



# DTBScalper

## Documentation

### Version 2.0

Sunday, 05 March 2006

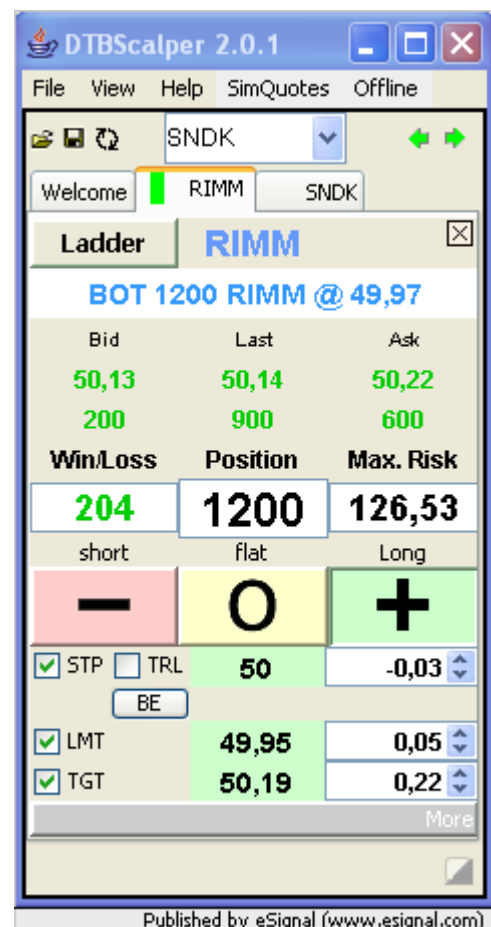
## Overview

DTBScalper is a front end order entry tool for the day trader. It uses a unique goal based order entry technique currently not found in other systems. The design goal was simplicity and easy handling in fast moving markets. This goal could be reached by minimising user interaction with a maximum of intelligence in the background to get better fills and safer operation. Brokers supported are currently [Interactive Brokers TWS](#) and the Laser trading system of [Genesis Securities LLC](#). Key features of DTBScalper are:

- One-Click Fast Short/Long/Reverse
- Simple goal based order entry
- Risk Control
- compact low footprint user interface
- Automatic Target / Stop brackets
- Trailing Stops
- Mouse-wheel based order parameter changes
- Partial Fill monitoring
- Optimised One-click Close position
- Intelligent Chase function
- Default values per symbol
- Distributed operations
- Synchronisation with Laser
- Paper trading mode on simulated or real quotes
- Mediator between Applications and Broker
- eSignal integration
- Smart order routing
- Level 2 based order entry
- Replay of eSignal Tick Data.

## Simple goal based order entry

DTBScalper has a unique goal based order entry capability. While in other systems you have to explicitly state the number of shares you want to buy or sell you simply enter the position size you want to be in as a goal and a buy/sell strategy to reach this goal. This will also work when you have already a position open. DTBScalper will buy or sell existing or additional shares until your target position has been reached.



In it's simplest form you only need 3 buttons (long, short, flat) and a position size

- Enter the size of shares you want as a goal position
- Click (+) for going long or (-) for going short, click (o) to close the trade.

If you want to have more control over your entries, you may open the strategy tab:

- Choose the strategy to get to your position goal. Currently there are 5 strategies, sorted from fastest (but may be the most expensive) to cheapest entry (but may be delayed forever):
  - Market Order - usually the most dumbest strategy. Give the control to the ECN and let them find a match. Huge slippage may cause bad prices.
  - Chase Order - algorithm using limit orders near the best asks for longs and near the best bids for shorts. Use several bullets to find an entry.
  - Best - Limit order at the best ask for longs or the best bid for shorts.
  - Join - join the bid for longs or the ask for shorts
  - Limit - give an arbitrary limit



Goal based order entry also has big advantages for command oriented actions: As long as the goal isn't changed there will be no changes in the generated orders. So if the goal is stated by a command (see the new command interface) duplicate commands will cause no harm. (It's a big difference to click a command button twice: "be long with 1000 shares" or "buy 1000 shares")

## Risk Control

DTBScalper now has an integrated money management function, which is perhaps the most important function of all, because it helps to protect your account and at the same time maximizes your wins on non-risky trades.

Everything is controlled by your **account value** and your **buying power**, which is a given multiple of your account value, based upon your margin setup, e.g. with a 1:10 margin ratio and a starting capital of 10.000 your buying power would be 100.000. Even if your account value exceeds your theoretical buying power, you may limit your buying power to a **maximum buying power** value.

Now you can limit your **risk per trade** by a certain percentage of your remaining account value. A common value would be 1% which means if your capital is 10.000, your maximum loss per trade should not exceed 100.

So the risk is determined at the start of your trade. The risk limit is enforced by automatic setting of a stop determined by your intended position size.

You may change the intended position size in increments of so called **lots**. A lot is a given percentage of your buying power divided by the current share price. So we automatically adapt the lot size increments by the stock price.

While you change the lot size, Scalper **updates the stop**. This way you can adjust your position size without sacrificing your risk protection.

Example:

Lets say you are expecting that the stock will not fall 20 cents below the current price around 50\$. Your maximum risk currently is 110\$. When you increase the lot size, Scalper calculates a stop of 18 cents at 600 shares, at 500 shares the stop would be 22 cents. So you will only take 500 shares and will not exceed your risk limit. At the same time you see that you have taken 5 of your available 10 lots, so you still have 5 lots available to enter another trade.

- CashValue and Buying Power are updated with every change in your positions.
- Buying Power can be limited to a maximum value.
- If stop is enabled, stop will be executed when the loss on that trade or the total loss per session exceeds a certain percentage of your Cash Value.
- For configuration of risk control parameters open the Setup/Risk Control form.

## Order adjustment

At any time you can adjust your order or your position just by redefining the goal. So if you want to scale in, just wheel to the new size ore press revert to change direction. Then click on the size to go on with the same strategy or click another strategy. DBT Scalper will automatically enter the right cancels and orders to get to the new goal.

If you want to adjust the Limit Price, just wheel the price and click and the update of the current pending order will be processed.

## Cancel

The Cancel function will just stop expanding or shrinking your position. Existing positions are not effected.

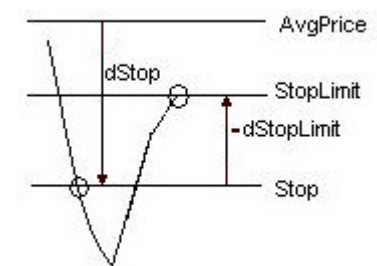
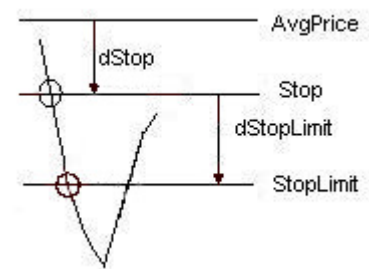
## Automatic Target / Stop brackets

As soon as a position has been established, automatic Target and Stop or Stop Limit Orders will be generated to the rules predefined in the Exit Section.

The **Target Order** will be submitted to the ECN as soon as a position has been established - also if a pending order has only been filled partially. The **Stop Order** will be submitted when the Stop has been reached, because Laser currently doesn't have Stop Orders.

There are two types of Stops - normal **Stop Order** or **Stop Limit Order** differing in the action taken when the stop level has been reached.

- A **Stop Order** will be converted to a **Chase Order** when the stop level has been reached (see Chase Orders below). The delta (dStop) between the Average Entry Price and the Stop level is defined with the dStop spinner.
- The **Stop Limit Order** will be converted to a Limit Order with the Current Stop Limit. The delta (dStopLimit) between the Stop level and the Stop Limit level is defined with the dStopLimit spinner. The dStopLimit can become negative, which means that the stop is only filled, when the price comes back and beyond the original stop.



The dTarget specifies the delta from the Average Entry Price to the designated Target. When the order is active the current computed Target Price shows up as well as the current computed Stop and if

enabled the Stop Limit Price (will be automatically adjusted on trailing stops, see below.)

Stops and Targets can be adjusted or enabled/disabled at any time just by wheeling the dStop, dStopLimit or dTarget spinners and checking the associated enable checkboxes.

## Trailing Stops

At any time you can start or stop trailing your Stops using the Trail Stops (T:) checkbox. When trailing, for each Pending Order a High/Low Water Mark is been maintained. The High/Low Water Mark gets adjusted as soon as n trades printed above/below the current Mark. It gets adjusted to the lowest/highest price of those n trades. The Stop will be adjusted with the given delta to that High/Low Water Mark. As soon as the Last print reaches the Stop, the Order will turn into a Chase Order to get out of the position. Because the system is goal based, corresponding target orders get cancelled or adjusted just because position size changes.

## Status Display

We want to keep space requirements tight and do not want to duplicate information shown elsewhere. So very little additional information is shown:

The Bid/Ask/Last Prices and Sizes. You may click on those to copy their values to the limit price for limit orders.

The Position information of your current position (Size, P/L and Average Entry Price).

A Status Line showing the last main actions. A log of all actions is kept for later reference as well.

## Close Position

The red Close Button is an emergency close action on the current stock. It will cause an immediate Sell/Buy Chase order on the open position using the Chase Feature of **DTBScalper**. Of course it also will cancel corresponding Stop Loss and Target Stop Orders.

## Intelligent Chase function

Market Orders are quite often a bit problematic. In pre-market they don't work at all. In other cases you do not have much control and often get filled at an extremely bad price. **DTBScalper**'s Chase function should be a better deal in most cases: On Sell/Buy Mkt a Sell/Buy Limit order is placed just below the minimum of Last and Bid/Ask Price. If the Order doesn't get filled within n milliseconds, another Bullet is fired. This will be repeated until the Order has been filled.

Other Chase Algorithms will be introduced in later versions. As an example a simple "2 reversal ticks" strategy has been implemented: On rising prices go short as soon as 2 consecutive lower ticks turn the price direction.

## Default values per symbol

For each symbol **DTBScalper** keeps a record of default values for Default Position Size, Default Delta Stop, Default Delta Stop Limit, Default Delta Target and Default Entry Price. These Defaults can be changed and become effective at any time just by clicking the Save symbol above the entry field. Clicking the label above will restore this default value.

## Distributed operations

DTBScalper is part of a distributed Automated Trading System being in the works at [daytraderbeans.com](http://daytraderbeans.com).

It connects to Laser via TCP/IP. So it can run on any computer in your network. This helps to distribute the load between components of your system.

## Synchronisation with Laser

General problem with loosely coupled systems is synchronisation on failures. E.g. you entered an order, DTBScalper computes the Stop/Loss orders and keeps a record of them and the connection gets interrupted. If order state is now changed on one of the systems without knowledge of the other, we get out of sync. DTBScalper can very easily deal with those situations, because of its stateless goal based logic. As soon as an outside condition is reported to DTBScalper it will adjust orders. E.g. if DTBScalper connects to Laser and there are already positions open, order adjustments will go from that existing position as a starting point. This way your trades can be protected by stops just by connecting DBT Scalper.

## Paper trading mode on simulated or real quotes

Of cause you want to practice with the System before going life. DTBScalper allows you to restrict interaction with the real Broker in several ways:

- Paper trade Mode / Offline  
In this mode there is no connection made to the broker at all. So this mode is the best to start practising the system. Every order gets filled by simulation. There are two sub modes:
  - Simulated quotes  
In this mode DBT Scalper generates Last/Bid/Ask events following a random sinus like curve. Fills will be simulated when a Last print matches a given order.
  - Manual quote entry  
In this mode additional fields will show up for manual entry of Last/Buy/Ask prices. This way you can check strategies in slow motion for testing purposes.
- Paper trade Mode / Online  
In this mode the system will try to connect to the broker and quote server, but the order fills will still be simulated: Every order gets filled by simulation (limit orders when a last print crosses the limit price, market orders at the next printed price).
- Real Mode / Online  
This is the normal real-time operation.

## eSignal integration

When you are using eSignal, DTBScalper will automatically link to eSignal windows marked green in both directions: When you focus on an instrument in DTBScalper, the green eSignal windows will show the same instrument. I you open a new instrument in eSignal, a new order entry tab in DTBScalper will pop up with that same instrument.

## Smart order routing

Since version 1.4 DTBScalper uses “smart” order routing based on level 2 data as a default. Among the most frequently used ECN’s (currently fixed ISLD, ARCA, BRUT – in that order) DTBScalper will look for the best price and direct Best and Chase orders to that ECN.

## Level 2 based order entry

Since version 1.4 DTBScalper has a direct Level 2 based order entry capability. An additional level 2 dialog window may be opened for every instrument in the watch list. The last 3 visited windows will be updated concurrently. As soon as a level 2 window gets the focus, DTBScalper will bring the corresponding order entry tab to the front and the linked eSignal windows will show the same instrument.

The layout of the level 2 window is rather intuitive: the middle column show the prices with highlighted last print(blue), ask(green), bid(yellow). The columns left and right to the price column show the bid and ask sizes. The outer columns will display order states.

The local minima and maxima are displayed with red and green in the bid and ask column.

### Order State markers

As soon as the order state changes, markers will show up in the state columns:

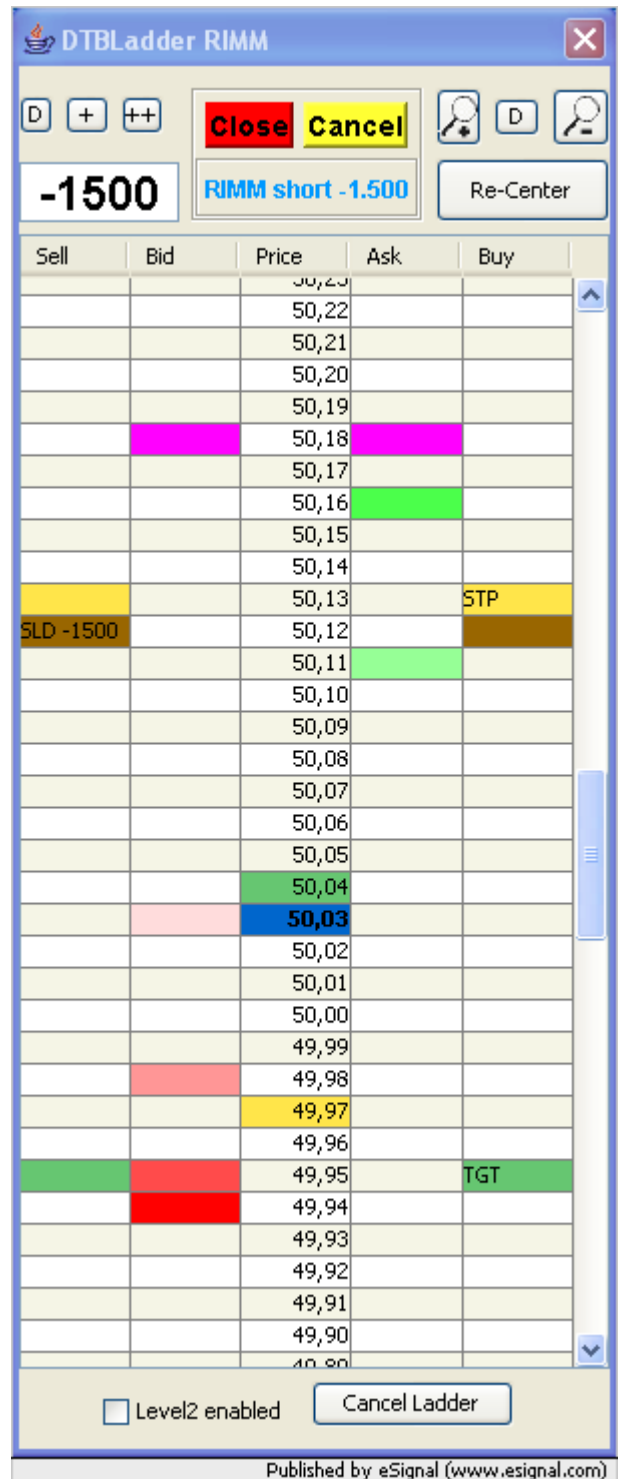
- TGT – the current target price (green)
- STP – the current stop price (yellow)
- STPLMT – the current stop limit price (magenta)
- BUY – the intended long entry price (light green)
- SELL – the intended short entry price (light red)
- BOT – the average long entry position (brown)
- SLD – the average short entry position (brown)

### Direct order manipulation

For a limited long position just click on the right (ask/buy) side.

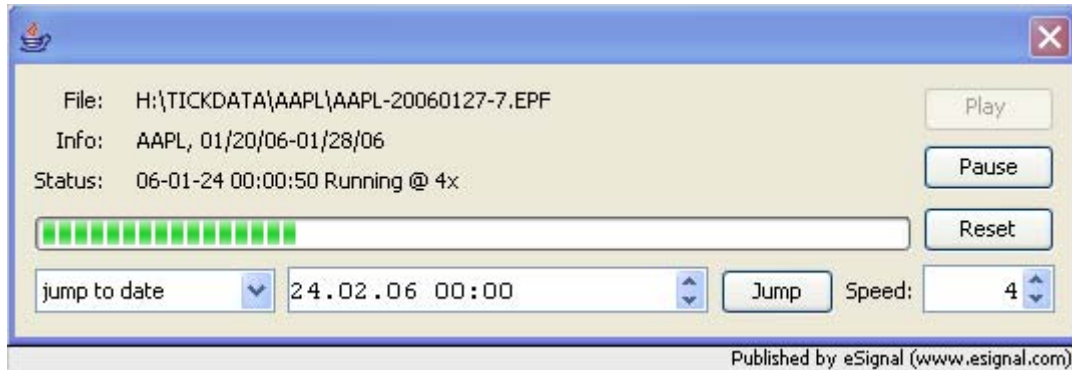
For a limited short position just click on the left (bid/sell) side.

TGT, STP, STPLMT, BUY, SELL prices can be modified by dragging the corresponding markers to another price row.



## Replay of eSignal Tick Data

Starting from Version 1.4.8 it is now possible to replay Tick Data that have been e.g. downloaded with eSignal:



You can load an arbitrary .epf file, jump to any date in the file (jump to date) or fast forward some amount of minutes. The data can be replayed at the original speed or any multiple thereof. As with the generated simulated data, you can papertrade and practice your skills on real world data. If a copy of the same file is replayed in eSignal, you can watch the charts as you would in real life. Though there is no synchronization between the replays in eSignal and DTBScalper at the current time, practice has shown, that there is very little slippage between both. DTBScalper guarantees that the data are displayed with a precision of 1 sec.

## Mediator between Applications and Broker

DTBScalper can be used to forward orders to the broker from tools like Excel or charting tools. This is accomplished by providing a server interface using the TCP/IP protocol and accepting messages on port 15417.

The protocol is defined as follows: (→ to Server) (← from Server)

```
→"HELLO"           ←"OK"
→"NAME=clientname" ←"OK"
→command           ←"END OK"
```

Syntax for commands:

```
{ "LONG" | "SHORT" } symbol size { "MARKET" | "CHASE" | "BEST" | "JOIN" | "LIMIT" limitprice }
{ "STOP" | "TARGET" | "STOPLIMIT" | "TRAILING" } symbol { "ON" | "OFF" }
{ "DSTOP" | "DTARGET" | "DSTOPLIMIT" } symbol deltaprice
{ "CANCEL" } symbol
{ "CLOSE" } symbol
{ "CANCELALL" }
```

An example telnet session might look as follows:

```
>telnet localhost 15417
HELLO
NAME=me
OK
Long yhoo 500 best
OK
Stop yhoo on
OK
Target yhoo on
```

```
OK
Trailing yhoo on
OK
Dstop yhoo 0.5
OK
Short msft 3000 limit 24.3
OK
Bye
>
```

An Excel example using the ToolsackBaseline Makros shows how to use this protocol.

This interface is also used by a new Auto-Trade Adapter feeding buy/sell signals from WealthLab directly into DTBScalper. The adapter is available on request from [daytraderbeans.com](http://daytraderbeans.com).

## Usage Cases

### ***Parameter adjustments***

Before you initiate a trade you should adjust the parameters associated with the stock you want to trade. These are default delta target, default delta stop and the default size you want to trade.

1. Select the trading panel associated with the stock you want to trade. (Create new panel by entering stock symbol in combo box in upper right corner)
2. Enter default values for the stock. For each of the size, delta target and delta stop click into the spinner fields. A system default will show up. Adjust value by turning the mouse wheel. Save the value by clicking the save button (the tiny floppy icon near by. At any time you can switch back to the default by clicking the label of the field.

Setting right values for a stop sure is a bit tricky. When stops are set to tight, the fluctuation of stock price may stop you out before you even recognise that you have been in a trade. So you probably will start with a larger delta stop (e.g. 50c) and narrow down if the stock starts moving in your desired direction. Otherwise you would close out immediately without a stop.

### ***Fast Entry - You want to get in a position as quickly as possible.***

1. Select the trading panel associated with the stock you want to trade.
2. Click Size field for the default size
3. Click LONG or SHORT
4. Click CHASE to let DTBScalper generate the orders. (Main, stop and target order)

### ***Fast EXIT - You want to get out of a position as quickly as possible.***

1. Select the stock
2. Click the big red CLOSE button.

(BTW, this is a short cut for wheeling the size down to zero and clicking the CHASE button)

### ***Reverse a trade***

1. Click Reverse (the size field will change sign)
2. Click CHASE

The effect will be that you will be in a new position with the opposite direction with same size as before.

### ***Scale in / Scale out***

To scale out

1. Turn size wheel to lower size
2. Click CHASE

E. g. if you are in a trade 1000 shares long, you may turn the size wheel to 500 and CHASE. DTBScalper will sell 500 shares to get there. You can do this even when an order is already pending and not yet filled. The order will be cancelled and a new one will be entered automatically.

To scale in you do just the opposite:

1. Turn size wheel to higher size
2. Click CHASE

### ***Entry with more specific limits***

When a stock is volatile, it may be a better strategy to join the offer, because hitting ask and hitting bid is nearly equally probable. When you see that your order doesn't get filled you may at any time change your entry strategy by clicking another strategy button like Best, Chase or Market or hit Join again, to chase from behind.

### ***Trailing Stops***

When a stock starts to run, you can try to lock your profit by narrowing down the stop by wheeling down the delta stop field and then activating the trailing of the stop (by checking the trailing check box in the lower left corner). You can watch how the stop is following the last print. At any time you can stop trailing (without losing the stop protection) by unchecking the trailing check box.

When the stop is hit, the position will be closed and the associated orders will all be cancelled.

### ***Usage of Stop Limit Orders***

The problem with normal stops often is, that they get hit with a spike, that may extend beyond your stop very fast. If we convert the Order to a Chase Order, we will possibly get a bad fill price because the price is moving fast away from us. Stop Limit Orders avoid this by converting the order to a Limit Order with the limit a bit away from our stop. Now if the price moves beyond that Limit the Stop order will only hit when the price comes back to our limit. Of course sometimes the price will not come back and we end up unprotected.

So if you leave the system unattended you should disable the Stop Limit or enter a sufficient large delta between your stop and the stop limit.

In some cases you can trigger break even orders just by setting the dStopLimit to the same value as the dStop just with opposite sign.

### ***Target***

Depending on your strategy at a particular time frame (tiny scalps during sideways fluctuation in the dead zone or larger deltas during trending or spiking situations) you can adjust the target at any time - just wheel the delta and click to change the target order.

# **Appendix - Release History**

## **0.2 Changes**

- Complete redesign of the order entry method.

## **0.3 Changes**

- Trailing of Stops can be enabled/disabled at any time.
- Profit/Loss bars on the tabs of each trading panel when in trade.
- Long/Short buttons to set trade direction explicitly.
- Stock specific storage of default values.

## **0.4 Changes**

- Introduction of Stop Limit Orders
- Logging Facilities
- License Management
- Installation Procedures

## **1.0 Changes**

- First published release

## **1.1 Changes**

- Bug fixes
- Break Even stop button

## **1.2 Changes**

- Support for Interactive Brokers TWS added
- Risk Control added

## **1.3 Changes**

- Bug fixes
- eSignal integration
- TCP/IP Server interface added

## **1.4 Changes**

- Bug fixes
- Performance enhancements
- Smart order routing
- Level 2 Ladder for mouse based order entry

## **1.5 Changes**

- Performance enhancements
- Replay of eSignal Tick Data

## **2.0 Changes**

- New simplified user interface (Three-Button-Trader)
- Money Management with automatic stop adjustment

Copyright (c) 2005 daytraderbeans.com