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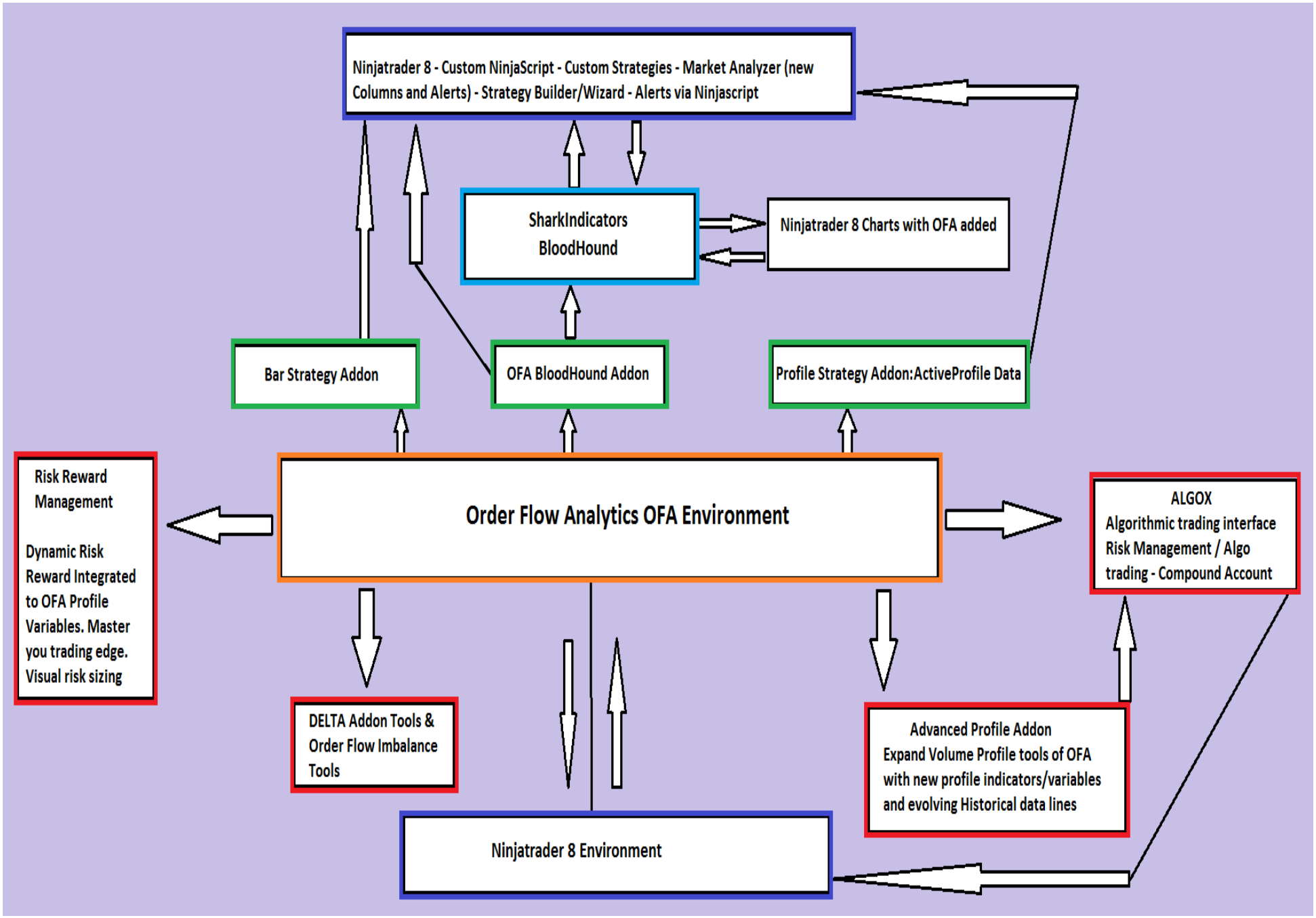
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OFA Strategy/Indicator Profile Data & BloodHound Addon Summary

To facilitate users accessing the **OFA Bar Data & Active Profile Data** to be used in the creation of custom strategies and indicators, **THREE** new Addons have been provided for this purpose.

These Addons are primarily aimed at users to build and code strategies/indicators in ninjatrader. Additionally, they provide strong scope for users to use the strategy wizard builder to start building their strategy & indicator ideas accessing OFA data and learn and grow their experience of this process.

It is important to be aware that with **Market Analyzer & Strategy Builder** you can access the data with virtually no programming needed other than setting up logic conditions and rules based on the OFA data and other chart bar and indicator data you wish to use. You can also access the OFA Price Series of each OFA Bar type element that applies to use as input to existing indicators. For example, use the OFA POC Price Series or the OFA VWAP price series for each bar as input to a moving average.

We have strived to keep up to date with carefully selected vendor products and the proven integrity of the **SharkIndicators** suite. With OFA NT8 compatibility now available with the Bloodhound toolset OFA data has been opened up as never before. This will help to empower you to build signal systems and iterate your logic rules and templates with OFA data utilizing the powerful and intuitive Bloodhound graphical interface.

A version of this has been specifically configured for integration and function with the **SharkIndicators BloodHound** product. The BloodHound integration process for using the **OFA Bloodhound Addon** is covered in a separate PDF document that will be located in this tutorial section. In the meantime, all the features and sample code covered in this document apply to Ninjatrader only users including those who select the Bloodhound Addon as well.

See www.sharkindicators.com : for more detailed information & specifically and initially the Bloodhound signal Designer tool.

NINE sample/example indicators and strategies have been provided to illustrate the framework for accessing the OFA data across the 3 provided Addons. Several of the Indicators provided to work with the Addon data access can be modified to suit users' settings and rules of classification/cluster pattern analysis. These will be covered in detail later in the document and in the video section. Included as part of this group is a functioning **Bonus out of box** classification/cluster logic pattern indicator, which draws and marks chart to help reading of the Auction bars clusters/poc according to your preferred Color Logic Settings.

These new modules are : the text in brackets () denotes the ninjatrader indicator name in the indicator list.

Bar Strategy Addon (OFASTCORE) : this version is for OFA Bar Data and Ninjatrader Components use – the available data points are covered in the next sections

Profile Strategy Addon (OFASTProfileAccess) : this version is stand alone and developed to access the nominated **Active Volume Profile** on an OFA chart. See below for the profile elements available.

OFA Bloodhound Addon (OFASTCOREBH) : this version is for OFA Bar Data & Ninjatrader use AND for **Bloodhound** integration and access.

Please note you will be authorized for either the **Bar Strategy Addon or OFA Bloodhound Addon** depending on which package and user type that you selected.

Key Features/Benefits of the OFA Indicator/Strategy Addons

- No longer are you constrained to the High Low Close bar data alone, all the key OFA Bar data Series elements are exposed to use as data input to indicators and strategies. See below for the full current list of these bar elements.

- Display new columns in the **Market Analyzer** created using the OFA Bar Data. To perform this function requires a straightforward sequence of steps outlined later in the document as an example, requiring **NO** programming experience. Following from creating new OFA data-based columns Alerts can be created with filters and conditions using this data.

- Create indicators & strategies using the OFA Bar Data and volumes at price for live bars. Implement your custom ideas using the OFA Bar Data and Bid/Ask print for the current live bar. Use the strategy builder and or the ninjascript editor to build your strategies/indicators.

- Then use the data from your calculations to create more columns based on your own custom/proprietary calculations and process. Reference these custom indicators based on the OFA Data addon to add new columns to Market Analyzer.

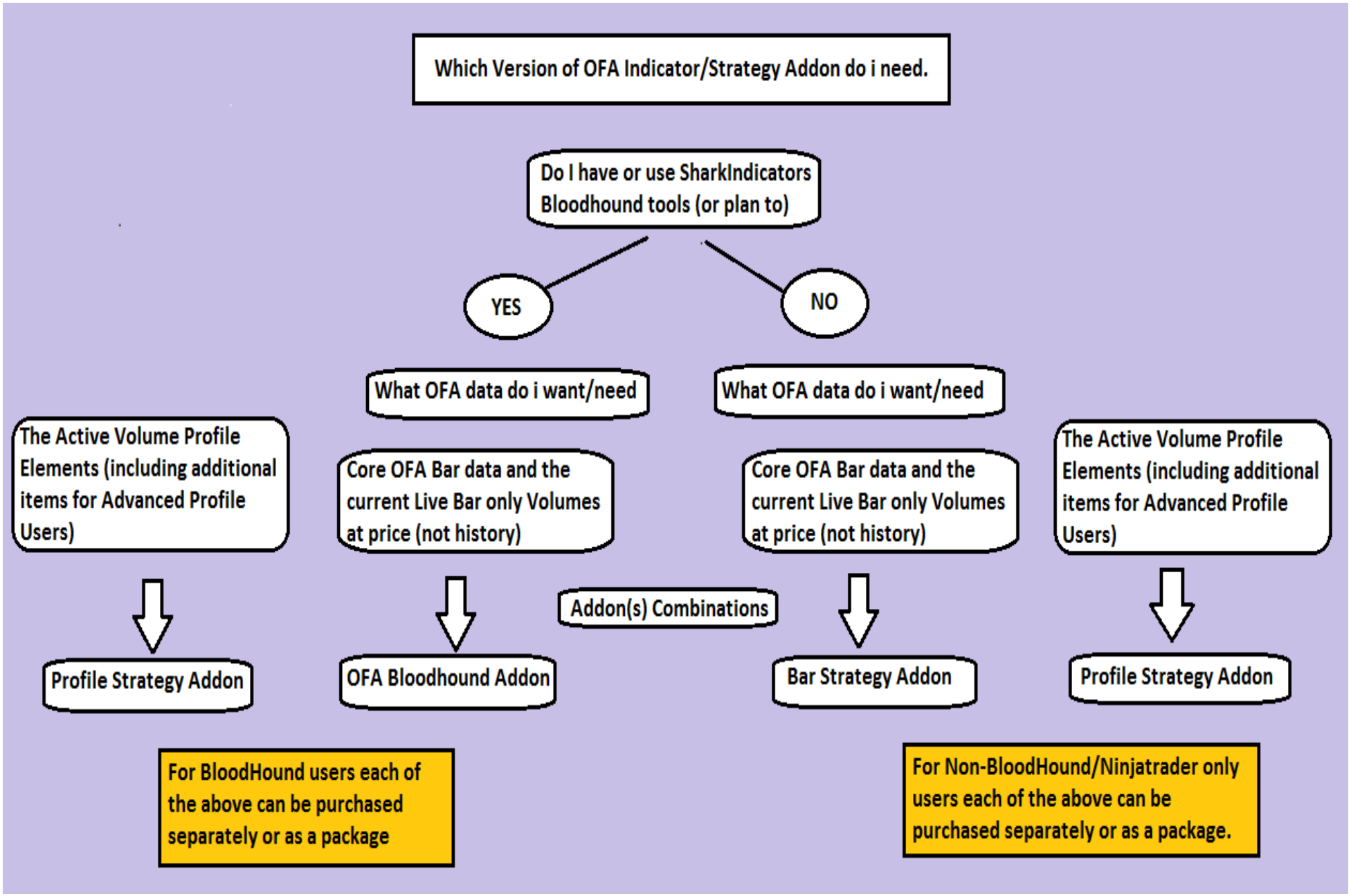
- With Strategies that access the OFA Bar variables and if authorized the Active Volume profile elements, you can set your additional trade triggers with other custom indicators. Add in your specific rules and logic based on your research and proprietary ideas/logic for your trade ideas.
- If authorized for the Active Profile Data Addon you can access all the profile elements of the current **Active Volume Profile** on the OFA chart.

- Note For Delta Addon users: future releases will include the data for the **OFACDelta** indicator. In the meantime, the **NET DELTA** and **COT** information for each bar is provided with this release.

- For BloodHound users Use the Power of bloodhound solvers and fuzzy logic to efficiently build and create system and strategies dynamically on the chart

- Use the ready functional classification/cluster logic **bonus indicator** provided. Use this to help reading the bar by bar auctions and close to prior cluster POCs. This can help to identify transitions and in key areas or levels of support being monitored at session highs and lows and around settlement.This is covered in more detail in a later section in this document. With little programming experience, you can make small edits and changes to this ready-made framework to tweak and refine the bar logic ruleset, and increase or decrease the number of bars included in the pattern. Following the Ninjatrader 8 Help sections and using the support forum at ninja examples and support that is provided with ninja support team to help build upon your programming knowledge.

The Schematic below on the next page illustrates the Three main Addon components which are part of this release. This is to help determine which version & package combination you will need. Each of these can be purchased individually or as a combo-package, The details of this will be clear on the sales pages you will be notified of and the links for those.


Which Version of OFA Indicator/Strategy Addon do i need.
Do I have or use SharkIndicators Bloodhound tools (or plan to)
YES
NO
What OFA data do i want/need
What OFA data do i want/need
The Active Volume Profile Elements (including additional items for Advanced Profile Users)
Core OFA Bar data and the current Live Bar only Volumes at price (not history)
Core OFA Bar data and the current Live Bar only Volumes at price (not history)
The Active Volume Profile Elements (including additional items for Advanced Profile Users)
Addon(s) Combinations
Profile Strategy Addon
OFA Bloodhound Addon
Bar Strategy Addon
Profile Strategy Addon
For BloodHound users each of the above can be purchased separately or as a package
For Non-BloodHound/Ninjatrader only users each of the above can be purchased separately or as a package.

Scope & Summary of Features of Addon(s)

BLOODHOUND Users Package OFA BloodHound Addon	Non-BloodHound/Ninjatrader Only Bar Strategy Addon
Integration and access from Bloodhound to the OFA Bar Data	
Use the Power of bloodhound solvers and fuzzy logic to efficiently build and create systems and strategies dynamically on the chart. Through the process of iteration with the real-time dynamic Logic template, one can more efficiently create and test different logic ideas without needing to code and recompile each change. Then use the Bloodhound logic template as part of your native Ninjatrader Strategy	
Access OFA Bar Data from Strategy builder and Ninjascript for indicators and strategies. See the following section for a full list of available data. A key feature of this is that users who have little to no programming experience CAN build some conditional logic for simple indicator ideas; then build upon this as more confidence is gained as they graduate to more complex ideas. Using the conditional builder in the Strategy builder code extracts can be produced which can then be copied into an indicator; even if a strategy is not required. Requests have been made to Ninjatrader to include & add the Conditional builder/wizard to the Ninjascript builder in future versions. So this is a workaround until such time.	Access OFA Bar Data from strategy builder and Ninjascript for indicators and strategies. See the following section for a full list of available data. A key feature of this is that users who have little to no programming experience CAN build some conditional logic for simple indicator ideas; then build upon this as more confidence is gained as they graduate to more complex ideas. Using the conditional builder in the Strategy builder code extracts can be produced which can then be copied into an indicator; even if a strategy is not required. Requests have been made to Ninjatrader to include & add the Conditional builder/wizard to the Ninjascript builder in future versions. So this is a workaround until such time.
Use the OFA Bar data in the creation of new Market Analyzer columns and then in the creation of custom Alerts within the Market analyzer builder.	Use the OFA Bar data in the creation of new Market Analyzer columns and then in the creation of custom Alerts within the Market analyzer builder.

Access current live OFA Bar volumes at price. Perform any custom analysis of the OFA Bars Volumes at price : Use volume thresholds on bid/ask for triggers/conditions for a trade strategy or an indicator. A sample has been provided to illustrate how to access the bid/ask values at price in the bar.	Access current live OFA Bar volumes at price. Perform any custom analysis of the OFA Bars Volumes at price : Use volume thresholds on bid/ask for triggers/conditions for a trade strategy or an indicator. A sample has been provided to illustrate how to access the bid/ask values at price in the bar.
SIX Samples provided including a mixture of strategies and indicators. See in following section more detail on these	SIX Samples provided including a mixture of strategies and indicators. See in following section more detail on these

Profile Strategy Addon

Access all the profile elements of the current **Active Volume Profile** on the OFA chart. These elements can be used for Entry and Stop management of strategies or used as input to indicators that can use the current profile elements of the Active Profile. See below in the next section for the full list of available elements. Convenience data fields have been created to use when assessing risk and stop levels for some profile entry & stop combinations.
Advanced Profile users will also have access to the SIX additional profile element values.

Three Samples provided :

See the two strategy samples using this and the indicator sample which illustrates access to the active profile variables.

Input parameters to define : for Bar Strategy Addon & OFA BloodHound Addon

Color Logic : recommended to match what is shown in Chart Settings – can be a different setting if you want
Cluster Area %
Value Area %

List of OFA Bar Data for access	Description/Values
OFAPocPrice	POC Price
OFAVwapPrice	Vwap Price
OFACAHPrice	Cluster Area High Price
OFACALPrice	Cluster Area Low Price
OFAVAHPrice	Value Area High Price
OFAVALPrice	Value Area Low Price
OFAStandardDeviation	Standard Deviation for Bar
OFABarTicks	Number of Ticks that created Bar (distinct from volume)
OFABarDirectionValue	Probe Up = 1 Probe Down = -1 Neutral = 2
OFABarDeltaVolume	+ve value Net Buy -ve value Net Sell for the Bar
OFABarCOTVolume	COT value for the bar – covered in a prior NT8 tutorial
OFABarOpen	Bar Open
OFABarClose	Bar Close
OFABarHigh	Bar High
OFABarLow	Bar Low
OFABarMedian	Bar Median
OFABarClassification	Buy = 1 Sell = -1 Neutral = 2 for selected Chart Color

	Logic
OFABarTotalVolume	**Total volume for the OFA Bar**
OFABarHighLowTicks	**Number of Ticks from the High to Low of the Bar. This can be used to assess volatility in the order flow and detecting large probe bars which likely will be tested.**
OFABarOpenCloseBodyTicks	**Number of Ticks in the Bar Body (between Open & Close)**
In addition to the above, the next section outlines the code segment for accessing the Current Live OFA Bar Volumes At Price. See sample code OFASampleBarsVolumesAtPriceAccess which illustrates this.	**The next section needs to be edited in ninjascript editor and or unlock the code in the strategy/indicator builder. The difference is due to the nature and structure of this data provided in a sorted list. It needs to be accessed in the code and the ninjatrader strategy wizard/builder which is not suited or aligned to process more complex custom data types.**
using NinjaTrader.OFA; **private SortedList<double, OFA_BA_Volume> _ofa_ba_v = new SortedList<double, OFA_BA_Volume>();** **public struct OFA_BA_Volume** **{** public double volume; public double sell_volume; public double buy_volume; public bool isBidAlert; public bool isOfferAlert; **}** Available data points for the current live bar only with data connection returns the volumes at price information for each price level in the bar.	**Include this in the using section of the strategy or indicator code in the header section. The volumes at price are returned as a sorted list from the lowest price to the highest price of the OFA Bar.** **For each price row of each OFA Bar access the Sell Volume (Bid) Buy Volume (Offer) – total volume and the toxic order flow Price Alert for each price as a boolean (true or false). Note this is not the sequence of 2 or 3 but the individual Price Alert – see NT8 tutorials for more details.**

Profile Strategy Addon : this Addon indicator version will provide access to the **Active Volume Profile** enabled on the current chart. All the elements of the profile will be accessible and for Advanced Profile Addon users the additional SIX elements will be accessible for those users. In addition to the profile elements several convenience value/elements are calculated to use in your strategy – eg the number/# of ticks between the CWAP & VWAP price of the profile which can be used to filter out the level of risk in a Cwap entry with Vwap stop trade. When you want to access the Active volume profile elements– this can be done by unlocking the code and adding in the logic as exemplified and illustrated in the 2 Samples in the next section.

OFAActiveProfileVwap	**Active Profile VWAP Price**
OFAActiveProfileCwap	**Active Profile CWAP Price**
OFAActiveProfileVAHPrice	**Active Profile Value Area High Price**
OFAActiveProfileVALPrice	**Active Profile Value Area Low Price**
OFAActiveProfileCAHPrice	**Active Profile Cluster Area High Price**
OFAActiveProfileCALPrice	**Active Profile Cluster Area Low Price**
OFAActiveProfileVPOCPrice	**Active Profile VPOC/POC Price**
OFAActiveProfileSTDEV	**Use this to calculate additional Upper Lower Standard Deviations**
OFAActiveProfileUpperSD1Price	**Active Profile Upper Standard Deviation 1 Price**
OFAActiveProfileLowerSD1Price	**Active Profile Lower Standard Deviation 1 Price**
OFAActiveProfileUpperSD2Price	**Active Profile Upper Standard Deviation 2 Price**
OFAActiveProfileLowerSD2Price	**Active Profile Lower Standard Deviation 2 Price**
OFAActiveProfileUpperSD3Price	**Active Profile Upper Standard Deviation 3 Price**

OFAActiveProfileLowerSD3Price	**Active Profile Lower Standard Deviation 3 Price**
OFAActiveProfileCWAPVWAPRisk	**This is the number of ticks between the CWAP and VWAP prices this can be used in the strategy or indicator to help qualify a cwap/vwap trade depending on the ticks/risk between the two profile values. Provided as a convenience value data point.**
OFAIsActiveProfileEnabled	**This boolean is KEY/Important and needs to be tested before accessing any of the other profile elements listed here. See in sample OFASampleStrategyCWAPVWAP in the next section.** This is a convenience function to test if a valid active profile is enabled on the current chart.
Additionally For Advanced Profile Users :	
OFAActiveProfile50LinePrice	**Active Profile 50 Line - MID Price**
OFAActiveProfileVAMedianPrice	**Active Profile Value Area Median Price**
OFAActiveProfileDwap	**Active Profile DWAP Price (Differential CWAP)**
OFAActiveProfileCWAPVWAPDIFFPrice	**Active Profile CWAP VWAP Difference Price**
OFAActiveProfileTWAPCLOSEPrice	**Active Profile TWAP Close Price**
OFAActiveProfileTWAPPOCPrice	**Active Profile TWAP POC Price**
OFAActiveProfileVWAPDWAPRisk	**This is the number of ticks between the VWAP and DWAP prices**
OFAActiveProfileVWAPCwapVwapDiffRisk	**This is the number of ticks between the VWAP and CWAPVWAPDiff prices**

Summary of Provided Samples

The first group illustrates use of **Bar Strategy / OFA BloodHound Addons**

OFASampleIndClusterCloseLogic
OFASampleCustomPOCEMA
OFASampleConnectPOCs
OFASampleBarsVolumesAtPriceAccess
OFASampleStrategyClusterCloseLogic
OFASampleStrategyClusterCloseLogicIntraBar

This next group illustrates use of **Profile Strategy Addon**

OFASampleStrategyCWAPVWAP
OFASampleStrategyVWAPDWAP
OFASampleIndActiveProfileDataAccess

The next section goes into more detail for each of the above Samples.
Please note that the above sample strategies do not in and of themselves constitute a trading system, but are provided to illustrate the use and access to the OFA variables. The CwapVwap & VwapDwap are trade entry and stop-loss setups that are used in context with OFA Profiles in other training materials.

This sample uses the Classification/Cluster Indicator Logic illustrated in the next section on the Bonus indicator. See also the chart example illustrations of this in the following section **OFASampleIndClusterCloseLogic** For BloodHound users, this cluster pattern logic in this indicator is the basis for the illustrated Logic Template covered in the Bloodhound documentation section	This example will help to illustrate and provide more focus on the OFA bar transitions and Cluster/POC logic patterns using the bar Classification. It can facilitate highlighting key transitions and locations for placing a Decision Point profile to assess potential entries. Using RiskReward/ RR tool : Entry with stop and risk-reward projections will automatically be marked on the chart when the profile is enabled for RR.
OFASampleCustomPOCEMA	This example illustrates how to create an EMA using the OFA Bar Data Series provided. In this case, the POC price series is used. The commented out section shows where any custom price calculations could be performed and stored before assigning to the main plot for the indicator which draws the EMA of the POC Series data line.
OFASampleConnectPOCs	This example illustrates how to connect the POC prices of each bar a draw with a colored line.
OFASampleActiveProfileDataAccess	Illustrates how to access the Active Volume Profile variables on the chart if one has been added, and prints out the values.

OFASampleStrategyCWAPVWAP – example using/accessing the CWAP for entry and VWAP for stop/risk to set a limit order position for the strategy. This sample illustrates using the **Profile Strategy Addon module** key features are : An example of using the cwap and vwap values to submit limit entries and update the stop to the vwap price. Some basic common-sense checks are made in the context of current bid/ask price and direction based on cwap price relative to vwap price. You can add your additional logic or other indicator checks in the structure to define your rule based logic.	More features : Check using I**sActiveProfileEnabled** value before proceeding to access the profile elements. This is an important test. Uses the active profile elements for entry and stop management, setting and checking breakeven stop when set. The logic only updates the stop to the dynamic profile stop variable (whichever selected eg vwap) if it does not increase the risk. Some parameters are provided for offsets to be used for the entry and the stop.
OFASampleStrategyVWAPDWAP – example for advanced profile users who can use the 6 additional profile elements. Example using/accessing the VWAP for entry and DWAP for stop/risk to set a limit order position for the strategy. This sample illustrates using the **Profile Strategy Addon module** key features are : An example of using the vwap and dwap values to submit limit entries and update the stop to the dwap price. Some basic common-sense checks are made in the context of current bid/ask price and direction based on vwap price relative to dwap price. You can add your additional logic or other indicator checks in the structure to define your rule-based logic.	More features : Check using I**sActiveProfileEnabled** value before proceeding to access the profile elements. This is an important test. Uses the active profile elements for entry and stop management, setting and checking breakeven stop when set. The logic only updates the stop to the dynamic profile stop variable (whichever selected eg dwap) if it does not increase the risk or the stop. Some parameters are provided for offsets to be used for the entry and the stop.

OFASampleBarsVolumesAtPriceAccess – an example of accessing the current live bars volumes at price.	This shows how to access the current live bars Volumes at price and store the values locally in the indicator for the current bar as each tick is processed. Example shows accessing the high low and 1 tick above and below low and high and prints out the values.
OFASampleStrategyClusterCloseLogic An order is submitted at the POC price of the bar with an offset, at the close of the current bar if the logic pattern qualifies. See SampleIntraBarBacktest provided by ninjatrader – for intrabar granularity using 1 tick data series – tick replay mode does not work for OFA (it is not required as we process all the ticks at source).	Using the Managed approach the order submitted is canceled on bar close if not filled. You need to use the Advanced Managed approach handling to change this. See the Ninjatrader 8 help for more details. History orders loaded onto the chart when you enable the strategy will not have intrabar processing only OBC (On Bar Close processing). The Stop move processing will also be OBC in this version.
OFASampleStrategyClusterCloseLogicIntraBar In addition to the above, I created a version using a One tick secondary series. This is to be used to process the entries and stops with tick by tick granularity. Checking the logic conditions and submitting on the close of the bar of the primary series.	As above using the POC price & offset for limit entries. Suggestion – you can use the Bar Median price to help if you want to filter entries depending on the position of the POC in the bar. Ie is it above or below the median.

Some Additional Notes on the above	
The above logic for accessing the Active Profile elements can be used using the ninja provided **SampleATMStrategy**. The active profile elements can be used for **entries only** since the stop management will be handled by the features of the ATM strategy. Full use of the profile elements can be used and extended in the sample provided for this Addon or fully automated in Algox which provides execution, Management and take profit algos with no coding required.	Reminder for Risk-Reward (RR) users – that with RR you will have access to the Entry and stop via the ATM strategy. ATM strategy has a means to connect to the values for the Active chart profile. Please see the RR Risk reward documentation for more details of this. This is not the same as having the actual prices to use in code form which is what this new Addon provides. It is important to make this distinction.

The following code segments are used for referencing each of the above 3 addons. You will see this in each of the respective code samples.
The indicator names in ninjatrader for the three addons are as follows shown in **brackets ()** alongside the Addon name and code reference:

Bar Strategy Addon - (OFASTCORE) : private OFAIndicatorSTCORE OFAIndicatorSTCORE1;

OFA BloodHound Addon - (OFASTCOREBH) : private OFAIndicatorSTCOREBH OFAIndicatorSTCOREBH1;

Profile Strategy Addon - (OFASTProfileAccess) : private OFAIndSTProfileAccess OFAIndSTPRACCESS1;

Important Processing Elements & Guidelines :

Please read over all the Ninjatrader 8 help documentation to familiarise/re-familiarise yourself with running and developing strategies in ninjatrader. The managed approach has been used in the sample strategies, this has been designed to offer the greatest ease of use for the beginner to intermediate programmers. The order methods are wrapped in a convenience layer that allows you to focus on your system's trading rules. More advanced users and coders can use the advanced managed approach and/or the unmanaged approach. This is covered in detail in Ninjatrader 8 help documentation
& review the Ninjatrader 8 youtube channel videos.

Please also read through carefully and note the **FAQ's** added at this end of this document.

This section outlines the Bonus Indicator and covers the cluster analysis logic

The following section illustrates the use of the **Bar Strategy / OFA Bloodhound** Addon(s) which access the OFA Bar Data. This sample is called **OFASampleIndClusterCloseLogic.**

The intention of this is to provide a functional out of the box sample/example of the OFA Probe and Rotation Auction Bars, performing some Bar Classification & Cluster/POC analysis on the **current** bar in the context of prior OFA Auctions. A colored region is drawn around the Bars that satisfy the conditions below. Two other options to mark the chart are provided in the code (currently commented out). Either draw a colored vertical line or a text marker dot above or below the OFA Bar. For purposes of illustration, the region color is drawn only. So you have options as to how you want to mark the chart. Whilst these are shown in the colors red and green (colors can be modified including the opacity in the parameters) it is important to be aware that these DO NOT in and of themselves constitute Buy/Sell signals. These are often tested AFTER and are to be used in context with other factors ie time of the day and any key Support Resistance Levels or other levels being monitored (eg session High/Low).

Some conditions and rules have been set as you can see in the code to help find transitions and pivots in the unfolding order flow that meet these rules.

The POC Color Logic has been used in this example and this is what is showing on the charts in these illustrations.

As a refresh for this setting rules: If POC Logic is selected. This is a point determinant which means when the bar closes above the POC, the color for Buy shows in the bar and cluster; below the POC, the color for Sell shows and when the bar closes right at the POC, the color will show Neutral. These are the Buy/Sell/Neutral classifications for the Bar. For more detail on classifications see the NT8 tutorial section for review.

Conditions :

The Bar Classification for the current bar if an **Up Probe** must be either a Buy or Neutral with this logic
ie any Sell classification for the current bar does not meet the rules.

The Bar Classification for the current bar if a **Down Probe** must be either a Sell or Neutral with this logic
ie any Buy classification for the current bar does not meet the rules.

For the current bar, if it is an **Up Probe** OFA Bar (shown in white on the following chart), the **CLOSE** of this bar is compared to the **POC** values of the prior TWO bars in the sequence. For an Up probe at least one of the 2 prior bars must be a **Down** probe bar (shown in black on the following chart)
For the current bar, if it is a **Down Probe** OFA Bar (shown in Black on the following chart), the **CLOSE** of this bar is compared to the **POC** values of the prior TWO bars in the sequence. For a Down probe at least one of the 2 prior bars must be an **Up** probe bar (shown in White on the following

chart)

For current bar = **Up Probe** :

The Close of the current bar must be GREATER than in price to the POC price of Bar ONE before the current (this is [1] in the code / Barsago 1)
AND
the Close of the current bar must be GREATER than or Equal to the POC price of BAR TWO before the current (this is [2] in the code / Barsago 2)

For current bar = **Down Probe** :

The Close of the current bar must be LESS than in price to the POC price of Bar ONE before the current (this is [1] in the code / Barsago 1) AND
the Close of the current bar must be LESS than or Equal to the POC price of BAR TWO before the current (this is [2] in the code / Barsago 2)

What the conditions are striving to show is when buyers in the Up probe drive up through at least TWO POC prices of the prior bars. Of these 2 prior bars, a minimum of one was a Sell Auction bar down. And conversely to show when sellers in the Down probe drive down through at least TWO POC prices of the prior bars. Of these 2 prior bars, a minimum of one was a Buy Auction Up bar. When the above is true a colored region shows. The region highlights the battle of buying and selling auctions and when they drive through prior POC prices (or clusters you can change this to Cluster High/Low) in the context of the above conditions/rules. This can get very interesting and gives us information to monitor when at key support and resistance areas.

In addition to adding and starting an OFA Profile to the chart and a sequence of bars, key information can be read and derived from the individual OFA Auction bars themselves. In context, this can add some clarity and confidence in reading the order flow in conjunction with the Profile that has been added.

When an Up Probe bar Closes above TWO prior clusters that satisfy the above rules, you can see when there is a follow-through of this pivot and this is **often** tested. Conversely, for a Down Probe bar that Closes below TWO prior clusters that satisfy the above rules, you can see when there is follow-through this is **often** tested.

Context and location and time of day is very important to consider. Not all transitions or pivots are created equal. Are we seeing a series of pivots/transitions occurring near the highs or near the lows of the trading day? Are these transitions occurring at any key support and resistance levels that you monitor in your trading? For example the Open price or Settlement price of the prior session and any previous session highs and lows.

We can start to see patterns where Selling Auctions close and then a series of Buying Auctions (Up Probes) follow. With the colored region, we can see when those Buying Auctions meet the above conditions and reveal a 'Spring' in the transition which is often tested before continuation.

With the above rule set defined, this can be reviewed in the code provided – you can modify the rules or strengthen the conditions you require for your pivot/transition. For example, you could change the greater than or equal to condition for the current bar close compared to TWO bars prior and change the condition to greater than (>) only. You could look for 3 bars back to check the POC prices against. You could change the rules to have at least 2 down probes in the last 3 bars when the current bar is an Up Probe. And so on.
This was provided and designed to make readily available to modify by simply making a copy of the original in the Ninjascript Editor (using Save As) and Save as a different indicator name you can then modify and edit your ideas and chosen ruleset.

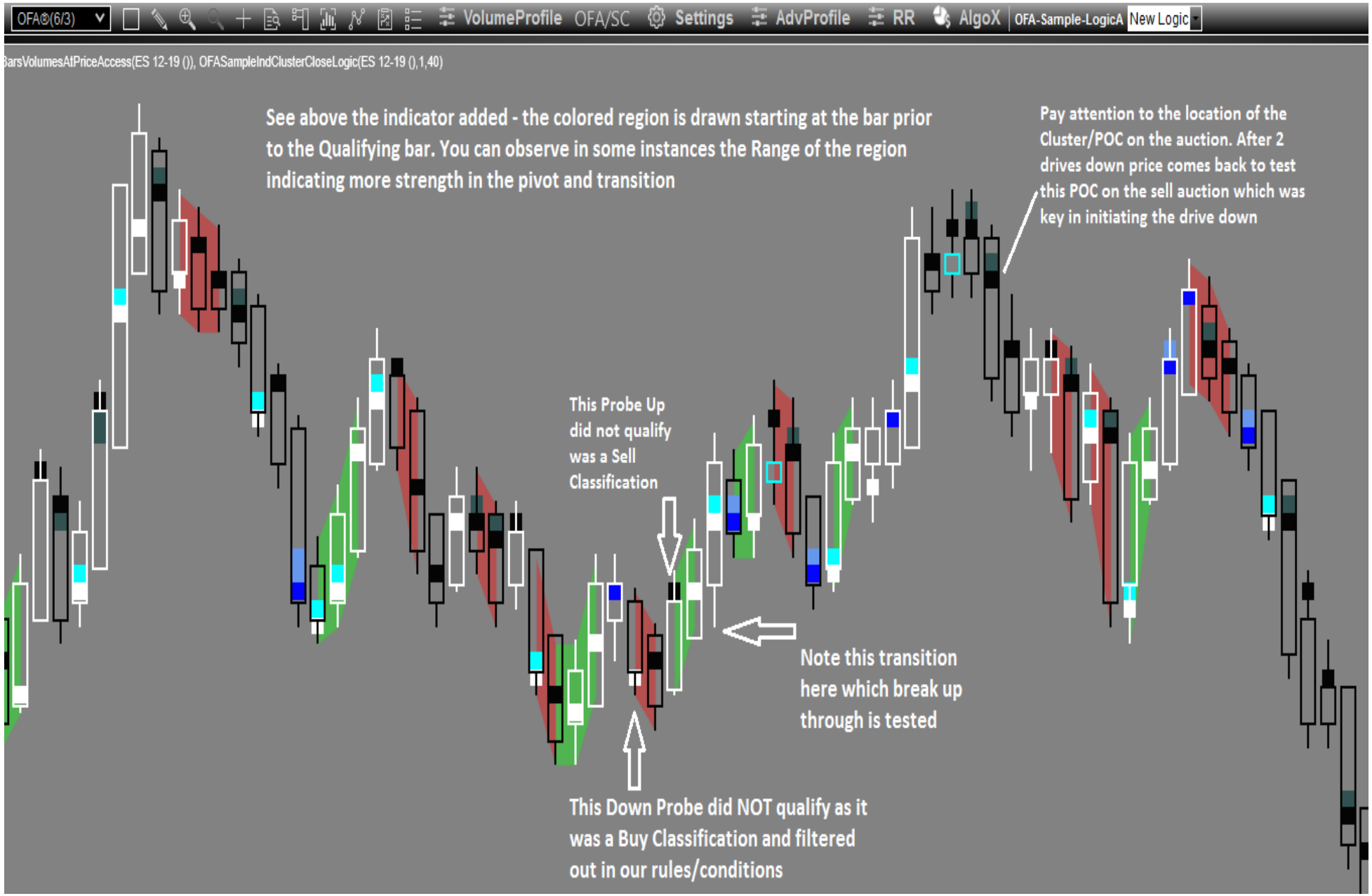
The BloodHound tool from SharkIndicators which is covered in more detail in a separate document uses 'racing stripes' with colors selected as in this indicator; typically red & green vertical stripes per bar. In Bloodhound when working with a Logic template of all the solvers/rules and conditions and more; if qualifies a vertical stripe red or green will show. The power of bloodhound is that you can iterate very quickly and change your logic connections in the template and dynamically and instantly see the change in the rules. Additionally working with the fuzzy logic feature gives you the ability to assign each condition a confidence value 0 to 1.

In providing this sample indicator to draw the region based on a set of logic conditions on OFA Data for Ninjatrader users & developers; it is providing visual feedback to your conditions and rule set to enable you to backtest your ruleset. The key difference being in Ninjatrader you will need to first recompile any changes and then reload (F5) the indicator to refresh and load the changes. Then you can see where key transitions/pivots occurred and with added Decision Point or Swing profile analysis where you could have participated with a defined risk to reward in those trade locations.
Since the Close in the context of Probe and Rotations is key in the rotation of the Bar, it also is key in determining the Bar Classification with the price location of the POC/Cluster of this Auction at the time of the Close. See in the next illustrations some examples of qualifying bars and bars that did NOT qualify due to the Bar Classification when the bar closed.

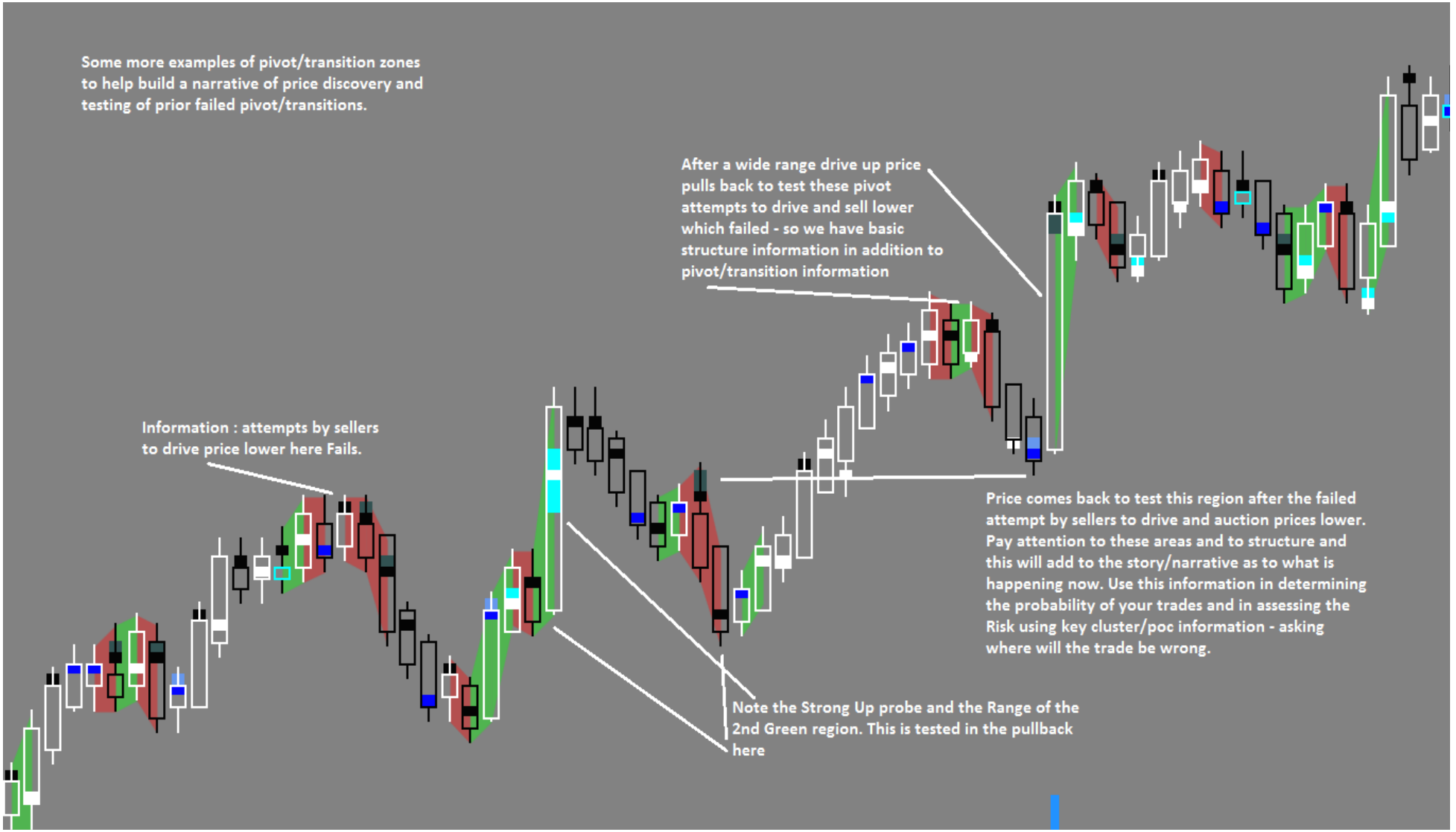
The following illustrations show the key points made above and are a progression of adding the OFA Addon toolset onto the chart in each subsequent graphic overlaying on the previous graphic.

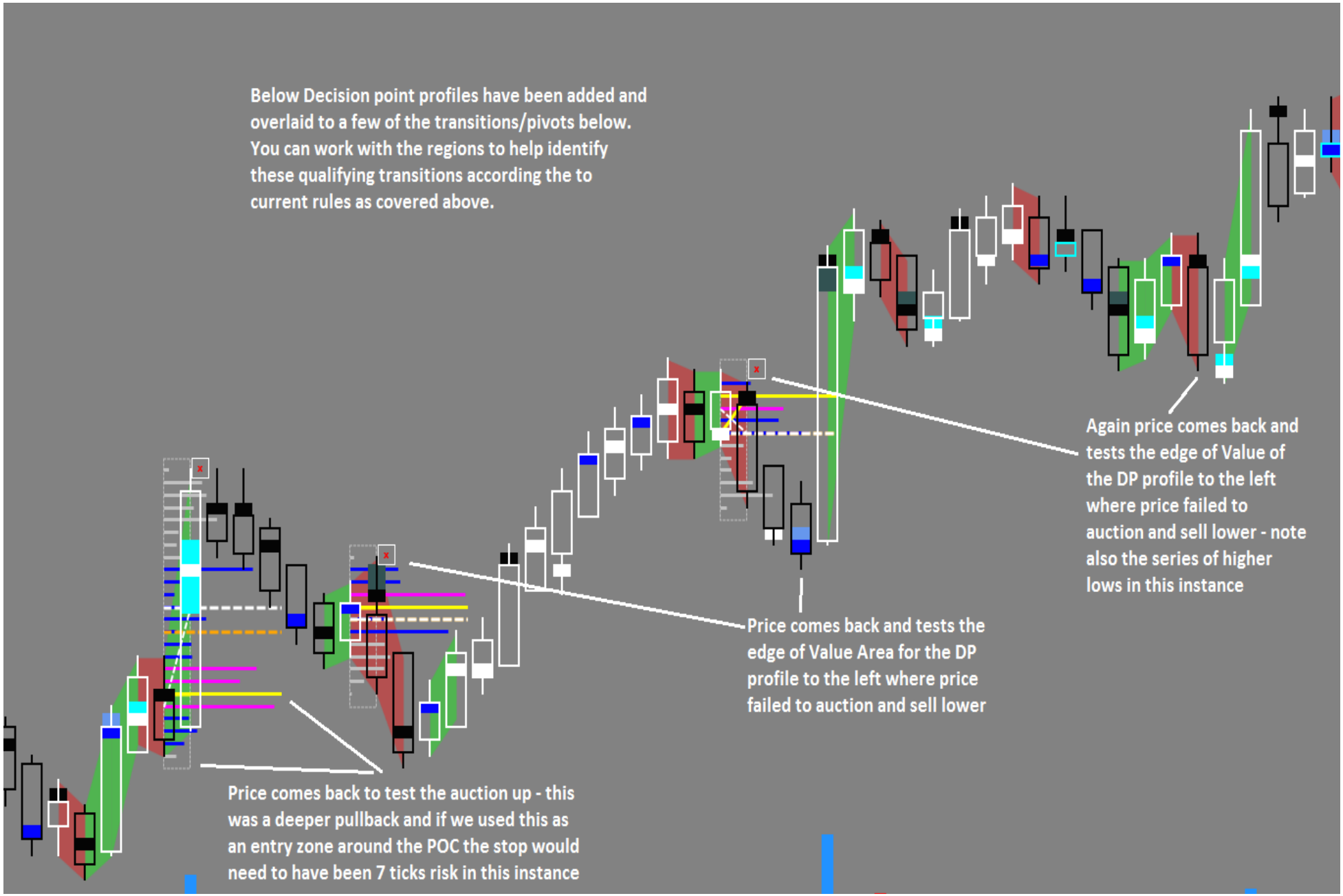
Using the drawn regions for the classification/cluster/poc logic can help you to add DP (Decision Points Profiles) to these qualifying bars. Ensure you include the bar and bar volume that is prior that has the opposite probe direction. Eg if we have an Up Probe that qualifies for the logic condition, we start drawing the DP (Decision Point) profile at the Down Probe that is part of this logic group. Spend some time with this and you will note with valid groups drawn with a DP it conveys a valid pivot/transition. At key times of the day and at levels of support resistance the transition/pivot volume details ie POC VAH VAL can be very key in assessing risk-reward for any trade opportunity.

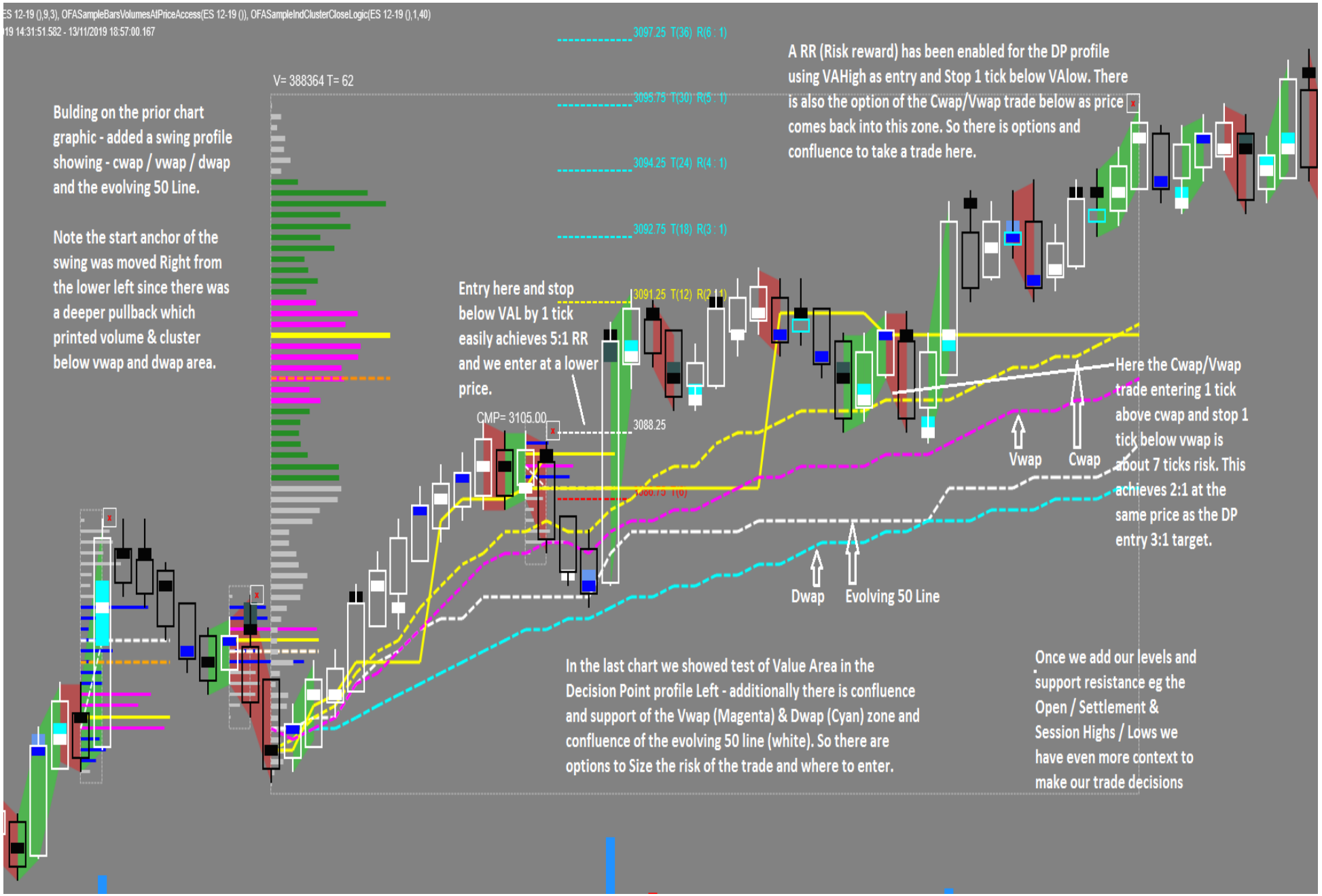
If you are already working with a swing profile – can use the Cluster/Classification pivots to support your cwap/vwap trade for example and or add to your trade. This can give you another confluence point and reason to take the cwap or vwap trade for the defined risk to reward.

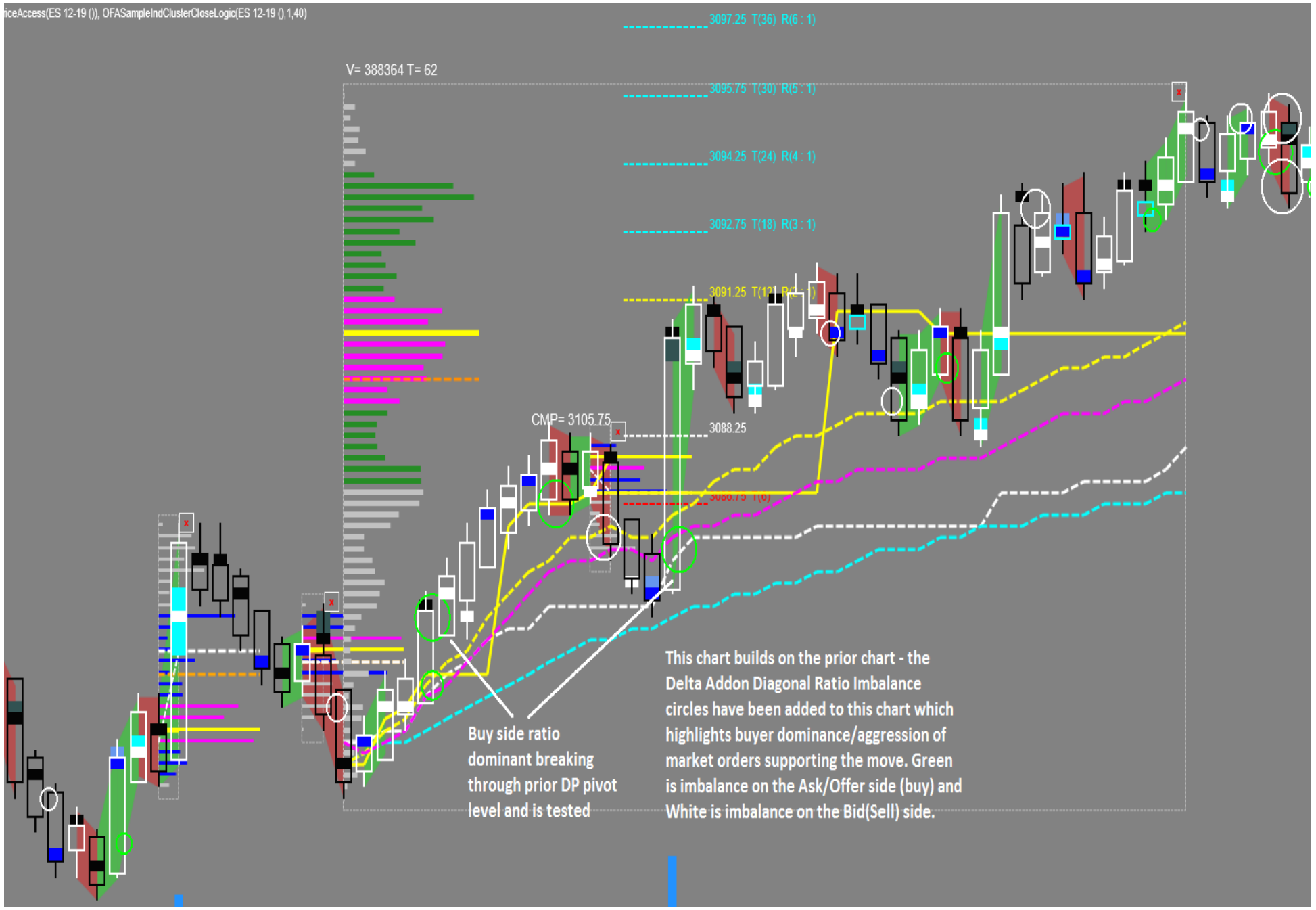

OFA®(6/3)
VolumeProfile
OFA/SC
Settings
AdvProfile
RR
AlgoX
OFA-Sample-LogicA
New Logic
BarsVolumesAtPriceAccess(ES 12-19 ()), OFASampleIndClusterCloseLogic(ES 12-19 (),1,40)
See above the indicator added - the colored region is drawn starting at the bar prior to the Qualifying bar. You can observe in some instances the Range of the region indicating more strength in the pivot and transition
Pay attention to the location of the Cluster/POC on the auction. After 2 drives down price comes back to test this POC on the sell auction which was key in initiating the drive down
This Probe Up did not qualify was a Sell Classification
Note this transition here which break up through is tested
This Down Probe did NOT qualify as it was a Buy Classification and filtered out in our rules/conditions

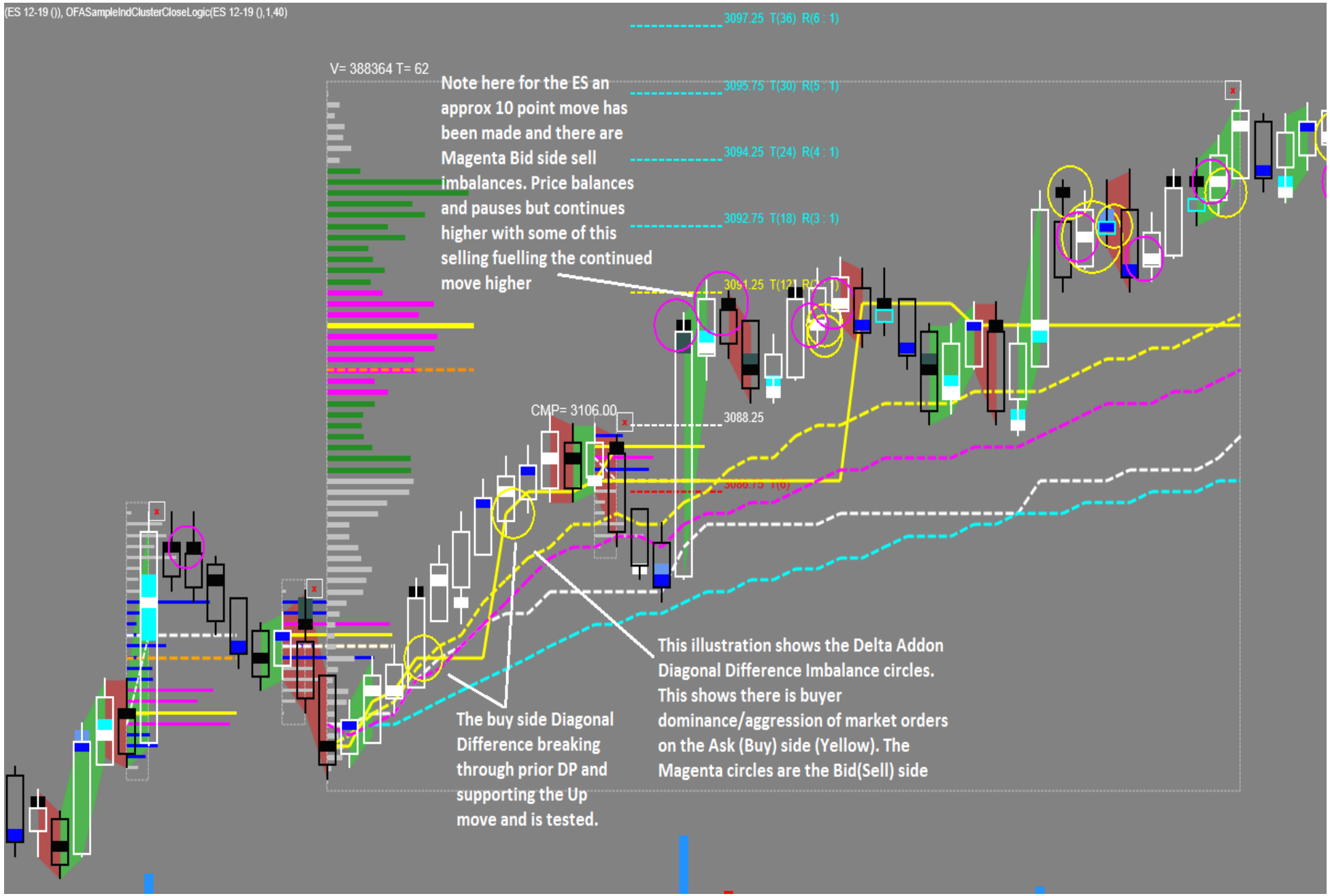
You can spend time on the charts to refine this and the rules if you need to and perhaps use the Color Logic eg Value if this is your preference. For the most part, my preference is the POC Logic but many do use the Value Logic. Pay attention to the position of the Cluster/POC and when it shifts as the Probe and Rotation bar develops and importantly where the POC location on the Bar is when the Auction bar closes.

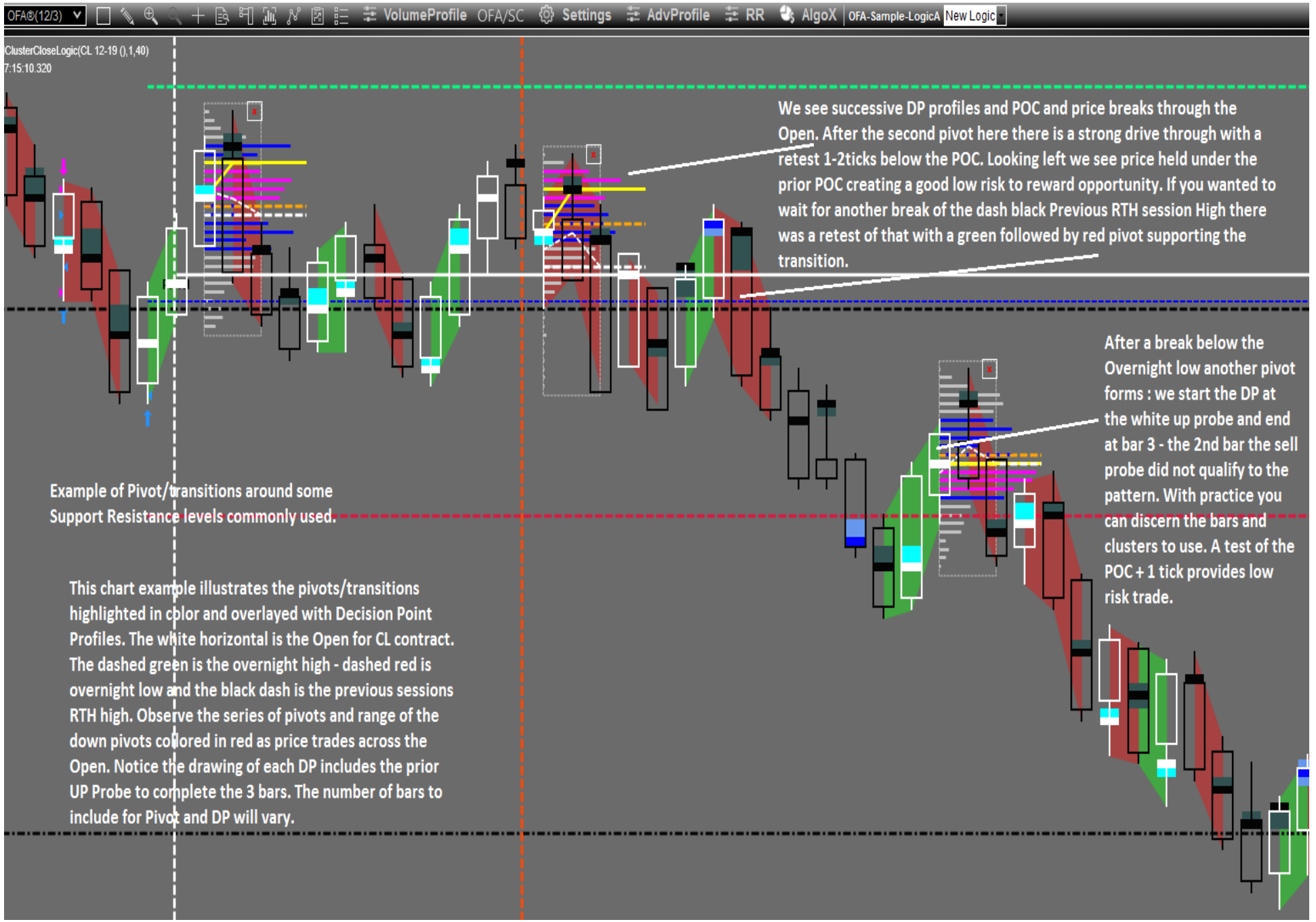



Below Decision point profiles have been added and overlaid to a few of the transitions/pivots below. You can work with the regions to help identify these qualifying transitions according the to current rules as covered above.
Again price comes back and tests the edge of Value of the DP profile to the left where price failed to auction and sell lower - note also the series of higher lows in this instance
Price comes back and tests the edge of Value Area for the DP profile to the left where price failed to auction and sell lower
Price comes back to test the auction up - this was a deeper pullback and if we used this as an entry zone around the POC the stop would need to have been 7 ticks risk in this instance


ES 12-19 (),9,3), OFASampleBarsVolumesAtPriceAccess(ES 12-19 ()), OFASampleIndClusterCloseLogic(ES 12-19 (),1,40)
19 14:31:51.582 - 13/11/2019 18:57:00.167
V= 388364 T= 62
3097.25 T(36) R(6 : 1)
3096.75 T(30) R(5 : 1)
3094.25 T(24) R(4 : 1)
3092.75 T(18) R(3 : 1)
3091.25 T(12) R(2 : 1)
CMP= 3105.00
3088.25
Bulding on the prior chart graphic - added a swing profile showing - cwap / vwap / dwap and the evolving 50 Line.
Note the start anchor of the swing was moved Right from the lower left since there was a deeper pullback which printed volume & cluster below vwap and dwap area.
A RR (Risk reward) has been enabled for the DP profile using VAHigh as entry and Stop 1 tick below VAlow. There is also the option of the Cwap/Vwap trade below as price comes back into this zone. So there is options and confluence to take a trade here.
Entry here and stop below VAL by 1 tick easily achieves 5:1 RR and we enter at a lower price.
Vwap
Cwap
Here the Cwap/Vwap trade entering 1 tick above cwap and stop 1 tick below vwap is about 7 ticks risk. This achieves 2:1 at the same price as the DP entry 3:1 target.
Dwap
Evolving 50 Line
In the last chart we showed test of Value Area in the Decision Point profile Left - additionally there is confluence and support of the Vwap (Magenta) & Dwap (Cyan) zone and confluence of the evolving 50 line (white). So there are options to Size the risk of the trade and where to enter.
Once we add our levels and support resistance eg the Open / Settlement & Session Highs / Lows we have even more context to make our trade decisions


iceAccess(ES 12-19 ()), OFASampleIndClusterCloseLogic(ES 12-19 (),1,40)
V= 388364 T= 62
3097.25 T(36) R(6 : 1)
3095.75 T(30) R(5 : 1)
3094.25 T(24) R(4 : 1)
3092.75 T(18) R(3 : 1)
3091.25 T(12)
CMP= 3105.75
3088.25
Buy side ratio dominant breaking through prior DP pivot level and is tested
This chart builds on the prior chart - the Delta Addon Diagonal Ratio Imbalance circles have been added to this chart which highlights buyer dominance/aggression of market orders supporting the move. Green is imbalance on the Ask/Offer side (buy) and White is imbalance on the Bid(Sell) side.


(ES 12-19 ()), OFASampleIndClusterCloseLogic(ES 12-19 (),1,40)
V= 388364 T= 62
3097.25 T(36) R(6 : 1)
3095.75 T(30) R(5 : 1)
3094.25 T(24) R(4 : 1)
3092.75 T(18) R(3 : 1)
CMP= 3106.00
3088.25
Note here for the ES an approx 10 point move has been made and there are Magenta Bid side sell imbalances. Price balances and pauses but continues higher with some of this selling fuelling the continued move higher
The buy side Diagonal Difference breaking through prior DP and supporting the Up move and is tested.
This illustration shows the Delta Addon Diagonal Difference Imbalance circles. This shows there is buyer dominance/aggression of market orders on the Ask (Buy) side (Yellow). The Magenta circles are the Bid(Sell) side


OFA®(12/3)
VolumeProfile
OFA/SC
Settings
AdvProfile
RR
AlgoX
OFA-Sample-LogicA
New Logic
ClusterCloseLogic(CL 12-19 (),1,40)
7:15:10.320
We see successive DP profiles and POC and price breaks through the Open. After the second pivot here there is a strong drive through with a retest 1-2ticks below the POC. Looking left we see price held under the prior POC creating a good low risk to reward opportunity. If you wanted to wait for another break of the dash black Previous RTH session High there was a retest of that with a green followed by red pivot supporting the transition.
After a break below the Overnight low another pivot forms : we start the DP at the white up probe and end at bar 3 - the 2nd bar the sell probe did not qualify to the pattern. With practice you can discern the bars and clusters to use. A test of the POC + 1 tick provides low risk trade.
Example of Pivot/transitions around some Support Resistance levels commonly used.
This chart example illustrates the pivots/transitions highlighted in color and overlayed with Decision Point Profiles. The white horizontal is the Open for CL contract. The dashed green is the overnight high - dashed red is overnight low and the black dash is the previous sessions RTH high. Observe the series of pivots and range of the down pivots colored in red as price trades across the Open. Notice the drawing of each DP includes the prior UP Probe to complete the 3 bars. The number of bars to include for Pivot and DP will vary.

Adding & Referencing the OFA Addon Indicators in Strategy Builder/Market Analyzer

Please spend time with the ninja 8 help sections on the strategy builder and the key features and settings available. Additionally, look at their youtube channel videos and tutorials. Then read over the Market Analyzer Help sections and videos too. Some familiarity with these components will help in understanding the following material if you are not familiar with these aspects of Ninjatrader 8.

A Tip here to consider in working with the Addon(s) is that if you wish to write an indicator and not a strategy: Use the condition builder in the strategy builder to generate the code. Then by viewing or unlocking the code once you have finished you can cut and paste the generated logic to put into the code logic sections of your indicator. The reason to suggest this here is that currently the ninjascript editor/wizard part of the editor currently does not have the condition builder feature. This has been requested as a feature request for future Ninjatrader 8 versions. So if you have a nested or group set of more complex conditions; all the bracketing and logic are generated. This can save time in ensuring all the brackets and && and || (And / OR) logic combinations are syntactically in order.

A summary of the approach is made here about accessing the OFA Bar Data and how to access each of these Ninjatrader components.

See in the graphics below how to make the selections and the steps needed and be clear of which bar offset each condition is referring to ie to the current bar or previous bar(s). As covered above the indicator to the Addon Mapping is : make clear ***

Process steps for referencing Bar Strategy Addon or OFA BloodHound Addon (Bloodhound users authorized for this) in Strategy Builder:

Once you have reached the Conditions and Actions section of strategy builder, after setting input variables and default properties :

You can then work with the conditions editor using the condition group editor or add each condition one by one.

Please note that for more complex logic conditions a group feature has been provided by ninja for this purpose

Key components: **Plots** is the common theme and key drop-down for accessing the OFA Bar data variables in Strategy Builder and Market Analyzer.

Select the **Add or Group** option in the lower right section of the upper panel. This will open up the chosen condition editor.

When you select the Indicators folder in the top left to begin creating the condition scroll down to **OFASTCORE/OFASTCOREBH** and select.

You can see the full list of OFA Bar Plot/Values that can be accessed in the strategy builder in the **Plots** section for the indicator selected. Note this is the same list of variables that can be accessed and referenced when and if you choose to Unlock the code in the strategy builder OR if you are manually coding your strategy or indicators.

This is for Bar Strategy and OFA BloodHound Addon modules only. Note that the Profile Strategy Addon module does not apply in strategy builder and only applies to a running OFA chart with an active profile marked on the chart. To access the active profile elements if you are authorized for this package, you will need to unlock and edit the code. For this see Sample **OFASampleIndActiveProfileDataAccess** for details of this.

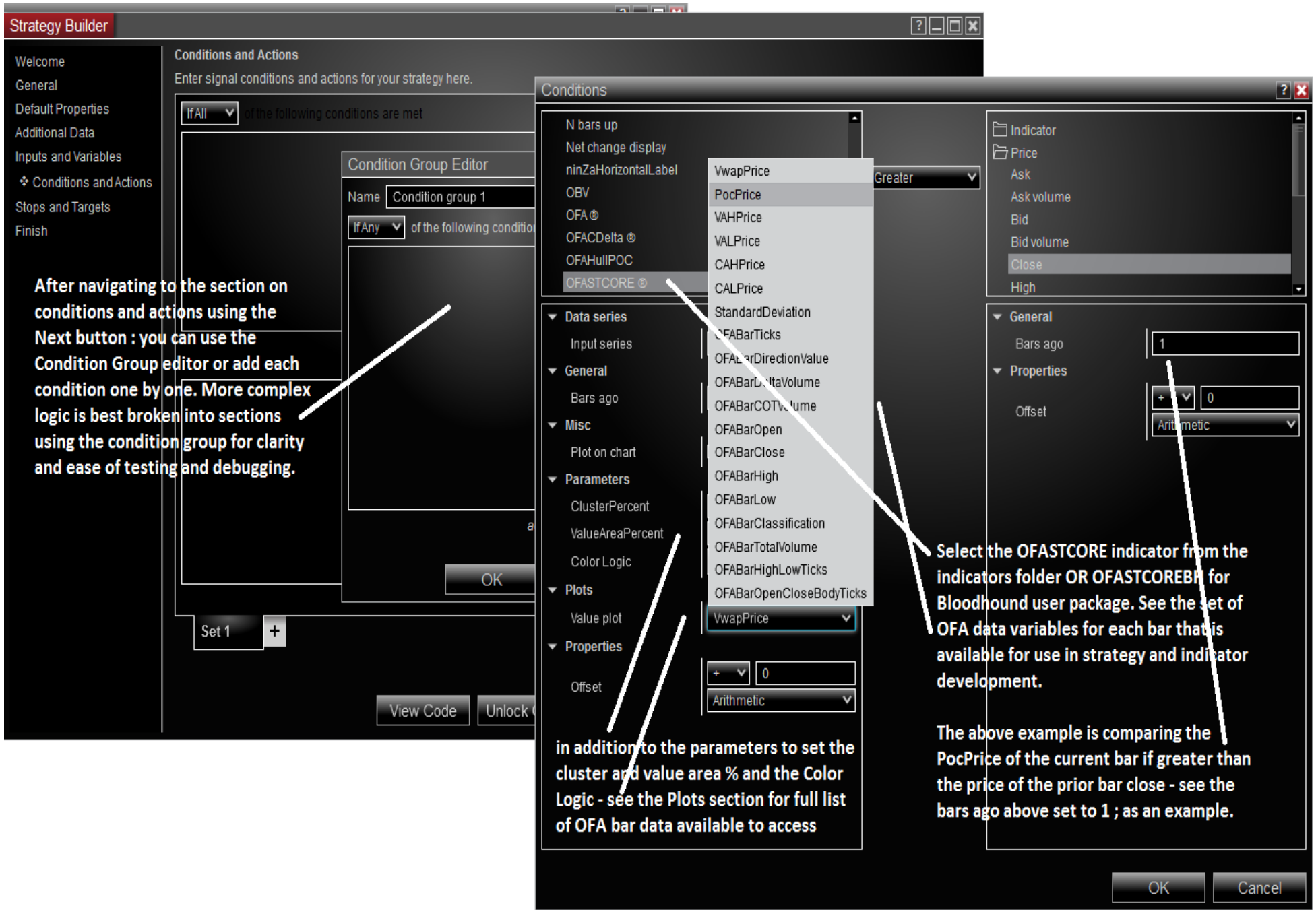
The condition that is created in the following example: used the OFA Bar VwapPrice for the current bar (0) and when the value is greater than the Prior Bar Close value (1) (using the Bars ago field) – the Action is added in the lower panel to Draw a vertical line.

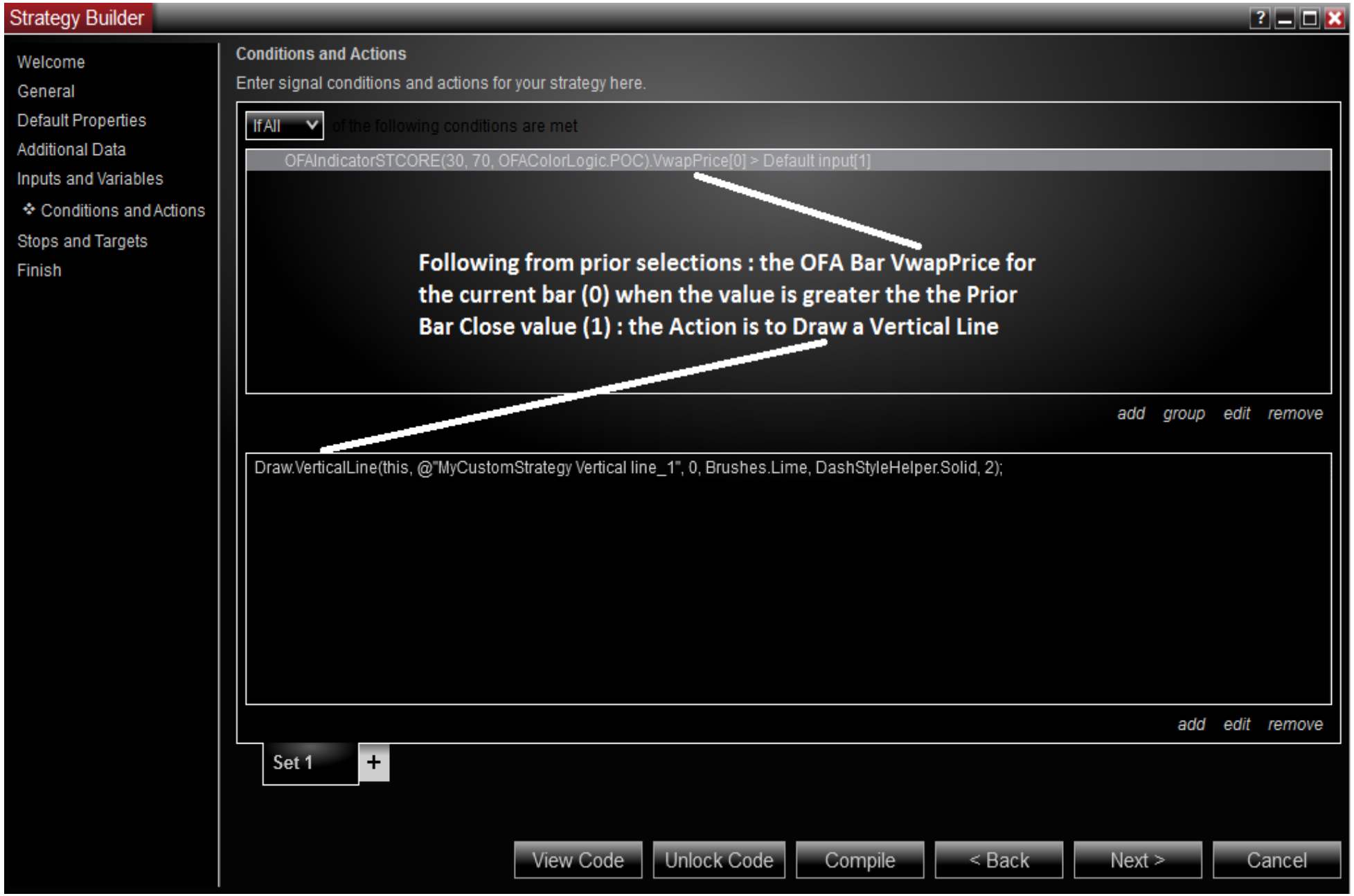
List of following screenshots :

1. **Strategy Builder Overview in the Conditions and Actions section which is key to building groups of logic conditions and using and accessing the OFA Bar Data. You will select the OFASTCORE or the OFASTCOREBH indicator depending on which of the packages you selected when purchasing. Again the OFASTCOREBH indicator is for Bloodhound users & bloodhound users using the Ninja 8 tools.**

2. **The next screenshot shows the outputs from the simple condition constructed on the prior screen.**

3. **The next screenshot section illustrates a screenshot of the key code segments generated by Strategy Builder which are key to referencing the OFA Bar data.**


Strategy Builder
Welcome
General
Default Properties
Additional Data
Inputs and Variables
Conditions and Actions
Stops and Targets
Finish
Conditions and Actions
Enter signal conditions and actions for your strategy here.
If All
of the following conditions are met
Condition Group Editor
Name
Condition group 1
If Any
OK
Set 1
View Code
Conditions
N bars up
Net change display
ninZaHorizontalLabel
OBV
OFA ®
OFACDelta ®
OFAHullPOC
OFASTCORE ®
Data series
Input series
General
Bars ago
Misc
Plot on chart
Parameters
ClusterPercent
ValueAreaPercent
Color Logic
Plots
Value plot
Properties
Offset
VwapPrice
PocPrice
VAHPrice
VALPrice
CAHPrice
CALPrice
StandardDeviation
OFABarTicks
OFABarDirectionValue
OFABarDeltaVolume
OFABarCOTVolume
OFABarOpen
OFABarClose
OFABarHigh
OFABarLow
OFABarClassification
OFABarTotalVolume
OFABarHighLowTicks
OFABarOpenCloseBodyTicks
VwapPrice
0
Arithmetic
Greater
Indicator
Price
Ask
Ask volume
Bid
Bid volume
Close
High
General
Bars ago
1
Properties
Offset
0
Arithmetic
OK
Cancel
After navigating to the section on conditions and actions using the Next button : you can use the Condition Group editor or add each condition one by one. More complex logic is best broken into sections using the condition group for clarity and ease of testing and debugging.
in addition to the parameters to set the cluster and value area % and the Color Logic - see the Plots section for full list of OFA bar data available to access
Select the OFASTCORE indicator from the indicators folder OR OFASTCOREBH for Bloodhound user package. See the set of OFA data variables for each bar that is available for use in strategy and indicator development.
The above example is comparing the PocPrice of the current bar if greater than the price of the prior bar close - see the bars ago above set to 1 ; as an example.


Strategy Builder
Welcome
General
Default Properties
Additional Data
Inputs and Variables
Conditions and Actions
Stops and Targets
Finish
Conditions and Actions
Enter signal conditions and actions for your strategy here.
If All
of the following conditions are met
OFAIndicatorSTCORE(30, 70, OFAColorLogic.POC).VwapPrice[0] > Default input[1]
Following from prior selections : the OFA Bar VwapPrice for the current bar (0) when the value is greater the the Prior Bar Close value (1) : the Action is to Draw a Vertical Line
add group edit remove
Draw.VerticalLine(this, @"MyCustomStrategy Vertical line_1", 0, Brushes.Lime, DashStyleHelper.Solid, 2);
add edit remove
Set 1
+
View Code
Unlock Code
Compile
< Back
Next >
Cancel

```
namespace NinjaTrader.NinjaScript.Strategies
{
    public class MyCustomStrategy : Strategy
    {
        private OFAIndicatorSTCORE OFAIndicatorSTCORE1;

        protected override void OnStateChange()
        {
            if (State == State.SetDefaults)
            {
                Description                                 = @"Enter the description for your new custom Strategy here.";
                Name                                        = "MyCustomStrategy";
                Calculate                                   = Calculate.OnBarClose;
                EntriesPerDirection                         = 1;
                EntryHandling                               = EntryHandling.AllEntries;
                IsExitOnSessionCloseStrategy                = true;
                ExitOnSessionCloseSeconds                   = 30;
                IsFillLimitOnTouch                          = false;
                MaximumBarsLookBack                         = MaximumBarsLookBack.TwoHundredFiftySix;
                OrderFillResolution                         = OrderFillResolution.Standard;
                Slippage                                    = 0;
                StartBehavior                               = StartBehavior.WaitUntilFlat;
                TimeInForce                                 = TimeInForce.Gtc;
                TraceOrders                                 = false;
                RealtimeErrorHandling                       = RealtimeErrorHandling.StopCancelClose;
                StopTargetHandling                          = StopTargetHandling.PerEntryExecution;
                BarsRequiredToTrade                         = 20;
                // Disable this property for performance gains in Strategy Analyzer optimizations
                // See the Help Guide for additional information
                IsInstantiatedOnEachOptimizationIteration   = true;
            }
            else if (State == State.Configure)
            {
            }
            else if (State == State.DataLoaded)
            {
                OFAIndicatorSTCORE1             = OFAIndicatorSTCORE(Close, 30, 70, NinjaTrader.OFA.OFAColorLogic.POC);
            }
        }

        protected override void OnBarUpdate()
        {
            if (BarsInProgress != 0)
                return;

            if (CurrentBars[0] < 1)
                return;

             // Set 1
            if (OFAIndicatorSTCORE1.VwapPrice[0] > Close[1])
            {
                Draw.VerticalLine(this, @"MyCustomStrategy Vertical line_1", 0, Brushes.Lime, DashStyleHelper.Solid, 2);
            }

        }
    }
```

The next section covers an example of using the Market Analyzer screen components

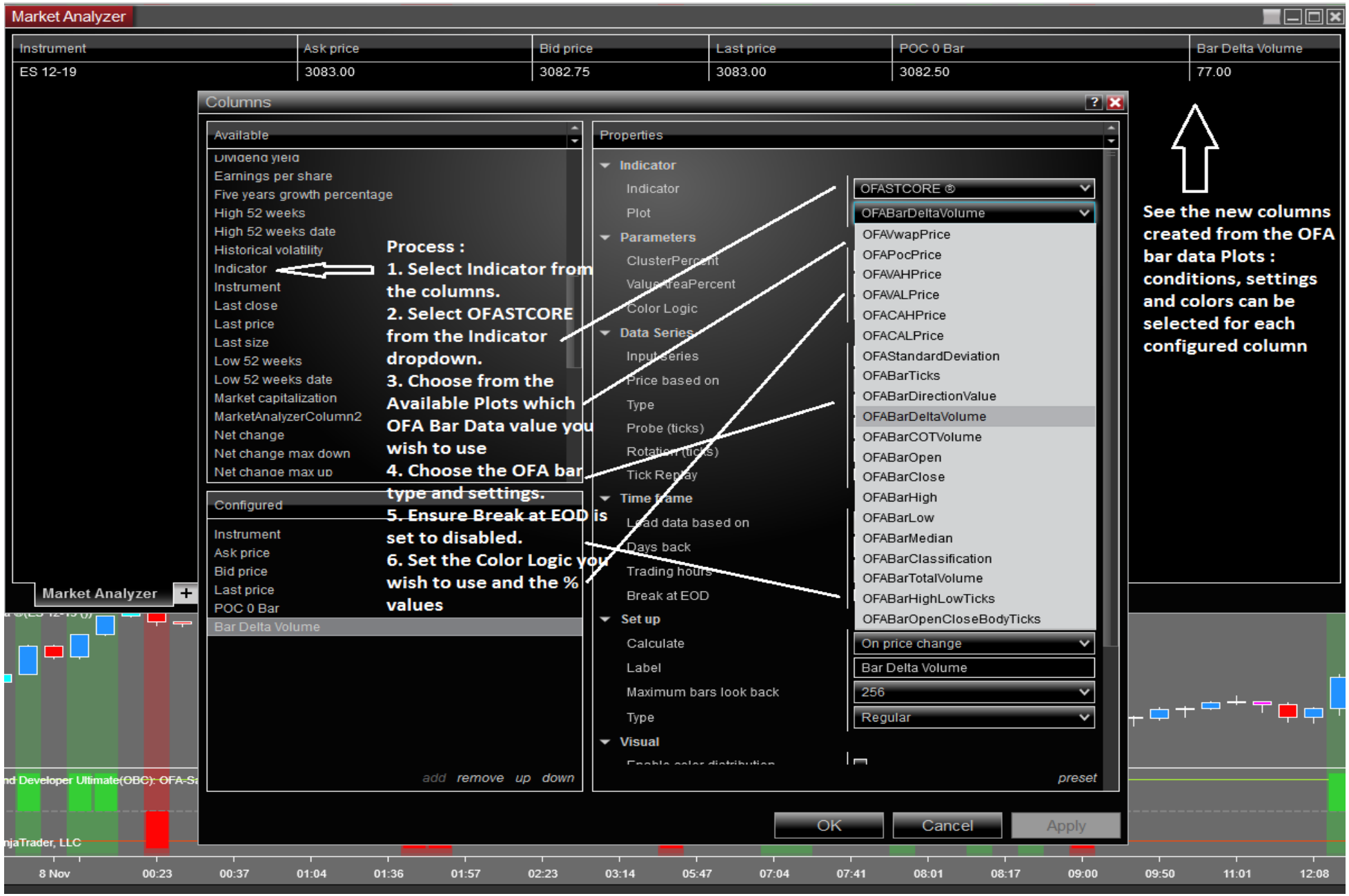
The first screenshot illustrates the steps and process for creating a new column based on an indicator, then selecting OFASTCORE or OFASTCOREBH(if using the bloodhound package) indicator to see all the available OFA Bar plots

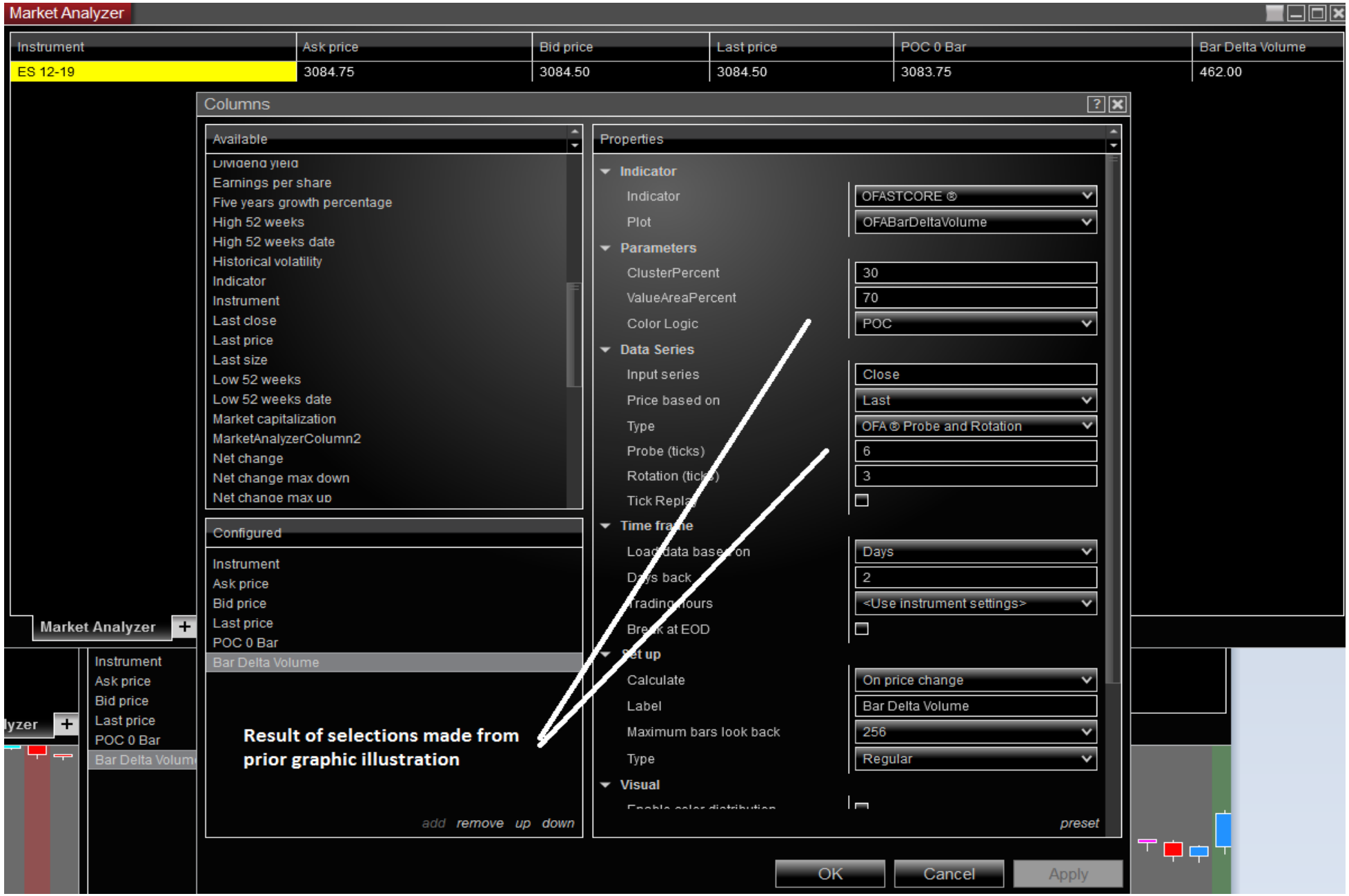
Market Analyzer process for adding a column :

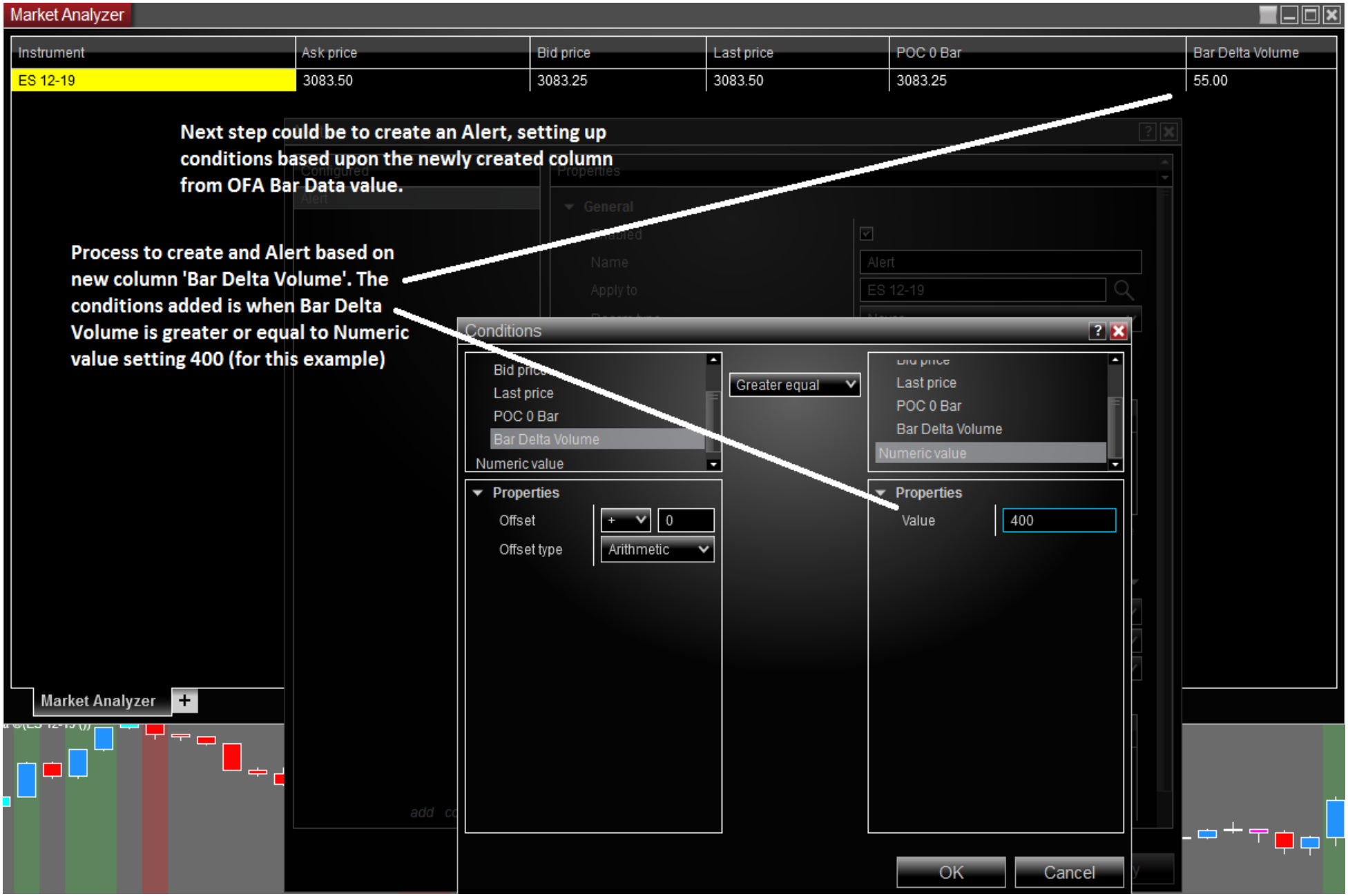
1. **Right Click in Market Analyzer window and select 'Columns...'**
2. **Scroll down the Columns panel in the opened dialog and select Indicator**
3. **On the right side panel scroll down the Indicators dropdown and select OFASTCORE**
4. **If you purchased the BloodHound package you will be authorized for OFASTCOREBH so select this**
5. **Choose from the available Plots list which OFA Bar Data value you wish to use. See illustrations following for the full list**
6. **Choose the OFA Bar Type and settings eg Probe and Rotation Probe (ticks) & Rotation (ticks)**
7. **Ensure tick replay is Disabled and Break at EOD is disabled.**
8. **Set the Color Logic you wish to use and the % values for the Value Area and Cluster Area.**
9. **In the SetUp section on the right edit the Label field and choose how you wish to Label the column**
10. **Add any conditions and filters in the next section you wish to use for this column**
11. **Select Apply then OK and the column will be calculated and appear in the Analyzer window**

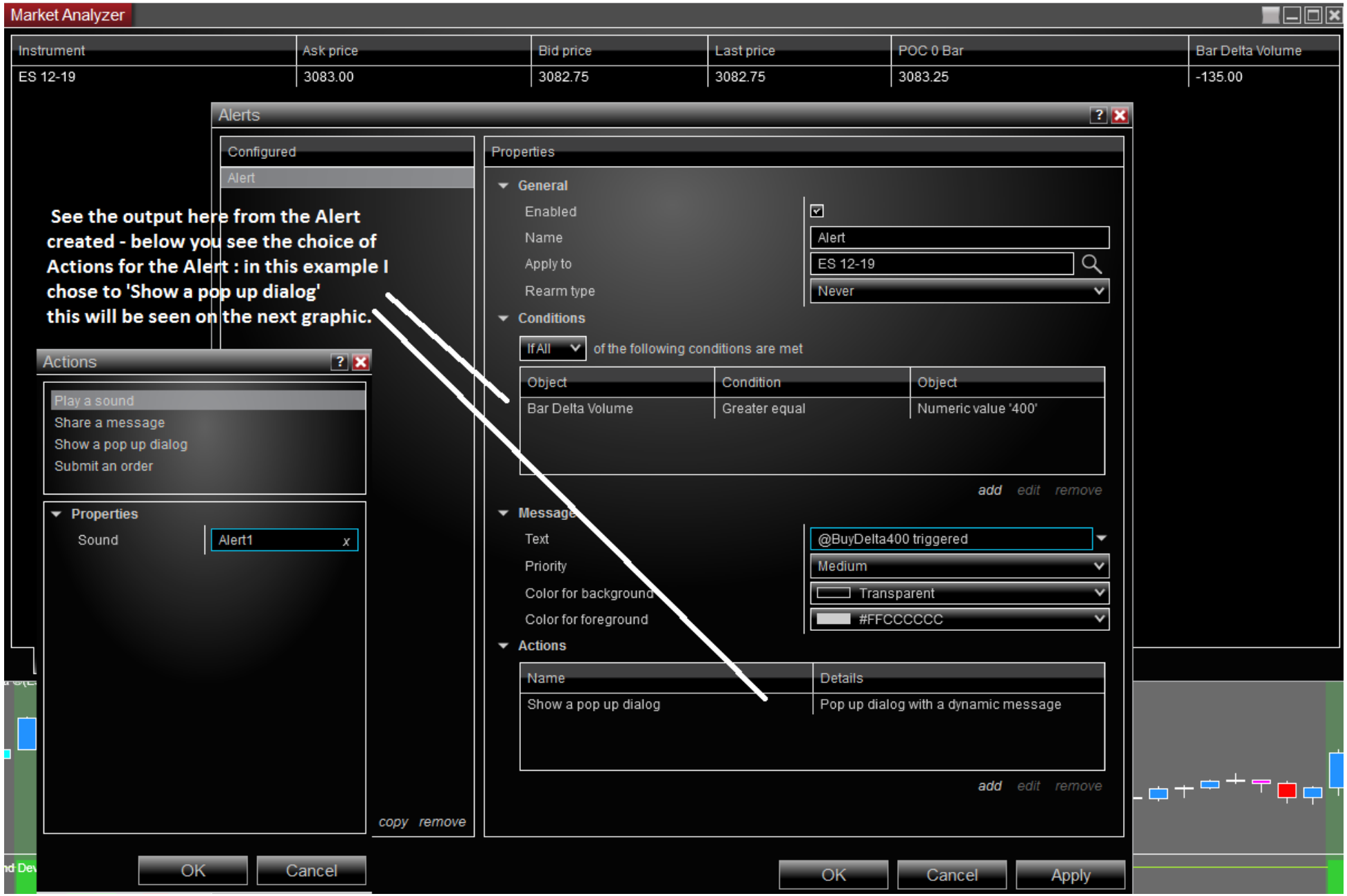
The next screenshot shows the results of the selections made before selecting OK which will then process and create the new column. This column shown is Bar Delta Volume

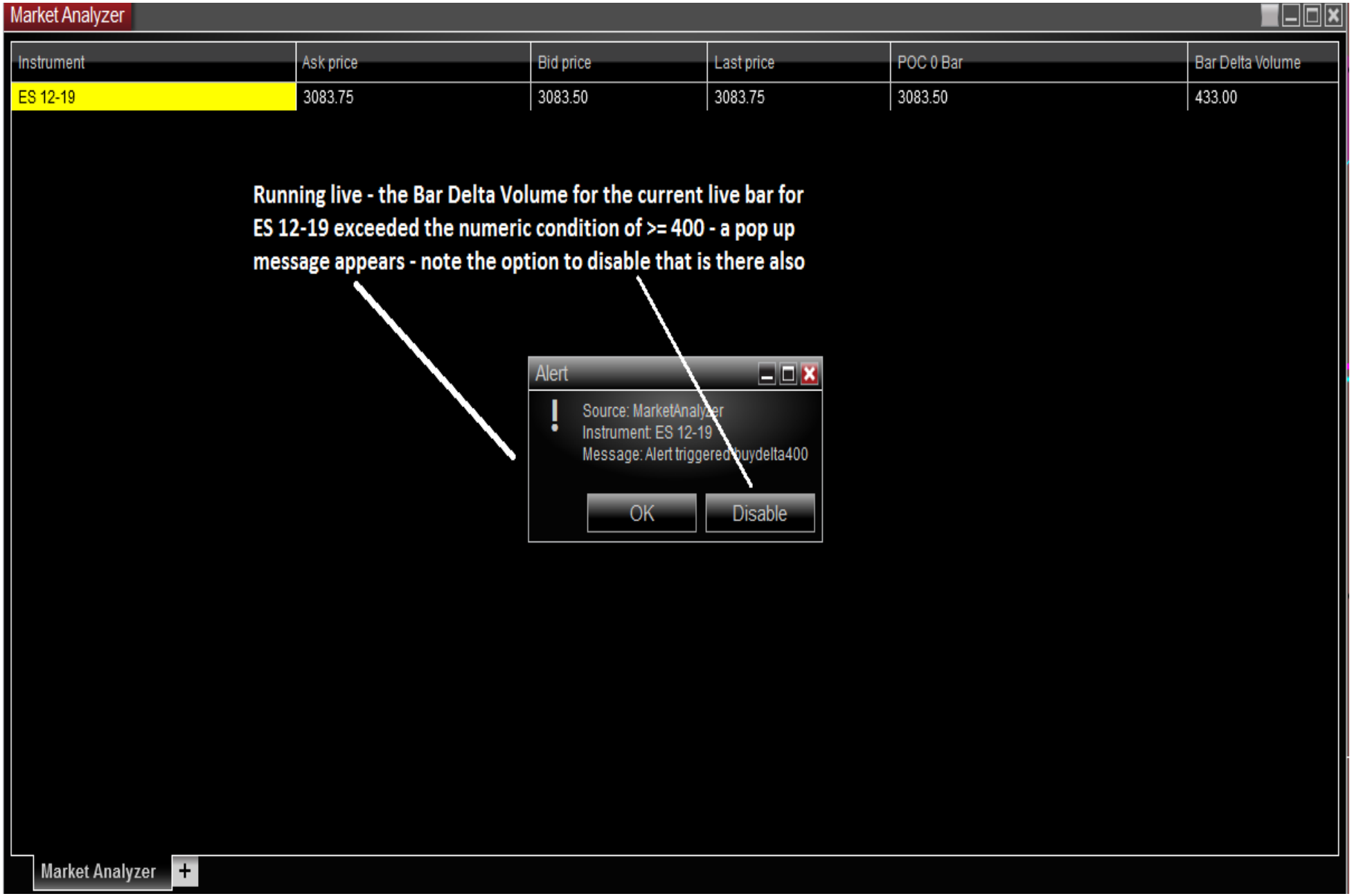
The 3 following screenshots show the process of creating an Alert using this newly created OFA data-based column.


Market Analyzer
Instrument
Ask price
Bid price
Last price
POC 0 Bar
Bar Delta Volume
ES 12-19
3083.00
3082.75
3083.00
3082.50
77.00
Columns
Available
Earnings per share
Five years growth percentage
High 52 weeks
High 52 weeks date
Historical volatility
Indicator
Instrument
Last close
Last price
Last size
Low 52 weeks
Low 52 weeks date
Market capitalization
MarketAnalyzerColumn2
Net change
Net change max down
Configured
Instrument
Ask price
Bid price
Last price
POC 0 Bar
Bar Delta Volume
add remove up down
Properties
Indicator
Indicator
Plot
Parameters
Color Logic
Data Series
Input series
Price based on
Type
Probe (ticks)
Tick Replay
Time frame
Days back
Trading hours
Break at EOD
Set up
Calculate
Label
Maximum bars look back
Type
Visual
OFASTCORE ®
OFABarDeltaVolume
OFAVwapPrice
OFAPocPrice
OFAVAHPrice
OFAVALPrice
OFACAHPrice
OFACALPrice
OFAStandardDeviation
OFABarTicks
OFABarDirectionValue
OFABarDeltaVolume
OFABarCOTVolume
OFABarOpen
OFABarClose
OFABarHigh
OFABarLow
OFABarMedian
OFABarClassification
OFABarTotalVolume
OFABarHighLowTicks
OFABarOpenCloseBodyTicks
On price change
Bar Delta Volume
256
Regular
preset
OK
Cancel
Apply
Process :
1. Select Indicator from the columns.
2. Select OFASTCORE from the Indicator dropdown.
3. Choose from the Available Plots which OFA Bar Data value you wish to use
4. Choose the OFA bar type and settings.
5. Ensure Break at EOD is set to disabled.
6. Set the Color Logic you wish to use and the % values
See the new columns created from the OFA bar data Plots : conditions, settings and colors can be selected for each configured column
Market Analyzer
8 Nov
00:23
00:37
01:04
01:36
01:57
02:23
03:14
05:47
07:04
07:41
08:01
08:17
09:00
09:50
11:01
12:08


Market Analyzer
Instrument
Ask price
Bid price
Last price
POC 0 Bar
Bar Delta Volume
ES 12-19
3084.75
3084.50
3084.50
3083.75
462.00
Columns
Available
Dividend yield
Earnings per share
Five years growth percentage
High 52 weeks
High 52 weeks date
Historical volatility
Indicator
Instrument
Last close
Last price
Last size
Low 52 weeks
Low 52 weeks date
Market capitalization
MarketAnalyzerColumn2
Net change
Net change max down
Net change max up
Configured
Instrument
Ask price
Bid price
Last price
POC 0 Bar
Bar Delta Volume
Result of selections made from prior graphic illustration
add remove up down
Properties
Indicator
Indicator
OFASTCORE ®
Plot
OFABarDeltaVolume
Parameters
ClusterPercent
30
ValueAreaPercent
70
Color Logic
POC
Data Series
Input series
Close
Price based on
Last
Type
OFA ® Probe and Rotation
Probe (ticks)
6
Rotation (ticks)
3
Tick Replay
Time frame
Load data based on
Days
Days back
2
Trading hours
<Use instrument settings>
Break at EOD
Set up
Calculate
On price change
Label
Bar Delta Volume
Maximum bars look back
256
Type
Regular
Visual
preset
OK
Cancel
Apply
Market Analyzer


Market Analyzer
Instrument
Ask price
Bid price
Last price
POC 0 Bar
Bar Delta Volume
ES 12-19
3083.50
3083.25
3083.50
3083.25
55.00
Next step could be to create an Alert, setting up conditions based upon the newly created column from OFA Bar Data value.
Process to create and Alert based on new column 'Bar Delta Volume'. The conditions added is when Bar Delta Volume is greater or equal to Numeric value setting 400 (for this example)
Conditions
Bid price
Last price
POC 0 Bar
Bar Delta Volume
Numeric value
Greater equal
Last price
POC 0 Bar
Bar Delta Volume
Numeric value
Properties
Offset
+
0
Offset type
Arithmetic
Properties
Value
400
OK
Cancel
Market Analyzer


Market Analyzer
Instrument
Ask price
Bid price
Last price
POC 0 Bar
Bar Delta Volume
ES 12-19
3083.00
3082.75
3082.75
3083.25
-135.00
Alerts
Configured
Alert
Properties
General
Enabled
Name
Alert
Apply to
ES 12-19
Rearm type
Never
Conditions
If All
of the following conditions are met
Object
Condition
Object
Bar Delta Volume
Greater equal
Numeric value '400'
add edit remove
Message
Text
@BuyDelta400 triggered
Priority
Medium
Color for background
Transparent
Color for foreground
#FFCCCCCC
Actions
Name
Details
Show a pop up dialog
Pop up dialog with a dynamic message
add edit remove
See the output here from the Alert created - below you see the choice of Actions for the Alert : in this example I chose to 'Show a pop up dialog' this will be seen on the next graphic.
Actions
Play a sound
Share a message
Show a pop up dialog
Submit an order
Properties
Sound
Alert1
copy remove
OK
Cancel
OK
Cancel
Apply


Market Analyzer
Instrument
Ask price
Bid price
Last price
POC 0 Bar
Bar Delta Volume
ES 12-19
3083.75
3083.50
3083.75
3083.50
433.00
Running live - the Bar Delta Volume for the current live bar for ES 12-19 exceeded the numeric condition of >= 400 - a pop up message appears - note the option to disable that is there also
Alert
Source: MarketAnalyzer
Instrument: ES 12-19
Message: Alert triggered: buydelta400
OK
Disable
Market Analyzer
+

Color Logic Summary Review From The Color Logic Settings Document

Selection of a Color Logic determines how each element in a bar will appear on a chart and in what color as you select the various colors for each. Below, the POC Logic is selected. This is a point determinant which means when the bar closes above the POC, the color for Buy shows in the bar and cluster; below the POC, the color for Sell shows and when the bar closes right at the POC, the color will show Neutral.

Below, the VWAP Logic is selected. This is a point determinant which means when the bar closes above the **1st Upper Standard Deviation**, the color for Buy shows in the bar and cluster; below the **1st Lower Standard Deviation**, the color for Sell shows and when the bar closes between the **1st Upper & 1st Lower Standard Deviations** the color will show Neutral.

Cluster and Value Area Color Logic(s) are range determinant. If a bar closes above the high of a cluster or the Value Area for the bar, the color will show green as shown above but whatever color you choose to select for Buy. If the close of a bar is below the low of a Cluster or the Value Area for a bar, it will show the color for sell. In the above case that is red. And if the close of the bar is inside either the Cluster or the Value Area, then the colors will show Neutral. That is the meaning of range determinant.

Basic Logic setting simply adopts the Neutral colors for the bar from each of the color sets available; POC, Cluster, Value Area and VWAP.

FAQ Section

How do I install this Addon?

This is an Import process of the ZIP file you downloaded. There is a separate ZIP download for each user type – BloodHound User or Non-BloodHound User. A separate ZIP file exists for users purchasing the Active Profile Access Addon.

This is different from the MAIN OFA application and due to the nature of the data access and integration structure with Ninjatrader components. Such as Strategy Builder / Market Analyzer and the ninjascript editor. Additionally, the BloodHound Logic template tools require a different access approach. See the download/installation section on the next page.

Which indicator do I use for bloodhound tools? This is the OFA Bloodhound Addon – in Bloodhound and in Ninjatrader you reference OFASTCOREBH

Which indicator do I use if I have the Bar Strategy Addon? In Ninjatrader you reference OFASTCORE

Why do I need to manually code access to the active profile elements or the Volumes at price (Bid/Ask volume) for the current bar?

The strategy builder cannot access additional indicator elements other than specific plots. This is a limitation of the strategy builder which can only access plots and not more complex data types.

Can I get history bars volume at price?

No currently we only provide the current live bar. You can save the details in your data structures to save/copy the data when you get the firsttickofbar of the new bar.

Why are 2 versions of the CORE indicator provided?

For Bloodhound users some additional coding specifics and processes were required to integrate with the SharkIndicators BloodHound toolset.

What are the value settings for Bar Classification to use in my code or reference in bloodhound?

Buy Classification = 1 Sell Classification = -1 Neutral Classification = 2

What are the value settings for Bar Direction to use in my code or reference in bloodhound?

Probe Up = 1 Probe Down = -1 Neutral = 2

Do I need to add the Addon(s) to the chart? – NO this is not required – you simply reference them either via the bloodhound Logic solver interface or directly in the Strategy builder / Market Analyzer interface or in the code by following the code segments in the Samples provided. The key aspect to all of these is the provided PLOT values you will see in the drop-down in each of the above.

How do I access the print volume bid/ask (bar volume profile detail) ? see the **OFASampleBarsVolumesAtPriceAccess** code for example of this.

How do I access Active profile detail? – see example **OFASampleActiveProfileDataAccess** which will run when you are authorized for the Profile Strategy Addon.

I have little to no programming experience what can I do with this?

If you follow the above steps for market analyzer & the ninja tutorials to access the plots for an indicator you can easily reference the OFA Bar data. You can then create new columns following a simple sequence of steps covered in this document. Then you can use the data to create simple if then else conditions building to more complex ones as you gain more understanding with experience. **Additionally,** you will be able to run and use the sample indicators as they are and if necessary make custom modifications to include your own ideas and rules.

Which approach for strategies is used in the strategy samples?

The strategy builder uses what is called the managed approach to govern how strategies can operate: *"The Managed approach in NinjaScript is designed to offer the greatest ease of use for beginner to intermediate programmers. The order methods are wrapped in a convenience layer that allows you to focus on your system's trading rules, leaving the underlying mechanics of order management and the relationships between entry orders, exit orders, and positions to NinjaTrader. This approach is best suited for simple to moderate order complexity, and can be further broken down into a Basic/Common Managed approach..."* Please see the help guide here for further contextual information:
https://ninjatrader.com/support/help...d_approach.htm

Download and Installation Process – for here and to copy on the website page

Please note that ONLY for users of the new Bar Strategy Addon / OFA Bloodhound Addon or Profile Strategy Addon : the process to install is via the standard import process. The main download and installation for OFA including future updates WILL continue as has been and this is covered in detail in that download section on the website. Installation of OFA Core is via an installer process & not an import process.

You should only be clicking yes to overwriting scripts if they are not system scripts that begin with the '@' symbol.

Before importing please download and update to the latest OFA Core version using the installer process covered in the download page.

To import the new OFA Addon NinjaScripts covered in this document into NinjaTrader 8 do the following:

1. Download the script to your desktop, keep it in the compressed .zip file.
2. From the Control Center window select Tools -> Import -> NinjaScript...
3. Click the Desktop icon on the left to navigate to the desktop
4. Select the downloaded .zip file -> then click Open
5. NinjaTrader will then confirm if the import has been successful.

Critical *Note that on any files that say "File already exists on your PC" that starts with an "@" symbol are the ones that came preloaded inside of NinjaTrader so you would say "No" so that you do not override those files.

The three ZIP file options are :

OFABarStrategyAddonBuild – for Bar Strategy Addon ninjatrader only package
OFABloodhoundAddonBuild – for OFA BloodHound Addon user package including use in ninjatrader
OFAProfileStrategyAddonBuild – for the Profile Strategy Addon : Active Volume Profile Access.

within each of the zip files will be included the sample strategies/indicators and code for each Addon group.