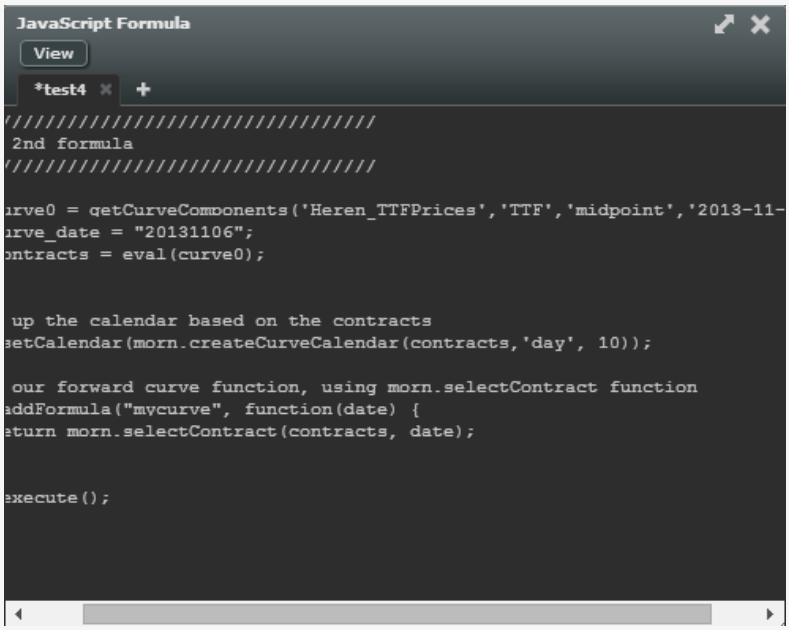
For more information on the Commodity DataServer Query Language, please view the Language Guide.

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

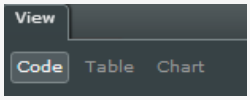
PRINT PDF

Javascript Formula

The Javascript Formula widget allows a user to create formulas using Javascript language.



View Code, Table, and Chart



To type or paste a Query, click on the "Code" button.
To query the data, click on the "table" or "Chart" button.

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
    - nteractive Search
    - cal Indicators
- Data
- Quick Start Guide

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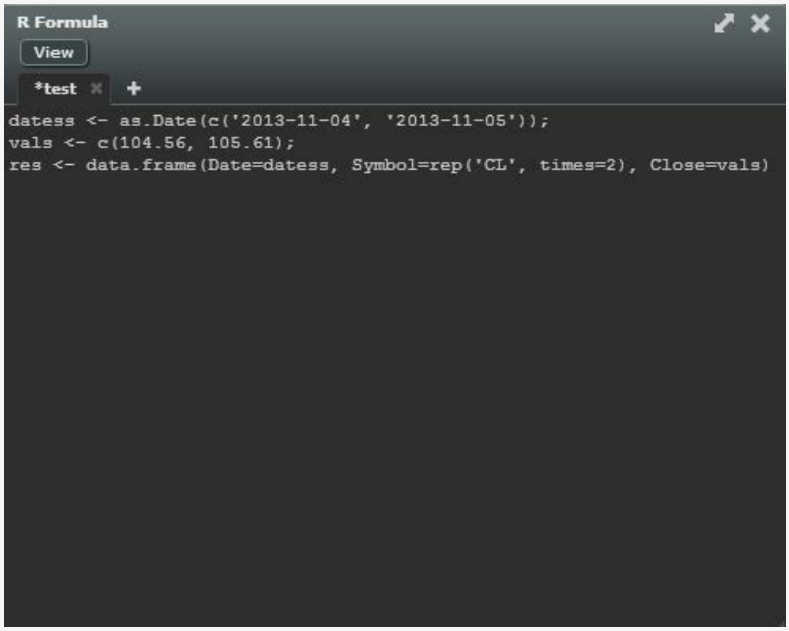
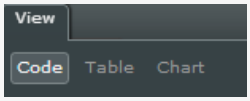
R Formula

The R Formula widget allows a user to create formulas using R language.



View Code, Table, and Chart



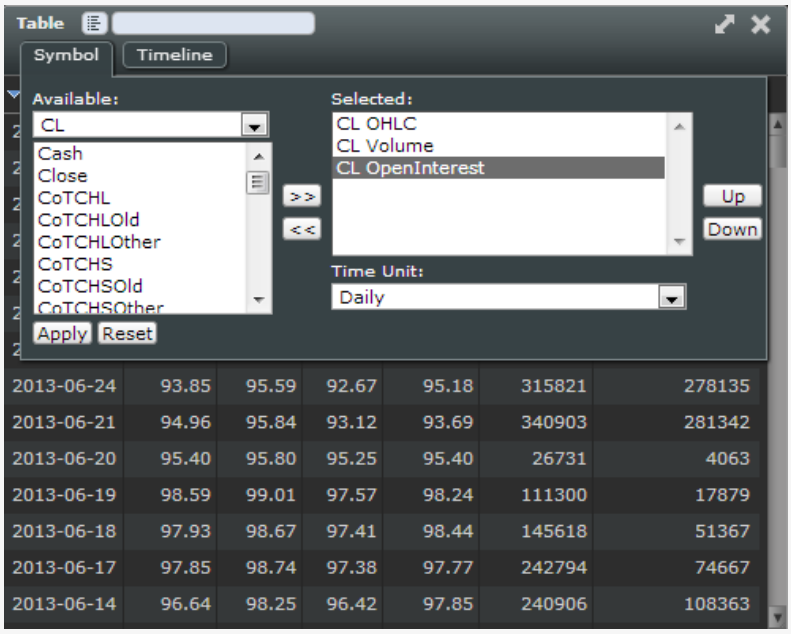
To type or paste a Query, click on the "Code" button.
To query the data, click on the "table" or "Chart" button.

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

K. Table

The table allows a user to create a data table with historical data.

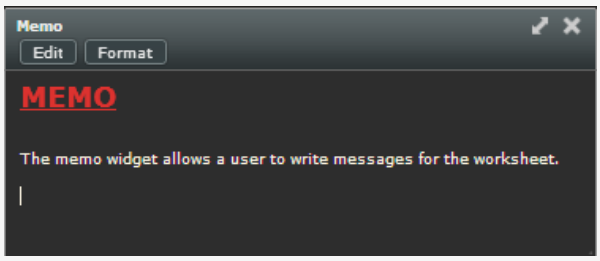


- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

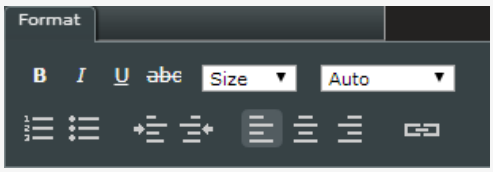
L. Memo

The memo allows a user to create a note to be displayed on the workspace. The note could include details on what to look for in charts, or any message that is important to the workspace.



Format

Format text using the pallette below. Edit the font size and color using the drop down menu. A user can also bold, intalics, or underline specific text. Users can also align text to left, center, or right margins, create bullets and number lists as well as, insert hyperlinks.

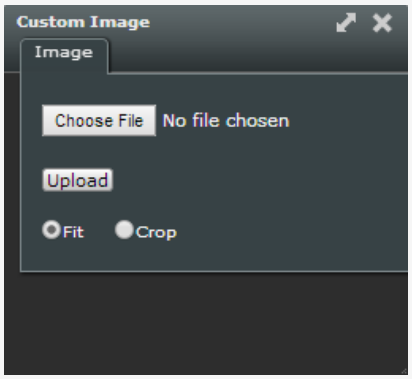


- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

Custom Image

The Custom Image widget allows a user to upload images to workspace.



Choose from a file from the computer, then click "Upload".

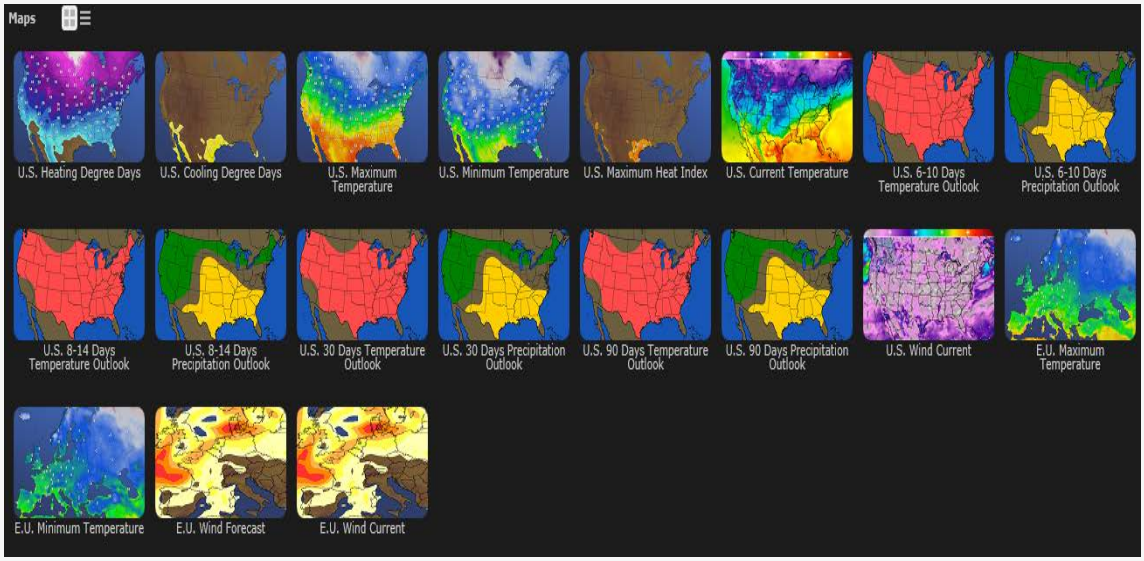
A user can also Fit or Crop the image.

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
    - nteractive Search
    - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

I. Maps

Maps consist of various maps for the United States and Europe.

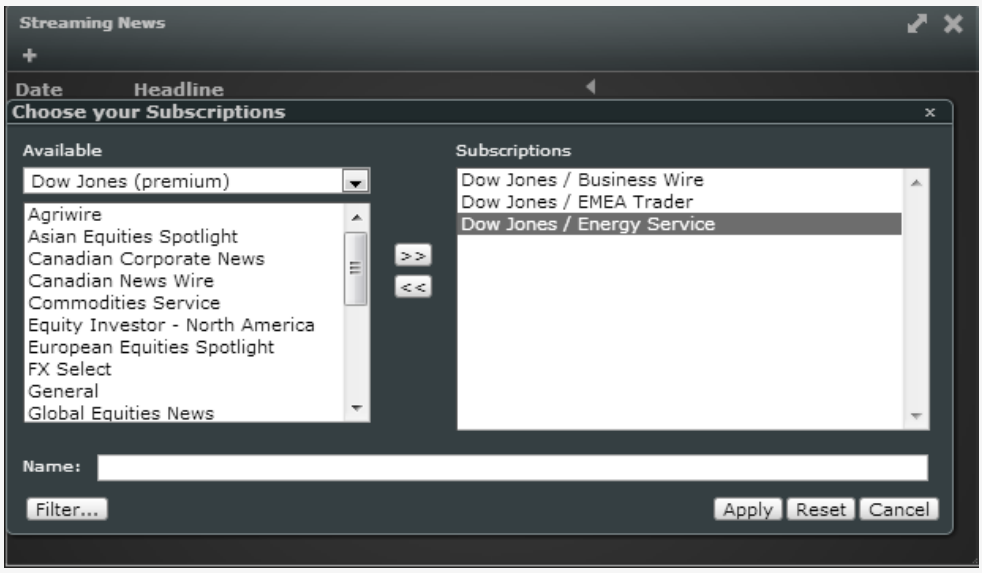


- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
  - Watchlist
  - Options Board
  - Worksheet
  - Quotes
  - ***Analysis***
  - Chart
  - Curve
  - Seasonal
  - Query
  - Javascript Formula
  - R Formula
  - Table
  - Memo
  - Custom Image
  - ***Weather***
  - Weather
  - ***News***
  - Streaming News
  - News
  - Calendar
  - nteractive Search
  - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

Streaming News

Streaming News widget allows a user to select different news feeds and display them as they become available. The widget will automatically refresh with new stories as they post.

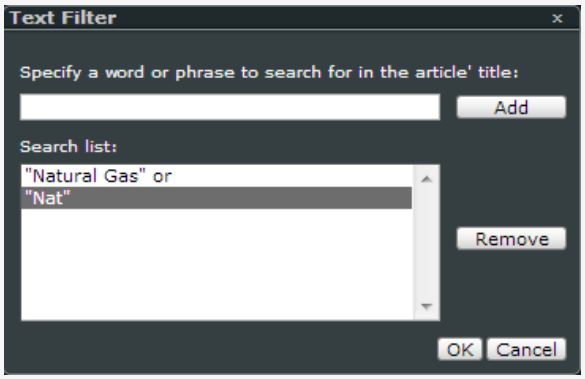


1) Select from a drop down list of available news feeds
2) Use the arrows to add/remove subscriptions that should be displayed
3) Provide a name for the subscription
4) Click "Apply"

To create a new tab, click on the "+" icon.

Filter

Filter allows a user to search for specific words or phrases in the article titles.



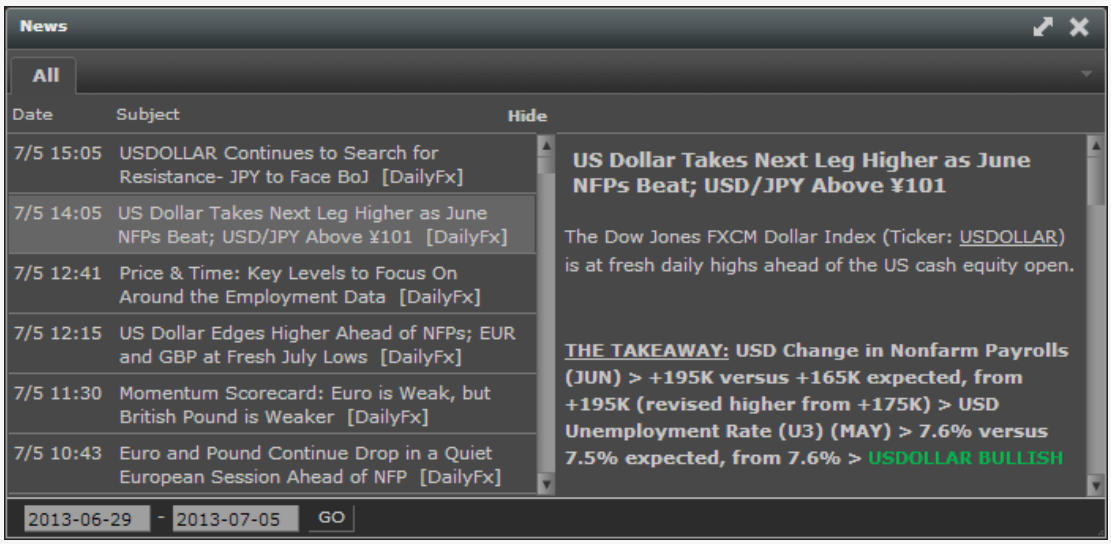
Add single or multiple words or phrases to search for. For example, a user can search for any title with the word "Natural Gas" or "Nat".

- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
    - nteractive Search
    - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

G. News

The "News" Window delivers up to the minute stories on the market. Use the drop down to select specific sources such as MarketWatch, DowJones Energy, DowJones Utilities, and other Top Stories.

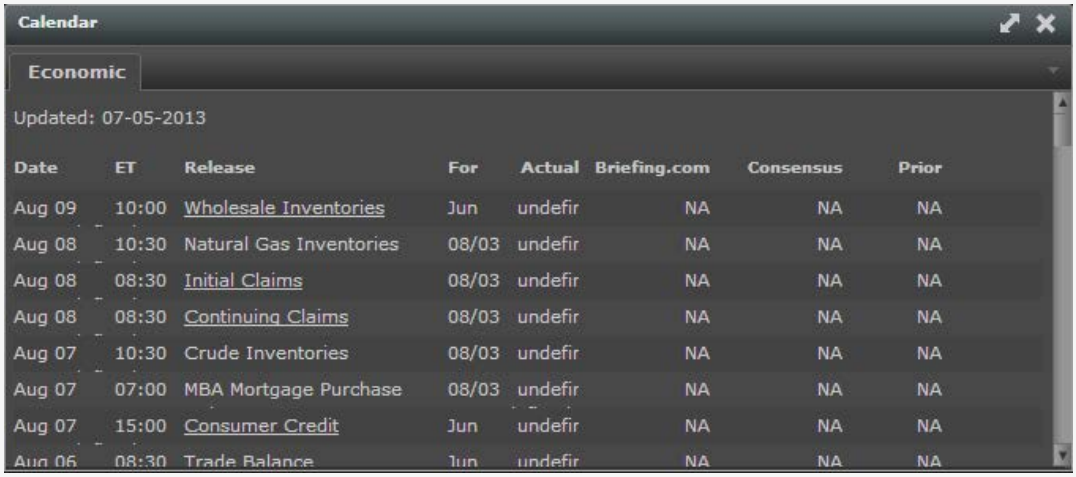


- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - ***Markets***
    - Watchlist
    - Options Board
    - Worksheet
    - Quotes
  - ***Analysis***
    - Chart
    - Curve
    - Seasonal
    - Query
    - Javascript Formula
    - R Formula
    - Table
    - Memo
    - Custom Image
  - ***Weather***
    - Weather
  - ***News***
    - Streaming News
    - News
    - Calendar
    - nteractive Search
    - cal Indicators
- Data
- Quick Start Guide

PRINT PDF

H. Calendar

The Economic Calendar Window provides an organized view of the actuals, estimates and consensus values of major economic reports, (ex. Unemployment Rate) released from Briefing.com

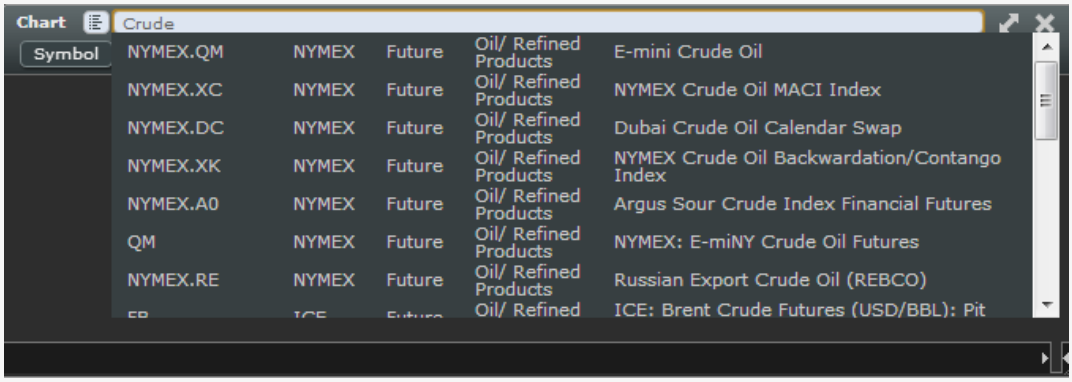


- Overview
- Requirements
- Logging In
- Web-Desktop
  - A. User Menu
  - B. Tabs
  - C. Widget Menu
  - Interactive Search
- Technical Indicators
- Data
- Quick Start Guide

Interactive Search

The Quote, Chart, and Watchlist windows all have a quick search that will display the most commonly used industry symbols.

Start by typing a symbol name, or a description of a symbol in the white field. As you type, a drop down will appear consisting of symbols or descriptions that start with, or match the letters that are being typed.



PRINT PDF

- Overview
- Requirements
- Logging In
- Web-Desktop
- Technical Indicators
- Data
- Quick Start Guide

Technical Indicators

Bollinger Band

The purpose of Bollinger Bands is to provide a relative definition of high and low. By definition, prices are high at the upper band and low at the lower band. This definition can aid in rigorous pattern recognition and is useful in comparing price action to the action of indicators to arrive at systematic trading decisions.

Bollinger Bands consist of:

- an N-period moving average (MA)
- an upper band at K times an N-period standard deviation above the moving average (MA + Kσ)
- a lower band at K times an N-period standard deviation below the moving average (MA − Kσ)

Typical values for N and K are 20 and 2, respectively. The default choice for the average is a simple moving average, but other types of averages can be employed as needed. Exponential moving averages are a common second choice. Usually the same period is used for both the middle band and the calculation of standard deviation.

Moving Average

Moving averages are used to emphasize the direction of a trend and to smooth out price and volume fluctuations, or "noise", that can confuse interpretation. Moving averages may be calculated for any sequential data set, including opening and closing prices, highest and lowest prices, trading volume or any other indicators.

Moving average is calculated by summing up the prices of instrument closure over a certain number of single periods (for instance, 12 hours). This value is then divided by the number of such periods.

SUM(Close, N)/N

Where:

N - is the number of calculation periods.

- Overview
- Requirements
- Logging In
- Web-Desktop
- Technical Indicators
- Data
- Quick Start Guide

Data

- Morningstar Commodity Data Core Data Set
- Morningstar Commodity Data Historical ISO Data
- Morningstar Real-Time Futures*
  - CBOT
  - CME
  - COMEX
  - ICE (does not include OTC)
  - KCBT
  - LIFFE
  - MGEX
  - NYMEX

- Real-time ISO
  - California ISO
  - ERCOT
  - Midwest ISO
  - New England ISO
  - New York ISO
  - Ontario
  - PJM

**Some specific Future Derivatives may not be available in real-time. If you are interested in getting real-time data for a specific future, unable to see real-time data, or if you are experiencing delayed values, please contact commoditydata-support@morningstar.com*