



## QBL Software Services

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### Understanding OptionStation

Simply put, the single most important factor to making money in the options market is finding the right strategies for your market assumptions. But knowing which position to take is difficult, and involves complex mathematical calculations and formulas.

With the introduction of OptionStation in 1996, many of the complexities of option trading have been removed. Along the way, OptionStation earned critical acclaim, was awarded Best Options Analysis Software by Stocks and Commodities magazine two years in a row, and became the world's best-selling product of its kind.

Today, OptionStation 2000i takes the process a giant leap forward with more of everything you need to trade options successfully. If you're new to option trading, you'll find that OptionStation 2000i will be both a great learning tool and a great trading tool. Many describe it as a program that you'll grow into and not out of.

If you are an experienced option trader, you will find OptionStation 2000i packed with enormous analysis power and flexibility.

OptionStation 2000i will help you find, track and analyse winning option positions all based on your own market assumptions. Very simply, you tell the program your input and it, it turn will sort through thousands of available option positions and report back the top choices for a trade - instantly!

With OptionStation 2000i, you not only have the ability to find the best positions without having to perform complex mathematical calculations, you will also be able to use the most widely-used top level option strategies, work with "what if" scenarios, and ultimately learn to make smarter option trades.

OptionStation 2000i facilitates trading options by breaking it down into three basic steps: Position Search, Position Analysis and Position Chart.

#### **Position Search**

The Position Search allows you to identify option positions with the highest expected profit based on the strategies, market outlooks, assumptions, and choices you specify. To create a Position Search window, you must first complete the Position Search Wizard. The Position Search Wizard is a series of dialog boxes where you answer questions and enter information specific to the type of search you want to perform. The Wizard then processes this information and automatically identifies the most profitable option positions based on the information you provided.

Position Search is an essential tool for the novice or experienced options trader or investor. For the experienced options trader, it is an excellent way to compare one's assumptions, strategies, and risk/reward results with those that Position Search finds.

A novice options trader who is unsure of which selections to choose, can use Position Search's default values for volatility, price, and models (Pricing, Volatility, and Smart Bid/Ask). If one were to use these defaults, the remaining steps to complete in the Position Search Wizard would include selecting an amount to risk, an underlying asset, the holding period, and the strategy/market outlook. Once you complete the seven steps that comprise the Position Search Wizard, the 50 most profitable positions based on your selections are found and displayed in a Position Search window.



## Position Analysis

### What is Position Analysis?

The Position Analysis window is a comprehensive tabular-style spreadsheet that allows you to enter the details of the options positions you want to analyse, monitor, and track. Position Analysis provides you with risk and profit/loss information essential for you to make educated and profitable options trading decisions by calculating the theoretical profit and loss of positions, risk factors, volatilities, probabilities, breakeven and other important analytical data. In addition, Position Analysis allows you to display asset and option values such as open, high, low, bid, ask, last, and volume as reported from your data source.

### Four Main Elements of Position Analysis

There are four main elements that comprise Position Analysis.

#### 1 Underlying Asset, Options, and Data Compression

The GlobalServer provides the data for the underlying asset and its corresponding options when the Position Analysis window is created, whether the window is created manually or from a Position Search.

**Note:** Data compression, the type of data (intra-day, daily, etc.) used in Position Analysis, is specified at the time the underlying asset is chosen for Position Search or Position Analysis.

#### 2 Options Positions (Actual and Hypothetical)

Options positions consisting of an underlying asset and its options are the focus of study in Position Analysis. Option positions displayed within Position Analysis are copied from a Position Search window or manually created and entered within the Position Analysis window. Positions may be actual or hypothetical. Creating hypothetical positions allows you to compare your own positions with Position Search generated positions. Hypothetical positions can also be constructed to manage and control risk. The number of positions that can be entered into a Position Analysis window is limited only by the capacity of your computer.

#### 3 Models: Pricing, Volatility, and Smart Bid/Ask

The function of the models is to provide Position Analysis with what is known as "core calculations". These include the raw implied volatilities, theoretical values (including theoretical profit and loss), the Greeks, and Smart Bid/Ask. It is through the models that Position Analysis provides some of the most important "bottom line" information such as whether or not an option is over or under valued, risks, and the future worth of a position based on your outlook of price, time, and volatility.

#### 4 Indicators: Asset, Options, and Positions

The values displayed in the various cells of a Position Analysis spreadsheet are derived from indicators. Indicators are versatile, easy to use, and open options analysis to new levels of study. Indicators are inserted into the columns of the spreadsheet and the values calculated by the indicators are displayed in the column's cells. The values can be the result of an extensive formula or as simple as displaying the "last" quote of an option symbol transmitted by the data provider. Indicators may be used "as is," modified by changing inputs, or you can create your own to calculate and display values that are tailored to your exact needs. You can view an indicator's EasyLanguage instructions or create your own using the EasyLanguage PowerEditor.

### Using the Position Analysis Window

The OptionStation Position Analysis window enables you to apply various indicators to your positions. Use of these indicators allows you to monitor your positions on an ongoing basis. You can determine whether the position is currently overvalued or undervalued, or how much of a profit or loss the



position is experiencing. In addition, you can monitor the price of the underlying asset on which your position is based to ensure that its direction is favoring your position.

If the market turns against you, you can use the Position Analysis window to calculate the effect of adjusting your position by adding or exiting legs in that position. Analysis can also be used to find new positions or adjust existing ones in order to maximise profit. Analysis enables you to immediately see the results of adjustments you make as it recalculates each time you make a change.

If you are using real-time/delayed data, you can monitor your options positions during the trading day. The Position Analysis window will continually recalculate the theoretical prices and analysis techniques you have applied so that you know what is happening, both good and bad, at any given time throughout the day.

Monitoring your position in order to make adjustments is a valuable function of the OptionStation Position Analysis window. A good example of how this might be done is to illustrate one way that a straddle position might be adjusted once the underlying asset has made a favourable move.

In our example, XYZ has broken out on the upside from a congestion pattern. Analysis of the move indicates that the asset will continue to move upward. Rather than keep the losing leg of the straddle (the long put), a decision is made to close it by selling a put. The premium received from closing the leg is used as part of the purchase price of a second put a few strikes higher than the call and a few strikes lower than the current asset price.

By so doing, downside protection has been provided should the underlying asset reverse direction. Not only have you decreased your risk, you have a guaranteed profit for the position. The overall effect on the profit and loss of the position can be analysed in the Position Analysis window prior to taking any action (eg, closing of the losing leg, purchase of the second put, etc).

The Position Analysis window is divided into three sections: Assets, Options, and Positions. These three sections provide you with all the necessary information to accurately and easily analyse option positions, including their profitability and risk. The data available for the underlying asset and the corresponding options contracts is as current as the data received by your datafeed. The cells where you are able to enter your own data contain a different background colour than those fields that are not editable. Like any other window, you are able to modify the foreground and background colour of all cells.

## **The Assets Section**

The Assets section is where you view all the market data for the underlying assets on which the option positions are based. The indicators available in this section enable you to view information specific to the underlying assets. Along with indicators specific to Position Analysis, you can also apply some of the same indicators that you use in your charting application. See the Assets Indicator Library to view indicators available to the Assets section of the Position Analysis window.

## **The Options Section**

This section contains the majority of the data and market information. Specifically, the Options section displays all the information on the option symbols that correspond to the underlying asset displayed in the Asset section. You may individually select which options you would like displayed or you may display all of them. Along with many of the same indicators available in the Asset section, the Options section includes other indicators such as Break Even Price and Probability, Probability ITM (in-the-money), the Greeks, Theoretical Value, and Smart Bid/Ask, just to name a few. See the Options Indicator Library to view indicators available to the Options section of the Position Analysis window. You can enter as many positions as you would like in the Options section, either by adding them manually or by copying selected positions from a Position Search Window.



## The Positions Section

The Positions Section displays a summary of the values, both actual and theoretical, along with other important information pertaining to the option and underlying asset positions that are entered in the Assets and Options sections. As positions are entered or modified, the changes are calculated and the resulting numbers are displayed in the Positions Section. The ability to keep the "bottom-line" of your positions continually updated will help you monitor the risk and profit of each position.

Each position included in the Position Analysis window is listed as a row in the Positions Section. To combine positions, you simply create a new position and select the existing positions you want to combine. The results of the combined positions will be calculated and displayed in another row in the Positions section. For more information, see Inserting Positions Manually into a Position Analysis Window.

Indicators that are especially useful in the Positions section include the Gross In/Out P&L, the Probability Calculator, the Position Delta, and the Max Gains/Loss. See the Position Indicator Library to view the indicators available in this section of the Position Analysis window.

## Combining the Three Sections

The Position Analysis window is displayed in a spreadsheet format comprised of columns and rows. When located within a Position column (eg, Pos1), cells contain option/underlying asset contract units and costs. In addition, cells display the calculated values for the indicator columns in which they are located. The values can include current option and underlying asset open, high, low, close, bid, and ask prices as transmitted by your data provider as well as other calculations such as moving averages and theta.

An underlying asset is entered into Position Analysis at the time the Position Analysis window is created, or when a position is copied from a Position Search window.

Only one underlying asset may be entered into a Position Analysis window. Once the underlying asset is entered, it cannot be deleted or replaced with another asset. The individual option contracts for the underlying asset do not need to be entered into the Position Analysis window. This is automatically done, as OptionStation retrieves all option contracts associated with the underlying asset from the GlobalServer and copies them into the Position Analysis window.

If you want to copy positions associated with different assets from a Position Search window into a Position Analysis window, a separate Position Analysis window is created for each underlying asset (if a Position Analysis window for that asset does not currently exist in the active workspace).

## Using Indicators in the Position Analysis Window

The values displayed in the various cells of a Position Analysis window are derived from indicators. Indicators are versatile, easy to use, and open option analysis to new levels of study. Indicators are inserted as columns and the values produced by the indicators are displayed in the column's cells. The values can be the result of an extensive formula or as simple as displaying the "last" quote of an option symbol transmitted by the data provider.

Indicators can be inserted into the columns of the Position Analysis window at any time. Position Analysis will begin calculating the results of the indicator immediately using the most recent data available. Indicators may be used "as is," modified by changing their inputs, or new ones can be created in the EasyLanguage PowerEditor to calculate and display values that are tailored to your exact needs.

## Understanding OptionStation Indicator Inputs

Each indicator available in the Position Analysis window is created in the EasyLanguage PowerEditor. Many of these indicators contain inputs. Changing an indicator's input value is a very simple way to change the values used in the calculation of an indicator or the value at which an indicator's alert is triggered.



An example of inputs used in the calculation of an indicator is provided below.

The Projected Opt Value indicator calculates the projected option value based on the values assigned to four inputs: TARGETPRICE (target price), TARGETDATE (target date), TARGETVOLTY (target volatility), and INTRATE (interest rate).

In order to calculate the projected option value, all four inputs must be assigned values. The values for the inputs should be your assumptions for the future price and volatility of the underlying asset, the date the option position will be closed, and the 90-day T-Bill rate.

An example of inputs used to trigger alert conditions is provided below:

The Over-Under Valued indicator has three inputs:

OverValuedAlertPct, UnderValuedAlertPct, and RoundToFraction. OverValuedAlertPct and UnderValuedAlertPct are inputs for alerts. Both have a default value of 10.0, which would result in an alert being triggered when this value is exceeded.

To use a value other than 10.0 to trigger the alert, simply change the value of each input to the desired value. For example, assigning a value of 5.0 to UnderValuedAlertPct and 8.0 to OverValuedAlertPct changes the value at which each alert will be triggered.

## **Editing a Position Analysis Indicator's Input**

You can edit (modify) any indicator that contains inputs. Once an input has been changed, the indicator will use that input's value for its calculations or as the trigger for an alert, depending upon the input type. The changed input setting will be applicable to the active Position Analysis window only, unless designated as the default setting.

Inputs are edited on an indicator-by-indicator basis. When editing any indicator, the changes made apply only to that indicator. It is important to note, that indicator settings are unique to the indicator within the section it is located (Asset, or Option, or Position). Therefore, when an indicator is used in more than one section, it can have its own unique settings for each section.

## **Position Analysis Summary**

The OptionStation Position Analysis window enables you to apply various indicators to your positions. Use of these indicators allows you to monitor your positions on an ongoing basis. You can determine whether the position is currently overvalued or undervalued, or how much of a profit or loss the position is experiencing. In addition, you can monitor the price of the underlying asset on which your position is based to ensure that its direction is favoring your position.

If the market turns against you, you can use the Position Analysis window to calculate the effect of adjusting your position by adding or exiting legs in that position. Analysis can also be used to find new positions or adjust existing ones in order to maximise profit. Analysis enables you to immediately see the results of adjustments you make as it recalculates each time you make a change.

If you are using real-time/delayed data, you can monitor your options positions during the trading day. The Position Analysis window will continually recalculate the theoretical prices and analysis techniques you have applied so that you know what is happening, both good and bad, at any given time throughout the day.



Monitoring your position in order to make adjustments is a valuable function of the OptionStation Position Analysis window. A good example of how this might be done is to illustrate one way that a straddle position might be adjusted once the underlying asset has made a favourable move.

In our example, XYZ has broken out on the upside from a congestion pattern. Analysis of the move indicates that the asset will continue to move upward. Rather than keep the losing leg of the straddle (the long put), a decision is made to close it by selling a put. The premium received from closing the leg is used as part of the purchase price of a second put a few strikes higher than the call and a few strikes lower than the current asset price. By so doing, downside protection has been provided should the underlying asset reverse direction. Not only have you decreased your risk, you have a guaranteed profit for the position. The overall effect on the profit and loss of the position can be analysed in the Position Analysis window prior to taking any action (eg, closing of the losing leg, purchase of the second put, etc).

The possible range or distribution of the potential closing prices of the underlying asset at option expiration is determined by time and volatility. Volatility is defined as the amount that the price will move during a given period of time. The more volatile the underlying asset, the more the expected movement. Conversely, a less volatile underlying asset can be expected to have a smaller price movement. The time to expiration also tends to spread out the possible range of price changes. The greater the time to expiration, the more events that can happen, thus moving the price either higher or lower. Another aspect of time is its detrimental effect on option purchases—the continual decline in the value of an option due to time decay.

## Position Charts

Since price, time, and volatility are the most important factors affecting an option's value, Position Charts can help you to visualise the impact that time, price and volatility would have on the value of an option. Position Charts are a highly effective means of doing "what if" analysis—for example, what if volatility changes from 25% to 35% or 25% to 45%; what if price changes from 60 to 80; or what is the effect of time on the value of an option. By displaying Chart Values window, you are able to see the corresponding values of your position given various scenarios for price, time, and volatility.

OptionStation is the most powerful tool you can use to take advantage of the limited risk, leverage, flexibility, and the unlimited profit potential that only the options market can provide.

## What are Position Charts?

All options positions are based on the four basic legs: long call, long put, short call and short put, and some positions might also include the underlying asset. For more information, see Four Basic Legs in Options Trading. These positions comprise various search strategies. A search strategy is bullish, bearish, or neutral in relation to the underlying asset. Visualizing these positions will help you understand how these positions are used to build search strategies. A position chart is an ideal way to illustrate this concept.

A Position Chart can represent the following:

- \* How your position will perform over time relative to the price of the underlying asset.
- \* How your position will perform in relation to changes in the price of the underlying asset.
- \* How your position will perform in relation to changes in the volatility of the underlying asset.

All Position Charts provide a visual aid to assist in determining the risk and reward of applied search strategies. In short, the basic function of a Position Chart is to enable you to visually analyse and view your position for profitability and risk.

A Position Chart plots the theoretical values of any position that is created within a Position Analysis window. There is a maximum of six plots per Position Chart and each plot may contain an actual or a hypothetical position based on the following factors: underlying asset's price, underlying asset's volatility, and the passage of time.



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It does this by visually displaying a plot line that depicts the position's value relative to the change upon which you are basing your chart. A Position Chart will demonstrate the risk and reward of the options strategies you select by charting the selected plot types relative to the variable on which your chart is based (price, volatility, or time). You can plot the Theoretical Gross Out P/L, the Greeks, or any of the many various plot types available relative to the chart's variable. For more information, see Using Position Charts to Evaluate Theoretical Profit and Loss.

A Position Chart is considered a window, and will always be placed inside the workspace containing the Position Analysis window on which it is based. You can insert an unlimited number of Position Charts into a single Position Analysis window. Position Charts associated with a Position Analysis window are available any time the workspace containing the Position Analysis window is open.

## **Using Position Chart Window Templates**

Once you have created and formatted a Position Chart window, you can save the formatting style as a template. Saving a window template preserves all formatting applied to the window. The template and its formatting styles may then be applied to a new Position Chart window or an existing one. Using templates can be a tremendous time saver when creating new windows and workspaces.

If you have any problems or questions with the above procedures:

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