

Strategy Testing with Multiple Time Frames STEP 1

OK, I've had a few requests for multiple timeframes using Vhands so I'll go ahead and detail the hows and whys over a few posts. I don't have a great deal of time to answer questions so I'm going to lay it all out, and I'm hoping that once some of you more competent guys n gals get it working you'll help out the few who have issues.

Before I start I let you know I'm using Alpari Demo to achieve this. If you can't do some of the things suggested here (e.g. download back data) then I suggest you install a new Alpari Demo.

This may seem long winded to some already using Vhands but I'd advise you don't skip even the basics section otherwise you may miss a vital step.

The setup may also seem long winded at least initially, but once you have completed all the steps then it can all be saved in templates and profiles so you won't have to do this every time!!! I'm sure once you get it working you'll be pleased with the results.

At various points I'll advise you close MT4 and restart. This is so that MT4 saves the current state of MT4 including the strategy tester options. Thereafter each time you restart MT4 you won't have to redo what you have already done!

Throughout this tutorial references & examples are made of GBPUSD. I hope I don't need to point out that you can use any currency pair.

Finally : The more time frames you create the slower Vhands will run. Having said this I have an AMD 2000+ 768 Mb ram and with M1,M5,M15,M30,H1,H4 & D1 up and running with vhands I'm still getting between 6 and 15 ticks per second. If you have a lower spec PC then consider the following

- Only Have the Vhands tester MT4 App open no other Apps
- Don't have any other chart windows open other than those you're using for Vhands trading.
- Download less back data
- Check the footnotes of this tutorial on how to base vhands on a higher timeframe.
- Install MT4 onto a Hard disk or partition other than the C: drive.
- Upgrade your PC (more Ram is usually the best place to start)
- Renew your PC

Step 1. -- The basics

a) If you don't already have Vhands up and running on your MT4 platform then STOP. Go to post #1 of this Vhands thread and come back here when you do have it up and running.

b) Since you have Vhands running I'll assume you know how to find the folder your MT4 App is installed in, how to add indicators to MT4, and how to use Windows Explorer to copy files and folders.

c) I would advise copying your entire MT4 Application to another 'copy' folder and use this new copy solely for Vhands.

To do this find the base folder for your current MT4 App and copy /paste it. (your MT4 app will probably be in C:\Program Files)

E.G. copy C:\program files\metatrader4 paste into c:\ program files

you should now have 2 MT4 folders ... the original --> "C:\Program files\metatrader4" and a copy --> "C:\Program files\Copy of metatrader4"

Create a new shortcut for the terminal.exe file in the new "copy of" folder and from here on use only the newly copied version.

(BTW when you make a new MT4 copy you'll need to know the account password that was given to you when you first opened the account

If you don't know it then simply create a new account)

d) Note this details how to get 3 years of 1 minute back data. If you don't want that much, or your PC is too slow to handle it, then be advised that 1 year of 1 minute data is approximately 375000 bars, so alter the following figure (1 Million) to your needs. Also be aware that the alpari 1 minute data gets a bit 'fuzzy' before october 2006. However strategy tester will be using tick data for this period (as you VhandsTrade it) and I'm not sure of the quality of the tick data

Now you have a new copy of MT4 we will get some more history data.

Close ALL open Chart windows

goto Menu - TOOLS --> Options then select the "chart" tab.

Type 1000000 (1million) into both the "max bars in history" and "Max bars in chart" options

click OK

close and restart MT4

e) goto Menu - TOOLS --> History Center

double click your preferred currency eg GBPUSD then double click on the 1 Minute node then click the Download button at the bottom of this window.

wait (perhaps for sometime) for the data to download

You should now have 3 years or so of 1 minute data

Just for fun - close MT4 and restart.

e) Open the strategy tester and select the VhandsTrade EA....

Select the 1 minute time frame period for the strategy tester REGARDLESS of the time frame you want to trade from.

Now since strategy tester doesnt give us much data before the start date we specify, we want to set the Start and End dates

In this example I'm looking to trade from 2008.01.01 so I want six months of data before this date so use the following settings.

change the "From date" to somewhere close to 2007.06.01

change the "To date" to 2008.05.29 (todays date)

change the "skip to date" to the date you want to begin trading 2008.01.01

Start Vhands in the normal way. Make sure its ticking away on a 1 minute chart.

Stop the strategy tester --> click stop.

Close MT4 and restart it.

OK now you should have all the basics :

1) a separate "VhandsTrade" test copy of MT4

2) A goodly amount of 1 minute back data

3) strategy tester setup ready to go with Vhands on a 1minute chart.

OK I'm going to split this into 3 separate posts so the next post will detail the next steps.

Strategy Testing with Multiple Time Frames STEP 2

Indicators and modified VhandsTrade EA

First you'll want to download & install the VhandsTrade.mq4 attached to this post...

Why ??

Well I've added a couple of lines of code that will help you use the "skip to" feature of the strategy tester ...

WHY ???

Well with Vhandstrade running the "skip to" won't be any quicker than running in normal visual mode so we need some way of pausing Vhands so that "skip to" can do what it says on the tin. IE skip (in quick time) to the specified date.

Now would be a good time to download the attached Zip file and install them

- copy the new Vhandstrade.mq4 file to the "Experts" folder.
- copy the file Period_Converter_Opt.mq4 to the "Experts\indicators" folder
- Close and restart MT4

So Whats been changed in vhandstrade ???

I've added a "Global variable" called "vhandspause" when this value is 0 vhands works normally, however when this value is any numeric value other than 0 Vhands will short cut out of its main loop allowing the "skip to" feature to do its job IE skip through the back data quickly.

So how do I use it ??

Open the strategy tester (the settings should be the same as detailed at the end of STEP 1 of the tutorial)

- Click start.
- Make sure the chart is ticking then Pause it using the normal play/pause button.
- Press F3 or use Menu --> TOOLS --> Global variables.
- Change the value of "vhandspause" from 0 to 1 effectively "pausing" vhands.
- close the Global Variables window.
- make sure the "skip to" date is that date you want (2008.01.01) then Click "Skip to" button then click the play / pause button ...
- wait for the data to be skipped.(watch the progress bar at the bottom)
- When the chart is updated and ticking away again (at the new date) we need to "unpause" vhands so
- Pause the strategy tester with the play / pause button.
- Open the 'Global variables' window again (as detailed above ... F3 or Menu)
- Change the "vhandspause" value from 1 back to 0 then close the variables window
- Now click the play button.

Viola you should now have Vhandstrade ticking away and you should have 6 months of 1minute history data in the Vhands chart window.

You will use this same method to start VhandsTrade every time. Of course you can change the dates to be appropriate to the day/s you want to trade, but it is important to note that you need to have a fair amount of previous history data in this strategy testing window as this previous data will be used to create all the other time frames you want to see. If we didn't use the "skip to" option we would only have a few hours of data in this chart and consequently when we create say a 1 hour chart it would only have 3 or so bars on it. Now we have "skipped", we have 6 months of history data to build the 1 hour chart from.

OK so whats with the "Period_Converter_Opt" indicator ????

Normally this indicator is used to create, and Keep Live, "non standard" timeframe charts. (BTW It can still be used for this). Lets say during your normal trading you would like to see a Live 3 minute timeframe along with

your 1 min and 15 min standard timeframes. The period converter indicator achieves this for you in a much more elegant way than the period converter 'script' supplied as standard with MT4.

*** Note the following examples are NOT for use with Vhands, they are merely included to introduce you to how the Period converter can be used for normal every day use. Therefore you do not need to complete these following steps

1) To create a 3 minute chart

- open a normal "live" 1 minute GBPUSD chart
- add the period converter indicator
- set the "periodmultiplier" value to 3 and click OK
- Goto Menu FILE --> OPEN OFFLINE
- Find and open the offline file "GPBUSD,M3"

Now you will see that the 3 minute time frame is automatically updated by the indicator on the 1 min chart.

2) create a 2 hour timeframe chart.

- open GBPJPY 15 minute chart
- add the period converter indicator
- set periodmultiplier value to 8
- open the Offline file "GBPJPY,H2"

3) create a 2 hour chart another way

- open EURUSD 1 munite chart
- add the period converter indicator
- set periodmultiplier value to 120
- open the Offline file "EURUSD,H2"

NOTE : In order to keep a chart ticking away on the screen the indicator calls a couple of windows DLL function calls. You must therefore enable this indicator to do this by selecting the "Allow DLL Imports" option. This option can be found on the setup options window whenever the indicator is added to a chart.

OK so how is it used for Vhands ?

Well again I've made a couple of modifications to let us use it

How& Why

Since we will probably want to create some standard MT4 timeframes (eg 5min / 1 hour / D1 etc) for use with Vhands we really cant be using the same file that MT4 thinks is a "live" file. If I overwrite "GBPUSD,M5" file with my data (X months old) then when I open the chart MT4 will automatically overwrite it with the live current data.

So we have to force the period converter to write the 5 minute data into a file that MT4 will view as an "offline file", and will therefore leave well alone.

In order to achieve this I've added 2 new values to the indicator

1) ForceOfflineFilePeriod

This value effectively sets the file to store the data in.

if this value is 0 then it will be ignored by the period converter indicator

2) ThisActualPeriodMins

This value is used to force the period converter to 'view' the data as x minute bars

if this value is 0 then it will be ignored by the period converter indicator

examples

** note these are examples of how to use period converter with Vhands (strategy tester) they are only present to show how it should be used when using Vhands. Therefore you dont need to carry out the following steps.

1) create an "offline" 1 minute chart

- Open a normal live GBPUSD 1 min chart
- add period converter indicator
- set Periodmultiplier = 1
- ForceOfflinefileperiod = 2
- ThisActualPeriodMins = 0
- open the offline file GBPUSD,M2

This Is now a 1 minute time frame chart "HIDDING" in a 2 minute file.

2) create an offline 1 hour chart

- open a normal live GBPUSD 15 minute chart
- add period converter indicator
- set Periodmultiplier = 4
- ForceOfflinefileperiod = 61
- ThisActualPeriodMins = 0
- open the offline file GBPUSD,M61

This Is now a 1 hour time frame chart "HIDDING" in a 61 minute file.

NOTE the value of "ForceOfflinefileperiod" is not critical only that it should be a value (in minutes) that is not a standard MT4 time frame. So for example I could use a value of 63 or 9457 to "hide" my 1 hour time frame in. However if I use a value of 240 (mins) (4hour) then I will have problems!

So lets add one to Vhands shall we?!?!?!

** Please continue with theses steps to continue with the new Vhands setup.

- Close all Chart windows
- Since we dont really want to add indicators to the main Vhands chart window we want to duplicate the 1 minute chart. We can then put our fibs/ RSIs etc onto the new duplicate 1 minute file. This file needs to be updated by the Vhands 1 minute chart so we need to do the following
- Open the strategy tester.
- Click Start button (Dont use "Skip to" yet)
- Pause Vhands using the standard Pause/play button.
- Add the period converter indicator to the Vhands chart window using the following settings
- Periodmultiplier = 1
- ForceOfflinefileperiod = 2
- ThisActualPeriodMins = 0
- open the Offline file "GBPUSD,M2"
- Click the Stop Button.
- Save the Vhandstrade chart window template (the one you just added the period converter to) --- overwrite the template "vhandstrade"

(now every time you open/start the Vhands strategy tester the M2 offline file will be updated by the Vhands Chart).

- Close the VhandsTrade chart window. ** you should now only have the GBPUSD,M2 chart open.
- Start the strategy tester (vhandstrade) again.
- Click the play button ... now both charts should be ticking away.
- Try using the "skip to" option (dont forget to use the global variable to pause vhands) and you'll find both the M2 and Vhands window are updated with the history data.
- Add your required template / indicators to the M2 offline file.
- Stop the strategy tester
- Close and restart MT4

If your MT4 application has Hung at any point since adding the period converter to the Vhands trade window, then try the following.

Close MT4 using either the normal Close button (X at the top right) or using task manager.

- Re open MT4
- Close all chart windows
- Start the strategy tester (vhands) --- there should be no crash
- Stop Vhands --- close all chart windows

- open GBPUSD,M2 offline file.
- Start Vhands again.

this should get you running.

****Note even if you do experience MT4 hanging dont worry. Once you do get it up and running it should be very stable.

Im bored can we get to the point !!!

LOL were almost there have some patience, you'll need it if you wanna be a trader !!!

The next post will detail the final stuff

WARNING at this point dont just jump in and add more Period converters to the Vhands chart window. For some reason (I've only been able to narrow down not fully discover why) the Vhands chart will hang occasionally if more than one Period converter indicator is added to it. This is not the case with other live or offline chart windows so we will now build our multiple timeframes using the M2 chart window.

Strategy Testing with Multiple Time Frames STEP 3

The final setup.

OK heres where I finish off . I'm going to do 1 example and hope you can change it to suit your needs.

But first I'll describe what we already have

- A New version of Vhands running with a 1 minute chart & some good history data.
- The ability to quickly "Skip to" our desired date, which also helps us get a goodly amount of pre history bars on the chart.
- An offline 1 minute time frame chart "hiding" in the file "GBPUSD,M2" which is automatically updated by the Vhands

So we can trade with Vhands on the Vhands 1 min chart, and we can apply our analysis fibs/ trendlines/ MACDs Etc to our M2 (1 minute) chart.

OK so finally we can now create some other timeframes.

Im going to create a 5min, 1hour, daily and weekly.

NOTE that the weekly file will be created using the offline daily chart (5 days = 1 week) * NOTE THE CHANGE OF THE SETTINGS WELL * (This weekly chart is unlikely to be 100% accurate see final notes below)

1) create a 5 minute chart (hidden in a 6 minute file)

- add a Period converter onto the GPBUSD,M2 chart window
- use the settings
- Periodmultiplier = 5
- ForceOfflinefileperiod = 6
- ThisActualPeriodMins = 1
- open the offline file GPBUSD,M6

2) create a 1 hour chart (hidden in a 61 minute file)

- add another Period converter onto the GPBUSD,M2 chart window
- use the settings
- Periodmultiplier = 60
- ForceOfflinefileperiod = 61
- ThisActualPeriodMins = 1
- open the offline file GPBUSD,M61

3) Daily chart (hidden in a 1441 minute file)

- add another Period converter onto the GPBUSD,M2 chart window
- use the settings
- Periodmultiplier = 1440
- ForceOfflinefileperiod = 1441
- ThisActualPeriodMins = 1
- open the offline file GPBUSD,M1441

4) weekly chart (hidden in a 2001 minute file)

- add A Period converter onto the GPBUSD,M1441 chart window ***** NOTE add the period converter to the correct chart
- use the settings
- Periodmultiplier = 5
- ForceOfflinefileperiod = 2001
- ThisActualPeriodMins = 1440
- open the offline file GPBUSD,M2001

There it is you should now have Vhands ticking away along with Separate M1,M5,H1,D1,W1 (Hiding under the names M2,M6, M61, M1441, M2001) all ticking in unison.

Now you can add your required indicators / templates and then save the profiles of the chart windows or alternatively just close and reopen MT4

Just remember not to open a template on the M2 chart as this will remove the Period converter indicators that are currently updating all your other timeframes!!!

END NOTES

----- Monthly & weekly

Accurate Monthly charts are beyond the scope of this Period Converter. Since a month is not a standard length it cannot be built accurately using 4 weeks or 31 days etc., Weekly charts also have a problem because of the sunday opening time. I have little need for it but if another programmer wants to alter the period converter indicator specifically for this purpose of catering for Weekly /monthly charts, then by all means do so ... just remember to post it up here.

I Hate the 1 minute chart

If you dont go near a 1 min chart in your trading then no problem ... leave the GBPUSD,M2 open .. just let it drop behind the timeframes you do use.

But the Vhands chart is still 1 minute!!!!

Yes it is but all analysis can be conducted on your preferred time frames and their chart windows. whilst the trades are taken/setup on the Vhands 1 min chart.

If the scale of the chart is an issue IE you want to put a buy stop 100 pips or more away from current price then im sure someone can help you do that.

Personally I've never used Vhands -I merely Paper traded the MTF ticking charts using the "MACD Sample" EA so I cant comment on how you'd do this but I'm sure you can set your stop and limit prices so I'll leave it to someone else to help you.

If you really cant stand the thought of having it run on a 1Min chart (or if your PC is too old and too slow) then it is possible to follow the all the above steps and substitute the 1 min Vhands chart with a higher timeframe.

Just remember the following :

You wont be able to create & view a 5 minute chart if you base Vhands on a 15 min or 1 hour chart.

You must download the back data for the timeframe you desire rather than the 1 minute data.

(in which case you will need to recalc the "max history" and "max bars in chart" values

you'd only need $(375000 / 15) = 25000$ 15min bars for 1 year)

Make sure you get the "periodmultiplier" and "ThisActualPeriodMins" values correct when you setup your new timeframes.

Time based indicators, MTF indicators and EAs

Most standard indicators applied to these "Hiding" timeframes will work just fine. However an indicator or EA that uses the Period() function is concerned with the length of a bar in minutes and will fail (and possibly hang the MT4 App). The easiest example I can think of is the "time left to end of bar" indicator. This relays on "knowing" the Period in minutes of each bar in the chart. In our example a 1 hour chart is hidden in a 61 minute file and the indicator will think therefore that each bar is 61 minutes in length.

The only way round this problem is to modify the indicators code (much like the supplied period converter indicator) so that the user can specify the bar length in minutes.

If there are any indicator programmers that use vhands and go on to alter an indicator to suit this purpose I'm sure there will be some grateful souls if you post the modified version onto this thread.

An MTF Indicator or EA will want to examine different TimeFrames. It will attempt to do this by examining the Live files not the Hidden files we want them to use. It is way beyond the scope of this tutorial to detail how this maybe achieved, however it may be possible for a creative and able programmer to achieve this.

Though I suspect that changes to such indicators may well take more effort than can be justified. Be warned ... Any who do try may well encounter internal issues within the MT4 programming architecture that make this impossible.

If you are writing you own MTF EA and want to test it then you should consider the following

Your EA will work fine within the Time frame selected in the strategy tester window.

Any reference to any other time frame should be directed towards the "Hidden" file during test phases

E.G. you want to interrogate the D1 TF then interrogate the M1441 TF

If in the above example you need to do any time based calculations then you will also need the EA to know that this M1441 contains M1440 (D1) data

I hope this tutorial has helped you get multiple timeframes up and running.