

Range Volume Profile NT8 Handbook

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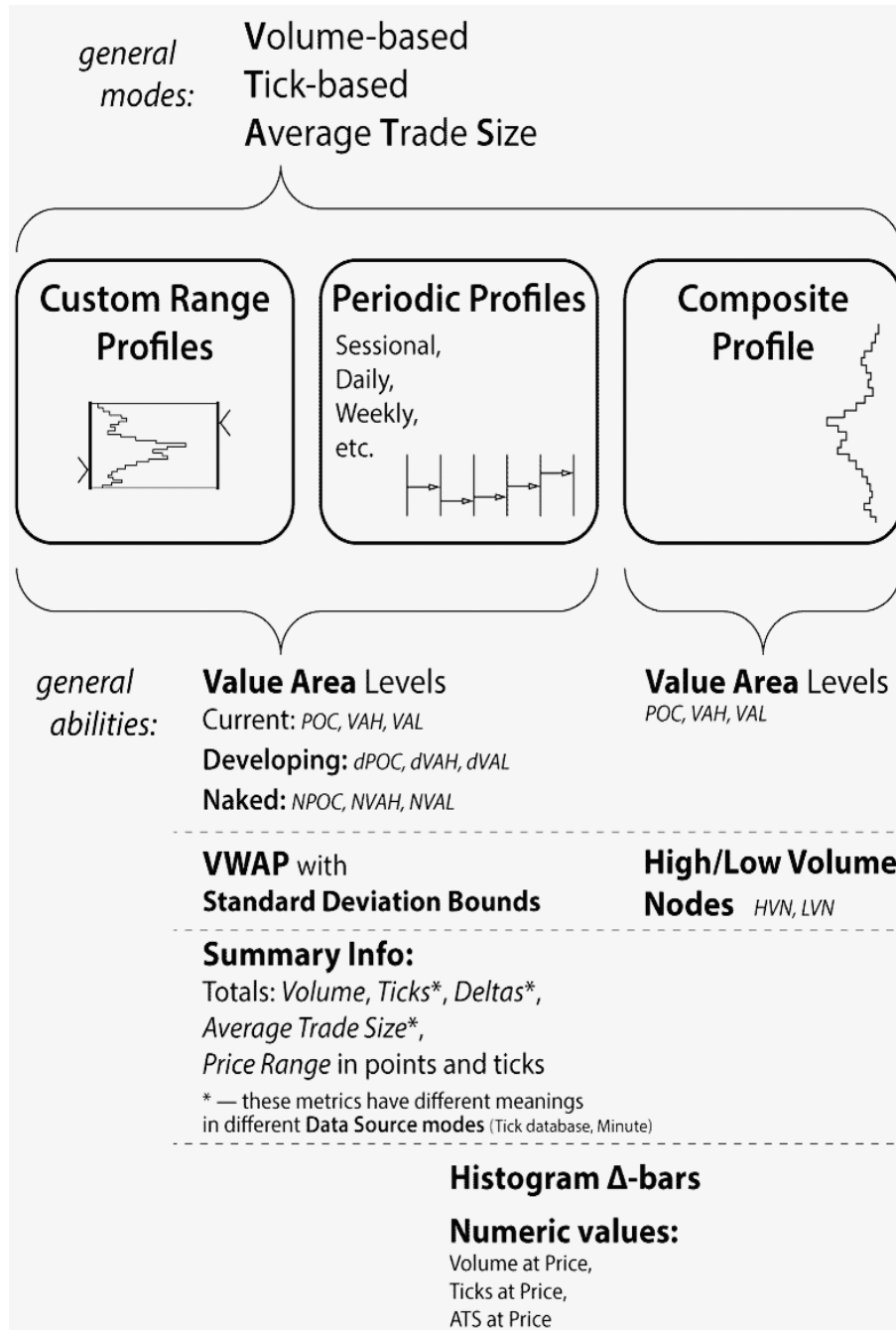
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Overview

Range Volume Profile NT8 (RVP) is a fairly versatile visual tool of trading activity profiling for NinjaTrader 8 aimed at discretionary traders. As a visual tool it is intended to observe the Market from various perspectives and to help you to discover and develop your own trading ideas.

Range Volume Profile allows to plot both classic periodic volume profiles (Daily, Sessional, Weekly, etc) and adjustable profiles of custom time range. Composite profile provides a basic overview of trading activity peaks and valleys in general, with displaying of high and low volume node levels either.

The base functional structure:



Three types of profiles by underlying metric

- **Volume**-based — Volume at Price
- **Tick**-based — Trades Qty at Price
- **Average Trade Size (ATS)** histogram

*The meaning of Tick Profiles and ATS Histograms is stated for profiles built upon data of 1-tick granularity (*set by default*). For “fast” profiles based on 1-minute data all calculations are based on counting of 1-minute data points.

Three kinds of profiles by period representation

- Adjustable *Custom Range Profiles*
- Classic *Periodic Profiles* (Sessional, Daily, Weekly, etc.)
- *Composite Profile*

Precise and Fast Profiling

There are two sorts of **Data Source** options you can choose for historical profiles building in *Range Volume Profile*: based on precise 1-tick data and based on less granular 1-minute data. Use Data Sources of tick granularity for highest accuracy and 'Minute Series' for faster start-up computations. While the use of 'Minute Series' Data Source is particularly intended for working with long-term charts, it is also pretty viable for intraday trading either.

Delta at Price

Volume (or Tick) *Delta histogram bars* (Δ -bars) can be plotted along with Volume (Tick) Profiles.

*Remember! Δ -bars have different meanings in 'Minute Series' Data Source mode: Obviously, the standard delta calculations are impossible when the chosen *Data Source* is 'Minute Series'. In this case the volume of Up (bullish) 1-minute data points will be considered as positive and the volume of Down (bearish) 1-minute data points will be considered as negative in delta calculations. This kind of Delta is called as *Pseudo-Delta* in RVP.

Various Delta calculation techniques

- *Bid vs Ask* (default mode)
- *Up Tick vs Down Tick*
- *Pseudo-Delta* (for “fast” profiles built from minute series data)

Value Area

Developing and *Naked Value Area* price levels can be plotted for both Periodic and Custom Range Profiles.

Open Range & Initial Balance

Available plotting of *Open Range* and *Initial Balance* price levels with customizable periods of formation and beginning time of day.

VWAP & Standard Deviation

VWAP and *VWAP Standard Deviation Bounds* can be plotted along with Periodic and Custom Range Profiles.

Volume Nodes

Highlighting of *High-Volume Node* histogram bars can be enabled for any profile.

High & Low Volume Nodes (or High & Low Tick Nodes for Tick Profile) of Composite Profile can be plotted as price levels.

Settings structure

The settings structure can be classified into four big groups for easier orientation:

The screenshot shows a 'Properties' window with a tree view of settings. The settings are grouped into four categories highlighted with colored boxes:

- Core properties (blue box):** 0. General Settings (68.30%; Tick Series; No filtering)
- Appearance & Common properties (magenta box):** 1. Appearance Settings (1.1. Frame, 1.2. Volume Profile, 1.3. Tick Profile, 1.4. ATS Profile, 1.5. VWAP, 1.6. Extra Levels, 1.2. PPs Appearance Settings, 1.3. CP Appearance Settings, 1.4. RPs Appearance Settings, Range Profiles Appearance)
- properties specific to profiles category (yellow box):** 2. Periodic Profiles (PPs), 3. Composite Profile, 4. Range Profiles
- Miscellaneous auxiliary & technical settings (orange box):** 5. Misc Settings

Core properties — options related to data processing and most general parameters having overall action:

- '0. General Settings' section

Appearance & Common properties — colors, line styles, fonts, other properties common to various profiles categories:

- '1. Appearance Settings' section (overall appearance)
- '1.2. PPs Appearance Settings' section (for Periodic Profiles if checked)
- '1.3. CP Appearance Settings' section (for Composite Profile if checked)
- '1.4. RPs Appearance Settings' section (for Custom Range Profiles if checked)

Properties **specific to a profiles category**:

- '2. Periodic Profiles (PPs)' section
- '3. Composite Profile' section
- '4. Range Profiles' section

Miscellaneous auxiliary & technical settings:

- '5. Misc Settings' section

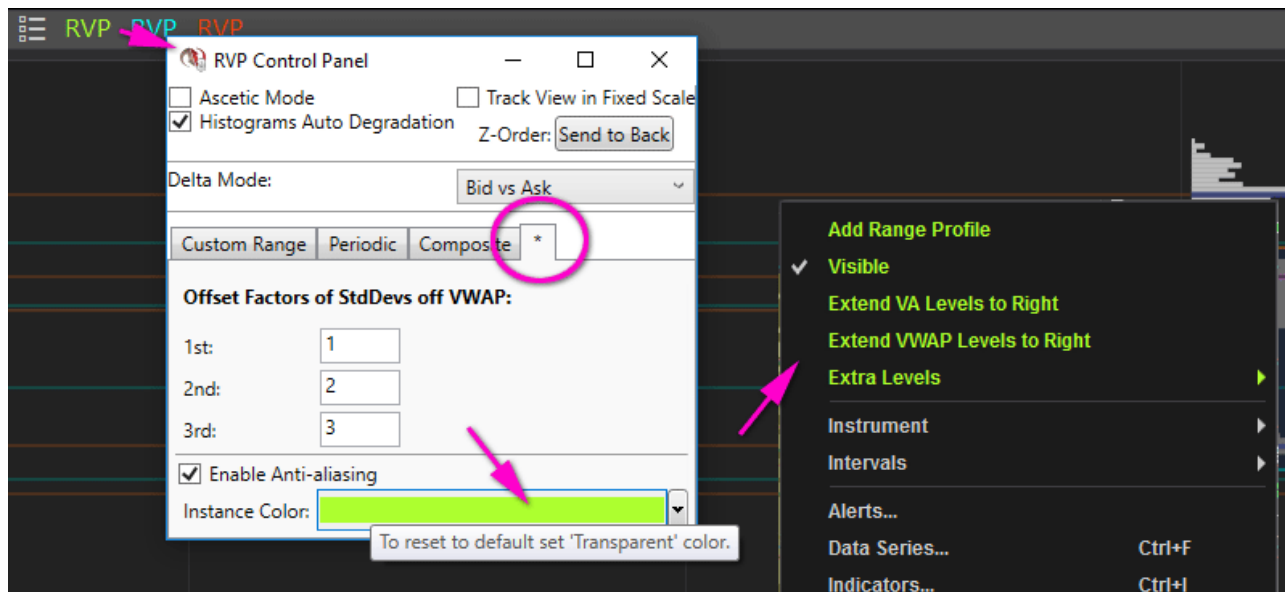
RVP Control Panel

RVP Control Panel provides the easiest control over the most frequently used properties as any changes made through the *RVP Control Panel* will be reflected on the chart immediately (**on-the-fly**).

Press 'RVP' toolbar button to get *RVP Control Panel*.

Tip: In the case of use several instances of the RVP indicator with different settings on the same chart it would be useful to set different 'Instance Color' property to each instance to manage them easier.

The 'Instance Color' affects UI elements related to a particular indicator instance: 'RVP' toolbar button and Context Menu items:



Shortcut Keys

In addition to the *RVP Control Panel* you can use a set of Shortcut Keys. The listed default combinations of shortcut keys can be redefined in the *Indicators* properties window.

Shortcut keys for Periodic Profiles

2. *Periodic Profiles (PPs)* settings section-> *Shortcut keys* group

- Toggle Visibility of Periodic Profiles — **[Alt + P]**
- Histograms horizontal scale
 - Increase — **[Ctrl + Plus]**
 - Decrease — **[Ctrl + Minus]**
 - Reset — **[Ctrl + Multiply]**
- Toggle Comparative Widths Mode — **[Backspace]**
- Toggle Labels Style of Price Levels — **[Ctrl + A]**
- Toggle Extension of Value Area Levels — **[Ctrl + Shift + A]**

Shortcut keys for Custom Range Profiles

4. *Range Profiles* settings section-> *Shortcut keys* group

- Toggle Visibility of all custom range profiles — *undefined by default*
 - Start creating new range profile — **[Insert]**
 - Remove all custom range profiles — *undefined by default*
 - Histograms horizontal scale
 - Increase — **[Ctrl + Alt + Plus]**
 - Decrease — **[Ctrl + Alt + Minus]**
 - Reset — **[Ctrl + Alt + Multiply]**
 - Toggle Labels Style of Price Levels — **[Ctrl + A]**
 - Toggle Extension of Value Area Levels — **[Ctrl + Shift + A]**
-
- Toggle Ascetic Mode — **[Ctrl + Alt + Divide]**

General Settings

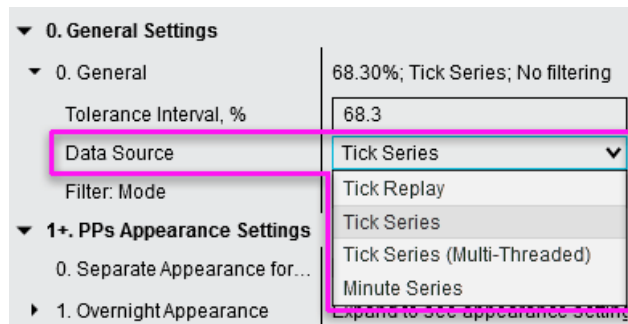
Both General and Appearance settings groups are generic to all kinds of profiles (Custom Range, Periodic, Composite).

Tolerance Interval,

Tolerance interval defines *Value Area* — a price range within which the specified percentage of total volume (or total number of trades for Tick Profiles) is distributed. The value of about 70% which represents one standard deviation of the mean in a normal distribution (also known as Gaussian distribution) is the mostly used tolerance interval.

Data Source

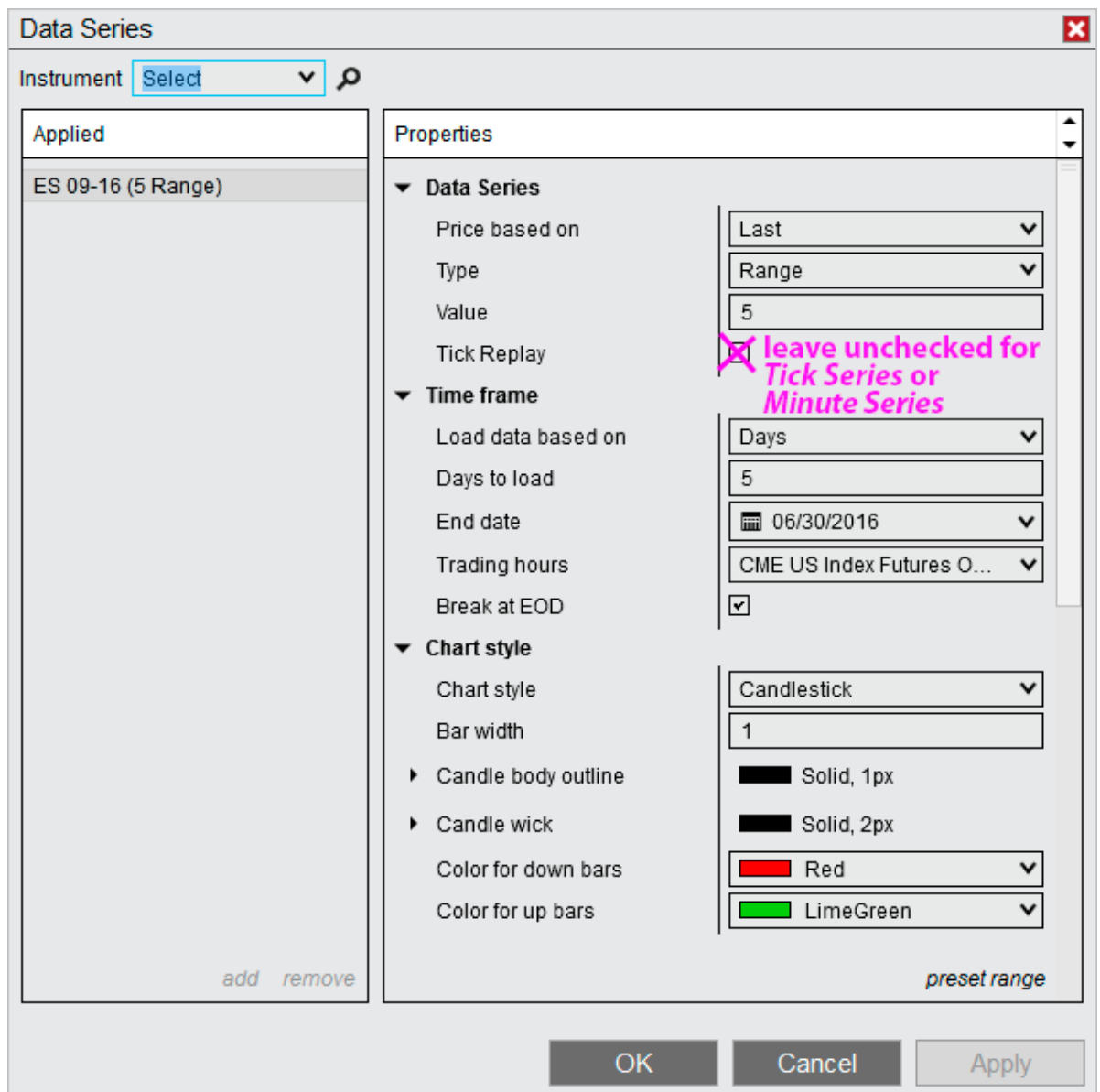
Sets which data source type to use to gather historical data.



- **“Tick Series”** (default) internally utilizes the most generic way of obtaining data of 1-tick-level granularity in NinjaTrader 8.
- **“Tick Series (Multi-Threaded)”** is almost the same but RVP will utilize all available cores of processor in order to speed up the gathering of historical tick data on start up when possible. The multi-threaded version may be useful when working with deep history charts therefore. However, the CPU loading may reach 100% on startup that might be undesirable if doing some work in background while RVP prepares tick data.
Prefer the default "Tick Series" Data Source instead if you work with short term intraday charts (where 'Days to load' < 60 days).
- **“Tick Replay”** is alternative way of obtaining historical 1-tick data introduced in NinjaTrader 8. This mode is added for compatibility reasons as some 3rd party indicators may require *Tick Replay* feature be enabled for the data series of the same chart in order to obtain tick data. For example, if you use RVP and some other indicator which works only in *Tick Replay* mode on the same chart then you have to switch the RVP's Data Source option to *“Tick Replay”* either.

In the *Tick Replay* mode NinjaTrader playbacks historical ticks (tick by tick) to build bars as if they had been built live and sends those ticks to indicators which in turn receive most precise 1-tick data.

To use this feature, one must be manually enabled on the primary Data Series in the *Data Series settings window*:



Important:

! Make sure you have checked the 'Tick Replay' option in the Data Series window when having set "Tick Replay" Data Source in RVP.

! Make sure you have unchecked the 'Tick Replay' option in the Data Series window if the selected RVP Data Source is other than "Tick Replay".

- **"Minute Series"** is the fastest Data Source. In this case RVP will use historical data with 1-minute granularity to build profiles. Using 1-minute historical data will provide less accurate volume profiles, albeit precise enough even for intraday trading. Nevertheless, this Data Source is mostly intended to work with long-term or deep historical charts ('Days to load' > 100 days).

Note about *Delta* meanings when Data Source is "Minute Series":

RVP will compute and show 'Pseudo-Delta' instead of the natural *Delta* if the Data Source option is set to "Minute Series". Since the historical tick data isn't available in this case, the *Delta* is calculated

on the historical data of 1-minute granularity as the following:

[Volume Pseudo- Δ] = [Volume of Bullish 1-Min intervals] minus [Volume of Bearish 1-Min intervals] for the period of the profile.

Also, computations of Tick Profiles and ATS Histograms is based on counting of 1-minute data points.

The filtering functionality (Filter By Trade Size) is also unavailable for Minute Data Source.

Delta Mode

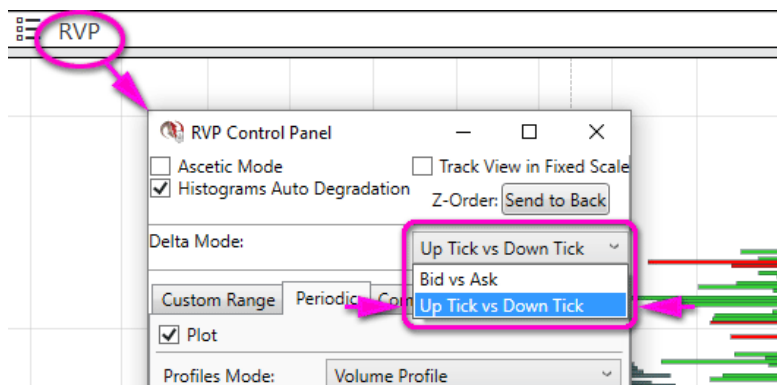
Specifies which technique of initiative trade side determination to use for *Delta* computations.

- Bid vs Ask (default)
- Up Tick vs Down Tick

What is *Delta*?

The "buying volume" and "selling volume" are conventional generic terms... Obviously, *every trade always has two participants* — buyer and seller. And the *Delta* is just a way to indicate which side (buyer or seller) was initiative side at trade moment, actually.

There are two techniques to determine the instant initiative side of a trade — the "*Bid vs Ask*" technique and the "*Up Tick vs Down Tick*" rule.



The "*Bid vs Ask*" technique answers which side was the initiator of trade by comparing trade price with established *Best Bid* and *Best Ask* prices at the trade moment:

Volume-based Delta = [Qty of Contracts traded at or above Best Ask price] minus [Qty of Contracts traded at or below Best Bid price]

Tick-based Delta = [Num of Trades at Ask] minus [Num of Trades at Bid]

Another old good technique is known as "*Up Tick vs Down Tick*" rule: The volume traded on UpTick or after UpTick (i.e. when price increases from previous trade) is considered as "Buying Volume" and the volume traded at DownTick or after DownTick is considered as "Selling Volume".

Many old-school traders still prefer the "Up Tick vs Down Tick" technique especially for high volatile and low volume futures where Best Bid and Best Offer prices changes rapidly even with no trades and aren't much representative therefore.

Some traders do not use *Delta* at all in their analysis, only Volume at Price histograms. Since *Delta* is just the most basic way to determine urgent side at short moment of time in can mostly be useful in very short-term outlook, but may tell nothing on bigger picture which is much more important.

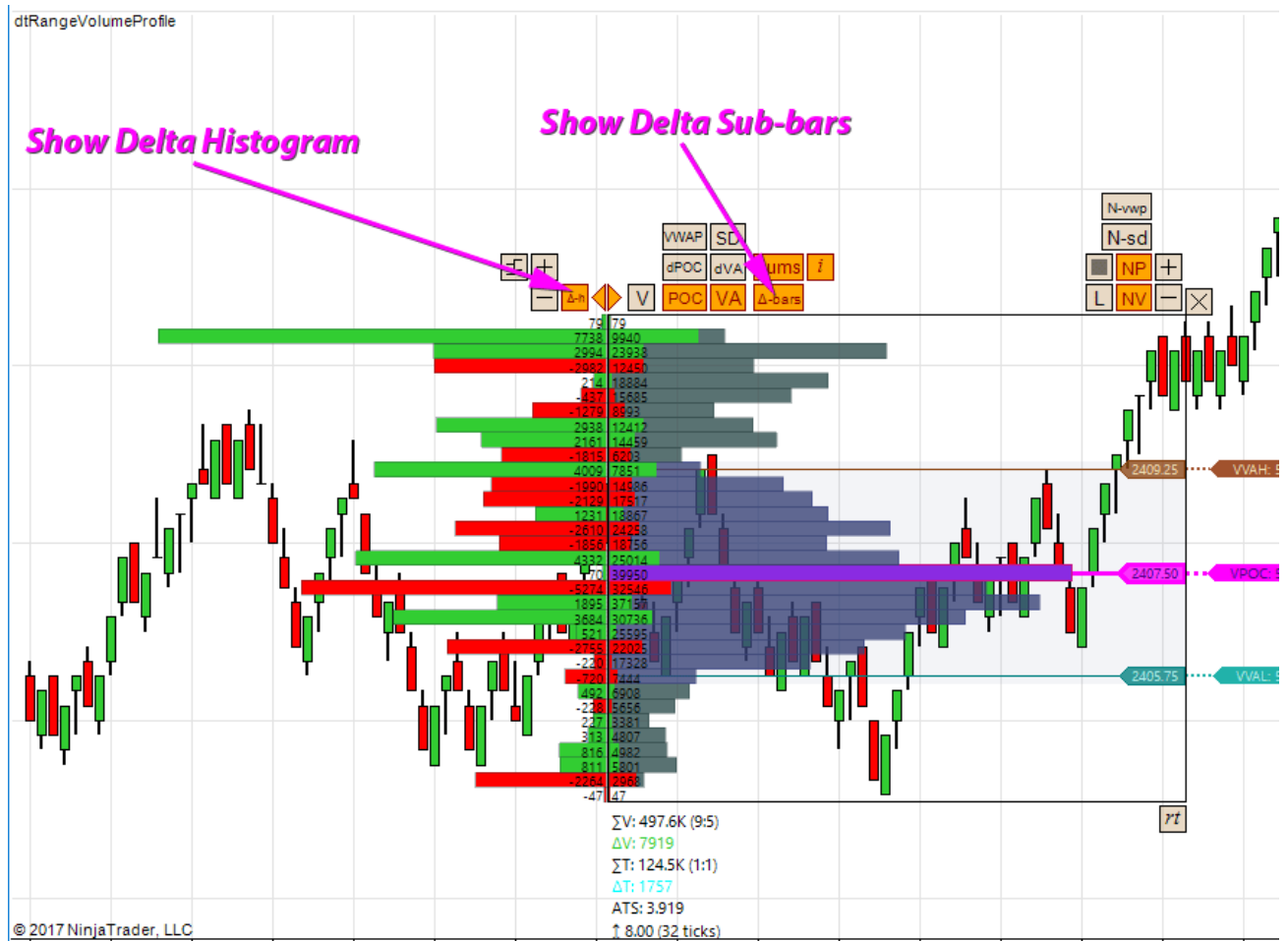
Anyway, it is important to understand that you should stick with one preferable Delta Mode and do not use both at the same time when making trading decisions.

Delta Histograms

Delta analysis is mostly viable on very short-term perspective (to scalpers or swift day traders).

Nevertheless, Range Volume Profile is capable to plot Volume-Delta At Price and Tick-Delta At Price as *Delta Sub-bars* and *Delta Histogram*.

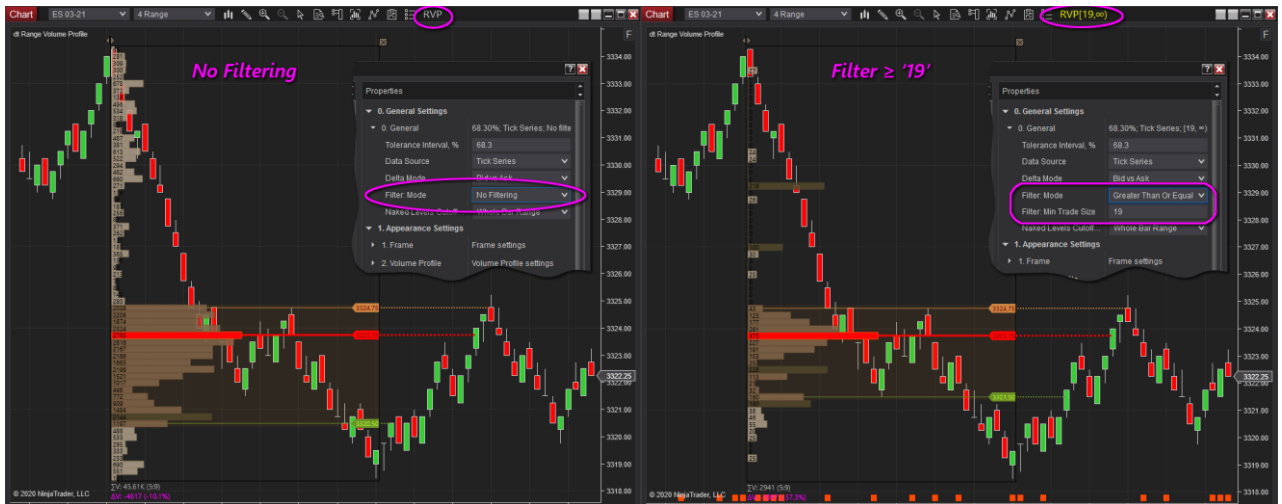
Both *Delta Sub-Bars* and *Delta Histogram* show absolutely the same thing. The only difference is that *Delta Histogram* is customizable as its direction and horizontal scale can be adjusted and it can be plotted along with Hollow-style profile, while *Delta Sub-bars* are always plotted right over the Volume (or Tick) histogram bars with the scale of each *Delta Sub-bar* related to corresponding Volume (or Ticks) bar value. That is, the *delta at price is shown as a portion of volume (or ticks) at the price*.



Filter: Mode

Sets the mode of *filtering by trade size*. Filter settings has an effect on all kinds of profiles.

- No Filtering
- Greater Than Or Equal
- Less Than Or Equal
- In Between



Naked Levels Cutoff Mode

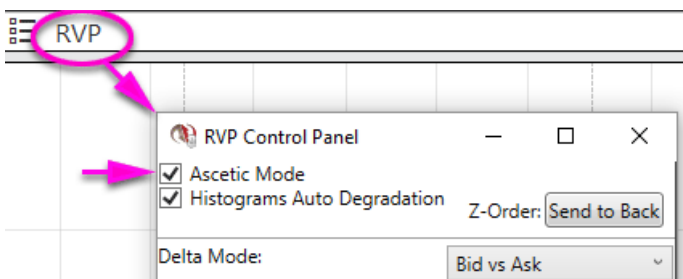
Specifies whether RVP have to take whole candlestick range or ignore candlestick shadows when deciding if a Naked price level is touched by price.

Appearance Settings

Appearance settings sections contains properties common to all categories of profiles.

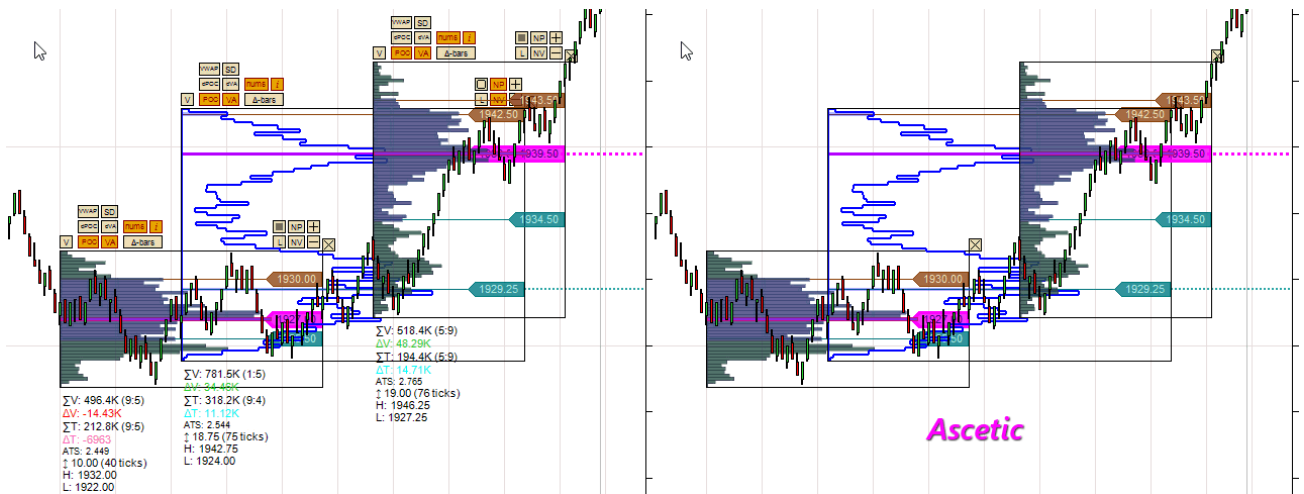
Ascetic Mode

(1. Appearance Settings -> 1. Frame -> Ascetic Mode)



Disabled by default. The *Ascetic Mode* serves to temporarily hide most of the UI elements excepting histograms and developing curves to make the chart look be clearer when necessary.

Ascetic Mode affects both Custom Range Profiles and Periodic Profiles.



Default shortcut key to toggle Ascetic Mode — [Ctrl + Alt + Divide key on Numeric Keypad]

Profile Summary Info

Summary Info block provides very basic summary information related to a particular profile (whether Periodic or Custom Period Profile).

Color properties used for Summary Info:

Base text color — 1. *Appearance Settings* -> 1. *Frame* -> **Text Color** property.

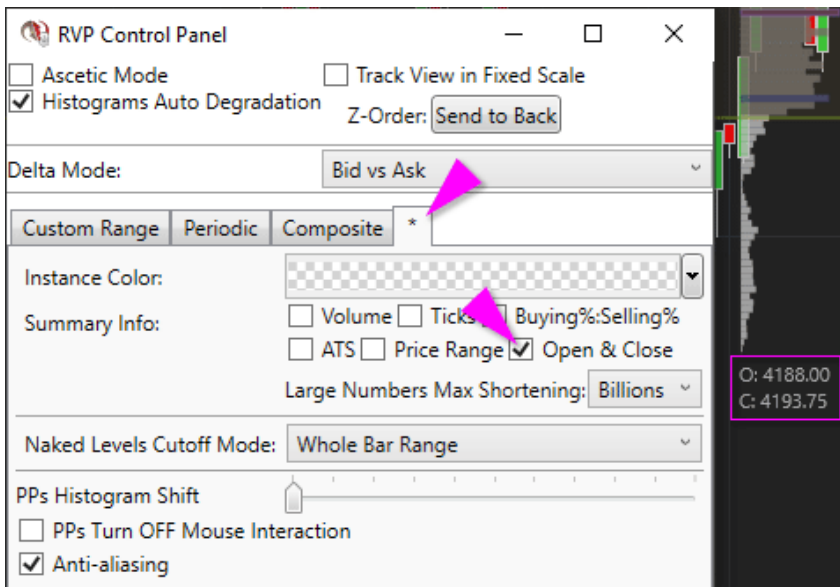
Delta (Δ) values are colored depending on the accumulated delta value (**negative**, **positive**). That is, the same color properties as for Delta Histogram bars are used for Delta numbers printed in Summary Info:

Accumulated Volume-Delta (ΔV) — 1. *Appearance Settings* -> 2. *Volume Profile* -> **Positive Delta Bar Color** and **Negative Delta Bar Color** properties.

Accumulated Tick-Delta (ΔT) — 1. *Appearance Settings* -> 3. *Tick Profile* -> **Positive Delta Bar Color** and **Negative Delta Bar Color** properties.

If a separate appearance for custom range profiles is enabled then set the same color properties in the 1.4. *RPs Appearance Settings* section.

It is possible to turn on/off various parts of Summary Info block easily on-the-fly through the *RVP Control Panel* -> [*] tab:



Here are expansions of the shorthand notations:

ΣV — Total Volume (number of contracts) traded over the period.

ΔV — Volume Delta over the period — the difference between total “buying volume” and total “selling volume” *.

Pseudo-ΔV — Volume Pseudo-Delta over the period — the difference between total volume of “bullish” minute intervals and total volume of “bearish” minute intervals.

ΣT — Total Trades (number of trades, also known as *fills, filled orders, ticks, transactions, order executions*) executed over the period.

ΔT — Tick Delta over the period — the difference between the total num of “buying trades” and total num of “selling trades” *.

Pseudo-ΔT — Tick Pseudo-Delta over the period — the difference between the count of “bullish” minute intervals and the count of “bearish” minute intervals.

Additional Buying%-Selling% numbers (disabled by default) show the percentage of “buying” volume or ticks vs “selling” volume or ticks (e.g. 49%:51%).

ATS — Average Trade Size — Average number of contracts per trade traded during the period.

↕ — Price Range in \$ value (as well as in price ticks in parentheses) = High price minus Low price.

H — High — Highest price of the period.

L — Low — Lowest price of the period.

O — Open — Opening price (price of the most first trade) of the period.

C — Close — Close price (price of the last trade) of the period.

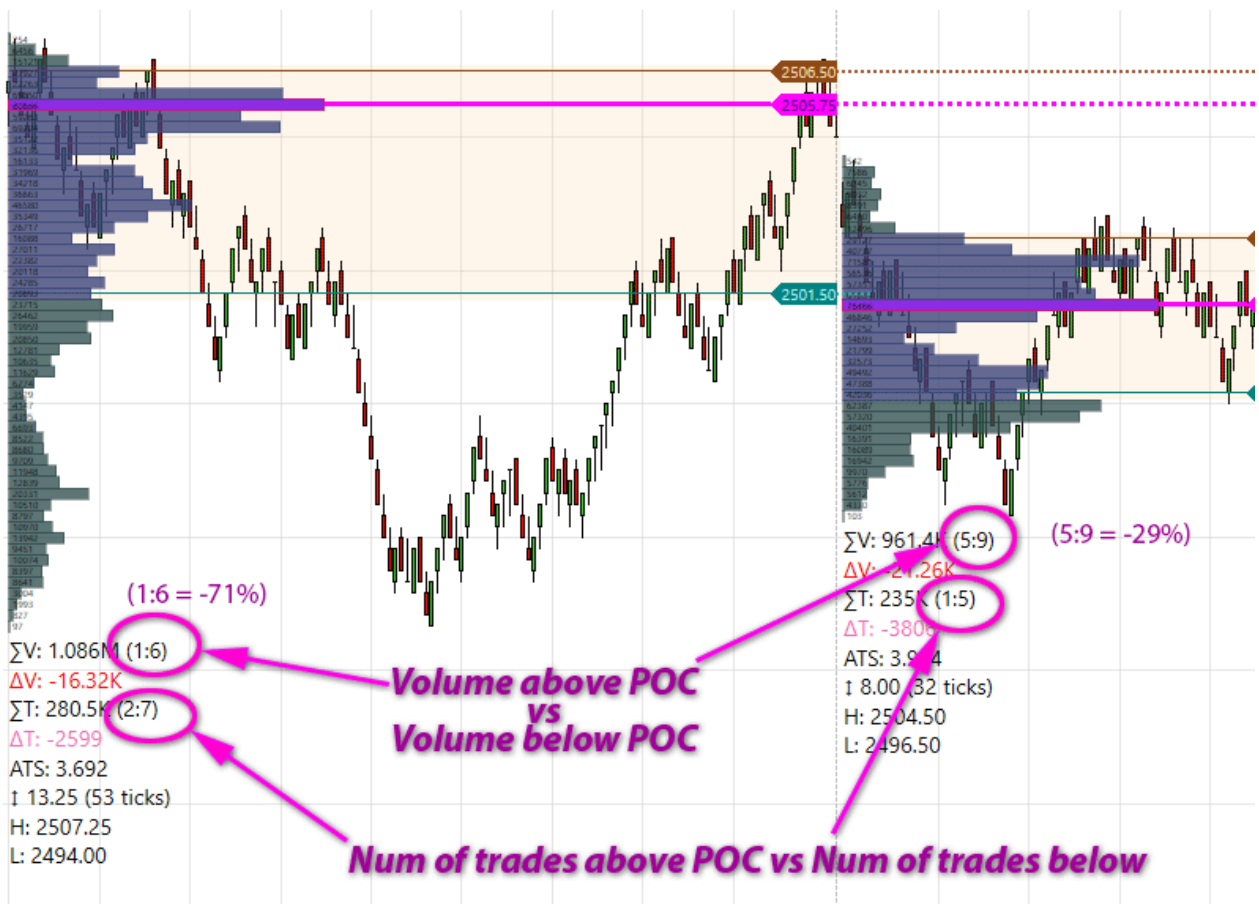
Notes:

* — Every trade has always two participants — buyer and seller. Thus the “buying volume” and “selling volume” are the terms related to initiative side of trade which is defined by chosen Delta estimation technique: "Bid vs Ask" or "Up Tick vs Down Tick".

Delta meaning when Data Source is "Minute Series": RVP will calculate “Pseudo-Delta” instead of the common Delta. As historical tick data isn't utilized in this mode the Pseudo-Delta is calculated by counting of the historical data with 1-minute granularity as the following:

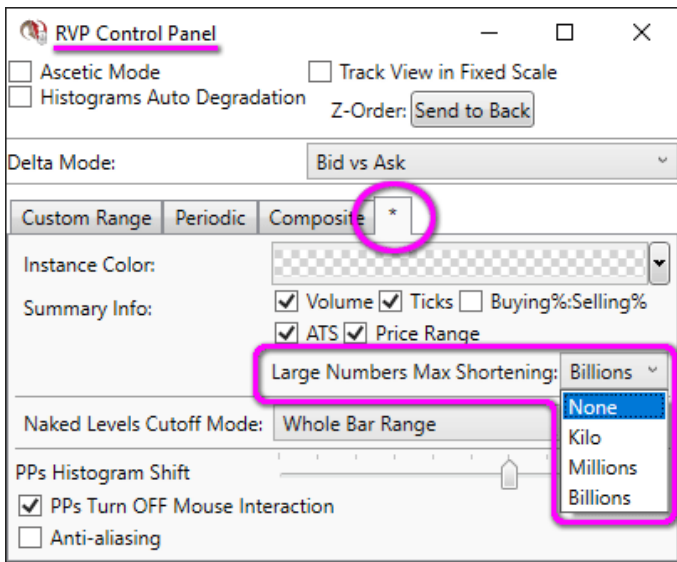
[Volume Pseudo-Δ] = [Volume of Bullish 1-Min intervals] minus [Volume of Bearish 1-Min intervals] for the period of the profile.

Profile Imbalance: The *Summary Info* also includes Volume- and Tick-based *Profile Imbalances* shown as Ratio (simple arithmetical fraction ‘Volume above POC : Volume below POC’) which is much easily readable than long numeric values. That is, RVP prints approximate ratio “5 : 9”, “1 : 6”, ... which can be more easily processed by human brain and visualized mentally than long values of volume or ticks (read as “1 part of total volume above VPOC versus 6 parts of total volume below VPOC”):



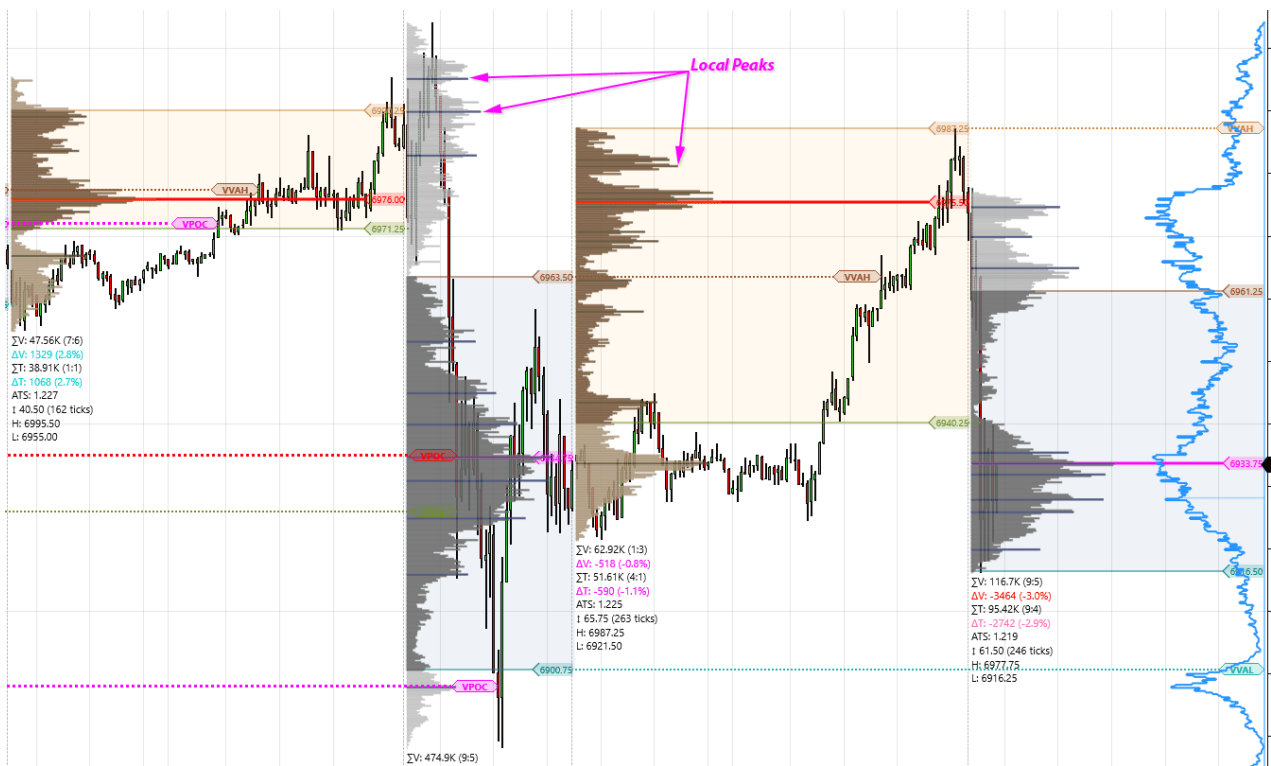
Large Numbers Shortening

In *Summary Info* all total and delta values are printed in a shortening form with the maximum degree of the shortening set “Billions” by default. It is possible to change the maximum degree of large numbers shortening or turn it off at all:



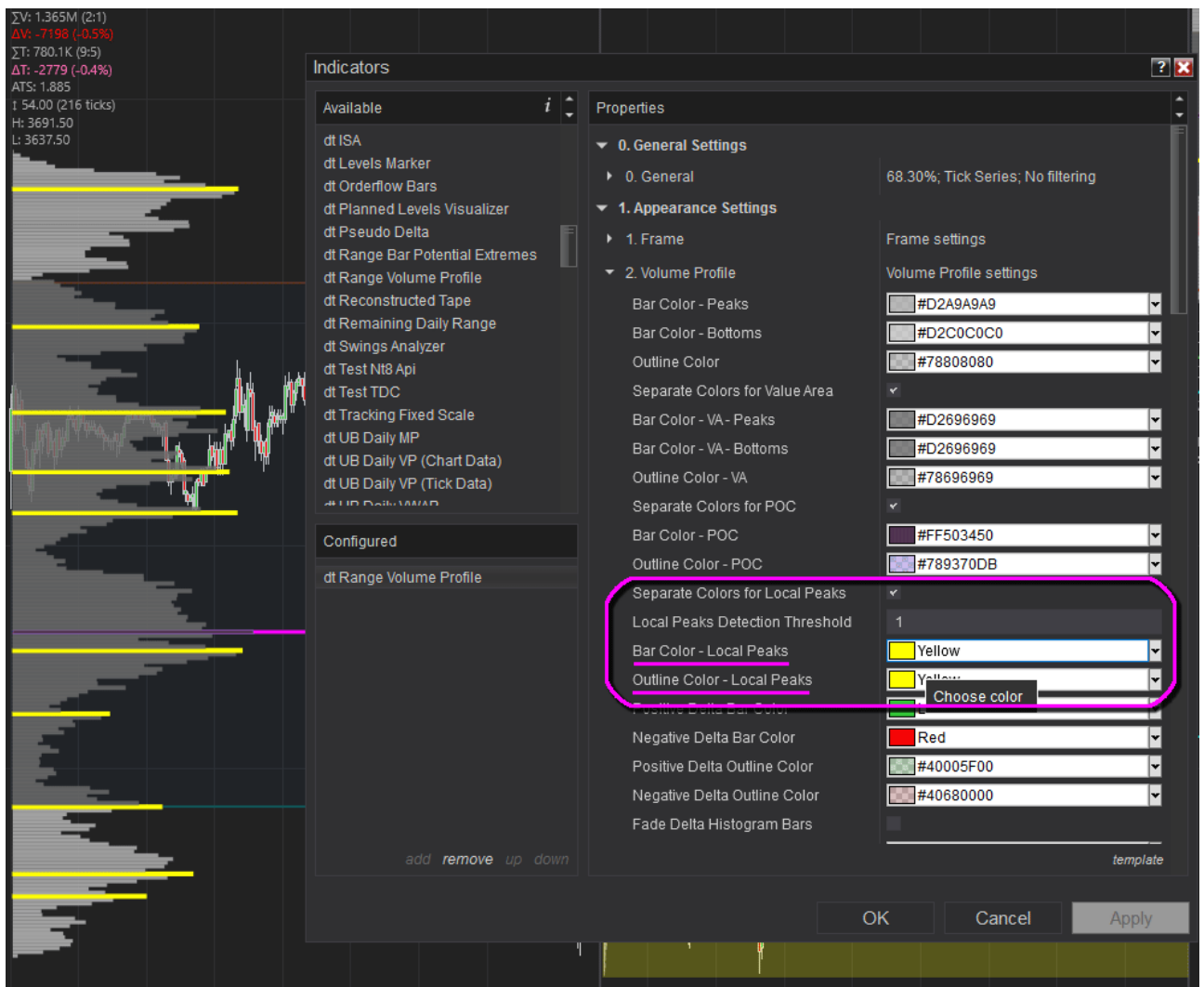
(1. Appearance Settings -> 1. Frame -> Summary Info - Large Numbers Max Shortening property)

Local Peaks Highlighting



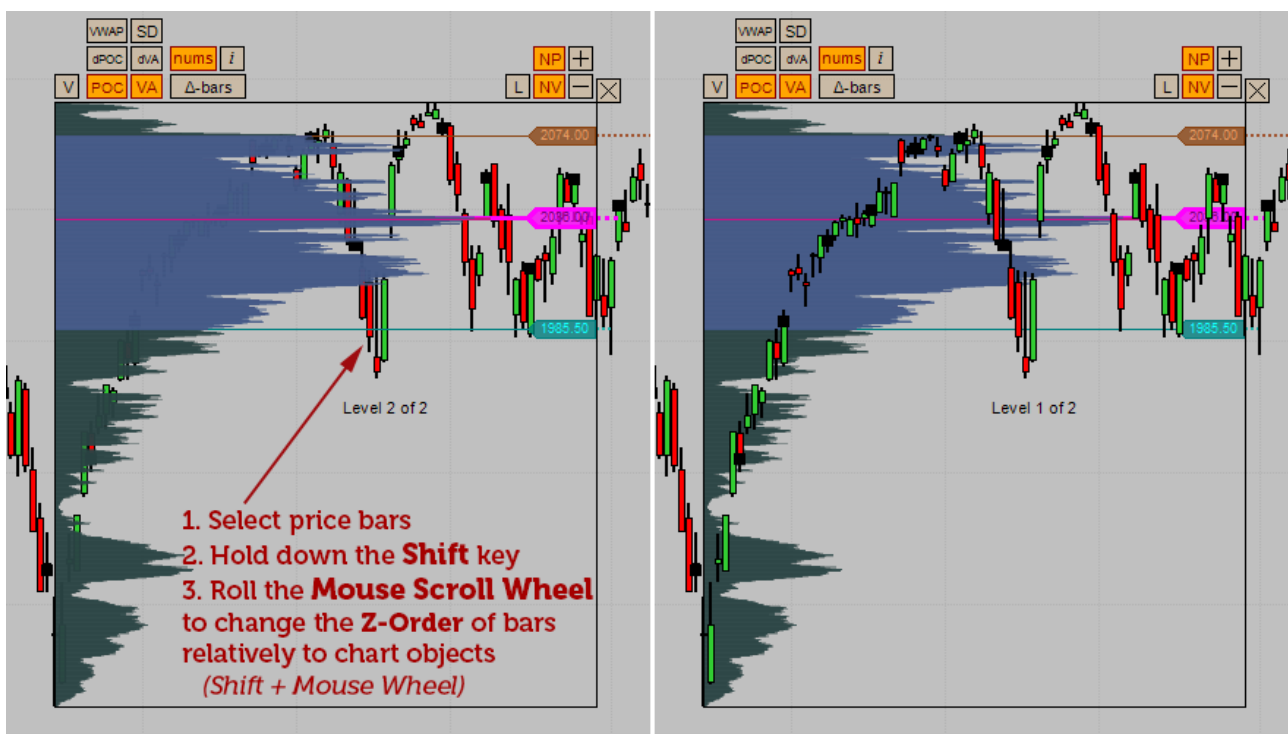
'Separate Color for Local Peaks' option in Volume and Tick Profile appearance settings allows to highlight local peaks on histograms by custom color.

'Local Peaks Detection Threshold' parameter controls the sensitivity of Local Peaks detection: the lower the threshold value the greater the sensitivity. Default threshold is 1.

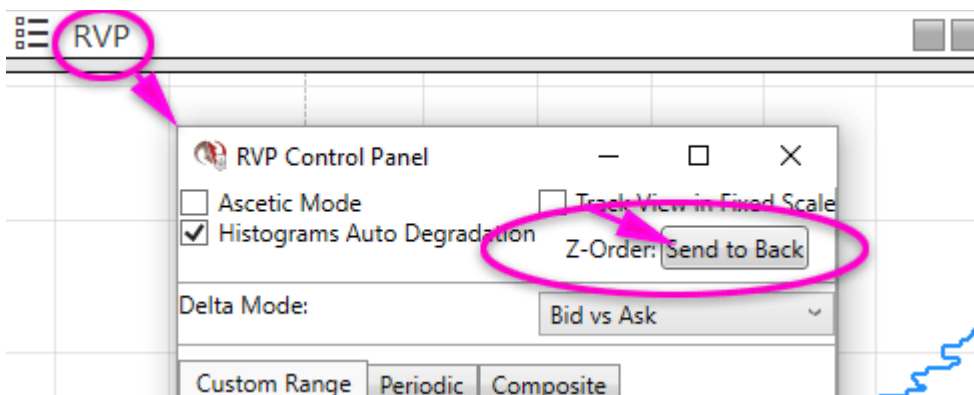


Z-Order

What if a histogram overlaps candlestick chart? In NinjaTrader you can change the z-order of price bars, indicator plots and other chart objects relatively to each other. So you can bring the candlestick chart to the forefront using [Shift + Mouse Wheel] — select price chart or chart object, hold down the Shift key and roll the mouse scroll wheel to adjust the z-order.



The standard way may not work sometimes. In this case you can use alternate way — a special command from *RVP Control Panel*:



Separate Appearance Settings

The appearance properties defined in the '**1. Appearance Settings**' sections can have a global impact on all sorts of profiles in Range Volume Profile.

Optionally separate appearance properties can be set particularly for

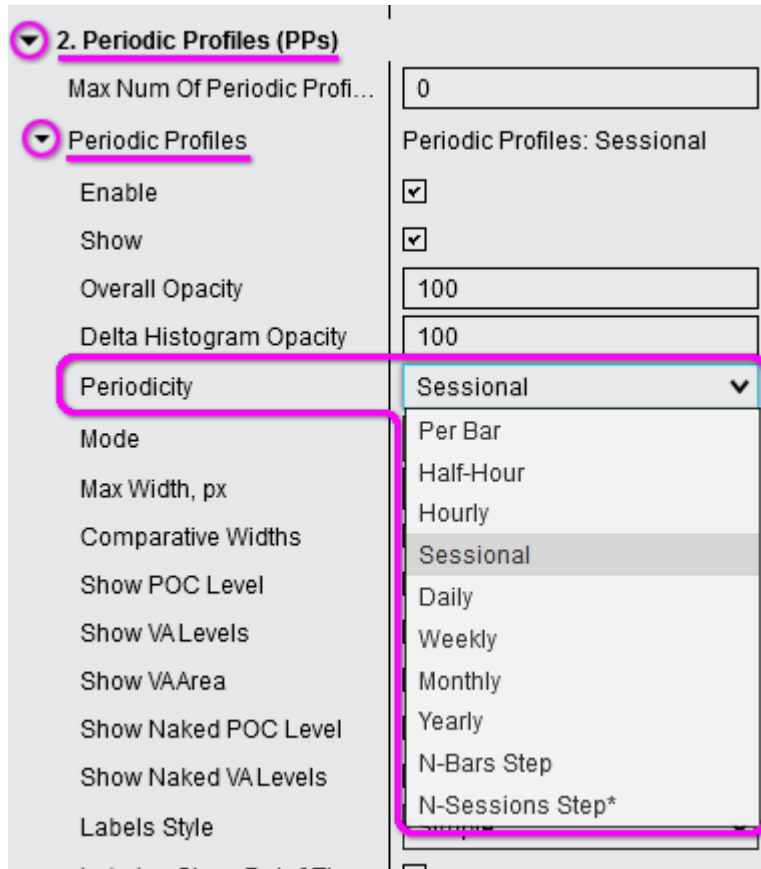
- Composite Profile — '**1.3. CP Appearance Settings**' section (enabled by default)
- Custom Range Profiles — '**1.4. RPs Appearance Settings**' section (enabled by default)
- Overnight Periodic Profiles — '**1.2. PPs Appearance Settings**' section (usable when working with a chart that has a custom multi-session *Trading Hours* template set on)

Periodic Profiles

Computation and plotting of Periodic Profiles with “Sessional” Periodicity is enabled by default.

Periodicity Options

See 2. *Periodic Profiles* section -> *Periodic Profiles* properties group -> *Periodicity* property:



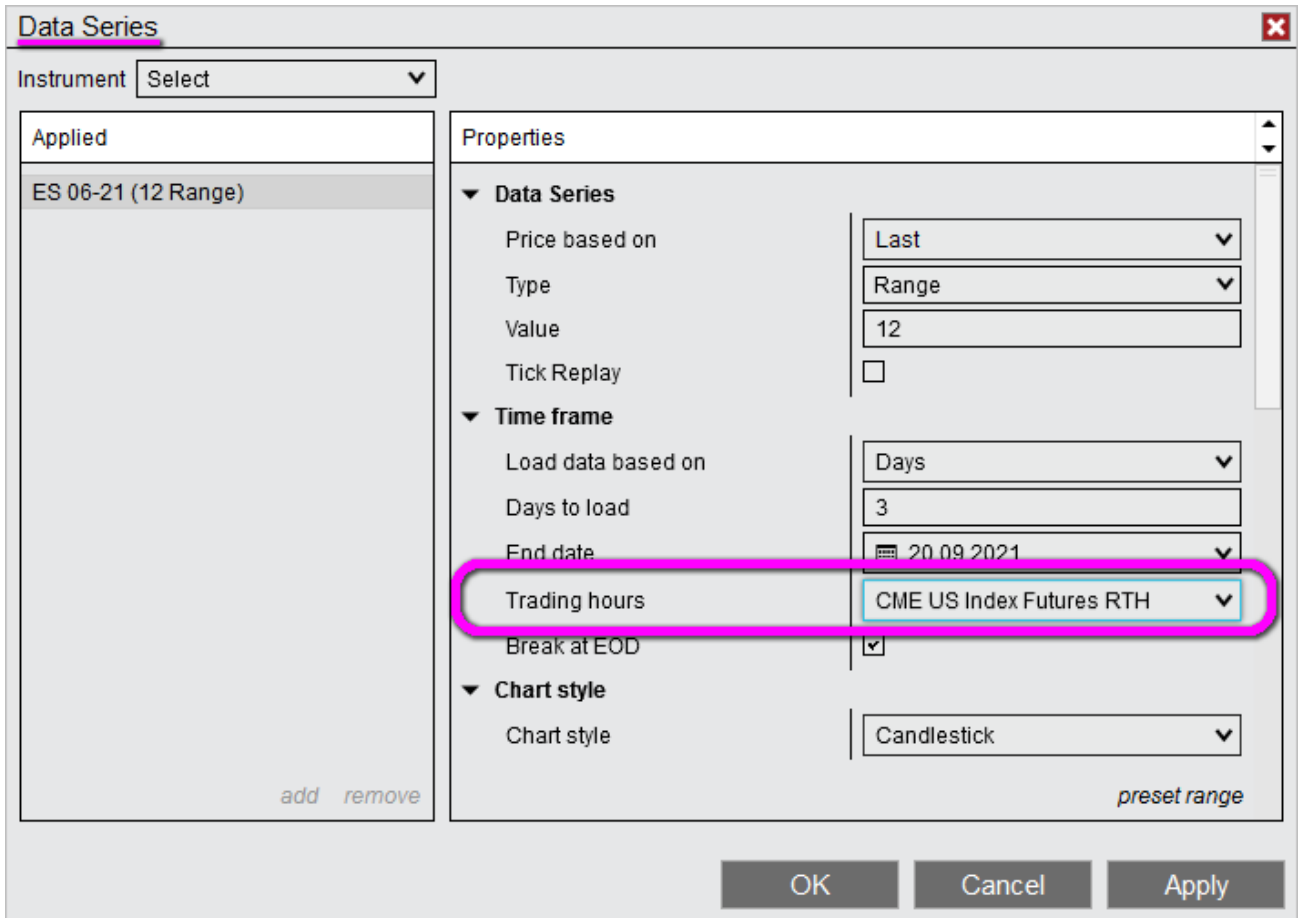
- Per Bar
- Half-Hour
- Hourly
- Sessional (default)
- Daily
- Weekly
- Monthly
- Yearly
- N-Bars Step
- N-Sessions Step

Sessional

Set by default!

If the “*Sessional*” periodicity is selected then RVP will use **Trading Hours Template** set for data series of the chart to establish periodic profiles.

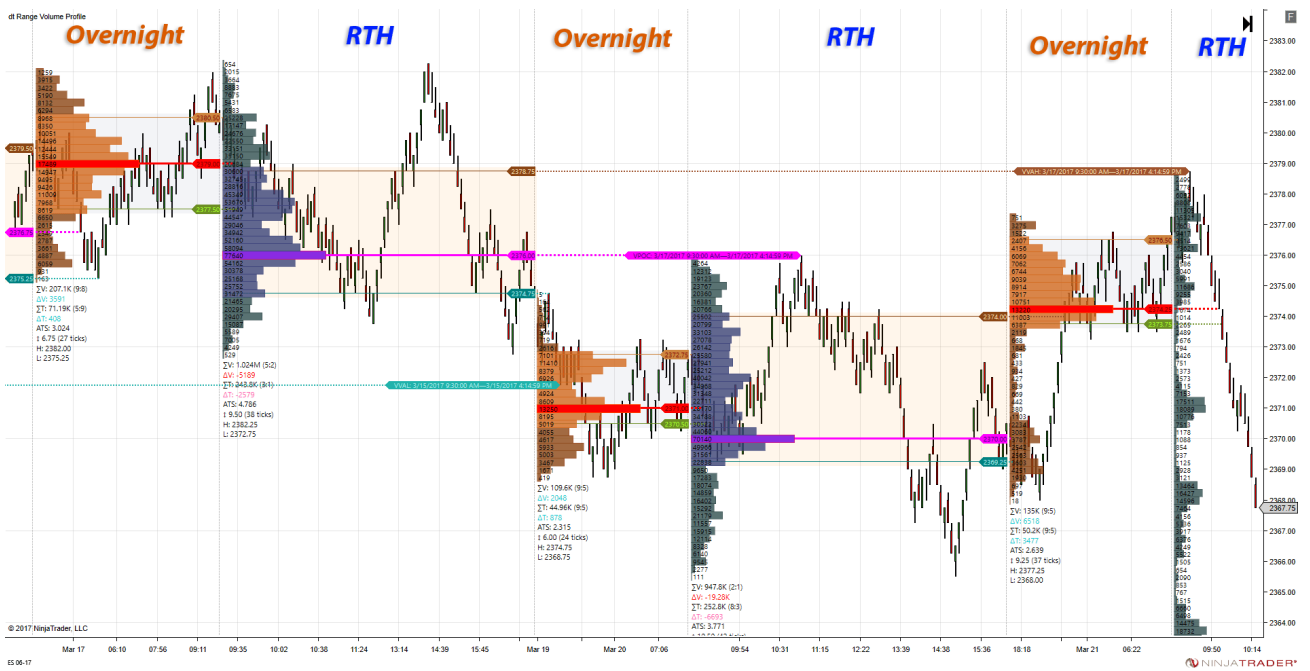
See chart *Data Series window* (Ctrl+F) -> select applied data series -> *Time frame* section -> *Trading hours* property:



Trading Hour Templates are set up to contain the *session start* and *end times* of a specific market or a sort of instruments. All available *Trading Hours Templates* can be accessed in *Trading Hours* window (*NinjaTrader Control Center* -> menu *Tools* -> *Trading Hours*).

Split Overnight & Regular Sessions

NinjaTrader comes with predefined common *Trading Hour Templates* for the most common instruments. Additionally, you can use the *Trading Hours* window to modify or create own templates. This makes the “*Sessional*” periodicity be one of the most flexible options. For example, it provides the way to separate *Overnight* session from *Regular* session (*Open Outcry* on full-sized contract) to get a trading day split to “*Overnight*” and “*Pit*” profiles on the same chart*:



* For US Equity Futures the **Regular Trading Hours (RTH)** term is mostly applicable to E-Mini Futures traded electronically (e.g. *ES*). **RTH** coincides with **Open Outcry Trading Hours** (also known as **Pit Session**) related to base full-sized contracts (e.g. *SP*).

The following *Trading Hours Template* “CME US Index Futures ON+RTH” is used for this example:

Trading Hours

Templates

- CME Commodities ETH
- CME Commodities RTH
- CME Forest Futures
- CME Forest Futures ETH
- CME FX Futures ETH
- CME FX Futures RTH
- CME Global Index Futures RTH
- CME Housing Futures ETH
- CME US Index Futures ETH
- CME US Index Futures ON+RTH
- CME US Index Futures RTH
- Cryptocurrency
- Default 24 x 5
- Default 24 x 7
- Eurex Equity Index Futures
- Eurex Equity Index Futures Extended
- Eurex Fixed Income Futures
- Eurex Fixed Income Futures Extended
- Eurex German Equity
- Eurex German Equity Extended
- Eurex SMI Index Futures
- Euronext CET Index Futures RTH
- Euronext GMT Index Futures RTH1
- Euronext GMT Index Futures RTH2
- Euronext GMT Index Futures RTH3
- Euronext GMT Interest Rate Futures 1
- Euronext GMT Interest Rate Futures2
- Forex
- German Equities
- HKFE
- Idem
- Ipe Europe Futures
- Ipe US Agriculturals 1

add copy remove

Properties

▼ General

Name: CME US Index Futures ON+RTH

Time zone: (UTC-06:00) Central Time (US & Canada)

▼ Sessions two sessions per day

Start day	Start time	End day	End time	EOD
Sunday	17:00	Monday	8:30	<input type="checkbox"/>
Monday	8:30	Monday	15:15	<input checked="" type="checkbox"/>
Monday	15:30	Tuesday	8:30	<input type="checkbox"/>
Tuesday	8:30	Tuesday	15:15	<input checked="" type="checkbox"/>
Tuesday	15:30	Wednesday	8:30	<input type="checkbox"/>
Wednesday	8:30	Wednesday	15:15	<input checked="" type="checkbox"/>
Wednesday	15:30	Thursday	8:30	<input type="checkbox"/>
Thursday	8:30	Thursday	15:15	<input checked="" type="checkbox"/>
Thursday	15:30	Friday	8:30	<input type="checkbox"/>
Friday	8:30	Friday	15:15	<input checked="" type="checkbox"/>

add edit remove

▼ Holidays

Trading date	Start date	Start time	End date	End time	Type	Description
01.01.2021					Full Day	New Year's Day
18.01.2021			18.01.2021	12:00	Early Close	Martin Luther King, Jr
15.02.2021			15.02.2021	12:00	Early Close	President's Day
02.04.2021			02.04.2021	8:15	Early Close	Good Friday
31.05.2021			31.05.2021	12:00	Early Close	Memorial Day
05.07.2021			05.07.2021	12:00	Early Close	Independence Day
06.09.2021			06.09.2021	12:00	Early Close	Labor Day
25.11.2021			25.11.2021	12:00	Early Close	Thanksgiving Day
26.11.2021			26.11.2021	12:15	Early Close	Day after Thanksgivir
24.12.2021					Full Day	Christmas Eve

add edit remove

OK
Cancel
Apply

Also, the 'Separate Appearance for Overnight PPs' option (see 1.2. PPS Appearance Settings section) is enabled for this example.

▼ 1.2. PPs Appearance Settings

Separate Appearance for Overnight PPs

Overnight Intra-Session Time: 00:00:00

▶ Overnight Appearance

The sample "CME US Equity Index Futures ON+RTH" Trading Hours Template (in .zip archive) can be downloaded from this direct link: <http://www.discotrading.com/Content/files/nt8/workspaces/CME-US-Index-Futures-ON-RTH.zip>

In order to install the provided sample template, unpack and move the "CME US Index Futures ON+RTH.xml" file into "<Your PC>\Documents\NinjaTrader 8\templates\TradingHours" folder.

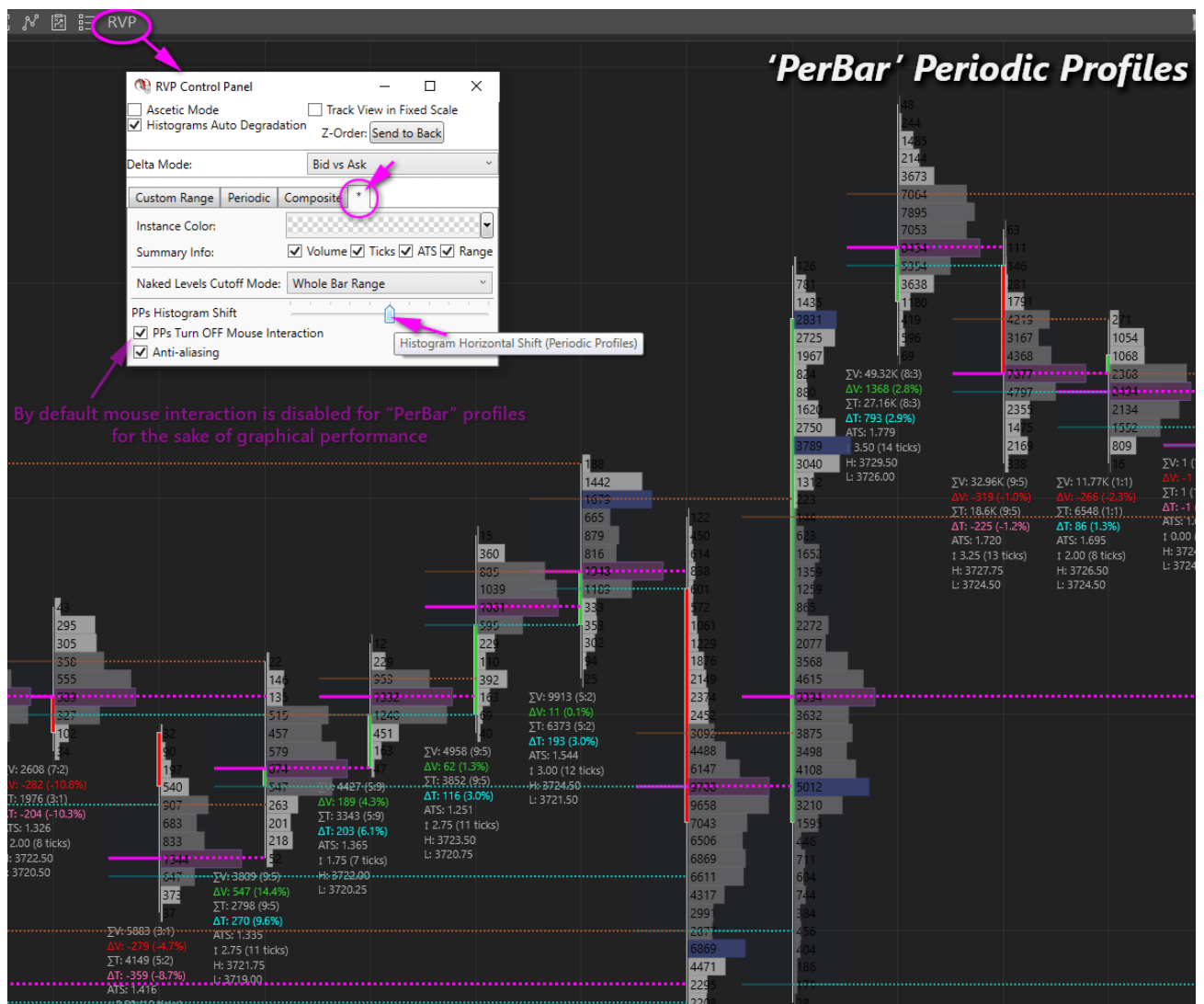
Then restart NinjaTrader. The “CME US Equity Index Futures ON+RTH” Trading Hours will become available to set in Data Series settings window.

Daily

The “Daily” periodicity may seem to be very similar to the “Sessional” but it is based on simpler logic intended to create Daily profiles *regardless* the currently set *Trading Hours Template*. Thus, it may come in handy when you need the common Daily profiles on charts that have complex Trading Hours templates set on.

Per Bar

Inasmuch as a huge number of profiles is usually created for the “Per Bar” periodicity, the mouse interaction and profile-related context menu commands are disabled in this mode by default for the sake of better performance. It can be turned back on: *RVP Control Panel* -> [*] tab -> **PPs Turn OFF Mouse Interaction** checkbox.

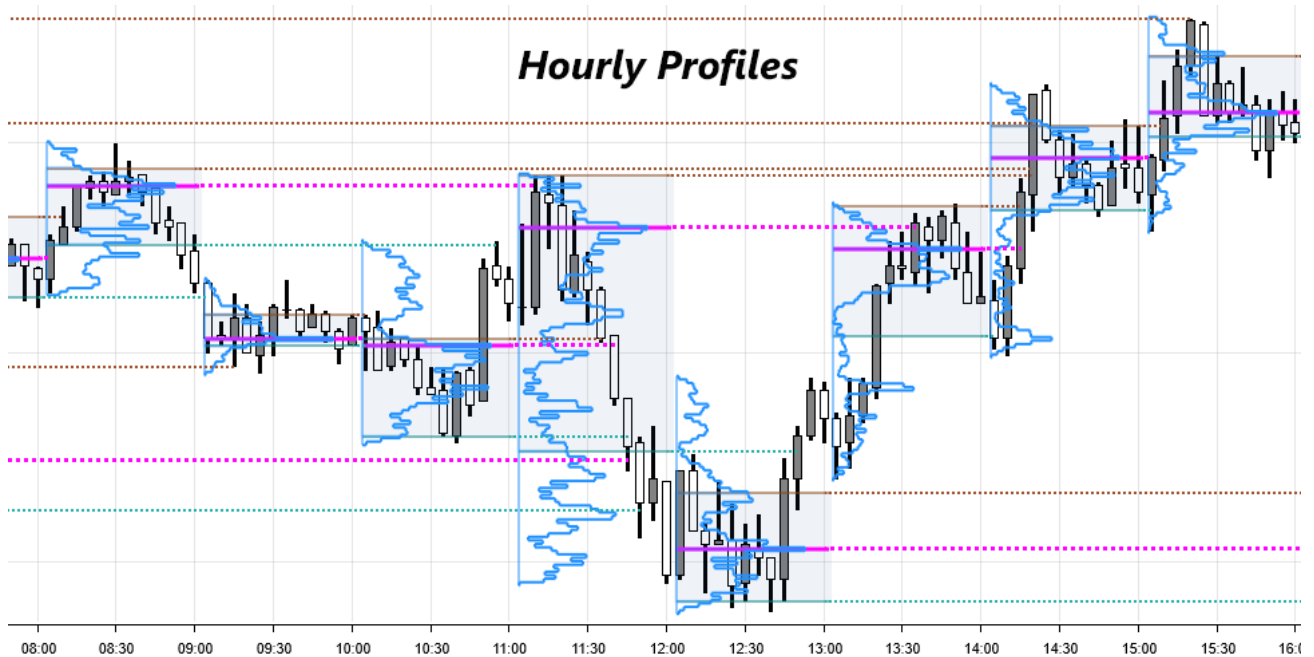


It also may be desirable to adjust the horizontal position of Per Bar profiles. Use the **PPs Histogram Shift** slider for that purpose.

Note: Even while the *Range Volume Profile NT8* indicator provides the “Per Bar” periodicity option the [Orderflow Bars NT8](#) indicator is specially adapted to work such way on per bar basis.

Half-Hour, Hourly

The “Half-Hour” and “Hourly” periodicity options are only intended for intraday charts.



It is important to note that arrangement base of *Hourly* and *Half-Hour* periodic profiles is session beginning. This guarantees the same repeatable resulted arrangement of the periodic profiles each time you open chart/reload indicator.

Weekly, Monthly, Yearly

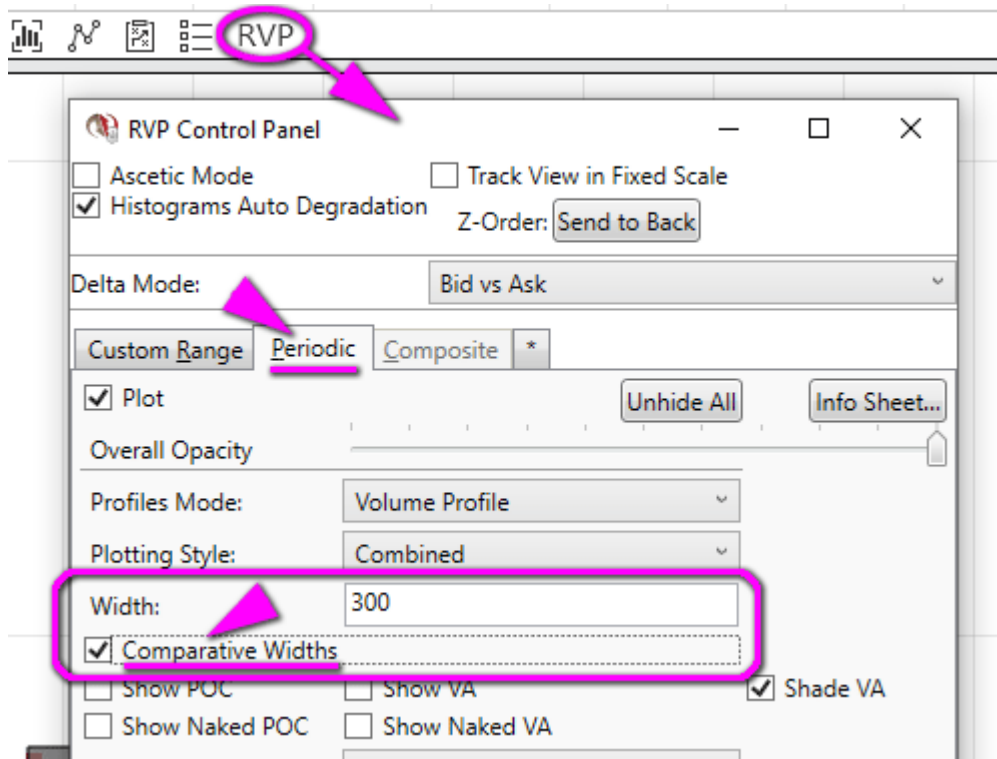
Fairly self-explanatory.

See the [Non-intraday charts handling](#) chapter below for more information on indicator work with non-intraday bars.

and this is important to understand, you will get entirely different picture each time next day/next session is coming.

Comparative Widths Mode

All histograms are plotting with specified *uniform width* which can be adjusted through RVP Control Panel or by using Shortcut Keys. However, it would be interesting to visually compare neighboring Periodic Profiles by their summary volume.



The *Comparative Widths* mode enables histogram scaling of Periodic Profiles that gives the quick overview of relation by trading activity between periods:

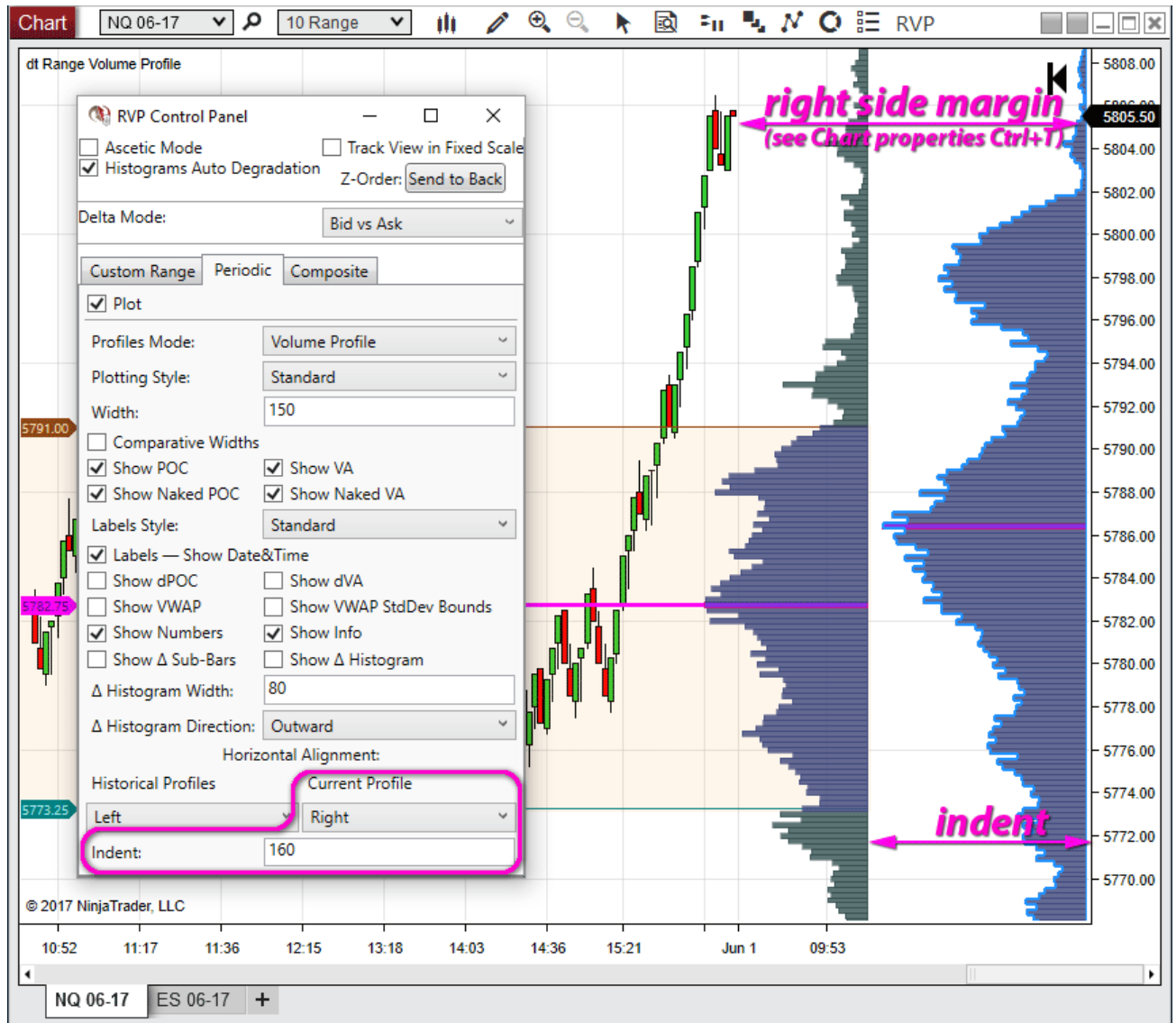




Use the [Ctrl + Plus] and [Ctrl + Minus] *shortcut keys* to adjust the horizontal scale of *Periodic Profiles*.

Horizontal Alignment & Right Indent

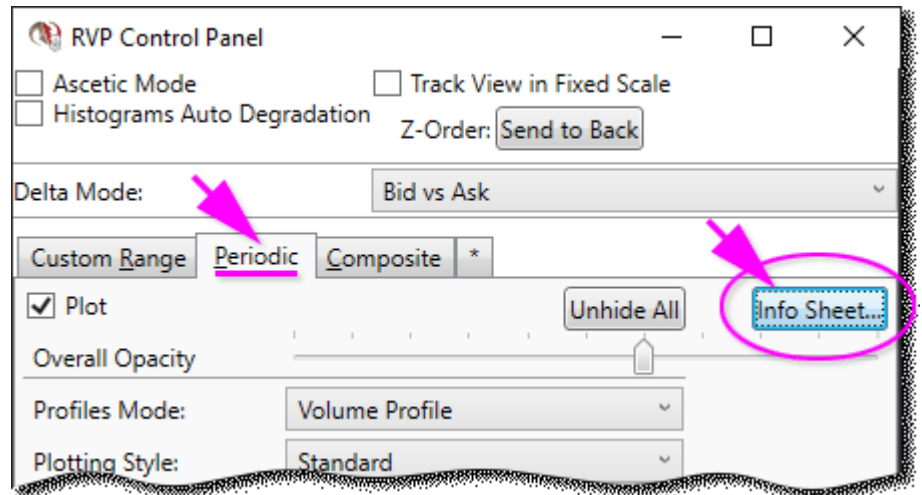
The *Horizontal Alignment* of all Periodic Profiles is *Left* by default but can be changed independently for the current (developing) Periodic Profile and historical Periodic Profiles through *RVP Control Panel (Periodic tab)*:



It is also possible to set a desirable value of right indent for the Right-aligned current profile (*Periodic tab -> Indent* property).

Periodic Profiles Info Sheet

RVP allows to compose informational data sheet for Periodic Profiles as a plain text table with tab-separated values using system numeric and date-time formats, so it can easily be put into MS Excel or another spreadsheet for any kind of statistical analysis.

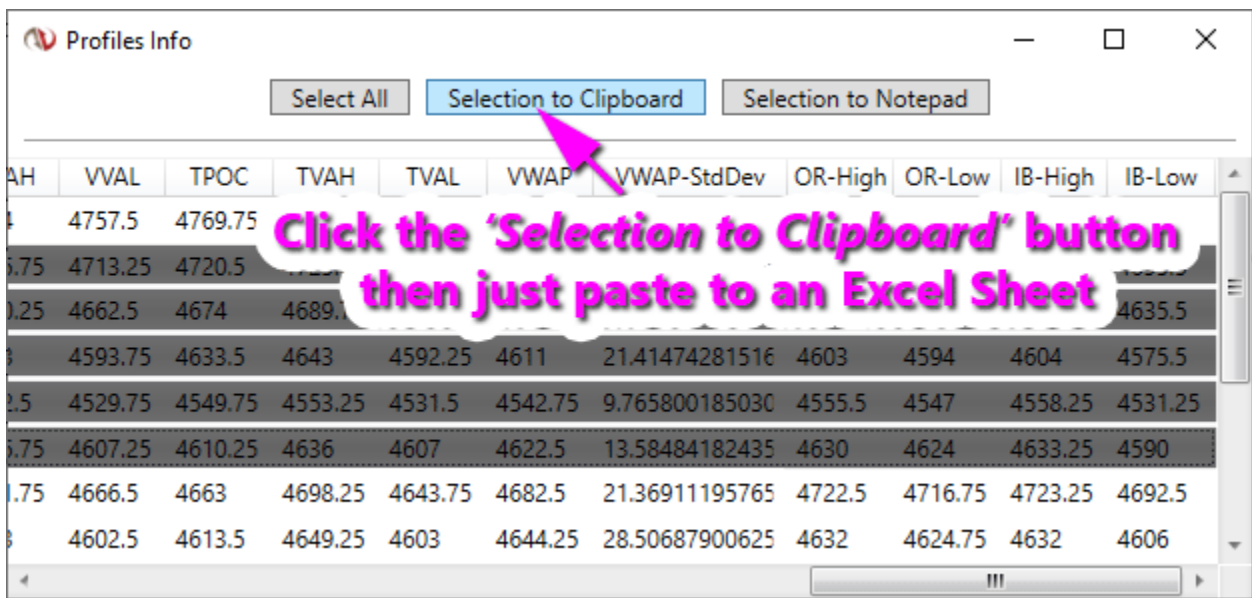


Informational data sheet provides the following metrics (columns):

- Beginning Date & Time; End Date & Time;
- Volume; Volume-Delta; Volume above VPOC; Volume below VPOC
- Ticks; Tick-Delta; Ticks above TPOC; Ticks below TPOC;
- Open; Close; High; Low;
- VPOC; VVAH; VVAL;
- TPOC; TVAH; TVAL; VWAP; VWAP-StdDev;
- Open Range High; Open Range Low; Initial Balance High; Initial Balance Low.

Actual set of the info sheet columns depends on the Periodicity of Periodic Profiles: *Open Range* and *Initial Balance Prices* are only available for *Daily* and *Sessional* profiles.

It may require some extra time to compute all values when retrieving data sheet for Daily or Sessional Periodic Profiles.

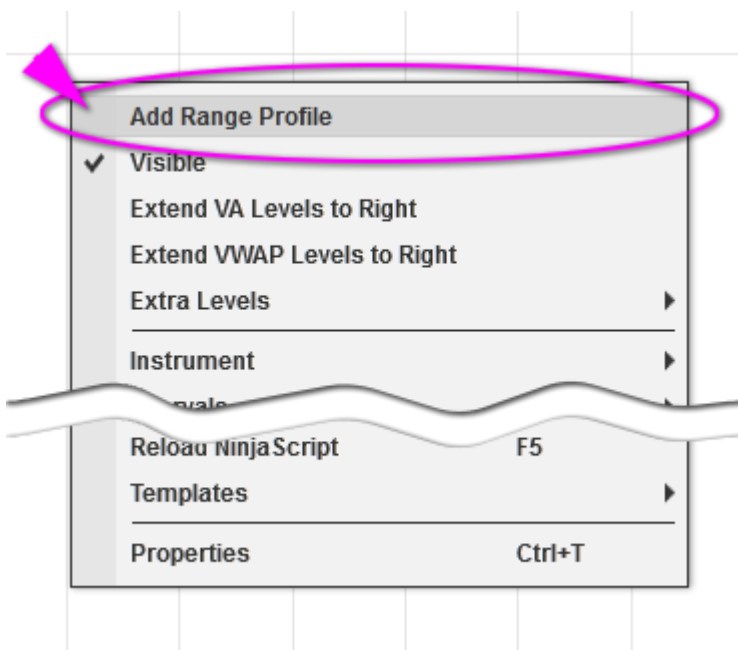


Custom Range Profiles

Custom Range Profiles brings the most flexible way to reveal volume distribution and related Value Area of any period you are interested in.

Creation & Adjustment

In order to add a new Range Profile on the active chart press **[Insert]** shortcut key or use the **'Add Range Profile'** command from context menu of the chart:

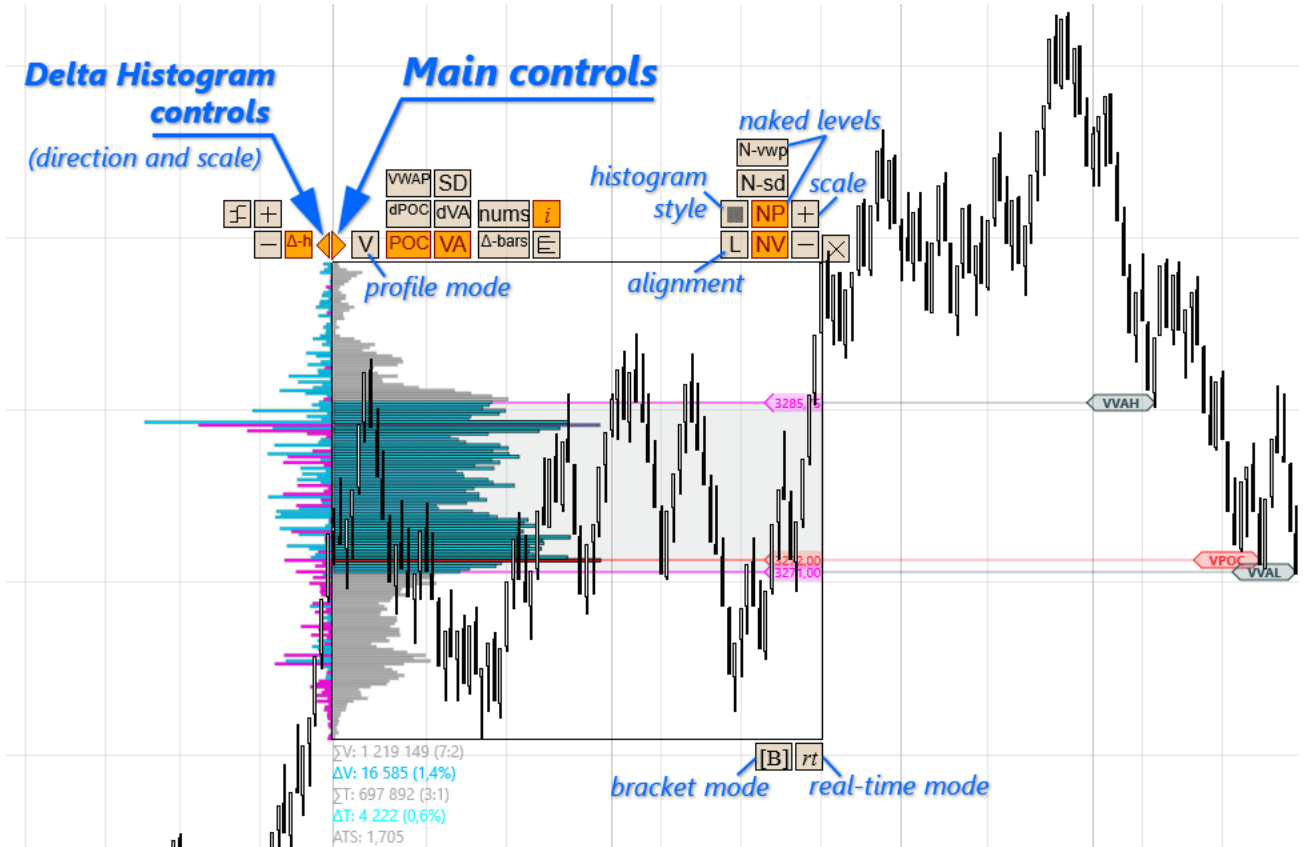


Then click on the chart to start creation of the new profile, move mouse pointer and click on the boundary to finish profile creation.

Range Profiles Controls

Interactive Buttons

While the most options of *Periodic Profiles* family are controllable though RVP Control Panel, the options of each individual *Range Profile* are controllable by means of interactive buttons right on the chart.



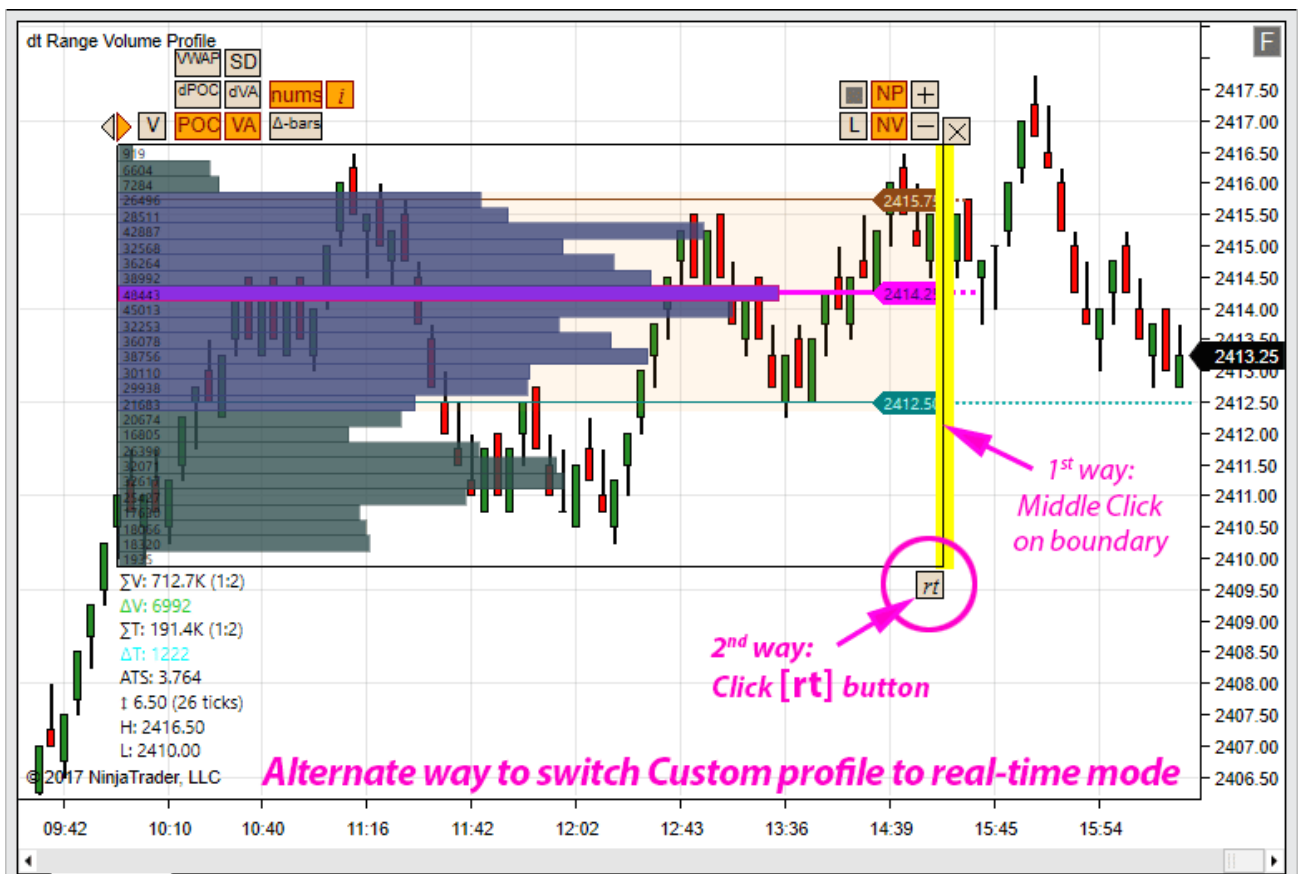
The most of interactive buttons can also be used to control properties of **all** Range Profiles added to chart if clicked while holding down the **[Shift]** key. For example, if you need to adjust histogram scale of all Range Profiles then just hold down the **[Shift]** key and click **[+]**/**[-]** interactive buttons of any custom range profile.

Use Middle Mouse Click on **[+]** or **[-]** interactive buttons to reset histogram scale to default.

(Alternatively use the Shortcut keys: **[Ctrl + Alt + Plus]** to increase scale, **[Ctrl + Alt + Minus]** to decrease scale, **[Ctrl + Alt + Multiply]** to reset scale.)

“Real-time” Mode

It is possible to switch a Range Profile to “real-time” mode in which it is developing with incoming live data. Click **Middle Mouse Button** on any of the boundaries or click the **[rt]** button at the bottom right corner to “attach” the boundary to the current price bar:



Additionally, **Right Indent** property can be set for **right-aligned Range Profiles** in "real-time" mode both individually and overall. To set an individual **Right Indent** use the [↔] button at the bottom of the profile:



To set overall *Right Indent* use the **Right Indent for rt Mode** field in the *Custom Range* tab of *RVP Control Panel*:



Bracket Mode

Bracket Mode is an experimental mode of custom range profile in which the left boundary of the profile (and its period therefore) are floating and dependent on one of the four kinds of constraints: Limit by Volume, by Ticks, by Number of Bars and Limit by Price Range.

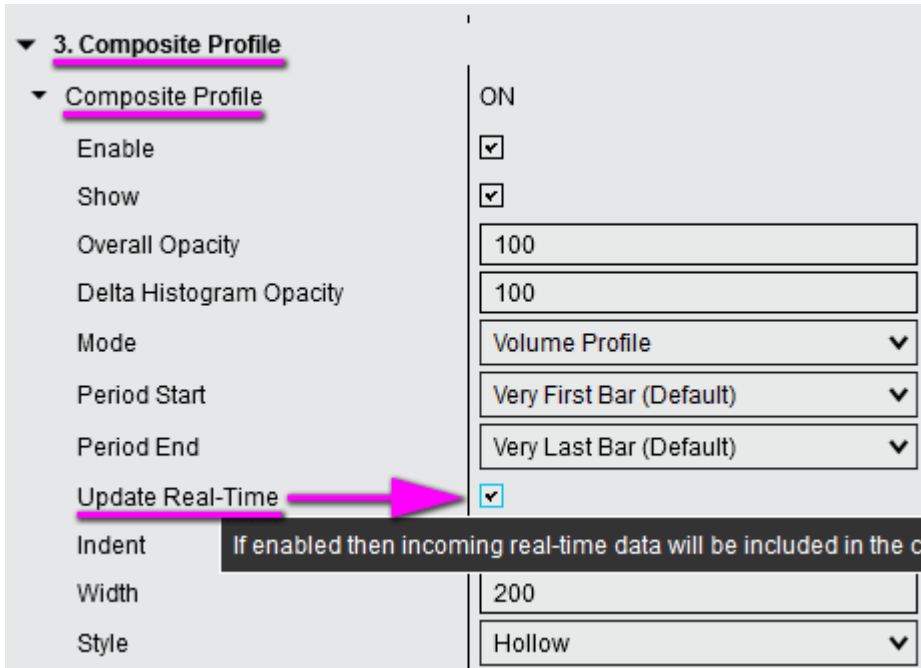


For example, in the “Limit by Price Range” Bracket Mode a range profile will automatically try to keep the price range be less or equal to defined 'Price Range Limit' value (with the accuracy dependent on the bars type: the shorter the bars timeframe the closer the actual bracket range to defined value).

Composite Profile

The mere purpose of *Composite Profile* is to provide a basic overview of volume peaks and valleys in general.

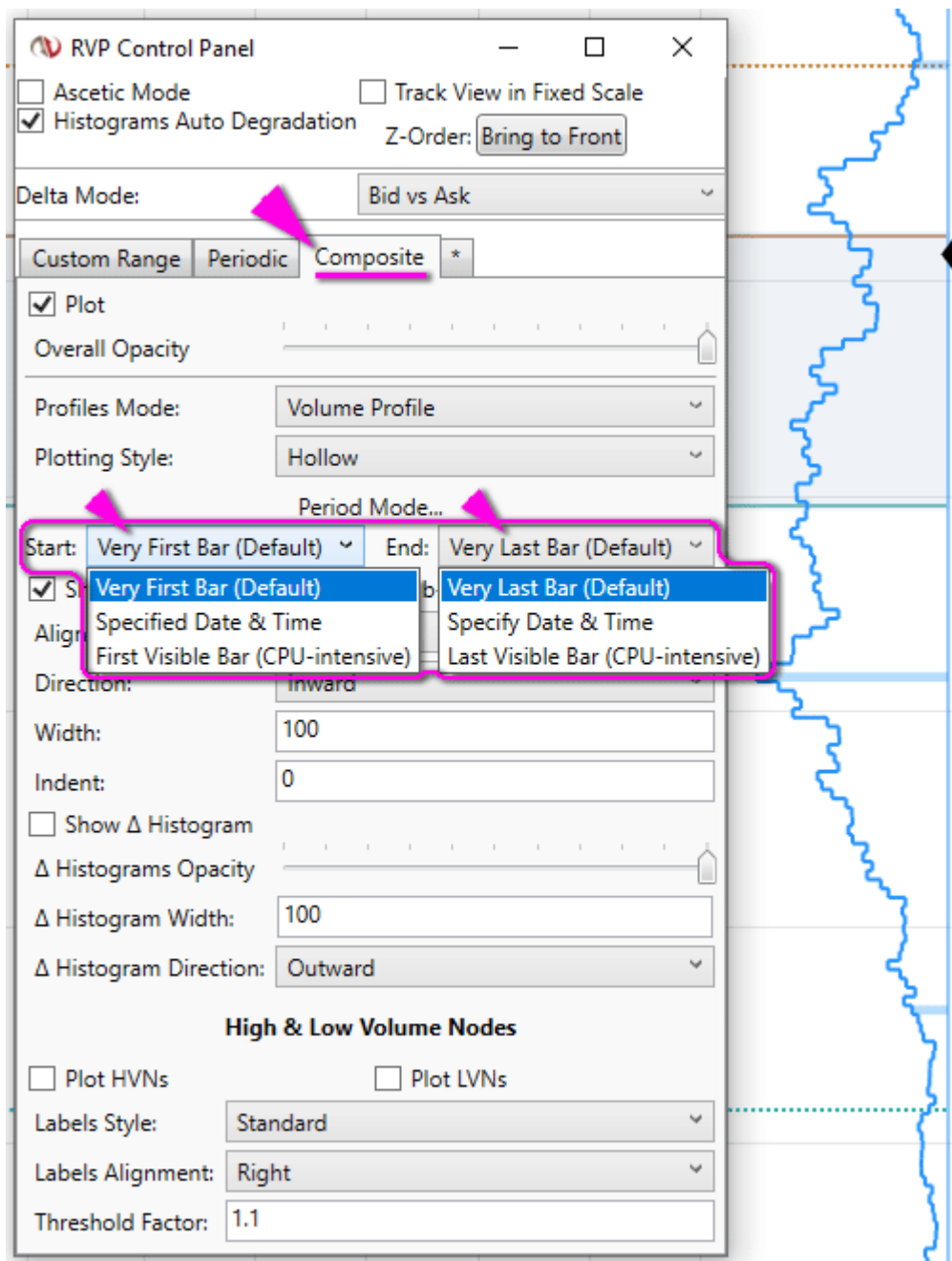
Updating of Composite Profile in real-time (with live data) is disabled by default as it is not necessary in the most scenarios of use. To explicitly enable live updating of Composite Profile go to *Indicators* window -> 3. *Composite Profile* section -> expand *Composite Profile* properties group and check the **Update Real-Time** checkbox:



If you do not plan to use Composite Profile on your chart it would be reasonable to completely turn off its computations by unchecking the *Enable* checkbox in the *Composite Profile* settings section.

Period of Composite Profile

By default, Composite Profile is built based on all bars of the chart, naturally: **Period Start** = “*Very First Bar*” and **Period End** = “*Very Last Bar*”.

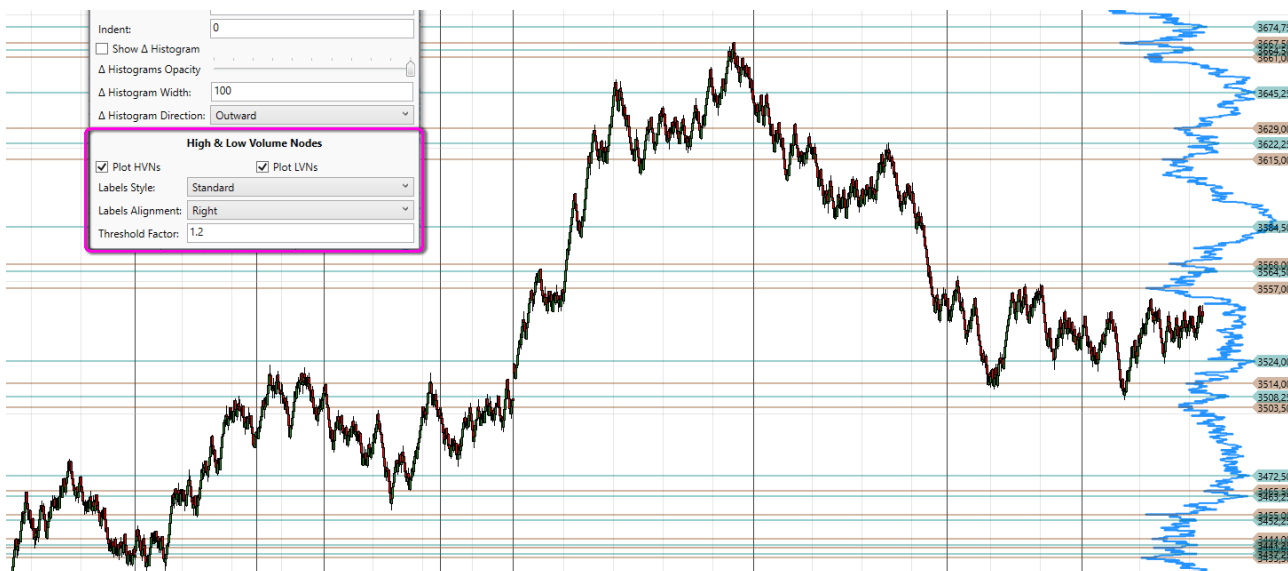


Important to note: Setting the alternative options “First Visible Bar” to Period Start and/or “Last Visible Bar” to Period End may naturally lead to frequent complete re-computations of the Composite Profile data and very intensive CPU usage therefore. Hence, it is strongly recommended to not to use these options for live charts, especially during periods of extreme trading activity/volatility.

High & Low Volume Nodes (HVN & LVNs)

RVP can automatically determine and plot High and Low Volume Nodes (High and Low Tick Nodes if selected profile type is Tick Profile) — simple price levels based on peaks and valleys of Composite Profile.

The less the *Threshold Factor* value you set the more sensitivity of peaks and valleys detection you get. (The recommended *Threshold Factor* values to play with lie in the range ~0.5...3. The default threshold is 1.1.)



The *Threshold Factor* parameter can be adjusted on-the-fly through *RVP Control Panel*: type new threshold value and press Enter key to apply the new setting to your chart).

If the *Update Real-Time* option of Composite Profile is enabled then the Volume Node price levels will be live updating correspondingly.

Price Levels System in Range Volume Profile

Value Area

Point Of Control, *Value Area High* and *Value Area Low* price levels can be shown in two ways:

- Horizontal level lines indicating current POC, VAH and VAL values of the profile (enabled by default);
- Developing dPOC, dVAH and dVAL graphs (disabled by default).

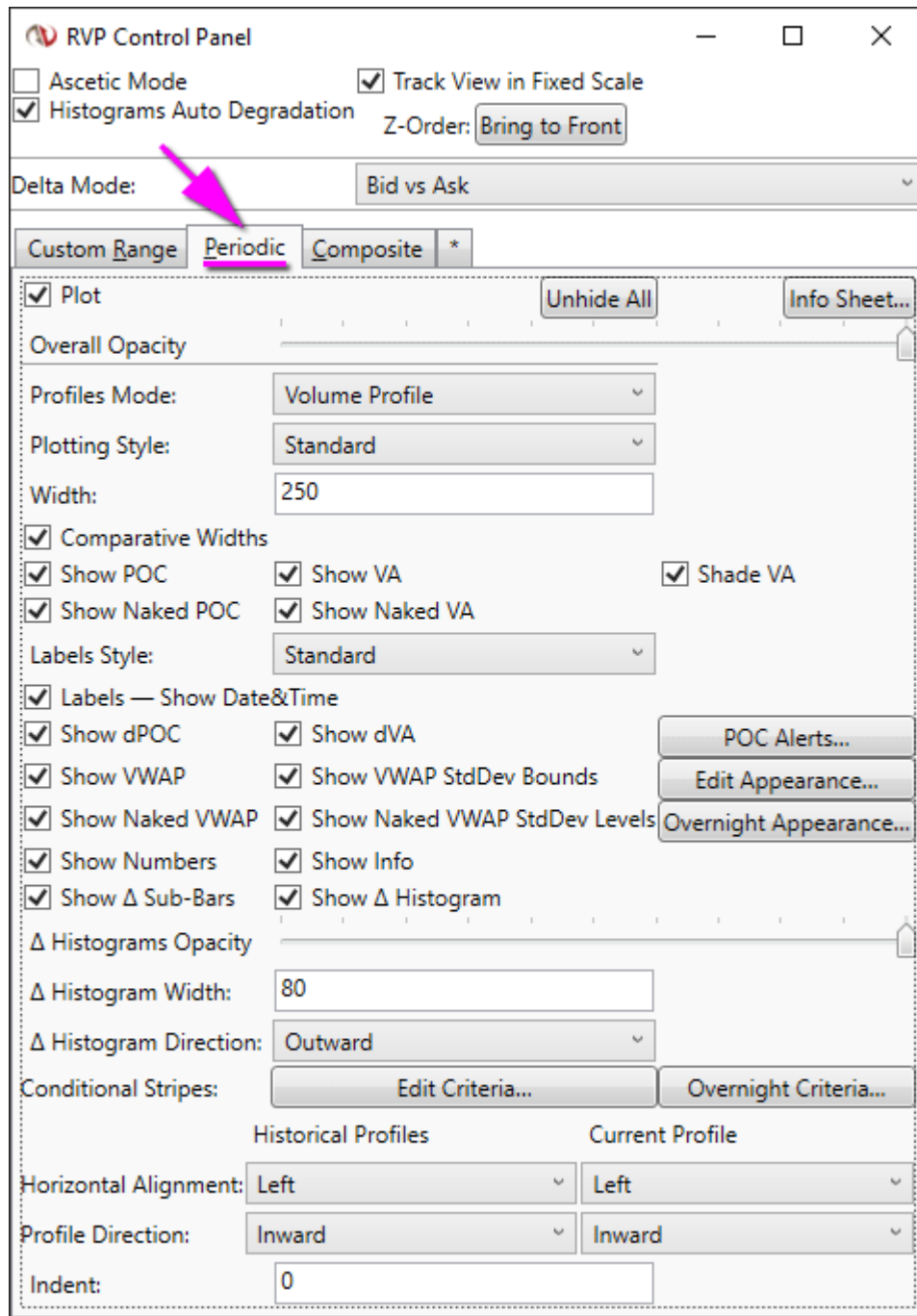
Additionally, the Value Area price levels of profile can be extended beyond the profile range till the right edge of the chart or till the first encounter with the further price bars — so called Naked or Virgin Value Area levels.

Periodic Profiles:

Options related to *Periodic Profiles* can be configured on-the-fly in the *Periodic* tab of the *RVP Control Panel*.

Check the *Show dPOC* and *Show dVA* options to enable developing Value Area graphs for *Periodic Profiles*.

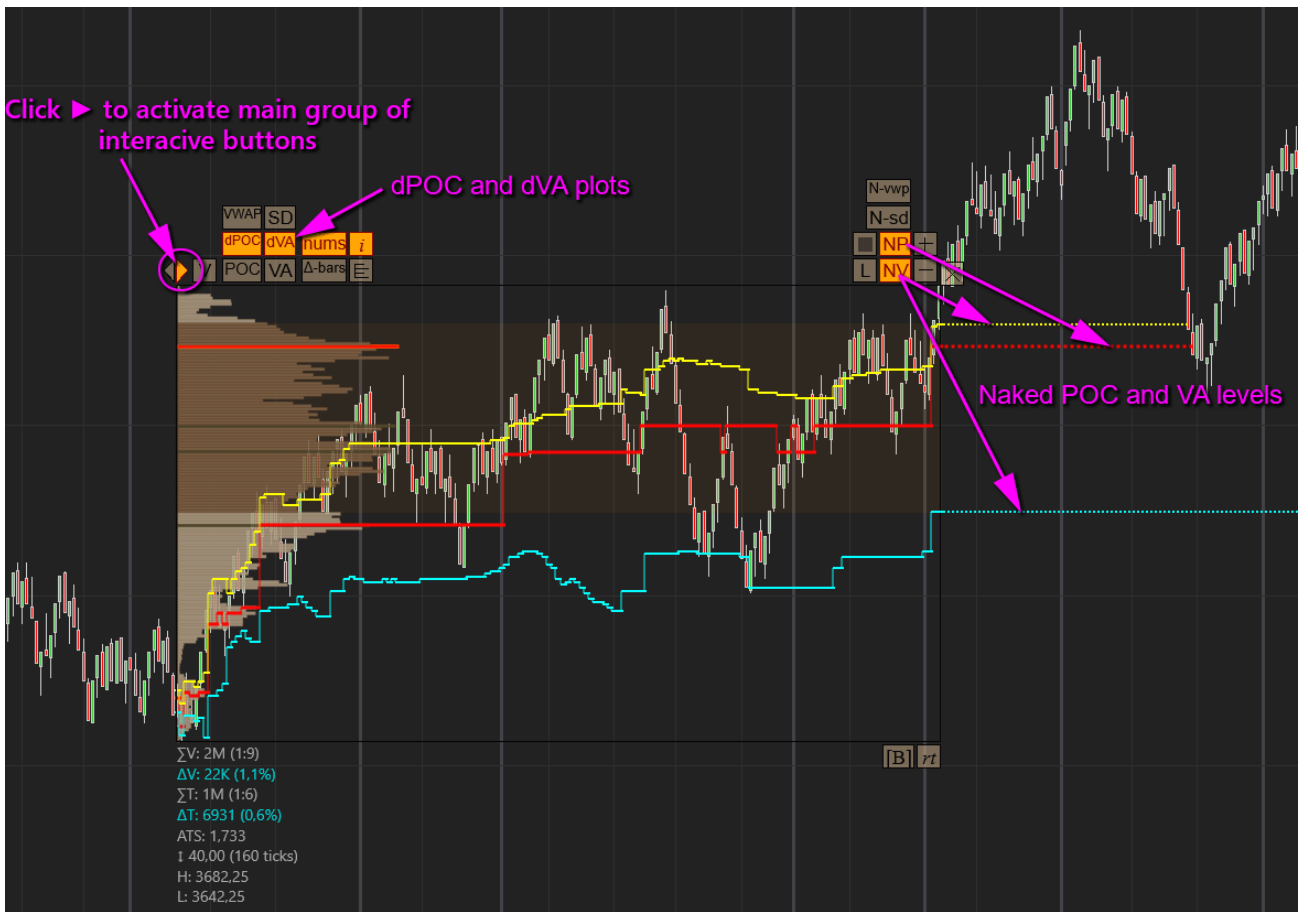
Plotting of Naked Value Area levels of *Periodic Profiles* is enabled by default. To disable — uncheck the *Show Naked POC* and *Show Naked VA* options in the Periodic tab:



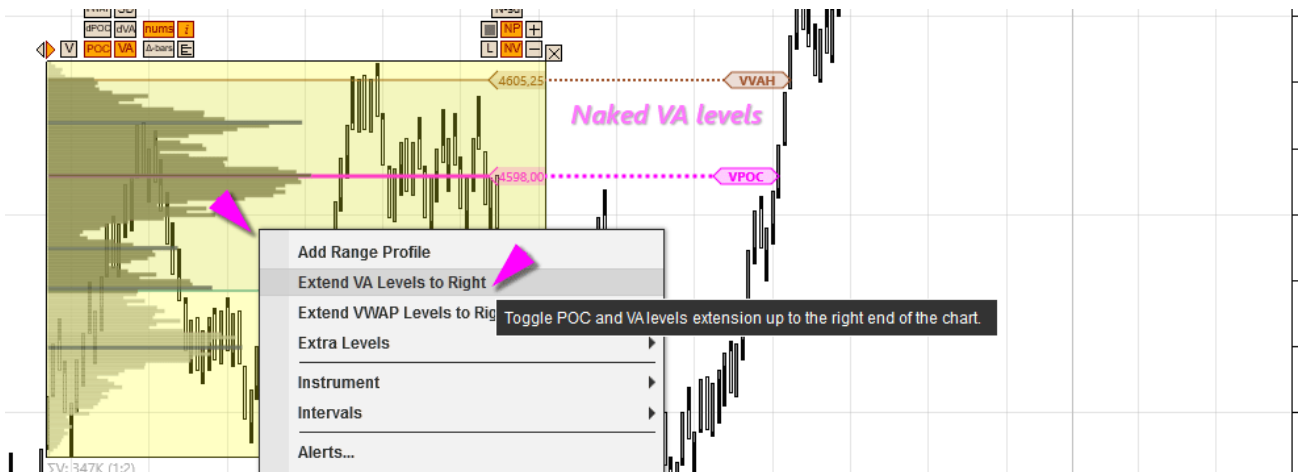
Custom Range Profiles:

Click the *dPOC* and *dVA* interactive buttons of a *Custom Range Profile* to enable developing Value Area graphs for that particular custom profile.

Plotting of Naked Value Area levels of Custom Range Profiles is disabled by default. To enable — click the *NP* and *NV* interactive buttons:



As mentioned above, Value Area price levels of any profile can be extended to the right edge of the chart: click Right Mouse Button over profile to get the profile's context menu and then click the *Extend VA Levels to Right* menu item:

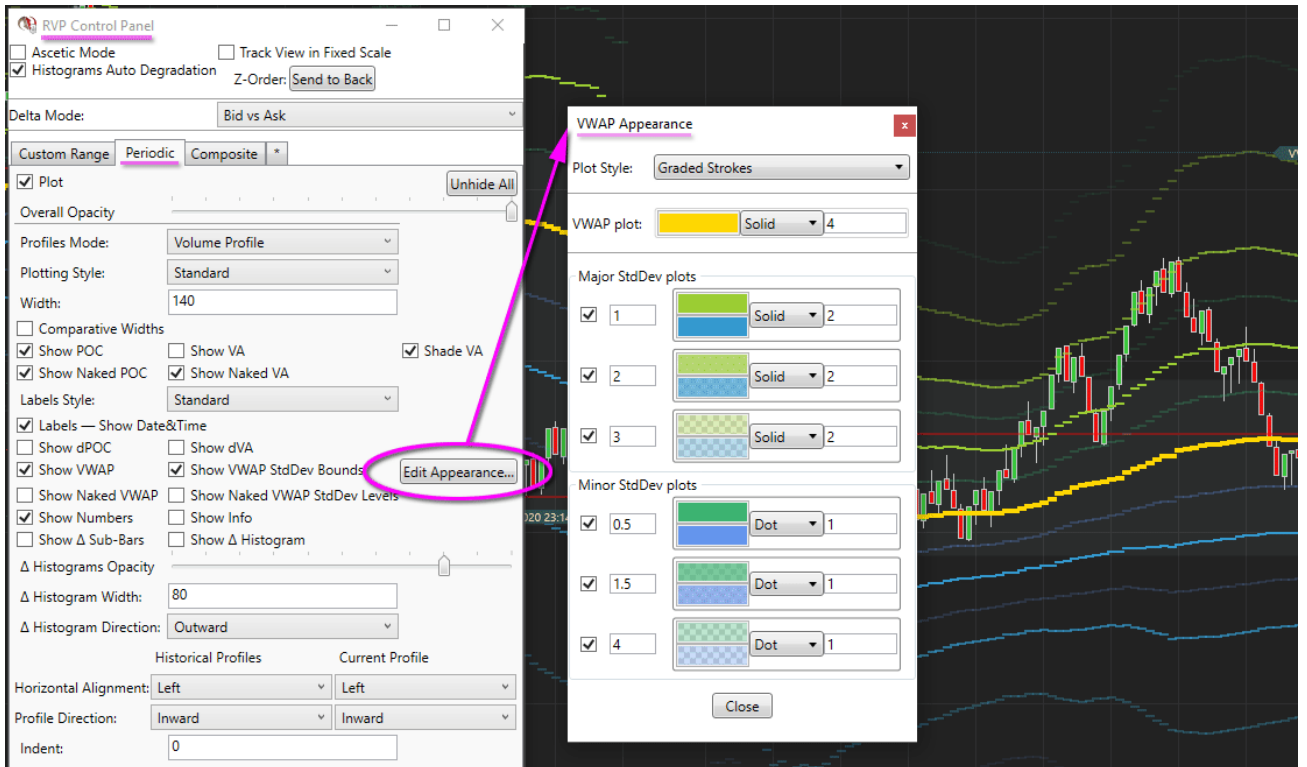


Click *VWAP* and *SD* interactive buttons of a *Custom Range Profile* to enable developing Value Area graphs for that particular custom profile.

Click the *NP* and *NV* interactive buttons to plot VWAP-based Naked levels.

Just as profile Value Area levels, VWAP-based levels can also be extended to the right chart edge by using the *Extend VWAP Levels to Right* command from profile's context menu.

Appearance options and deviation factors of VWAP StdDev Bounds can easily be adjusted on-the-fly by using *RVP Control Panel*: switch to *Periodic* tab and click the 'Edit Appearance...' button next the *Show VWAP* checkboxes to get the *VWAP Appearance* editor window:



Opening Range & Initial Balance

Initial Balance (IB) concept was born in the time of Pit trading when there was neither electronic trading nor real-time access to trading activity data that we have nowadays.

Initial Balance is originally a price range established in the *first hour* or Regular (Pit) trading session in CME or CBOT. *Opening Range* (OR) is a price range for a relatively short period after the market opens (usually 1...2 min).

The first hour of the Pit session has the most importance because the most significant market players place orders this time in the morning. That was so in the days of Pit trading, and that's true in the modern days of electronic trading.

A custom period can be set to Initial Balance and/or Opening Range in the *6. Extra Levels* properties group of *1. Appearance Settings* section (or in corresponding separate *Appearance Settings* section if enabled):

Indicators [?] [X]

Available *i*

- ADL
- ADX
- ADXR
- APZ
- Aroon
- Aroon oscillator
- ATR
- Bar timer
- Block volume
- Bollinger
- BOP
- Buy sell pressure
- Buy sell volume
- Camarilla pivots
- Candlestick pattern
- CCI
- Chaikin money flow
- Chaikin oscillator
- Chaikin volatility
- Choppiness index
- CMO
- Constant lines
- Correlation
- COT
- Current day OHL

Configured

- dt Range Volume Profile
- VOL(ES 03-21 (15 Minute))

add remove up down

Properties

▼ **0. General Settings**

- ▶ 0. General | 68,30%; Tick Series; No filtering
- 1. Appearance Settings**
- ▶ 1. Frame
- ▶ 2. Volume Profile
- ▶ 3. Tick Profile
- ▶ 4. ATS Profile
- ▶ 5. VWAP
- 6. Extra Levels**
- ▶ Labels Font

Open Line

High Line

Low Line

Close Line

Middle Line

Open Range: Period (min) | 2

Open Range: Lines | [Yellow] Solid ▼ 1

Open Range: Fill Opacity | 0,3

Initial Balance: Period (min) | 60

Initial Balance: Lines | [Blue] Solid ▼ 2
Label Text: [Yellow] 9

Initial Balance 150%: Lines | [Blue] Solid ▼ 2
Label Text: [White] 9

Initial Balance 200%: Lines | [Light Blue] Solid ▼ 2
Label Text: [White] 9

Use Custom Start Time for OR & IB

Show IB After IB is Formed

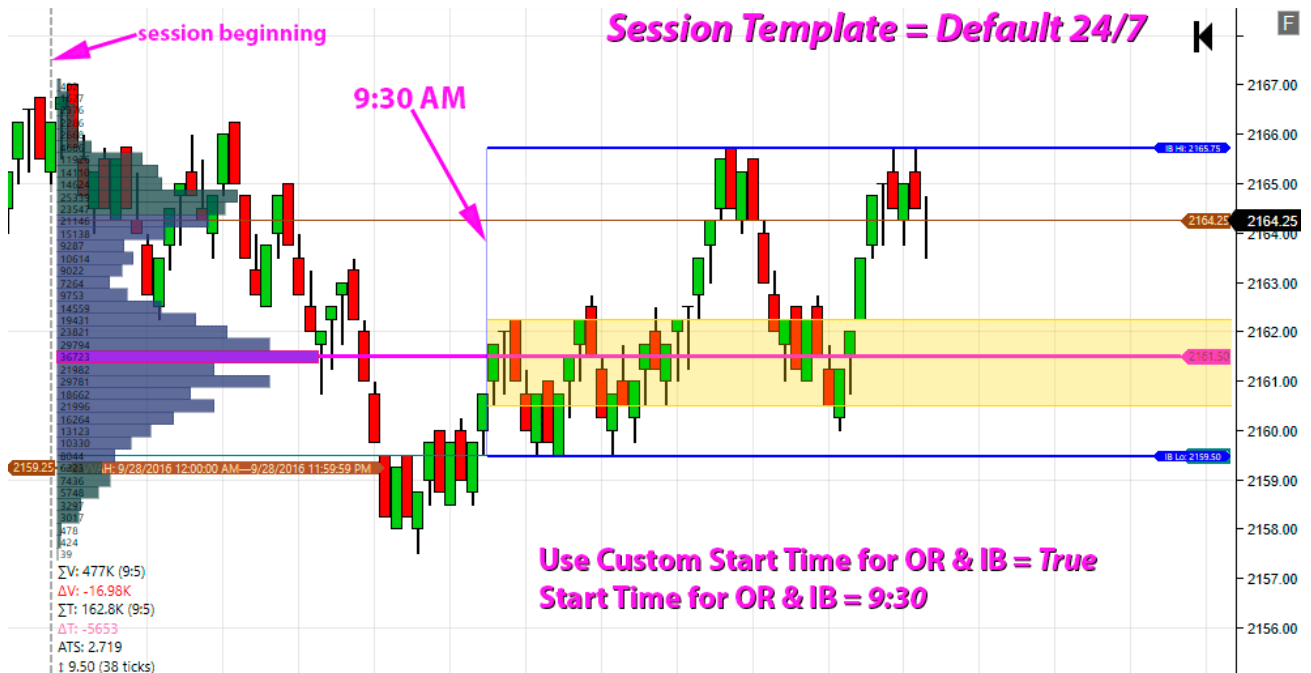
▼ **1.2. PPs Appearance Settings**

template

OK Cancel Apply

Important! By default, the initial time point of OR and IB levels is the beginning of the profile supposing that a trader uses these price levels on a chart with "RTH" Trading Hours template set (Regular trading session).

However, this default behavior may be not suitable if set "Default 24x5", "Default 24x7", or one of the "ETH" Trading Hours templates (Extended Trading Hours). Thus, it is possible enable the **Use Custom Start Time for OR & IB** option and set a custom **Start Time for OR & IB** time value which is usually the start time of regular session (9:30 AM ET for US Equity Index Futures, for instance).



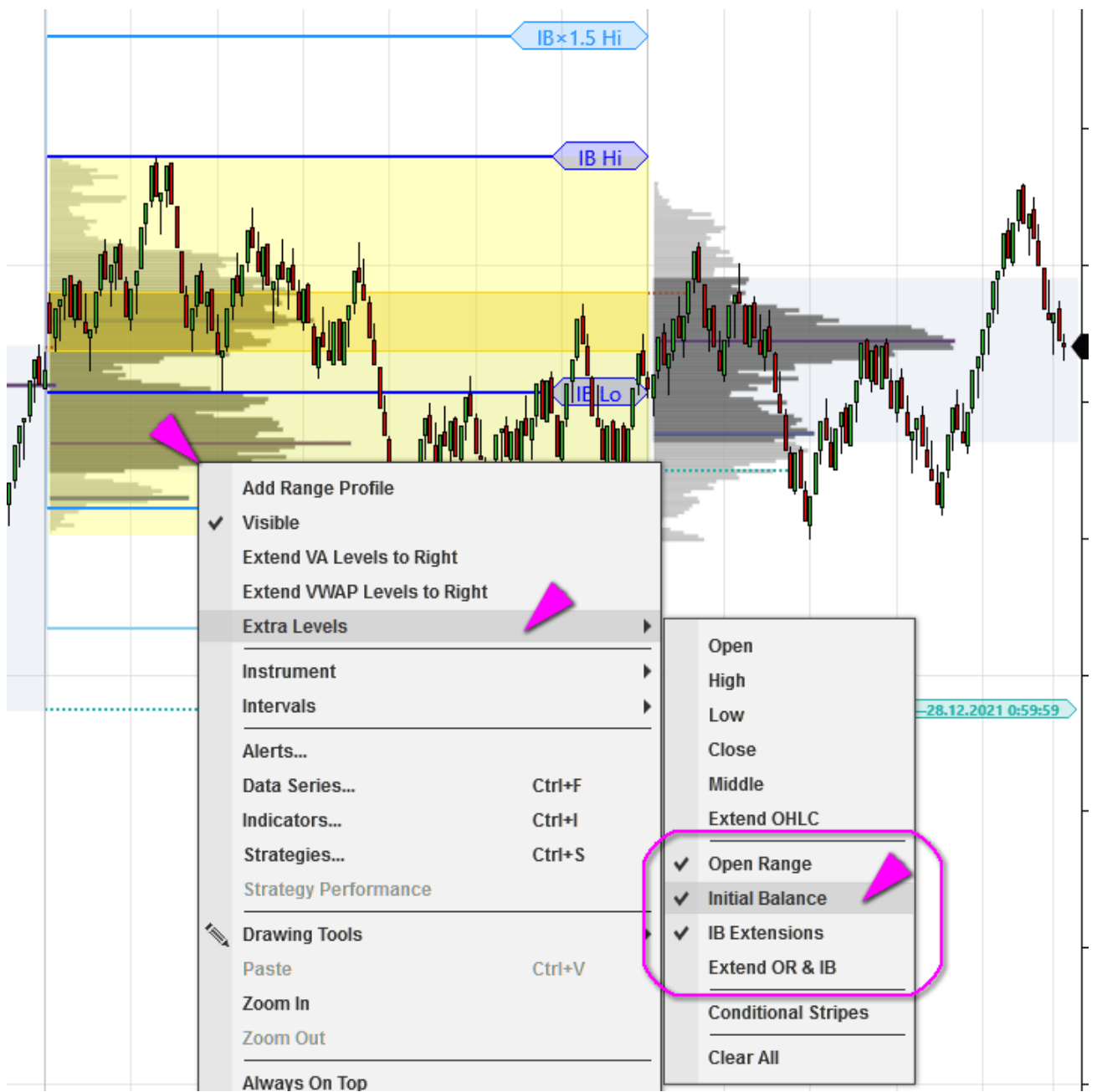
Note: OR and IB levels are not displayed for the current (developing) profile until the specified Start Time in this case.

However, if enable the **Show IB After IB is Formed** option then **Initial Balance** levels will become visible only after the lapse of IB Period and will remain hidden during IB formation.

By default, OR and IB price levels are disabled. Plotting of the levels can be enabled for a particular profile through profile's context menu **Extra Levels -> Initial Balance** and **Open Range** menu items.

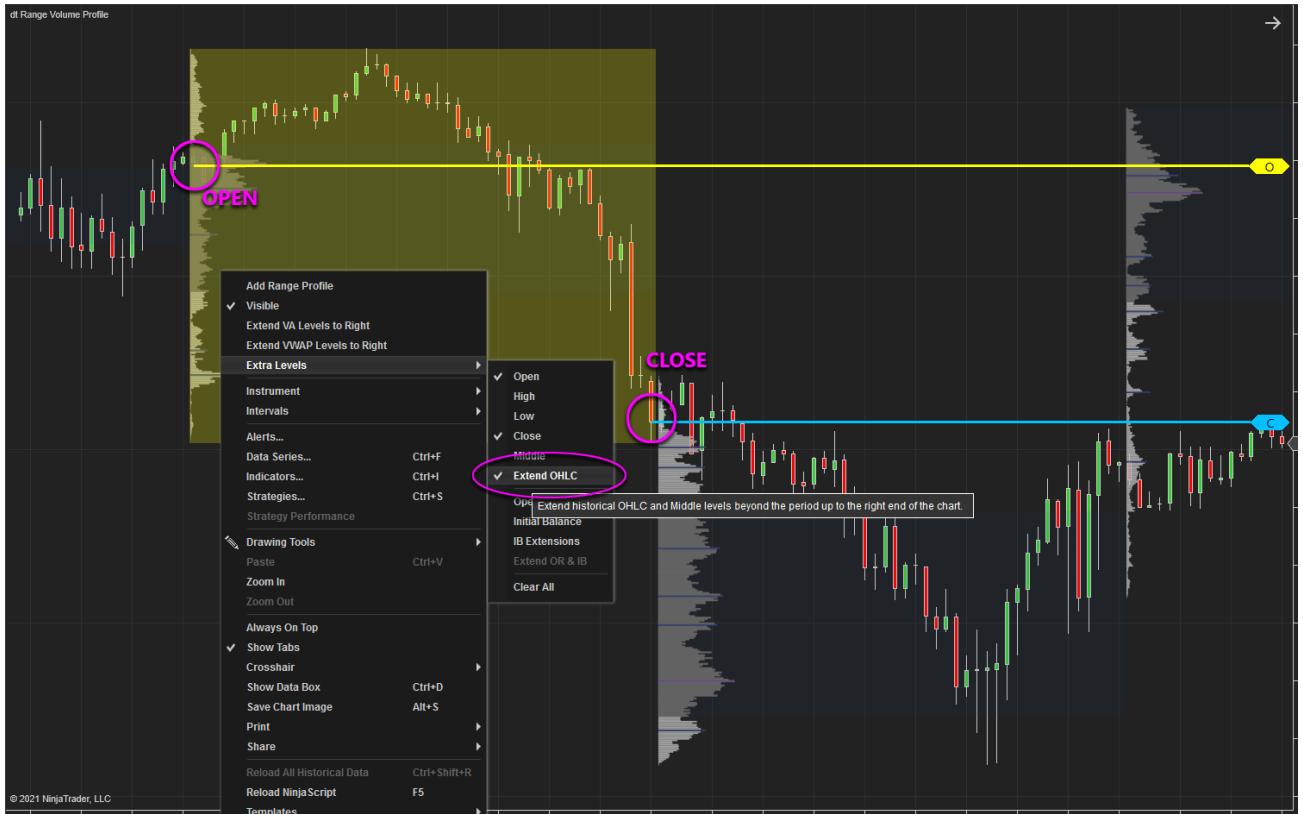
The **IB Extensions** menu item enables the plotting of x1.5 and x2 Initial Balance extension levels (same as 50% and 100% extensions).

By default, OR and IB price levels are cut off at the end of the profile period but can be extended to the right chart edge by using profile's context menu **Extra Levels -> Extend OR & IB**.



Open, High, Low, Close, Middle

The **Extra Levels** context menu of a profile allows to enable plotting of the common *Open*, *High*, *Low*, *Close* and *Middle* price levels of the corresponding profile period. By default, these levels are extended to the right chart edge.

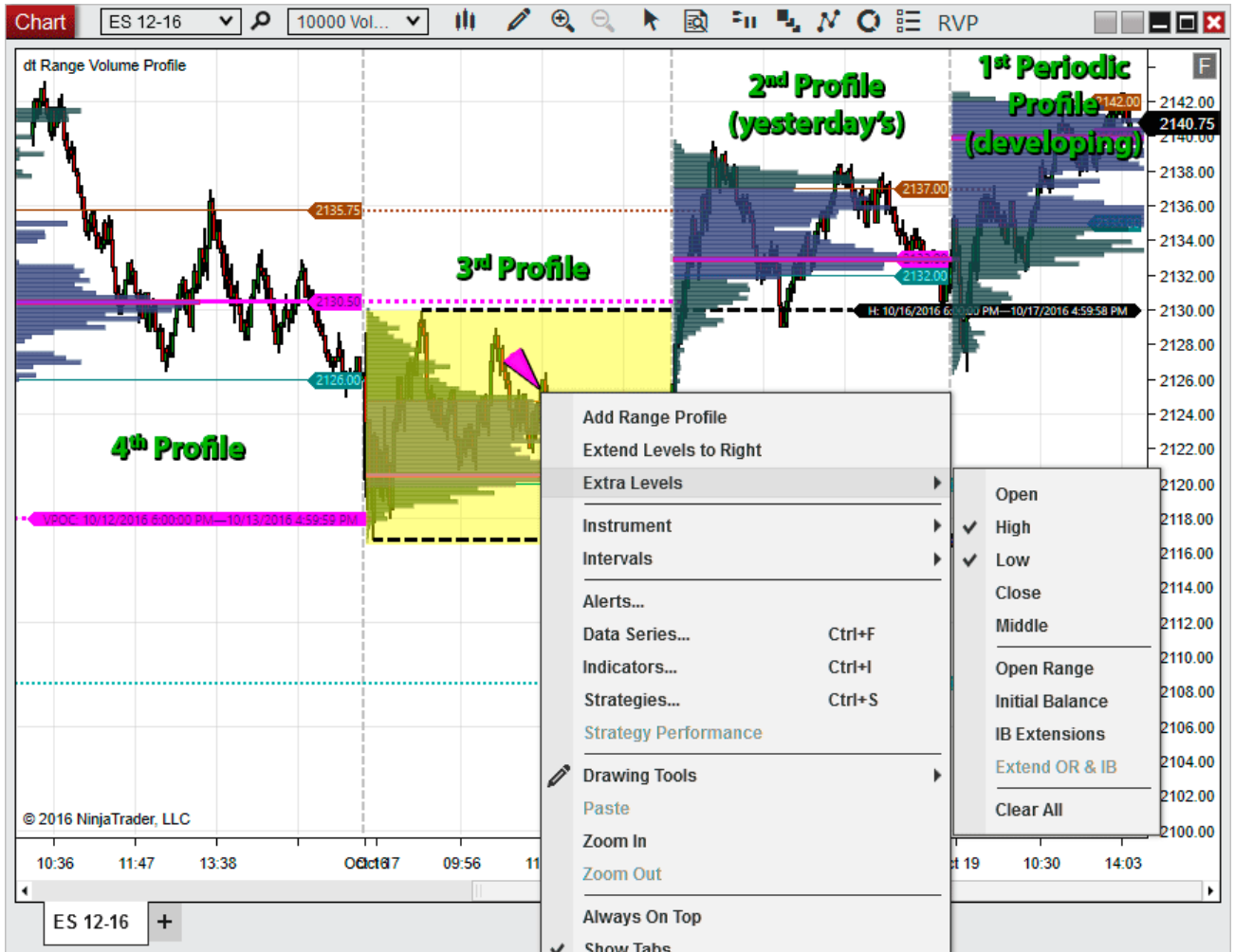


Start point of an *Open*, *High*, *Low* or *Close* price level is an actual origin of that particular level. Hence, *Open* price level is plotted starting from most first bar of the profile period, *High* price level is plotted starting from the highest bar of the profile period, and the *Close* price level is plotted starting from the last (closing) bar of the profile period.

Middle price level is plotted starting from the beginning of the profile period just like *Open* price level.

Special Importance of the Current, Prior, 3rd and 4th Periodic Profiles

The last four *Periodic Profiles* (*Current, Prior, 3rd* and *4th*) have special importance in terms of settings. They each have individual *Extra Levels* settings in order to allow to save/restore the individual states of extra levels of those 4 profiles in/from *Workspace* or *Chart Template*.



Note: The states of *Extra Levels* of other historical profiles (5th and older) are also controllable individually per profile through the *Extra Levels* context menu, but these states will not be saved individually in *Workspace*. In other words, one should enable them again after restart of chart or NinjaTrader.

Miscellaneous

Compatibility with bar types

Not all Data Series Types (or simply — bar types) are partially or completely compatible with order-flow-based tools depending on their nature of construction. For example, Line Break, Point and Figure and most of the Renko bar types have a specific impact on the data flow that makes them technically be not suitable for use with order-flow tools. These "bar types" are actually *self-sufficient studies* intended to use in itself.

Thus, for instance, RVP can build historical profiles on charts of some of these Data Series Types, but processing of incoming live data isn't possible due to a specific impact on data caused by the logic of bars construction. By the way, that is the reason why Tick Replay feature of NinjaTrader is disabled for some of these bar types.

Bar types of this sort tend to produce bars with fake data points (at least partially) and may have retrospective impact on volume of a finished bar in real-time computations (some of them internally use Ninja's RemoveLastBar() function). Thus, a price bar built based on any of these techniques may vary considerably from actual price action took place on the market during the bar formation. Moreover, the developing (current) bar may have even bigger volume than after it becomes a historical bar (when new bar is coming). As a new bar is built it can take ticks away from a previous bar. Simply speaking, the past is dependent on the future. This may be called as 'inconsistent' way of bars building, and this is a main obstacle to use such period types with order-flow tools, especially when it comes to processing of live data.

Range Volume Profile constantly performs a very basic check of incoming real-time data for consistency and stop working when data inconsistency is detected to prevent showing of unfair data.

The most of the Renko-bar types, LineBreak Charting, Point and Figure Charting may be excellent tools on their own — all these bar types are *self-sufficient trading tools* actually, but they should not be used in conjunction with order-flow tools just because of the nature of how they are built.

We also provide two volatility-based Bars Types dt Reversal and cRenko (Consistent Renko) that uses adapted consistent logic that do not affect data flow, so they are compatible with any order-flow tools therefore (<https://www.discotrading.com/en/Description/3020>, <https://www.discotrading.com/en/Description/3035>).

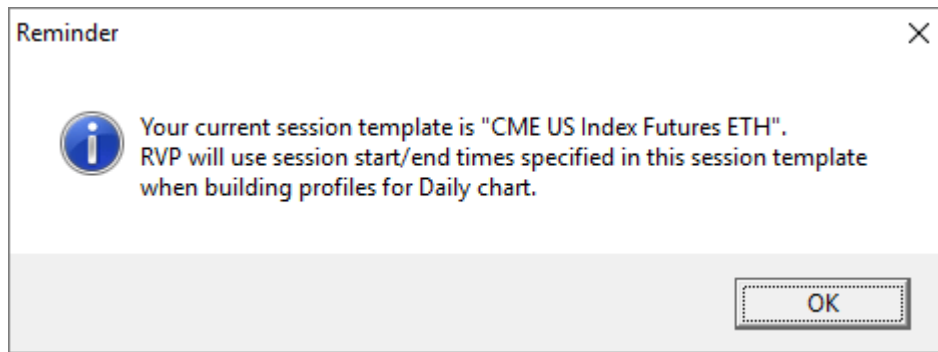
Non-intraday charts handling

NinjaTrader utilizes three basic types of historical data: 1) *Daily data*, 2) data of *1-Minute* granularity, 3) data of *1-Tick* granularity.

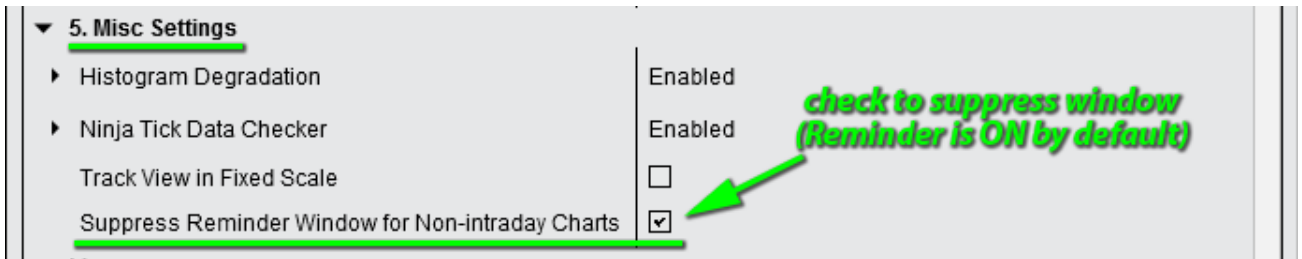
The last two data types are used to construct intraday charts with intraday bar types such as Minute, Tick, Range bars. Further, NinjaTrader naturally takes into account customizable *Trading Hours Templates* (formerly Session Templates) when constructing intraday bars. The point is that you can control which exactly session start and end times are used when NinjaTrader creates price candlestick chart of these intraday types.

On the other hand, *Daily* bars are built upon *Daily data* (Daily Open, High, Low and Close prices). *Daily data* is data-vendor-specific and it does not take into account a *Trading Hours Template* set for data series in NinjaTrader. That is, which exactly session times (RTH, ETH or other) your *Daily* bars' Open, High, Low and Close prices are based on depends on your data provider, not your *Trading Hours* settings! Most often data feeds use ETH hours for *Daily* bars. Anyway, you cannot control the trading hours of *Daily* bars. So, you may get profiles visually misaligned with such *Daily* bars because *Range Volume Profile NT8* always takes the selected *Trading Hours Template* into account.

If you add *Range Volume Profile NT8* to a non-intraday chart (*Daily*, for example) then you will get a '*Reminder message*' from RVP and the further data loading may be paused until you close the Reminder window by clicking *OK* as this note is important to know.



The Reminder window can be turned off though: go to **5. Misc Settings** section -> check the **Suppress Reminder Window for Non-intraday Charts** checkbox and click **OK** to apply new settings. Re-save your Workspace then:



A little tip: How to get Daily bars constructed with the selected Trading Hours taken into account? You can just use Minute bars instead of Daily in such cases. For example, use the 405 Min bars instead of Daily bars for RTH session charts (15:15 - 8:30 = 405 minutes — this is the duration of RTH session) and 1380 MIN bars for ETH session (ETH = 23 hours = 23*60 = 1380 minutes is the duration of ETH session).

Note: It may be reasonable to switch the 'Data Source' property to the "Minute Series" when working with long-term profiles (Days to load > 60 days).