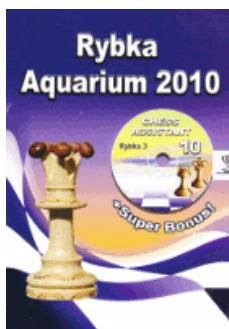




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## Getting More Out of IDeA in Aquarium 2010

In this column, I take a deeper look at some features that were discussed in earlier columns, and I reveal a couple of interesting ideas that will help you get a better understanding of IDeA in Aquarium 2010. As before, I emphasize the importance of its interactive features and start out with the many different ways of selecting and sending positions for analysis in IDeA.

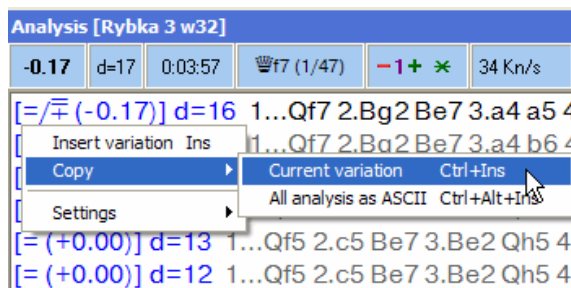
### Sending Games and Positions to IDeA

There are many different ways to feed interesting positions into IDeA for analysis. You can use the following methods at any time and it doesn't matter if the project is analyzing or not.

**Enter moves manually.** The simplest method is to make moves on the chessboard in IDeA or browse the tree and use the buttons in the "Interactive" group in the ribbon to create the analysis tasks. Most users probably know and use this method, even if they also use some of the other methods described below.

**Copy/paste engine analysis.** A good player will use all the resources available to him for improving his analysis. Therefore, It is natural to combine the strengths of infinite analysis and IDeA. If you are analyzing a position with infinite analysis, you can easily copy any of the variations in the analysis window to IDeA.

**Start infinite analysis.** When you see an interesting variation in the analysis window, select it by clicking on it and then right-click.

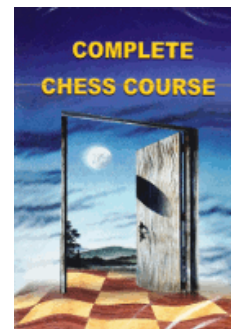


Select "Copy" and then "Current variation" from the right-click menu. Experienced users may prefer to use the Ctrl+Ins keyboard shortcut. What happens here is that the selected variation is copied in PGN format, so you can paste it directly into IDeA. Simply switch to IDeA, select the notation window and press Ctrl+V or use the right-click menu to paste the PV from the engine into the notation. After that you can, for instance, click "All Positions" to add it to the analysis queue.

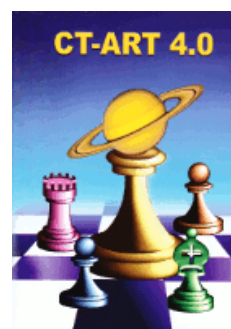
**Copy/paste a game.** Another method is to copy a game from the Sandbox or a database, paste it into the IDeA notation window and click "All Positions." IDeA will go through the moves in the notation window and add any position to the analysis queue that has not been analyzed previously.

Sometimes you don't want to analyze all the moves in the IDeA notation. You may, for instance, want to skip the opening moves of the game. After pasting a game into IDeA go to the position where you want the analysis to start and press the Delete (or Del) button. The "Deleting moves" dialog box will be displayed.

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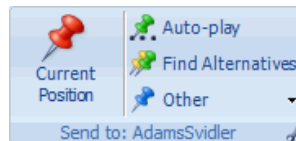
version or here to download and install the [Full](#) version. Or play online against [Rybka](#).



Select "Delete previous moves" and press OK. After that you can click "All Positions" to analyze the remaining moves. You should note the various other options shown here, which can be useful for trimming the notation before sending it to the analysis queue.

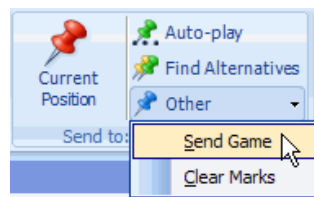
**Copy/paste a game fraction.** Instead of pasting a whole game into the IDeA notation, you can copy a range of moves from a game and paste only those moves into IDeA. The method for doing that was explained in [Aquarium's Hidden Treasures, Part One](#).

**Send selected positions to IDeA.** When you are viewing a game and switch to the Analysis tab, you will see the following group of buttons.

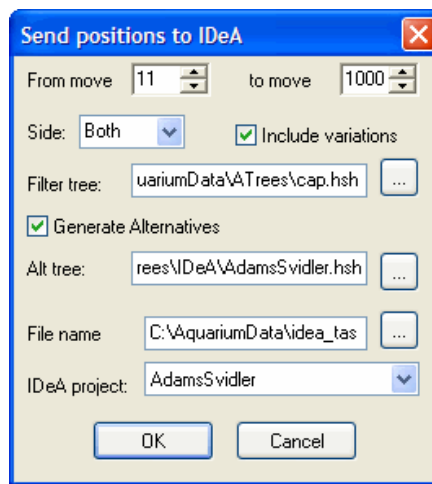


While browsing the game, you can click "Current Position," "Auto-play," and "Find Alternatives" to create tasks based on the current position. You can create tasks for as many positions as you like. These buttons work similar to analogous buttons within IDeA, and they send the tasks directly to selected IDeA projects. The name of the project is displayed below the buttons and you can switch to a different project by clicking the tool button shown in the lower right corner of the image.

**Send the current game to IDeA.** The "Other" menu button in the image above displays a menu with two items as shown below.



"Clear Marks" clear the task markup from the current move, but Send Game is a very flexible method to send positions from the current game to an IDeA project. It displays the "Send positions to IDeA" dialog box.



Starting at the top, "From move" and "to move" specify a range of moves to copy from the game to the IDeA queue.

"Side" can be "Both," "White," "Black," "Winning," or "Losing." It determines if moves for both sides or only one side (and then which side) are sent to IDeA.

If you select "Include variations," both the mainline and the variations in the game are sent to IDeA. Otherwise, only the mainline is sent.

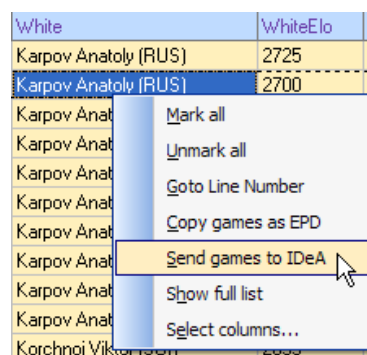
"Filter tree" is used to filter out certain positions in the game. If a position from the game is found in the tree, then it is not sent to IDeA. The tree could be an opening tree, which would filter out known opening moves, or it could be your IDeA tree, which would prevent positions already in the tree from being analyzed again.

"Generate Alternatives" is used in connection with "Alt tree." When it is selected, each position that is sent to IDeA will be used to find an alternative move instead of analyzing the position normally. The move in the game and the moves that are found in the "Alt tree" will be excluded in the search for the new alternative. One method of using this feature is to send the moves of the losing side to IDeA and search for improvements that have not been analyzed before.

"File name" is only useful if you want to save the positions to an EPD file.

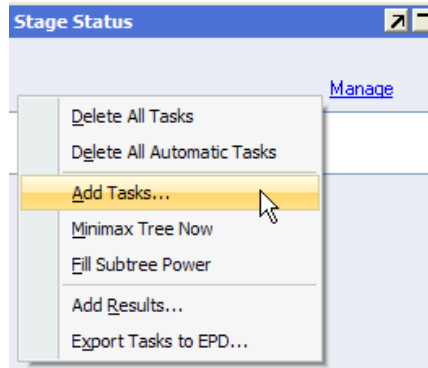
The positions will be sent to the project specified in "IDeA project" for analysis. If you have specified "File name," you can select "<none>" from the project drop-down list and the positions will only be saved to the EPD file, but not sent to an IDeA project.

**Sending several games to IDeA.** Sometimes you may want to send not only one game, but a number of games to an IDeA project for analysis. Say that you are analyzing an opening. You would start by searching a database for the position that you are interested in. The search will return a list of games. Highlight the games you want to include in the analysis (using the Insert (or Ins) keyboard shortcut or the Mark Range button). After marking the games, right-click over the game list.



Select "Send games to IDeA" from the menu. This will bring up the "Send positions to IDeA" dialog box that was described above. The difference is that this time Aquarium will collect positions from all the highlighted games.

**Loading positions from an EPD file.** The eighth and final way to add positions to an IDeA analysis queue is through an EPD file. If you have an EPD file with positions that are relevant for your IDeA project, you can load them into the analysis queue via the "Manage" menu in the Stage Status window. Clicking the "Manage" link opens the following menu.



Select "Add Tasks" from the menu and a standard Windows file open dialog will be opened, allowing you to locate the EPD file and open it. All the positions in the file will be added to the analysis queue of the project.

### Optimal Analysis Quality Settings

Many users have asked about the optimal analysis quality settings for IDeA. Unfortunately – or perhaps I should say fortunately – chess is a very complex game and there is no single setting that is optimal for all situations. Here are some of the factors that may need to be considered when choosing analysis quality settings in IDeA:

1. The position on the board. Is it dominated by deep tactics? Is it a positional battle? Is it an opening, middlegame, or endgame position? Etc.
2. Are you running IDeA exclusively in automatic mode (not recommended), or are you interacting with the analysis?
3. Are you a weak, average, or a strong chess player?
4. Are you an experienced computer and chess software user? Do you have good knowledge of the chess engine you are using, its analysis features, strengths, and weaknesses?
5. How powerful is your computer (or computers if you are also using remote engines)? See [Networked Computers with Aquarium 2010](#).
6. How much time do you have for the analysis? A few hours? A day? Several days?
7. What is the goal of your analysis session? Besides searching for the best way to play a position, IDeA can be used for a quick insight, as a source of ideas to explore further, or for providing a general overview of where the game may be heading.
8. The engine you use is also important. Different engines behave very differently and analysis quality parameters need to be chosen with that in mind. As an example, the depth reported by Rybka is generally much lower than the depth reported by other engines.

The ideal situation is to have a huge IDeA tree based on deep analysis of every position in the tree. The problem is that the deeper the analysis is, the longer it takes and the fewer positions will be analyzed. Analysis depth and the number of positions are two dimensions that compete for the same resource, namely time. That's why items five and six above must be considered when selecting the Analysis Quality Settings.

If you are a strong player with a good understanding of IDeA and the chess engine that you are using for the analysis, you can get away with faster

analysis if you also use your chess knowledge to take advantage of IDeA's interactive features and focus the analysis on the lines that really matter (See items two, three, and four above).

Even if you are not a strong chess player, you can still get great results with IDeA. The key is to understand how it works and use the interactive features to guide the analysis. There are many examples in recent years of players who are very proficient in using chess analysis tools, although they are not strong players themselves.

If you are running IDeA purely in automatic mode, you are not taking advantage of your chess strength, your human insight, or your knowledge of Aquarium, IDeA and the chess engine you are using. Leaving all the analysis to IDeA without contributing anything yourself goes against the basic purpose of IDeA and, honestly, is simply boring. Besides, pure engine analysis without interaction will not give you the results you hope for, as will become painfully clear if you, for instance, play correspondence chess against strong players. This applies to infinite analysis and other methods of analysis as well.

IDeA is based on repeated application of infinite analysis. Therefore, the quality of the analysis of individual positions is exactly the same as you will get by applying infinite analysis directly with the same parameters. The difference is that IDeA learns more about a position as it expands the analysis tree by adding alternatives and extending variations. The new knowledge flows up the tree and corrections are applied to previously analyzed positions. Therefore, the effective depth of the IDeA analysis is higher than the analysis depth for individual positions indicates.

With the above in mind, let's look at a few examples of analysis quality settings. I assume that Rybka is being used for the analysis. If you are using a different engine, you might need to adjust the "plies" for comparable results.

10 seconds AND 12 plies  
Wait for next depth

If you have a fairly powerful computer, this would be considered fast analysis, suitable for getting an overview of the position. As an absolute minimum, you want a few hundred (preferably a few thousand) positions analyzed from the current root node. If a setting like this is required to analyze that number of positions within your time limits, then it might be an acceptable choice, but only if you guide the analysis by using the interactive features of IDeA. A strong player might be able to get excellent analysis using these parameters, but it would depend on the position and how skilled he is in using the interactive features.

30 seconds AND 15 plies

These settings would give you deeper (and better) analysis, although considerable manual interaction is still required. One purpose of the 30 seconds is to allow the analysis to exceed 15 plies in endgame positions and other positions where the engine needs little time to complete each iteration.

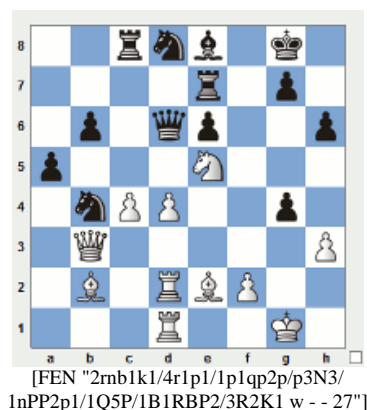
120 seconds AND 17 plies

This would give quite good results. The tree will be smaller, but its quality will be higher. You would need considerable time to build a large tree unless you run the analysis with several instances of (single core) Rybka. Also here, manual interaction is required for best results.

60 seconds AND 20 plies  
Max. time 1200  
Wait for next depth

A setting like this one will only be practical in an endgame or if you have really powerful hardware. Shahar Tzafrir (Highendman), a strong player and one of the best "centaur" players around, used similar settings when he won a correspondence game against the Rybka forum team. He used forty-four single core engines for his IDeA analysis! Even with this powerful hardware

and deep analysis, Shahar used interactive analysis extensively, both within IDeA and infinite analysis. At one point in the game Shahar found a really beautiful move, which turned out to be the key to his victory. This move would not have been found with automatic analysis. Extensive interactive analysis was required. His opponents missed the move in spite of using various chess engines and analysis methods.



The move I'm talking about is **27.d5!!**, which was discussed extensively during and after the game. The game is also [available](#) with Shahar's notes.

I have found that with increasing number of cores I also like to increase the depth of analysis in IDeA. I prefer increased depth as long as I still have enough time to build a sufficiently big tree. The other option is to keep the analysis quality constant and build a bigger tree as the number of cores increases.

### Multiple Projects

If you are using several instances of Rybka (or another engine) for IDeA analysis, you can keep the engines busy at all times by analyzing more than one project simultaneously. If you only have one active project, go to the IDeA Control Center, select another project and press the "Active" button to activate it.

I often analyze three projects simultaneously, but there is no practical limit to the number of projects that can be analyzed at the same time. This is a very useful feature for correspondence players, opening analysts, etc.

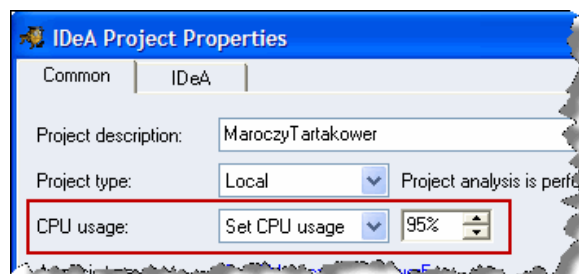
### Analysis Roots in Different Projects

Here is one trick you may not have thought of. A strong player told me that he sometimes creates two or more projects for studying the same opening. He uses the same tree and the same tree configuration for the projects. That's another way to keep the engines busy. Of course, you should make sure that the projects are analyzing positions that have little in common. This is often easy to do. An example is a position where White's best move is to castle, but he can choose between kingside and queenside castling. In that case you can create one project after each move and be sure that the resulting positions are different. In other cases it may not be as clear as in this example, but you will often find root positions that have little in common. Even if some of the analysis tasks happen to be the same, nothing terrible will happen aside from some wasted time. Identical tasks may be analyzed in two projects if they happen to end up in both queues at the same time. However, if a task is analyzed in one of the projects, the other projects will know about it when they generate the tasks for the next stage, and in that case the task would only be analyzed once.

### Project CPU Settings

Although several active projects make better use of the analysis time of the engine, there is often one particular project that you are more interested in than others at a given moment. Let's say that you have three active projects and you want to spend most of the time on one of them. Go to the IDeA

Control Center, highlight the project in the list and click the Edit button in the ribbon. The IDeA Project Properties will be displayed.



In the "CPU usage," select "Set CPU usage" from the drop-down list. A new percentage field will be displayed. Change the percentage to a high number, but make sure that it is lower than 100 percent. In the example shown in the screenshot above, I have set it to ninety-five percent, which means that other active projects will be analyzed when there are not enough tasks available in this project. Make sure that the "CPU usage" for the other projects is set to "Active."

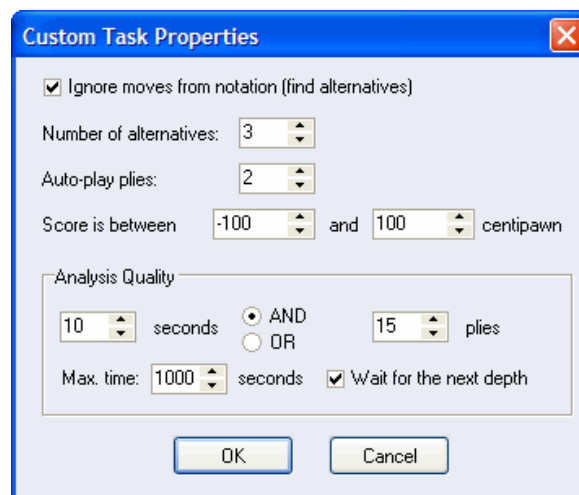
If you set the percentage to 100, then the other projects would not be analyzed at all, as was explained in [Interactive Deep Analysis \(IDeA\) With Rybka Aquarium 2010](#).

Of course, you can change the "CPU usage" at any time, even while IDeA is running. This means that you can make another project the "ninety-five percent project" any time you like.

This feature will be appreciated by correspondence players who want to emphasize the analysis of the most critical game while slowly improving the analysis of one or more other games.

### Custom Tasks

Custom tasks are a very powerful feature for interacting with IDeA and specifying analysis tasks. The "Custom Task" button is in the ribbon in project view. When you click the button, the Custom Task Properties dialog box, shown below, is displayed where you can define the parameters for the task.



In the lower half of the image, you can see the familiar "Analysis Quality" pane (showing the project's settings). This allows you to choose settings for the task that are different from the project settings. This can come in handy when you are dealing with an interesting position that you want to analyze deeply.

Near the top of the image, you can see that I have set "Number of alternatives" to three. This means that three new alternatives will be generated

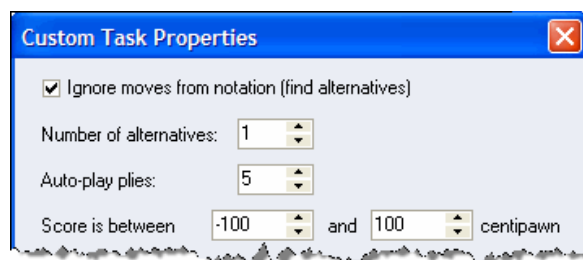


for the current position. This is a convenient way of automatically adding several alternatives in one task.

"Auto-play plies" is set to two. This means that after generating an alternative, IDeA will play one additional move in that variation. This parameter defines how long the generated lines will be. If I had set "Auto-play plies" to one, only the new alternatives would be generated. If I had set it to five, each alternative would be followed by four new moves.

If you want to limit the analysis to moves within a certain evaluation interval, you can set the "Score is between" parameter. In the example above, I have set the interval to -100 to +100 centipawns, which means that I am not interested in variations outside that interval. This can save you from spending too much time on positions which are not interesting. Let's say that the evaluation of the second alternative had been -150, then IDeA would not have generated the third alternative. The same applies when IDeA extends a line. If it hits a move with an evaluation outside the interval, the line will not be extended further.

If I only want to extend a line in the tree, I can set the parameters as follows.



In this example, a single line of five plies will be generated. If the tree is currently positioned at the end of a variation (a leaf node), it will be extended. Otherwise, a new alternative will be generated and then extended according to the "Auto-play plies."

### Possible uses for manual analysis

Besides the normal IDeA analysis where the analysis tree is expanded automatically, you can use IDeA similar to infinite analysis. This approach has the advantage that all your analysis is stored in the analysis tree, ready to be used for normal IDeA analysis.

Define a new project (or select an existing project). Make sure that the analysis quality settings are high enough so you will have time to interact with the tasks that you create. Next, switch to the IDeA tab in the IDeA Project Properties.



All you need to do here remove the check mark from "Automatic tree expansion (IDeA)." This means that IDeA will not generate any tasks automatically and you can use it to analyze the positions that you are interested in. You can use this method when you are starting the analysis of a new position where you have your own ideas about how it should be played.

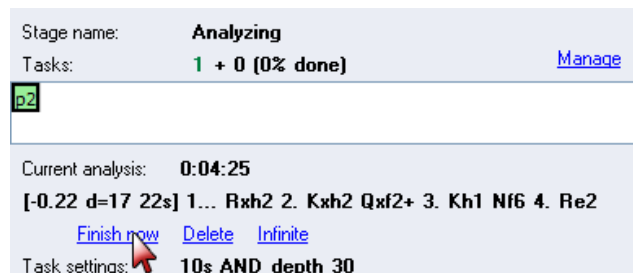
Note that the original idea of this setting was to let IDeA work like an "EPD-processor" and load the positions to be analyzed from an EPD file as was described above (see Sending Games and Positions to IDeA).

After defining the parameters for the project, you can open it and start analyzing. Use the interactive features to select the positions that you want to



analyze. Make some moves on the board and press "Current Position" to analyze the position and any moves in the variation leading to the position. You can also ask IDeA to generate a new alternative in a position, by clicking the "Alternative" button. If you have been examining several variations on the board and want IDeA to analyze all the positions in the notation window, click "All Positions" to analyze all positions which haven't been analyzed already. "Custom Task" can also be used to generate analysis tasks.

You can decide for how long each task is analyzed and when to stop the analysis of a particular task.



When you want to stop the analysis of a task, first select it in the analysis queue by clicking on it and then click "Finish now," as shown in the image above.

Sometimes you may see that a move you wanted to try is actually a terrible blunder and you don't want to add it to the tree. Then you can click the "Delete" link instead of "Finish now" and the task will be deleted.

When you are analyzing an interesting position, you may want to let the analysis run longer than it normally would. Select the task as described above and click the "Infinite" link. Now the analysis will run until you stop it manually by clicking "Finish now."

Basically, everything is working just like in a "normal" IDeA project, but by using this manual method, you can build an analysis tree based on your own ideas. It is important to realize that you can switch to normal IDeA any time you like by opening the IDeA tab in the IDeA Project Properties and selecting "Automatic tree expansion (IDeA)" again.

If you have an existing project that has been analyzed with normal IDeA settings, you can also switch to manual mode by removing the check mark from "Automatic tree expansion (IDeA)."

## Conclusion

IDeA is an advanced analysis method that is very powerful in the hands of players who master its features. One of its advantages is that it can use the computing power of several computers for its analysis. However, regardless of how powerful your computers are, the best results require manual interaction. Although computers and chess engines are more powerful than ever, human input still makes the difference between good and great analysis.

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