

CUSTOM STUDY LITE

STDY<GO>



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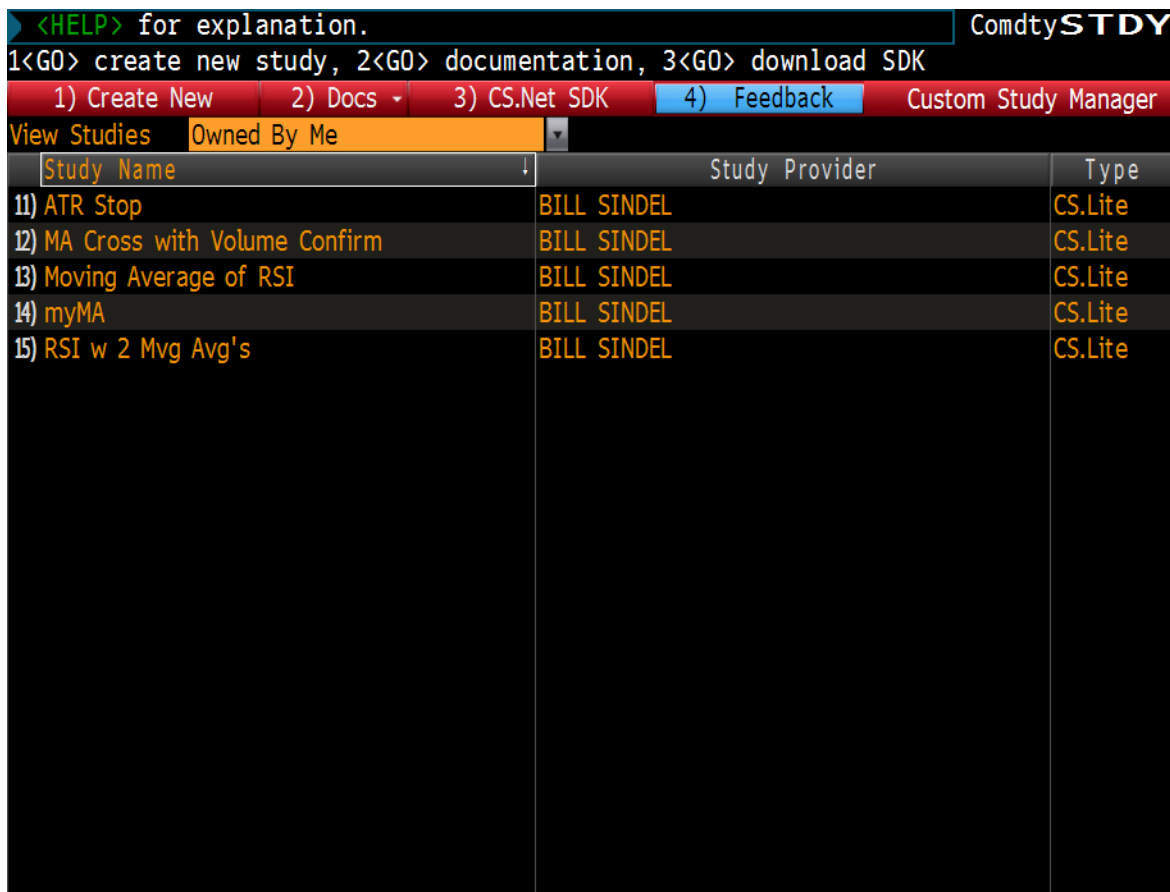
STDY<GO>

STDY<GO> is the Bloomberg function for creating and managing custom studies that you can use with both historical and intra-day multi-security G charts. STDY<GO> is the interface for both CS.Lite where you can develop your own studies using the Bloomberg proprietary editor, and CS.NET where C# or VB.Net are used. *

How to create a study using STDY<GO>

Run STDY<GO> to open the **Custom Study Manager**.

Figure 1



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When launched, the Custom Study Manager screen shows studies available to you created in CS.Lite and CS.NET. The default view will show the list of studies Owned by you (Figure 1). You may also choose to display studies Shared with you, or to display All available studies (Figure 2).

Figure 2

<HELP> for explanation. ComdtySTDY

1<GO> create new study, 2<GO> documentation, 3<GO> download SDK

1) Create New 2) Docs 3) CS.Net SDK 4) Feedback Custom Study Manager

View Studies All

Study Name	Study Provider	Type
67) McGinley Dynamic Indicator	BLOOMBERG	CS.NET
68) MLR R-Squared	BLOOMBERG	CS.NET
69) MLR Slope	BLOOMBERG	CS.NET
70) Moving Average	BLOOMBERG	CS.NET
71) Moving Average of RSI	BILL SINDEL	CS.Lite
72) Moving Avg - Adaptive	BLOOMBERG	CS.NET
73) Moving Linear Regression	BLOOMBERG	CS.NET
74) myMA	BILL SINDEL	CS.Lite
75) On Balance Volume	BLOOMBERG	CS.NET
76) Opening Range	BLOOMBERG	CS.NET
77) Pivot	BLOOMBERG	CS.NET
78) Premium Discount	BLOOMBERG	CS.NET
79) Previous OHLC	BLOOMBERG	CS.NET
80) Price Magnet Down	BLOOMBERG	CS.NET
81) Price Magnet Up	BLOOMBERG	CS.NET
82) Price Zone Oscillator	BLOOMBERG	CS.NET
83) Psychological Line	BLOOMBERG	CS.NET
84) REX Oscillator	BLOOMBERG	CS.NET
85) RSI w 2 Mvg Avg's	BILL SINDEL	CS.Lite
86) RSI with Mov Avg	BLOOMBERG	CS.NET

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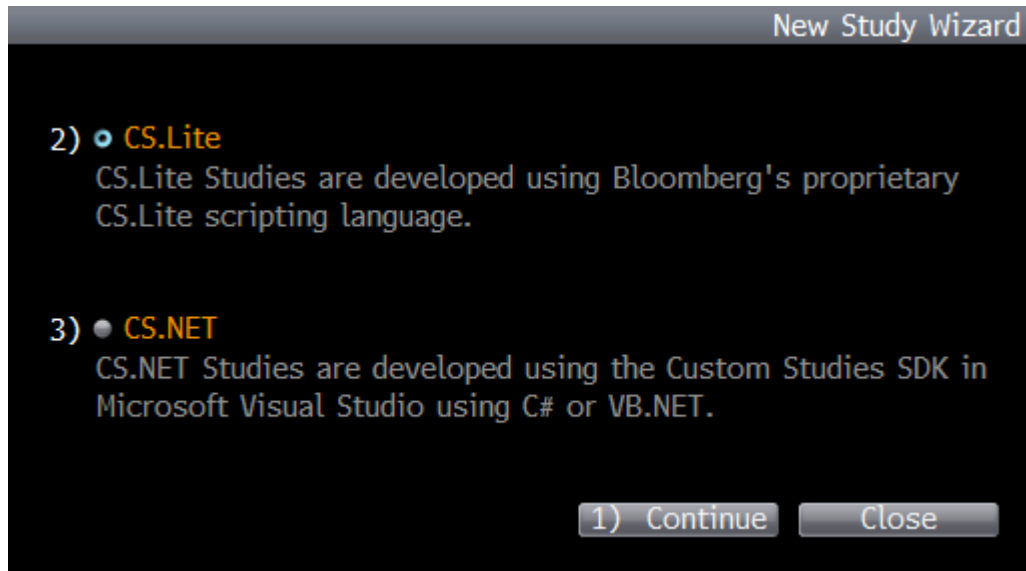
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Creating a new Custom Study

To create a new custom study, select **1) Create New** on the red toolbar. The pop-up window will default to creating a new CS.Lite custom study; select **1) Continue** (Figure 3).

Figure 3



* For more information about CS.NET, go to STDY<GO> and click on 2) Docs on the red toolbar; you may request permission to download the CS.NET SDK with the **4) Feedback** button on the red toolbar.

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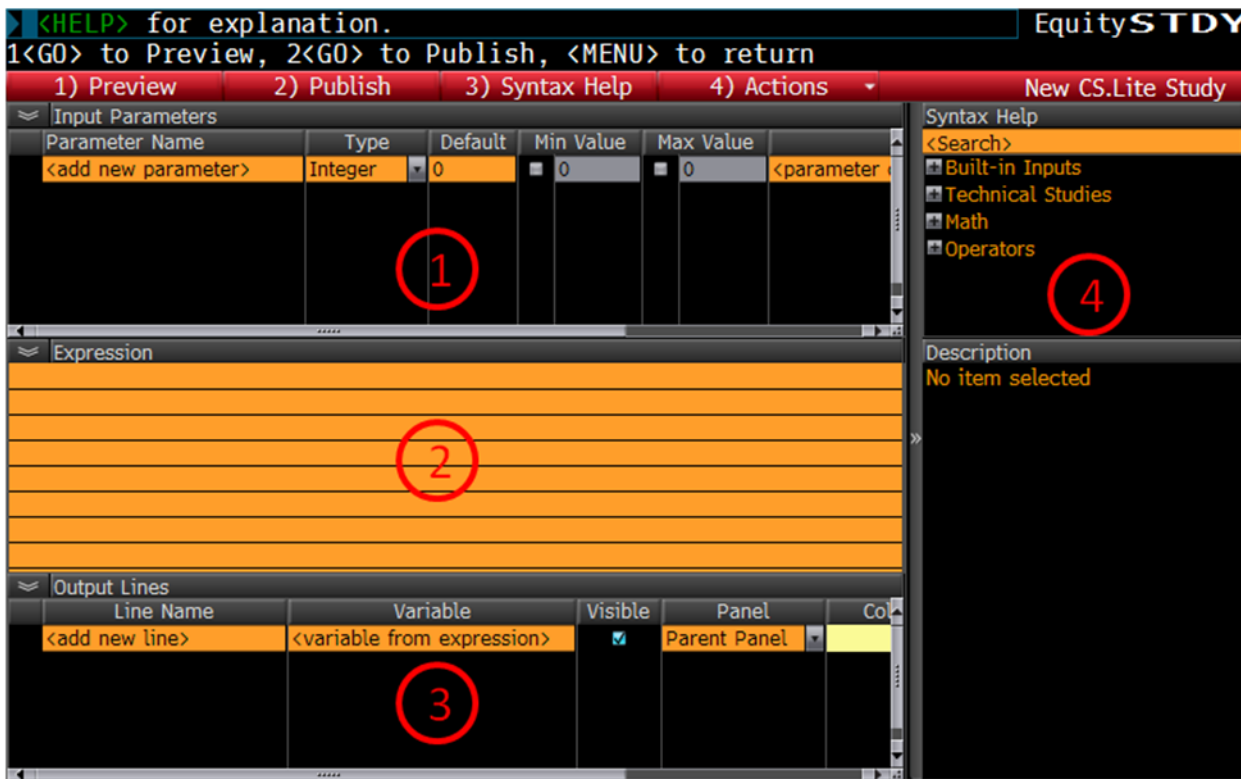
CS.Lite Custom Study Editor

Once selected, the CS.Lite editor will appear, as shown in Figure 4. The editor is divided into 4 sections:

- ① Input Parameters
- ② Expression
- ③ Output Lines
- ④ Syntax Help

The Syntax Help side panel ④ can be hidden by clicking the double arrows on the panel, or choosing **3) Syntax Help** on the red toolbar. The side panel can be expanded again at any time using either of the same methods.

Figure 4



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Section 1: Input Parameters

Figure 5

	Parameter Name	Type	Default	Min Value	Max Value	Display Name	
	<add new parameter>	Integer	0	0	0	<parameter display name>	
1.	MAper	Integer	50	<input checked="" type="checkbox"/> 2	0	Moving Average Period	X

Up to 5 parameters can be specified for a study. To add a parameter, choose a name to reference the parameter and enter it in the **Parameter Name** field. The Parameter Name should be kept short, as this will need to be called in other parts of the editor. A more descriptive name may be entered in the Display Name field. The name chosen in the **Display Name** field for the parameter is the name that will be shown in the Properties dialogue box available from the pencil icon in the study side panel or right clicking on the indicator once the custom study is added to a chart. The Type of parameter can be either Integer (whole number) or Real (numbers that may include decimals). A default value for the parameter value must be chosen; Minimum and/or Maximum acceptable values for the parameter can also be set, if desired by checking the appropriate boxes and typing in the preferred value. Once a parameter line has been completed, press<GO>; the parameter is now accessible for further use, and a new line is available for the next parameter to be created.

In the example in Figure 5, “MAper” is the label that will be used in the Expression section or Output Lines section of the editor and “Moving Average Period” is the name that will be shown to modify the indicator on the chart. A **Default** value of 50 is used to set the moving average period to 50 bars for this example, with a **Min Value** of 2 bars, and no **Max Value**. This study will default to a 50 bar setting as designated by this parameter, but is now customizable and can be edited by the user at any time when applied to a chart.

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Section 2: Expression

Figure 6

The screenshot shows a software interface with a dark header bar containing a double arrow icon and the word "Expression". Below the header is a large orange rectangular area. The first line of this area contains the text "myMA = SMAvg(C, MAper);". The remaining lines of the orange area are empty.

The **Expression** section is where the equations (algorithms) that constitute the study and produce the output values are entered and calculated. Syntax for the equations in this section consist of an expression on the left side of the “=” followed by a calculation formula. The calculation formula may be a reference to an included indicator, as in the moving average formula in Figure 6, or a standard math equation that is part of the overall indicator calculation.

The example above shows the creation of a Simple Moving Average line calculated using the close for the last “MAper” bars, which was set at 50 in the **Input Parameters** section. The left side of the equation, where the result of the calculation is called “myMA” will be referenced in the bottom **Output Lines** section if myMA is chosen as one of the items that should be shown on the chart screen. The syntax for the simple moving average is “SMAvg(Series, Period). This syntax is easily found in the **Syntax Help** side panel (Section 4 shown in Figure 3) as well as Appendix B of this document.

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Section 3: Output Lines

Figure 7

Output Lines							
Line Name	Variable	Visible	Panel	Color	Width	Style	
Moving Average	myMA	<input checked="" type="checkbox"/>	Parent Panel		1	Solid Line	
			1 Parent Panel				
			2 Study Panel				

The **Output Lines** section of the editor, shown in Figure 7, is where the specific expression products are chosen to shown on the chart. Each CS.Lite study must contain at least 1 output line, with a limit of 5 permitted per study. The first column in this section, **Line Name**, is the name that will be in the legend for the indicator. The second column, **Variable**, is the name taken from the main Expression section of the editor. The third column, **Visible**, contains a check box that will establish the initial default state of the output line. If this box is left unchecked, when added to a chart, that line will not be shown. It will still be available for display by checking the box in the Display tab of the properties dialogue box when the study is added to a chart.

The **Panel** column contains a drop down (shown expanded in Figure 7) that allows the user to choose whether to place the specific line in the Parent Panel that houses the price chart, or in a new Study Panel that will be created below the Parent Panel.

Clicking on the corresponding color column for a line launches a color palette window as shown in Figure 8. Here the user can use the vertical slider to choose a general color, and the small circle in the leftmost section to determine the shade of that color. The right most part of this selector shows the current color on the bottom half, and what the new color output will be in the top half.

The **Width** column sets the thickness of the line to be output and can be defaulted from 1 (narrowest) to 5 (widest). The last column, **Style**, shows a dropdown of the different output styles available (Figure 9).

Figure 8



Figure 9

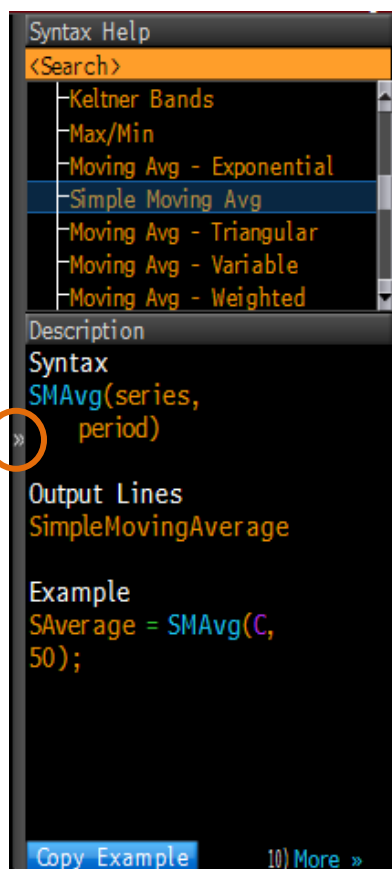


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Section 4: Syntax Help

The **Syntax Help** side panel can be exposed or hidden as needed. The panel defaults to the open position when a new study is being created. The panel can be toggled between shown and hidden by using either the double arrows on side of the panel or by clicking on the **3) Syntax Help** button on the red toolbar.

Figure 10



In Figure 10, the syntax for the Simple Moving Average used in the algorithm in Figure 6 is shown. As in the Example provided in the Help panel, the close is referenced as the “series” to be accessed, and the parameter MAper created in the Input Parameters section in Figure 4 is substituted for the number 50 used in the help example for the “period.”

This panel also includes a “Copy Example” button that when clicked will copy the Example provided to the clipboard. This can then be pasted directly into the Expression section to help with creating the equation, or pasted into any other application for other use. Clicking on 10) More brings up a further explanation of the indicator and a picture of a sample chart with that indicator applied.

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Previewing a CS.Lite custom study

Once the initial version of the custom study has been defined and at least one output line created, the study output can be previewed before being published to confirm that the display is as expected. Clicking the **1) Preview** button on the red toolbar launches a new window with a preview of the study.

Figure 11



Figure 11 shows the preview window with the Moving Average line created in the previous steps. The preview window can be changed in much the same way as a G chart; hotspots are located at the top to quickly preview the new indicator on different securities, time frames, and chart types. Additionally, by clicking the pencil icon in the side panel, the properties of the study, including any user adjustable parameters previously defined, can be seen and adjusted (Figure 12).

Figure 12



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Publishing a new CS.Lite study

After previewing the study, click on the **2) Publish** button to launch the publishing window where the study will be named for future use on charts and a field is available for a description of the study that will also show up in the properties of the study when applied (Figure 13).

Figure 13

Study Settings

Study Name: myMA

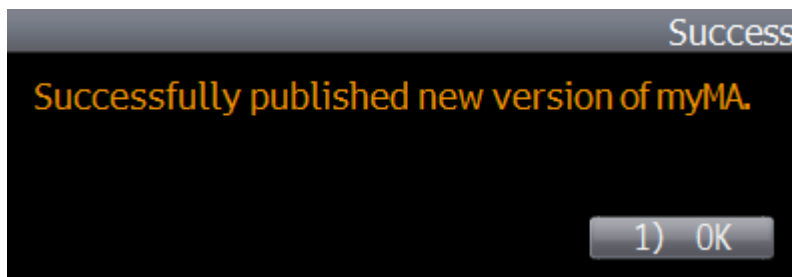
Description:
Simple moving average created in CS.Lite

Note: CS.Lite studies are only supported on Multiple Security charts in {G<G0>} and must be published before use.

1) Save Close

The notification window shown in Figure 14 will pop up indicating that the new custom study has been successfully saved and is now available from the study picker within a G chart.

Figure 14



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Using a CS.Lite Custom Study on a multi-security G chart

To add the new study to a chart, click the **Studies** button on the chart toolbar to expand the side panel shown in Figure 15.

Figure 15



From this side panel, select **Add Study** to launch the Study Browser. The Custom Study will be found under **My Studies** within the **User Defined Studies** tree node (figure 16).

Figure 16



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Click on the desired study, and it will appear on the right side under **Selected Studies** (Figure 17). Clicking on the study in the list of **Technical Studies** more than once will apply multiple instances of the indicator to the chart. All of these instances will appear on the right side, as the user definable parameters, as set in the **Input Parameters** section of the editor (Figure 5) can now be adjusted independently for each instance of the study.

Figure 17

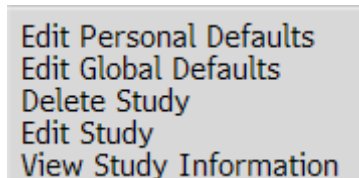


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Editing a previously created CS.Lite Custom Study

Once a study has been created, it can be edited at any time by reopening the study in the CS.Lite editor. To do this, open the study browser list of all studies with **STDY<GO>**. Find the desired study in the list and right click on any column in the study's row. Choose "Edit Study" from the list shown in Figure 18. This will open the CS.Lite editor from which any part of the study can be changed. Additionally, the default values of the Input Parameters and study description can also be modified.

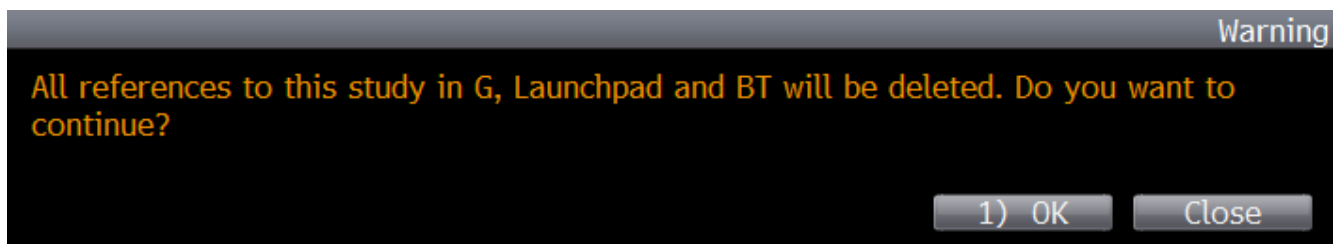
Figure 18



Deleting a previously created CS.Lite Custom Study

Custom studies can easily be deleted when they will no longer be used. The same method is employed as above for editing; right click on the study in the **STDY<GO>** list and choose **Delete Study**. At this point a confirmation box will appear to confirm deletion of the study (Figure 19). Click **1) OK** and the study will no longer appear in the list of available studies. This will also cause the study to be deleted from charts. The change will take effect when the charts are refreshed.

Figure 19

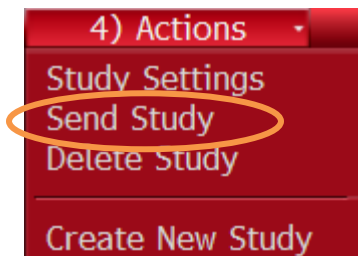


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Sending a CS.Lite Custom Study

Studies can be sent to other Bloomberg users for use on their charts. Click the **4) Actions** button on the red toolbar and select **Send Study** from the drop down list (Figure 20).

Figure 20



A message window will pop up (Figure 21). Insert user names and any additional message text and click send.

Figure 21

A screenshot of a 'Send Study' message window. It has a dark background with orange text and input fields. The 'To:' field is empty. The 'Subject:' field contains 'FW: CS.Lite Study:myMA'. The 'Message:' field contains 'Please see attached CS.Lite.' and has several empty lines below it. At the bottom right is a button labeled '1) Send'.

The study will appear as an attachment to a MSG<GO>. When the attachment is opened, a confirmation box will appear. Click **Save** and the recipient will now see the study in their study list.

Figure 22

A screenshot of a 'Save CS.Lite Study' confirmation window. It has a dark background with orange text and input fields. The 'Study Name:' field contains 'myMA'. The 'Description:' field contains 'Simple moving average created in CS.Lite' and has several empty lines below it. At the bottom are two buttons: '1) Save' and 'Close'.

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APPENDIX A – Supported Inputs, Math, and Operators

Inputs

Operator	Description	Example
O	Open Price Series	openPrice = O
H	High Price Series	highPrice = H
L	Low Price Series	lowPrice = L
C	Close Price Series	closePrice = C
V	Volume Series	volume = V

Arithmetic

=	Assignment of an expression in a variable	closePrice = C;
+	Addition	newPrice = H+L;
-	Subtraction	diff = H-L;
*	Multiplication	halfPrice = 0.5*C;
/	Division	closePctOfHigh = C/H;
%	Remainder	rem = C%2;
-	Negation	negativeClose = -(C);

Shifts and Crosses

<<	Shift Left	tomosClose = C<<1;
>>	Shift Right	ydaysClose = C>>1;
X	Crosses	sampleMA = SMAvg(C, 14); reverse = C X sampleMA;
XD	Crosses Below	sampleMA = SMAvg(C, 14); bearish = sampleMA XD C;
XU	Crosses Above	sampleMA = SMAvg(C, 14); bullish = sampleMA XU C;

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Comparison

<	Less than	yestClose = C >> 1; lowBelowYestClose = (L < yestClose);
>	Greater than	yestClose = C >> 1; highAboveYestClose = (H > yestClose);
<=	Less than or equal	yestClose = C >> 1; lowBelOrEqYestClose = (L <= yestClose);
>=	Greater than or equal	yestClose = C >> 1; highAbovOrEqYestClose = (L >= yestClose);
!=	Not equal	yestClose = C >> 1; unequalClose = (C != yestClose);

Logical

&&	And	yestHigh = H>>1; yestLow = L>>1; insideDay = (H > yestHigh) && (L<yestLow)
	Or	sampleRSI = RSI(C, 14); overboughtORoversold = (sampleRSI > 70) (sampleRSI < 30);
!	Not	sampleRSI = RSI(C, 14); notOverbought = !(sampleRSI > 70);

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Math

Abs	Absolute Value	absVal = Abs(C);
Accum	Accumulation	accumuln = Accum(C);
Exp	Exponent	exponent = Exp(C);
Ln	Natural Log	natLog = Ln(C);
Log10	Log to Base 10	log = Log10(C);
MovingMax	Moving Maximum	5DayHigh = MovingMax(C, 5);
MovingMin	Moving Minimum	5DayLow = MovingMin(C, 5);
MovingSum	Moving Sum	sum5Closes = MovingSum(C, 5);
MovingStDev	Moving Standard Deviation	1DevBand = MovingStDev(C, 20);
Power	Power	closeCubed = Power(C, 3);
Round	Round	closeRndedto2 = Round(C, 2);
RoundUp	Round Up	closeRndedUpto2 = RoundUp(C,2);
RoundDown	Round Down	closeRndedDownto2 = RoundDown(C, 2);
Sqrt	Square Root	sqrtOfClose = Sqrt(C);

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APPENDIX B – Available Technical Studies

Average Line

Syntax	AvgLine(series, period)[Output]
Required Inputs	series , period
Available Outputs	Average Line, Deviation3Up, Deviation2Up, Deviation1Up, Deviation1Dn, Deviation2Dn, Deviation3Dn
Example	AvgLineDevUpBnd = Avgline(c, 50)[Deviation1Up];

Average True Range

Syntax	ATR(highSeries, lowSeries, closeSeries, period, MAType)
Required Inputs	highSeries, lowSeries, closeSeries, period, MAType
Available Outputs	AverageTrueRange
Example	ATRline = ATR(H, L, C, 5, Exponential);

Acc/Dist Oscillator

Syntax	ADOsc(openSeries, highSeries, lowSeries, closeSeries, MAType, period)[Output]
Required Inputs	openSeries, highSeries, lowSeries, closeSeries, MAType, period
Available Outputs	ADO, Signal
Example	ADOscillator = ADOsc(o, H, L, C, Simple, 5)[Signal];

Bollinger Bands

Syntax	Boll(series, period, upperFactor, LowerFactor)[Output]
Required Inputs	Series, period, upperFactor, LowerFactor
Available Outputs	BollMavg, UpperBand, LowerBand, PercentB
Example	upperBollBnd = Boll(C, 20, 2.0, 2.0)[UpperBand];

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Commodity Channel Index

Syntax	CMCI(highSeries, lowSeries, closeSeries, period)
Required Inputs	highSeries, lowSeries, closeSeries, period
Available Outputs	CommodityChannelIndex
Example	CMCIIline = CMCI(H, L, C, 13)

Directional Movement Indicator

Syntax	DMI(highseries, lowSeries, closeSeries, period)[Output]
Required Inputs	highseries, lowSeries, closeSeries, period
Available Outputs	PlusDMI, MinusDM{I, ADX, ADXR
Example	ADXline = DMI(H, L, C, 14)[ADX]

Erlanger Trend Direction

Syntax	ETD(highSeries, lowSeries, closeSeries)[Output]
Required Inputs	highSeries, lowSeries, closeSeries
Available Outputs	UpTrend, Rally, Pullback, DownTrend
Example	erlaRally = ETD(O, H, L, C)[Rally];

Fear/Greed Indicator

Syntax	Radar1FG(highSeries, lowSeries, closeSeries, sensitivity, firstLookBack, lookback, alertLevel)[Output]
Required Inputs	highSeries, lowSeries, closeSeries, sensitivity, firstLookBack, lookback, alertLevel
Available Outputs	Radar, BullAlert, BearAlert
Example	FGRadar = Radar1FG(H, L, C, 5, 0, 3, 0)[Radar];

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Hurst Exponent

Syntax	Hurst(series, period)
Required Inputs	series, period
Available Outputs	HurstExponent
Example	hurstLine = Hurst(C, 25)

Ichimoku

Syntax	GOC(highSeries, lowSeries, closeSeries, conversion, base, lead, lag)[Output]
Required Inputs	highSeries, lowSeries, closeSeries, conversion, base, lead, lag
Available Outputs	BaseLine, ConversionLine, Lagging, Leading1, Leading2
Example	Gocbaseline = GOC(H, L, C, 9, 26, 26, 26)[Baseline]

Keltner Bands

Syntax	KTLN(high, Series, lowSeries, closeSeries, bandPeriod, middlePeriod, UpperBand%, lowerband%)[Output]
Required Inputs	high, Series, lowSeries, closeSeries, bandPeriod, middlePeriod, UpperBand%, lowerband%
Available Outputs	MiddleBand, UpperBand, LowerBand
Example	keltnerMidBnd = KLTN(H, L, C, 10, 10, 150, 150)[MiddleBand]

Max/Min

Syntax	MaxMin(inputMax, inputMin, period, calcRetrace, retracement)[Output]
Required Inputs	inputMax, inputMin, period, calcRetrace, retracement
Available Outputs	Min, Max, Retracement
Example	minLine = MaxMin(H, L, 14, true, 20)[Min];

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Moving Avg – Exponential

Syntax	EMAvg(series, period)
Required Inputs	series, period
Available Outputs	ExponentialMovingAverage
Example	EAverage = EMAvg(C, 50);

Simple Moving Avg

Syntax	SMAvg(series, period)
Required Inputs	series, period
Available Outputs	SimpleMovingAverage
Example	SAaverage = SMAvg(C, 50);

Moving Avg – Triangular

Syntax	SMAvg(series, period)
Required Inputs	series, period
Available Outputs	TriangularMovingAverage
Example	TAaverage = TMAvg(C, 50);

Moving Avg – Variable

Syntax	VMAvg(series, period)
Required Inputs	series, period
Available Outputs	VariableMovingAverage
Example	VAaverage = VMavg(C, 50);

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Moving Avg – Weighted

Syntax	WMAvg(series, period)
Required Inputs	series, period
Available Outputs	WeightedMovingAverage
Example	WAaverage = WMAvg(C, 50);

Moving Avg Conv/Divergence (MACD)

Syntax	MACD(series, period1, period2, period3)[Output]
Required Inputs	series, period1, period2, period3
Available Outputs	MACD1, MACD2, Signal
Example	MACDSignalLine = MACD(C, 12, 26, 9)[Signal]

Moving Avg Envelopes

Syntax	MAE(series, period, upperBand, lowerBand)
Required Inputs	series, period, upperBand, lowerBand
Available Outputs	MiddleBand, UpperBand, LowerBand
Example	MvAvgEnvUpBand = MAE(C, 15, 3, 3)[UpperBand];

Moving Avg Oscillator

Syntax	MAO(series, oscType, MAType1, MAType2, MAType3, period1, period2, period3)[Output]
Required Inputs	series, oscType, MAType1, MAType2, MAType3, period1, period2, period3
Available Outputs	Osc, Signal, Diff
Example	MAOscillator = MAO(C, Difference, Simple, Simple, Simple, 5, 15, 9)[Osc];

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Parabolic Studies

Syntax	PTPS(highSeries, lowSeries, accelFactor, startFactor, maxFactor)
Required Inputs	highSeries, lowSeries, accelFactor, startFactor, maxFactor
Available Outputs	ParabolicLine
Example	parabolic = PTPS(H, L, 0.02, 0.2, 0.02);

Rate of Change

Syntax	ROC(series, period)
Required Inputs	series, period
Available Outputs	RateOfChange
Example	rateOfChange = ROC(C, 1);

Relative Strength Index

Syntax	RSI(series, period)
Required Inputs	series, period
Available Outputs	RelativeStrengthIndex
Example	RSILine = RSI(C, 14);

REX Oscillator

Syntax	Rex(openSeries, highSeries, lowSeries, closeSeries, rexPeriod, signalPeriod)
Required Inputs	openSeries, highSeries, lowSeries, closeSeries, rexPeriod, signalPeriod
Available Outputs	REX, Signal
Example	REXLine = Rex(O, H, L, C, 20, 3)[REX];

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Stochastics

Syntax	TAS(highSeries, lowSeries, closeSeries, periodK, periodD, periodDS, periodDSS)[Output]
Required Inputs	highSeries, lowSeries, closeSeries, periodK, periodD, periodDS, periodDSS
Available Outputs	K, D, DS, DSS
Example	stochKLine = TAS(H, L, C, 20, 5, 5, 3)[K];

Trading Envelopes

Syntax	TE(series, period, upperBndFactor, lowerBndFactor)[Output]
Required Inputs	series, period, upperBndFactor, lowerBndFactor
Available Outputs	UpperBand, LowerBand
Example	TEUpperBnd = TE(C, 20, 2, 2)[Upperband];

Trender

Syntax	Trender(highSeries, lowSeries, closeSeries, sensitivity, useClose)
Required Inputs	highSeries, lowSeries, closeSeries, sensitivity, useClose
Available Outputs	TrendUp, TrendDown
Example	trendUpLine = Trender(H, L, C, 3, true)[TrendUp];

Williams %R

Syntax	WLPR(highSeries, lowSeries, closeSeries, period)
Required Inputs	highSeries, lowSeries, closeSeries, period
Available Outputs	Williams% R
Example	willamsPctR = WLPR(H, L, C, 14);

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APPENDIX C – Sample Studies

Moving Average of RSI

This simple study is a popular combination of two existing studies, Relative Strength Index (RSI) and a Simple Moving Average. The Expression in this indicator uses the simple moving average study formula with the entire RSI formula inserted as the Series to be averaged.

Input Parameters

Parameter Name	Type	Default	Min Value	Max Value	Display Name	
<add new parameter>	Integer	0	0	0	<parameter display name>	
1 MAper	Integer	20	2	0	Moving Average Period	X
2 RSIper	Integer	14	0	0	RSI Period	X

Expression [Click to edit]

MArsi = SMAvg(RSI(C, RSIper),MAper);

Output Lines

Line Name	Variable	Visible	Panel	Color	Width	Style	
<add new line>	<variable from expression>		Parent Panel		1	Solid Line	
1 MovAvg of RSI	MArsi		Study Panel		1	Solid Line	X

The Custom Study output is placed on a new study panel below the chart, and is used to smooth the movements of the RSI indicator over time.



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ATR Stop

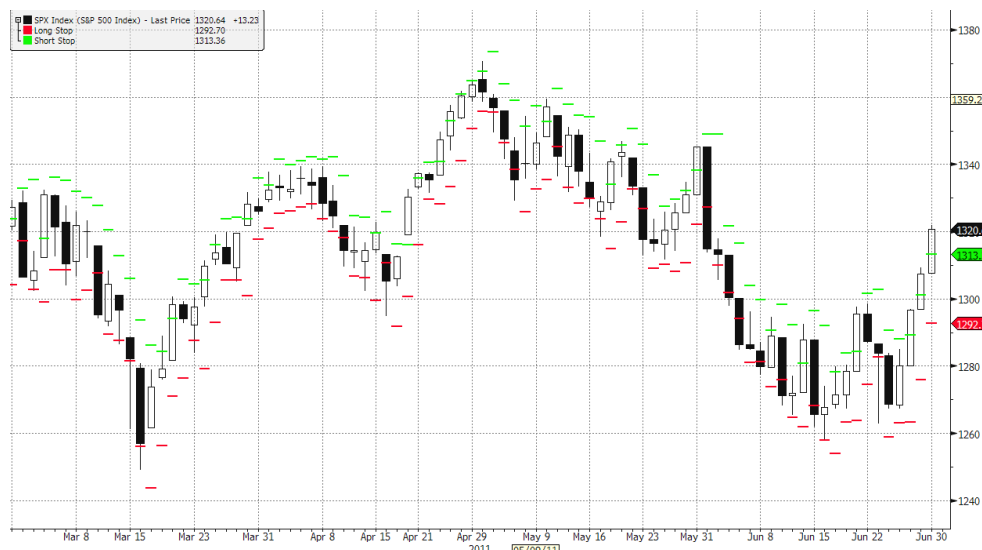
A stop using Average True Range as a reference is a popular indicator. This can be created in CS.Lite with a multiplier included to personalize the stop to user preferences of the percent of the ATR over the specified period to add or subtract from the high and low. In the example below, the defaults will result in a stop that is equal to 25% of the 14 Day ATR added to the high and subtracted from the low of the previous bar.

Input Parameters						
Parameter Name	Type	Default	Min Value	Max Value	Display Name	
<add new parameter>	Integer	0	0	0	<parameter display name>	
1. per	Integer	14	0	0	ATR Period	
2. pct	Integer	25	0	0	ATR Percent Multiplier	

Expression [Click to edit]	
<code>multpct = pct / 100;</code> <code>ls = L>>1 - multpct*ATR(H,L,C,per,Simple);</code> <code>ss = H>>1 + multpct*ATR(H,L,C,per,Simple);</code>	

Output Lines						
Line Name	Variable	Visible	Panel	Color	Width	Style
<add new line>	<variable from expression>	<input checked="" type="checkbox"/>	Parent Panel	Yellow	1	Solid Line
1. Long Stop	ls	<input checked="" type="checkbox"/>	Parent Panel	Red	2	Open Step
2. Short Stop	ss	<input checked="" type="checkbox"/>	Parent Panel	Green	2	Open Step

This study outputs small markers (Open Step Line) above and below the price bars to represent the long and short stop values.



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Moving Average Cross with Volume Confirmation

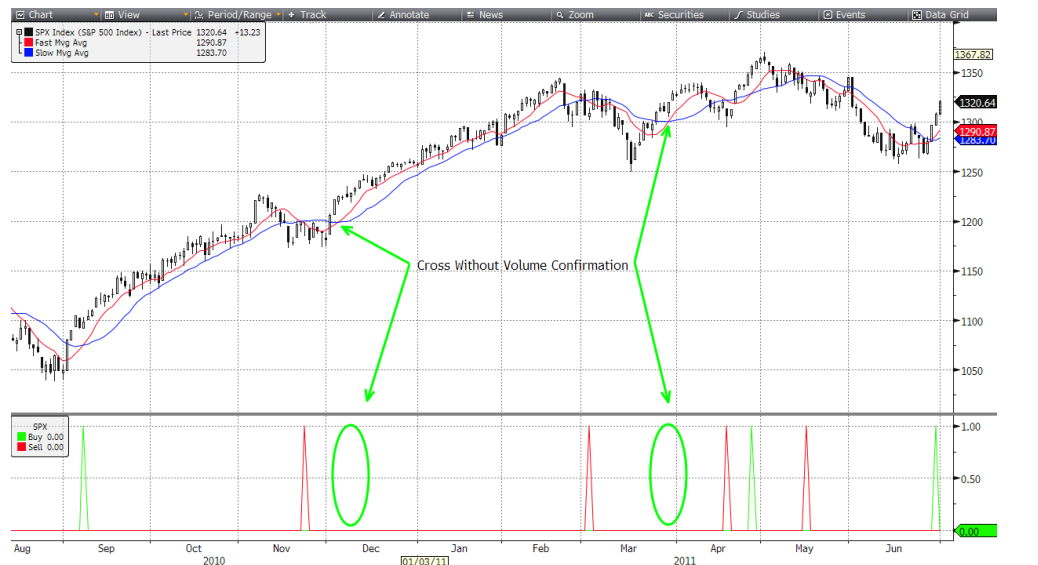
This study will look for traditional fast/slow moving average crosses as buy/sell signals, with Volume used as a confirmation of the crossover signals. CS.Lite can generate Boolean (true/false) 1 and 0 values that can then be displayed in a Study Panel below the chart.

Input Parameters						
Parameter Name	Type	Default	Min Value	Max Value	Display Name	
<add new parameter>	Integer	0	0	0	<parameter display name>	
1. MA1per	Integer	9	1	0	Fast MA Period	X
2. MA2per	Integer	18	2	0	Slow MA Period	X
3. Vper	Integer	20	0	0	Volume Period	X
4. Vmult	Real	0.85	0	0	Volume Multiplier	X

Expression	
MA1 = SMAvg(C, MA1per);	
MA2 = SMAvg(C, MA2per);	
Volavg = SMAvg(V, Vper);	
LC = MA1 XU MA2 && V > (Volavg * Vmult);	
SC = MA1 XD MA2 && V > (Volavg * Vmult);	

Output Lines							
Line Name	Variable	Visible	Panel	Color	Width	Style	
<add new line>	<variable from expression>	<input checked="" type="checkbox"/>	Parent Panel		1	Solid Line	
1. Fast Mvg Avg	MA1	<input checked="" type="checkbox"/>	Parent Panel		1	Solid Line	X
2. Slow Mvg Avg	MA2	<input checked="" type="checkbox"/>	Parent Panel		1	Solid Line	X
3. Buy	LC	<input checked="" type="checkbox"/>	Study Panel		1	Solid Line	X
4. Sell	SC	<input checked="" type="checkbox"/>	Study Panel		1	Solid Line	X

The Output Lines for this study show on both the Parent (chart) Panel and a Study Panel below. The moving averages show on the chart, and the Periods for these moving averages are available to be modified after the indicator is applied to the chart. In the Study Panel, a green spike is generated by the Boolean condition 'LC' for a buy cross confirmed by volume that is above the level specified as 'Volume Multiplier'; a red spike is conversely generated from the Boolean 'SC'.



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