Money Manager Plug-in

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Requires VTS-Connect minimum version **4.0.0.76**

Optimize the profit potential of your EA by automatically selecting the risk-appropriate lot size based on your current account balance.   The Money Manager allows you to generate lot size strategies where you define your level of allowed risk and your maximum loss.   Fixed, Fixed Percentage and Fixed Ratios methods are available as well as a Monte Carlo simulation engine that allows you to view the likely outcome of your money management strategy.

The Money Manager Plug-in is available as a VTS [System Manager](#) and can be used with any VTS-generated Expert Advisor.

What is a Plug-in?

VTS stands for ***Visual Traders Studio.***

The VTS *Expert Advisor* Builder is a Windows graphical application that enables non-programmers to build complex Expert Advisors by dragging, dropping and connecting logical elements.

The VTS application contains basic functionality to build almost any Expert Advisor.

A ***VTS Plug-in*** allows traders to easily implement advanced trading techniques using an add-on user interface.

Contents

Enable the Money Manager Plug-in

You must enter your License key to enable the *Money Manager Plug-in*.   Your license key for all of your VTS products can be found in the Members Area.

License keys are entered in Visual Traders Studio (VTS) from the License entry tab.

- The **email** address is the email address used to purchase VTS.
- The **License Key** is the key listed in the Members Area.
- The **Update** button is used to verify the email address and license key.
- The **edit key** button is used edit the key value.

Money Manager in the System Manager

- *Money Manager* configuration is accessed through the *Money Manager* System Manager.
- System Managers are found on the right side of the VTS main application.
- Depending on your screen resolution, you may need to scroll down to view the *Money Manager* icon.
- To open the *Money Manager*, double-click the icon.
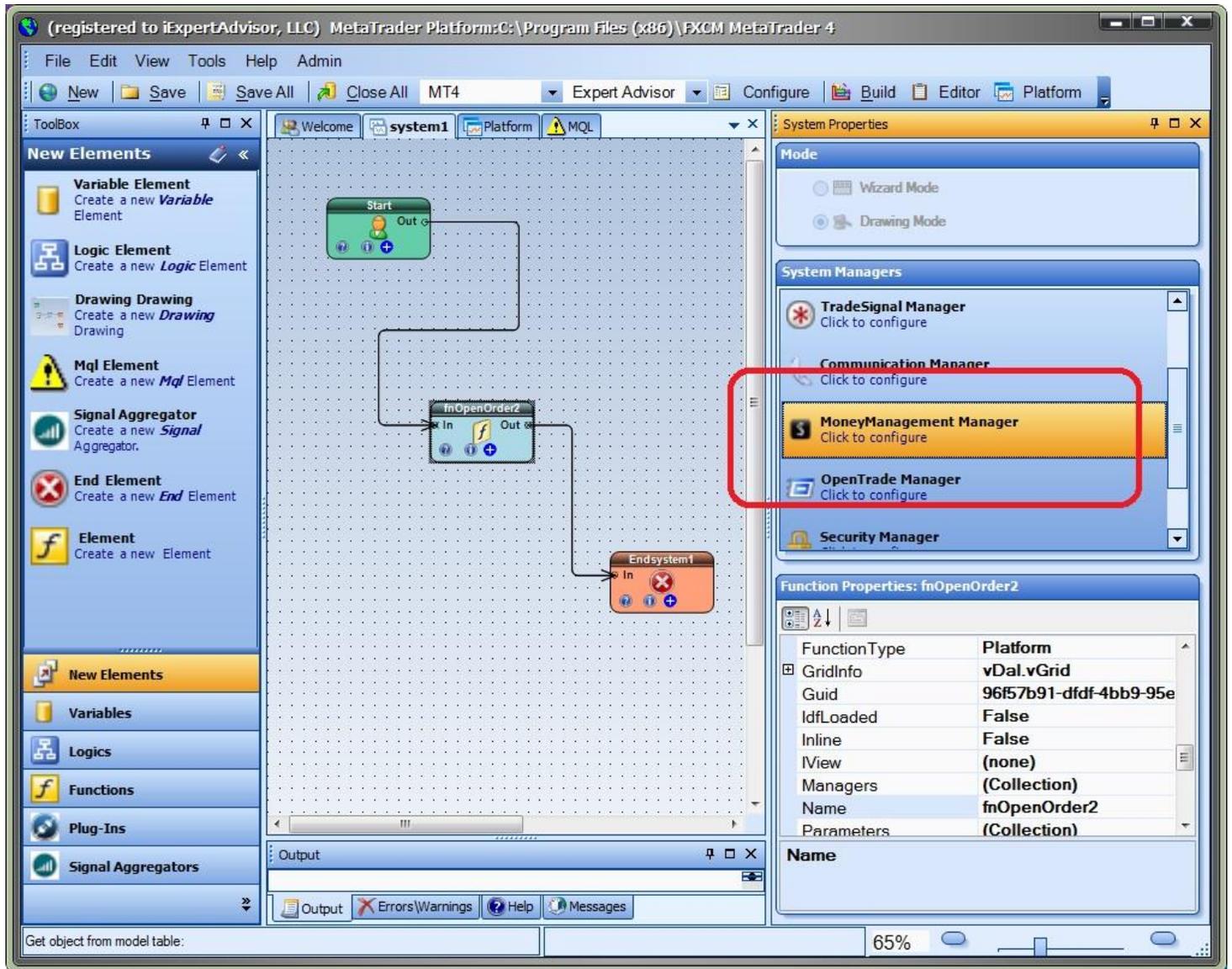
Money Manager Configuration

- *Money Manager* configuration is accessed through the **Money Manager** System Manager.
- There are two tabs available: Configure and Simulate.
    - The **Configure** area is used to define the Money Manager parameters
    - The **Simulate** area is used to generate Monte Carlo simulations to view the likely equity curve of the strategy.

Configure Parameters

Section	Parameter Name	Value	Description
Account			
	Account Type	Micro, Mini or Standard	The account type will effect the value of one point as well as the minimum and maximum lot sizes. For reference, the value of one point on a EURUSD chart is: Standard: $10.00 Mini: $1.00 Micro: $ 0.10
	Start Balance	Any value greater than 0	The starting balance. This value, along with the stoploss, is used to determine the starting lot size.
Trade			
	Stoploss	Any value greater than 0 Any VTS Variable	The stoploss is used to define the maximum lot size for a given risk value. On a per trade basis, the stoploss is viewed as the maximum allowable loss.
	TakeProfit	Any value greater than 0 Any VTS Variable	The takeprofit is only used during simulation to apply profitable trades to the account balance. The takeprofit is not used to calculate lot size.
Money Management			
	Type	Fixed Fixed Percent	**Fixed** uses the same lot size for any account balance.

| | | Fixed Ratio | **Fixed Percent** calculates the lot size using the stoploss (to define maximum allowable loss for a risk percentage) and the current balance.
 Fixed Ratio calculates the lot size using the delta* value. |
| | Risk % or Delta | Any value greater than 0 | The percent amount of the current balance that can be lost on a single trade, or the delta* value. |

* The **Fixed Ratio** method is further defined in our ebook **Automatic Alpha,** by David Williams. Here is an excerpt:

The Fixed Ratio method allows the account to grow aggressively in the beginning, assuming more risk, and gradually reduces risk as the account size grows. The main principle behind Fixed Ratio is that the relationship between the number of lots traded and the amount of profit needed to increase the number of lots traded remains fixed.

For example, if a trader's money management method is to trade one (full-sized) lot and requires $10,000 USD of profit to increase to (2) two lots, then the Fixed Ratio method would required an additional $20,000 USD of profit to increase to the next level, that is, to (3) three lots.

The ratio between the number of lots traded and the amount of profit required to increase the number of lots is fixed. In Jones' method, the amount of profit required to increase the number of lots traded is referred to as Delta. Once a trader chooses a value of Delta appropriate for their risk tolerance, the entire money management scheme can be fully described.

For example, suppose a trader opens a (mini) account with $2000 USD.
- *The trader chooses to begin trading with a lot size of (1) mini-lot. (One mini-lot is*
- *the minimum lot size that can be traded).*
- *The trader chooses a Delta value of $200 USD.*

The account level at which the trader increases their lot size to (2) lots is $2,200 USD.
The account level at which the trader increases their lot size to (3) lots is $2,600 USD.
The account level at which the trader increases their lot size to (4) lots is $3,200 USD.

This Fixed Ratio relationship can be expressed as:
The New Account Level to Increase Trade Size by One Lot =
*Starting Account Value + (Delta x Number of Current Lots)*

For more information, read **The Trading Game**, by Ryan Jones. He is the original developer of the Fixed Ratio method.
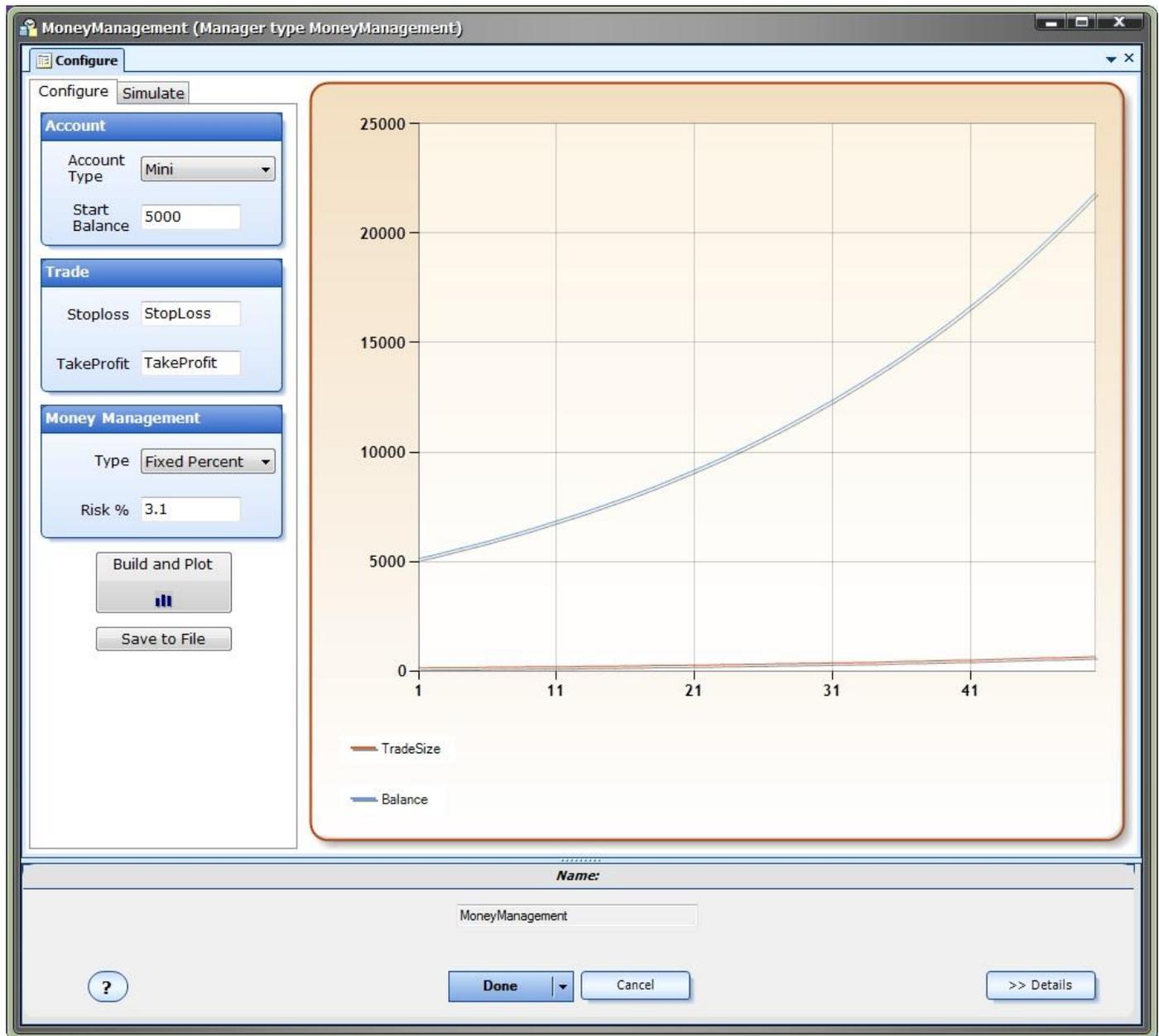
To generate an equity curve.click the "**Build and Plot**" button.
- This plots the equity using winning trades only.
- By default, the result of 50 trades is shown. The purpose of the equity graph is to display the *relative strength* of different money management configurations.
- The "**Build and Plot**" button should be clicked after any changes have been made to any of the parameters.
- A table is built that assembles the lot size for each level of the account balance.

- o This table can be saved as a Comma Separated File (CSV) by clicking the "Save to File" button:
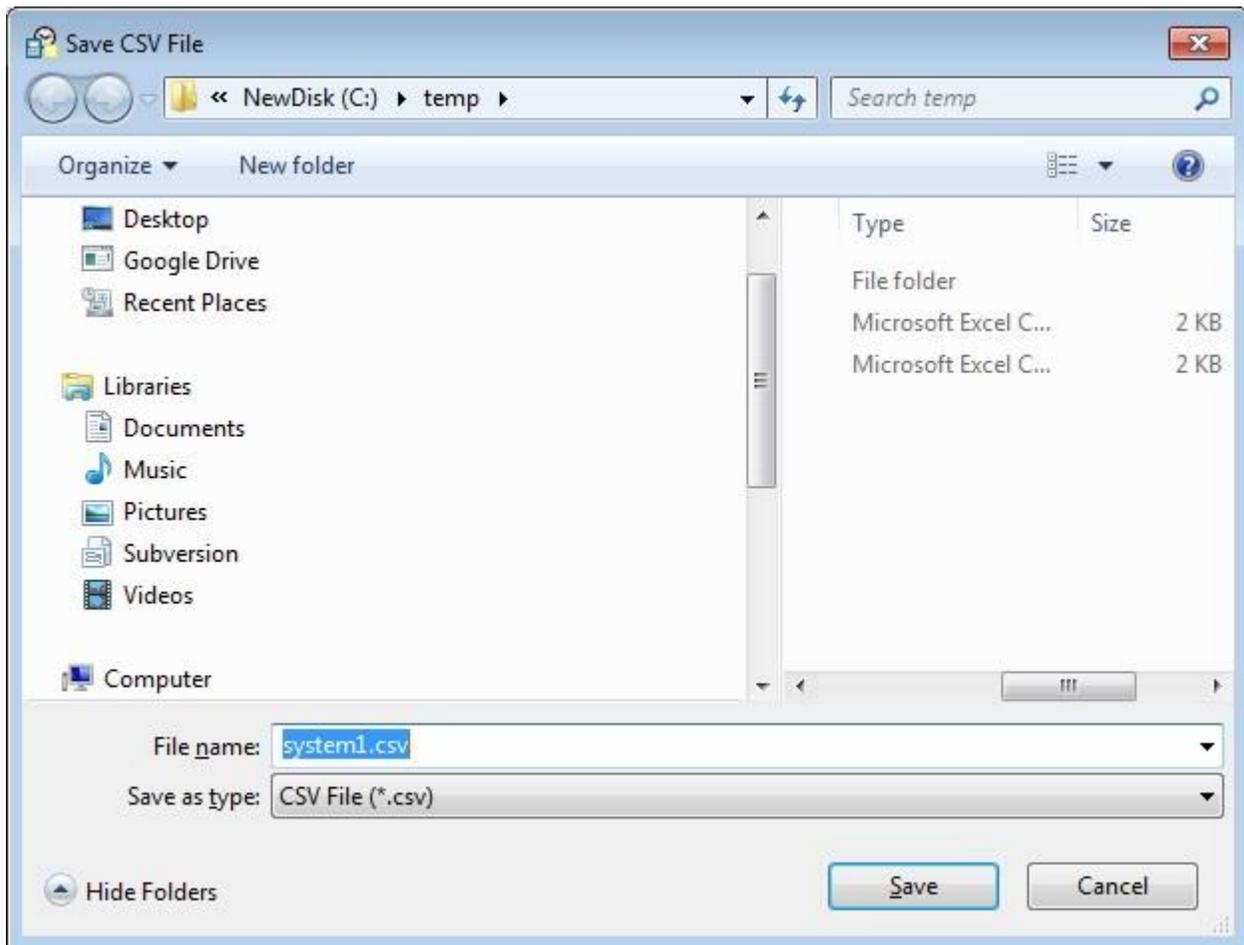
Simulate Parameters

Parameter Name	Value	Description
Start Balance	Any value greater than 0	The starting balance
Number of Trades	Any value greater than 0	The number of trades to simulate*
Number of Samples	Any value greater than 0	The number of times to run the simulation*
Winning Percent	A value between 0 and 100	The winning percent of the trading system

Theory
- The Monte Carlo simulation uses the wining percentage to define exactly how many trades will be

profitable from the value entered in the 'Number of Trades'.

- o The TakeProfit value from the configuration tab is used to define the amount of a winning trade.
- o The StopLoss value from the configuration tab is used to define the amount of a losing trade.
- Each sample distributes the wins and losses randomly throughout the number of trades. The final plot shows the average of all sampled plots.
- Each time you click the "Build and Plot" button, the equity plot is redrawn. It should look different each time since the distribution of wins and losses is random.
    - o It is useful to set the **Number of Trades** to 1 and click the **Build and Plot** button several times: This displays the equity curve of a single run of the Expert Advisor, which is what most traders run.
- Monte Carlo simulation is useful when you know the winning percentage of your Expert Advisor, but you do not know the exact order of the wins and losses.

*Note: Large values of **Number of Trades** and/or **Number of Samples** may result in intensive CPU utilization.

The total number of simulations will equal the **Number of Trades** multiplied by **Number of Samples**
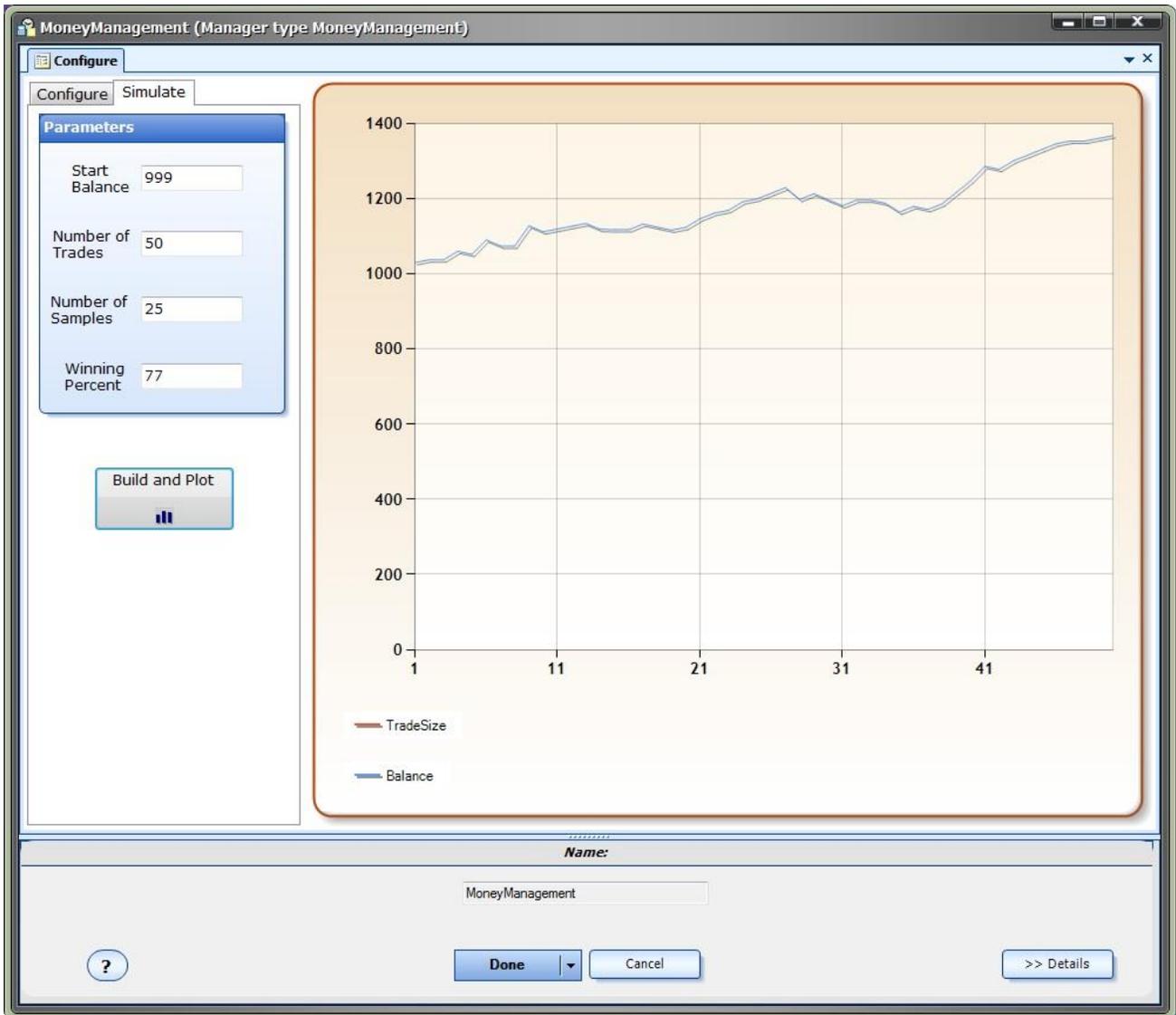
Using the Money Manager

- After you have defined and built a Money Management configuration, the Money Management lot size value can be set in the **Volume** parameter of the [fnOpenOrder](#) function.

- **NOTE:** If any changes are made to the Money Management configuration, the VTS system must be rebuilt to rebuild the money management tables.
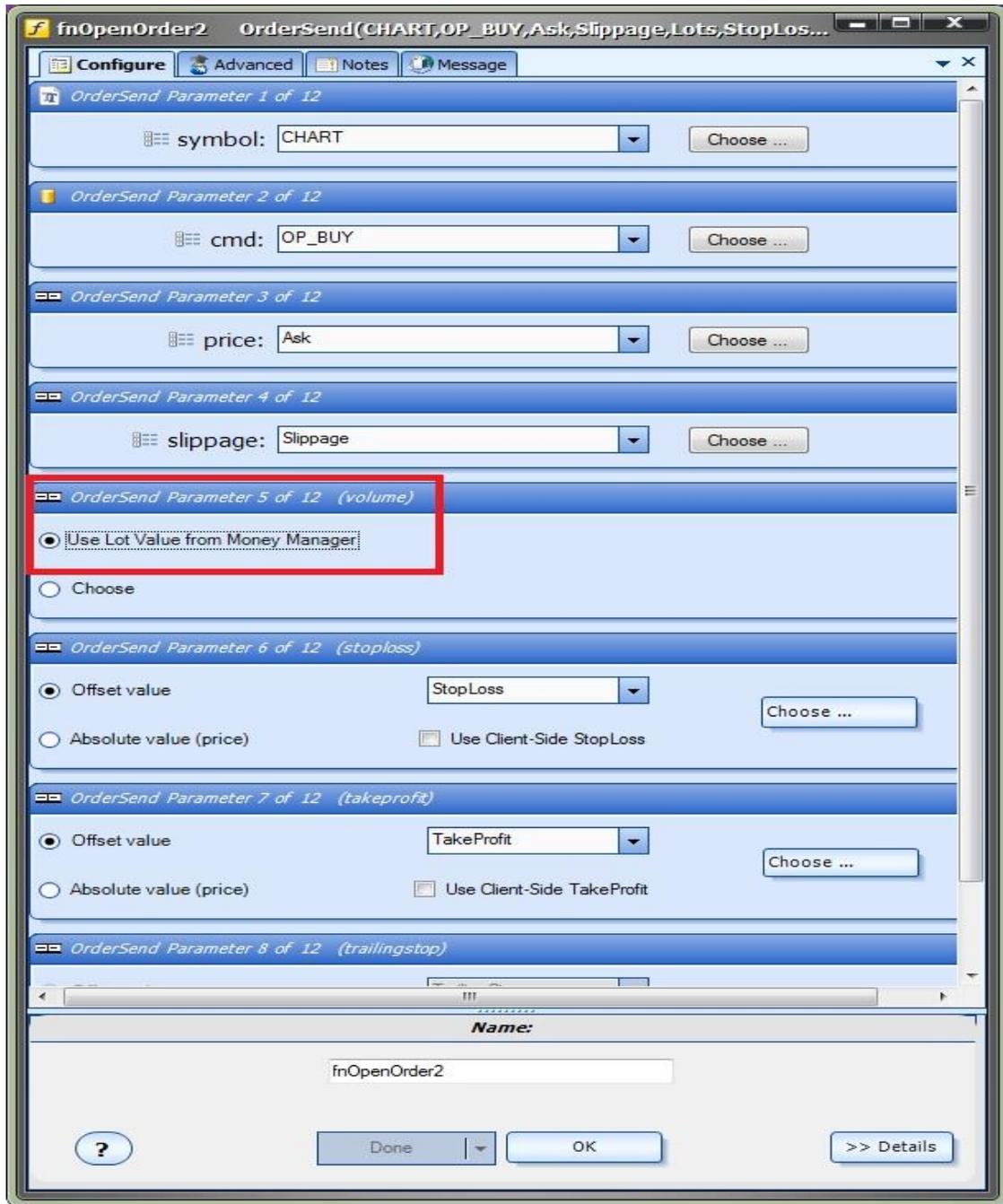
Money Manager Table

- After using the [Configuration](#) to build and plot a money management scheme, VTS builds a table values.

- This table can be saved to a [CSV](#) file and opened using a program like Excel.

- This table provides a view of the lot size versus balance scheme.

- You can refer to this table to find the correct lot size when *manually* opening trades

- This same data is used by your Expert Advisor to find the correct lot size when the EA opens a trade.

This is an example of a money management table.

Trade	Number of Lots	Profit	Account Balance
1	0.7	140	5140
2	0.8	160	5280
3	0.8	160	5440
4	0.8	160	5600
5	0.8	160	5760
6	0.9	180	5920
7	0.9	180	6100
8	0.9	180	6280
9	1	200	6460
10	1	200	6660
11	1	200	6860
12	1	200	7060
13	1.1	220	7260
14	1.1	220	7480
15	1.1	220	7700
16	1.2	240	7920
17	1.2	240	8160
18	1.3	260	8400
19	1.3	260	8660
20	1.3	260	8920
21	1.4	280	9180
22	1.4	280	9460
23	1.5	300	9740
24	1.5	300	10040
25	1.6	320	10340
26	1.6	320	10660
27	1.7	340	10980
28	1.7	340	11320
29	1.8	360	11660

30	1.8	360	12020	
31	1.9	380	12380	
32	1.9	380	12760	
33	2	400	13140	
34	2	400	13540	
35	2.1	420	13940	
36	2.2	440	14360	
37	2.2	440	14800	
38	2.3	460	15240	
39	2.4	480	15700	
40	2.5	500	16180	
41	2.5	500	16680	
42	2.6	520	17180	
43	2.7	540	17700	
44	2.8	560	18240	
45	2.9	580	18800	
46	3	600	19380	
47	3	600	19980	
48	3.1	620	20580	
49	3.2	640	21200	
50	3.3	660	21840	