

Upgrade Notes for FastBreak Pro

Maintaining Existing FastBreak Trading Strategies

If you have existing FastBreak strategies that you like we recommend that you keep the old version of FastBreak on your computer until you have verified that the strategies produce the same results with the new version. Prior to installing the new version of FastBreak go to the folder where the existing version is located, typically ftbreakp for Pro users, and find the file ftbreakp.exe. Rename this file ftbreakpVx.exe where Vx represents your current version (ftbreakpV6.2.exe for example). Now put a shortcut to this file on your desk top.

We also recommend that if you are making a major upgrade, i.e. from Version 5 to Version 6, then install the new version in a new folder, e.g., ftbreakp6. This will allow you to segregate your new files and systems that are associated with this new major version.

If you see significant changes in favorite trading strategies then continue to run these strategies in your old version of FastBreak until you have a chance to create new strategies in the new version. You can have multiple versions of FastBreak installed on a computer so there is no problem running these old strategies.

Release Notes V6.8.2

Bug fix in the Alpha ranking strategy.

Release Notes V6.8

Note: The changes for Version 6.8 only affect FastBreak Pro. There isn't a Version 6.8 for Standard FastBreak.

This update adds two new options for the genetic algorithm (GA) that may improve optimization to generate better strategies, and a third internal change to the optimizer should significantly improve when optimizing for MDD.

The GA options are strictly optional. If you don't use them the optimizer works as before. Both options have been added to the Genetic Algorithm screen.

Improving the Genetic Algorithm Optimizer



Randomize Mating of Genes

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On the Genetic Algorithm screen, a new checkbox has been added. Without getting into the mathematical details, this option often does better in the way strategies are combined to find better solutions.

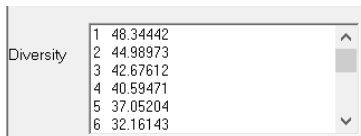
Set Minimum Diversity

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20

A second checkbox and associated input text box has been added at the bottom of the Genetic Algorithm screen. Sometimes the optimizer too quickly begins to find strategies that are very similar to each other. This lack of diversity in strategies may preclude finding strategies that are even better. If the Set Minimum Diversity box is checked then the optimizer will begin to “encourage” diversity in the strategies when the population diversity drops below the value placed in the text box, i.e., 20 in the default above. Without going into how diversity is calculated simply know that large values indicate there the strategies in each generation are very different from each other. Low values of diversity indicate the strategies are beginning to resemble each other. That is not necessarily bad, but if the diversity drops too quickly then the optimizer may be converging too rapidly.

Of course the question is “What is a good choice for the minimum diversity?” A good place to begin is 20. To help determine a better option we have added a Diversity text box at the bottom of the Best Results screen. This box will display the diversity of the latest generation at the end of each generation. For example, here is a example of the diversity values for the first six generations in a typical run:



Generation	Diversity
1	48.34442
2	44.98973
3	42.67612
4	40.59471
5	37.05204
6	32.16143

Diversity is very high for the initial generations, and as optimization continues the strategies begin to resemble each other and the diversity decreases. By setting the Minimum Diversity to a specific value, e.g., 20, that doesn't prevent the diversity from falling below that value. It will simply tend to begin giving more attention to strategies that are more different from other strategies in the population.

One way to better select a minimum diversity is to make an optimization run without the selecting the minimum diversity option. Look at the Out of Sample Results screen and see in which generation the optimization may have begun to “stall” or which generation the Out of Sample the results are falling off. Then look at the diversity for that generation. So let's say the optimizer may have started to struggle at generation 12 and the diversity was 25. Try making a second run with the Minimum Diversity set to 25. This means it will begin to take effect around generation 12 and try to improve diversity, and possibly find better strategies.

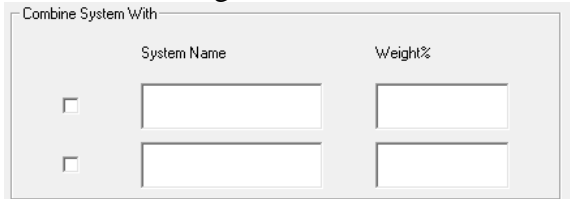
The two new options can be used independent of each other or together. The options often improve strategies, but not always. We encourage experimentation.

Optimizing for minimum Maximum Draw Down (MDD)

In the process of improving the GA we made a change that should improve finding strategies when optimizing for a minimum MDD.

Changes in V6.7

On the Buy Filter Tab the **Combine System With** option doesn't automatically load a value in the Weight% text box, i.e.:



	System Name	Weight%
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>

If the user tries to save a DFT file without entering a value you can get a “Run-time error 13: Type mismatch” error.

We have now put a default value of 0 in the Weight% when FastBreak is launched to prevent this problem.

Changes in V6.6

If using the Dynamic Stop function a check is now made to verify that the fund has enough market days of date to satisfy the user defined period associated with the stop. On rare occasions a fund would be purchased and almost immediately sold because it would fail the Dynamic Stop because the standard deviation wasn't being properly calculated. This would occur when the Dynamic Stop calculation period is longer than the ranking period.

Changes in Version 6.5

Bug Fix and Better Error Checking on Early Start Date

V6.5 fixes a problem when the Correlation Check option is used. Sometimes the correlation check wasn't properly being applied.

As more and more users use ETFs that have a limited price history that would result in errors if a user selected a start date that is too early. We have made changes that will result in fewer errors/crashes if an early start date is chosen. A user should still try to select a start date that is relevant to the beginning of price data for funds in the trading family.

BOOM (Breakout Optimization Method) with Linear Slope Ranking

Long term FastBreak users are familiar with the BOOM option for ranking. Read the description for the option later in the manual. We have made BOOM available to use with the Linear Slope ranking method. In recent years we have found that Linear Slope is a great ranking method for stocks and ETFs. This ranking method appears to help adjust

for the greater volatility of stocks/ETFs vs. the less volatile mutual funds so allowing BOOM to be used with Linear Slope was a natural extension.

Buying Weakness and Selling Strength

FastBreak Pro V6.5 adds two new capabilities (RAT and BAT) for buying and selling into what may be permanent or temporary strength. Some of the changes are intended to build systems that are complementary to traditional FastBreak systems that always buy into strength. This will become clear as each of the new options is explained. Note: The new options will only work with Linear Slope ranking. We will give only a brief overview here in the upgrade notes. **More information can be found later in this manual, and details on the new functions can be found in the Appendix in the Standard FastBreak manual.**

RAT (Return Advance to Trend)

Typical FastBreak trading systems usually buy maximum price strength/momentum. Trading systems can take a different approach and successfully take advantage of buying temporary price weakness or selling into short term price strength. RAT is an option to take advantage of these temporary moves. The assumption is that the move is temporary and the price will revert to the trend.

BAT (Breakout Above Trend)

Sometimes a stock will have a good positive long term price trend, but for various reasons new buying will come into the stock and an even better trend will be established. This is different from the BOOM option which tries to determine when a stock that has been falling breaks out to the upside.

Changes in Version 6.4

Combine/Complementary Systems

FastBreak Pro V6.4 adds the capability to build a new trading system in conjunction with one or two existing trading systems. One purpose of this capability is to build complementary systems that may reduce the MDD or volatility of an entire portfolio that is trading multiple systems.

As an example, perhaps the investor has developed a system that trades ETFs. The annual return of this system may be excellent but has significant drawdowns on a regular basis. This is often the case with a system that trades based on very long term trends without the benefit of tight stops. FastBreak Pro now allows you to import the equity curve (FNU file) from this existing system and the optimizer will attempt to build a complementary system that reduces the overall MDD when the two systems are traded together. Perhaps the optimizer finds a new trading system that makes short term trades or finds alternative funds that don't have a high correlation with the equity curve of the original system.

This functionality can also be used to build FastBreak trading systems that complement non-FastBreak trading systems.

The feature is controlled with new options on the Generic Algorithm screen where you set trading system goals.

Changes in Version 6.3

Version 6.3 allows a user to add FNU and Detail files when the best generation systems (DFT files) are saved. Read the "Saving Strategies" section at the end of Chapter 8 to understand how you can take advantage of this new option to more quickly evaluate the ten best trading systems found by the optimizer. It will allow you to quickly compare the equity curves of the top ten best systems.

Changes in Version 6.2

This section will cover enhancements in FastBreak Pro Version 6.2 and is of interest to users of previous versions of FastBreak Pro.

Version 6.2 (V6.2) is the first release version of V6.X. It has exactly the same functionality of beta V6.1 that some users may have tested.

V6.1 of FastBreak Pro was a beta version that could be run by users of V5. We made the beta available free of charge for V5 users. V6.1 will continue to function; however, going forward we will not maintain the beta version. Now that V6.2 is the official release version any future enhancements or bug fixes will build upon V6.2. If bugs are fixed in version 5 then upgrades of version 5 will be made, i.e., V5.5, V5.6 etc. Users of versions

prior to Version 6 will need to upgrade if they want to take advantage of any future enhancements. Our policy is to provide technical support to the most two recent versions, e.g., V5 and V6.

Trendline Stop and Buy Filters

Version 6 provides trendline Buy Filters and Sell Stops. Trendlines are one of the oldest and still most useful technical analysis tools. Trendlines can be used to determine when a stock or mutual fund has broken down in an upward move, i.e., used as a sell Stop, or trendlines can be used to determine if a downward move has ended and it is safe to buy, i.e., Buy filter. The vast majority of trendline users use a manual method to draw the trendline on a paper chart or a computer screen. Programming a computer to calculate a trendline that a human brain can draw in a few seconds is a daunting task; however, there is a tendency when manually drawing trendlines to “force” the line to other expectations. A mathematical algorithm is not subject to such expectations, but at the same time cannot “see” other potential complications and complexities.

The optimizer in FastBreak Pro will help determine if a trendline Buy Filter or Sell Stop is effective. It will determine if a logarithmic or arithmetic trendline is most effective, and determine the parameter that controls the way the trendline is calculated.

Adding trendlines to the Buy Filter and Stops required changes in the layout to a number of display screens, but you should quickly become comfortable with the new layout.

Details of the Trendline algorithm is provided in the Appendix A of the Standard FastBreak manual, and issues to consider when using Trendlines with the optimizer are discussed in Appendix A of this manual.

NOTE: The algorithm to determine trendlines is very computer time intensive. You will notice a long delay at the beginning of the optimization as trendlines are calculated for all trading family members. If the trading family is large, i.e., hundreds of members, then it may take an hour or more before the first strategies begin to be evaluated. The program may look like it is frozen but it is busy calculating trendlines. See Appendix A for details.

Delay Activation of Stops in Optimizer

FastBreak Pro V6 adds an option to the optimization process to suspend all Stops for a user defined period of days after a fund is purchased. We added this feature for a couple of reasons. One, we have users who use fund families that absolutely prevent exiting a fund for a fixed number of days, e.g., 7 and 30 days are quite common, after a fund is purchased. The second reason is that some companies will allow you make short term trades, but limit you on the number of short term trades. Fidelity for example, will only allow a limited number of short term (less than 30 days) trades during a 12 month period. If a users wants to build a trading strategy to either prevent or limit the number of short

term trades this new feature will prevent any of the stops from being effective. The option is at the top of the screen where Stop optimization ranges are set.

Changes in Version 5

The following list of changes covers upgrades from Version 4 to Version 5. Some users may be upgrading from very old versions, and a section follows to cover upgrades from Version 3. You may ask how Version 5 of FastBreak Pro is different from previous versions and if you should reread the manual. The answer is that the changes are extensive and we suggest you read the entire manual to understand the enhancements. The examples are for the most part unchanged, and you can skip these sections if you are a veteran FastBreak Pro user.

Changes between Version 4 and Version 5

Version 5 of FastBreak Pro dramatically improved the optimization time when using FNU data files. FNU files are in a simple data format that FastTrack uses allowing a user to create data that isn't in the FastTrack data base. Users create FNU files for a wide range of reasons. For example, users who want to create trading systems using synthetic versions of high beta index funds. These funds haven't existed for a long period of time so systems can't be tested over a long period of market history; however, it is quite easy to create synthetic versions of these funds that extend over a long period and the data can be stored in the FNU format. See FastTrack Help for more information on the FNU format. FNU data can't be read as quickly as data in the FastTrack database. The FastBreak Pro optimizer would read the trading family data each time a strategy was evaluated. When FNU data was used this would slow the optimization process by a substantial amount.

Version 5 of FastBreak Pro was modified to read the data only once at the start of the optimization process. This modification allows the optimizer to run approximately four times faster. There will only be a small, perhaps 10%, improvement in optimization time when using only data from the FastTrack database. There is no effect on the execution time of a single strategy. If a FastBreak Pro user selects the Optimize Family option the new version will not optimizer any faster than the old version. This is because when the Optimize Family option is used custom families are created for each strategy evaluated; therefore the family data is read for each strategy so the data is read over and over again just like previous versions of FastBreak Pro.

- Capability to build market timing systems and signal files.
 - We believe this is the most exciting new functionality. The optimizer and out-of-sample testing capability in FastBreak Pro make building market timing signals a snap.
 - This functionality was developed, in large part, to better trade individual stocks. Over the years we have found that FastBreak stock trading systems

have the potential for fantastic returns, but we have also found that controlling drawdown is a challenge in bear markets. We have found that even in severe bear markets there will be stocks that rally strongly, however, these rallies often fail resulting in a whipsaw trades. We saw the need for market timing signals that would keep the trading system out of the very worst of markets. There are numerous market timing signals available but so many of these are not robust and fail the test of time. Also, we wanted to develop our own signals that met our needs, e.g., switches per year, drawdown, markets traded etc.

- One disadvantage of the many market signals available is that they are developed for a specific index, e.g., S&P 500 Index. Often there is a divergence in different stock indexes, i.e., small cap stocks performing well while large cap stocks are not. FastBreak allows the use to combine multiple indexes (or any stock, fund, FNU file) into a family. This allows the user to build signals that stay in a buy mode if any of the indexes are in an uptrend and will only signal a sell signal if all are in a down trend.
 - We have used this capability to build signals for trading diversified mutual funds and individual stocks. We have also used it to build market sector specific signals; for example, we have built signals to build trading systems for energy stocks.
 - Signal file building systems can be run like a regular FastBreak trading system, except the output is a FastTrack signal file. This signal file can then be used in a FastBreak trading system or other FastTrack applications.
- Rank using Ulcer Performance Index (UPI). This option will tend to purchase high-UPI funds and produce strategies that have a high UPI equity curve.
 - Rank using Sharpe Ratio. This option will tend to purchase high Sharp Ratio funds and produce strategies that have a high Sharp Ratio equity curve.
 - Removed the Long Rank + Short Rank momentum ranking option. This option had the tendency to give ambiguous ranking order because the value produced was an integer (whole) number and more than one fund could have the same value.
 - Removed the Families/Individual option on the Funds/Index tab. This option was never very useful.
 - Changed the logic in the Harnsberger option. Previously, Harnsberger would only trigger a sell if you were not holding the top Buy ranked fund. This made sense on early versions of the program when we didn't have buy filters. Now, it is very common for you not to hold the #1 Buy ranked fund because of the filters. Also, with some users having large numbers of funds or stocks in their trading families, the difference in rate of change between the #1 Buy ranked fund and the Nth Buy ranked

fund may be very small. However, the Nth ranked fund may meet all your buy criteria when the #1 fund does not. We changed the logic so that it will always try to buy a top ranked fund that meets your buying criteria. The fund sold must meet your minimum holding period value. This is now very similar to setting the top % to zero percent. One difference is that if more than one fund can be sold on a given day the Harnsberger option will sell the weakest (as measured by Sell ranking) fund. We now put an H in the Why Detail file column to indicate a Harnsberger sell.

- Stop loss using a short/long Exponential Moving Average (EMA) crossover. This is similar to the current EMA stop except that the fund NAV is smoothed with a short term EMA.
- Buy filter using a short/long Exponential Moving Average (EMA) crossover. This is similar to the current EMA Buy filter except that the fund NAV is smoothed with a short term EMA.
- The next four enhancements are all similar in that they allow the user to modify stop or buy filter options according to market conditions or a user defined input file. The modification is triggered when an index (or any user defined fund or FNU file) drops below its user defined EMA line. For example, if the S&P is used as the index then the parameters are not modified as long as the index stays above a user defined EMA line. If the S&P falls below its EMA line then a factor is applied to the standard value. A simple example is that when the market is in a strong uptrend high beta funds may be a good investment option. However, when the market is in a downturn or trading market it may be prudent to purchase low beta funds.
 - Adjust the Trailing Stop Loss value based on market conditions or external file input.
 - Adjust the EMA Stop value based on market conditions or external file input.
 - Adjust the Beta Buy filter value based on market conditions or external file input.
 - Adjust the EMA Buy filter value based on market conditions or external file input
- Beta buy filter can now be a non-correlated beta as an option. Beta is the ratio of the volatility of a fund divided by the volatility of an index (typically the S&P 500), multiplied by a correlation value between the fund and the index. If a fund has a low correlation to the index it can have a low beta but be a very volatile fund. An example would be a gold fund. Gold funds have a low or even negative market correlation and yet are very volatile. Filtering on standard beta may not filter out a gold fund. Using the non-correlated beta filter allows a user to mix a wide range of fund types including those that may not have a high market correlation value, e.g., bonds, international etc., in a trading family and have the ability to filter those with high volatility.
- Improved the BOSS stop option to be more effective with some ranking methods.

- Ability to begin the effectiveness of a stop option later than the first day. Previous versions required the stop to be in effect on the first day a fund was purchased. Some users have the requirement to hold a fund for a fixed number of days after purchase. They can now start a stop after this number of days.
- Ability to search the Buy and Sell ranking list by fund symbol. Some users have very large trading families and it is difficult to locate a particular issue in the ranking list. This option allows the user to do an efficient search for the fund symbol.

Additional Changes between Version 3 and Version 5

Note: You can load trading systems developed with Version 3 of FastBreak into this new version, however, you must input the beta /correlation index and calculation period on the Funds/Index tab. After you have entered this information you will need to resave the DFT file.

Here is a short list of some of the major enhancements:

- Better Opportunity Sell Signal (BOSS)
- Numerous buy filters: EMA, parabolic, RSI, beta, and correlation
- New information in summary output (Beta, Alpha, and Correlation)
- New information in detail output to explain why a fund was sold

Because of changes in program calculation logic, you may see changes in results from your trading systems developed with prior versions of FastBreak Pro. Here are just a few examples:

- We removed the Adaptive Moving Average as a stop option. This was done because we never found the AMA to be a particularly effective stop option, and we wanted to make room on the Stops tab for a much more effective new option called BOSS.
- Change in the logic for the Rate of Return Sell stop. We now check a candidate fund, prior to purchase, to verify that it exceeds the stop parameters specified.