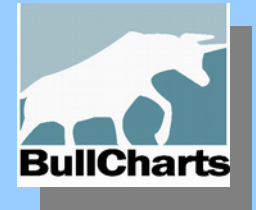


BullCharts



TradeSim for back-testing

Case Study example
MA Cross-over

October 2016



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Disclaimer

The information herein is for general education only.

Any information presented or discussed is only opinion, and is NOT ADVICE, and it should NOT be acted upon.

The particular financial needs of any individual have not been taken into consideration. One should always seek professional advice before entering into financial or other arrangements.

Session Purpose

Session Purpose:



- Briefly introduce TradeSim
(see a separate presentation for introduction and details of what it is and how it works)
- Walk through a case study sample of testing an example trading strategy in TradeSim.

Assumptions

The following assumptions apply to the case study within these slides:

- That BullCharts is installed.
- That you know the basics of creating and running a BullCharts scan.
- That TradeSim is installed and registered.
- That you already have a trading strategy.

Our Trading Strategy

In this case study we will utilise the following trading strategy:

- Use Moving Average cross-overs, 5 and 21.
- Buy signal:- When $MA(C,S,5)$ crosses Above the $MA(C,S,21)$
- Sell signal:- When $MA(C,S,5)$ crosses Below the $MA(C,S,21)$
- Universe of stocks — XTL index (top 20)

C = Close
S = Simple

See sample price chart on next slide...

Sample chart



Process overview

BullCharts

TradeSim

1. Create
"TradeSim scan"
in BullCharts

2. Run the
TradeSim scan

Watch BullCharts
and wait for scan
to complete

9. Modify
the scan

TradeSim program
will start (if not running)

Trade
Database
(lists possible
trades)

Trade Database Report Log
will list messages

3. Review Database Report Log

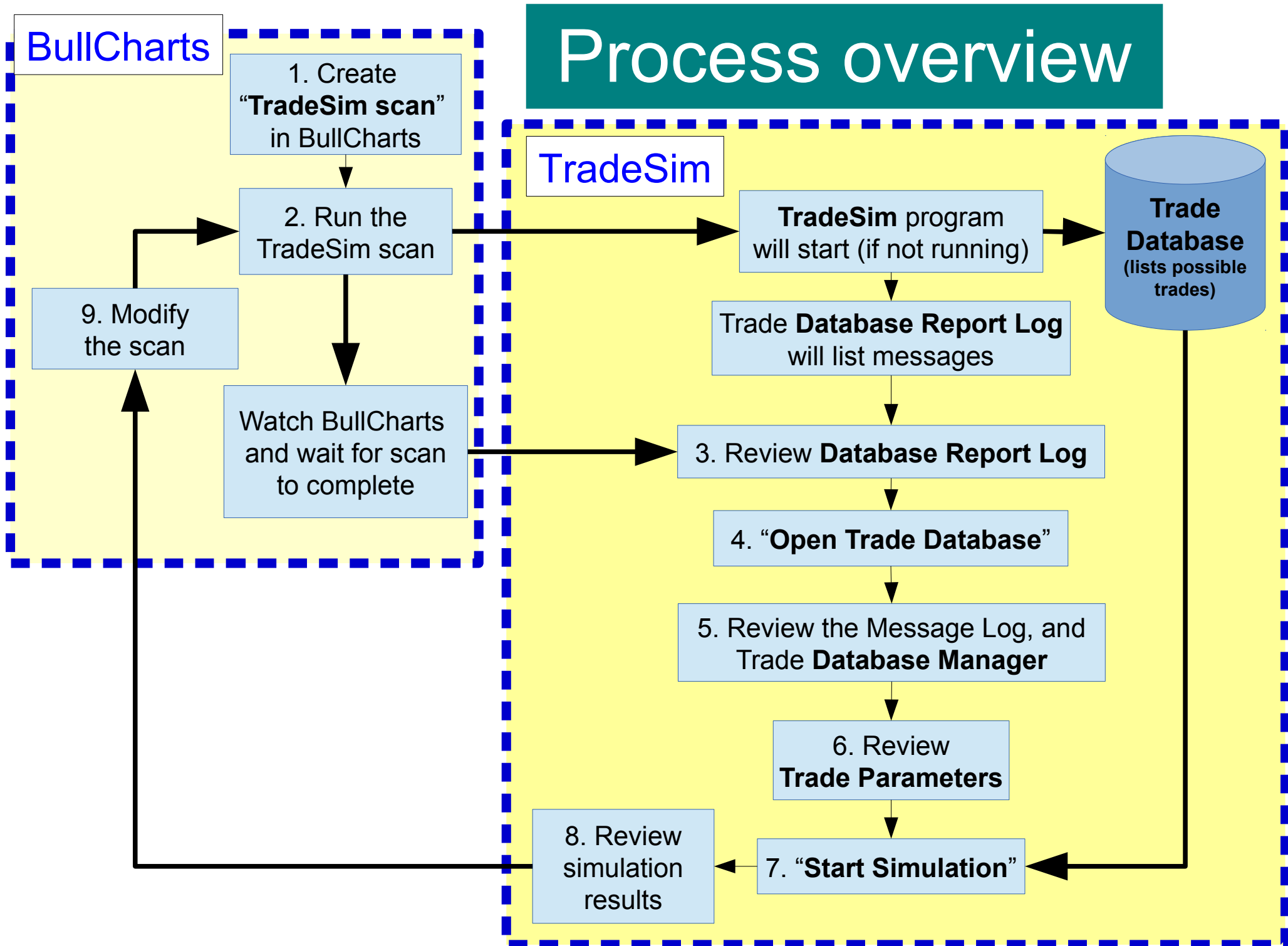
4. "Open Trade Database"

5. Review the Message Log, and
Trade Database Manager

6. Review
Trade Parameters

8. Review
simulation
results

7. "Start Simulation"



Overview of the steps

1. In BullCharts:

- (a) Open BullScan Manager
- (b) Select “New Scan” (of type “TradeSim”)
- (c) On the “Trade Systems” tab, click on “New...” to create a new “system”
- (d) Enter the entry, exit, and stops details (from your trading strategy)
- (e) Enter your scan watchlist details (eg. XTL).

Overview (cont.)

2. Run the scan, noting:

- TradeSim program will start, and
- Will accumulate messages in the Trade Database Report log (access any time using the flashing icon in Windows System Tray).

Overview (cont.)

3. After scan completion:

- (a) Peruse the Database Report Log
- (b) “Open the (TradeSim) Trade Database”
- (c) Peruse the Message Log file
- (d) Peruse the “Trade Database Manager” entries
- (e) Review the “Trade Parameters”, and adjust.

Overview (cont.)

4. Start Simulation

- (a) Click on “Start Simulation” button
- (b) Review the results.

Overview (cont.)

5. Within the TradeSim screen after the simulation, peruse the following:
 - (a) Message Log
 - (b) Trade Log
 - (c) Trade Simulation Report
 - (d) Charts (many):
 - Equity charts (\$, %);
 - Weekly, Monthly, Yearly — Profit, Return
 - Drawdown
 - Winning, Losing trades, etc...

If possible (in a live presentation)
work through the real case study.

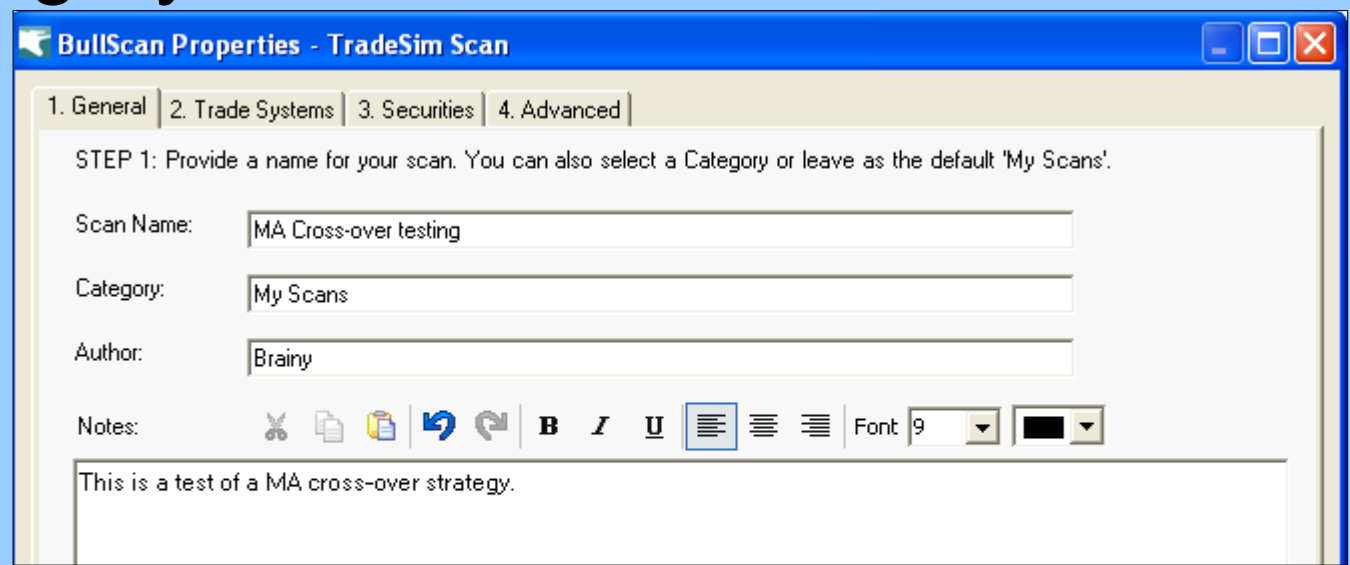
If not, then
the following slides are for
perusal outside of a live presentation.

The details — Create Scan

1. In BullCharts:

(a) Open BullScan Manager

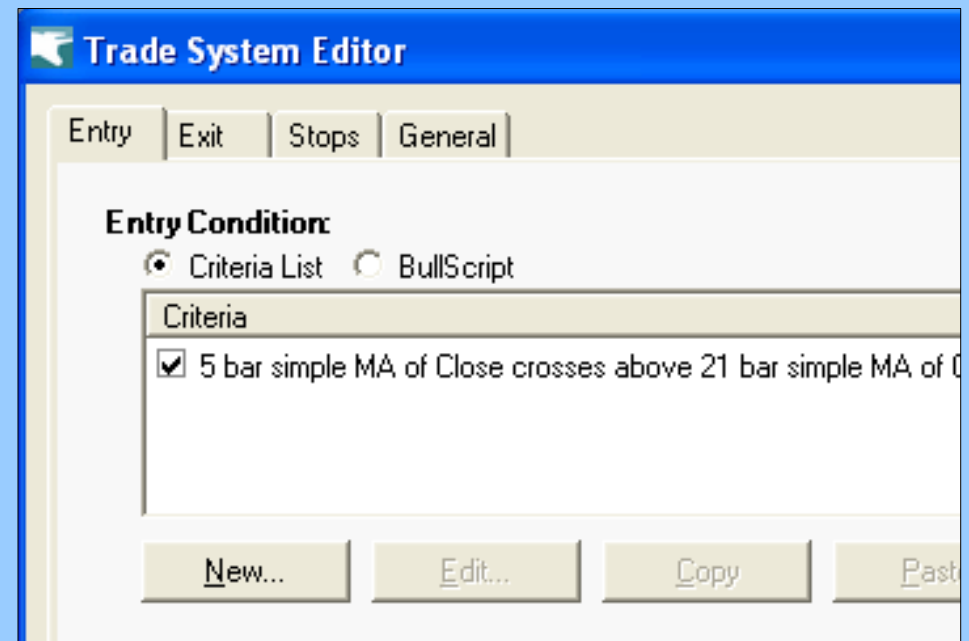
(b) Select “New TradeSim Scan” and enter:
Name, Category, Author, Notes *



* About now, TradeSim will start in the b/background, if it is registered.

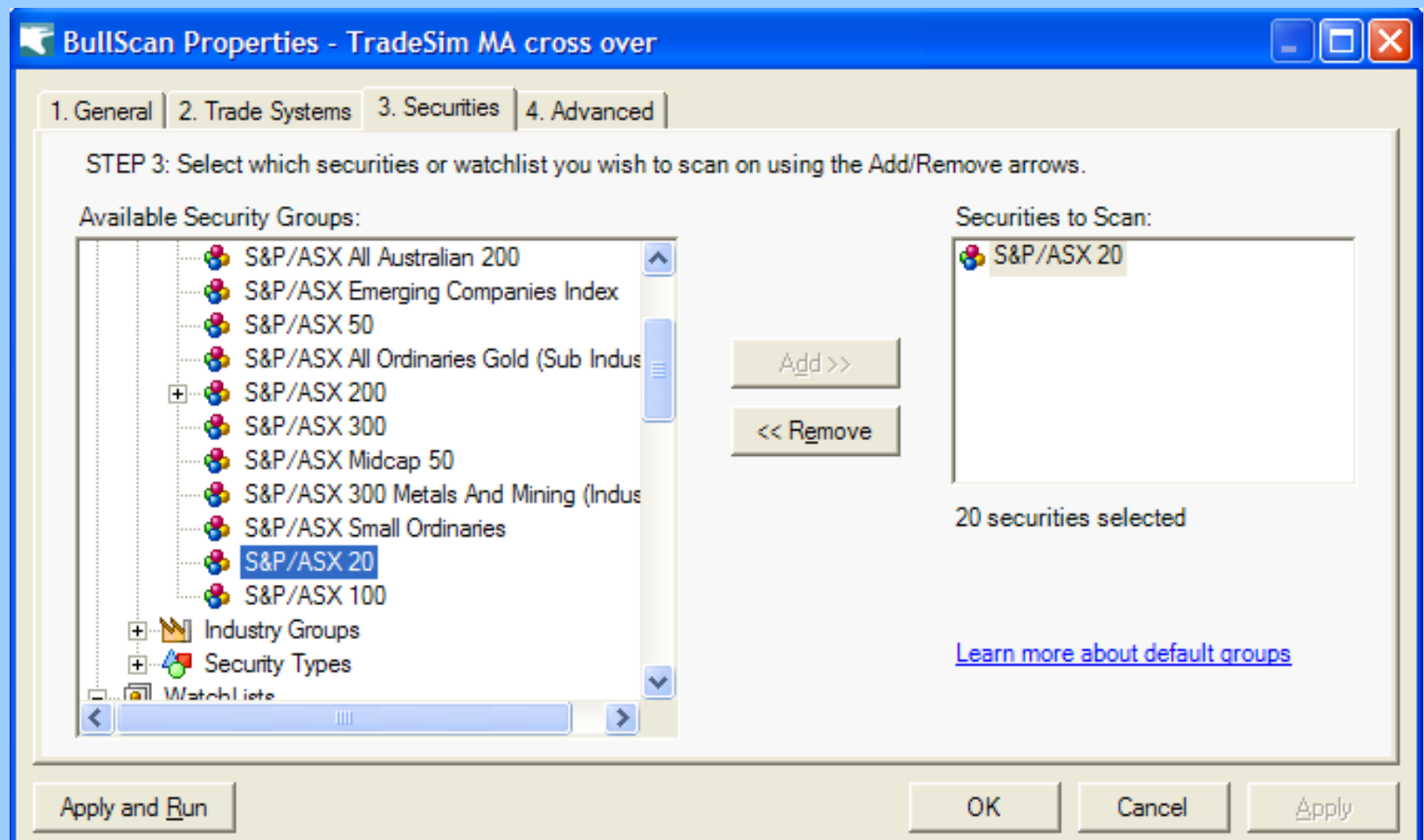
The details

- (c) On the “Trade Systems” tab, click on “New...” to create a new “system”
- (d) In the “Trade System Editor” dialogue there are four tabs to enter the entry, exit, and stops details from your strategy
- (e) The “General” tab can be used to enter “Start Date” and “End Date”.



The details

(f) Enter your scan watchlist details as normal



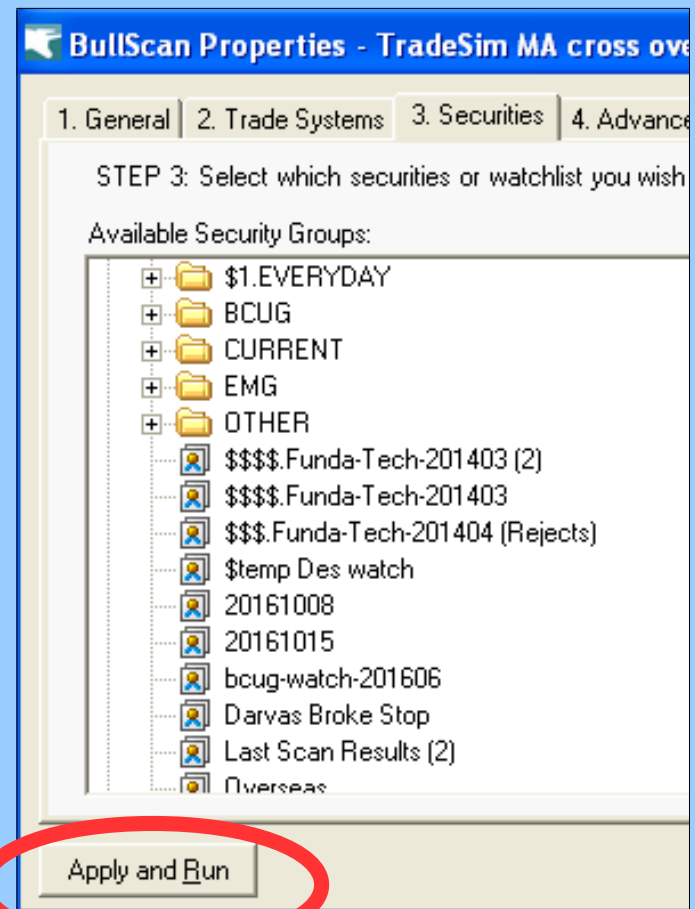
The details — Run Scan

(g) Run the TradeSim scan.

BUT, NOTE:

The scan will create a Trade Database file of the same name as the scan (.trb), and it will automatically over-write any existing Trade Database file.

We have NOT yet run a “simulation”.

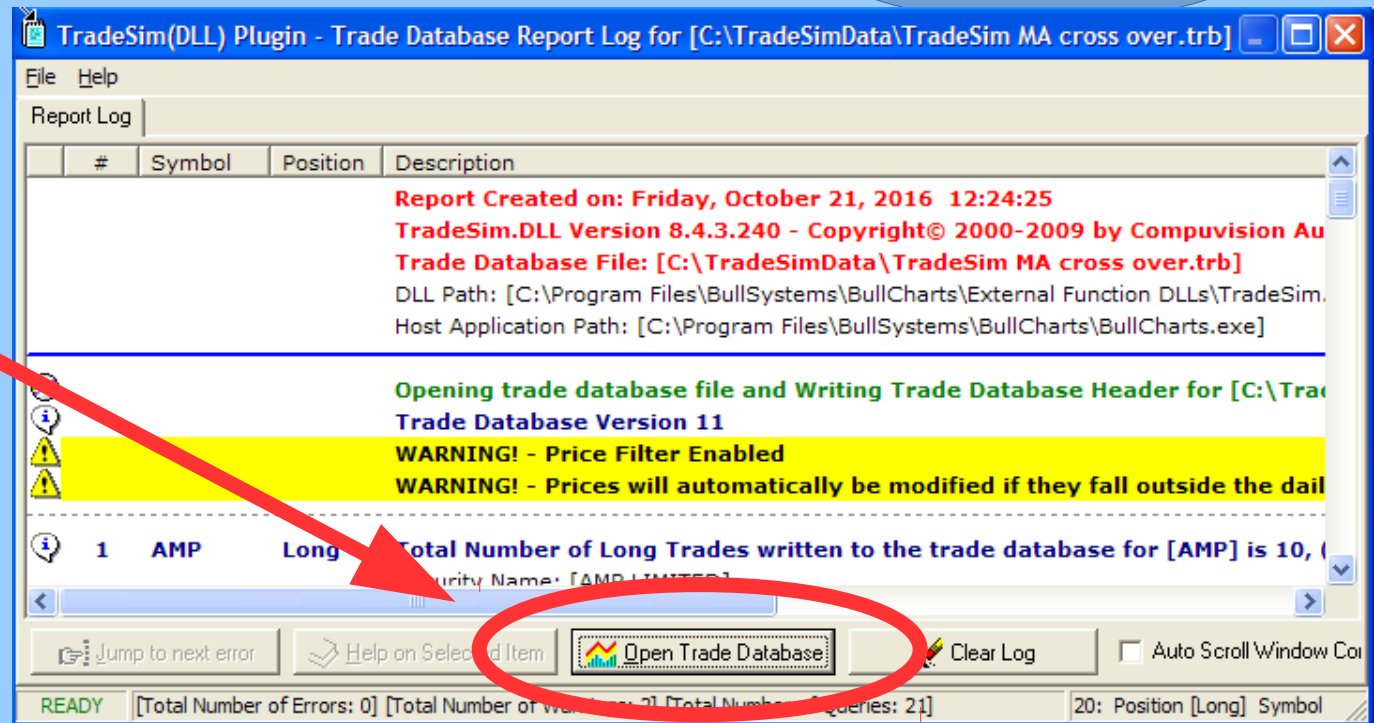


Open TradeSim

TradeSim opens and adds potential trades to the Trade Database file.

Peruse the Database Report Log file.

Open Trade Database



TradeSim(DLL) Plugin - Trade Database Report Log for [C:\TradeSimData\TradeSim MA cross over.trb]

File Help

Report Log

#	Symbol	Position	Description
Report Created on: Friday, October 21, 2016 12:24:25			
TradeSim.DLL Version 8.4.3.240 - Copyright© 2000-2009 by Compuvision Au			
Trade Database File: [C:\TradeSimData\TradeSim MA cross over.trb]			
DLL Path: [C:\Program Files\BullSystems\BullCharts\External Function DLLs\TradeSim.			
Host Application Path: [C:\Program Files\BullSystems\BullCharts\BullCharts.exe]			
Opening trade database file and Writing Trade Database Header for [C:\Tra			
Trade Database Version 11			
WARNING! - Price Filter Enabled			
WARNING! - Prices will automatically be modified if they fall outside the dai			
1	AMP	Long	Total Number of Long Trades written to the trade database for [AMP] is 10, (
Security Name: [AMP LIMITED]			

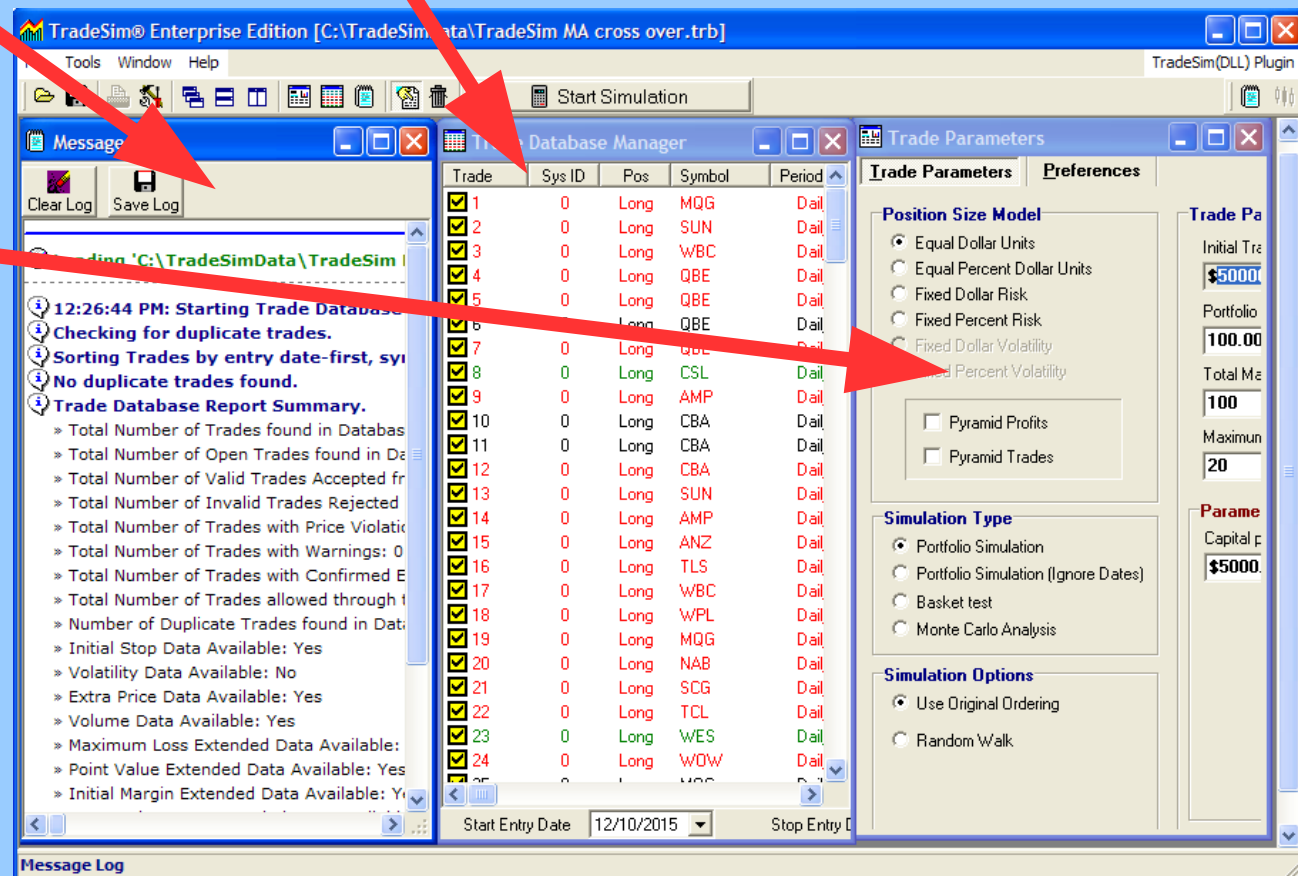
Jump to next error Help on Selected Item **Open Trade Database** Clear Log Auto Scroll Window Cor

READY [Total Number of Errors: 0] [Total Number of Warnings: 2] [Total Number of Queries: 21] 20: Position [Long] Symbol

The TradeSim windows

TradeSim opens, with several windows:

- Trade Database Manager
- Message Log
- Trade Parameters



Next steps

- Review the Message Log file
- View the Trade Database Manager screen
 - Consider un-ticking some entries to exclude from simulation.
- Review Trade Parameters screen
- “Start Simulation”



Review simulation results

The screenshot displays the TradeSim Standard Edition interface with several windows open:

- Trade Database Manager:** A table listing trade parameters for three trades (ADU, ALD, AMX).
- Trade Log:** A table showing trade execution details for trades 1 through 7.
- Charts (Closed Trade):** A line chart titled "Closed Trade Equity Percentile (\$)" showing Equity (%) and Total Equity (%) over time from 4/05/2009 to 27/04/2011. The chart shows a sharp increase in equity starting around 8/02/2010.
- Trade Simulation Report:** A window displaying simulation parameters and statistics.

Trade	Sys ID	Pos	Symbol	Periodicity	CE	SBFTE	Entry Date-Time	Exit Date-Time	P-Group	P-Level	R
1	0	Long	ADU	Weekly	Yes	Yes	2/03/2009	2/05/2011	1	0	
2	0	Long	ALD	Weekly	Yes	Yes	2/03/2009	4/05/2009	1	0	
3	0	Long	AMX	Weekly	Yes	Yes	2/03/2009	27/04/2011	1	0	

In...	Trade	Sys ID	Trans Date-Time	P Level	P Cou...	Re-entry Type	Days	Volatility	Ini
0	1	0	2/03/2009	0	0	Base	-	-	-
1	2	0	2/03/2009	0	0	Base	-	-	-
2	3	0	2/03/2009	0	0	Base	-	-	-
3	4	0	2/03/2009	0	0	Base	-	-	-
4	5	0	2/03/2009	0	0	Base	-	-	-
5	6	0	2/03/2009	0	0	Base	-	-	-
6	7	0	2/03/2009	0	0	Base	-	-	-

Date-Time	Equity (%)	Total Equity (%)
4/05/2009	0	0
13/07/2009	0	0
14/12/2009	0	0
8/02/2010	~20	~100
8/02/2010	~30	~120
27/04/2011	~300	~400

Trade Simulation Report

Trade Parameters

Trade Database Manager

Trade Log

Charts (Closed Trade)

Equity (%)

Equity (\$)

Monthly Profit

Yearly Profit

More Charts....

Closed Trade Equity Percentile (\$)

Equity (%)

Total Equity (%)

various charts

Date-Time

(Compressed Time Scale)

Trade Simulation Report

Trade Simulation Reports

Trade Statistics

Trade Parameters

Trade Database Manager

Trade Simulation Report

Maximum number of open positions:

Maximum allowable daily orders:

Automatically Use Position Size Model from data

Default Position Size Model:

Capital per Trade (\$ value):

Trade Parameters

Detailed Report

Combined Report

Trade Simulation Report

Trade Simulation Report

Trade Simulation Reports | Trade Statistics

Trade Parameters and Preferences

Trade Database Filename
C:\TradeSimData\\$.Funda-... TEST.trb

Trade Parameters

Initial Capital:	\$50,000.00
Portfolio Limit:	100.00%
Maximum number of open positions:	100
Maximum allowable daily orders:	20
Automatically Use Position Size Model from database:	No
Default Position Size Model:	Equal Dollar Units
Capital per Trade (\$ value):	\$5,000.00
Pyramid profits:	No
Transaction cost (Trade Entry):	\$0.00
Transaction cost (Trade Exit):	\$0.00
Automatically use Margin Requirement from database:	No
Margin Requirement:	100.00%
Magnify Position Size (& Risk) according to Margin Req:	No
Automatically select Position Size Model from database:	No
Enable Provisional Trades:	No
Survivorship Bias Filer:	No
Margin Requirement Daily Interest Rate (Long Trades):	0.0000%
Margin Requirement Yearly Interest Rate (Long Trades):	0.0000%
Margin Requirement Daily Interest Rate (Short Trades):	0.0000%
Margin Requirement Yearly Interest Rate (Short Trades):	0.0000%

Trade Preferences

Trading Instrument:	Stocks
Break Even Trades:	Process separately
Trade Position Type:	Process all trades
Entry Order Type:	Default Order
Exit Order Type:	Default Order
Minimum Trade Size:	\$0.00
Accept Partial Trades:	No
Volume Filter:	Ignore Volume Information
Pyramid Trades:	No

Trade Parameters | Detailed Report | Combined Report

Note 2 tabs:-
– Simulation Reports
– Statistics

Note 3 tabs:-
– Trade Parameters
– Detailed Report
– Combined Report

Trade Statistics Table

Note tabs and many columns

Trade Simulation Report

Trade Simulation Reports | Trade Statistics

Trade Statistics Table | Security Profit Distribution | Trade Profit Distribution

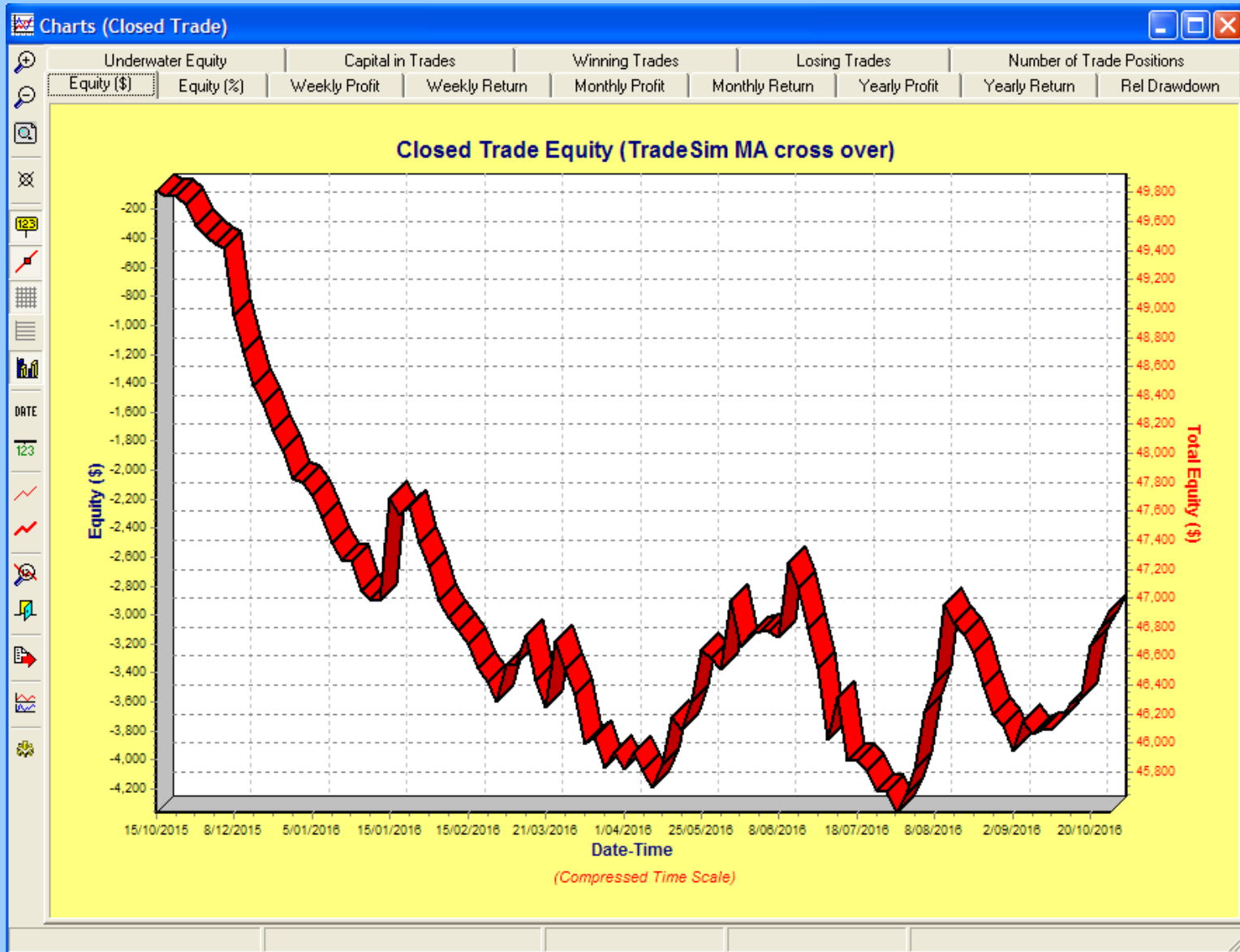
Sym...	Total Profit	Min Profit (\$)	Avg Profit (\$)	Max Profit (\$)	Min Profit (%)	Avg Profit (%)	Max Profit (%)	Number of Trades	Winning Trades	->Percent	Losing Trades
AMP	\$259.42	-\$117.45	\$123.71	\$388.50	-2.58%	2.60%	7.78%	2	1	50.00%	1
ANN	\$869.06	-\$117.45	\$289.69	\$534.63	-2.35%	5.81%	10.72%	3	2	66.67%	1
ANZ	-\$399.23	-\$399.23	-\$399.23	-\$399.23	-8.03%	-8.03%	-8.03%	1	0	0.00%	1
ADG	-\$402.71	-\$269.79	-\$100.68	\$179.64	-5.40%	-2.01%	3.59%	4	1	25.00%	3
API	\$970.50	-\$93.15	\$485.25	\$1,063.65	-1.86%	9.71%	21.28%	2	1	50.00%	1
APN	\$133.71	-\$100.24	\$44.57	\$180.14	-2.01%	0.89%	3.60%	3	2	66.67%	1
APD	-\$135.09	-\$77.33	-\$67.55	-\$57.76	-1.55%	-1.35%	-1.16%	2	0	0.00%	2
ARB	\$46.36	-\$121.88	\$15.45	\$216.08	-2.45%	0.31%	4.33%	3	1	33.33%	2
ASB	-\$48.69	-\$48.69	-\$48.69	-\$48.69	-0.97%	-0.97%	-0.97%	1	0	0.00%	1
AST	-\$113.17	-\$229.20	-\$29.20	\$192.21	-4.50%	-0.57%	3.67%	4	1	25.00%	3
ASX	\$144.22					1.44%	6.50%	2	1	50.00%	1
BAL	-\$253.44					-5.07%	-5.07%	1	0	0.00%	1

Can re-sort — click on column header

See the User Manual (pp172-179) for discussion

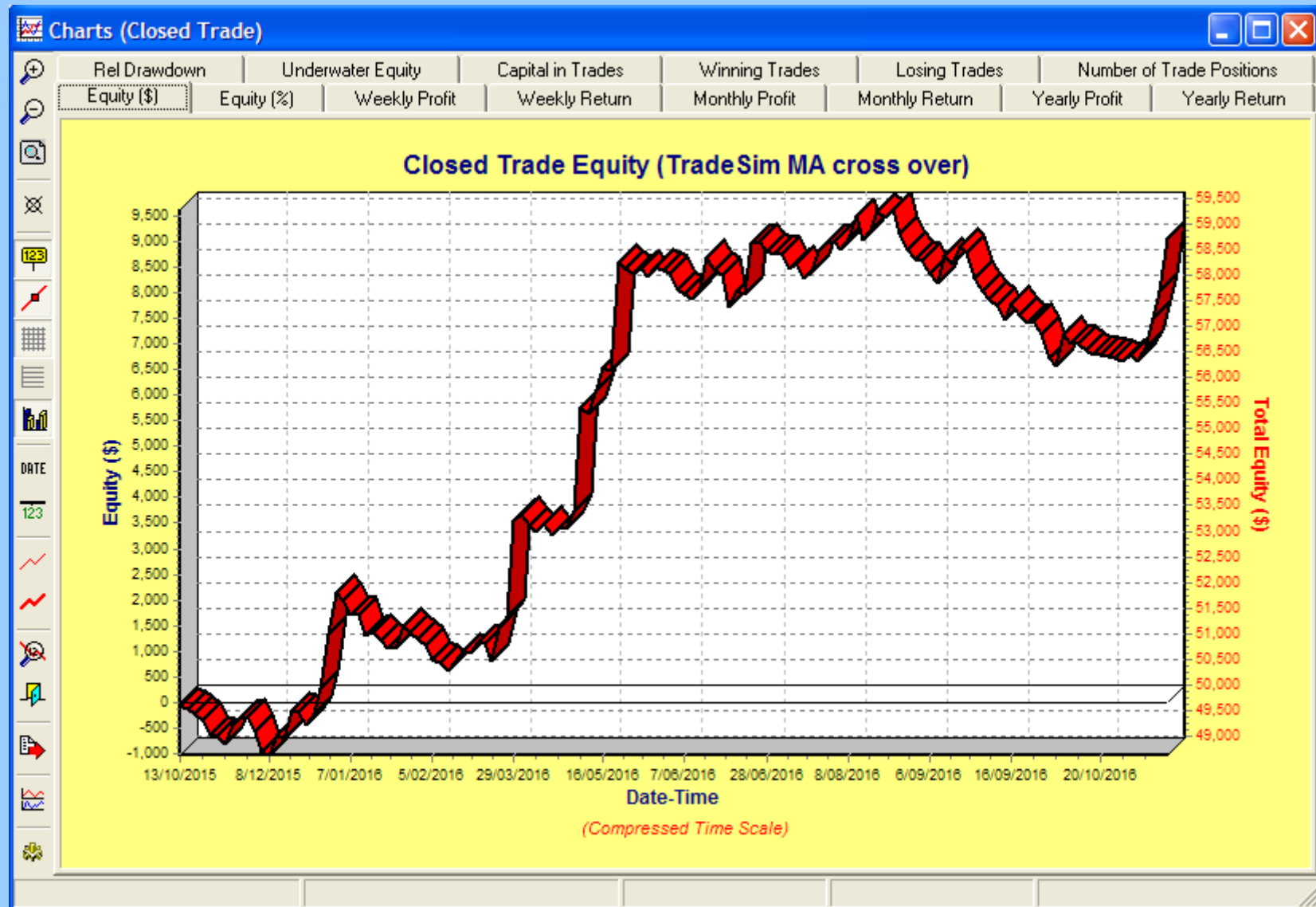
Equity for Closed Trades

For XTL stocks



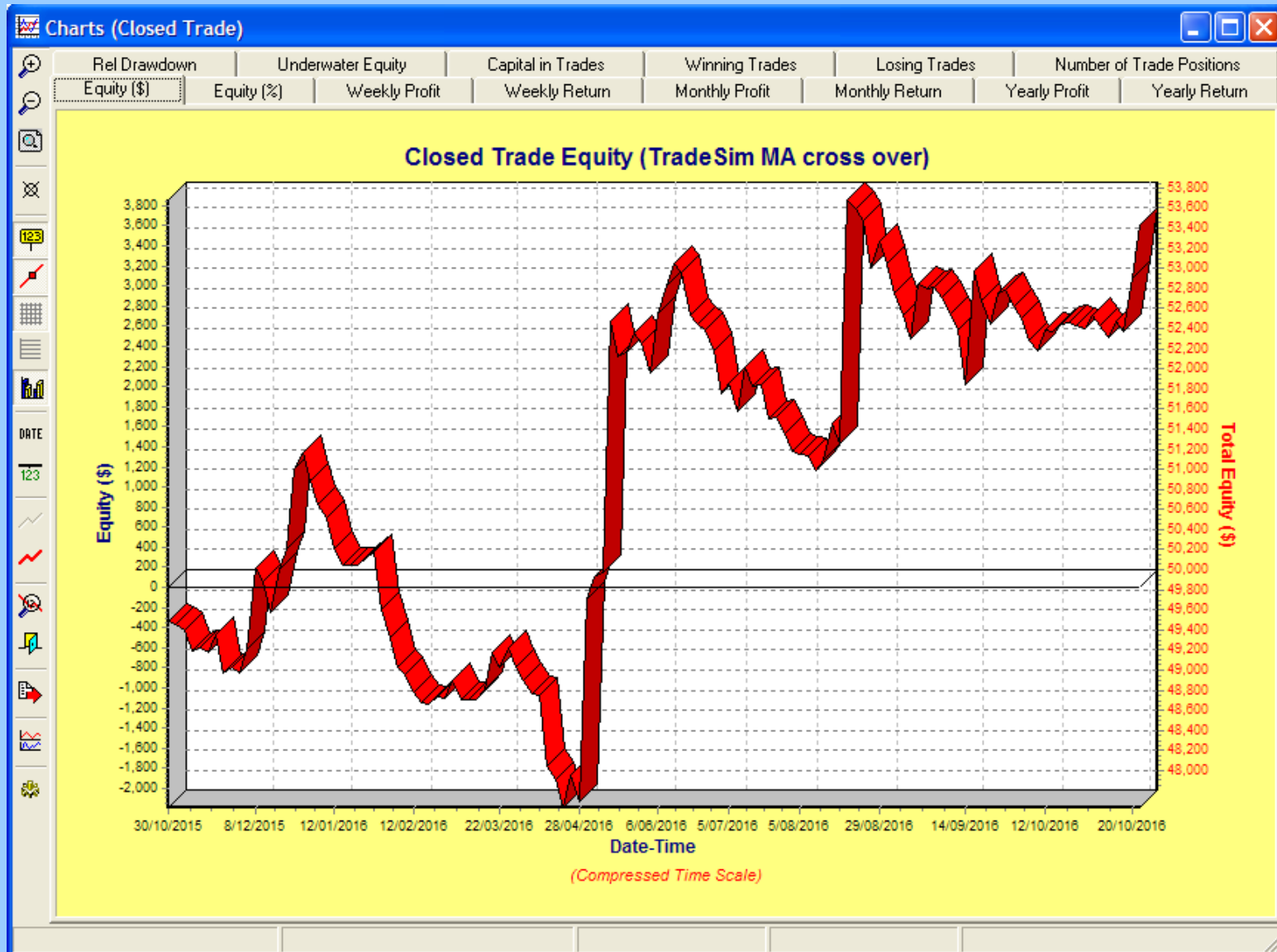
Equity for Closed Trades

For XJO stocks



Equity for Closed Trades

For XMD stocks



A conclusion

- The selection of stock universe can make a big difference.
- There are many possibilities for tweaking the trading system, and the trade parameters.
- The choice of time window can make a difference.

Caveats

This case study is over-simplified, and it has ignored:

- Brokerage
- Testing different time periods and market conditions
- Survivorship Bias (securities that were in the target group in the past, but are no longer)
- Possible optimisation (of trade parameters)

More information?

- Tutorial guides (pdf), videos, etc.
- Robert's web site:
www.robertbrain.com/bullcharts/
- The official web site:
www.compuvision.com.au
- Pricing (time unlimited versions):
Standard edition — \$198
Professional edition — \$484
Enterprise edition — \$1,520

TradeSim — more help

Current version 6.7.7 (build 769)*

A number of materials are available:

- “Users Guide” (299 pages)
- Quick Start Tutorial guide (21 pages)
- Several focused docs on various topics

<http://www.compuvision.com.au/Articles.htm>

Note: Some documentation refers mostly to MetaStock; but is still relevant to BullCharts.

* as at October 2016

The End