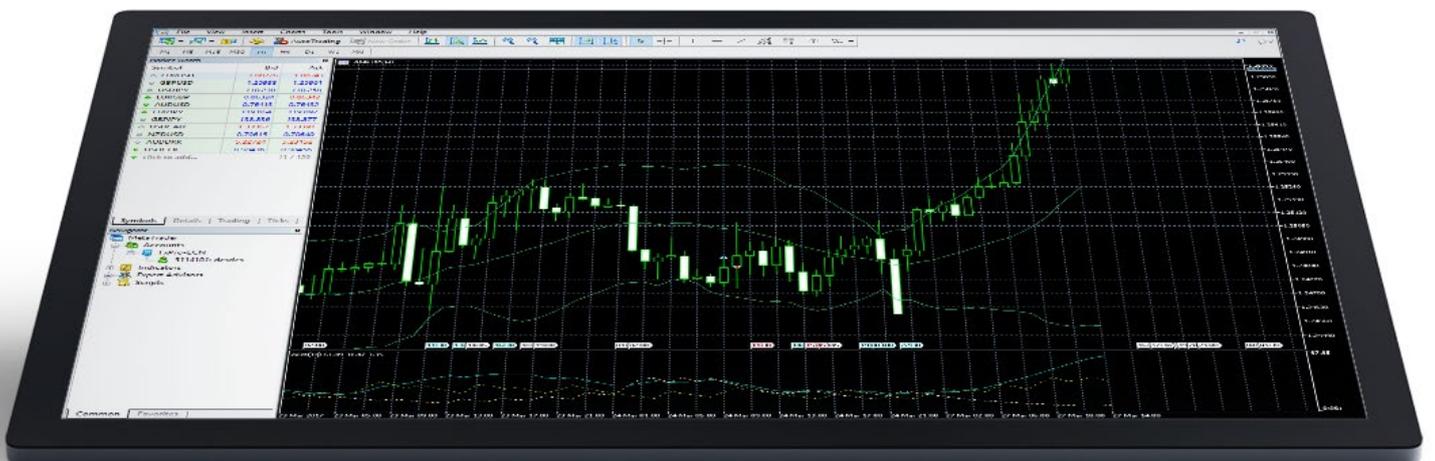




FxPro MT4 Backtest

A backtesting guide for MetaTrader 4



User Guide

Disclaimer

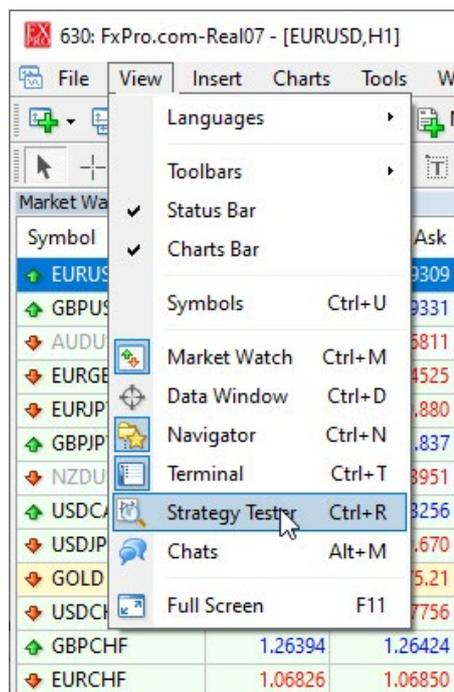
Under no circumstances, the backtesting process described in this guide should be interpreted as an indication of the potential profitability of any Expert Advisor. Past performance is not indicative of future results. FxPro cannot guarantee the accuracy of performance and/ or results of the process described herein. Your individual circumstances and trading objectives have not been considered. Therefore, this should not be considered as a personal recommendation or investment advice.

- ✚ The backtesting functionality of the Metatrader 4 platform allows a trader to check how an EA (Expert Advisor) would have traded in the past. It allows to test how different indicator inputs and other EA parameters may affect profitability as well as allowing developers to test for any errors in the logic of their strategy.
- ✚ Backtesting can save a lot of time, since it allows a trader to see trade results quickly, without having to test it real-time on a demo to gain results. It can also be used as a research tool, allowing a strategy developer to check how a given setup will work in a range market as opposed to trending market as well other market conditions.
- ✚ The following guide will take you through the main steps in backtesting a strategy, as well as some of the common problems encountered.

Enable Strategy Tester

If the Strategy Tester does not appear on the screen, you can enable it by selecting View → Strategy Tester or simply click **Ctrl+R**

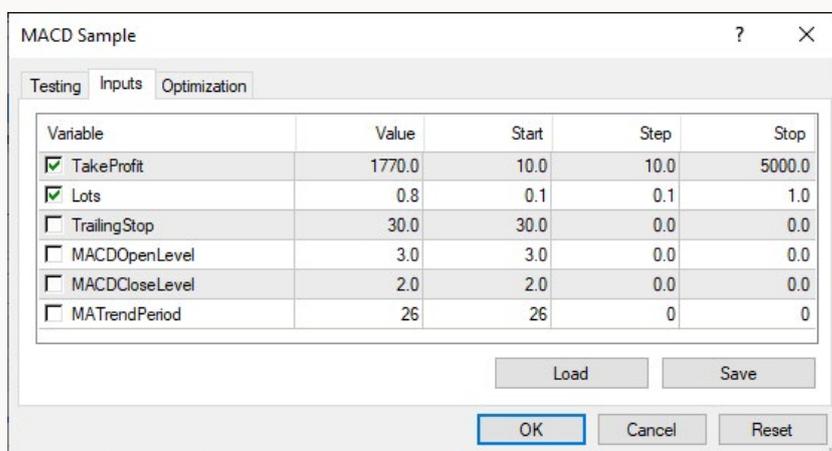
the Strategy Tester window should appear similar to this:



Set Inputs

To set the backtest input values for the EA, click on Expert properties → Inputs tab.

Here you can set the value for each of the EA inputs or simply use the default ones. Only the **'Values'** column will be used and other columns are used for optimization and are irrelevant for the backtest.



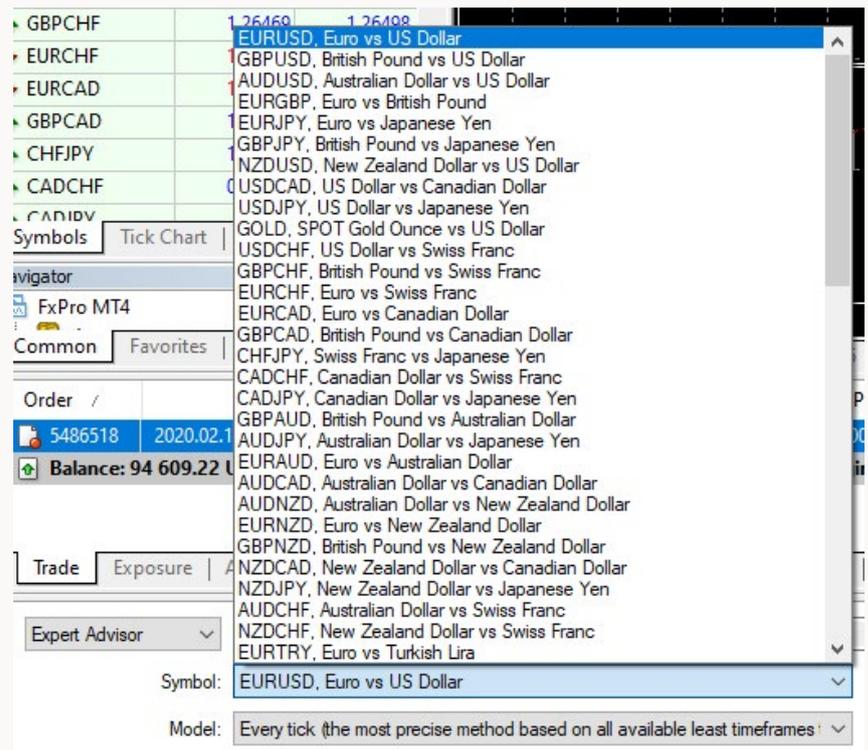
Select the Expert Advisor from the list

If the Expert Advisor that you wish to select is not in the list, make sure that its placed in the right folder eg: **C:\Program Files\FxPro - Metatrader 4\experts**



Select Symbol/ Currency pair

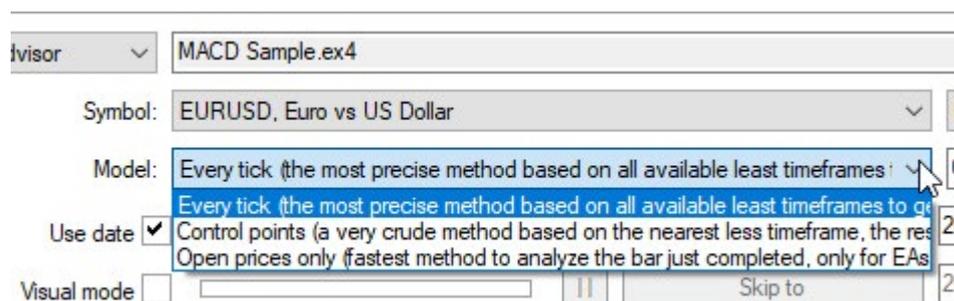
You can specify the symbol that you wish to be used for the backtest by selecting it from the drop down menu



Select data generation model

Open prices only method will check the prices and react to them only at the open of each bar. **'Every tick'** method will do so at every tick. Please note that MT4 does not use historical tick data and instead simulates tick based on 1 minute bars.

For more details about different data models used during testing see: <http://articles.mql4.com/70>



Time Period restrictions

If you want to restrict the EA to backtest over a specific time period, select 'Use date'.

Use date From: 2019.10.01 To: 2020.02.10

Visual mode 2020.02.10

Now you can press **Start** (bottom right corner) and you should see the backtest start.

Viewing results

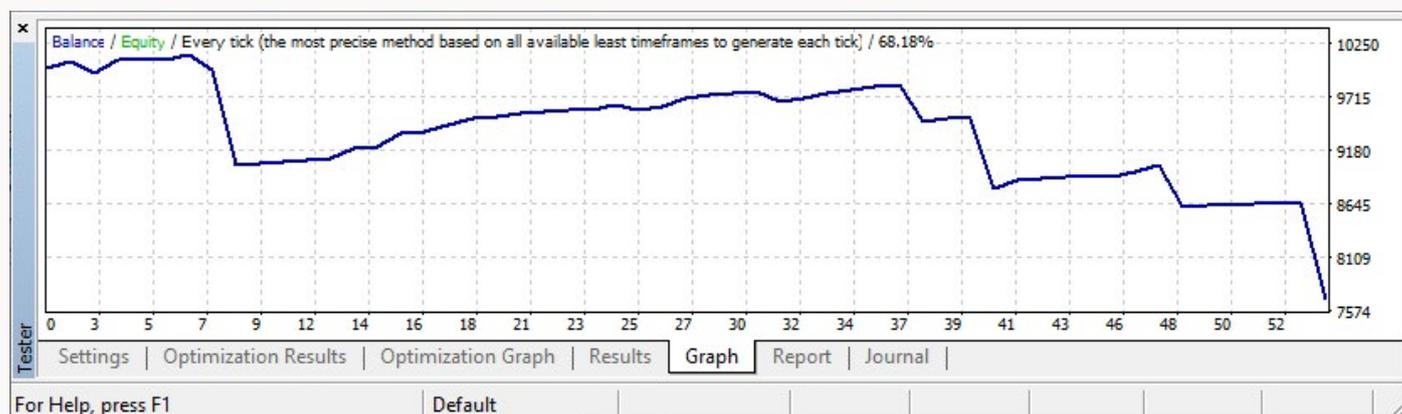
If your backtest was successful, you can view all the results in the **results** tab.

#	Time	Type	Order	Size	Price	S / L	T / P	Profit	Balance
268	2019.10.08 17:39	modify	3	0.80	1.09730	1.09569	1.07960		
269	2019.10.08 17:43	s/l	3	0.80	1.09569	1.09569	1.07960	128.80	10088.62
270	2019.10.09 21:38	sell	4	0.80	1.09719		1.07949		
271	2019.10.09 23:39	modify	4	0.80	1.09719	1.09718	1.07949		
272	2019.10.09 23:39	modify	4	0.80	1.09719	1.09717	1.07949		
273	2019.10.09 23:39	modify	4	0.80	1.09719	1.09716	1.07949		
274	2019.10.09 23:54	s/l	4	0.80	1.09716	1.09716	1.07949	2.40	10091.02
275	2019.10.15 00:02	buy	5	0.80	1.10287		1.12057		

Tester Settings | Optimization Results | Optimization Graph | **Results** | Graph | Report | Journal |

For Help, press F1 Default

See the balance graph in the **Graph** tab



You can view the backtest summary report in the Report tab

Bars in test	3193	Ticks modelled	3551569	Modelling quality	68.18%	
Mismatched charts err...	1					
Initial deposit	10000.00				Spread	Current (15)
Total net profit	-2303.74	Gross profit	1534.20	Gross loss	-3837.94	
Profit factor	0.40	Expected payoff	-42.66			
Absolute drawdown	2327.74	Maximal drawdown	2491.55 (24.5...)	Relative drawdown	24.51% (2491.55)	
Total trades	54	Short positions (won %)	31 (90.32%)	Long positions (won %)	23 (73.91%)	
		Profit trades (% of total)	45 (83.33%)	Loss trades (% of total)	9 (16.67%)	
	Largest	profit trade	129.60	loss trade	-979.56	
	Average	profit trade	34.00	loss trade	-426.44	

Tester Settings | Optimization Results | Optimization Graph | Results | Graph | Report | Journal

Here you can see the total net profit that the EA generated during the backtests, as well as other key performance metrics such as '**Profit factor**', '**Drawdown**' and '**win percentage**'. For more information about what all of these numbers mean, please refer to the following article: <http://articles.mql4.com/83>

Backtest chart

Expert Advisor: MACD Sample.ex4

Symbol: EURUSD, Euro vs US Dollar

Model: Every tick (the most precise method based on all available least timeframes to genera

Use date From: 2019.10.01 To: 2020.02.10

Visual mode Skip to: 2020.02.10

Period: H1 Spread: Current Optimization

Start

Tester Settings | Optimization Results | Optimization Graph | Journal

To view the historical trades plotted on the chart, simply click the '**Open Chart**' button on the right hand side.



A new chart window will be opened and trades will be drawn on the chart you can scroll back and forth to review the historical trades of the EA.

Backtest troubleshooting

If the backtest does not show any trades or does not happen at all, click on the Journal tab to check for any errors:

Time	Message
2020.02.10 15:59:58.690	2020.01.28 23:41:10 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10192 tp: 1.11926 ok
2020.02.10 15:59:58.690	2020.01.28 23:41:05 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10191 tp: 1.11926 ok
2020.02.10 15:59:58.690	2020.01.28 23:40:35 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10190 tp: 1.11926 ok
2020.02.10 15:59:58.689	2020.01.28 23:01:40 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10189 tp: 1.11926 ok
2020.02.10 15:59:58.689	2020.01.28 23:01:38 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10188 tp: 1.11926 ok
2020.02.10 15:59:58.689	2020.01.28 23:01:36 MACD Sample EURUSD,H1: OrderModify error 1
2020.02.10 15:59:58.689	2020.01.28 23:01:36 MACD Sample EURUSD,H1: OrderModify error 1
2020.02.10 15:59:58.689	2020.01.28 23:01:33 MACD Sample EURUSD,H1: OrderModify error 1

Tester | Settings | Optimization Results | Optimization Graph | Results | Graph | Report | Journal

For Help, press F1 | Default | 9716/2 kb

If click the 'Start' button and backtest does not start, the most likely issue is that there is no data in the history centre

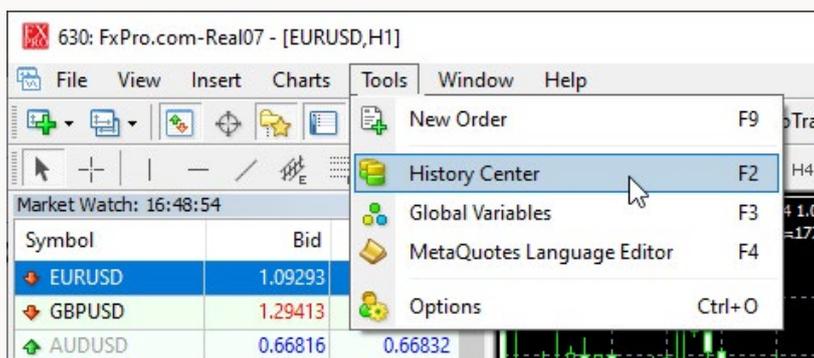
Time	Message
2020.02.10 16:46:17.327	TestGenerator: no ticks generated, history of EURUSD,H1 begins from 2020.02.10 0:00
2020.02.10 16:46:15.323	TestGenerator: current spread 15 used
2020.02.10 16:45:57.286	TestGenerator: no ticks generated, history of EURUSD,H1 begins from 2020.02.10 0:00
2020.02.10 16:45:55.282	TestGenerator: current spread 15 used
2020.02.10 16:45:22.878	EURUSD,H1: 3550569 tick events (2192 bars, 3551569 bar states) processed in 0:00:02.312 (total time 0:00:06.531)
2020.02.10 16:45:22.877	2020.02.07 23:59:49 Tester: order #54 is closed
2020.02.10 16:45:22.768	2020.02.04 03:47:03 MACD Sample EURUSD,H1: BUY order opened : 1.1064
2020.02.10 16:45:22.768	2020.02.04 03:47:03 MACD Sample EURUSD,H1: open #54 buy 0.80 EURUSD at 1.10640 tp: 1.12410 ok

Tester | Settings | Optimization Results | Optimization Graph | Results | Graph | Report | Journal

For Help, press F1 | Default | 10129/2 kb

In this case you will need to either **Download** or **import the data**

To download historical data go to Tools → History Centre



Select the Symbol that you wish to backtest for and the download dialog box will appear.

Select the timeframe that you wish to backtest by double-clicking on it
Then simply click **Download**

History Center: EURUSD,M5

Symbols: Database: 6378 records

Time	Open	High	Low	Close	Volume
2020.02.10 16:50	1.09286	1.09290	1.09284	1.09290	20
2020.02.10 16:45	1.09292	1.09315	1.09285	1.09285	290
2020.02.10 16:40	1.09282	1.09292	1.09271	1.09291	179
2020.02.10 16:35	1.09292	1.09295	1.09278	1.09280	217
2020.02.10 16:30	1.09279	1.09294	1.09269	1.09290	320
2020.02.10 16:25	1.09297	1.09302	1.09271	1.09278	219
2020.02.10 16:20	1.09291	1.09318	1.09288	1.09295	228
2020.02.10 16:15	1.09279	1.09304	1.09278	1.09290	217
2020.02.10 16:10	1.09287	1.09295	1.09264	1.09278	333
2020.02.10 16:05	1.09326	1.09331	1.09276	1.09286	509
2020.02.10 16:00	1.09318	1.09328	1.09297	1.09325	462
2020.02.10 15:55	1.09356	1.09362	1.09292	1.09319	525
2020.02.10 15:50	1.09428	1.09430	1.09353	1.09358	531
2020.02.10 15:45	1.09466	1.09469	1.09425	1.09429	274
2020.02.10 15:40	1.09484	1.09501	1.09457	1.09467	247
2020.02.10 15:35	1.09492	1.09498	1.09484	1.09485	173
2020.02.10 15:30	1.09518	1.09519	1.09474	1.09491	275

Download Add Edit Delete Export Import Close

If during your backtest you get 'Order Send error 130' or 'Order Modify error 130', the take profit or stop loss is too close to the opening price of the trade or to the current price.

Time	Message
2013.06.05 15:43:56	2012.01.12 02:45 MACD Sample EURUSD,M15: OrderModify error 130
2013.06.05 15:43:56	2012.01.12 02:45 MACD Sample EURUSD,M15: OrderModify error 130
2013.06.05 15:43:56	2012.01.12 02:45 MACD Sample EURUSD,M15: OrderModify error 130
2013.06.05 15:43:56	2012.01.12 02:44 MACD Sample EURUSD,M15: OrderModify error 130

For Help, press F1 Default 1305/1 kb

If you see an error similar to this one: there must be an error in the code of the EA and it cannot compile. You will not be able to backtest the EA until the error is resolved.

Time	Message
2013.06.05 16:21:50	Cannot open file 'C:\Program Files (x86)\MT4_3\experts\MACD Sample.ex4' on the ,

For Help, press F1 Default 8/0 kb

If you see an error similar to this one: the EA needs a custom indicator to be present in order for it to work. Please put the relevant indicator into the 'indicators' subfolder of the 'experts' folder where your EA is.

Time	Message
2013.06.05 16:26:00	2012.01.02 00:28 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,M15
2013.06.05 16:26:00	2012.01.02 00:18 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,M15
2013.06.05 16:26:00	2012.01.02 00:18 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,M15
2013.06.05 16:26:00	2012.01.02 00:18 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,M15
2013.06.05 16:26:00	2012.01.02 00:18 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,M15
2013.06.05 16:26:00	2012.01.02 00:18 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,M15

For Help, press F1 Default 2012.01.02 05:30 O: 1.29275 H: 1.29277 L: 1.29215 C: 1.29247 V: 268 28/0 kb

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