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## Analysis Presets in Rybka Aquarium

This month we'll examine infinite analysis presets in [Rybka Aquarium](#). Presets allow you to store and quickly access your favorite analysis settings so you don't have to configure them manually every time you want to use them. A single preset can hold advanced analysis configurations consisting of multiple engines and analysis panels.

I assume that the reader is familiar with the basics of infinite analysis in Rybka Aquarium, which was discussed in my [July 2008](#) column.

## Presets vs. Traditional Analysis

When infinite analysis is mentioned, most users will think of a single chess engine analyzing a position and displaying the results in the analysis pane, but Aquarium offers much more:

1. Concurrent analysis by two or more chess engines.
2. Multiple analysis panes, or panels as they are called in Aquarium.
3. One or more chess engines analyzing in the each panel.
4. Different analysis parameters for each engine. One of them can do normal analysis, while the next one analyzes threats, the third runs in multi-variation mode etc.

All these types of analysis configurations can be saved as presets in Aquarium. Besides complex multi-engine setups, presets can also be useful for creating shortcuts to simple, frequently used types of analysis. Here are a few ideas:

1. If you have a large number of engines installed you can create presets for the engines that you use most often for analysis.
2. Presets for each of the most used engines analyzing in multi-variation mode with a specific delta (MultiPV\_cp).
3. A preset for analyzing only moves displayed in the tree pane.
4. A preset with an engine analyzing threats.

Presets are the fastest way to start a specific type of analysis. You just select a preset from a list and the analysis starts with the specified parameters, engine(s) and analysis panel(s). Once the analysis has started you can of course modify the parameters as you like, such as increasing or decreasing the number of lines in multi-variation mode.

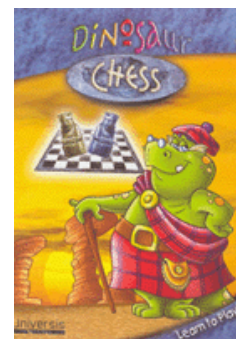
Note that presets running multiple engines require a multiprocessor computer (dual processor, quad processor etc.). It is not advisable to analyze with two engines simultaneously on a single processor computer.

Although convenient, analysis presets are neither required to run infinite analysis nor do they interfere in any way with basic infinite analysis. You can still start infinite analysis by pressing the space bar or by using the Analyze button on the Analysis tab.

## Configuring a Preset

When you want to create a new analysis preset, switch to the analysis tab. Now you can click the "Start Custom" button, or the black triangle on the

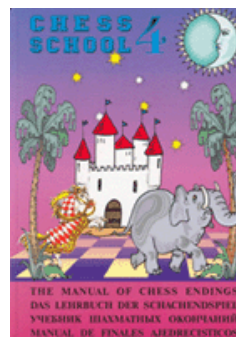
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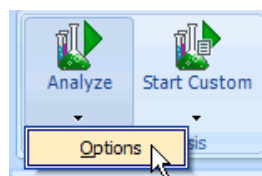
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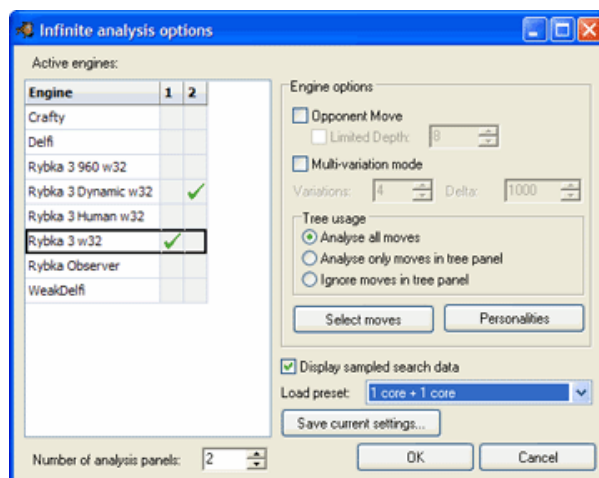


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“Analyze” button, and then select “Options” as shown in the image.

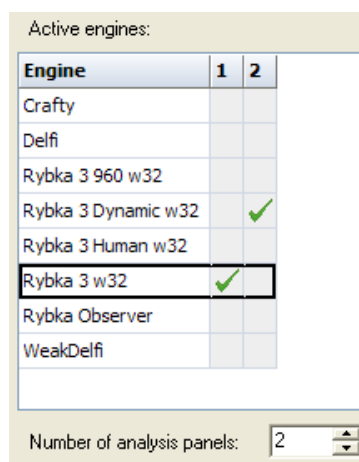


This opens the “Infinite analysis options” dialog box, where you can define the analysis parameters for the preset. The difference is that when you click the OK button the analysis starts immediately if you used the “Start Custom” button.



*The infinite analysis options*

The options are split into two main sections. A list of all available engines is displayed on the left-hand side where you can specify the analysis panels and choose the engines to analyze in each of them. When you highlight an engine in the list you can adjust its analysis parameters on the right-hand side of the window. We’ll start by having a closer look at the engine selection and panel setup.

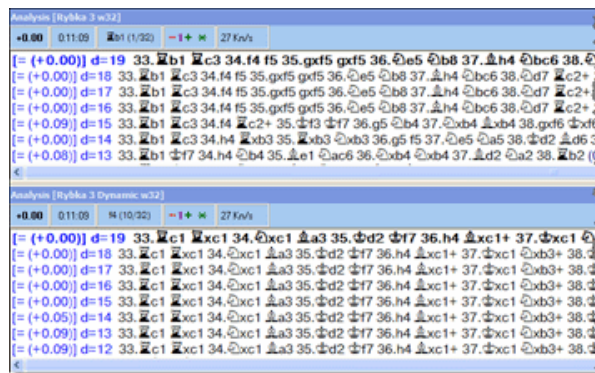


*Analysis panel setup*

The “Engine” column lists all installed chess engines. Following that, there is one column for each analysis panel. The panels are numbered starting from one as the column headings show. If we look down the column for panel one, we see that there is a check mark in the “Rybka 3 w32” line, which means that it will analyze in panel one. Similarly, we see that “Rybka 3 Dynamic w32” will analyze in panel two.

The “Number of analysis panels” at the bottom of the image lets you define the number of analysis panels that will be present when analyzing. Two panels will be used in this example. A panel is only displayed during analysis if it has an engine associated with it.

If we start analysis using the preset shown above (it's actually the standard preset "1 core + 1 core") it will look something like this when the analysis starts:



*Infinite analysis with two analysis panels*

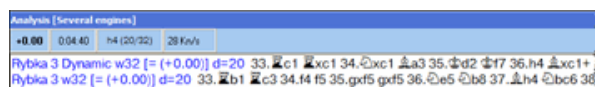
We see two analysis panels with Rybka 3 analyzing in the top panel and Rybka 3 Dynamic in the other one. Here we also see one of the advantages of multiple engine analysis. The two engines suggest different moves. Rybka 3 wants to play 33.Rb1 at depth 19, but the Dynamic version likes 33.Rc1 at the same depth. This is the reason why many users prefer to analyze important positions with more than one engine. If the engines agree on the best move, then you can be more confident that it's a good move. If they disagree, then you can add their suggestions to the list of candidate moves to analyze further.

If you are only interested in the best line found by each engine or want to save space you can run the two engines in the same panel. Just change the panel setup in the analysis options so it looks like this

Engine	1	2
Crafty		
Delfi		
Rybka 3 960 w32		
Rybka 3 Dynamic w32	✓	
Rybka 3 Human w32		
Rybka 3 w32	✓	
Rybka Observer		
WeakDelfi		

Here we see that Rybka Dynamic and Rybka 3 have both been assigned to panel one. An engine is added to a panel by clicking in the corresponding panel column. Note that it is not sufficient to click the engine's name. If you want to add a second engine to a panel you must use Ctrl+Click; i.e., hold down the Ctrl key while clicking the panel cell. Use the same method if you want to remove an engine from a panel.

This is how the analysis window would look in this case:

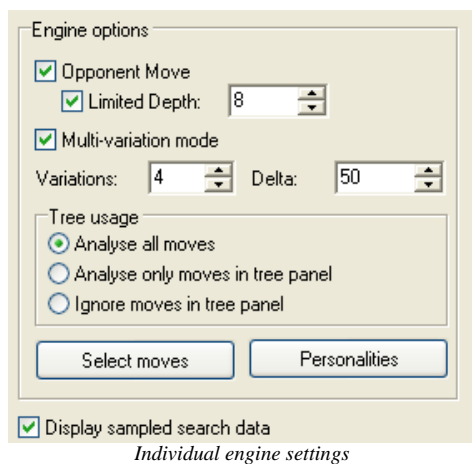


*Two engines analyzing in the same panel*

When you compare this output to the one where each engine analyzed in its own panel you can see that here you get a more compact view of the analysis and it requires less screen space.

Even when several engines are analyzing at the same time, each of them can be configured separately. First highlight the engine by clicking on it in the "Active engines" list in the "Infinite analysis options" and then select the options in the "Engine options" pane as shown in the image

below.



Most of the options you see here were explained in my previous article about infinite analysis, but Aquarium is constantly evolving and a couple of new options have been added since then.

When you select “Opponent Move” you can now specify “Limited Depth.” In this example I have set this parameter to eight. This means that when the engine starts analyzing it will first analyze the opponent’s threats until it has reached depth eight. Then it will show the opponent’s main threat as a curved, red arrow on the board as shown in the diagram below.



This is a position from the game Fischer-Geller, Skopje 1967, which was analyzed in my [January 2009](#) column. Black just played 20...Qb7 and it is White’s move. Even with “Limited Depth” set as low as eight, Geller’s idea of 21...Ba4!!, which caught Fischer by surprise, is uncovered.

After pointing out Black’s threat, the engine turns to analyzing the position from White’s side.

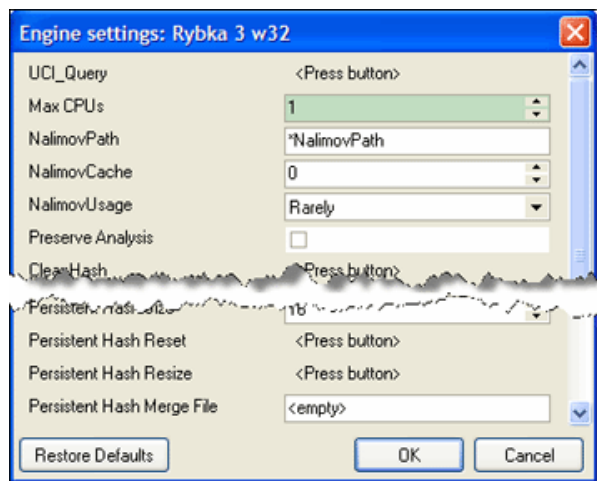
Note that this option is intended for a quick automatic check and doesn’t display anything in the analysis window. Its only output is the curved arrow.

Multi-variation mode was also described in the January column. If you want to use the “Delta” parameter but are unsure about which value to choose, I suggest that you start by setting it to 50 centipawns. It makes the multi-variation analysis more efficient as Rybka doesn’t waste time getting exact scores for moves that are 50 centipawn worse than the best move found so far.

The “Tree usage” options were also described in the January column. I would just like to emphasize that this option is based on moves that are

displayed in the tree pane, which can combine moves from many trees in addition to moves in the game notation. This means that if you are analyzing a position that is not found in the active tree configuration, “Ignore moves in tree panel” can be used to analyze alternatives to the moves that were played in the game. If the game is annotated, then it would analyze moves that were not played and are not present in any variation.

The “Personalities” button allows you to specify parameters for the engine that is currently highlighted in the active engines list. When you click the button, you get a list of available parameters as shown in the next screenshot. The title bar shows that the settings apply to Rybka 3 w32.



*Analysis preset parameters for an engine*

I’m only showing the top and the bottom of the dialog box. The most important parameter when creating a multi-engine analysis preset is the number of CPUs (or cores) assigned to each engine. You must make sure that the total number of CPUs used by the engines is not greater than the number of CPUs in your computer. If you exceed that number, the engines will start fighting for CPU time with unpredictable results. You must also make sure that the total hash size of the engines in the preset doesn’t exceed available memory.

In the image above, I have set Max CPUs to one. Note that the background color of the field is changed to indicate that it has been modified. This allows you to keep track of which fields you have changed for each engine in the analysis configuration. The “Restore Defaults” button at the bottom of the dialog box replaces all the changes you have made with the default values.

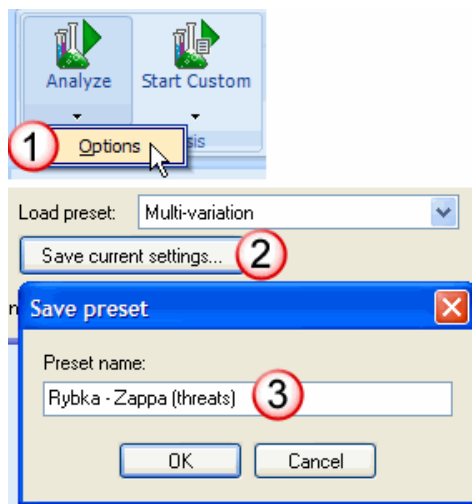
If you change any of the settings in the “Infinite analysis options,” clicking the “Analyze” button will analyze using the new settings, even after you exit and restart Aquarium. Clicking the “Start Custom” button opens the “Infinite analysis options” with the settings you specified.

### **Saving and Activating Presets**

After testing different analysis configurations and figuring out what works best for you, you will want a quick access to your favorite presets. Therefore, Aquarium allows saving analysis presets. Each preset can be given a descriptive name so that later on you can quickly pick the right preset from the list of available presets.

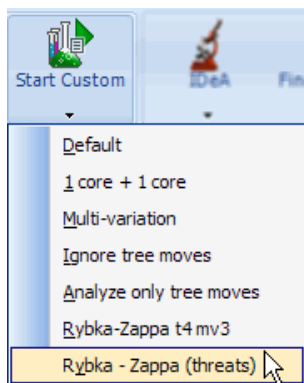
When you have found a configuration that you are happy with, do as shown in the image below. First click the downward pointing triangle on the Analyze button and select “Options,” as shown in the illustration (you can also use the “Start Custom” button as explained before). The “Infinite analysis options” will be displayed. Click “Save current settings.” Finally

enter the preset name in the “Save preset” dialog box and click OK. In this example, I named the preset “Rybka – Zappa (threats)” to remind me that Rybka is analyzing normally (single variation mode) using all available cores except one, which Zappa uses to analyze the opponent’s threats.



*Saving a new analysis preset*

After this, the new preset is ready for use. All saved presets can be accessed by clicking the downward pointing triangle on the “Start Custom” button. Here we see a list of seven presets, with the new one we just created highlighted at the bottom of the list. After clicking, the analysis starts immediately using the selected preset.



*Starting analysis using a saved preset*

As you have now seen, analysis presets can save you time when using infinite analysis. Complex analysis configuration, even those involving multiple engines and panels, can be picked from a list instead of requiring manual configuration every time you need them.

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