LINEDATA LONGVIEW ALGO TRADING UPDATE USER GUIDE

The Linedata Alliance Program (LAP) maintains partnerships and integrations with a wide range of third-party financial systems including broker algorithmic trading suites (algos), execution management systems (EMS), dark pools, analytics engines, and post-trade and settlement systems.

This update streamlines how broker algorithmic trading suites are developed and enabled for Linedata Longview clients. Additionally, there are substantial workflow enhancements in the Longview user interface which include the following:

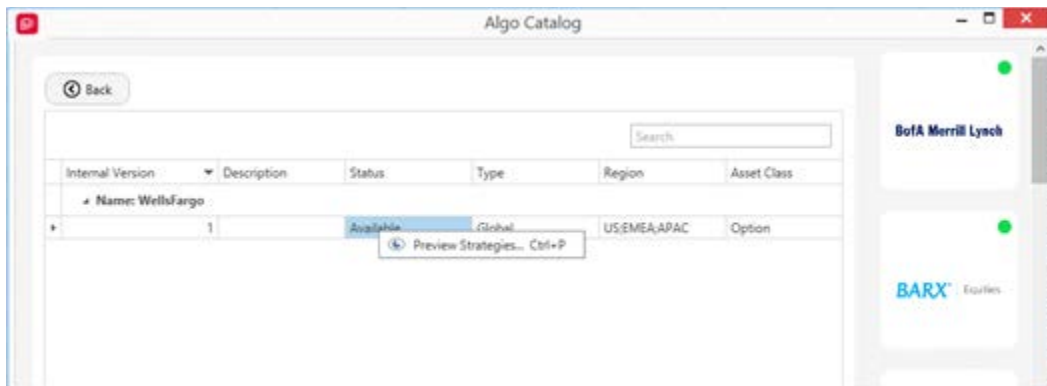|	
View Algo Catalog	Create Shortcut
Map Algos to Liquidity Sources	Create Single and Multiple Order Placements
Update List of Algos	Customize Algo Placement Grid View

View Algo Catalog

The Algo Catalog displays and previews all pre-deployed broker algos available and shows which ones are enabled or disabled for trading. Green dots indicate that there is at least one algo version enabled for the broker. To activate algos, you must contact a Linedata ETS Representative or send mail to ETS@na.linedata.com.

To see the list of algos from an algo provider:

- Select **View** | **Algo Catalog** from the main menu**.**

- Click algo provider.
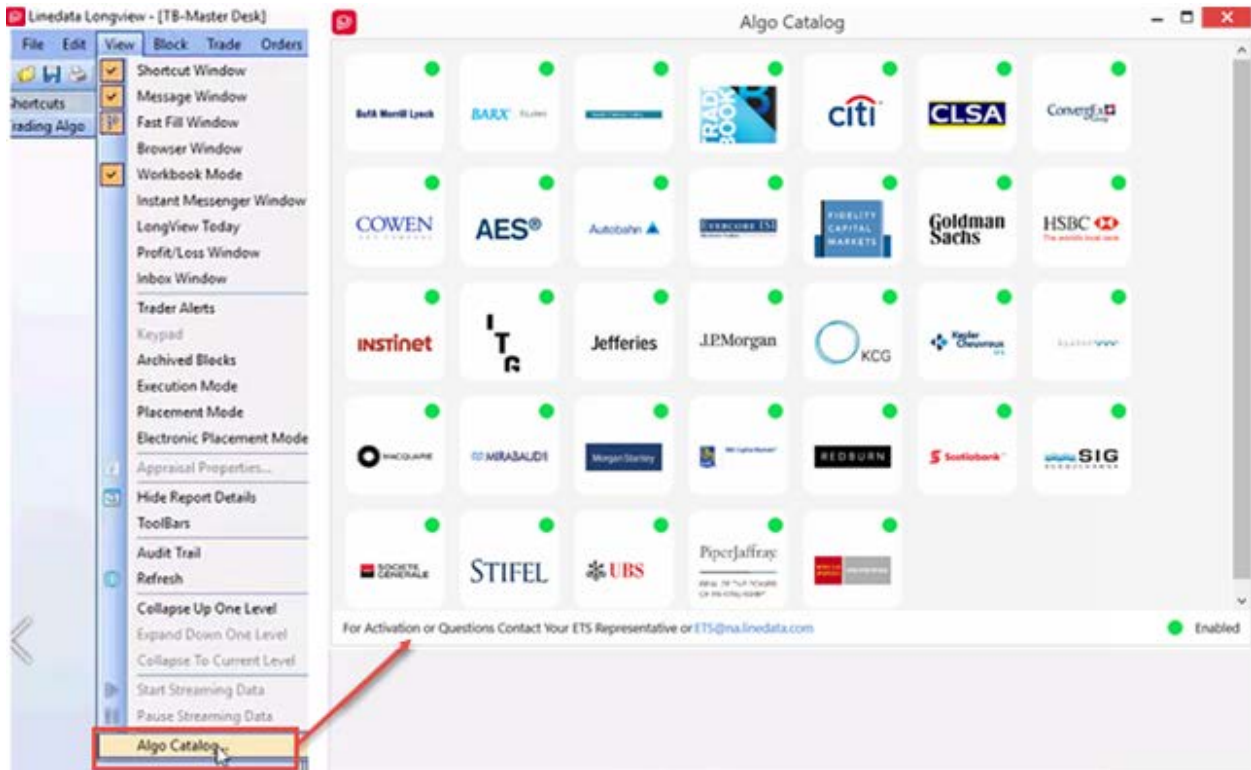
In the example below, WellsFargo algos are presented to the user.

Algo Catalog Columns

| Column Name	Description
z	Internal identifier hidden by default.
Internal version	Linedata ETS internal version of an algo (not the broker version).
Status	**Available**: Algos published by Linedata ETS which are available for enablement. **Pending**: Algos activated by Linedata ETS but with effective date in the future. **Enabled**: Algos activated by ETS with effective date in the past. **Expired**: Algos that have been cancelled with expiration date in the past.
Type	Indicates whether algo is Global or Regional.
Region	Displays supported region for each algo.
Asset Class	Displays supported asset classes.
Broker Version	Algo version provided by the broker.
Effective Date	Date from which algo is considered enabled.
Expiration Date	Date from which algo is considered as expired.

All columns can be moved, sorted, and resized with the Column Manager.

Preview Algo Strategies

When algos are listed in the Algo Catalog, you can preview strategies and their parameters.

In the Algo Catalog, click a broker. In the grid that follows, click the arrow next to the algo name to expand the row. Right-click to select **Preview Strategies** (or press **Ctrl+P**). If there is a long list of algos, you can use Search to filter all columns in this dialog (which is broker level).
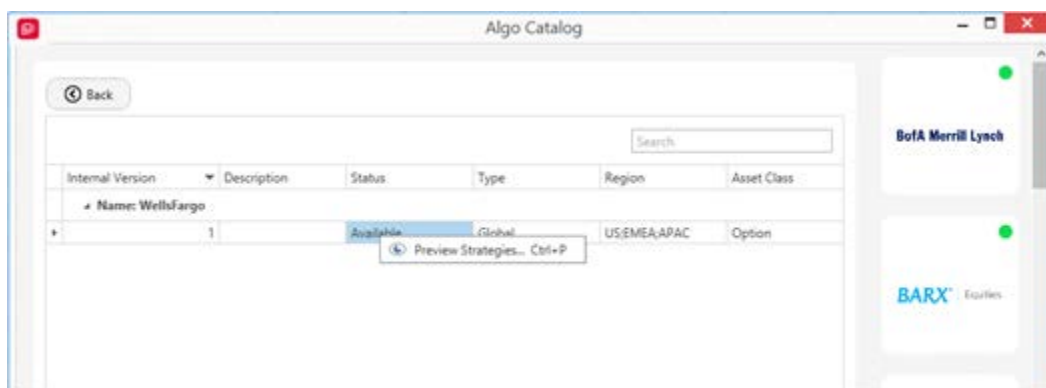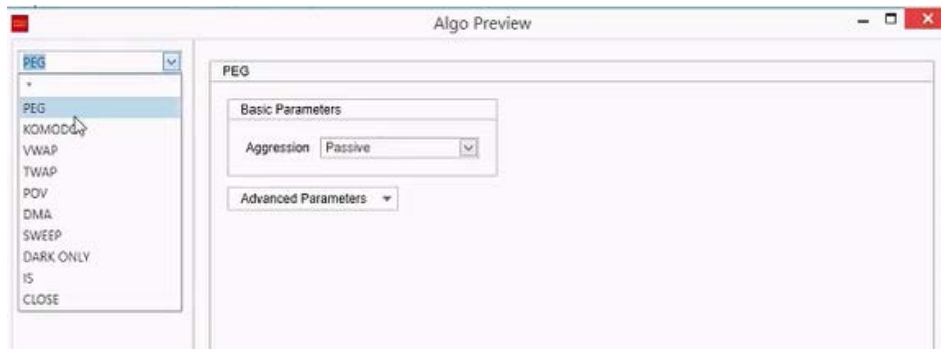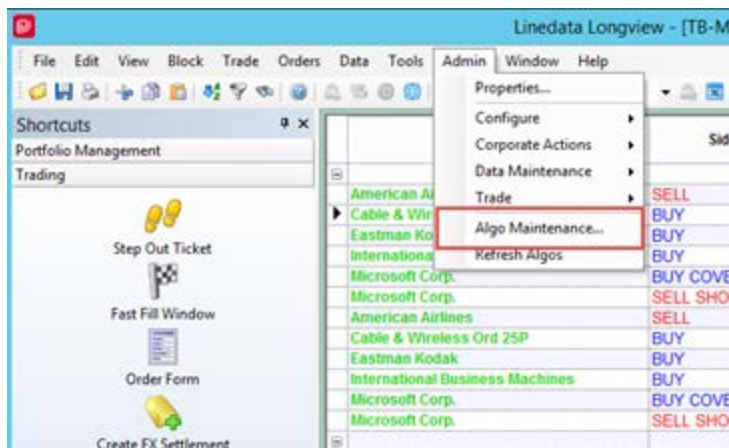
Map Algos to Liquidity Sources

Algos must be mapped to at least one liquidity source before you can create a shortcut and route order.

NOTE: This configuration was introduced to filter liquidity sources (i.e., connections) to which an algo could be mapped while creating the shortcut to avoid selecting the wrong liquidity source.
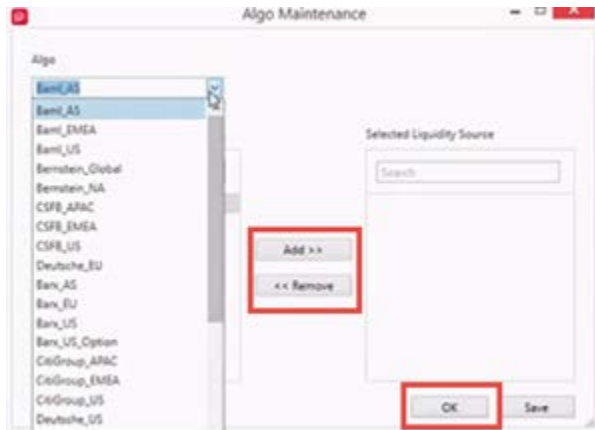
In the main menu, select **Admin | Algo Maintenance.**

A list of all enabled algos will be displayed. You can use Search to find available liquidity sources.

To assign and map liquidity sources to an algo, click **Add** or **Remove,** then click **OK.**

To assign and map liquidity sources to multiple algos, click **Add** or **Remove**, then click **Save**. The Algo Maintenance window remains open for you to map multiple algos.

Update List of Algos

To update your list of algos/activation status, in the main menu select **Admin | Refresh Algos**.

NOTE: You can refresh your Algo suite/activation status without exiting Longview. You do not need to perform this step if you have restarted Longview.

Create Shortcut

When an algo is enabled and mapped to at least one liquidity source, you can create a shortcut in the Shortcuts panel of the blotter. To do this, right-click in the Shortcuts panel on the blotter to select **New Shortcut.**

In the Add to Shortcut Window dialog, on the Algo tab, select an algo.

NOTE: Only liquidity sources that are already mapped to the selected algo will be displayed in the liquidity source column.

Select both algo and liquidity source then click **OK** to create the shortcut. The shortcut appears in the Shortcuts panel on the blotter. Shortcuts are updated automatically.
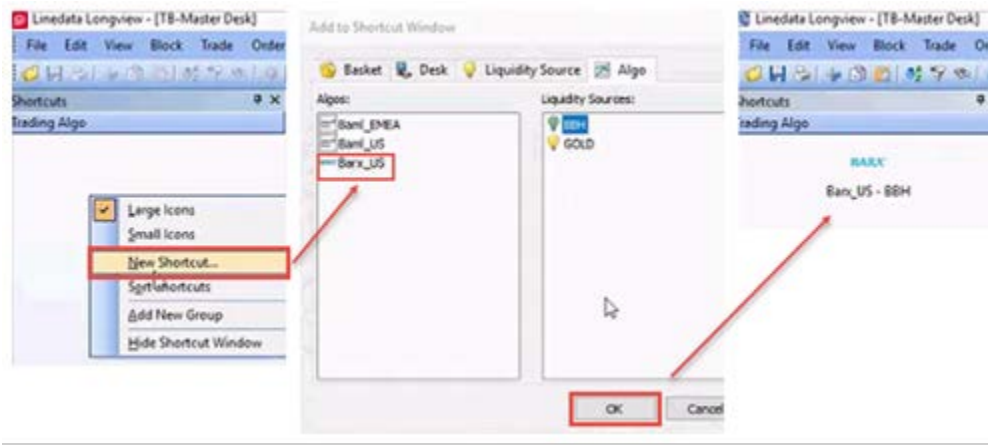
Create Single and Multiple Order Placements

You can create single and multiple order placements. The single order placement workflow has a specific dialog. To do this, select one or more rows in the trader blotter then drag and drop the item(s) over the algo shortcut in the Shortcuts panel. The Algo Placement dialog will appear.
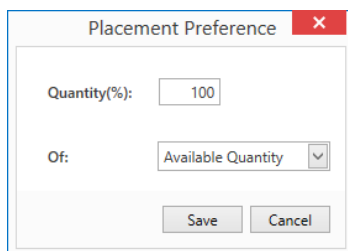
User Preferences

You access user preferences for single and multiple orders on the Algo Placement dialog. Through Preferences you can control and configure placement and strategy parameters. These selections are not applied in the current session and will be active in your next session. Time Zone preferences are applied immediately.

Set user preferences

- Placement Preference (**Alt+P**):

  Enter Quantity(%) and type (Of:) to define default placement percentage preference.

  This preference affects the **Percent** and **Of** fields which appear in the Algo Placement dialog and will be calculated in the next session.

- Time Zone & GTC preference (**Alt+T**):

  - Time Zone Display: Specify time zone in which algo time parameters present time and accept user input. If this field is set to Local, time parameters are specified at the strategy level in your local time zone.

  - Always Allow GTC TIF: This configuration overrides the algo strategy TIF constraint to always allow GTC orders regardless of the FIXatdl broker specification. You need to inform your broker if you are overriding TIF against the broker specification.

    NOTE: FIXatdl = FIX Algorithmic Trading Definition Language
    A standard for the exchange of meta information required to enable algorithmic trading activity within the financial markets.
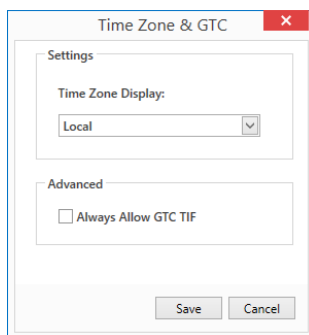
- Strategy preference (**Alt+S**):

  Default Strategy: Select a strategy and click **Save as Default** to save a strategy as default option. When you save a strategy as default an asterisk appears next to the item in the dropdown list.

  NOTE: You can clear a default strategy and save it as blank by default (item on the strategy list).
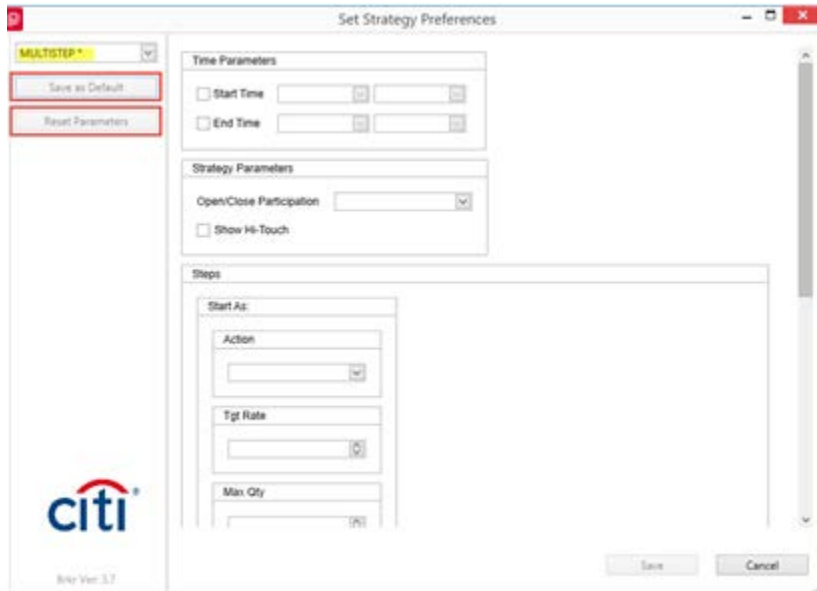
You can also click **Reset Parameters** to clear values. Parameters will revert to default options and values specified in the FIXatdl definition provided by the broker.
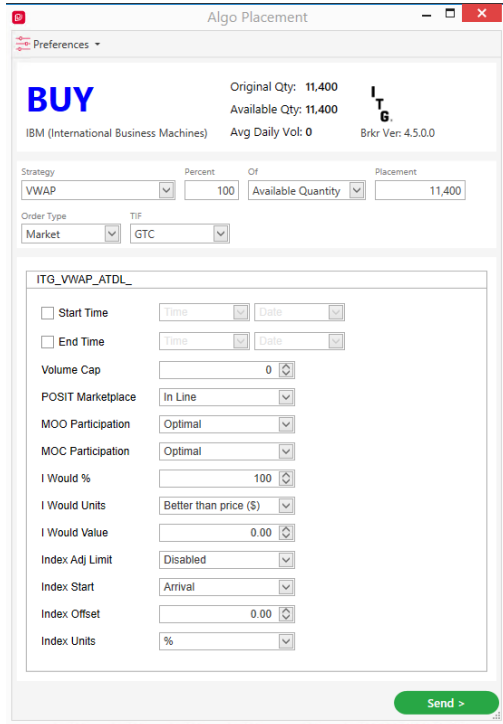
- Strategy parameters: To pre-define strategy parameter(s), select one from the dropdown list and enter parameter values. Click **Save.**

    NOTE: The broker version number appears in the lower left corner under its logo. This is the version provided by the broker.

Create a single order placement

Select an order in the trader blotter then drag and drop the item over the algo shortcut in the Shortcuts panel. A single-order Algo Placement ticket will appear (see below). Here you can enter or confirm placement details including Strategy and Algo Parameters. You can also set user preferences (Placement, Time Zone & GTC, and Strategy Preferences).

NOTE:

- The **Send** button is enabled (green) when required placement data are entered and all strategy parameters and placement information are valid (**Ctrl+Enter**).

- It will be disabled (gray) when required fields are missing entries and/or placement parameters are not valid.

Keyboard shortcuts are available as tooltips which appear when you hover over controls, such as buttons or menu options.

To make placements valid, go through placement information fields or strategy parameters and correct the wrong entries.

Some fields conditionally appear in the placement information:

Limit Price	When you set type to Limit, Limit Or Better, Limit Stop, Pegged.
Stop Price	When set type to Stop, Stop Limit.
Locate Broker LocateReqd Locate Id	Appears only with sell-short orders.

Create a multiple order placement

Select more than one order in the trader blotter then drag and drop the items over the algo shortcut in the left panel. The Algo Placement dialog will appear with the orders displayed.

To apply a strategy to all orders, select an item in the Strategy at the top of the grid dropdown (bulk option). The *Edit Strategy Parameters* dialog will appear automatically where you can enter/ confirm the strategy parameters for all orders at once. To reopen the Edit Strategy Parameters dialog click 🔲 .

You can also right-click on a row in the grid to edit strategy parameters or press **Ctrl+E** to enter/override strategy parameters for each individual order.

You can set strategy parameters for multiple rows at the same time unless the rows have different strategies:

- Highlight orders with the same strategy.

- Right-mouse click to select **Edit Strategy Params** or **Ctrl+E** to open the Edit Strategy Parameters dialog.

NOTE: Strategy Parameters set from the *Edit Strategy Parameters* dialog will only be applied to the current placements.
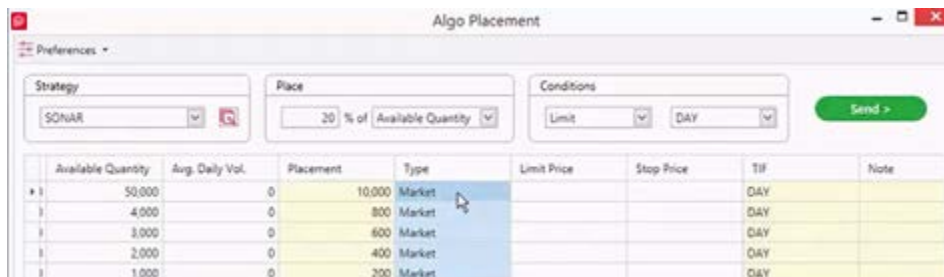
Click **OK** to apply strategy parameters.

NOTE: You can click **Reset Parameters** to clear values. Parameters will revert to default options/values specified in the FIXatdl definition provided by the broker.
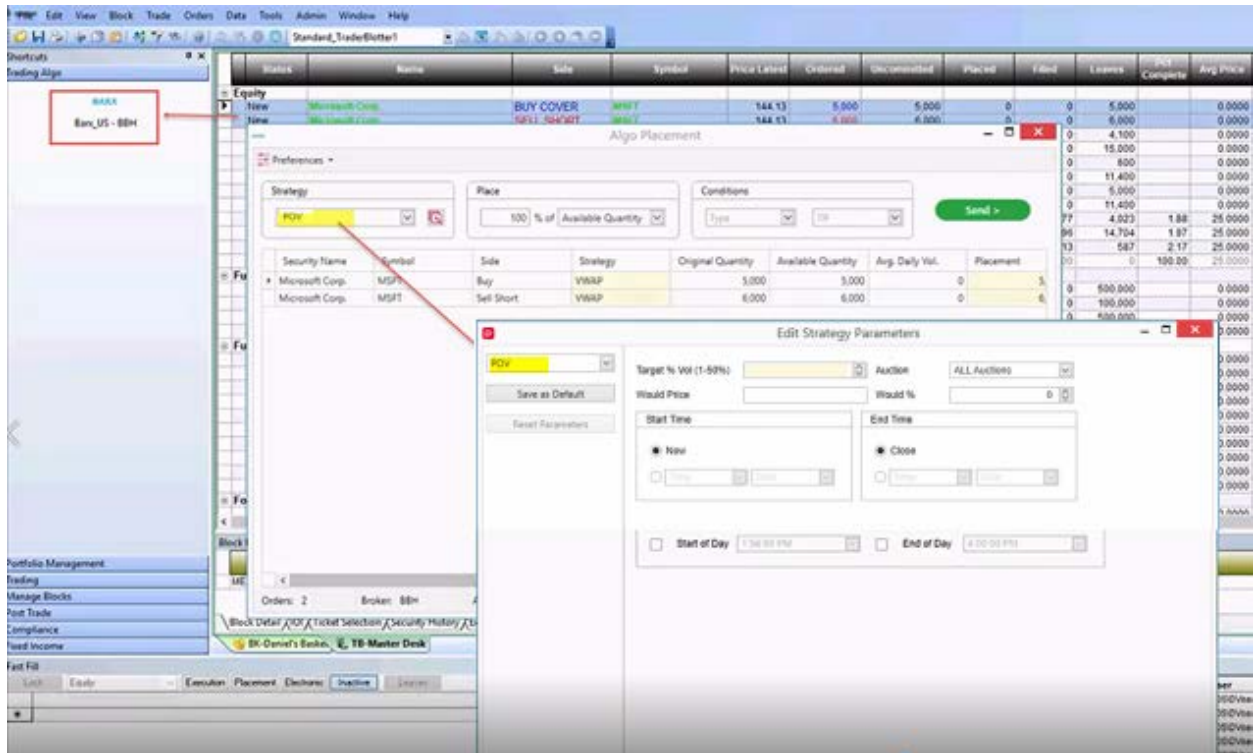
To see all errors in the Algo Placement grid, you can add the Errors column to the grid from the Column Manager.

In this view you can:

- Apply changes in bulk from the fields at the top of the grid (Strategy, Percent, Of, TYPE, TIF). This information will be applied to all placement rows displayed in the current session.

- Edit one or more cells in a column.

Editable/conditional fields are highlighted in yellow.

Limit Price	When you set Type to Stop or Stop Limit.
Stop Price	When you set Type to Stop or Stop Limit.
Locate Broker LocateReqd Locate Id	Editable only with sell short orders.

You can also remove orders from the Placement window. To remove one or more orders, select the rows and right-click to select **Remove** or press **Ctrl+Delete.**

You can also set user preferences (Placement, Time Zone & GTC, and default Strategy Parameters).

NOTES:

- You can use keyboard shortcuts to move between controls and elements in the Algo Placement dialog: up/down arrows in dropdown lists, tabbing between fields, etc.

- As you enter the first letter of a strategy name, when the strategy field is selected, a list of options will appear (autocomplete). Choose a strategy from the displayed options.

  This autocomplete shortcut applies to all dropdown lists with editable fields.

- Algos support equities, futures, and options; however, support will vary by broker.

Customize Algo Placement Grid View

Standard Column Manager functionality is available in the Algo Placement grid:

- Add or remove fields (Show Column Chooser)

- Edit field labels (click the label)

- Adjust field width (Best Fit)

- Sort order

To open the Column Manager, right-click on a column label in the grid to see these options.

Algo Placement grid fields

Field	Description	Editable or Read-only	Mandatory (M) Optional (O) Conditional (C)
Security Name	Security name	Read-only	NA
Symbol	Security symbol	Read-only	NA
Side	Direction	Read-only	NA
Strategy	Strategies available in the algo.	Editable	M
Placement	Placement quantity	Read-only	M
Original Quantity	Orders original quantity	Read-only	NA
Available Quantity	For new placements: quantity remaining to complete order. For Replace: maximum size order could be corrected to (includes shares filled).	Read-only	NA
Avg. Daily Vol.	Security Average Daily Trading Volume define in the security master.	Read-only	NA

Type	Order types such as MKT, LMT. Defaults from order.	Editable	M
Limit Price	Conditional on certain order types: LMT, Limit Or Better, Pegged, Stop Limit. Defaults from order. User has the option to override.	Editable	C
Stop Price	Conditional on certain order types: Stop, Stop Limit.	Editable	C
TIF	Order Expiration such as DAY. Defaults from under liquidity source connection configuration.	Editable	M
Note	Trader note to broker	Editable	O
Locate Reqd	Indicate whether broker needs to locate stock. Applicable to short-sell orders only.	Editable	C
Locate Broker	Broker who located the stock. Applicable to short-sell order only. Conditionally required when Locate Reqd is set to N.	Editable	C
Locate ID	Locate code provided by the broker. Conditionally required when Locate Reqd is set to N.	Editable	C
Exchange	Security exchange name	Read-only	NA
Close Time	Exchange closing time	Read-only	NA
Liquidity Source	Liquidity source linked to algo route order is routed to.	Read-only	NA
Exchange Time Zone	Security Exchange TZ	Read-only	NA
Country	Security country	Read-only	NA
Security Type	Security type	Read-only	NA
Executed Quantity	Block quantity filled	Read-only	NA
Params	Strategy parameters sent	Read-only	NA
Errors	Errors on individual orders	Read-only	NA

Keyboard shortcuts

Shortcut	Dialog	Usage
Alt+P	Algo Placement (Multi) or Algo Placement (Single)	Opens the Placement Preference dialog.
Alt+T	Algo Placement (Multi) or Algo Placement (Single)	Opens Time Zone & GTC dialog.
Alt+S	Algo Placement (Multi) or Algo Placement (Single)	Opens Strategy Preferences dialog.
Ctrl+Delete	Algo Placement (Multi)	Deletes selected rows in the Algo Placement grid.
Ctrl+Enter	Algo Placement (Multi) or Algo Placement (Single)	Send placement if **Send** button is green (all entries are valid).
Escape	All dialogs	Closes the dialog/cancel.
M and K	Placement field: Algo Placement (Multi) or Algo Placement (Single)	Enters thousands.
Enter	Time Zone & GTC Placement Preference	Saves entries.