FOREX DERIVATIVE 2.0

USER MANUAL

Table Of Contents

<u>How to Install Forex Derivative 2.0</u>

Forex Derivative 2.0 is an Expert Advisor designed to run on Metatrader 4 trading platform. Therefore, in order to run it properly you will need the latest version of Metatrader 4. If you don't already have it installed you can download it for free at http://www.metaquotes.net/.

## **Installation Steps**

Step 1. Copy ex4 and dll file

Place the ForexDerivative.ex4 file into experts folder of your MetaTrader 4 installation. The experts folder is usually found at C:\Program Files\MetaTrader 4\experts\ . Place the ForexDerivative.dll file into the library folder. The library folder is usually found at C:\Program Files\MetaTrader 4\experts\libraries\.

Please note: During this procedure Metatrader 4 should be closed.

Step 2. Restart MetaTrader 4

Step 3. Set up the working parameters common for all experts

Click on **Tools** on the menu bar and select "**Options".** Options window appears. Select now **"Expert Advisors"** tab.
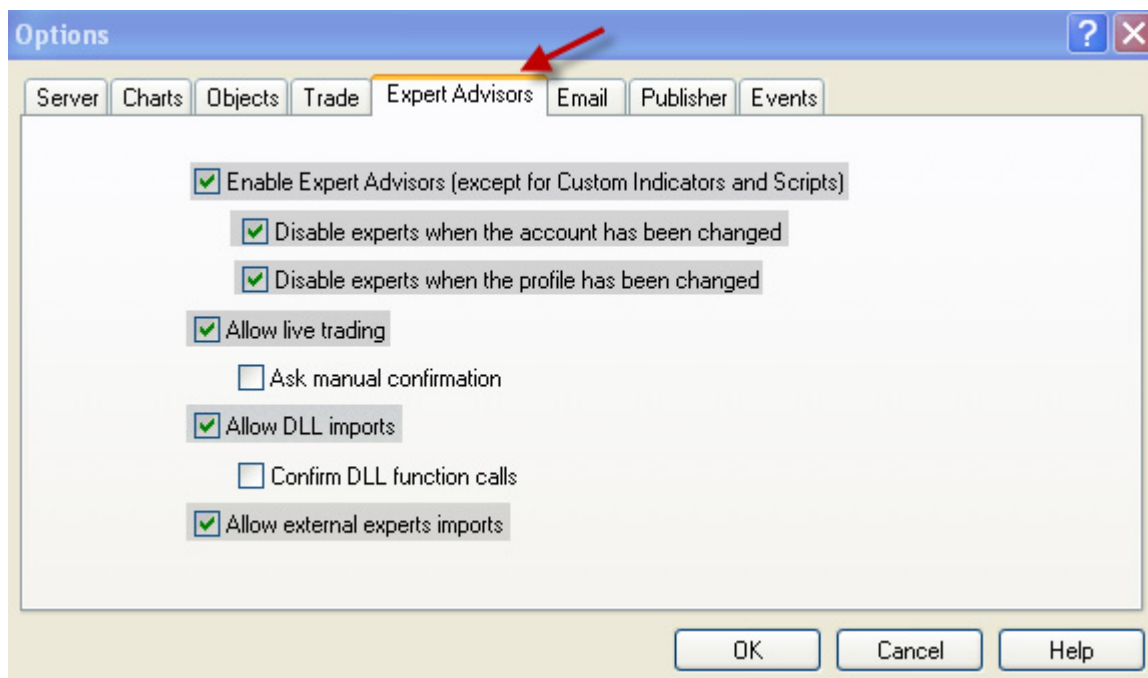
Please check:

☑ Enable Expert Advisor

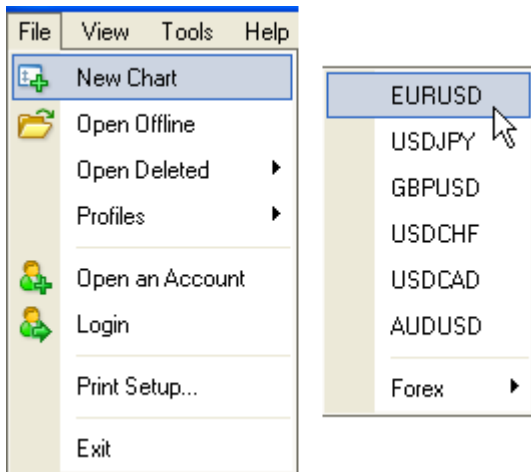☑ Allow live Trading

☑ Allow dll imports

Please uncheck:

☐ Confirm DLL function calls

When you've made selections click **OK.**

Step 4. Open a chart

Now you need to open the chart for the currency pair. You can open it by clicking on **File** on the menu bar and selecting **"New Chart".** Choose the currency pair. Then choose the time frame.

Please Note: Forex Derivative 2.0 works with EUR/USD, GBP/USD, USD/CAD and AUD/USD on M1 timeframe.

Step 5. Place Forex Derivative 2.0 on the chart

Now we are ready to place Forex Derivative 2.0 on the chart.
Double click on Forex Derivative 2.0 in the Navigator window. If you can not see Navigator window then click on **View** on the menu bar and select "**Navigator"**.
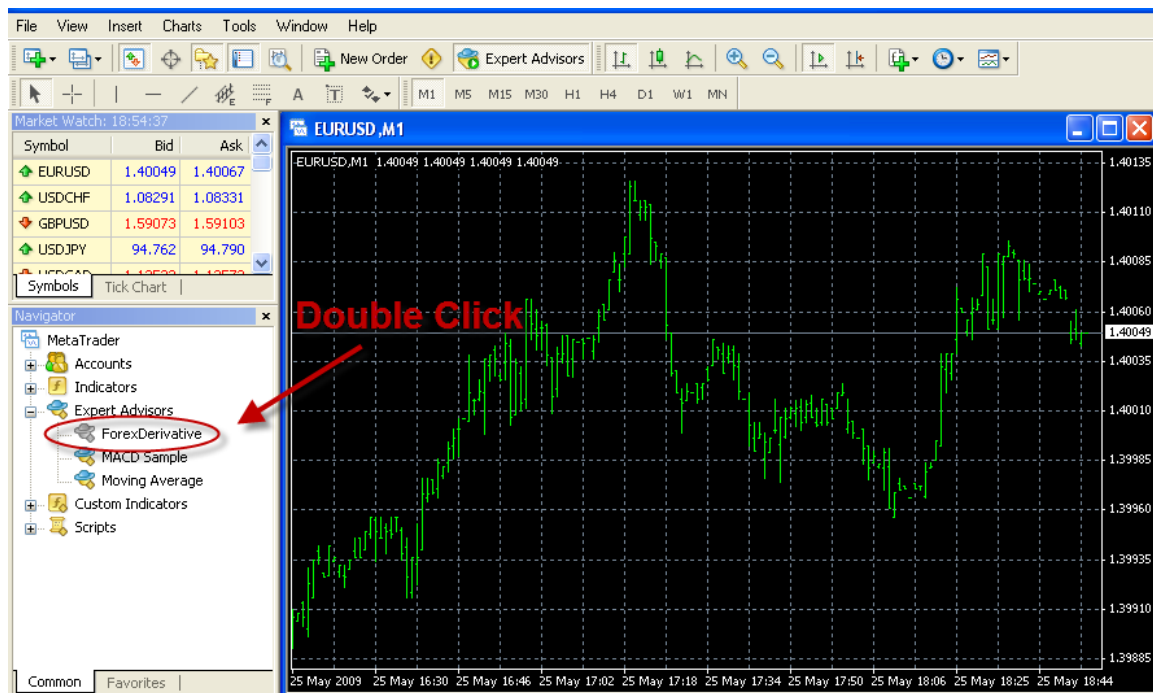
Expert Advisor Settings window appears now. Select "Common" tab and make the selections as shown in the picture below.
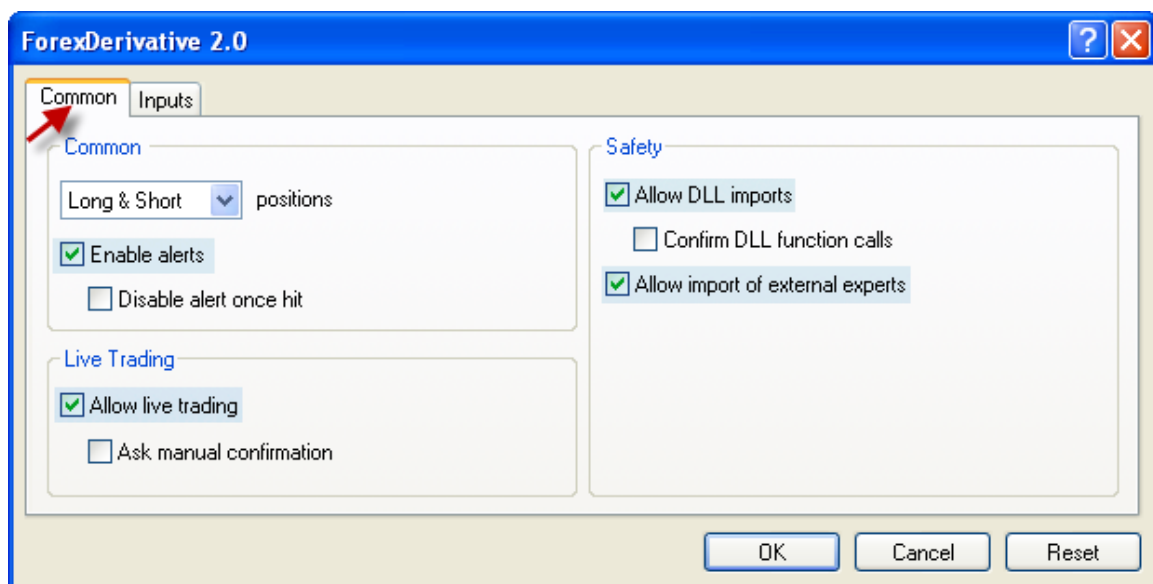
Be sure to select Long&Short positions and:

Check:

        ☑   Allow live Trading

        ☑   Allow dll imports

Uncheck:

        ☐   Confirm DLL function calls

When you`ve made selections, click **OK** to close the settings window.

If you've done everything properly until now a smiley face ☺ will be displayed in the top right corner. Next step is to activate your copy.

If you see a sad face ☹ that means that you didn't enable live trading. To correct this right mouse click on the chart, select **Expert Advisors**, **Properties.** Expert Advisor Settings window will appear. Select "**Common"** tab and check the "**Allow live trading"**.

If you see ✖ that means that Expert Advisor is disabled. To correct this click on the Expert Advisors icon in the top menu bar (see picture below).
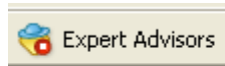
Expert Advisor is disabled

Expert Advisor is enabled

If you get a message: "Warning: Amount of Bars should be greater than 800" you will either need to download historical data or just scroll the chart backwards (about 2 days). How to download historical data is explained in the section "Forex Derivative 2.0 backtesting". This message usually appears, if you are using a new account.

Step 6. Activate your Forex Derivative 2.0.

In order to get your activation key you will need your account number (demo or real). You can find your account number in the **Navigator** window under the **Accounts**.
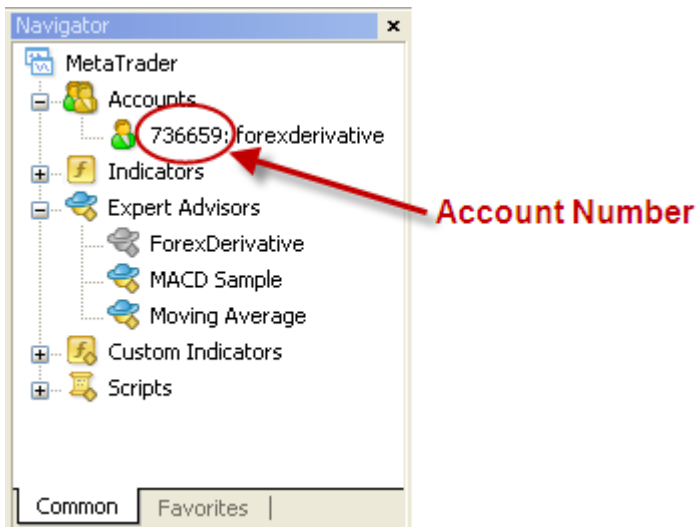
1. Please record your account number.
2. Now go to the download area http://www.forexderivative.com/membersFD/
3. Insert the account number into the box and press **Get Key**. Please make sure that your Web Browser allows cookies.

Please get your key here:

Account Number: 736659   [Get Key]

4. Please record your activation number

Please get your key here:

Account Number: [   ]   [Get Key]

Your KEY = 94886116

5. Go back to the Metatrader

6. Right mouse click on the chart and select **Expert Advisors, Properties.** Select "**Inputs**" tab.

7. Double click on the **"KEY"** – **"Value"** and type in your key number.

Variable	Value
KEY	94886116
MoneyManagement	true
FixLotSize	1.0
Hedging	false
DisplayOnChart	true
EmailNotification	false
INFO	FOREX DERIVATIVE 2.0 v1

ForexDerivative — Common | Inputs

PLEASE INSERT YOUR KEY HERE

[Load] [Save]

[OK] [Cancel] [Reset]

8. Press **OK**

Chart as below should be now displayed.

Please note: during the activation process, you need to be logged in into your Metatrader account.

In order to get the most trades and therefore most profits out of Forex Derivative 2.0 you should enable it to run all four currency pairs. EUR/USD, USD/CAD, AUD/USD and GBP/USD.

Your Forex Derivative 2.0 has now been activated. 🙂

Explanation of the external parameters

Once you have loaded Expert Advisor to the chart you can change its external parameters by right-mouse clicking on the chart, selecting **Expert Advisors**, **Properties** and selecting the "**Inputs**" tab. The values that you see are the default values.
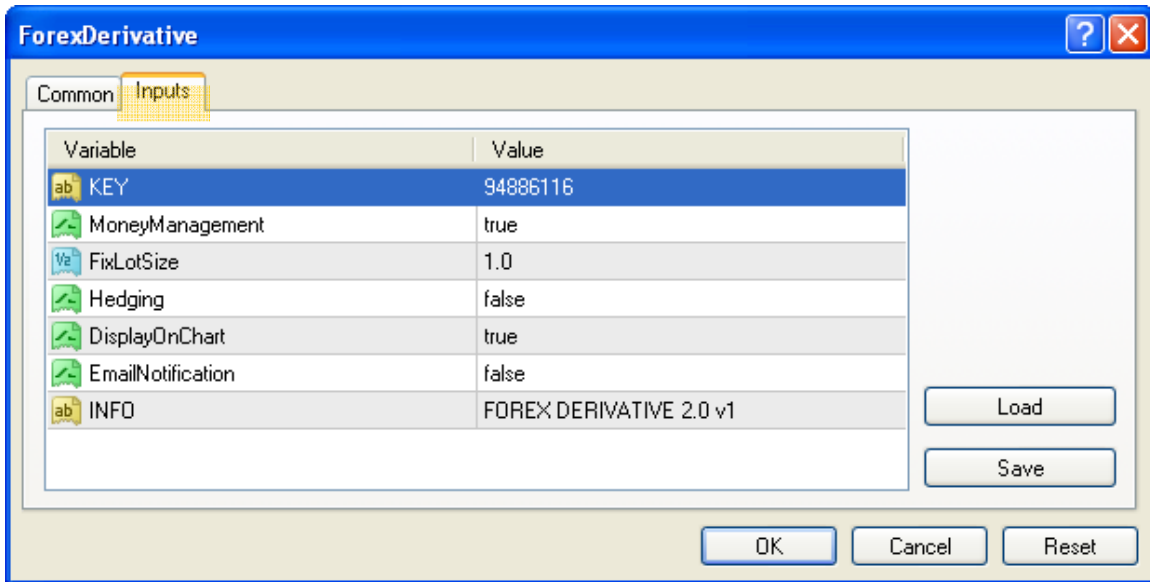
PARAMETERS

KEY

Key parameter is used to activate the Forex Derivative 2.0. Activation process is explained in STEP 6.

MoneyManagement

This parameter is used to enable/disable the built-in money management system.
It can have only two values "true" or "false". If it's true, then the built-in money management system is enabled. If it's false, then the built-in money management system is disabled. The built-in money management system is explained in detail in chapter "The Forex Derivative 2.0 Intelligent Money Management System" at page 24.

FixLotSize

This parameter is only relevant if **MoneyManagement** is false (built-in money management system disabled).
In this case, the user has to define which lot size he wants to trade. The minimum lot size and maximum lot size depend on your brokerage. But in any case it cannot be zero.

Hedging

This parameter is only relevant for the customers that have non U.S. forex broker.
It can have only two values true or false. If it's true then hedging is enabled and otherwise not.

DisplayOnChart

This parameter can have only two values: true or false. If it's true, general information and the current status of the Forex Derivative expert advisor will be displayed on the chart otherwise not.

EmailNotification

This parameter sends email notifications about opening trades. It has only two values true or false. By default is set to false. But if you want that you receive email you will need to set up your email under Tools/Options/Email.

INFO

This parameter contains the information about current version of the Forex Derivative expert advisor.

Explanation of the EA State displayed on the chart

As you have already seen there is some information displayed on the chart such as broker company, account currency, balance etc. But the most important information is EA State. (see picture below)

If everything is going well EA State message will be RUNING PROPERLY otherwise there will be different messages depending on the state of the Forex Derivative expert advisor. Here are some of those messages.

EA State: EA STOPPED → Warning: Wrong Time Frame
Forex Derivative 2.0 can only work on M1 time frame.

EA State: EA STOPPED -> Warning: Wrong Currency Pair
Forex Derivative trades EUR/USD, GBP/USD, USD/CAD and AUD/USD currency pairs.

EA State: EA STOPPED -> Please insert your key.
Activation key needs to be inserted.

EA State: EA STOPPED -> Warning: Wrong KEY

Correct key needs to be inserted.

EA State: Warning: Old Metatrader version

New Metatrader version needs to be downloaded.

EA State: Warning: Wrong EA Settings

Check your EA Settings. Be sure to allow live trading and dll imports.

EA State: Warning: No connection available!

There is no connection. Please note that for testing mode you also need a connection.


EA State: Warning: Amount of Bars should be greater than 800

As explained on our homepage most of the strategy parameters are not defined as fixed, but calculated constantly as function of other market variables. In order to be able to do so, Forex Derivative 2.0 needs a certain amount of data. If you get this message you can either go to Tools -> History Center and download historical data or just scroll the chart backwards (about 2 days) so that Metatrader 4 reads in the data. After doing so, you need to remove the EA and attach it again to the chart.

Forex Derivative 2.0 Backtesting

In order to perform backtesting you will first need to download historical data.
Click on **Tools** on the menu bar and select "**History Center".** History Center window
will be now displayed. Double click on the currency pair, click 1 Minute (M1) and press
Download button. History data will be downloaded.
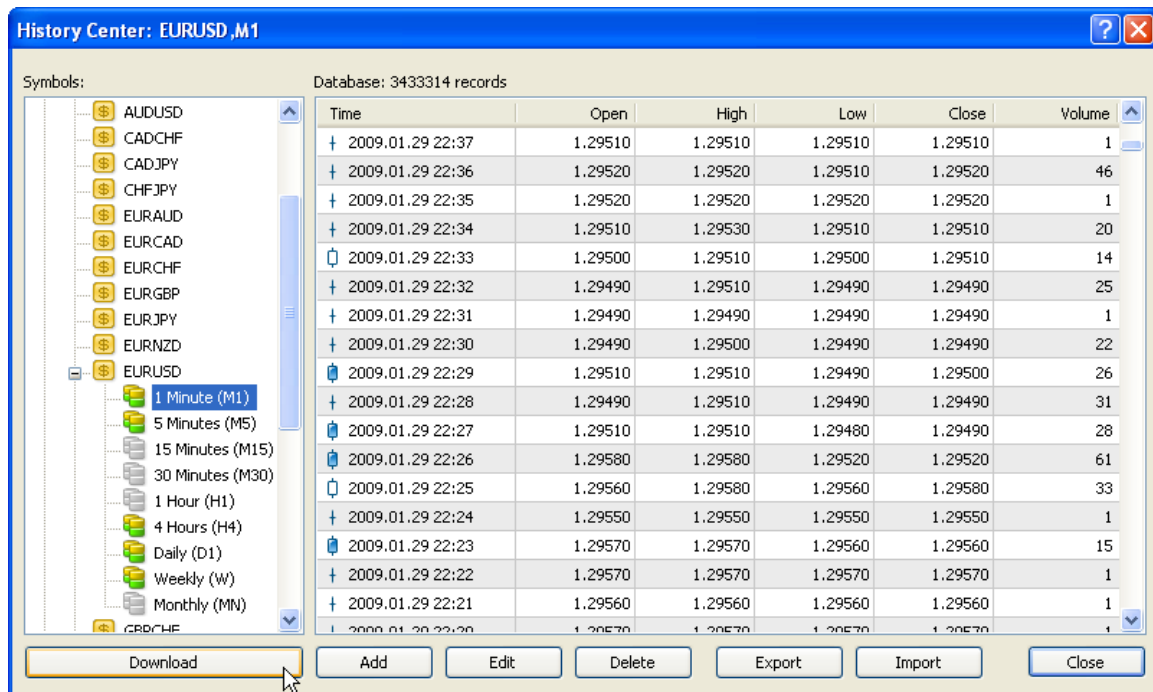
Close the History Center window. Click on **View** on the menu bar and select **"Strategy
Tester".** Strategy Tester window will be now displayed.
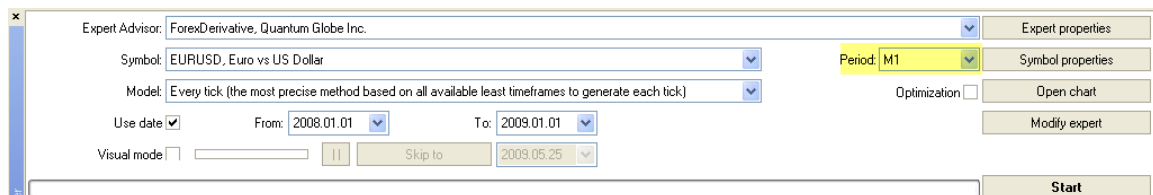
Select the proper currency pair, select the time interval, period (needs to be M1). Click on Expert properties button. Select Inputs and insert activation key if it isn't already there. Close the window. Click on Start. To see the results click on Results, Graph, Report tabs.

Please Note: In order to perform Strategy Testing Forex Derivative 2.0 needs to be activated and connected.

Please Note: The spread value, which is established by your brokerage, has a big effect on the overall performance. You should not do backtesting with spread values greater than 2 pips (0.0002) for EURUSD or 3 pips (0.0003) for GBPUSD, USDCAD and AUDUSD.

Frequently Asked Questions:

What is Forex Derivative 2.0?

Forex Derivative 2.0 is an Expert Advisor designed to run on Metatrader 4 trading platform. So in order to run it properly you are going to need the latest version of Metatrader 4. If you don't already have it installed you can download it for free at http://www.metaquotes.net/downloads.

What is an Expert Advisor?

Expert Advisor is an automated trading system written in mql4 programming language. All trading decisions are taken over automatically by the EA based on predefined set of rules.

Which currencies can I trade with Forex Derivative 2.0?

You can trade four major currency pairs such as EUR/USD, GBP/USD, USD/CAD and AUD/USD.

What timeframe do I choose?

Forex Derivative 2.0 uses information from several timeframes to calculate exit/entry points. The lowest one is M1. So in order for Forex Derivative 2.0 to run properly it needs to be put on a M1 chart. That applies for all currencies.

What do I need to run Forex Derivative 2.0?

You need to install the latest version of Metatrader 4 trading platform on your PC and you need a reliable Internet connection.

Are there any free updates?

Yes, all our loyal customers will be able to download every new version free of charge.

Can I test your system on a demo account?

Yes, you can.

Can I run your Expert Advisor on different currency pairs at the same time?

Yes. You just need to attach the EA to different charts. By doing so you will get more trades and a higher revenue.

What if my brokerage uses 5 digit price quotes? Will Forex Derivative 2.0 still work?

Yes, it will work fine, as Forex Derivative 2.0 is designed to handle this case.

My Metatrader crashes when I try to attach Forex Derivative 2.0?

You need to download and to install the newest version of Metatrader 4.

Do I need any specific academic background in order to be successful?

Not at all. Successful forex traders come from many different professions. Very often, people who are very successful at school or at their businesses wrongly believe that their success will be automatically translated at forex trading.

What kind of Internet connection do I need?

I would recommend you to use either Cable or DSL Internet service if it is available in

your area.

I have got invalid key message although I entered the right account number.

For some reasons sometimes Metatrader does not recognize the account number if you are not properly logged into the account. Please make sure that you are properly logged on and connected.

In the right upper corner I don't see happy face ☺ , I see a sad face ☹.

That means that you didn't enable live trading. To correct this you need to "right mouse click" on the chart, select Expert Advisor, Properties. Dialog Box will be displayed. Select Common tab and check the Allow live trading.

In the right upper corner I see ✖, I don't see a happy face ☺

That means that Expert Advisor is disabled.
To correct this click on the Expert Advisors icon in the top menu (see picture below).
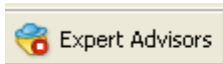
What happens if my computer crashes or Internet connection is lost while Expert Advisor is running?**

Forex Derivative 2.0 will run again when connection is restored. In the meantime your positions are protected by a stop loss.

Do I need to constantly monitor the software?

No, you don't. Expert Advisor does the trading for you.

Which brokerage can I use?

Any brokerage that supports Metatrader trading platform.

When I open Metatrader I don`t see Navigator window?

Click on the View/Navigator in the Metatrader toolbar or simply press CTRL+N hotkey.

Why my testing results slightly differ from yours for the same time period?

One reason is that you are using different history data. Second reason is that we are not using the same brokerage. Different brokerages have different spreads. Because of that the results may slightly differ.

How do I attach EA to a chart?

You can do it by just double clicking on the EA name in the Navigator window. Dialog box will be displayed. Check the settings as explained in the User Manual and press ok. You can also attach EA to a chart by right clicking on the EA name in the Navigator window. Again Dialog box will be displayed. Check the settings as explained in the User Manual and press ok.

How can I remove EA from the chart?

Right-click on the chart and select ExpertAdvisors/Remove.

Is there a stop loss integrated in the system?

Forex Derivative 2.0 exit strategy consists of a much more than a simple stop loss. But
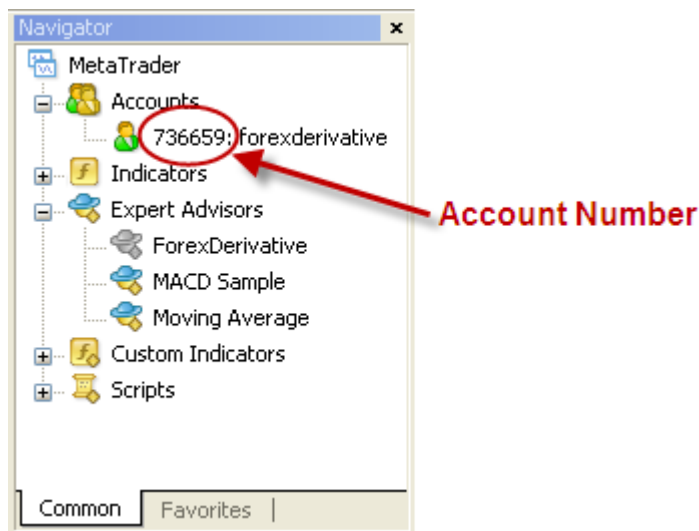
for protection purposes, specially when your Internet connection fails, every opened position has a stop loss.

Can I use Forex Derivative 2.0 on a demo or on a real account?

You can use Forex Derivative 2.0 both on a demo and a real account.

Where can I find the Account Number and why do I need it?

You can find your account number in the Navigator menu

You need the account number to get your activation key in the download area.

Why has my position been closed even though neither take-profit nor stop loss level have been reached?

Forex Derivative 2.0 exit strategy consists of much more than placing a simple stop loss and take-profit level when the position is entered. The strategy constantly monitors the market and decides when it is the proper moment to close the position. But for protection purposes, specially when your internet connection fails, every opened position has a stop loss and take-profit level.

Why do I get message "Warning: Amount of Bars should be greater than 800 => Download historical data under Tools -> History Center"?

As explained on our homepage most of the strategy parameters are not defined as fixed, but calculated constantly as function of other market variables. In order to be able to do so, Forex Derivative 2.0 needs a certain amount of data. If you get this message you can either go to Tools -> History Center and download historical data or just scroll the chart backwards (about 2 days) so that Metatrader 4 reads in the data. After doing so, you need to remove the EA and attach it again to the chart.

Why do I get the message "Information: We recommend you to use a brokerage which permits to open micro lots (=0.01 lot = 1,000 units)"?

If you're trading with a low account size, it can occur that Forex Derivative 2.0 needs to trade micro lots. This is done so in order to be able to trade with an appropriate risk level. If this is the case and your current account doesn't allow to trade micro lots, then you will see this message.

What is behind Forex Derivative 2.0?

Please Note: We have included this chapter in our manual in order to give our reader a glimpse into the making of a profitable trading system. Some of the technical language that is included may be new to some of our readers. However the understanding of this chapter is not necessary for the successful usage of our strategy, as for this you only need to know how to install Forex Derivative 2.0 in Metatrader.

The Forex Derivative 2.0 Self-Adjusting Strategy System

The kernel(brain) of the software continuously monitors the market and is constantly aware of the current market condition.

Market can be either trending, sideways, swinging, support/resistance driven or it can be extremely volatile due to non technical factors.

The kernel is able to recognize each of those market conditions (and many other conditions that I can not mention here)...

After the condition is recognized the kernel chooses one of the many different strategies that it has in its portfolio.

It chooses the strategy that is specifically designed for such market condition.

But the kernel is not only doing that: most of the strategy parameters are not defined as fixed, but calculated constantly as function of other market variables. Doing so every single strategy of our portfolio is also readjusted to the current market conditions.

The Forex Derivative 2.0 Intelligent Money Management System

### How to reach decent profits and at the same time protect your capital?

The task is to find the proper lot size for reaching decent profits, but at the same time protecting your capital from suffering a painful setback.

One can describe this task mathematically as finding the lot size which maximizes the profit subject to the constraints that we do not want to experience a single loss or a drawdown greater than predefined values.

> **Please note:** *for those of you who do not understand the difference between single loss and drawdown, the explanation follows.*
> *"Single loss" is the maximum loss you can suffer in a single trade.*
> *"Drawdown" is the highest setback of your account balance.*
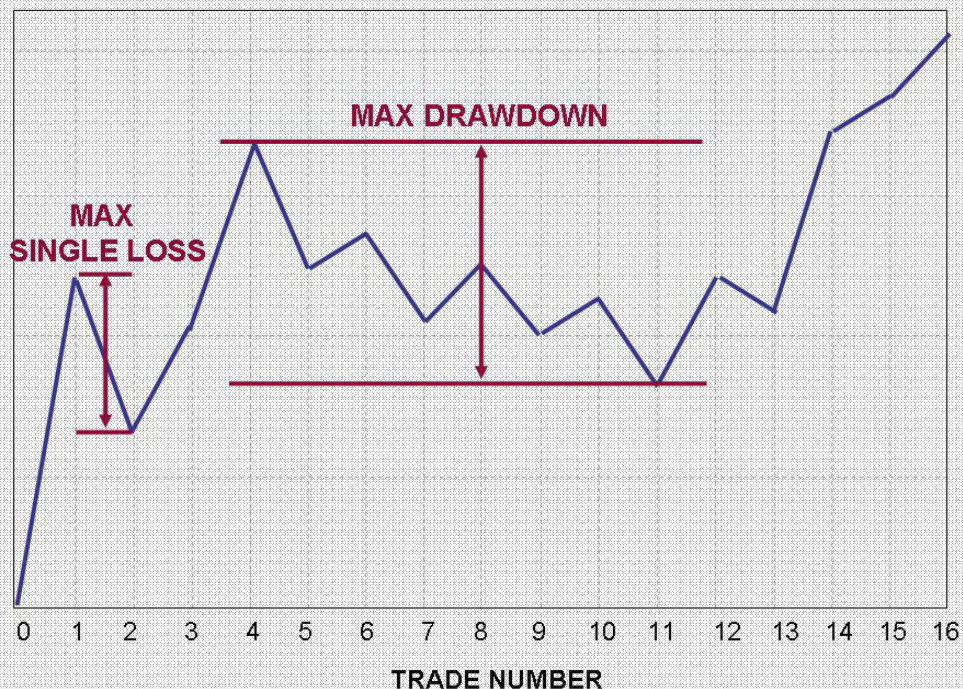
In mathematics such problem is known as "constrained optimization" and can be solved by using the method of Lagrange multipliers. See the picture below:

Figure 1: Find x and y to maximize f(x,y) subject to a constraint (shown in red) g(x,y) = c.
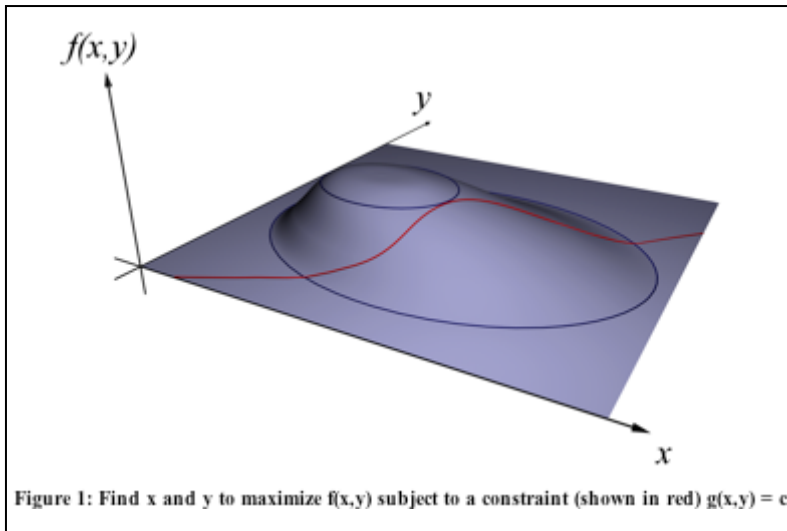
Without any constraint for a strategy with a profit factor greater than 1, the solution for optimal lot problem is as follows:

$$\text{if } PF > 1 \Rightarrow L = \infty$$

That means the bigger the lot size, the greater the profit we will have. However, if constraints come into play the solution is as follows:

$$\text{if } PF > 1 \Rightarrow L = Min(L_{MaxSingleLoss}, L_{MaxDrawdown}) \text{ with}$$

$L_{MaxSingleLoss} \equiv$ Maximum lot size in order to avoid predefined maximum single loss

$L_{MaxDrawdown} \equiv$ Maximum lot size in order to avoid maximum drawdown

$L_{MaxSingleLoss}$ can be easily calculated based on the stop loss used

$L_{MaxDrawdown}$ is much more trickier to calculate

The difficulty here is to determine MaxDrawdown. The reason is that the maximum drawdown is not just the maximum loss you may phase in a single trade, or the loss you may suffer in the case you get maximum number of losses in a row. The maximum setback can also occur in the case you get losing trades within winning trades. Clearly

speaking there are millions of combinations and you can only determine the maximum drawdown in terms of probability.

We will use a 3sigma-probability level which means that with 99.75% probability - almost 100% - we won't reach the predefined drawdown.

For doing so we use the so-called Monte Carlo method.
Monte Carlo methods are a class of computational algorithms that rely on repeated random sampling to compute their results.

Monte Carlo methods are often used when simulating physical and mathematical systems. Because of their reliance on repeated computation and random or pseudo-random numbers, Monte Carlo methods are most suited for calculation by a computer.

Following steps are done:

A) For 1 lot do the following calculation

1) First we calculate the probability distribution for the outcome of a single trade
2) Then we simulate 10,000 samples, each one with 1,000 trades, based on the previously determined probability distribution for the outcome of a single trade
3) Calculate the probability distribution that a Max Drawdown occurs
4) Calculate the cumulative distribution function and determine the 3s point
5) We get the maximum drawdown value for trading 1 lot

=> now we need to adjust the lot size so that we get the maximum desired drawdown

B) As the maximum drawdown is proportional to the lot size, we can use the following trick. We calculate the needed factor for multiplying the max drawdown axis in order that the 3 sigma point falls as desired. With the same factor we multiply the 1 lot size and obtain the desired value.

Here is a general example how this could look like, when plotting the determined drawdown as function of profit factor and winning percentage rate (accuracy).

Relationship between Maximum Drawdown and Accuracy/Payoff Ratio of the Trading Systems
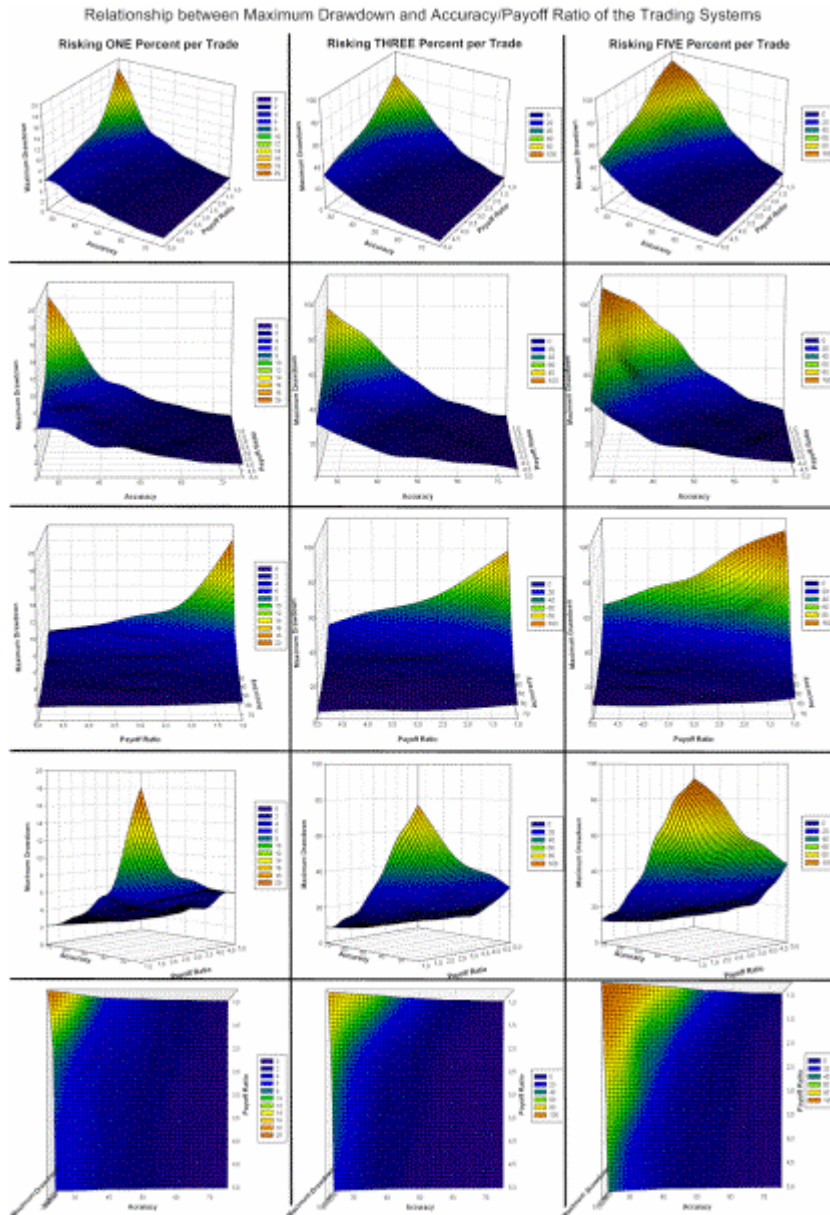
Ok, now that we now how to control the risk, it is about to determine which are proper risk values to trade with.

How to determine proper risk values?

If we have a 100,000$ trading account, then surely we can afford to suffer a 5,000$ setback, but this is not true when trading with a 10,000$ trading account. So taking a constant risk value is surely not the right solution. By the way, this is exactly what you do when you always use the same lot size.

The proper risk is highly dependent on the current balance, but not in the way as it is commonly used.

Out there you will find that the risk value is typically calculated as a percentage of the current balance. But by doing so you have a major weakness, which becomes clear in the following scenario. Assume that you trade using a constant 20% risk value and that you were facing a good raw of trades, so that you initial capital grew from 10,000$ up to 40,000$. The higher your balance the greater risk you are taking – speaking in terms of absolute value. This is ok, as long as your good raw continues, but by following this money management system it only needs few bad trades to devastate your wins. So what is the problem? As your current balance grows up, you increase your lot size. But at a certain point you will face some losing trades, which due to the bigger lot size, will be overvalued and have a great negative influence on your balance.

So what is the right approach? Well, the right approach is in between both cases. So that on hand you are able to get decent profits by increasing **moderately** the lot size as your balance grows, but at the same time protect your reached profits from large setbacks. Here is an example of how this could look like:

Balance [$]	Max Single Loss [$]	Max Single Loss [%]	Max Drawdown [$]	Max Drawdown [%]
1000	100	10.0%	250	25.0%
10000	500	5.0%	1250	12.5%
100000	2501	2.5%	6252	6.3%
1000000	12505	1.3%	31263	3.1%

This can be mathematically described by using a power function with non-integer exponent:
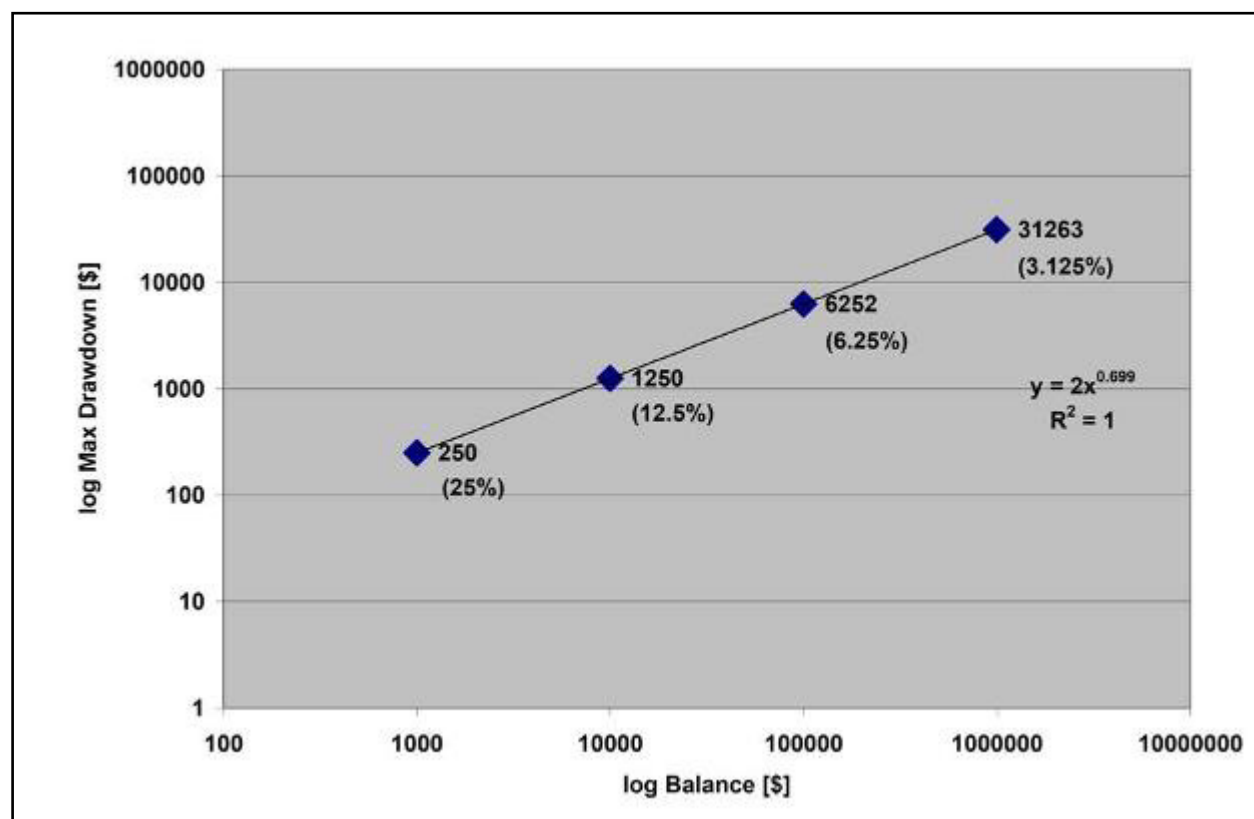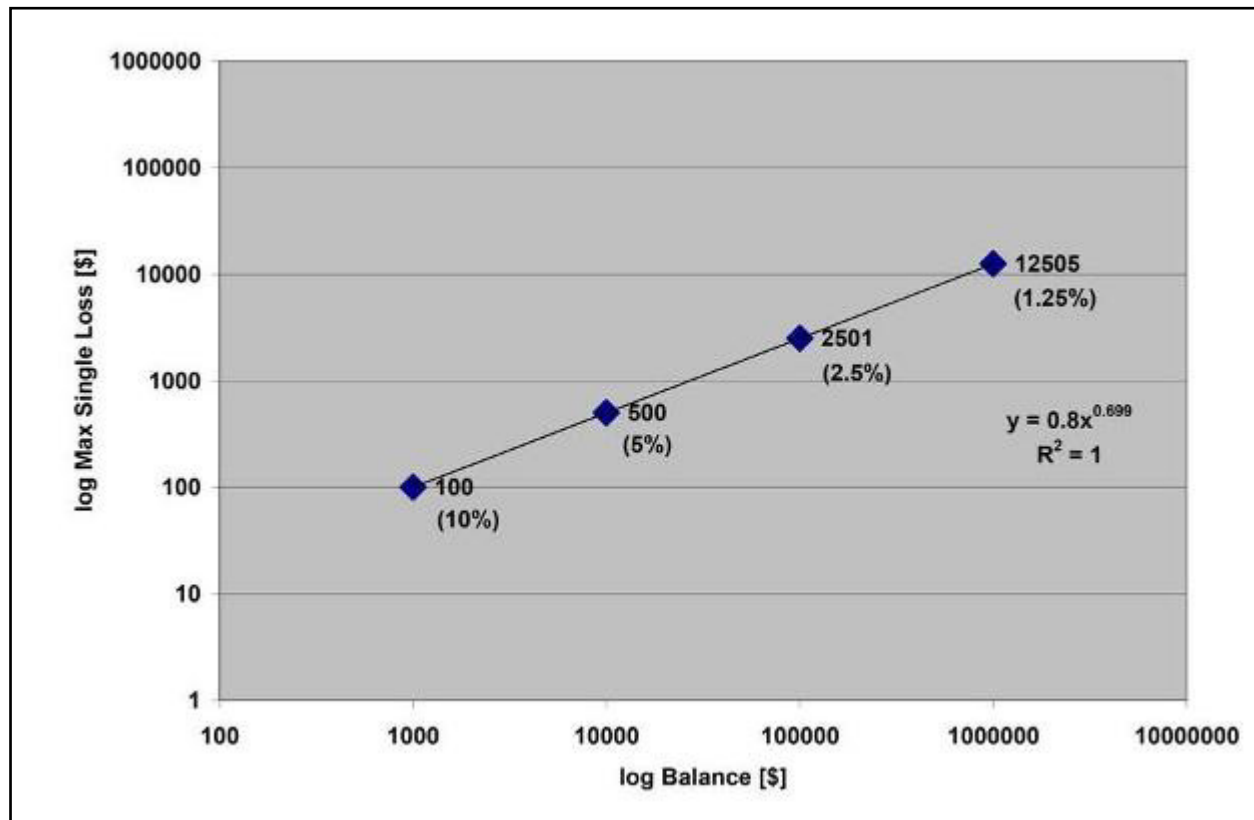
Our system is continuously monitoring the performance values

The probability distribution is continuously recalculated once we enter new trades by using our portfolio of strategies.

Also the best lot size – by using the method explained before – is recalculated in order to adjust to the updated performance values.

So that one could speak of a self-adjusting lot size calculation method.

What is the benefit of doing these calculations constantly?

Well, we need to react to the market reality as fast as possible.

If a strategy A is performing extremely well in the last trades, then our Intelligent Money Management Function will increase the lot size for entering a trade based on that strategy.

But also if a strategy B is facing a bad period, then we will reduce the lot size, so that the negative effect on the overall performance is minimized.

We could go on and on about the logic behind the software however we are not sure that you are all that interested in such technical aspects.