

Learning TradeStation  
**Chart Analysis and Strategy Testing**



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## Table of Contents

Welcome to the Learning TradeStation series. The main topics in this lesson are included below for your easy reference, and the complete links for more features are available in the TradeStation® platform help system.

To access the topics directly on your desktop, navigate to the top Menu bar within the TradeStation platform, then select **Help > Get Help > Platform Trading**.

### *Chart Analysis and Strategy Testing*

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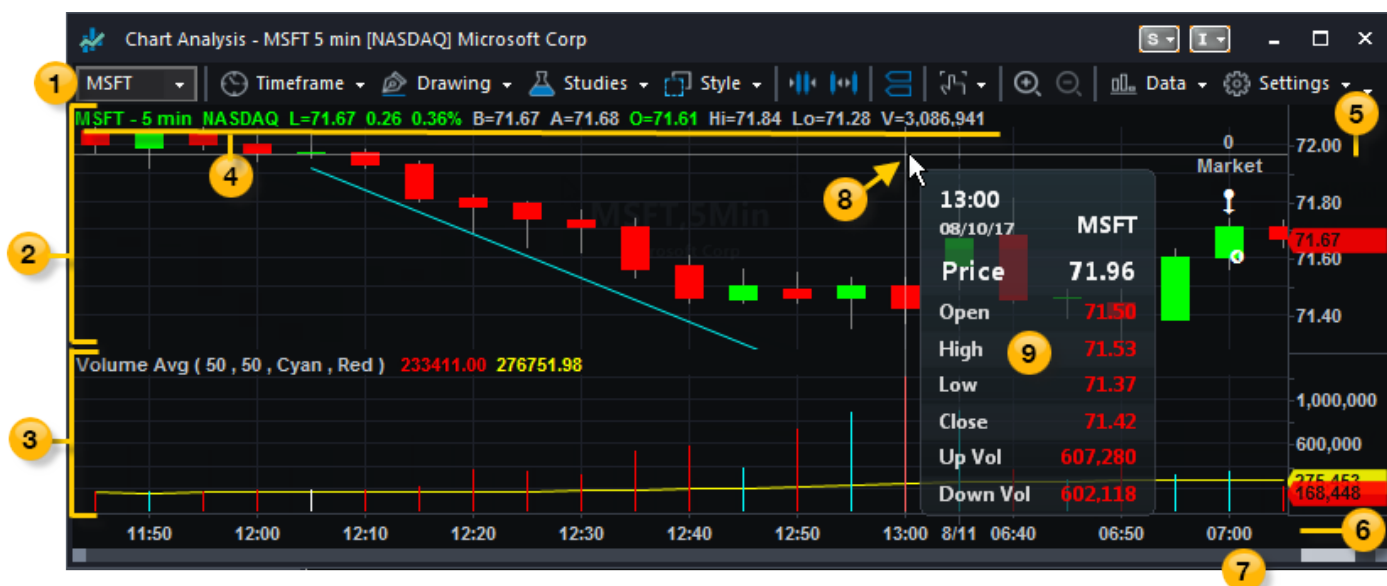
## About Chart Analysis

The Chart Analysis window is used to graphically display price data, perform technical analysis, back-test and automate strategies, and show orders and positions for a specified symbol. Chart analysis windows are created and saved as part of a workspace allowing multiple chart windows to be combined with other tool windows in each workspace.

► To create a Chart Analysis window, click the **Chart Analysis**  icon from the **Apps** tab, or use the Main **File > New Application > Chart Analysis** menu sequence. A new Chart Analysis window is displayed.

 VIDEO - Creating a Chart Analysis Window

### Chart Window Layout



The main portion of the chart window displays the price chart with its status line and associated price and time axes. You can scroll the chart left and right to view price history and use the crosshairs pointer (with datatip) to review details for a selected bar and price point. Sub-graphs may appear beneath the price chart if you have added studies or price data for other symbols.

The following numbered items refer to features in the picture (above):

#### 1 Toolbar

Provides drop down menus that control the features and settings of the window.

#### 2 Price Chart

The price chart displays a series of bar values that summarize market prices based on the trading interval selected for the current chart symbol. Trading intervals can be time-based (5 minute, 30 minutes, daily, etc.), activity-based (ticks, volume), or price-based (Point-and-Figure, Kagi, etc.). You can select the bar style (OHLC, candlestick, line-on-close, etc.) used to represent the interval as well as choosing custom display settings such as color, line type, etc.

### 3 Sub-graph

A subgraph will appear beneath the price chart for each applied study that requires its own price axis scale, such as volume or a reference indicator such as ADX. Sub-graphs are also used to display additional symbols or intervals. A maximum of 16 sub-graphs can appear in the chart window. See [Working with Sub-graphs](#) for more information.

### 4 Status Line

A status line appears at the top of each price chart and subgraph. It displays information about the symbol and/or studies and strategies applied to the chart or subgraph. For example, for a symbol you will see the name, interval, and exchange along with its current prices, bid-asks, session high-lows, and volume. For studies and strategies you will see each listed by name along with a summary of its input settings and plotted values. For more information, see [Chart Status Line](#).

### 5 Price Axis

The price axis (y-axis) of the chart window displays the range of prices for the symbol in a price chart and any plotted values in a subgraph.

### 6 Time Axis

The time axis (x-axis) shows the time scale (interval) of the bars displayed in the chart window.

### 7 Scroll Bar

The horizontal scroll bar appears when a price chart contains bar data that does not fit in the current chart window. Drag the scroll bar slider to the left or right to view more bars, or use the left/right arrow keys to perform the same function. The up/down arrows keys are used to change the bar spacing allowing you to control the number of bars that are visible in the chart window.

### 8 Crosshairs (Pointer)

Clicking the chart pointer in an open area of the chart displays crosshairs at the location of the pointer. The horizontal line let you identify a price level on the price axis and the vertical line aligns with the nearest bar to show its position on the time axis. For more information, see [About Pointers](#).

### 9 DataTip

The DataTip shows information relative to the position of the crosshairs pointer in a price chart or subgraph. For example, when the mouse button is clicked near a particular bar in a price chart, a summary of that bar's prices and volume is displayed along with the values of any studies applied to that set of bars. For more information, see [Viewing Price Data in the DataTip](#).

## Chart Analysis Tools

A variety of charting tools can be applied to a chart to help you measure and analyze market movement, backtest and manage rule-based trading, and monitor orders and current positions.

### Studies

Studies are used to evaluate historical and real-time market data. Applying a study to a chart provides you with a visual method of monitoring and measuring the symbol's price movement and financial performance. Studies can be an Indicator, ShowMe, PaintBar, ActivityBar, ProbabilityMap and Study Groups. For more information, see [About Studies](#).

### Strategies

Strategies consist of a set of rules that can be based on price movement, volatility and interest rate changes, and other market conditions for a charted symbol. They allow you to develop and back-test your trading ideas and, when appropriate, automate buy/sell signals and order generation. When strategies are applied to a chart, onscreen cues are displayed (arrows, flags, numbers and order names) to show you when your strategy rules would have historically placed trades. Once you apply a strategy

to a chart, you can modify the general, back-testing, automation and optimization settings. For more information, see [About Strategies](#).

## Drawing Tools

Drawing tools are used to visually highlight information on a chart. Some drawing tools, such as trendlines, let you connect multiple price points to help you analyze the direction or amount of price movement. Non-analytical drawing objects, such as boxes or text objects, call attention to an area of a chart, yet have no specific market interpretation. Drawing objects applied to a chart can be moved, formatted, and stay aligned with new price bar data when the symbol's interval is changed. For more information, see [About Drawing Objects](#).

## Account Orders & Positions


Account order & position markers on a chart provide a convenient way to monitor the status of your orders and positions for the charted symbol. Order markers show you the target price for an open limit or stop order. Position markers point to the price on a bar where an order is filled and show the type of order along with its size in shares/contracts. For more information, see [About Account Orders & Positions](#).

## Chart Trading

Chart Trading is a built-in study that allows you to quickly place trades, manage orders, and monitor positions directly on a chart. For more information, see [Using Chart Trading](#).

## Creating and Customizing a Chart

The following steps will assist you in creating and customizing a chart:

1. Click the Chart Analysis  icon on the **Apps** tab. The Chart Analysis window appears in your workspace and you are ready to customize your chart.
2. To change the symbol on the chart, type the symbol name (which appears in the toolbar's command line) and press ENTER. If you do not know the symbol name, click the Symbol Lookup icon to search the symbol by name or description.
3. Use the **Style** menu to select a bar or chart type (Candlestick, OHLC, Kagi, etc.).
4. Use the **Data > Edit Symbol** menu sequence and select the **Settings** tab to change the symbol [Settings](#) for selected chart type. The range values let you decide how much historical data you want to appear in the chart window. Depending on the interval or chart type you select, will determine the amount of historical data is displayed.
5. Use the **Timeframe** menu to change the bar interval for the specified bar or chart type, Or, type the interval keyword (i.e. 5 min, 10 min, daily, etc.) and press ENTER (the interval appears in the toolbar's command line). By default, intra-day (time) is displayed when a chart is created. For more information on interval, interval/chart types and range, see [Timeframes \(Data Intervals\)](#).
6. Once you have specified your chart settings, you can use the **Data > Edit Symbol** menu sequence and select the **Scaling** tab to change the symbol [Scaling](#) settings for the chart.

 To apply the changes you made for future charts, select the Set as Default check box in each customize dialog.

## Related Topics

[Chart Types](#)

[Timeframes \(Data Intervals\)](#)

[Customizing a Symbol in a Chart](#)

[Customizing a Chart Analysis Window](#)

[Adding Studies to a Chart or Grid Window](#)

[Clicking and Dragging in a Chart](#)

[About Scaling in Price Charts](#)

[Overlaying Symbols on a Chart](#)

[Changing the Vertical Axis Settings on a Chart](#)

[Creating a Multi-Data Chart](#)

[Removing a Symbol in a Multi-Data Chart](#)

[Using Chart Trading \(trading from a Chart\)](#)

About Account Orders & Positions

### See Also

[About the Download Scheduler](#)

[About the Data Window](#)

[Toolbars](#)

[About Windows](#)

[Refreshing TradeStation Windows](#)

[Printing Windows and Documents](#)

About the EasyLanguage Utilization Monitor

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 Similar functionality is available in the Mobile and Web Trading versions of TradeStation.



## Chart Types

There are several types of charts you can create in TradeStation:

- [Bar Chart](#)
- [Candlestick Chart](#)
- [Kagi Chart](#)
- [Kase Bar Chart](#)
- [Line Chart](#)
- [Line Break Chart](#)
- [Momentum Bar Chart](#)
- [Point & Figure Chart](#)
- [Range Bar Chart](#)
- [Renko Chart](#)

## Related Topics

[About Chart Analysis](#)

## About Drawing Objects

Your charting application contains drawing objects that can be applied, moved, and formatted, directly on a chart, providing tremendous flexibility. When you change the data interval of your chart, your charting application automatically readjusts your drawing object. In addition, many drawing objects allow you to analyze new data on a chart by extending the drawing object to the right of the chart. Drawing objects cannot be included as part of a study group.

There are two different types of drawing objects:

- **Non-analytical** - Such as the arc, arrow, text, and ellipse offer no specific market interpretation. You can use them to call attention to an area of a chart you consider worth noting. For example, you may want to highlight an area of your chart you want to review later using the rectangle drawing object. You might also want to write text on the chart to remind yourself about a market condition to watch for or as a label to include when you print a chart.
- **Analytical** - Such as the Fibonacci Cycle, Percent Retracement, and Gann Fan perform calculations to analyze the price data where they are drawn. Most analytical drawing objects can also alert you when certain market conditions occur such as price breakouts.


You can also set alerts for drawing objects. You can choose to be alerted by a visual alert, sound notification, or email message when the alert criteria are met. This way you can keep up-to-date on important changes in the market no matter where you are. For more information, see [About the TradeStation Message Center](#).

Each drawing object applied to a chart is assigned an identification number (ID#). As you place drawing objects on a chart, these numbers are assigned in sequence, starting with 1. Identification numbers are used in the Message Center to identify which drawing object generated an alert, in the Data Window to reference the values of a specific drawing objects, and in EasyLanguage to reference specific trendline and text drawing objects.

To view information on the drawing object applied to a chart, place your pointer on the drawing object and press and hold the right mouse button. Information specific to the drawing object is displayed as a DataTip.

When you apply a drawing object to a chart, it is associated with a specific data stream in the chart (for example, Data1, Data2, Data3, etc). If you replace or delete the associated data stream, the drawing object disappears. If replacing the data stream, you will need to redraw that object for the new symbol. However, the drawing object will reappear if you reapply the original data stream.

By default, your pointer remains in Drawing mode after applying a drawing object. While in Drawing mode, you will not be able to select other objects on the Chart Analysis window (for example, other drawing objects or price data). However, you can choose any other command from a menu or toolbar. Since each drawing object is unique, it is best to use the Drawing Object Library to locate the drawing object you want to learn more about.

 You can also use the [shortcut](#) menu on a selected object component (identified with small square) to change the drawing properties such as Color, Style, Weight, and any object specific settings.

### Related Topics

[Drawing Object Library](#)

[Snap Mode](#)

[Parallel Drawing Object](#)


[Using Alerts with Drawing Objects](#)

[Deleting Drawing Objects](#)

## Adding Studies to a Chart or Grid Window

TradeStation provides a large selection of [studies](#) that can be used to analyze data. These include indicators, ShowMe and PaintBar studies, ActivityBar studies, and ProbabilityMap studies. You can change the parameters (inputs) used in the calculation of a study or trading strategy to better suit your own trading objectives. Adding studies into your Chart or Grid window can also help you evaluate market actions that can be used later when building trading strategies.

### VIDEO - Adding Indicator Studies to Chart Analysis

 The studies you decide to apply to your market data, as well as the interpretation of what price movement and market trend they illustrate, are subjective and ultimately determined by the investor or trader who is studying that market.

1. From an active chart or grid window, access the **Studies > Add Study** menu sequence.
2. Select the study type tab (Chart) or study type drop-down items (RadarScreen/Quotes) to display a list of study names.
3. Select the desired study (or studies) to add to the active chart or grid.
  - **Definition** - Launches the Help topic for the selected study name.
  - **Edit EasyLanguage** - Opens the EasyLanguage document for the selected study name in the TradeStation Development Environment.
  - **Import** - Imports a study provided by a 3rd part from the TradeStation website or using the Import Wizard.
3. In RadarScreen, click **Add** to move the selected studies from Available to Selected. **Remove** moves Selected studies back to Available.
4. Optional. Check **Prompt for Editing** (Chart) or **Customize** (RadarScreen) to edit the settings for selected studies before they are added.
5. Click **OK** to add the selected items or **Cancel** to exit without any changes.

### Related Topics

About Studies

[About Indicators](#)

[About ShowMe and PaintBar Studies](#)

[About ActivityBar Studies](#)

[About ProbabilityMap Studies](#)

[About Chart Analysis](#)

[About RadarScreen](#)

## Enabling and Disabling Alerts for a Study

Many studies have alert criteria written into them; once you enable the alert for the study, then when market activity on the last bar of the chart meets the criteria specified by the study, an alert is triggered.

Your analysis application checks for alert conditions when you first apply the study to the app. Thereafter, it will check for alert conditions when:

- The price data is updated.
- You open the workspace containing the study.
- You replace the symbol with another symbol.

In order to monitor alerts, make sure you enable the Update on every tick option. If not, studies are recalculated only at the close of the bar. When an alert is triggered, the details of the alert are posted to the Message Center. By default, you are also notified by means of an audible beep and an Alert Notification window. However, you can choose what type of notification you want to receive - an email message, visual alert, or sound notification. For instructions for changing the way you are notified and on how to use the Message Center to monitor your alerts, see [About the TradeStation Message Center](#).

1. Access the **Studies > Edit Studies** menu sequence. The Customize Studies & Strategies dialog is displayed.
2. Click the **Studies** tab.
3. Select the study to modify.
4. Click **Customize**.
5. Click the **Alerts** tab.

 See [Customize Study - Alerts](#) to set drawing object alerts.

6. Click **Default** to use the settings as the default for all future studies of this type.
7. Click **OK** when finished.

### Related Topics


About Studies

## Creating a Multi-Data Chart


You can plot more than one symbol in the same Chart Analysis window.

By default, each additional symbol will plot underneath the other in a separate [subgraph](#). You will begin with a chart analysis window that already has a symbol plotted ([base price data](#)) then add a second symbol to the Chart Analysis window without replacing the first symbol.

### VIDEO - Multiple Symbol Analysis in Chart Analysis

1. Activate a Chart Analysis window.
2. From the menu, click **Data > Add Symbol**. The Add Symbol dialog is displayed.
3. Enter the symbol in the Symbol box or select one from the drop-down list. Click **Lookup**  to do a [symbol](#) search.
4. To customize the symbol, select the *Prompt for Editing* check box. If you do not select the check box, the symbol is plotted using the default settings.
5. Click **Plot**. If the *Prompt for Editing* check box is selected, the Customize Symbol [symbol] dialog is displayed.

The additional symbol will be plotted in a new subgraph in the Chart Analysis window.

 You cannot combine a symbol using a tick-based data interval with any other type of data interval (for example, you cannot plot one symbol as a 1-tick chart and the other as a 5-minute chart). You can not combine Point & Figure charts with other data intervals.

### Related Topics

[Overlaying Symbols on a Chart](#)

[Removing a Symbol in a Multi-Data Chart](#)

["About Chart Analysis" on page 5](#)

## About Strategy Testing

Testing a strategy is a two-step process. First, test your trading rules on historical data (also called backtesting) to examine the results that are generated. Once they perform sufficiently to your requirements, you can apply the rules in a TradeStation Chart Analysis window and automate them to see how they perform in real-time. Complete strategy testing involves both historical and real-time evaluation.

To back test your strategy on historical data, you apply a strategy to a Chart Analysis window and TradeStation automatically reviews every entry and exit signal and graphically displays them on the screen. You should come to an understanding of how your strategy enters and exits trades as well as other behaviors. If you find that your trading strategy fits your trading personality, you may feel confident in using the strategy to make future trading decisions.

To test-trade your strategy, you can automate the strategy so it automatically generates new entry and exit signals as they occur. You can then evaluate exactly where the trades occurred and at what price. For more information, see [Automating a Strategy](#).

The Strategy Performance Report provides detailed information about the strategy. This report may be used to help decide if the trading strategy is right for you. When testing a strategy, you may factor in the costs of your trades-costs such as broker's commissions, slippage, and margin. This may help you ensure that the profit and loss figures reported in the Strategy Performance Report are as realistic as possible.

For more information, see [About the Strategy Performance Report](#).

### Related Topics

[Inserting a Strategy](#)

[About the Strategy's Onscreen Cues](#)

[Customizing Studies and Strategies](#)

[Removing a Strategy](#)

[Changing the Status of a Strategy](#)

[About the Strategy Performance Report](#)

[About Chart Analysis](#)

## About the Strategy Performance Report

The Strategy Performance Report (SPR) is used to analyze the performance of a strategy as well as to gain a better understanding of its characteristics. Once you apply an entry and exit strategy to a chart, the Strategy Performance Report enables you to view strategy information such as total net profit, total number of trades, largest losing trade, and more.

- ▶ Access from a Chart Analysis window using the **Data > Strategy Performance Report** menu sequence. The Strategy Performance Report window is displayed. Note that you must already have strategy trades in your chart to see report data.

The Strategy Performance Report allows you to view a detailed report of all trades generated by your strategy's criteria. It provides over 100 performance fields including several graphs.

If the symbol associated with your strategy trades in a different currency than that of the brokerage account used for the trade, you will have the option of selecting either Symbol () or Account () from the SPR menu to change the report currency.

In addition to sending the report to a printer, the report can be saved as an Excel spreadsheet for further analysis or as a single html-based web archive file for easy storage, sharing, and/or future reference and graphing. Use the **Save** icon on the SPR toolbar to select an export file format.

### Related Topics

[Strategy Performance Report Tabs and Fields](#)

[Customize Report Settings](#)

[Printing a Report](#)

Saving a Report