MZpack 2.4.0 beta for NinjaTrader 7

USER GUIDE

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Links

- WWW http://www.mzpack.pro
- MZpack Trading Room in Skype https://join.skype.com/B48OjcjNeodD
- MZpack YouTube channel http://www.youtube.com/channel/UCqabMIgUEjk3Bkee8G-oSMg
- Facebook https://www.facebook.com/mzpackninjatraderindicators/
- VKontakte https://vk.com/mzpack
- Newsletters subscription and feedback form http://www.mzpack.pro/en/contact-mzpack-ninjatrader-indicators-team/

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Introduction

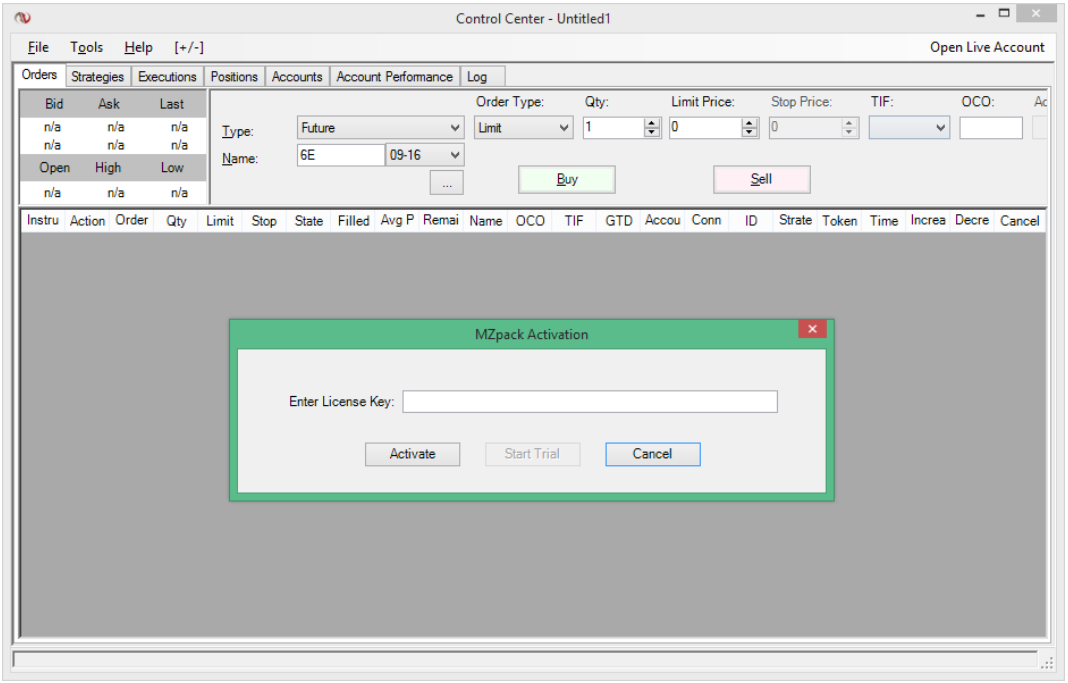
MZpack for NinjaTrader is based on analysis of market microstructure events using Level I & Level II data. The indicators' algorithms include elements of CME MDP 3.0.

MZpack tools can be used in variety of appliances from scalping to day trading. Also momentum and swing traders can use MZpack Tools to manage their entries and exits.

Indicators support only live or replay data. You can't see anything on historical data because NinjaTrader 7 not provides Level I or Level II data on history.

Installing MZpack for NinjaTrader 7

1. Close NinjaTrader 7 if it was opened. Unpack downloaded zip-archive and run MZpack installer
2. After MZpack installation finished run NinjaTrader 7
3. Open Indicators window (Ctrl+I) in any chart.
4. If product was not previously activated by paid license key (or trial license key) activating window will be shown. Enter license key and click **Activate** button or click **Start Trial** button if it enabled and if you don't have a license key.



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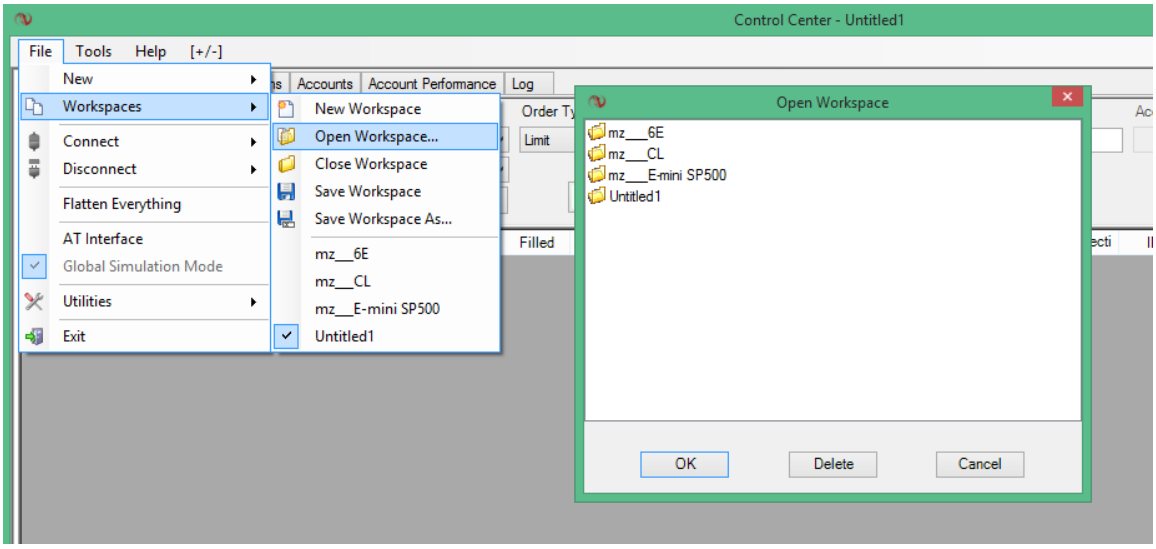
Quick start. Indicators setup, chart templates and workspaces

Chart templates for NinjaTrader 7 are part of MZpack installation. All the templates start with mz___ and placed in NinjaTrader 7 charts template folder. Particular chart templates have been made to illustrate User Guide and starts with mz___UserGuide_.

You should adjust parameters of indicators for traded instrument. Also you should use different parameters for mzBigtrade, mzMarketDepth, mzAggressivTrade, mzSmartMarket etc. for different trading sessions. See **Indicators' General settings** section to learn how to use Strat/Stop time options to organaize trading sessions.

The best practice is to use NinjaTrader Market Replay for adjusting parameters and getting some screen time before you can start. For more info on using Market Replay please visit this page http://www.mzpack.pro/en/how-to-use-ninjatrader-market-replay/

Workspaces for **E-mini S&P500, CL** and **6E futures** are within installation. Workspaces templates start with mz___. To load workspace please choose in NinjaTrader main menu: **File – Workspaces – Open Workspace …** Then choose workspace and click Ok.



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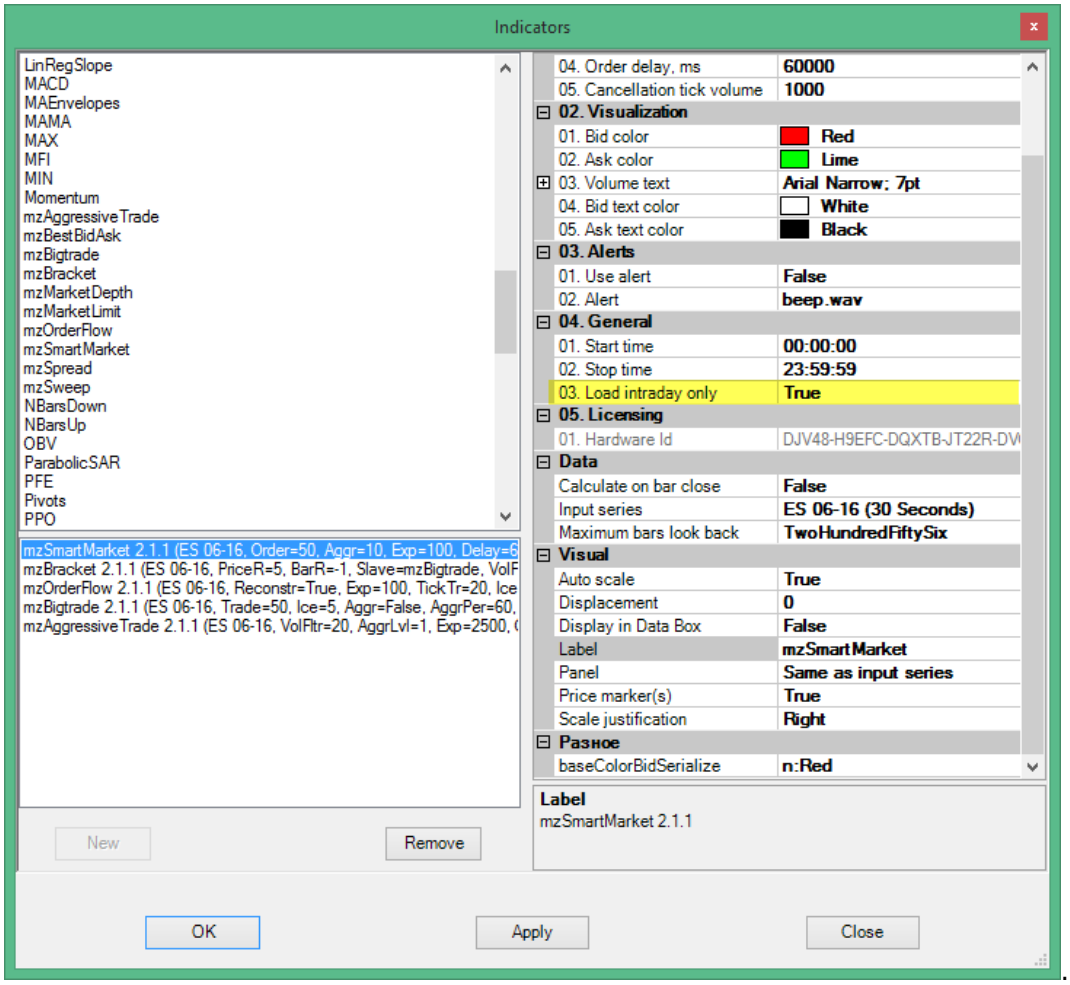
Performance notes

NinjaTrader may need big amount of system memory in some cases. To avoid this issue load only market data you really need. E.g. on 1 Tick charts you absolutely don't need to load yesterday historical data. So set **Days to load** parameter of **ANY TICK** chart to **0** (i.e intraday market data only) **BEFORE** applying any of MZpack chart templates or indicators to it.

All MZpack orderflow-based indicators have parameter to control amount of market data loaded for tick charts. It setted to "Intraday data only" by default. If you need more historical data on chart set this parameter to **false** and control amount of loaded data by **Days to load** parameter.



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mzFootprint indicator

NOTE. mzFootprint for NinjaTrader 7 does not support Bid x Ask or Delta Footprint® styles on historical data. Use mzFootprint for NinjaTrader 8 to apply all available Footprint® styles on historical data.

Video Tutorial from MZpack 3 for NT8 https://www.youtube.com/watch?v=BXsM-07SLDo

Indicator settings

01. Style. Style of the Footprint® chart
    - Footprint® style
        a. BidAsk. Classical Bid x Ask Footprint®
        b. Volume. Traded volume
        c. Delta. Bid-Ask volumes delta
    - Cluster style
        a. Brick. Solid color fill of a price cluster
        b. Histogram. Partial solid color fill of a price cluster proportionally to its value
        c. None. No color fill
    - Cluster/Histogram scale
        a. Bar. Histogram scale calculated inside current bar only
        b. Chart. Histogram scale calculated among all bars visible on chart
        c. All. Histogram scale calculated among all loaded bars
    - Bar distance, px. Distance between next two bars on chart. This space is used to render Footprint®
    - Bar marker. Turn it on to replace default chart view style by Open-Close bar markers
    - Cluster. Color for price slot
    - Delta. Show Delta value above or under bars
    - Negative delta. Color for negative delta (including slot color for Brick/Histogram styles
    - Positive delta. Color for positive delta (including slot color for Brick/Histogram styles
    - Saturation. Use saturation to visualize volume and delta values
    - Values. Show values
    - Values color.
    - Values font.
02. Filters

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- Value filter. All values and its corresponding clusters less than this parameter will not be shown

03. Bar Volume Profile
    - POC. Show Point Of Control for each bar
    - POC. POC line
    - VA. Show bar Value Area
    - VA, %. Value Area percentage
    - VA. Value Area line
04. Session Volume Profile
    - POC. Show developed Point Of Control for each session
    - POC. POC line
    - VA. Show session developed Value Area
    - VA, %. Value area percentage
    - VA. Value area line
05. Patterns
    - Imbalance. Show diagonal Bid-Ask Imbalance
    - Imbalance, %. Imbalances percentage
    - Imbalance filter. Filter by traded volume on imbalance side
    - Bid. Color for Bid imbalance
    - Aks. Color for Ask imbalance
    - Imbalance font
    - Absorption. Show Absorptions
    - Absorption, %. Absorptions percentage
    - Absorption depth. Means how far price bounces from the level of absorption. In ticks
    - Absorption filter. Filter by traded volume on absorption side
    - Bid absorption. Border for absorption marker at Bid
    - Ask absorption. . Border for absorption marker at Ask
06. Notifications
    - Imbalance alert
    - Imbalance sound
    - Absorption alert
    - Absorption sound
    - Send Email. Send email message on Imbalance/Absorption
    - Email address
07. Levels defaults. Default settings for new alert levels added to the chart
    - Level. Level line
    - Alert. Alert on conditions
    - Aler on. Condition for alert
        a. LevelCross

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b. LevelTouch

- Rearm. Rearm alert after it has been fired
- Rearm interval, sec. Alert will be rearmed after this period of time. Set to zero to rearm alert immediately after it has been fired
- Sound. Alert sound

For additional information: http://www.mzpack.pro/en/footprint-ninjatrader-indicator/

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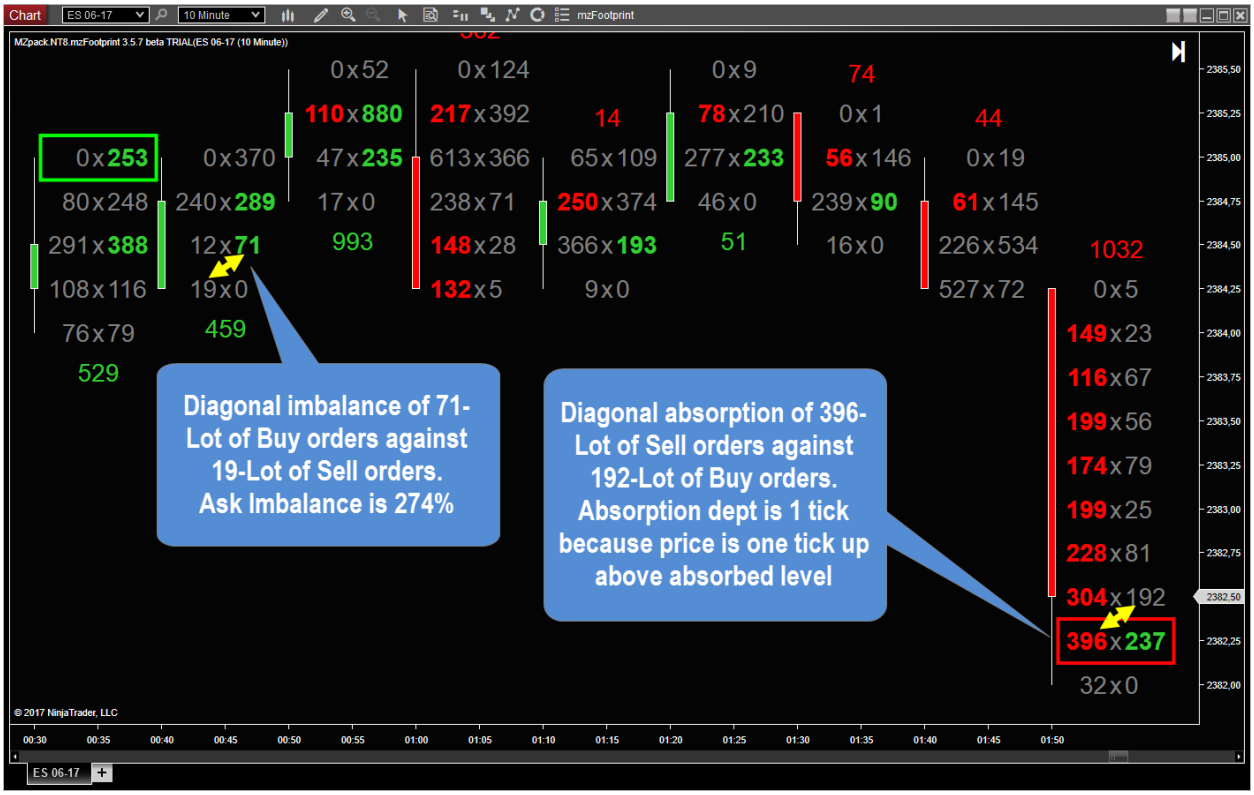
EXPLAINING IMBALANCE/ABSORPTION

mzFootprint calculates diagonal Imbalance. Diagonal imbalance e.g. at Ask means that volume of filled Buy orders is greater by given percentage than volume of filled Sell orders at price just below that Ask price. See fig. 71-Lot at Ask @2384.50 is by 274% greater than 19-Lot at Bid @2384.25: (71/19 - 1) * 100 = 274%.

Absorption is a diagonal imbalance but with level rejection. Absorption depth (in ticks) means how far price bounces from the level of absorption.



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ALERT LEVELS

Hot keys to set and manage alert levels

- Add a level: Left Mouse Click + Left Shift key
- Remove a level: Left Mouse Click + Left Shift key on a level
- Adjust level duration: Left Mouse Click + Left Alt key on a level
- Open level settings window: Left Mouse Click on a level

Levels with Alerts from MZpack 3 for NT8 https://www.youtube.com/watch?v=Yu-ol6FjYAE

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mzBigtrade indicator

In opposite to other big trades indicators mzBigtrade indicator can displays big trades as exact as one tick of price. In **Levels** drawing mode thanks to aggregation feature you will see exact price levels instead of fuzzy overlapped bubbles on the chart.

For more details on how to setup and trade with mzBigtrade indicator visit this page http://www.mzpack.pro/en/bigtrade-ninjatrader-indicator/

Parameters

- **Trade filter.** Trade **display** filter.
- **Iceberg filter.** Orders (trades) filled by hidden liquidity **display** filter.
- **Aggregate.** Aggregate or not trades passed aggregation filter.
- **Aggregation period.** Period of aggregation in seconds.
- **Trade aggregation filter.** Trade **aggregated** if volume is greater than or equla to aggregation filter.
- **Iceberg aggregation filter.** Orders (trades) filled by hidden liquidity **aggregation** filter.
- **Marker**. Marker for trades: Levels, Bubbles, Boxes
- **Marker position**. Marker position relative to trade or group of aggregated trades: **First** – first tick, **Last** –last tick, **Hi** – highest price, **Lo** – lowest price, **POC** – volume Point Of Control.
- **Sell level line**. Line for sell trades: color, dash style, thickness (width).
- **Buy level line**. Line for buy trades: color, dash style, thickness (width).
- **Max level length.** Maximal length of support/resistance level line in bars of chart. Applied to maximal trade (or group of trades). All other levels' lines will be proportional to maximal level.
- **Scale level thickness.** Scale level line thickness proportionally to trade volume.
- **Max shape extent.** Maximal marker shape extent in chart bars.
- **Min shape extent.** Minimal marker shape extent in chart bars.
- **Ask shape color.**
- **Bid shape color.**
- **Iceberg color**. Color for iceberg volume and marker borders for trades with icebergs.
- **Volume text font**
- **Ask volume in shape color**
- **Bid volume in shape color**
- **Draw levels on right margin**
- **Use alert.** Use or not alert on big trade
- **Sell alert.** WAV file for big Sell trade alert
- **Buy alert.** WAV file for big Buy trade alert

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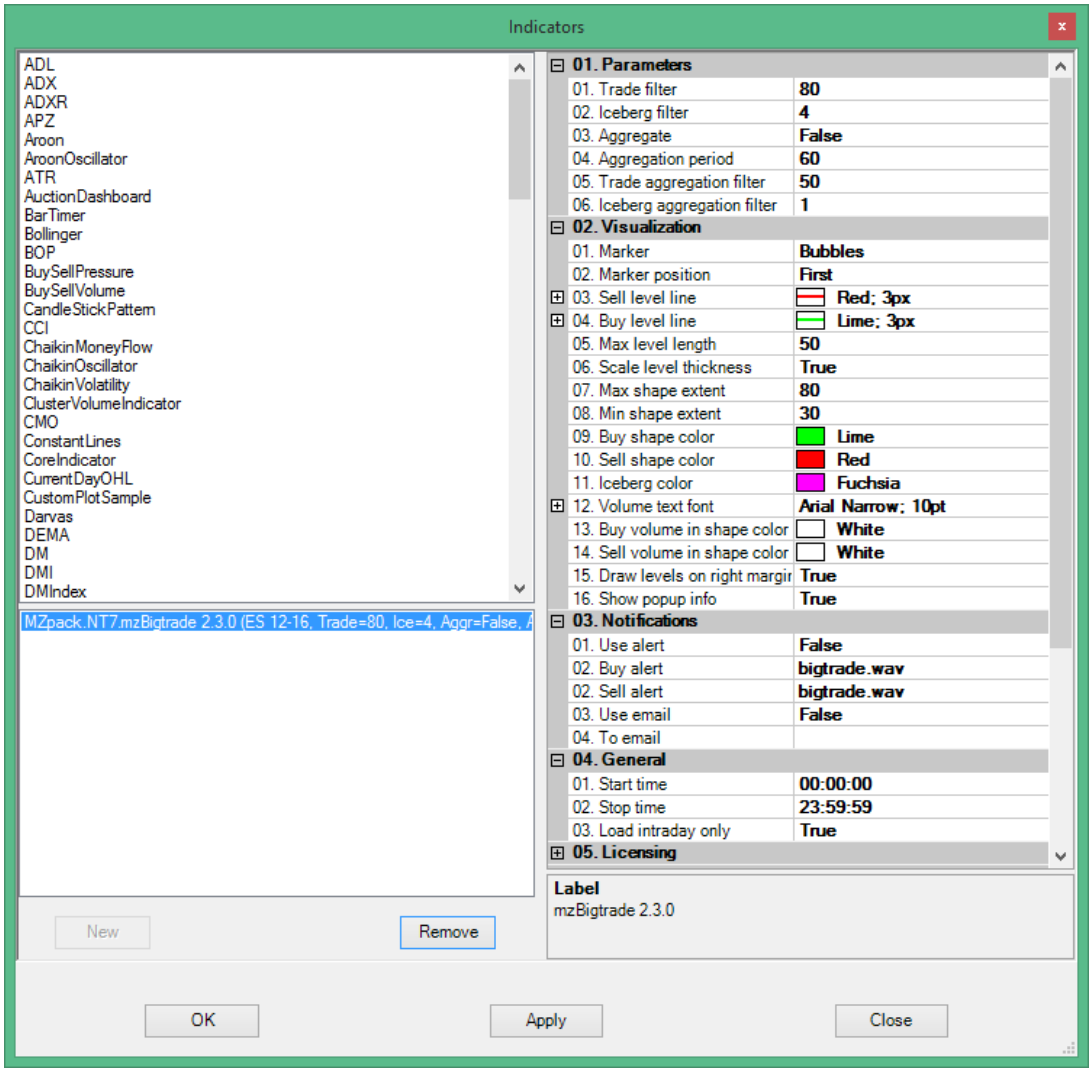
- **Use email.** Use email notifications on big trade
- **To email.** Email address for email notifications



Additional data series in strategy mode

- **Id.** Trade internal id
- **StartPrice**. Start price
- **StopPrice**. Start price
- **Vol.** Trade volume. Greater than zero for buy trades and less than zero for sell trades. Equals to zero if no trade on current tick have passed filters.
- **Iceberg.** Iceberg volume in trade. Greater than zero for buy trades and less than zero for sell trades
- **AggrCount.** Number of aggregated trades

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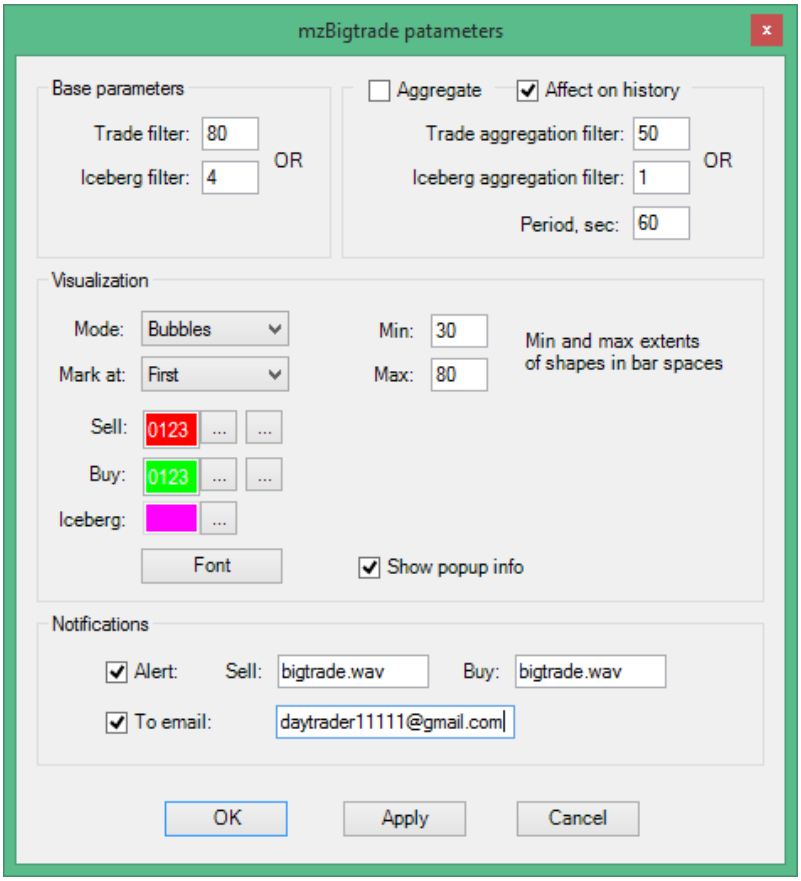

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EXPLAINING AGGREGATION MODE

mzBigtrade sums reconstructed trades passed aggregation filters in aggregation period. When sum is no less than display filter indicator draws a level or a shape. In both cases indicator uses OR logic for trade and iceberg filters. If aggregation period not ended new trades can be summed and level will be updated (volumes and price of the level). New aggregation period will start if prior period ended AND new trade passed aggregation filter.

Chart template mz___UserGuide_Bigtrade_1

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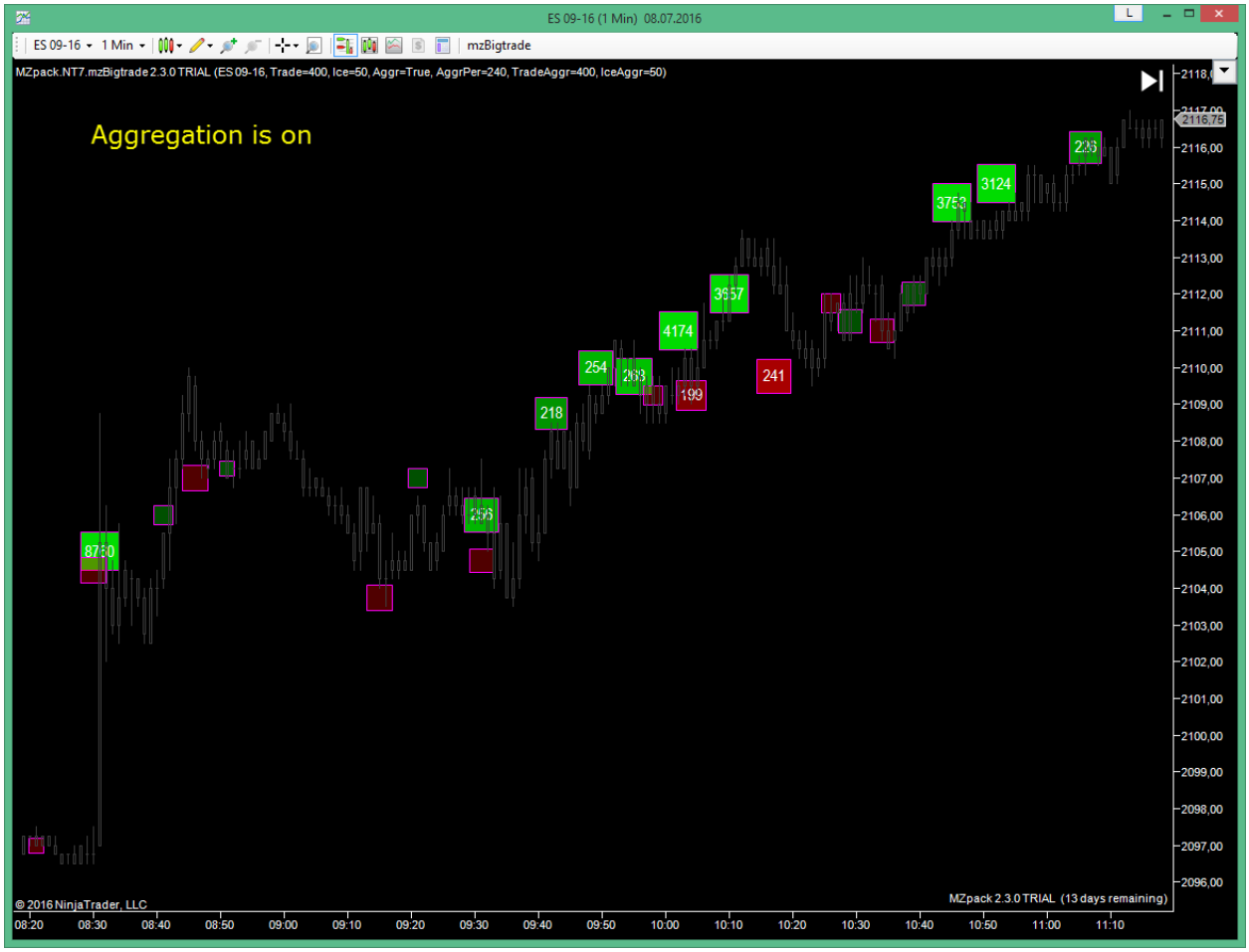

Chart template mz___UserGuide_Bigtrade_1

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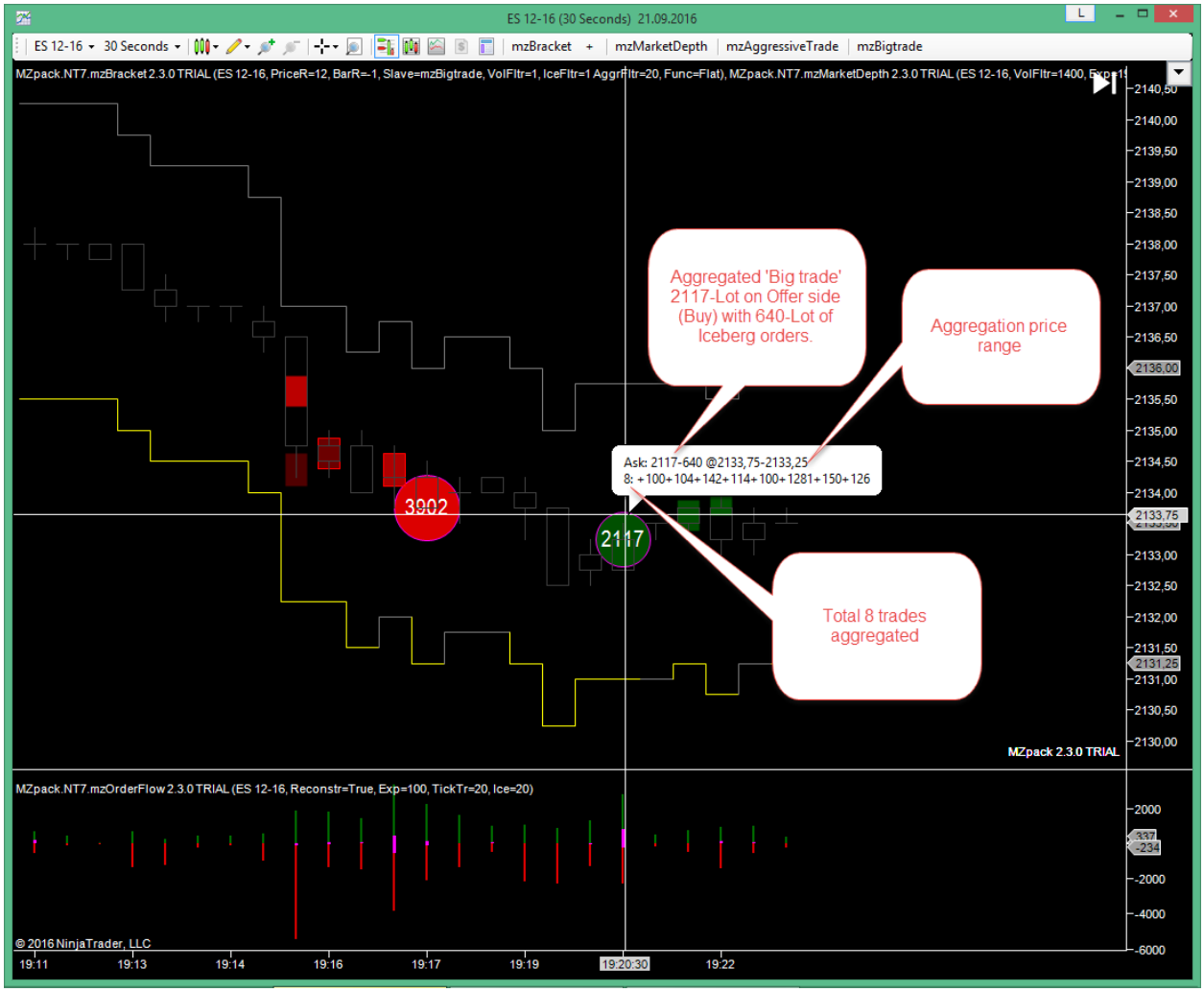
How to read big trade popup info.



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mzSmartMarket indicator

Displays market orders triggered by smart market during positon accumulation or exit. The first condition for this indicator to show to us SmartMarket order mark is liquidity absorption exactly on one or more price levels. In other words buyer or seller takes exact quantity of conrtacts resting in DOM by the best price or in some price range.

We recommend use mzSmartMarket on Range bars.

For more details on how to trade with mzSmartMarket indicator visit this page
http://www.mzpack.pro/en/smartmarket-ninjatrader-indicator/

Parameters

- **Orders display filter.** Market order volume filter for displaying
- **Orders aggregation filter**. Market order volume filter for aggregation. Must be less than or equal to Order display filter
- **Cancellation tick volume.** Max cancellation tick volume inside market order
- **Sell color.** Color for sell orders
- **Buy color**. Color for buy orders
- **Volume text font**. Volume text font
- **Sell text color**
- **Buy text color**
- **Show Rejections.** Show border for trades with level rejections.
- **Rejections filter.** Trades with rejections less than this value will be without bright borders
- **Use alert.** Use or not alert (sound and message on Alerts window)
- **Alert.** WAV file for alert

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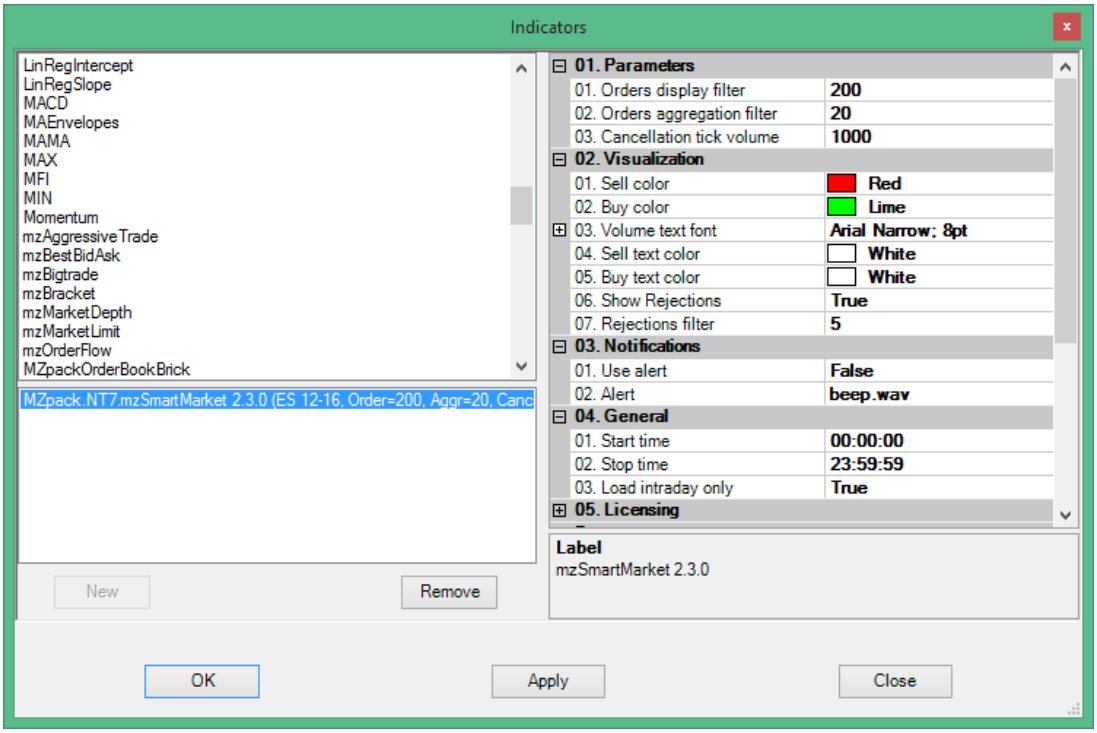

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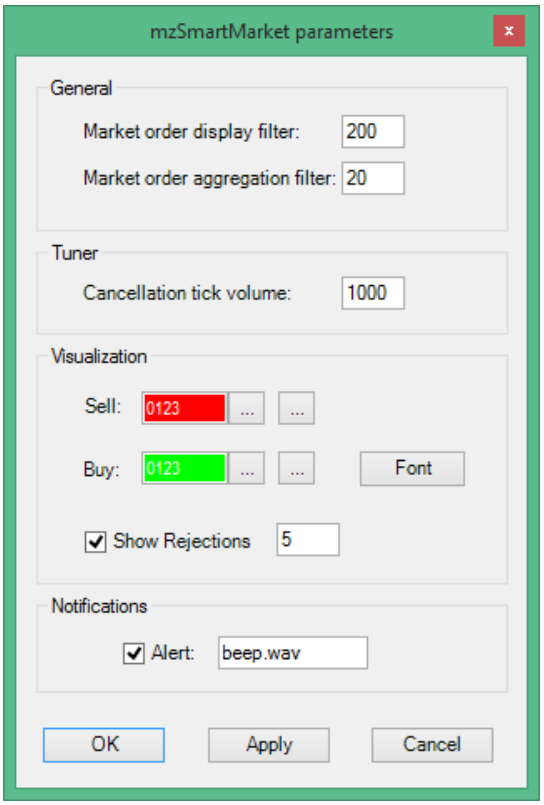
You can adjust and apply parameters “on the fly” – no need to reload indicator. Click mzSmartMarket button on chart toolbar to open Parameters windows.



Additional data series in strategy mode

- **Id.** Trade internal id
- **StartPrice**. Start price
- **StopPrice**. Start price
- **Vol.** Trade volume. Greater than zero for buy trades and less than zero for sell trades. Equals to zero if no trade on current tick.
- **Iceberg.** Iceberg volume in trade. Greater than zero for buy trades and less than zero for sell trades
- **AggrCount.** Number of aggregated trades

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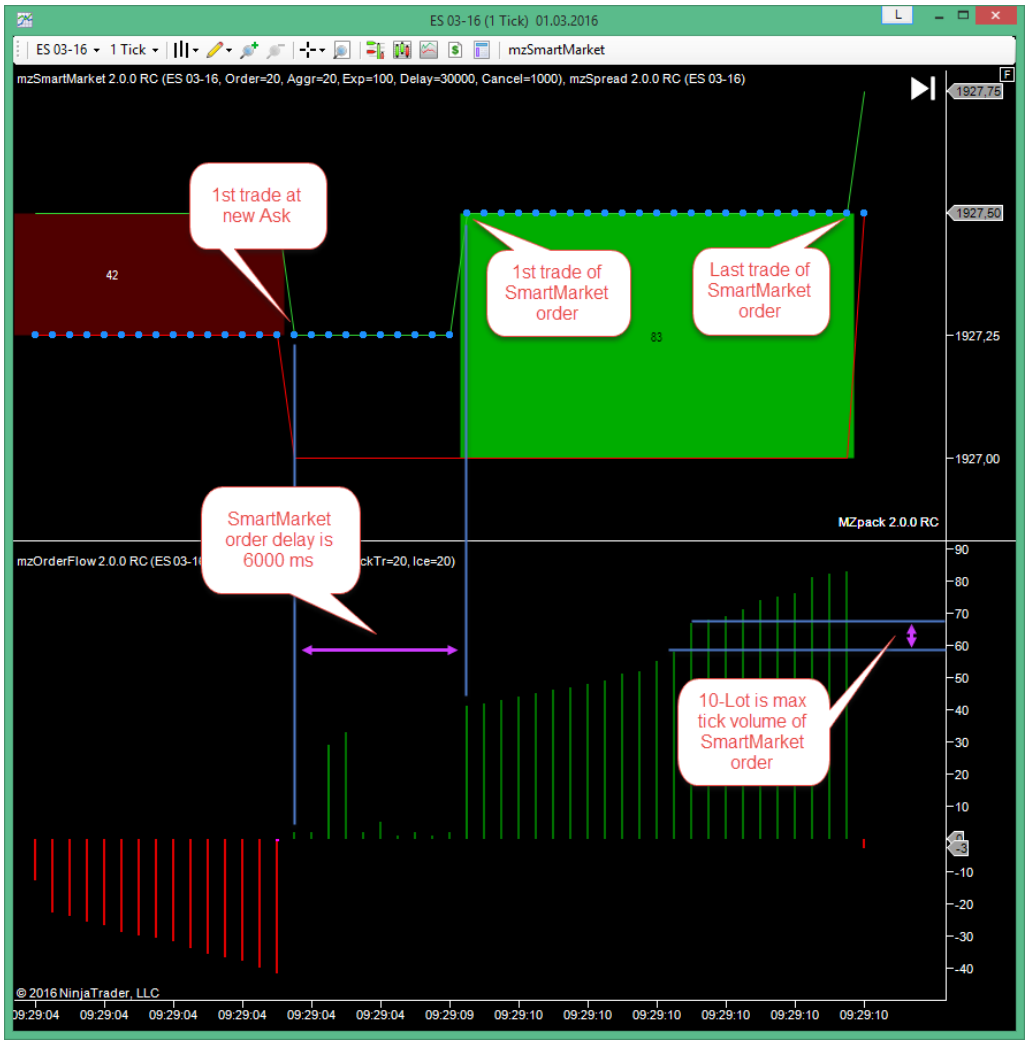
To tune SmartMarket indicator use **Cancellation tick volume** parameter. If any of tick volume inside SmartMarket order is greater than or equal to Cancellation tick volume then this order will not be detected as smart-market order. Use this parameter to avoid detection of orders filled by big limit orders. Big limit orders usually belongs to big money standing on the way of movement.



REJECTIONS

Rejection of price level happnes when new limit orders placed on price level right after its absorption. **Rejections filter** allows trader to see this processes. Big values of Rejection tells that this is good defended strong price level.

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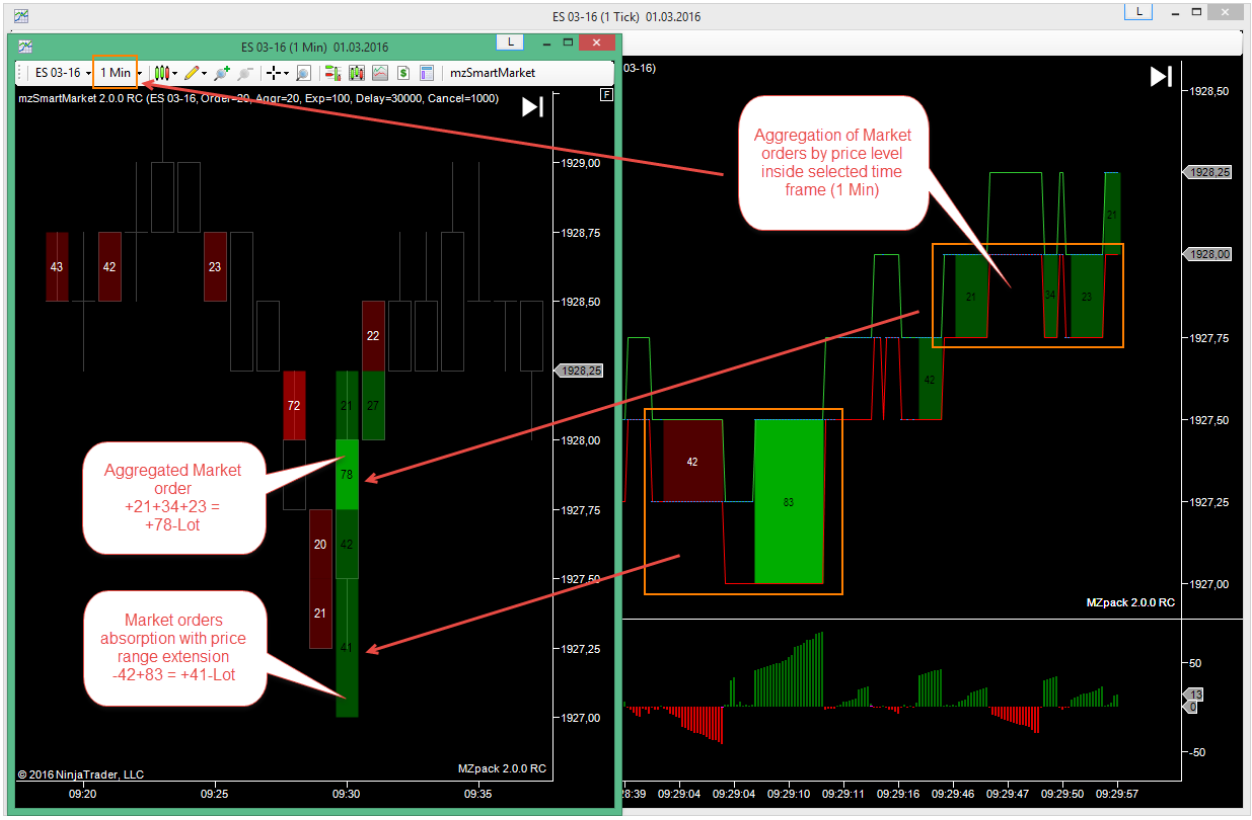
EXPLAINING MARKET ORDERS AGGREGATION

mzSmartMarket indicator supports aggregation of orders by time and price. E.g. place mzSmartMarket on 1 Min chart if you want to aggregate market orders inside 1 Min bars on each price or range of prices (it depends on actual orders execution range). Algo will aggregate all intersected market orders passed aggregation filter.

In this example SELL market order 42-Lot intersects with BUY market 83-Lot traded on 2 price levels. Now we got aggregation BUY 41-Lot on @1927.0-1927.5 prices. If some market order will occur in this price range or even will intersect it inside 1 Min bar, e.g. @1927.25-1927.75, it will be aggregated with 41-Lot BUY market order.



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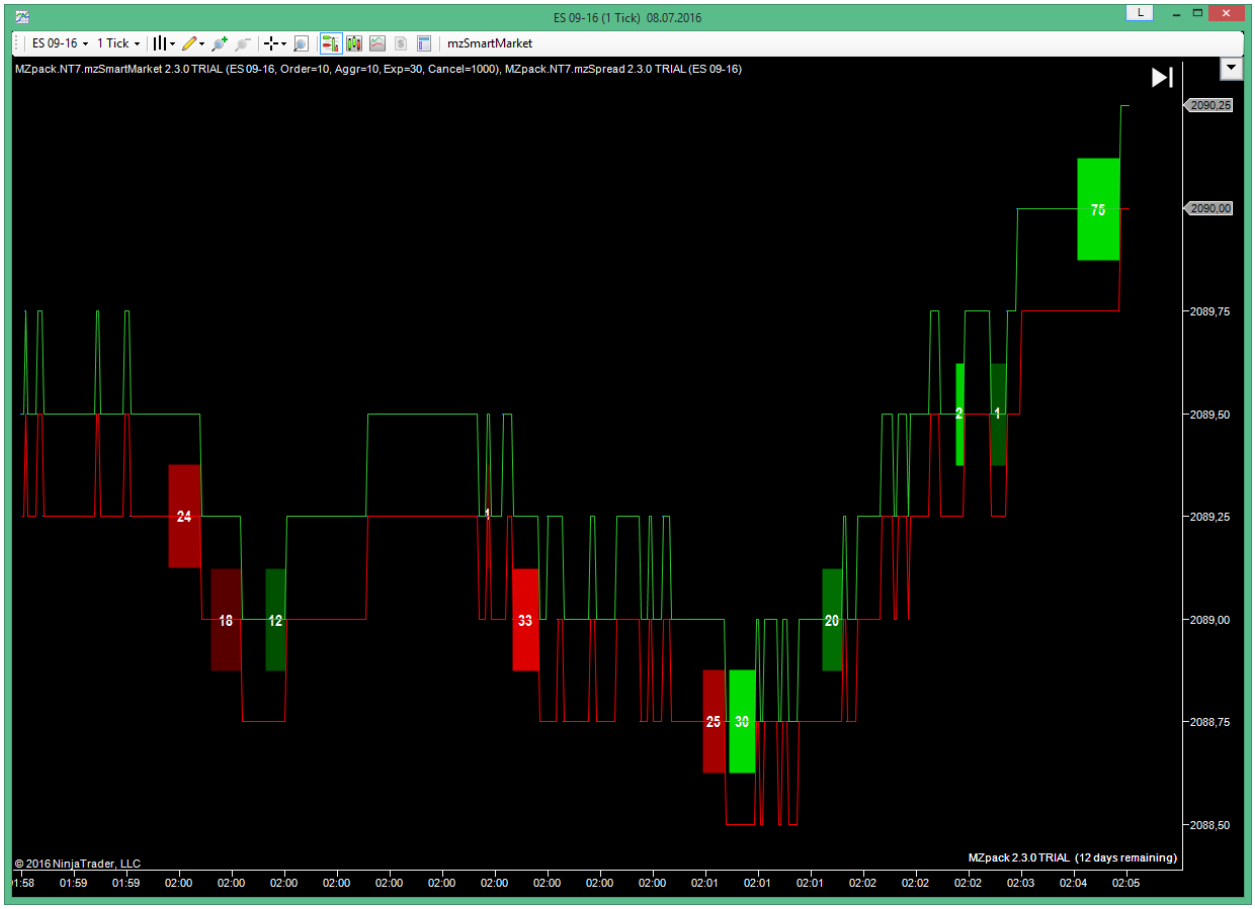

Chart template mz___UserGuide_SmartMarket_1

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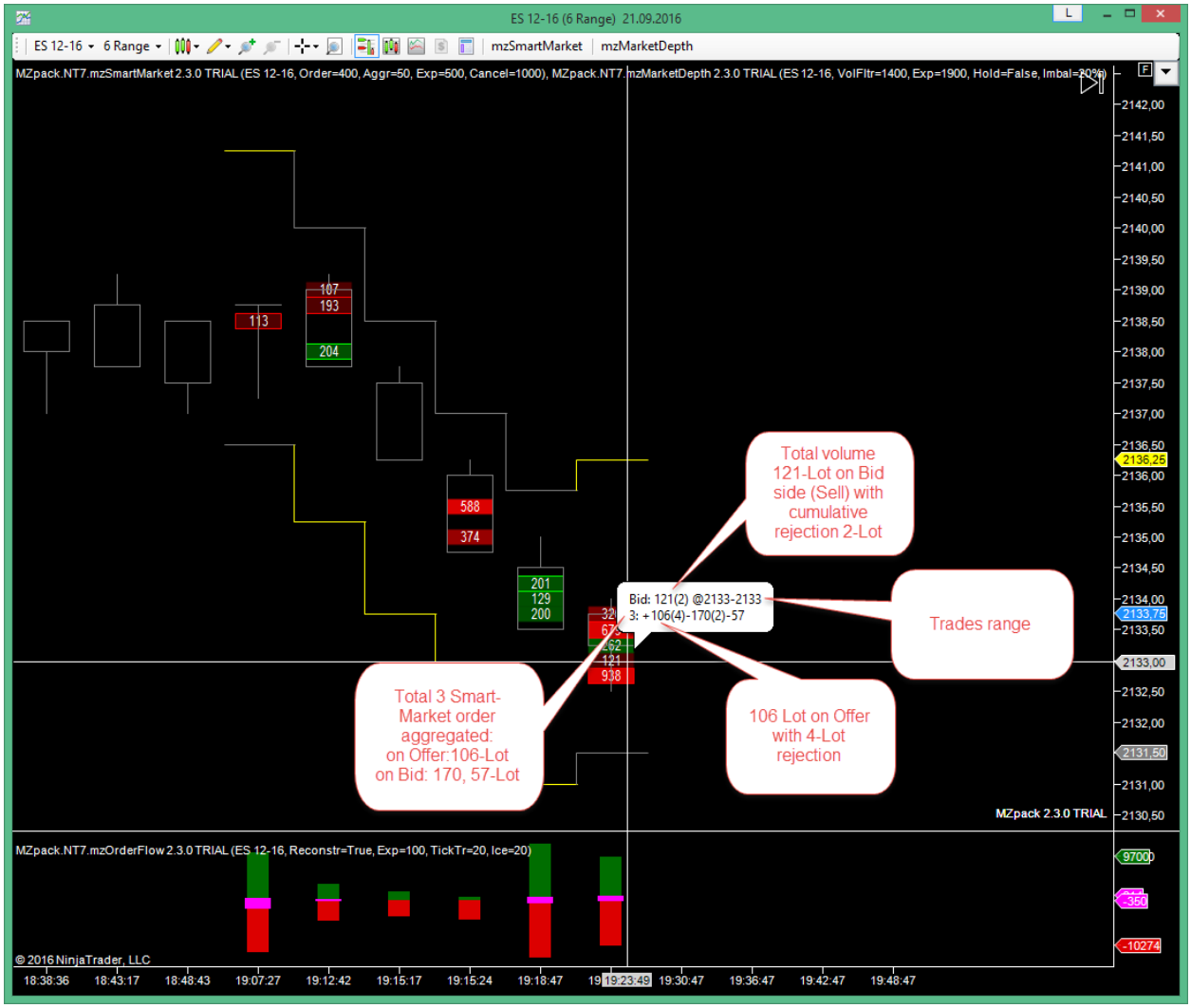

Chart template mz___UserGuide_SmartMarket_2

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mzAggressiveTrade indicator

AggressiveTrade indicator is based on direct analysis of order flow. An aggressive trade always moves the market. Indicator collects local events in market microstructure to show kind of a big picture or local initiative and spots start of a momentum. This indicator can be used on any type of chart.

For more details on how to setup and trade with mzAggressiveTrade indicator visit this page http://www.mzpack.pro/en/aggressivetrade-ninjatrader-indicator/

Parameters

- **Volume filter**. Reconstructed trade volume filter. Trades with volume less than this parameter will not be displayed.
- **Aggression level.** Aggression level filter. Can be value 1, 2, 3 etc. It means tick quantity which aggressive trade moves the price.
- **Outline "multiple of" volumes.** Outline circles for trades volume multiple of this value.
- **Apply "multiple of" filter.** Apply or not "Volume is multiple of" filter (see next parameter)
- **"Volume is multiple of" filter.** Show only trades with volume is multiple of this value. E.g. set value to 50 to see only 50, 100, 150-Lot trades.
- **Drawing mode**. Bubbles, Boxes.
- **Maximum radius.** Maximum radius of bubbles in bar's width.
- **Minimum radius.** Minimum radius of bubbles in bar's width.
- **Bid color.** Color for aggressive sell trades
- **Ask color.** Color for aggressive buy trades
- **Use alert.**
- **Sell alert.** WAV file for aggressive Sell trade alert
- **Buy alert.** WAV file for aggressive Buy trade alert

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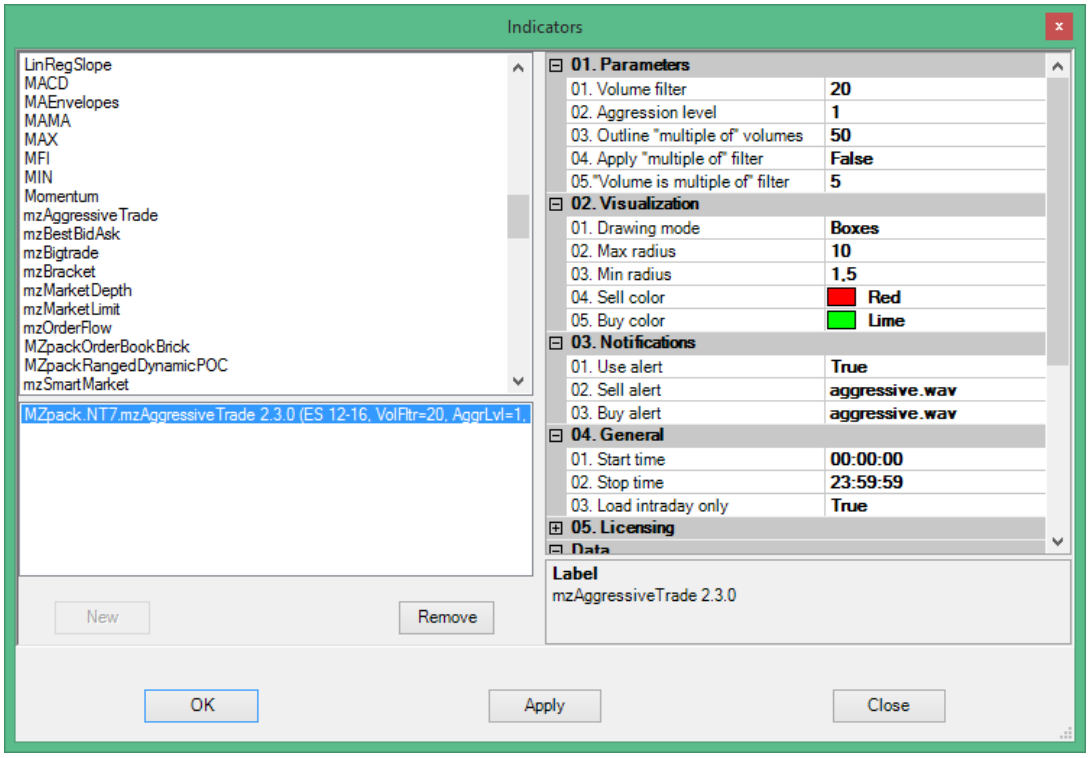
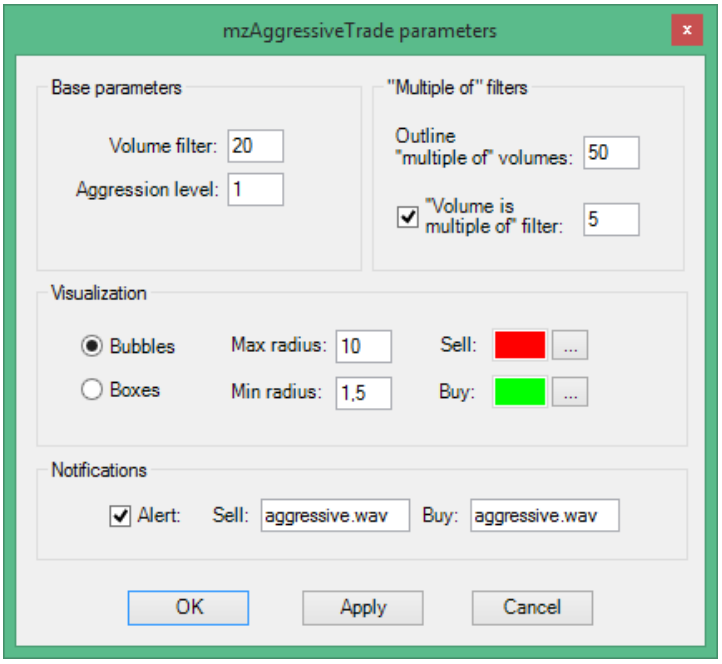


You can adjust and apply parameters “on the fly” – no need to reload indicator. Click mzAggressiveTrade button on chart toolbar to open Parameters windows.



Aggressive trade can be initiative or triggered stop-loss orders. Statistically more likely bunch of triggered stop-loss orders will have multiple of 1 volume. And aggressive trade with

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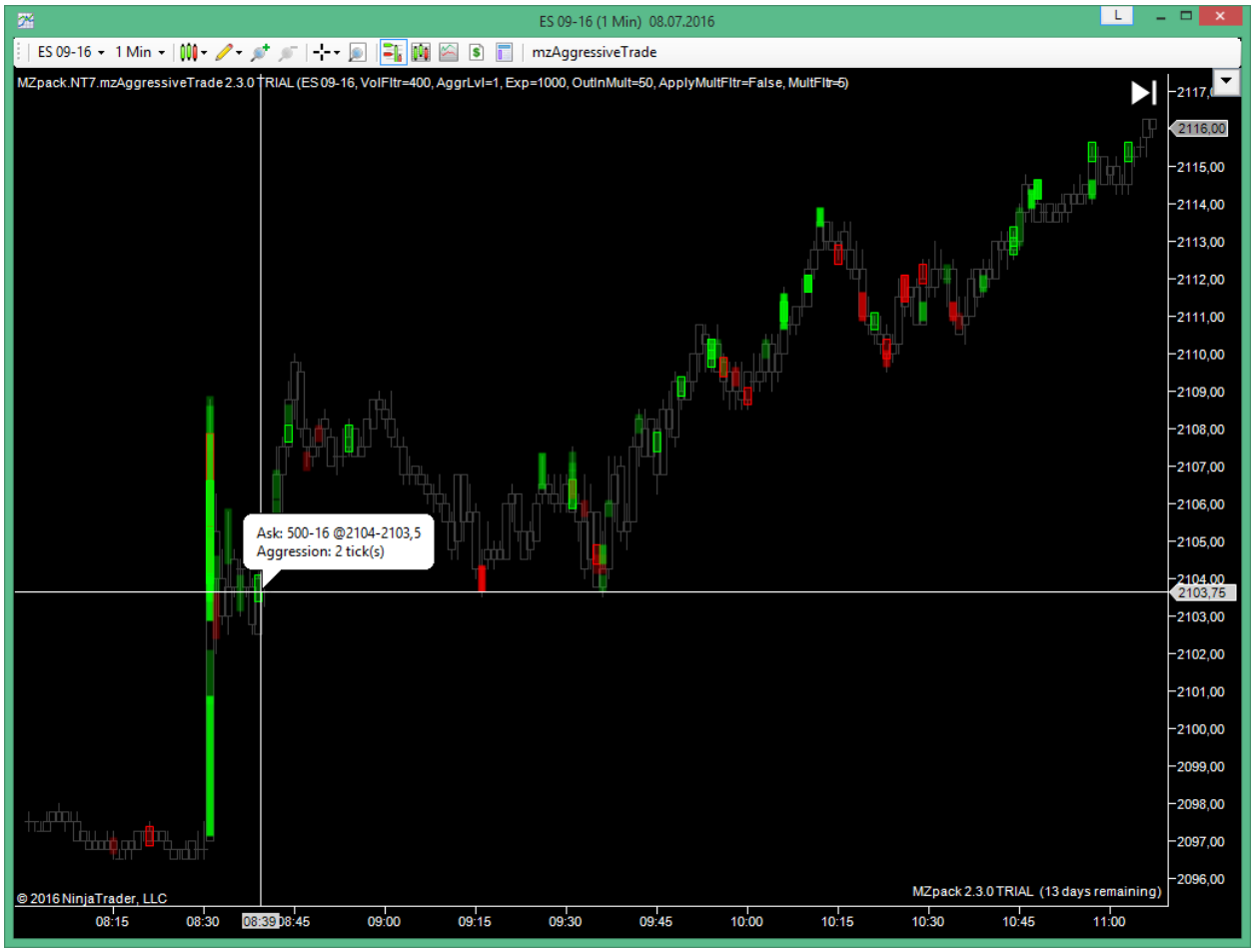
multiple of 10-100 statistically more likely submitted by big player (not "smart money" every time, but "big money"). And we can consider it as a single initiative market order.

Another question is that "rounded" aggressive trades can be not entries but exits (take profit orders e.g.). So please look at aggressive trades in some bigger context if you want to take targets more than 4-5 ticks.



Шаблон mz___UserGuide _AggressiveTrade _1

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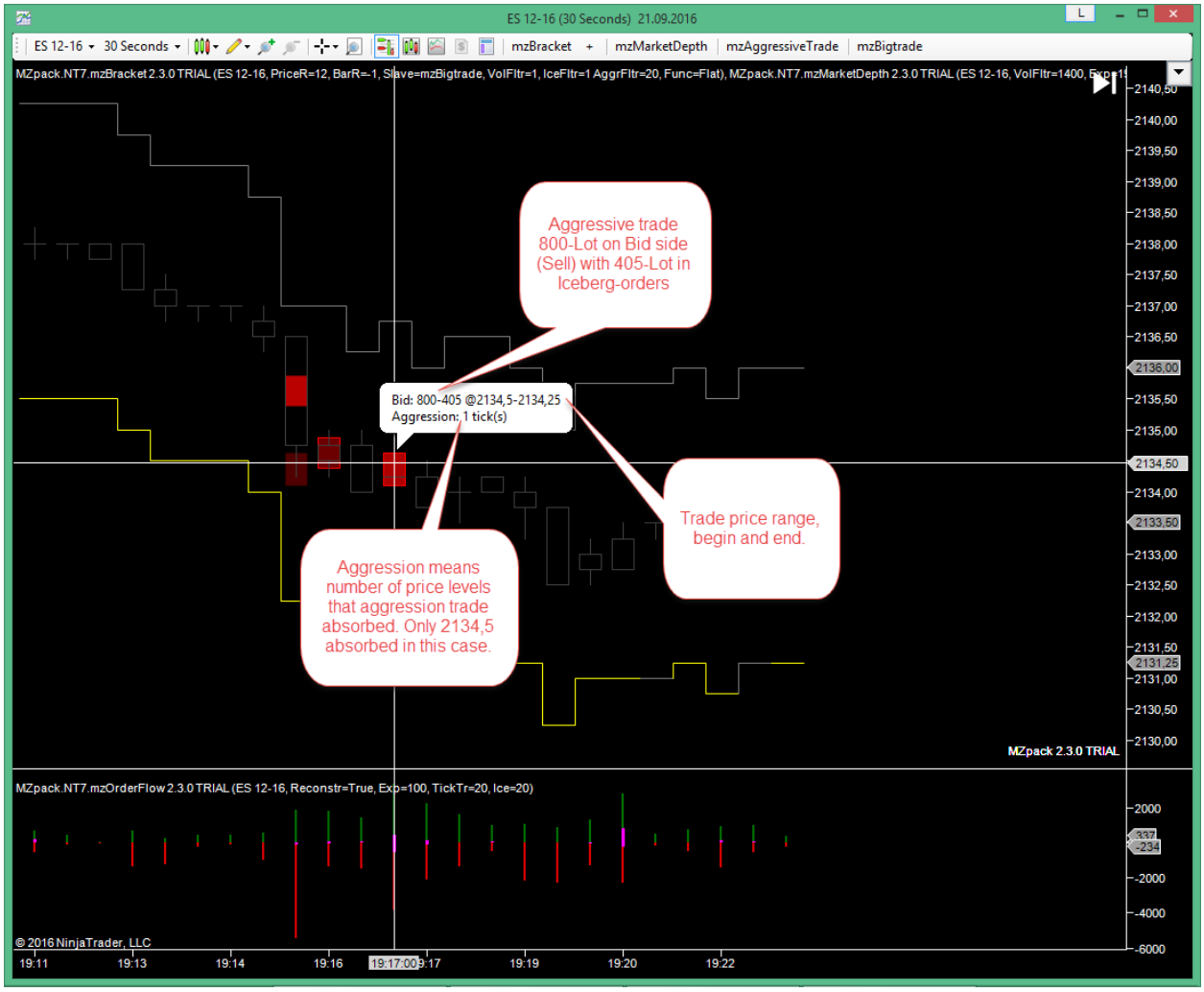
How to read aggressive trade popup info.



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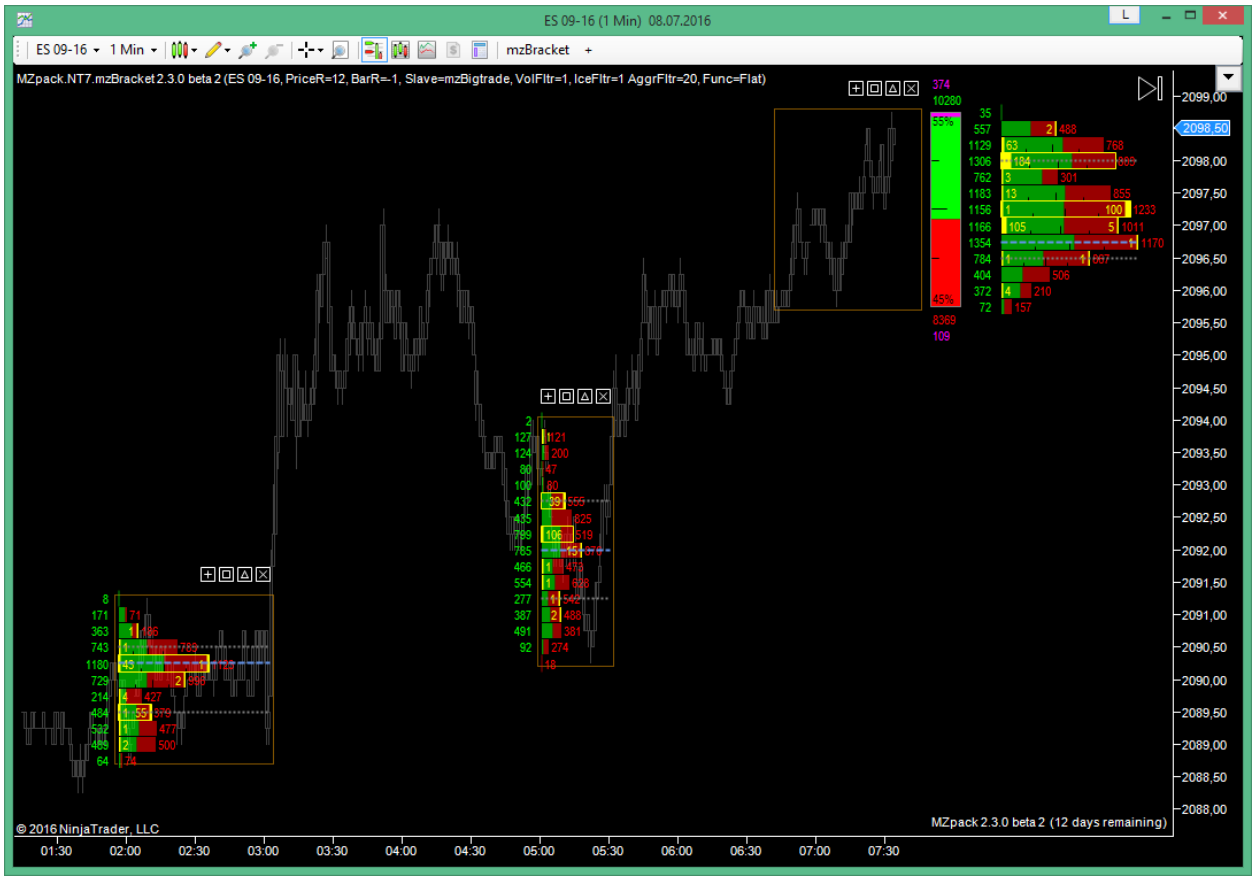
mzBracket indicator

mzBracket cumulates and process traded volumes and microstructure data of other MZpack indicator (or slave indicator) in given range or bracket. As a slave indicator trader can pick mzBigtrade, mzAggressiveTrade or mzSmartMarket indicator. In TRIAL version you can pick only mzBigtrade. Also filters can be applied to slave indicators. Volume profile builded by volumes coming from slave indicator. The gauge at right side of the bracket displays balance between bid and ask volumes provided by slave indicator.

You can interactively add unlimited number of brackets (with VP and gauge) and change its parameters: extents, filters etc. Use bracket buttons to interact with it. To add new bracket click “+” button on toolbar or on [+] bracket button (in that case new bracket with settings identical to selected bracket setings will be added). Then click left mouse button at bracket begin and then click at bracket end.

Demo video: https://www.youtube.com/watch?v=-AagnMy_Nl8



Шаблон mz___UserGuide_Bracket_1

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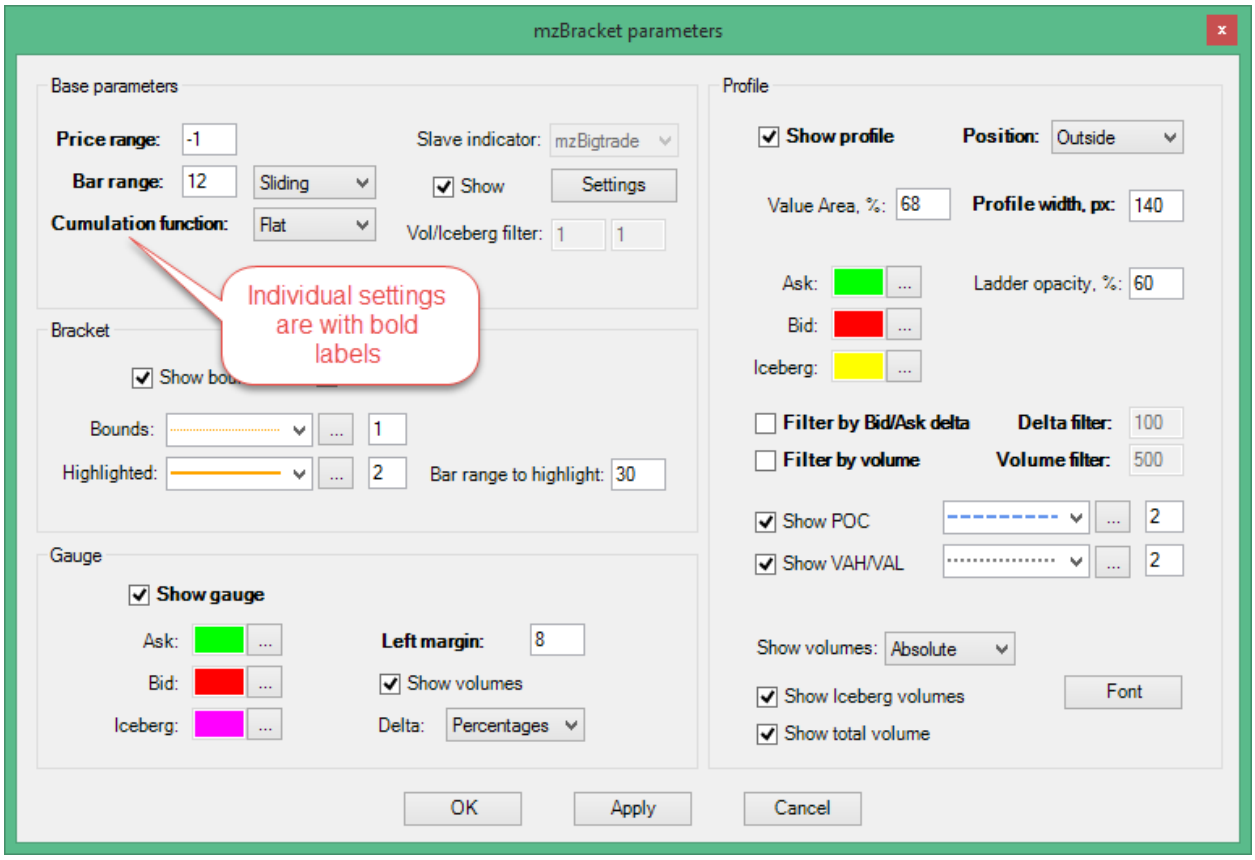
To open on-the-fly parameters window double click inside bracket, on delta gauge or on volume profile. Individual bracket parameters labled by bold font. Those parameters enabled only when particular bracket was selected or the only bracket stays on chart. To make bracket selected click on its border.



Maximal bracket range defined by **Price range** and **Bar range** parameters. Price range has priority before Bar range. For unlimited range use -1.

Indicator provides listed bar range types:

- **Sliding.** Range slides with the price. You can specify both price and bar ranges.
- **Developing.** Sliding range with static begin. Interactively added brackets containing current bar get Developing bar range type. Price and bar ranges ignored
- **Static.** Static begin and end of bracket. Price range ignored. Brackets added on historical bars have Static range type.

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Parameters

- **Bar range type.** You can adjust this parameter only from on-the-fly parameters window. **Sliding** – maximal bar range restricted by Bar range parameter. **Developing** – static start of range (selectable by mouse). **Static** – static begin and static end of range.
- **Price range.** Range of bracket in ticks. Set to -1 for infinite price range.
- **Bar range**. Range of bracket in bars. Set to -1 in **Sliding** mode for infinite bar range.
- **Slave indicator**. Volume provider for cumulation and processing: **mzBigtrade, mzAggressiveTrade, mzSmartMarket**. In TRIAL version only mzBigtrade available
- **Slave indicator volume filter**. Always 1 in TRIAL version
- **Slave indicator iceberg filter.** Applied to mzBigtrade slave indicator only. Always 1 in TRIAL version.
- **Slave indicator volume aggr. filter**. Applied for mzSmartMarket slave indicator only
- **Volume cumulation function.** How to cumulate volumes inside bracket: **Flat, Linear, Exponential**. Read more below.
- **Profile VA, %.** Value Area %.
- **Filter profile by Bid/Ask delta.**
- **Profile Bid/Ask delta filter.** Profile ladders with delta less than this value not showed.
- **Show total volume.** Show total volume traded inside bracket

Visualization

- **Show slave indicator.**
- **Show bracket bounds.**
- **Bracket bounds.** Line for bounds
- **Bar range to highlight.** Highlight bracket bounds if bracket bar range is greater or equal to that parameter
- **Bracket bounds highlighted.** Line for highlighted bounds.
- **Show gauge.** Show delta gauge
- **Gauge ask color**.
- **Gauge bid color**.
- **Gauge iceberg color.**
- **Gauge left margin.** Space between barcket and gauge.
- **Show gauge volumes.**
- **Gauge Delta display mode.** How to display delta on gauge: **None** – not showed, **Absolute** – absolute delta, **Percentages** – delta in percentages.
- **Show buttons.** Show control buttons on chart

Profile visualization

- **Show profile.** Show Volume Profile
- **Profile position. Inside** – inside bracket. **Outside** – outside of bracket.
- **Profile width.** Width of volume profile in percentages (for **Inside** position) or in pixels (for **Outside** position).

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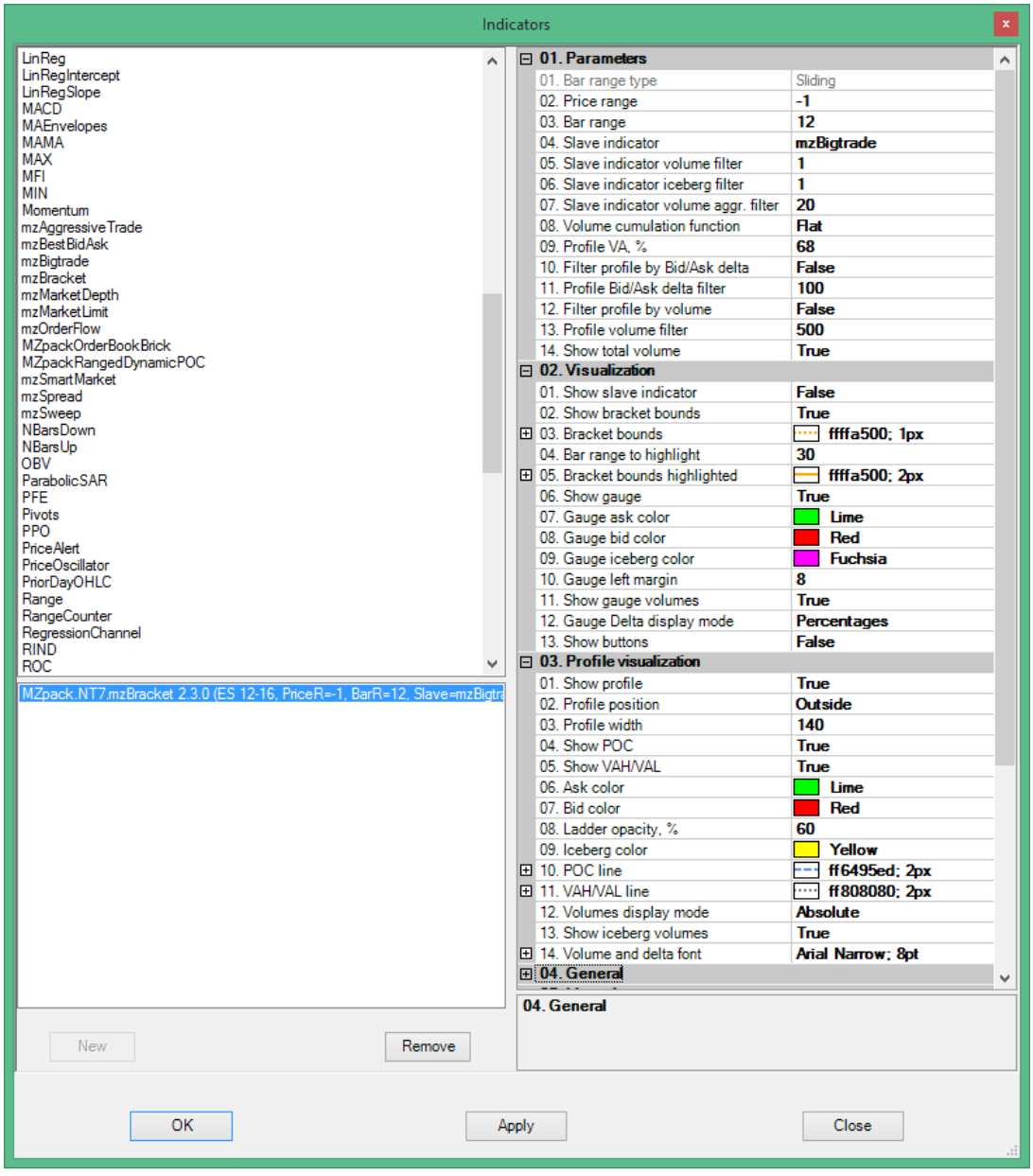
- **Show POC.** Show Point Of Control
- **Show VAH/VAL.** Show Value Area High/ Value Area Low
- **Ask color**
- **Bid color**
- **Ladder opacity, %**
- **Iceberg color**
- **POC line.** Line for Point Of Control drawing
- **VAH/VAL line.** Line for Value Area High/Low drawing
- **Volumes display mode. Absolute** – for displaying cumulated volumes for each ladder on bid and ask side**, Delta** – delta bid-ask for each ladder**, None** – no volumes.
- **Show iceberg volumes**. Show iceberg volumes inside ladders
- **Show total volume**
- **Volume and delta font**.



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VOLUME CUMULATION FUNCTION

Cummulation function has been added to differentiate volumes by its positions in developed bracket (e.g. by time on time framed charts).

Flat

All volumes cumulated as is.

Linear

Or directly-proportional. Each cumulated volume multiplied by ratio depending on volume's bar number inside bracket. Ratio is minimal inside first bar of a bracket (at left side) and maximal inside last bar (at right side).

Exponential

Bracket is considered as X-axis in {0..1} range. Each cumulated volume multiplied by ratio R = exp(X), e.i. R = {1..2,72}.

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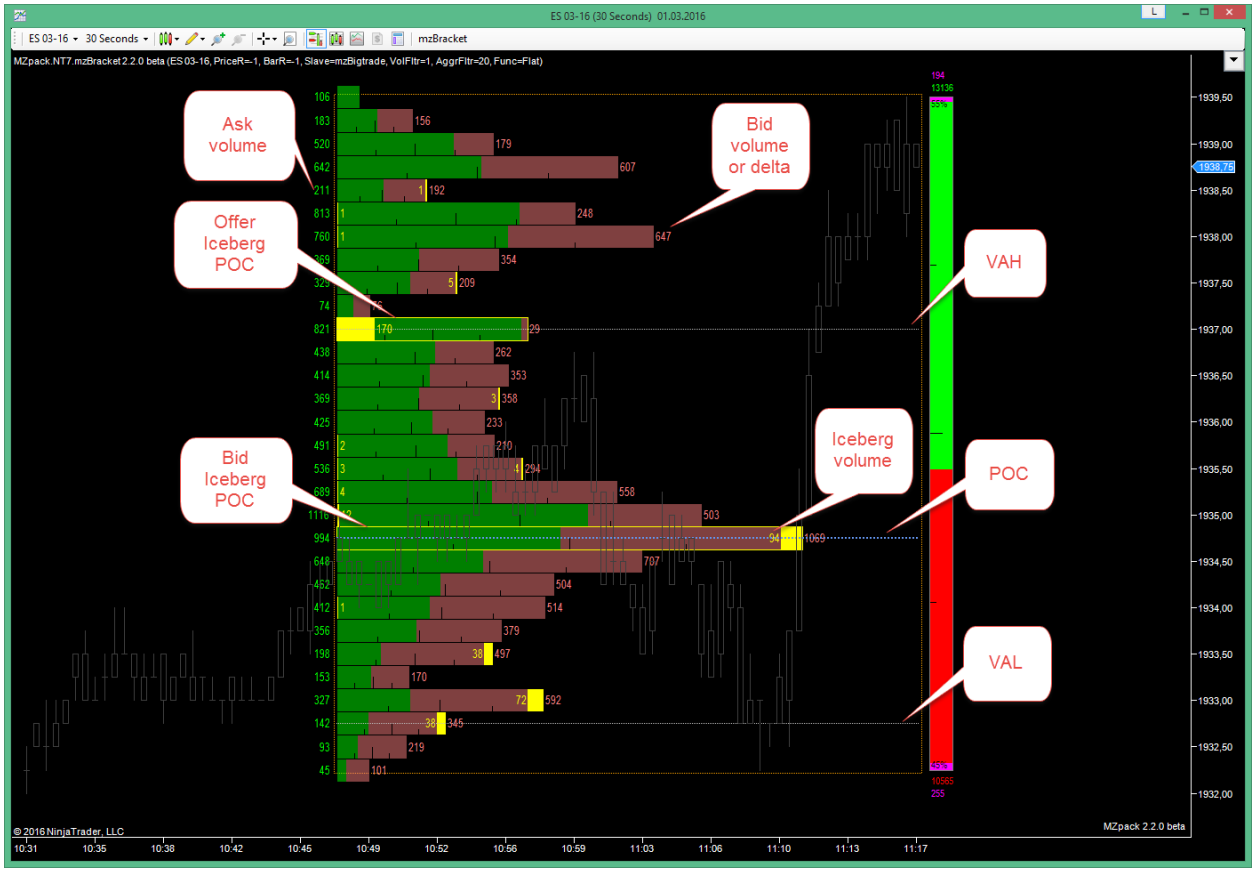

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mzMarketDepth indicator

The mzMarketDepth indicator displays orders resting in the DOM (Depth Of Market) and shows its on chart as historical data. This awesome order book NinjaTrader indicator can be placed on any type of chart from 1 tick to 30 minutes or more, renko bars, range bars etc.

mzMarketDepth allows display imbalance in order book. This imbalance is a result of uncertainty in current prices. Big imbalance leads to market auction begin. Prices tends to move to areas with higher liquidity forming well traded levels, value areas and ranges.

Indicator can hold maximal volumes on each DOM level with **Hold higher volume** option. Use **Hold levels** option to see strong DOM levels before price can reach it by Market Depth scope.

For more details on how to setup and trade with mzMarketDepth indicator visit this page http://www.mzpack.pro/en/marketdepth-ninjatrader-indicator/

Parameters

DOM filtering

- **Depth of market**. Visible depth of market in ticks. Use -1 for unlimited depth (for some instruments)
- **Filtering mode**. Absolute – filters are in contracts, Percentage – filters are in percentages
- **Percentage. Display volume, %**. Display only given % of volumes.
- **Percentage. Extreme volume, %**. Given % of volumes from bigger end treated as extremal.
- **Absolute. Display volume, contracts** This will show volumes greater than or equal to this value.
- **Absolute. Extreme volume, contracts.** Volumes greater than or equal to this value treated as extremal.
- **Bid.** Color for bids.
- **Offer.** Color for offers.
- **Extremal Bid.** Bid color if volume is extremal
- **Extremal Offer.** Offer color if volume is extremal
- **Offer text.** Offer volume text color
- **Bid text.** Bid volume text color
- **Extremal Offer text.** Offer text color if volume is extremal
- **Extremal Bid text.** Bid text color if volume is extremal
- **Code extremal.** Code extremal volumes by color saturation.
- **Hold higher volume.** Hold higher volumes inside current bar on each price level. If =True new incoming lower volume will not replace prior one. So you can see maximum volumes for levels in DOM. Use Hold = True with strong Volume filter.

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- **Hold levels.** Hold levels out of Market Depth scope.

Liquidity migration

- **Show liquidity migration.** Migration here means adding/removing of limit orders
- **Added volume filter**. Mark block with added liquidity of volumes greater than or equal to this value
- **Removed volume filter**. Mark block with removed liquidity of volumes greater than or equal to this value
- **Added offer.** Marker color for liquidity added on offer
- **Added bid.** Marker color for liquidity added on bid
- **Removed offer.** Marker color for liquidity removed from offer
- **Removed bid.** Marker color for liquidity removed from bid

Imbalance

- **Imbalance, %.** Difference between bids and offers volumes in percantages to display on order book edges. To change imbalance appearance use DOM_Hi, DOM_Lo plots.
- **Bid imbalance.** Color for imbalance on bid side
- **Offer imbalance.** Color for imbalance on offer side

Other

- **Show popup info.** Show detailed popup info on mouse move over order book block
- **Refresh delay, ms.** Time interval between indicator's refreshing on chart in milliseconds
- **Show volumes.** Show or not volumes from order book
- **Volume font.** Volume text font

Notifications

- **Use extreme alert.** Use or not alert on extremal volumes
- **Extreme alert.** Wav file for alert

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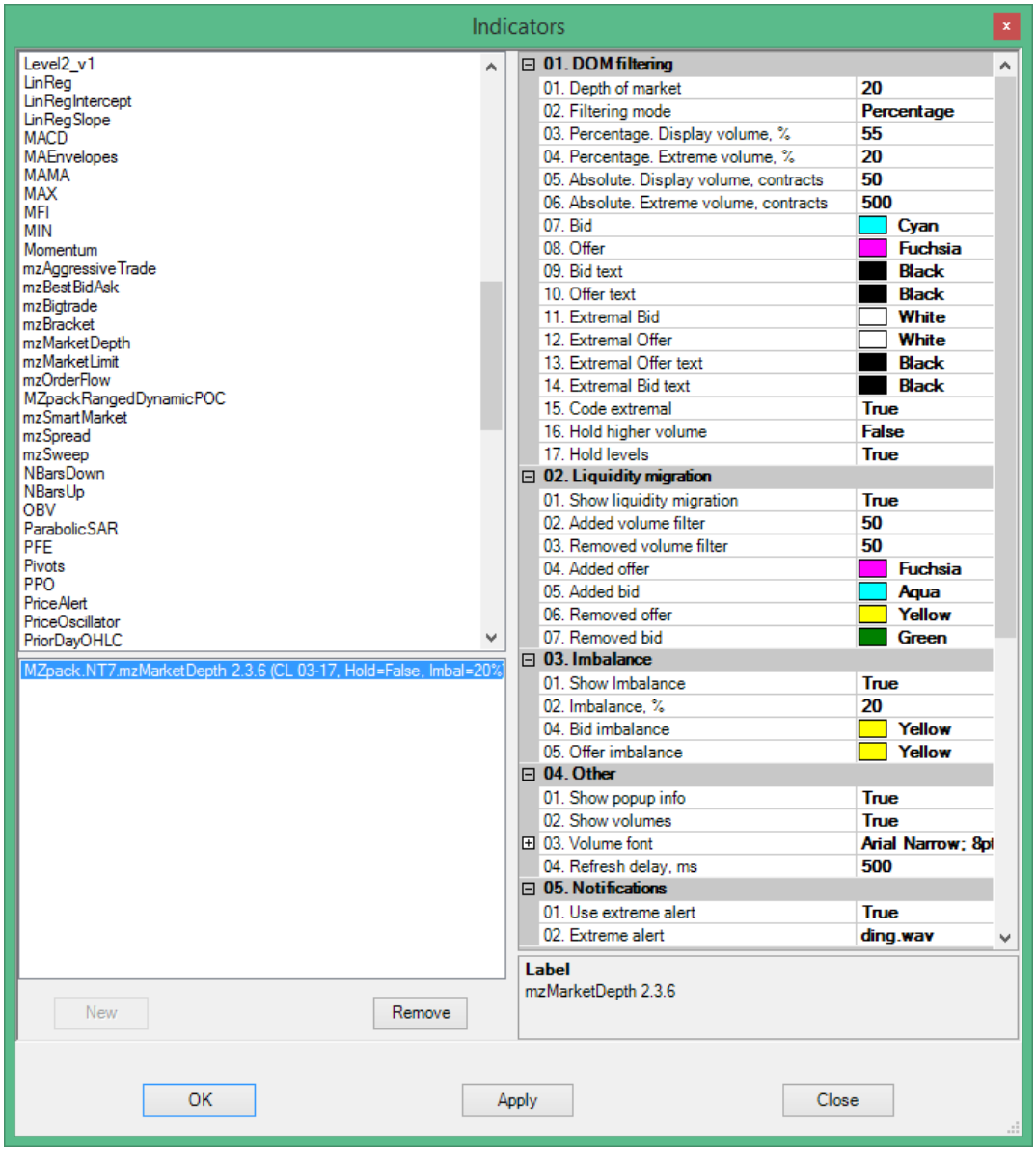

By default mzMarketDepth indicator autoscales chart to fit DOM on screen. If you don't want this set **Auto scale** = False in Visual section.

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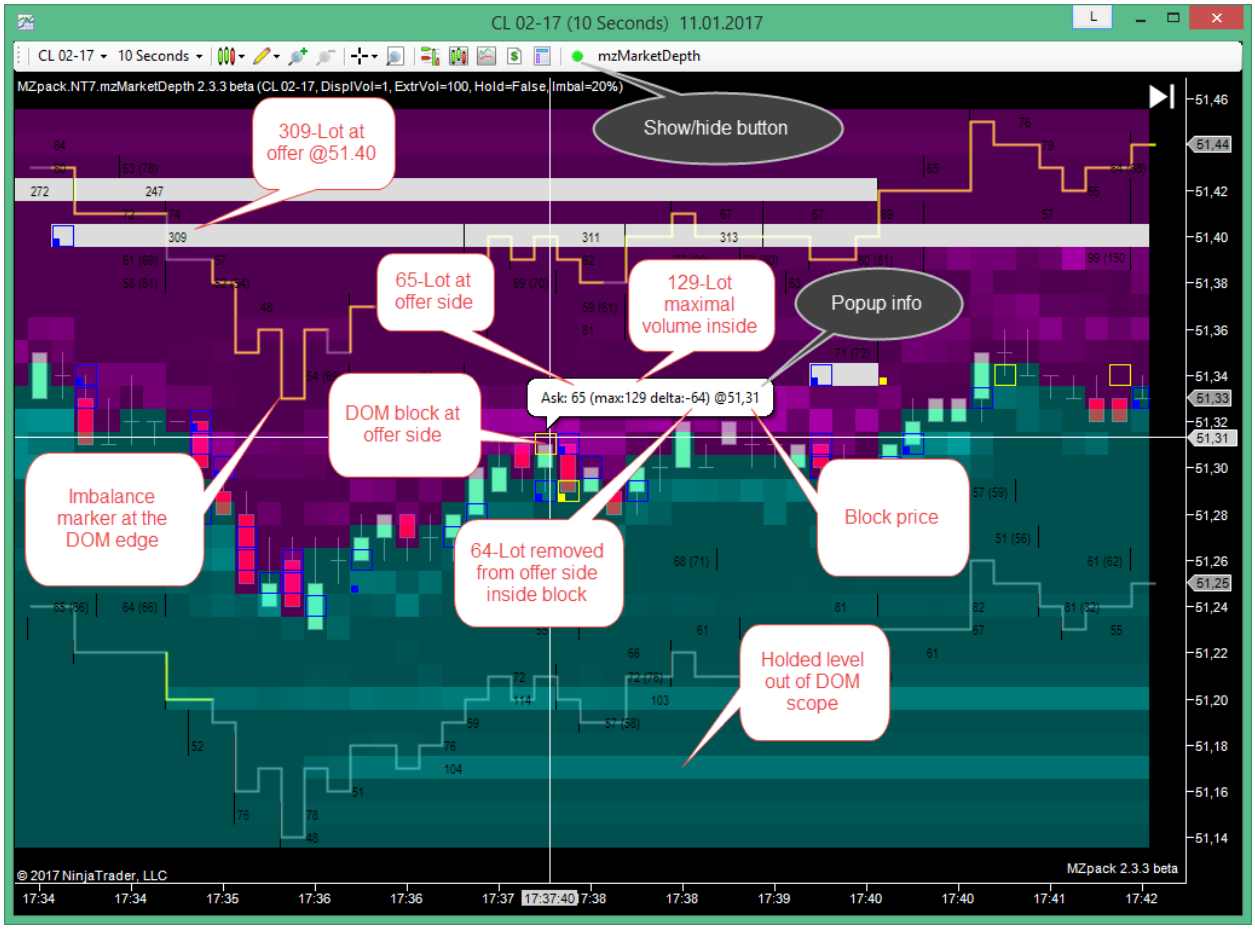
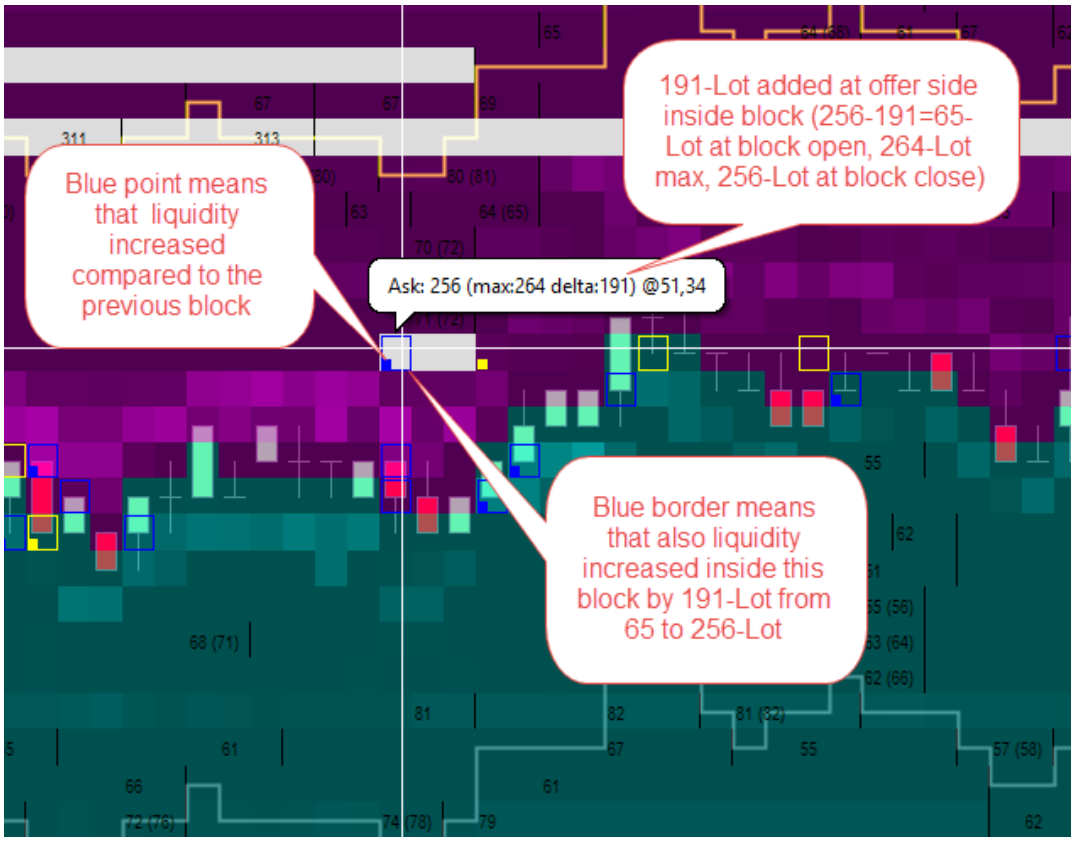


Chart template name is mz___UserGuide _MarketDepth _2



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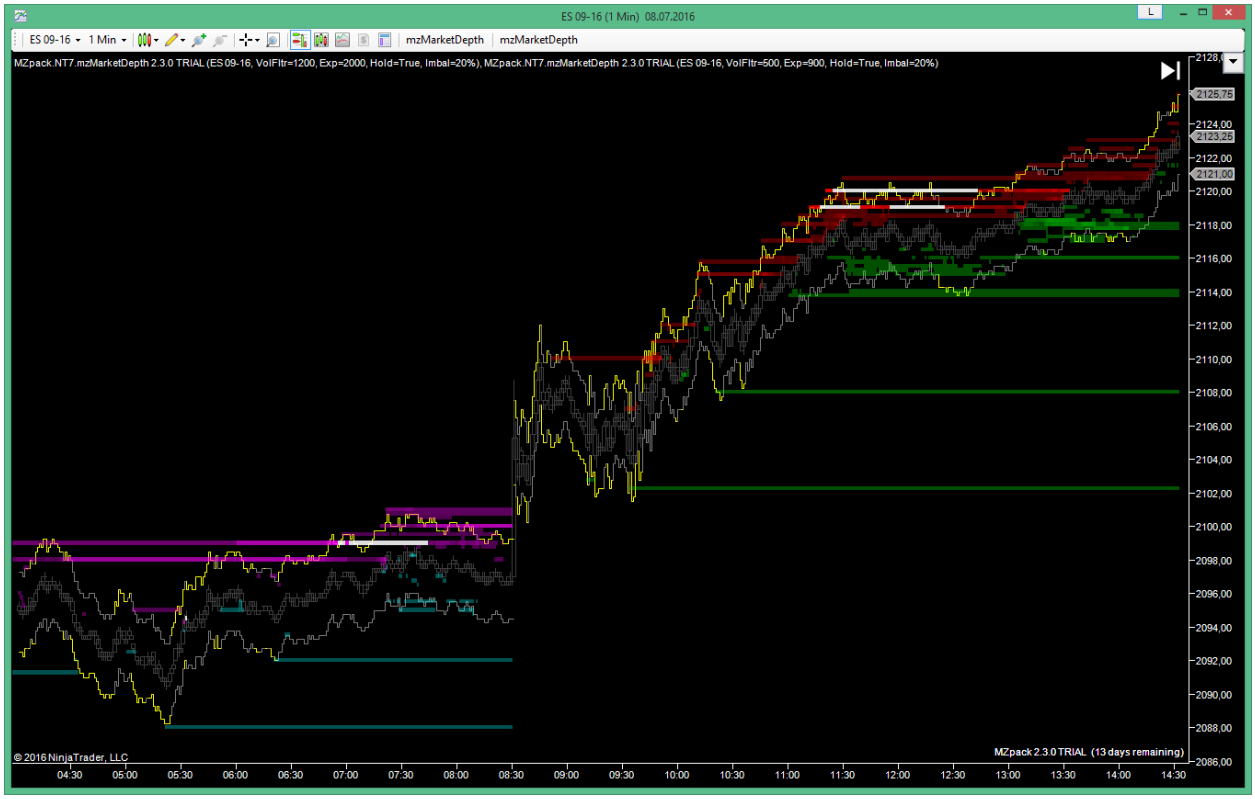

Chart template name is mz___UserGuide _MarketDepth _1

On this ES chart two mzMarketDepth indicators with different filters were placed. One indicator is for Europe session and another one for American session. Time on chart is UTEC-5 (EST USA & Canada). See **Indicators' general parameters** section to learm how to use Strat/Stop time option.

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mzOrderFlow. Order flow as volume histogram

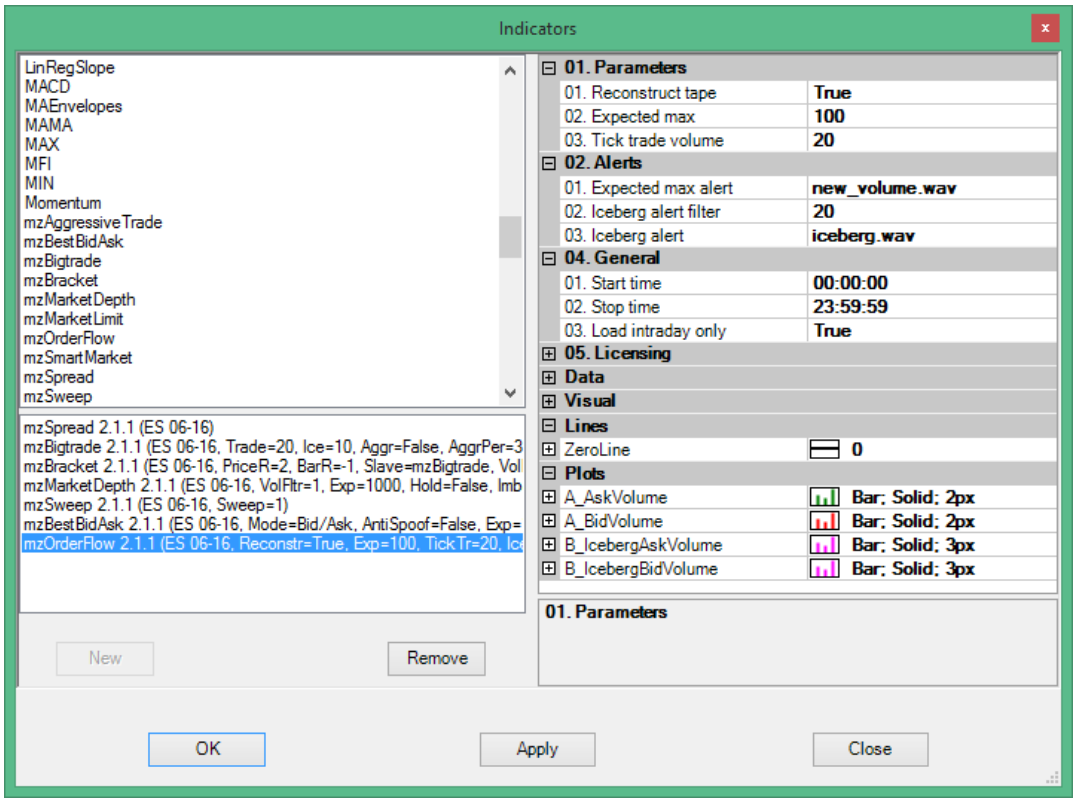
The unique and awesome feature of mzOrderFlow indicator is clear view of orderflow. Now with Reconstruct tape is on you can see real volumes of orders. This OrderFlow indicator supports color coding of traded volumes with just one parameter to setup it.

This indicator can be used on any type of chart, but it was designed to use on one tick charts to reconstruct tape.

For more details on how to setup and trade with mzOrderFlow indicator visit this page http://www.mzpack.pro/en/orderflow-ninjatrader-indicator/

Parameters

- **Reconstruct tape**. Reconstruct quantity (volume) of Market-Order sliced by stock exchange core.
- **Expected max**. Expected maximum trade quantity (volume). Used for volumes color coding and alert.
- **Tick trade volume**. Trade volume filter per one tick to highlight with most brightest color.
- **Expected max alert**. Sound file for alert on volume equal to or above Expected max.
- **Iceberg alert filter**. Iceberg volume filter for alert
- **Iceberg alert**. Sound file for alert on Iceberg filter



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Data series

- **A_AskVolume** – volumes traded on offer side
- **A_BidVolume** - volumes traded on bid side
- **B_IcebergAskVolume** – volume of BUY BY MARKET orders filled with hidden liquidity
- **B_IcebergBidVolume** - volume of SELL BY MARKET orders filled with hidden liquidity

Additional data series in strategy mode

- **BestAskVolume** – limit orders' quantity (volume) on best offer before tick event
- **BestBidVolume** – limit orders' quantity (volume) on best bid before tick event
- **BestAskPrice** – best offer price
- **BestBidPrice** – best bid price
- **StartOfTrade** – = 1 if current tick is first tick of a new trade

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EXPLAINING RECONSTRUCT TAPE MODE AND TICK TRADE

On one tick chart you can use reconstruct tape mode. It is for this mzOrderFlow indicator has been designed. Commonly stock exchange or HFTs divide big orders to small up to 1-Lot orders. In reconstruct tape mode you can clearly see treaded volumes in convenient visualization provided by the indicator.

Chart template name is mz___UserGuide _OrderFlow_1

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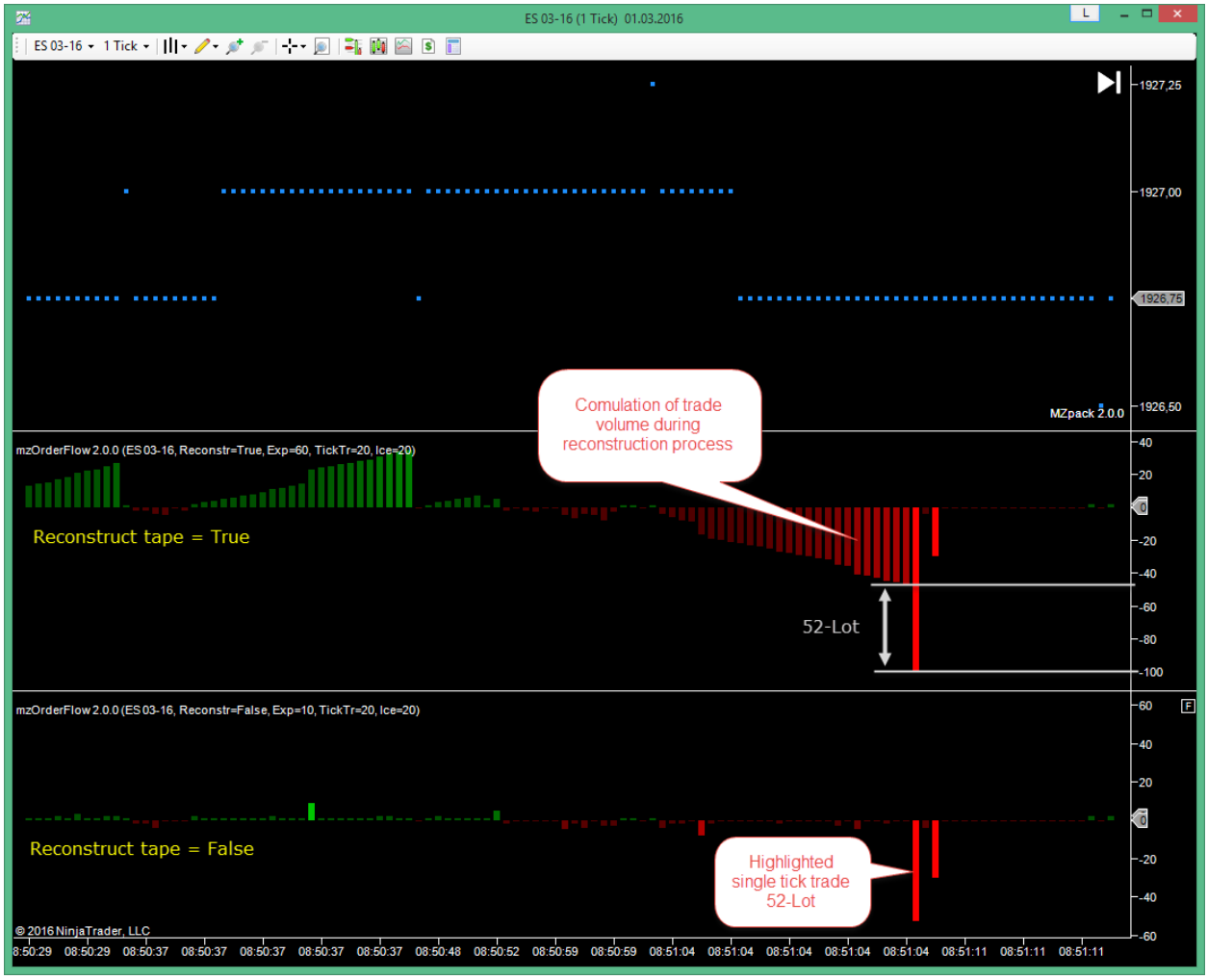

Chart template name is mz___UserGuide _OrderFlow_2.

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mzBestBidAsk. Liquidity on best bid/ask

This is NinjaTrader indicator for scalpers. Knowing what happens on the edges of the spread right now is very important for who must take fast decisions. BestBidAsk shows limits on bests right before every trade. By calculating different between next two values on best bid or ask indicator can shows delta and spots spoofing activity on spread edges.

This indicator can be used on any type of chart, but it was designed to use on one tick charts and **we strongly recommend this**.

For more details on how to setup and trade with mzBestBidAsk indicator visit this page http://www.mzpack.pro/en/bestbidask-ninjatrader-indicator-for-scalping/

Parameters

- **Mode.** Display mode: 1 – best Bid/Ask. Histogram displays limit orders' quantity (volume) on best bid or offer **before** tick event; 2 - best Bid/Ask delta. Histogram displays delta between current and previous bid or offer quantities right before tick event; In delta mode best offer delta is above zero line and best bid delta is below it.
- **Anti spoofing.** Hide spoofing on limit orders and on delta.
- **Expected max.** Expected maximum limit orders quantity (volume). Used for volumes color coding.
- **Inverted histogram.** If =True offers will under zero line and bids will be above it.
- **Mark new Bid/Ask.** Mark or not limit orders on new bid/ask.
- **New Bid/Ask color.** Color of histogram for best bid/ask price update.
- **Positive Bid/Ask delta color.** Color for positive bid/ask delta
- **Negative Bid/Ask delta color.** Color for negative bid/ask delta

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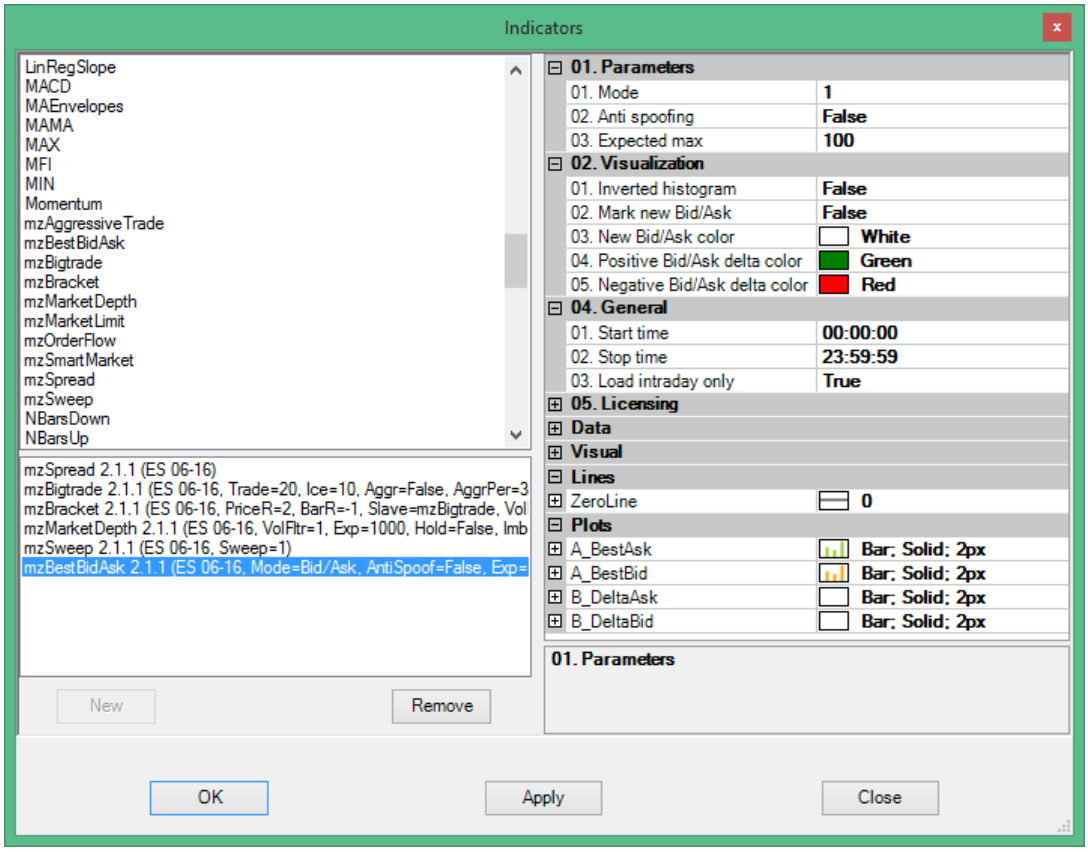

Data series

- **A_BestAsk** – best ask limit orders
- **A_BestBid** – best bid limit orders
- **B_DeltaAsk** – delta between next two offers values on histogram
- **B_DeltaBid** – delta between next two bids values on histogram

Additional data series in strategy mode

- **DeltaAskPN** – positive-negative delta between next two offers values (for internal or in strategy usage)
- **DeltaBidPN** – positive-negative delta between next two bids values (for internal or in strategy usage)

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Both delta (positive and negative) on offer displayed above zero line and on bid displayed below zero line. To swap delta set **Inverted histogram = True**.

On examples pictures below used **four** mzBestBidAsk indicators with different settings.

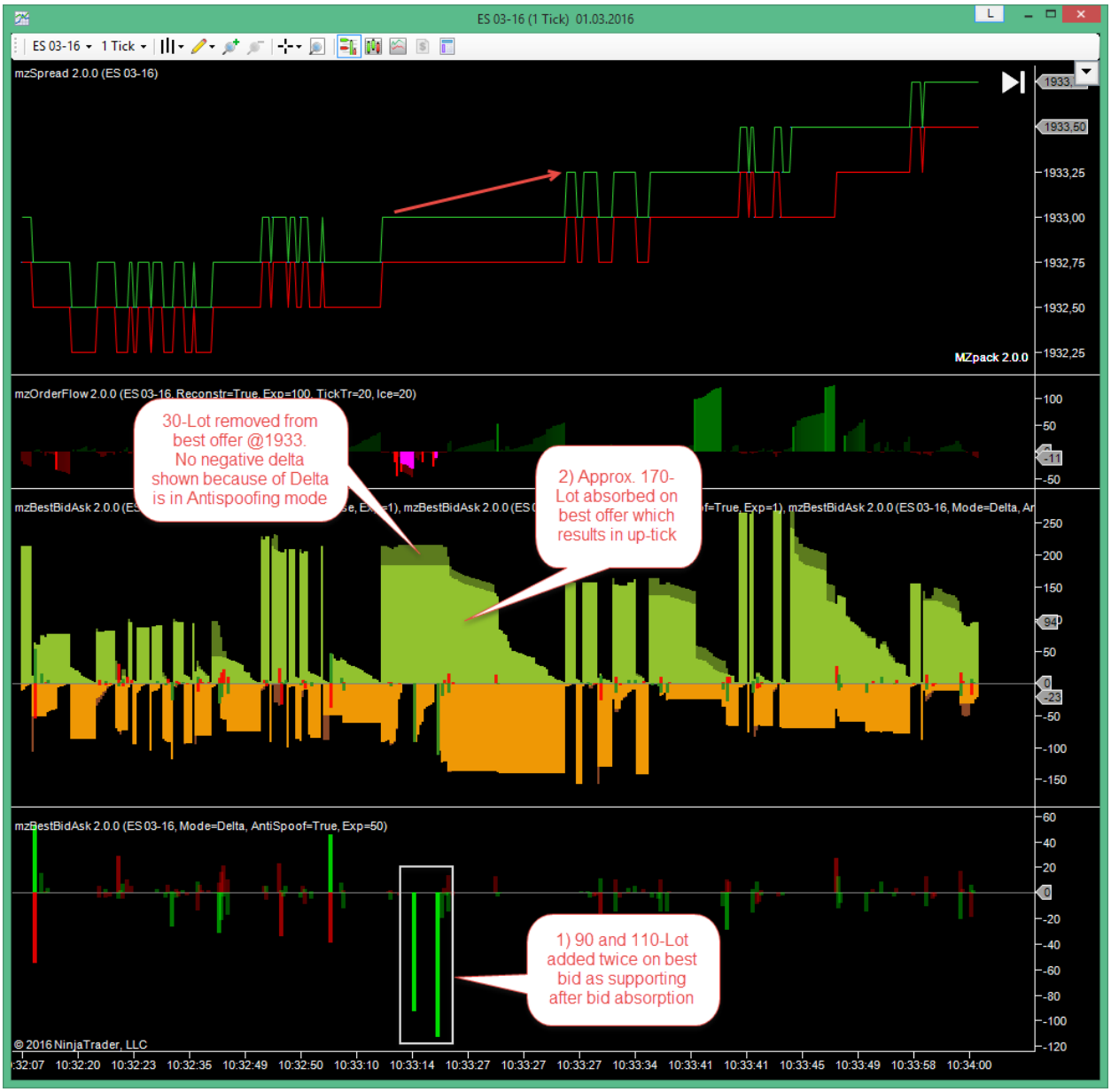

Chart template name is mz___UserGuide _BestBidAsk_1

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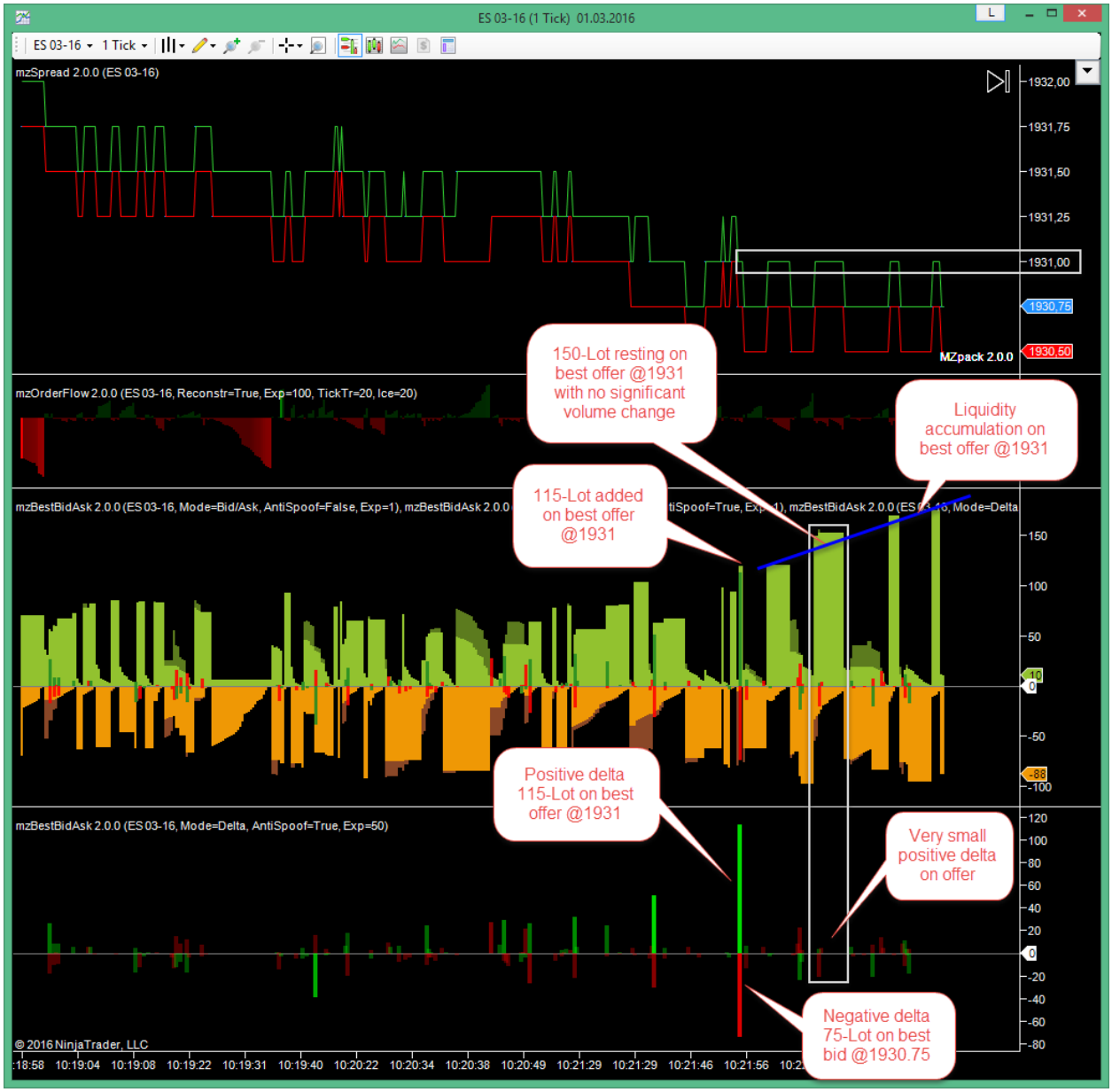

Chart template name is mz___UserGuide _BestBidAsk _1

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mzMarketLimit. Indicator of Market-Limit/Stop-Limit orders

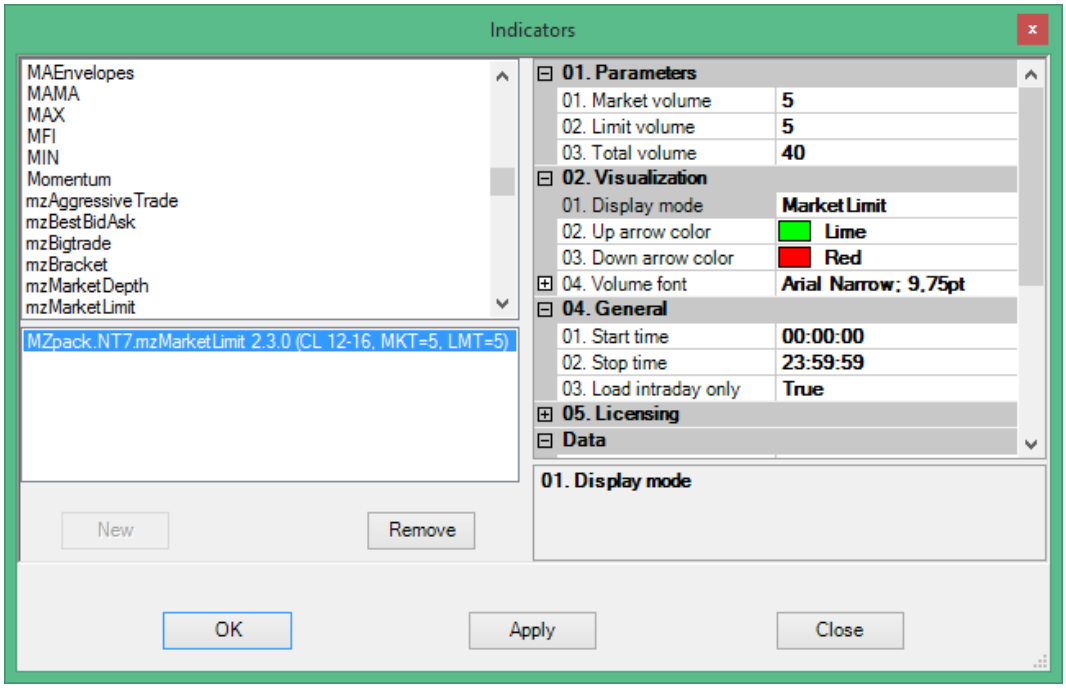
Big or smart money and professionals act by Market-Limit and Stop-Limit orders. Market-Limit orders are executed at the best price available in the market. If the Market-Limit order can only be partially filled, the order becomes a limit order and the remaining quantity remains on the order book at the specified limit price. Learn more at CME Group Wiki

mzMarketLimit indicator can be used on any type of chart.

For more details on how to setup and trade with mzMarketLimit indicator visit this page http://www.mzpack.pro/en/market-limit-ninjatrader-indicator/

Parameters

- **Market volume.** Filter for Market part of order.
- **Limit volume.** Filter for Limit part of order.
- **TotalVolume.** Filter for total volume of Market-Limit order.
- **Display mode.** Total – total volume; MarketLimit – market and limit parts of order; MarketLimitTotal – market, limit parts and total volume of order
- **Up arrow color.** Up arrow color for BUY Market-Limit order.
- **Down arrow color.** Down arrow color for SELL Market-Limit order.
- **Volume font.** Font for volumes.



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mzSweep. Indicator of continuous absorption of liquidity in DOM

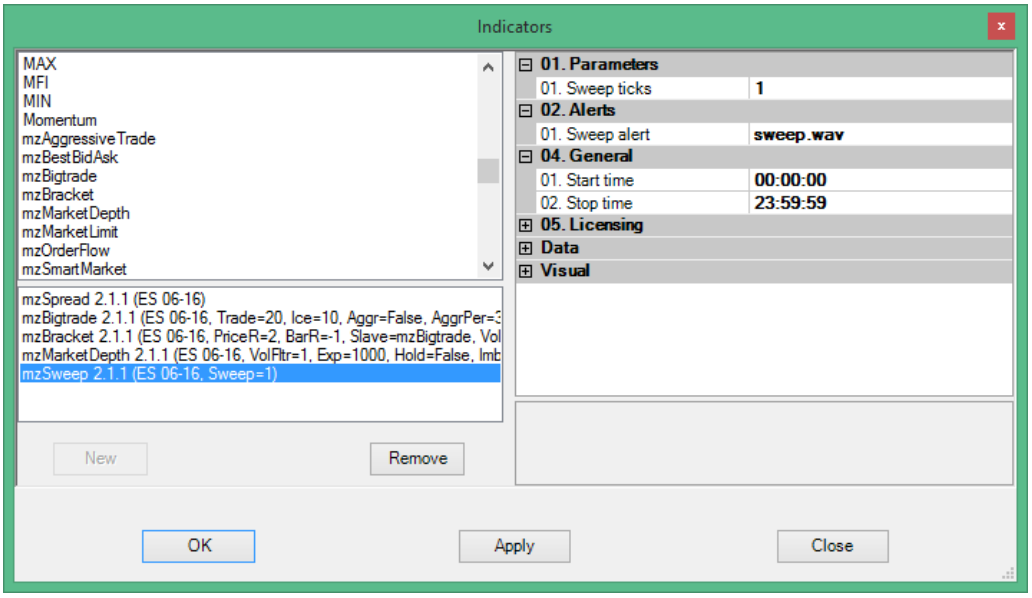
Displays continuous absorption of liquidity on one or more levels of DOM. This can be result of triggering big or cascading stop orders or initiative activity – it depends on context.

Parameters

- **Sweep ticks**. Filter for sweep in instrument ticks or DOM levels.
- **Sweep alert**. Sound file for alert.

Additional data series in strategy mode

- **StartPrice**. Sweep start price
- **StopPrice**. Sweep stop price
- **Vol**. Sweep volume. Greater than 0 for buy trades and less than 0 for sell trades. Equals to 0 if no trade on current tick.
- **Iceberg**. Iceberg volume in sweep trade. Greater than 0 for buy trades and less than 0 for sell trades



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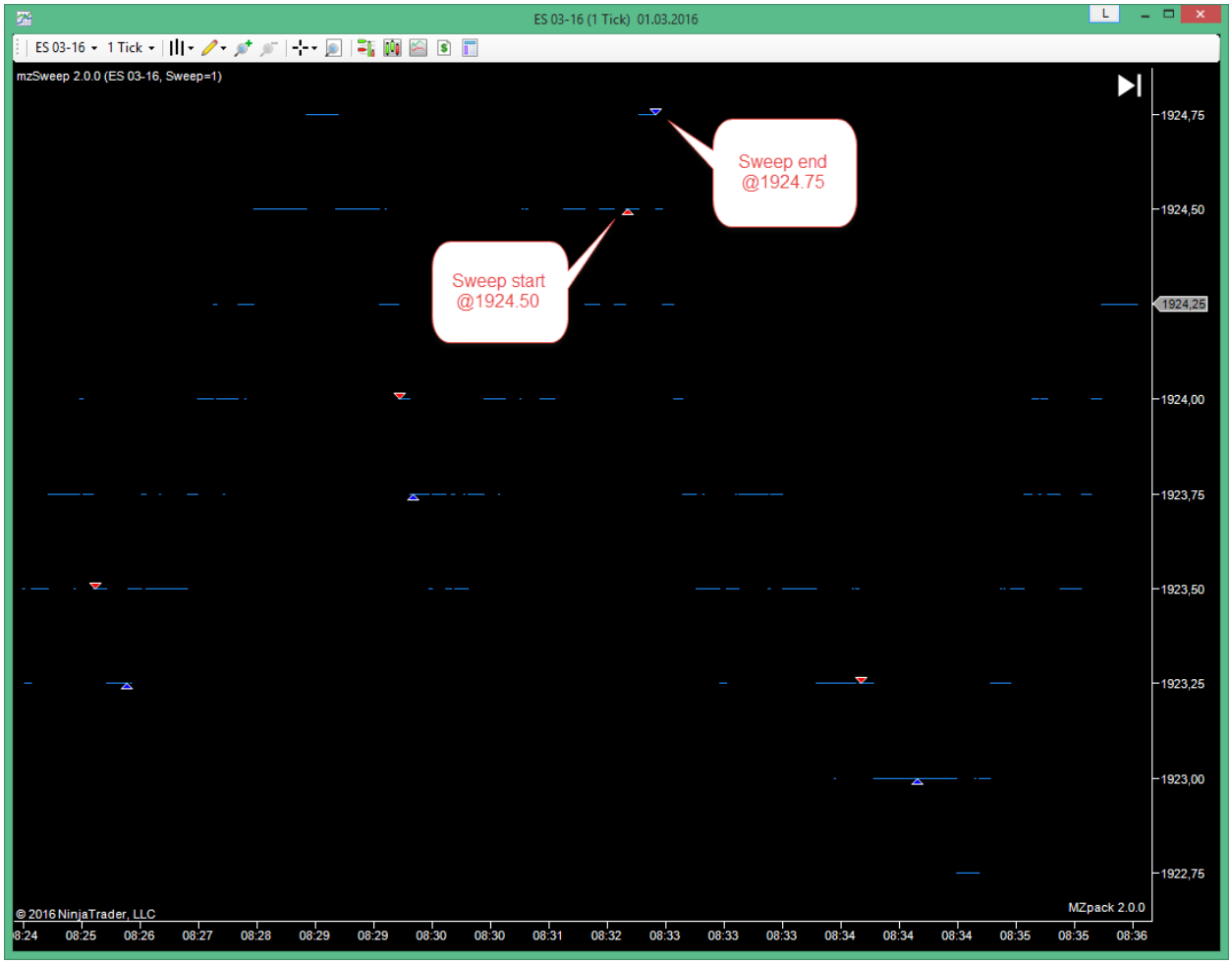

Red marker is for sweep start, blue marker is for sweep end.

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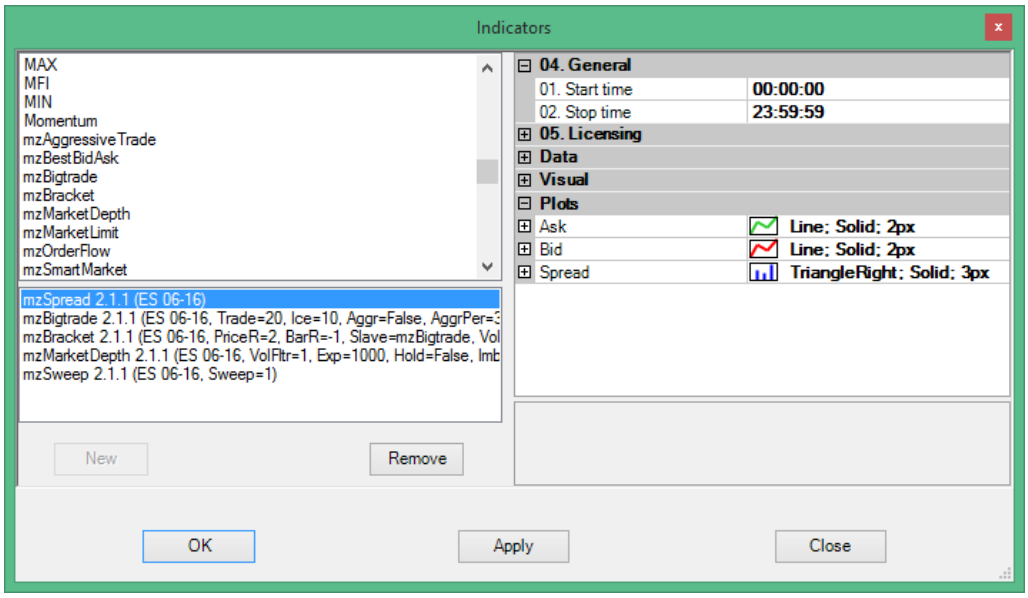
mzSpread indicator

Displays current spread and trades inside spread.

Data series

- **Ask**. Current offer price.
- **Bid**. Current bid price.
- **Spread**. Trades inside current spread.



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Indicators' general settings

Start/stop time parameters

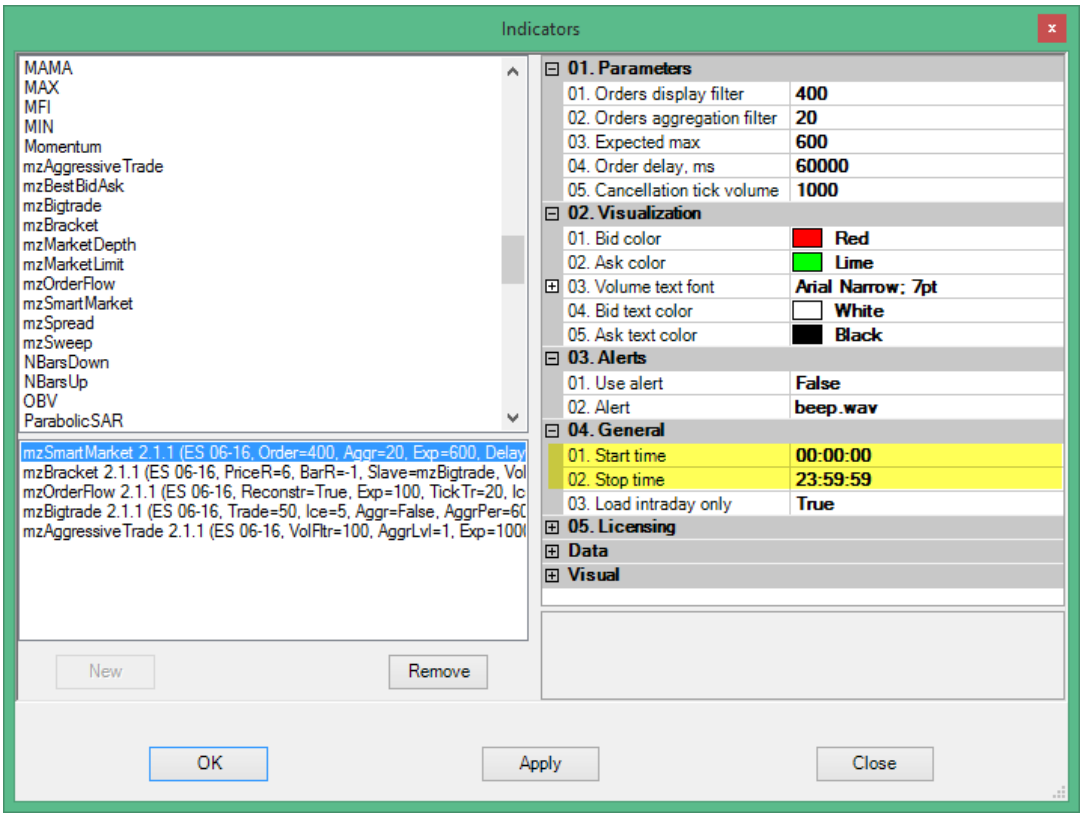
- **Start time**. Indicator start time
- **Stop time**. Indicator stop time

Offten we need to set different settings for different trade sessions for an indicator. To do that please:

1. Place e.g. two instances of the same MZpack indicator on a chart
2. Set desired parameters for each of them
3. Set Start and Stop time corresponded to trade sessions (e.g. Europe and American) for each of them

As a result one indicator will work e.g. on Europe session only and the other one on American session only.

By default all indicators configured for continuous usage: Start time is 00:00:00 and Stop time is 23:59:59.



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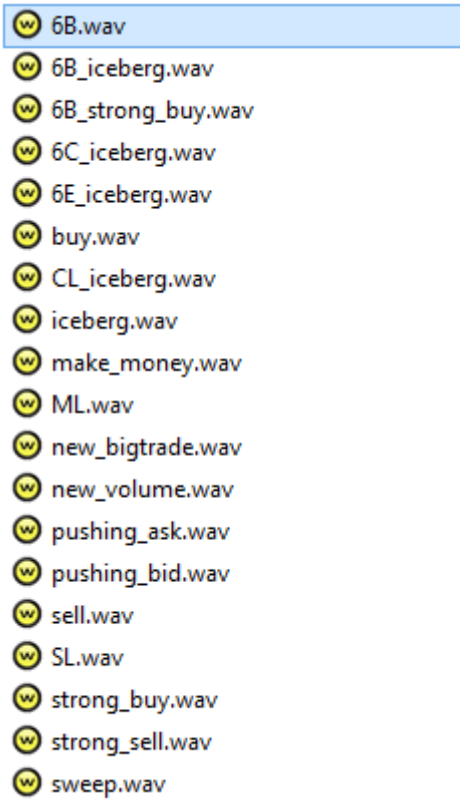
Sound files for alerts

List of sound files placed by setup in NinjaTrader sounds folder. To use sound for alert print file name with extension in alert parameter of an indicator.



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Building custom indicator or strategy

To manually code a custom indicator or strategy based on MZpack core use this programming interfaces. Interfaces are still under development. Some methods not available or have restrictons in TRIAL version

If you have a request for developing of custom indicator or strategy let us know.

Indicators instantiate methods

```
public static mzBigtrade CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input)

public static mzBigtrade CreateInstance(CoreIndicator MasterIndicator,
NinjaTrader.Indicator.IndicatorCollection Indicators, IDataSeries input, long
bigtradeFilter, long icebergFilter, bool aggregate, int aggrPeriod, long
bigtradeAggrFilter, long icebergAggrFilter, IndicatorMode usageMode)


public static mzAggressiveTrade CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input)
public static mzAggressiveTrade CreateInstance(CoreIndicator MasterIndicator,
NinjaTrader.Indicator.IndicatorCollection Indicators, IDataSeries input, long
volumeFilter, int sweepRange, int filterMultipleOf, bool useFilterMultipleOf,
IndicatorMode usageMode)


public static mzSmartMarket CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input)

public static mzSmartMarket CreateInstance(CoreIndicator MasterIndicator,
NinjaTrader.Indicator.IndicatorCollection Indicators, IDataSeries input, long
marketFilter, long marketAggrFilter, long cancellationTickVolume, IndicatorMode
usageMode)


public static mzMarketDepth CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input)



public static mzBracket CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input)

public static mzBracket CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input, int priceRange, int barRange, BracketSlaveIndicator
slaveIndicator, int volumeFilter, int icebergFilter, int volumeAggrFilter,
VolumeCumulationFunction volumeCumulationFunction, IndicatorMode usageMode)


public static mzBestBidAsk CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input)
```

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```
public static mzBestBidAsk CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input, BestBidAskMode mode, bool antiSpoofing, IndicatorMode
usageMode)


public static mzSweep CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input)

public static mzSweep CreateInstance(NinjaTrader.Indicator.IndicatorCollection
Indicators, IDataSeries input, int sweepTicks, IndicatorMode usageMode)
```

See **MZpackOrderBookBrick** and **MZpackRangedDynamicPOC** indicators sapmles on using MZpack core indicators. To add this indicators to NinjaTrader import **MZpackInterfaceSamples.zip** indicator from MZpack installation folder.

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