

# MT4 TRADING SIMULATOR



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# 1. Overview of the FX Blue Trading Simulator

## 1.1 Purpose of the Trading Simulator

The FX Blue Trading Simulator converts the MetaTrader 4 strategy tester into a tool for practising manual trading using historic data. You can use the Simulator to test how well you would have fared under particular historic market conditions – and/or to check how well your favourite indicators would have guided you in the past.

The Simulator lets you place market and pending orders, set trailing stops, alter the s/l and t/p on orders by clicking on the chart, save complex order definitions as templates, quickly close all open orders, plus many more features which are not available as standard in MetaTrader 4.

The results of a simulation can be published to the FX Blue website, giving you access to the full FX Blue reporting and analysis functionality.

## 1.2 Licence

**Unless otherwise specified in writing by FX Blue, this software is licensed for personal use only. You are not allowed to distribute it to other people, regardless of whether or not money is changing hands. You only have a licence to use the software if you, personally, downloaded it from our website.**

**The software is provided entirely at the user's risk, and you should check it thoroughly before deploying it on computers trading real money. FX Blue accepts no responsibility whatsoever for any loss of any kind caused by installation or use of the software.**

## 2. Installing the Trading Simulator

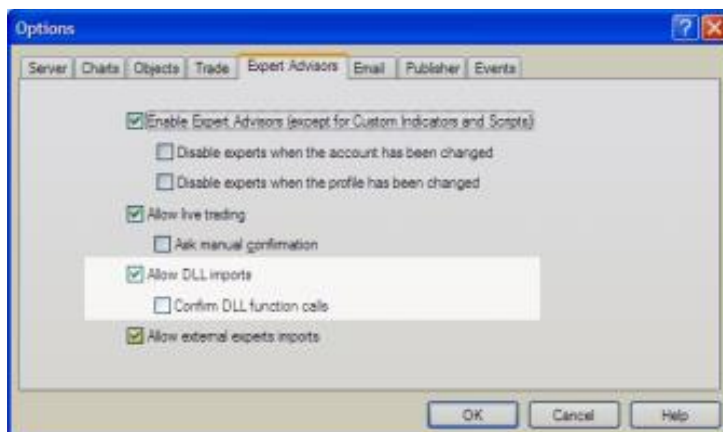
### 2.1 Installing the Simulator

You install the Trading Simulator by running its setup program. This will list all the copies of MetaTrader 4 on your computer, and you simply click on the ones where you want to install the Simulator. If any copies of MT4 are not shown, you can add them to the list using the “Find MT4” button.

You will need to restart any copies of MT4 which are already running. MT4’s Navigator list does not update until the software is restarted.

### 2.2 MetaTrader 4 settings

In order to use the Trading Simulator you need to turn on “Allow DLL imports” (and turn off “Confirm DLL function calls”). Click on Tools/Options in MT4, and then change the settings on the “Expert Advisors” tab as follows:



### 2.3 FX Blue account

You need an account with FX Blue in order to use the Trading Simulator. You can create accounts for free at <http://www.fxblue.com/fxbluelive.aspx>. The Trading Simulator can publish its results to the FX Blue website for further analysis. If you already use FX Blue to publish your live trading results, you may want to create a second account for use with the Simulator so that publication of the simulated results does not overwrite your live results.

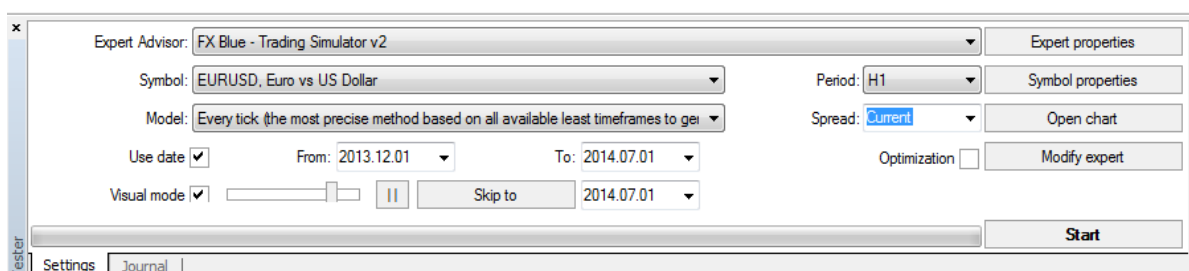
### 3. Running the Trading Simulator

#### 3.1 Starting the Simulator

You start the Trading Simulator by running a backtest in MT4 of the “FX Blue Trading Simulator” expert adviser:

- Open the MT4 strategy tester, by choosing “Strategy Tester” from the “View” menu, or by pressing Ctrl+R.
- Choose “FX Blue Trading Simulator v2” from the “Expert Advisor” list.
- Choose the symbol which you want to practise on from the “Symbol” list.
- Choose the chart timeframe which you want to practise on, from the “Period” list.
- Choose the date range which you want to practise on by clicking the “Use date” box and then choosing the start and end dates.
- Turn on the “Visual mode” setting.
- Click on the “Start” button.


For example:




You can also control the size of the simulated account which you are trading by clicking on the “Expert properties” button and changing the “Initial deposit” value on the “Testing” tab.

Once you click on “Start”, MT4 will collect the historic data for your chosen dates, and then load the Trading Simulator. (If nothing happens when you click on “Start”, please check the “Journal” tab of the strategy tester. The strategy tester will not run if it cannot collect historic data for your chosen dates.)

The simulation will then pause so that you can add indicators to the chart before continuing. The first time that you use the Simulator, you will need to enter your [FX Blue username and password](#). (These details are then remembered for re-use in future.)

When you are ready you can start the simulation using the button in the MT4 strategy tester (  ) or the equivalent button in the Simulator itself.

### 3.2 Adding indicators to the chart

You can add indicators to the simulated chart at any point, in the usual MT4 ways: double-click on an indicator in the MT4 Navigator, or drag an indicator from the Navigator onto the chart, or use the “Indicators” button (  ) on the MT4 toolbar. If you use “multi-timeframe” indicators, please see the [note below](#).

### 3.3 Controlling the speed of the Simulator

The main way of controlling the speed of the Simulator is to use the slider next to the “Visual mode” box, which has values from 1 to 32.

The effect of the slider depends on how powerful your computer is, how many indicators you add to the Simulator, how many ticks there are in each simulated bar etc. As a general rule:

- Value 32 on the slider will be very, very fast.
- Values 28 to 31 will be between 10 and 20 times faster than real life (e.g. an M15 bar is simulated in 1 minute).
- Values 20 to 27 will be between 2 and 5 times faster than real life.
- Values below 10 will be approximately real-life speed (i.e. each M15 bar takes 15 minutes)

You can experiment with the slider to find the best combination for your computer and how quickly you want the simulation to run.

You can also control the speed of the simulation further using the EA’s SpeedFactor property. You set this by clicking on the “Expert properties” button in the strategy tester and then altering the “Value” property on the “Inputs” tab.

The SpeedFactor parameter slows down the simulation; the larger the value, the slower the simulation. For example, you can create a simulation-speed between values 31 and 32 on the MT4 slider by setting the slider to 32 and then adjusting SpeedFactor to a non-zero value.

### 3.4 Pausing the Simulator automatically

You can make the Simulator pause after an s/l or t/p is hit, so that you can inspect the history of the trade before continuing. You turn on this option by clicking on the “Expert properties” button in the strategy tester and then altering the “Value” property for "PauseTester" on the “Inputs” tab.

The PauseTester setting has five options:

- No pausing.
- Pause when s/l or t/p is hit. The simulation will pause each time that a trade is closed at its s/l or t/p.
- Pause after all trade closes. The simulation will pause each time that a trade closes for any reason, including trades which you close manually. This option will also pause if a pending order expires without being filled.
- Pause at the start of each bar. The simulation will pause at the start of each and every new bar. (With this option, you may want to set the strategy tester to its maximum speed. You then decide at the start of each bar whether to place a trade, and resume the simulation as a way of skipping to the start of the next bar.)
- Pause at the start of each bar, and also at each trade close. This is a combination of the two options above: the simulation pauses at the start of each bar, and also at any trade-closes in the middle of bars.

## 4. Placing trades using the Trading Simulator

### 4.1 Placing buy/sell orders


Once the simulation is running you can place buy and sell orders using the large green and red buy and sell buttons.

MT4 will show dotted horizontal lines for each order and also draw markers showing where orders were opened and closed. The status indicator at the top of the Simulator will show your current net position, e.g. +0.10 if you are long 0.1 lots, or -0.10 if you are short 0.1 lots.

You can control the lot size on new orders, and set a stop-loss, take-profit, or trailing-stop using the fields above the buy and sell buttons.


You can also open calculators for each of these fields by holding down the Ctrl key while clicking on them. For example, if you are trading 0.25 lots, and you want a stop-loss which is equivalent to \$100, then you can Ctrl+click on the S/L field and tell the calculator to work out the number of pips which is equivalent to a fixed cash risk of \$100.

### 4.2 Placing pending orders

You can place pending orders (limits and stops) by clicking on the  button. You can choose the order type and entry price, stop-loss, take-profit etc.

The entry price for pending orders can be defined either as a fixed price (e.g. 1.23456) or as a number of pips. For example, if you choose a buy-limit and enter a value of 20 pips rather than a price, then the limit order is created 20 pips below the current price.

#### 4.2.1 Placing pending orders from the chart

You can also create pending orders from the chart. If you hold down the Ctrl key while clicking on the chart, a small window will pop up letting you create a pending order at the selected price. If the price you click on is above the current price then you can create a buy-stop or a sell-limit; if the selected price is below the current price then you can create a buy-limit or a sell-stop. You can turn on MT4's cross-hairs (using the  button on MT4's toolbar) to show the exact price which you are selecting.




#### 4.2.2 OCO orders

The new-order form also lets you place one-cancels-other (OCO) orders. There are two types of OCO order:


- “OCO breakout”. You specify two prices, or two values in pips, either side of the current price, and the Simulator places a buy-stop and a sell-stop. Once one of the pending orders is filled, the other is automatically cancelled. You would typically use this when you are expecting a major price movement, but you don’t know whether the move is going to be up or down. For example, there are many trading strategies based around trading the breakout, in either direction, of yesterday’s range.
- “OCO reversion”. In this case the Simulator places a buy-limit and sell-limit, rather than a buy-stop and sell-stop. You would typically use this if you are expecting a move in either direction followed by a return towards the current price – e.g. a bounce off yesterday’s high or low.

#### 4.3 Order templates

If there is a type of order which you place regularly – e.g. a buy-limit 20 pips below the current price, with a 100-pip s/l and t/p – then you can save this as a template for quick re-use in future:

- Click on the  button
- Enter the details of the order
- Click on the “Save template” button and choose a name.

You can then quickly execute that saved template in future:

- Hold down the Ctrl key while clicking on the  button
- Choose the saved template from the list

#### 4.4 Closing and modifying orders

You can close all open and pending orders by clicking on the position marker at the top of the Simulator: the text which reads +0.10, -0.50 etc.


You can close individual orders by opening the [account info](#) – see below.

#### 4.4.1 Changing the s/l or t/p on open orders

You can change the s/l or t/p on all open orders by clicking on the chart. You move the mouse over the price where you want to set the s/l or t/p, and then hold down the Ctrl key while clicking – i.e. the same method as for [placing a pending order](#).

From the window which pops up, you then click on the button for moving the s/l or t/p. For example, you can Ctrl+click on the high or low of a bar to set the s/l or t/p to that price.

#### 4.5 Account info


You can view information about your simulated account using the Account Info: click on the Tools button () at the top of the Simulator and then choose “Account info”.

This shows your total net profit in the simulation so far, your current balance and equity, the profit on all open orders, the margin usage etc.

The account info also shows a list of all pending and open orders. You can close each one of these by clicking on the icon next to its ticket number.


#### 4.6 Other features

##### 4.6.1 Settings, and non-hedging mode


You can control the settings used by the Simulator by clicking on the Tools button () and choosing “Settings”. This lets you turn on confirmations before orders are opened and closed, and also lets you turn on non-hedging mode.

By default, the Simulator follows normal MT4 behaviour and lets you have buy and sell orders open at the same time. (Please note that the MT4 strategy tester allows this even if you are using a US broker who is prohibited from allowing hedging.) If you turn on non-hedging mode, buy orders close sell orders, and vice versa. For example, if you are long 0.10 lots and place a sell order for 0.30 lots, then the buy order will be closed and a sell order will be placed for the balance of 0.20 lots.

##### 4.6.2 Automated tasks

You can see a list of all the automated tasks which the Simulator is running: any trailing stops on orders, plus any [OCO orders](#). You click on the Tools button () and choose “Auto tasks”.

#### 4.6.3 Undocking the Simulator window

You can undock the simulator into a floating window by clicking on the Tools button () and choosing “Undock terminal”. You can continue to trade while the terminal is undocked from its chart. To re-dock the terminal, click on the Tools button again and choose “Re-dock terminal”

## 5. Analysing your results


### 5.1 Monitoring results while the simulation is running

You can monitor your results while the simulation is running either by using the [Account info](#), or by using the Results and Graph tabs of the MT4 strategy tester.

### 5.2 Viewing and analysing final results

At the end of the simulation – when it reaches the end of the selected period, or you terminate it early using the “Stop” button in the MT4 strategy tester – MT4 will compile its usual backtesting report on the Report tab.

The Simulator will also show your final net profit. You can then get more comprehensive analysis of your simulated trading by publishing the results to the FX Blue website. You simply click on the “Analyse trading” button, and the simulated history is uploaded to the website, giving you access to the full range of FX Blue reporting and analysis.

Please note: if you already use FX Blue to publish your live trading results, you may want to create a second account for use with the Simulator so that publication of the simulated results does not overwrite your live results. If you need to change account at the end of the simulation, click on the  button and then log in again using a different FX Blue account.

## 6. Notes on the MT4 strategy tester

### 6.1 Historic data, “unmatched data errors”, modelling quality etc.

For general information about use of the MetaTrader 4 strategy tester, please see the MetaQuotes [forum.mql4.com](http://forum.mql4.com) discussion board and articles. For example:

- <http://forum.mql4.com/14612>
- <http://forum.mql4.com/35627>
- <http://articles.mql4.com/83>
- <http://articles.mql4.com/70>

### 6.2 “Multi-timeframe” (MTF) indicators

Please note that multi-timeframe indicators can effectively see into the future when used in visual-mode MT4 backtesting. They will potentially give you advantageous information which you could not have had historically. For example, halfway through a bar they will tend to indicate what is about to happen based on the future price at the end of the bar.

The technical reasons for this are as follows:

- If an EA uses MQ4 functions such as `iClose()`, `iHigh()`, `iCustom()` etc in backtesting for a timeframe which is different to the chart timeframe (e.g. the H1 values when running on a M15 chart), then this *is* safe. The values which the EA sees are based on the latest simulated price, not any future prices.
- But if an indicator is added manually to a visual-mode backtest, then use of `iClose()`, `iHigh()`, `iCustom()` etc for a higher timeframe will see the bar-end values rather than the interim simulated values. In other words, if an indicator is manually added to the chart, and collects prices from a higher timeframe than its chart, then it “breaks out” of the backtesting environment and can see what happens in the future.

### 6.3 Backtesting terminates after placing the first trade

If the backtesting/simulation is terminated immediately after you place the first trade, please look for errors in the Journal tab of the strategy tester.

The only known cause of this problem is the message from MT4 saying "margin exchange rate cannot be calculated", as a result of the deposit currency for the strategy tester being different to the deposit currency of your account.

Please check that the deposit currency which is being used in the strategy tester is correct, using the "Expert properties" button in the MT4 strategy tester pane. For another example and more information about this problem in the MT4 strategy tester, please see <http://forum.mql4.com/34736>