Lesson 4

Chart Analysis – Bar-Building Techniques and Chart Styles

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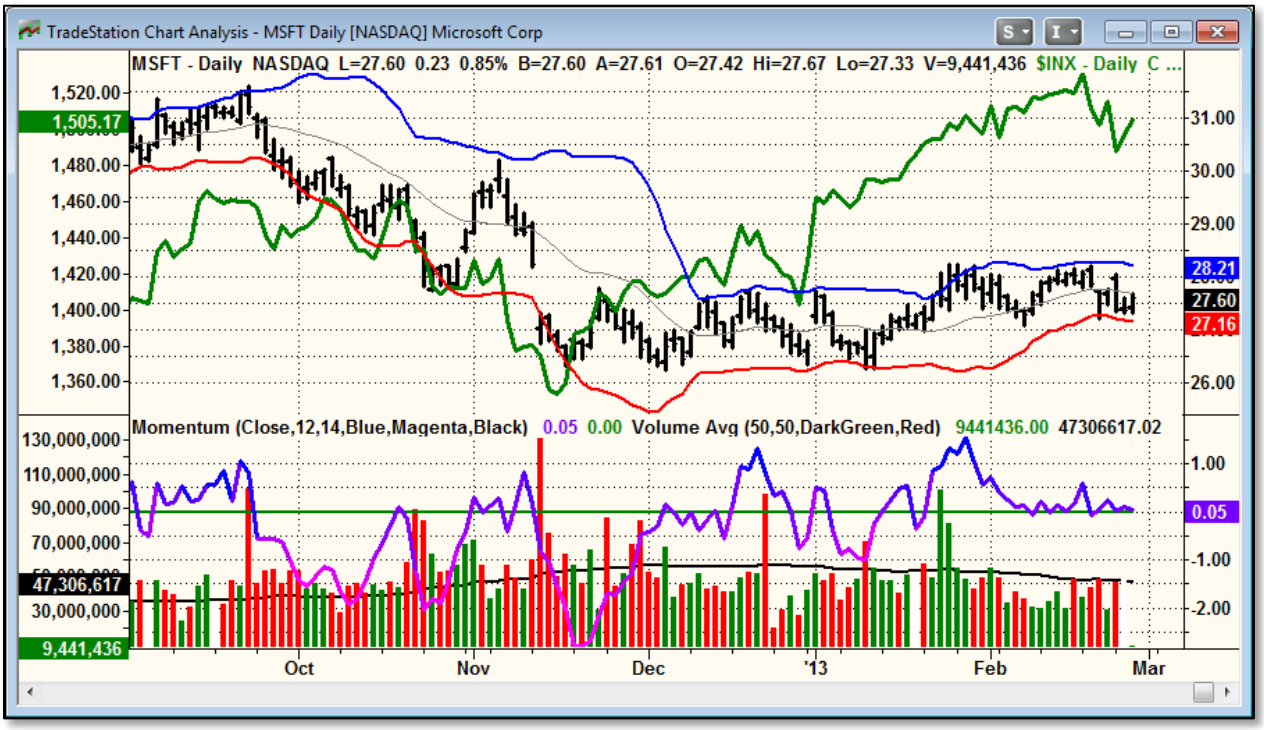
Chart Analysis Windows

Chart Analysis windows, or charts, are used to display price data for historical and real-time technical analysis, as well as for strategy back-testing and automation.

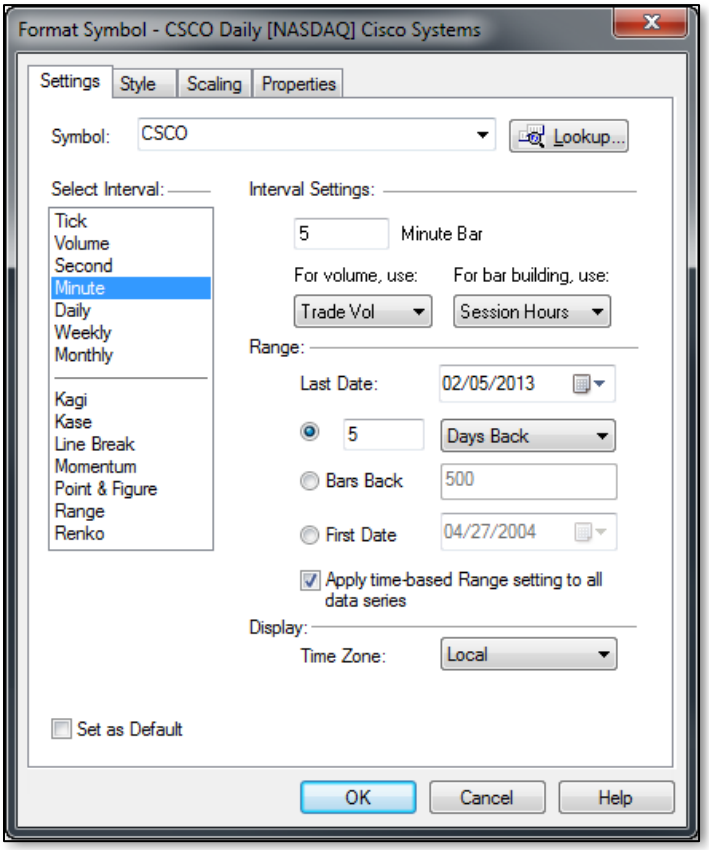


You can create as many Chart Analysis windows as you like, on the same workspace or on different workspaces. To create a Chart Analysis window, click on the **Chart Analysis** icon from the TradingApp Launcher or click on the **File – New – TradingApp Window…** menu sequence and click **Chart Analysis** from the **TradingApp Launcher**.

Formatting the Symbol in a Chart

You can change the settings and appearance of a Chart Analysis window by formatting the symbol. To access the **Format Symbol** dialog, click on the **Format – Symbol…** menu sequence or right-click on the background of a Chart Analysis window and click on **Format Symbol…** from the right-click menu. The **Format Symbol** dialog has four tabs with all the settings to customize the data and appearance in a Chart Analysis window.

Changing Symbol, Bar Interval and Range

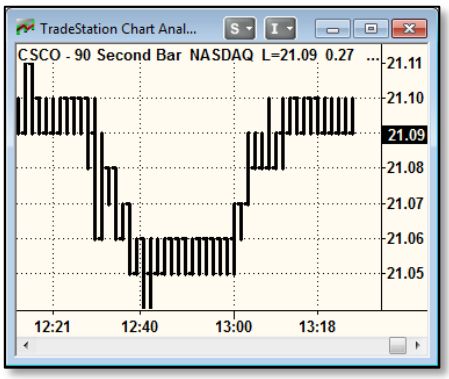


In the **Select Interval** box, you can choose the method used to build bars. Interval refers to the rule that will be used to determine when a bar (or column, etc.) closes and the next begins. TradeStation offers intervals that are time-based, activity-based or price-based.

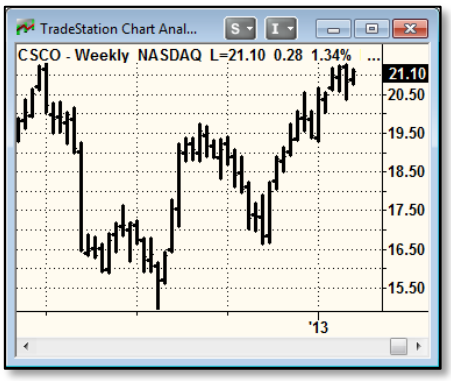
Under the section labeled **Range**, you can specify the amount of historical data to load. Historical data can be a specific number of days, weeks, months or years back. It can also be a specific number of bars back or a range between a first date and last date.

Note: In order for a Chart Analysis window to update in real time, **Last Date** under **Range** must be the current date. You must also subscribe to the exchange's real-time data service.

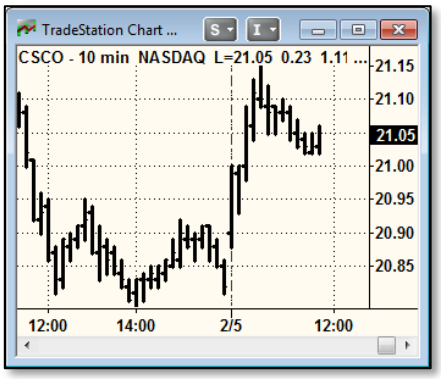
Time-Based Intervals



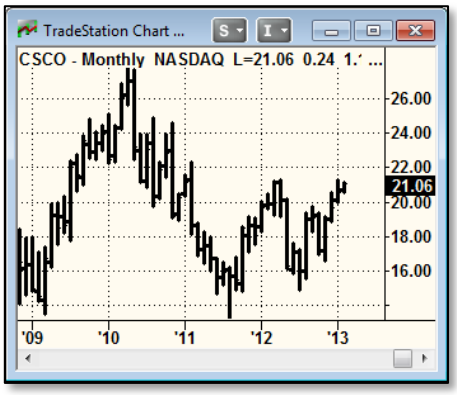
Seconds - Each bar represents the trading activity within a user-defined number of seconds.



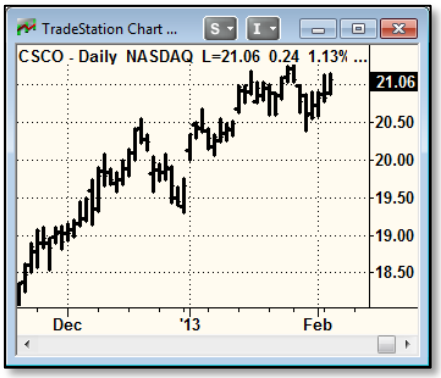
Weekly - Each bar represents the trading activity from the beginning of the week to the end.



Minute - Each bar represents the trading activity within a user-defined number of minutes.



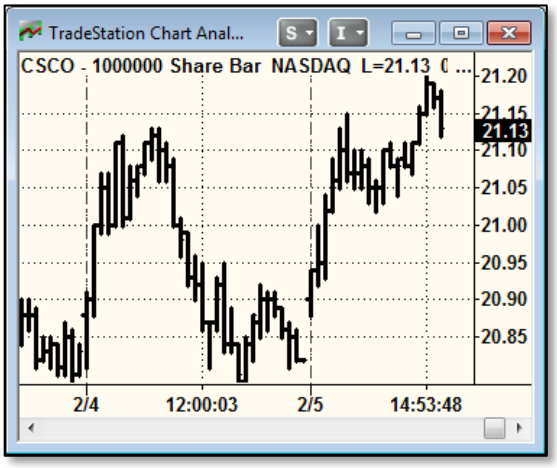
Monthly - Each bar represents the trading activity from the beginning of the calendar month to the end.



Daily - Each bar represents the trading activity from the beginning of the symbol's trading session to the end (one day).

Activity-Based Intervals

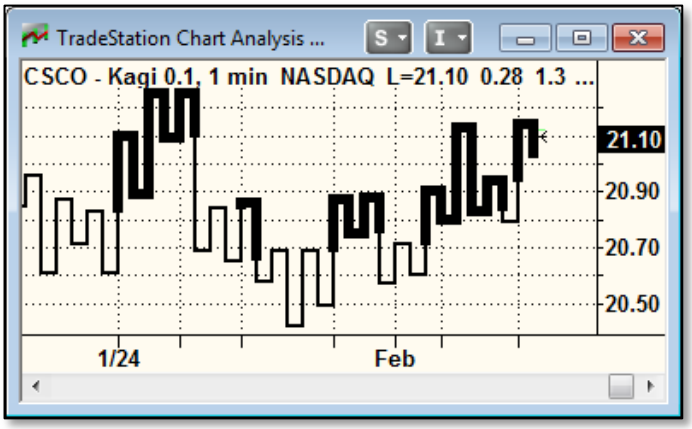
Tick - Each bar represents the trading activity within a user-defined number of trades.



Volume (Share) - Each bar represents the trading activity within a user-defined number of shares or contracts traded.

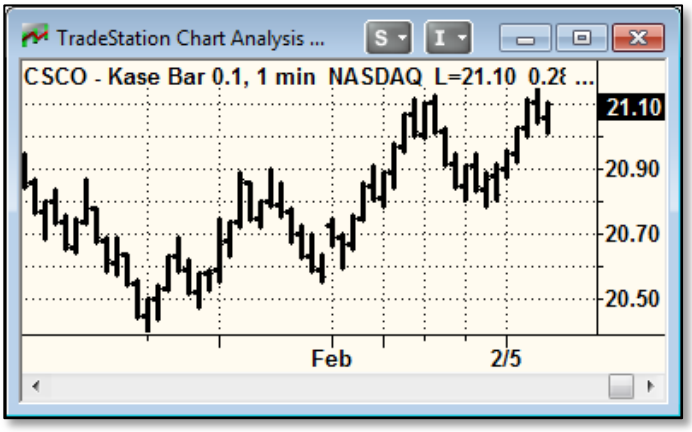
Price-Based Intervals

Kagi Chart



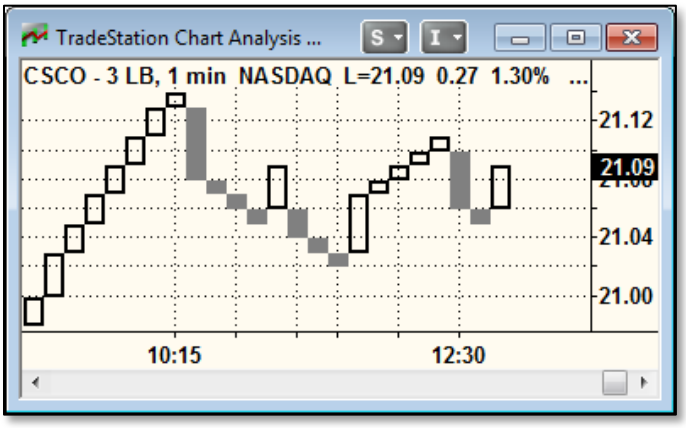
Kagi charts display a series of connecting vertical lines whose thickness and direction are dependent on price direction. When the market moves in the same direction as a prior Kagi line, the line will be extended. When the market moves in the opposite direction by at least the reversal amount, a new Kagi line in the opposite direction will be displayed. The color and width of the Kagi line changes when the Kagi line breaks a prior high or low.

Kase Chart



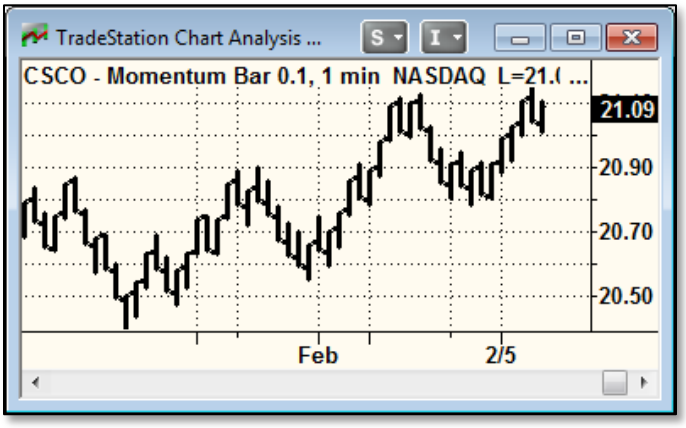
Kase charts create bars with a true range based on a user's specified target range value by using only real price data. Kase Bar charts look like a traditional bar (or candlestick) chart except that the size of each bar is dictated by a target range value; all the bars are approximately the same size or range.

Line Break Chart



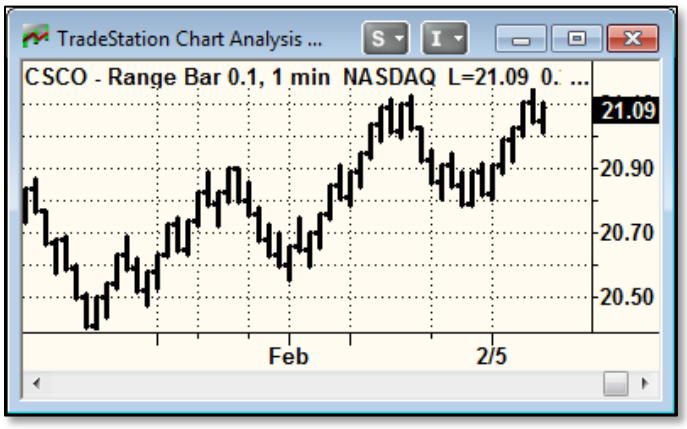
The Line Break chart is made up of a series of vertical blocks called lines. Line Break charts are most commonly set to three, and are known as "three-line break" charts. A break of the lowest low of the last three up lines will generate a down line. A break of the highest high of the last three down lines will generate an up line.

Momentum Bar Chart



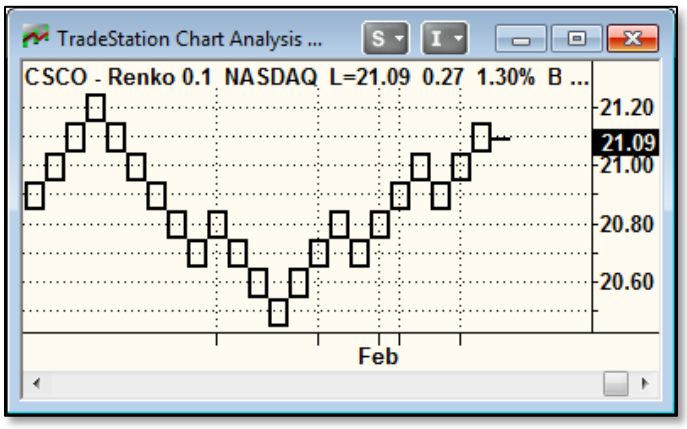
The size of Momentum bars will always be the range size set by the user and will never be anything smaller or larger unless it is the current bar that is building. Since a new bar cannot be started until the specified range is exceeded, the open of each Momentum bar is always one price tick above or below the close of the previous Momentum bar. There are no gaps displayed on Momentum bar charts, so when there is a price gap in the underlying data, "virtual bars" will be inserted to fill in the gap.

Range Bar Chart



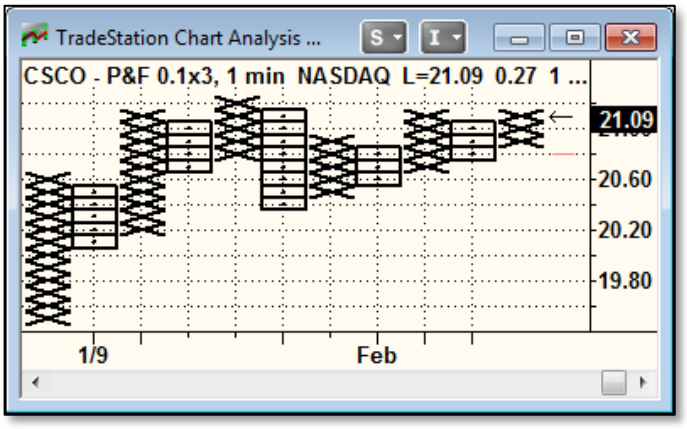
The size of Range bars will always be the range size set by the user and will never be anything smaller or larger unless it is the current bar that is building. The open of each Range bar is always equal to the close of the previous Range bar. There are no gaps displayed on Range bar charts; therefore, when there is a price gap in the underlying data, "virtual bars" will be inserted as necessary to fill in the gap.

Renko Bar Chart



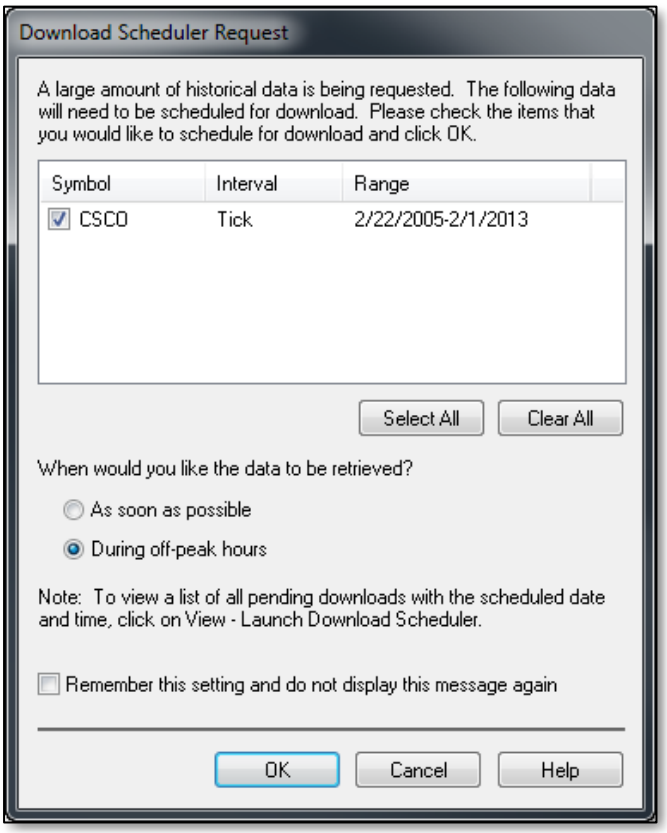
When the market moves in the same direction of the prior Renko brick by the specified brick size, a new brick will be added in the same direction as the prior brick. When the market moves in the opposite direction of the prior brick by twice the specified brick size, a new Renko brick will be added in the opposite direction of the prior brick. If there is no significant change in price – i.e., the price oscillates within the range of the last brick – no new brick will be added.

Point & Figure Chart



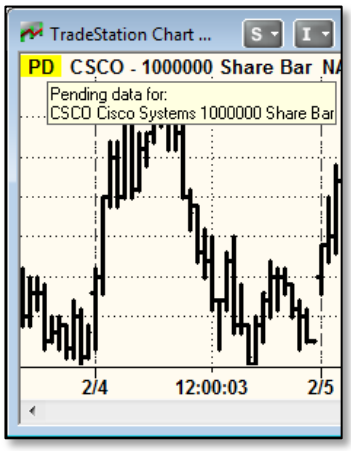
Point & Figure charts filter out time and insignificant price changes, leaving a chart that contains only relevant price movements. Rising prices are displayed as columns of Xs and falling prices are displayed as columns of Os. The box size reflects the minimum increase or decrease in price needed to add an X or O to a column of Xs or Os, respectively. The reversal amount refers to the change in price, either up or down, needed to create a new column and reverse from a column of Os to a column of Xs, and vice versa.

Requesting Data Using the Download Scheduler



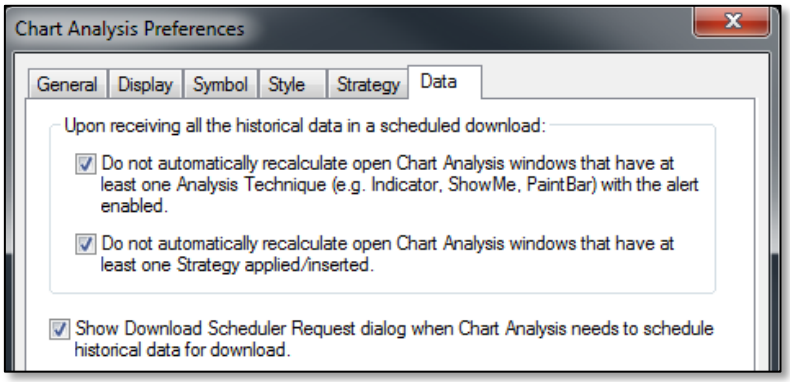
Requesting a large amount of historical data will bring up the Download Scheduler. Select whether you wish to download the data "**As soon as possible**" or "**During off-peak hours.**" (This will help you manage system resources as the data is being downloaded in the background.) Then click **OK**.

A "**PD**" or "Pending Data" indicator will appear at the top left corner of the chart, indicating that there is historical data pending for download.



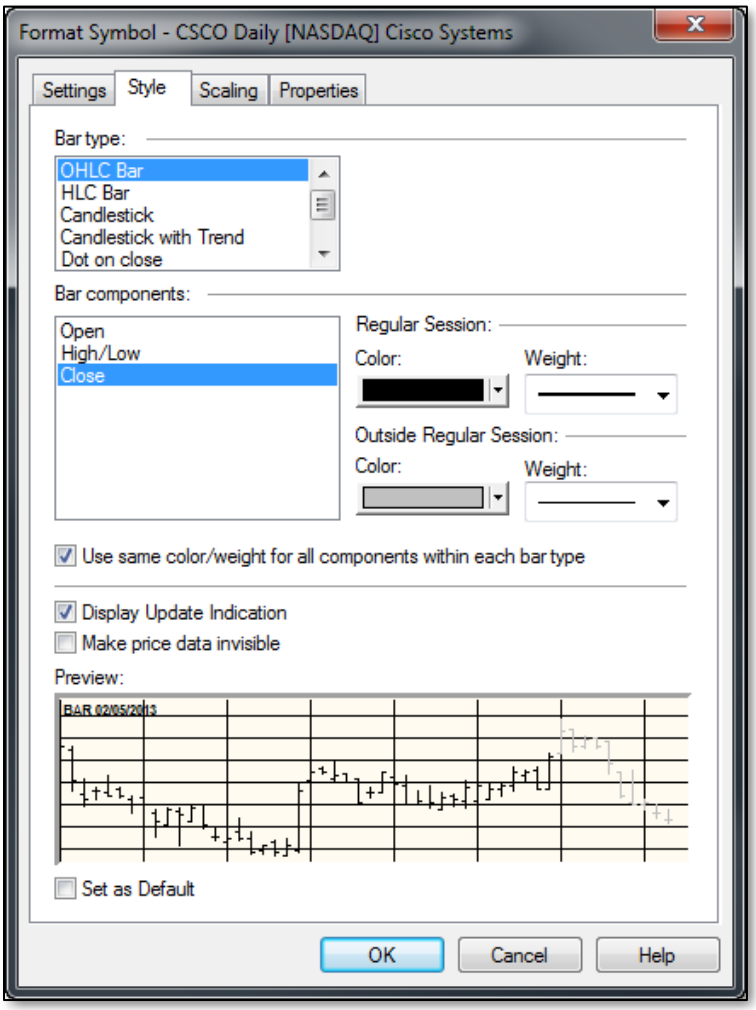
Historical data is downloaded gradually and automatically inserted on the chart. As soon as the download is complete, the "PD" indicator disappears.

If alerts are enabled for analysis techniques, or strategies are inserted in a Chart Analysis window, the analysis techniques or strategies will not recalculate using the recently downloaded data. By default, recalculations are turned off to avoid duplicating alerts or strategy orders. To change this functionality, click on **View – Chart Analysis Preferences** and set your preferences in the **Data** tab. Here, you may also disable the Download Scheduler from appearing every time there is a large data request.



Changing the Style of a Symbol

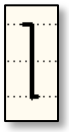
The **Style** tab lets you select the display style for the chart, including colors and weights. **Bar Type** refers to the display style for the bars in the chart. It is independent of data interval, although some price-based intervals are restricted to only their traditional bar-type setting.



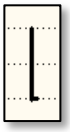
In the **Bar type** box, select the style for the bar. In the **Bar components** box, you may format individual parts of the bar. Checking the checkbox "**Use same color/weight for all components within each bar type**" applies any changes to one component to all other bar components. Uncheck this box if you wish to apply different styles to each bar component.

Checking the checkbox "**Display Update Indication**" will show the current trading price of a symbol in the price scale on the right side of a Chart Analysis window. You may also use a symbol in a Chart Analysis window and hide it from viewing by checking the "**Make price data invisible**" checkbox.

Note: *Available styles and bar components depend on the interval settings selected on the Settings tab.*



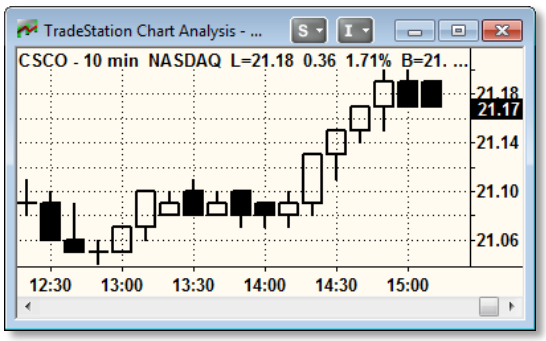
OHLC
Displays the open, high, low and close for each bar.

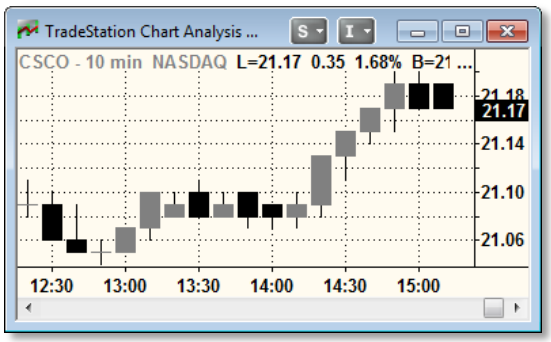


HLC
Displays the high, low and close of each bar. Open is removed.

Candlestick Chart

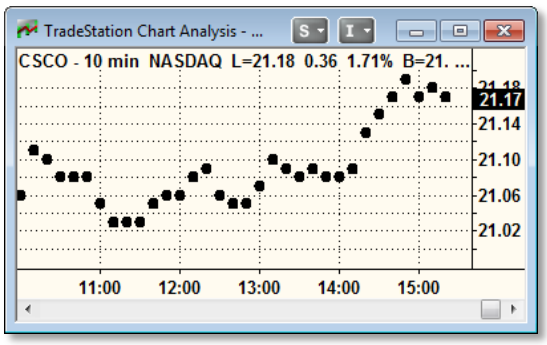
The candlestick chart uses the same price data as a bar chart. The "thick" part of the candlestick is known as the "real body" and represents the range between the open and closing prices. A green real body represents a bullish candle – the close price was higher than the open price. A red real body represents a bearish candle – the close was lower than the opening price. The thin line above the body extends to the high, and the thin line below the body extends to the low.





Candlestick with Trend

Displays candlestick bars with hollow and filled bodies. A hollow body represents a bullish candle – the close price was higher than the open price. A filled body represents a bearish candle – the close was lower than the opening price. The bar color is used to indicate the trend direction. By default, green indicates the current bar close is greater than the previous close, red indicates the current bar close is less than the previous close, and gray indicates no change in close from the previous to current bar.

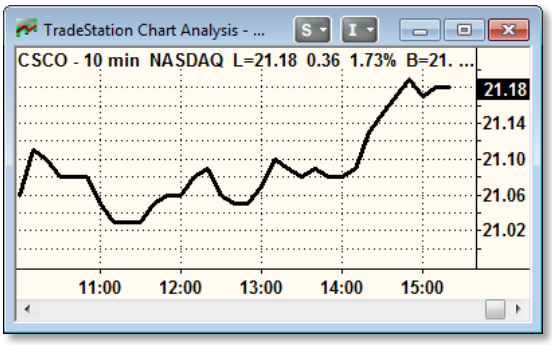


Dot on close

Paints a single dot at the close of each bar.

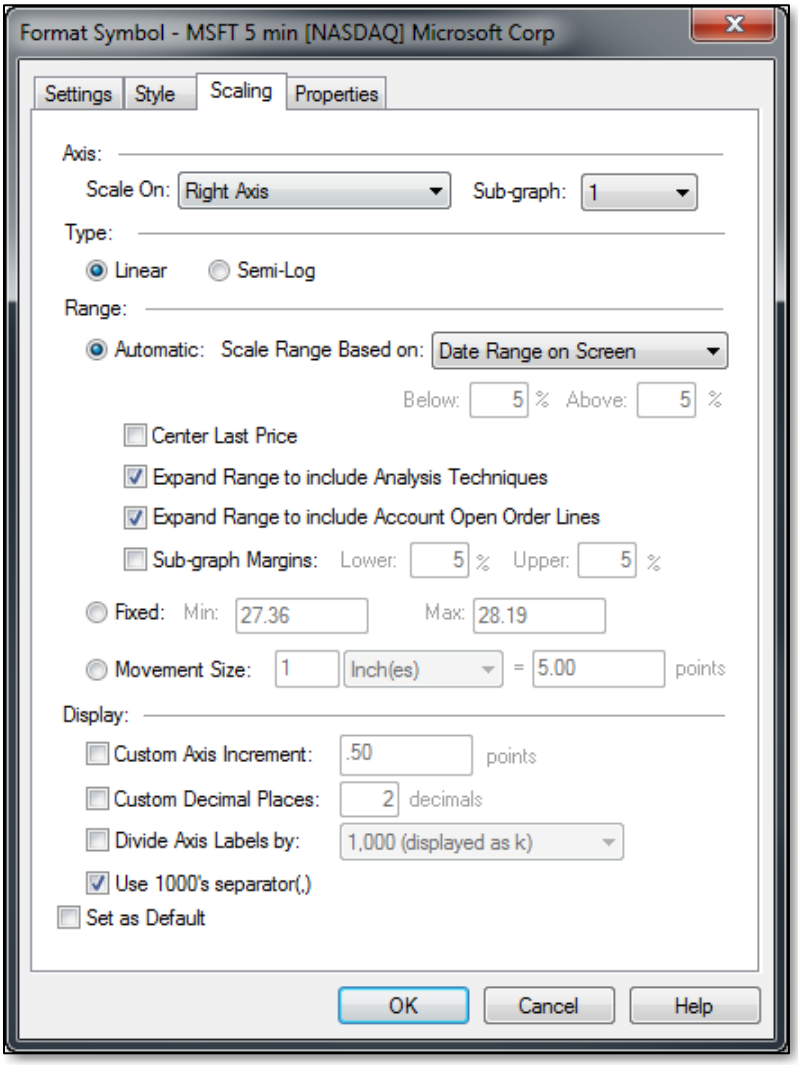
Line on close

A line chart displays a line that connects the closing price of each bar.



Formatting the Price Scale

The **Scaling** tab has selections for setting the style and range of the chart scaling.



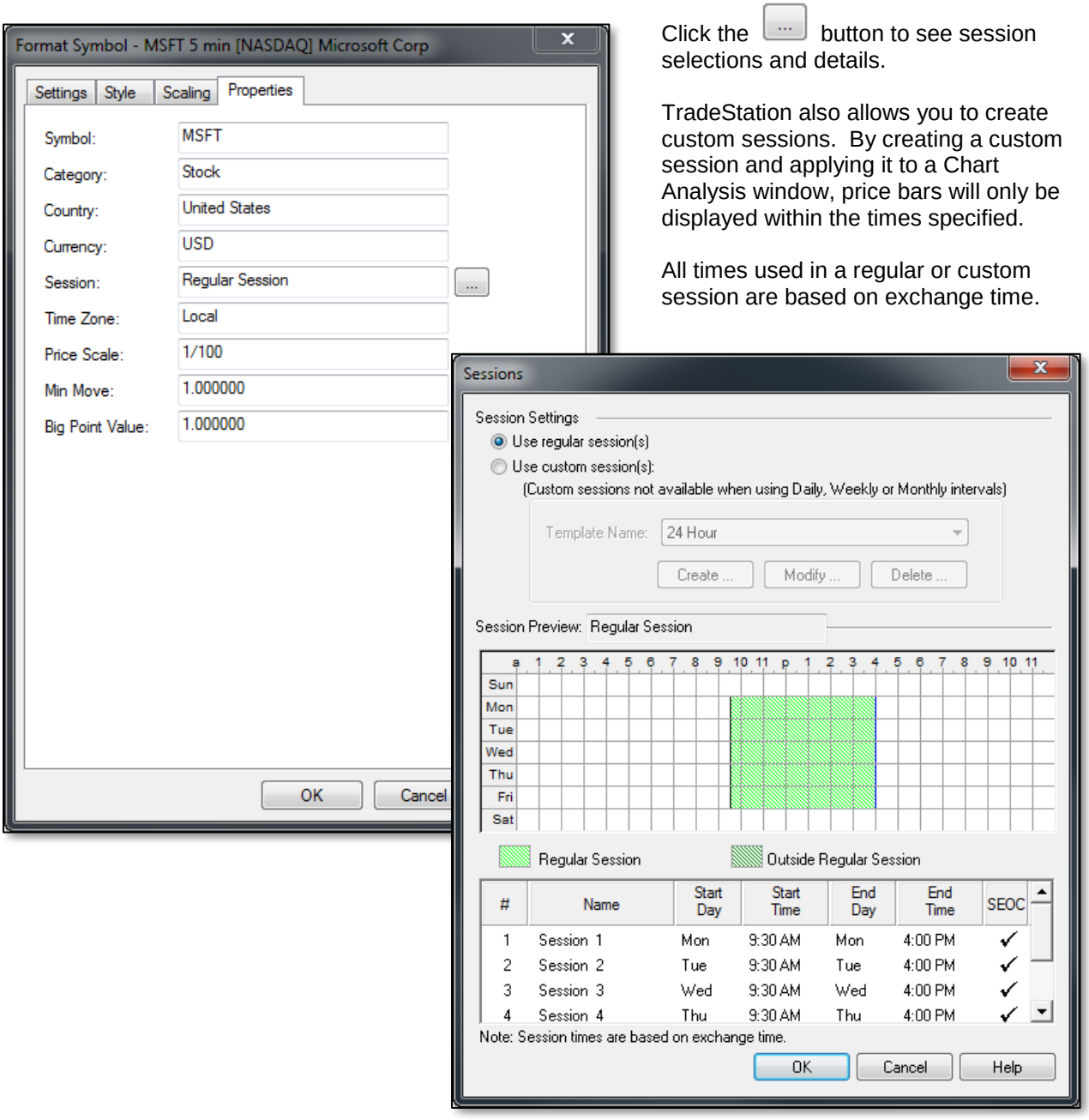
Under **Type,** select **Linear** to produce a scale where the height of each price increment is equal regardless of the price of the symbol; select **Semi-Log to** produce a scale where the height of each price increment is weighted towards percent of price.

A Chart Analysis window containing text annotations, drawing objects or trendlines may need additional space above and below the bars. You can select **Sub-graph Margins** under the **Range** section to add space above and below sub-graphs based on a percentage of the chart scale.

Custom Axis Increment, under the **Display** section, allows you to add more price detail to the price scale or adjust the price increments.

Symbol Properties and Trading Sessions

The **Properties** tab provides access to symbol information such as minimum price movement and big point value. It also provides access to settings for sessions in an intraday chart. These include pre- and post-market sessions for stocks as well as custom sessions.



Click the ... button to see session selections and details.

TradeStation also allows you to create custom sessions. By creating a custom session and applying it to a Chart Analysis window, price bars will only be displayed within the times specified.

All times used in a regular or custom session are based on exchange time.

Using Background Dragging

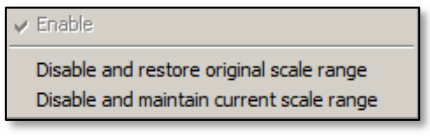
Enabling Background Dragging on a chart allows you to change the scaling of a sub-graph by dragging the sub-graph background or any selected object using the mouse. To enable Background Dragging, right-click on the background of a chart, select **Background Dragging** from the right-click menu and click on **Enable**.

You may also click on the Background Dragging button on the toolbar.

With Background Dragging enabled, the mouse pointer changes to a hand that lets you click and drag to move the background horizontally or vertically to display different sections of the chart window; all indicators and other chart features in a sub-graph will move together.

You may also adjust the price scale manually by clicking directly on the price axis area and dragging the mouse pointer up to expand the scale or down to contract the scale.

To disable Background dragging, right-click on the background of the chart, select **Background Dragging** from the menu and you have two options: restoring the original scale range or maintaining the new scale and range. Maintaining the new scale range means that the price scale is fixed and any price fluctuations outside this new range will not be displayed in your Chart Analysis window.



Clicking the Background Dragging button from the toolbar will restore the original scale range in the Chart Analysis window.

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