Contents

1. Introduction

1.1. Welcome to Aquarium 2018

Thank you for choosing Aquarium 2018

Aquarium 2018 is a GUI (Graphical User Interface) that allows you to take advantage of the features of the world's strongest chess playing engines. You can play, analyze, comment, search, and download the latest games and much more using Aquarium.

Aquarium is compatible with hundreds of chess playing engines, both free and commercial.

Aquarium 2018 is a feature rich program, with many novel features that will impress the serious chess player as well as the casual player.

Future versions of Aquarium will be heavily influenced by user requests. If you want to see your favorite feature added to Aquarium, make sure that you visit the Aquarium board on the forum (http://rybkaforum.net) and tell us about it.

1.2. System requirements

Aquarium 2018 is designed for Windows 10, Windows 8, Windows 7, Windows Vista. For questions regarding specific configurations, please contact technical support (**E-mail: info@chessok.com**). Some users have reported that Aquarium also runs under Windows 98 and Linux (using Wine). These operating systems are not officially supported by ChessOK.

1.3. Technical support

This document is intended as a general introduction to Aquarium 2018, with more details provided by other documentation such as the Aquarium help system and the Aquarium Tiki. These documents should provide answers to most of your questions. Nevertheless, don't hesitate to seek technical support in case you have any problems or questions regarding Aquarium 2018.

1.3.1. Support forum

In general we recommend that you post your questions on the Aquarium support forum: **http://rybkaforum.net**. There you will find the Aquarium support board which is monitored by Aquarium power users as well as the developers themselves more or less around the clock.
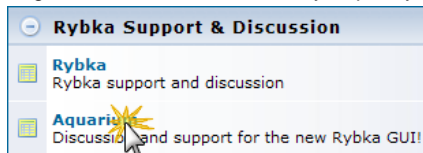
1.3.2. E-mail and Skype Support

In some cases you may prefer to contact ChessOK support instead of discussing your question in the support forum. In that case email **info@chessok.com** (or call by Skype: our name is "**ChessOK**" or call by Yahoo Messenger: our name is

"**best_chessok"**). For technical problems make sure that you include enough information to allow the support staff to reproduce the problem.

1.3.3. Additional help and information
The ChessOK web site (**www.chessok.com**) offers interesting, sometimes in-depth articles about Aquarium and other products as well as chess news.

1.4. Installation

1. Run the setup application

  o If you have the **DVD version,** the setup application is run **automatically** when the DVD is inserted into the DVD drive. If it doesn't, browse your DVD and run the AquariumSetup.exe application.
  o For the **download version** run the **AquariumSetup.exe** application.

2. Install Aquarium

The setup application will guide you through the installation procedure.

Aquarium is now ready to use. The included chess playing engines are already installed into Aquarium.

2. The User Interface

The Aquarium user interface is based on the revolutionary Fluent design, first introduced in Microsoft in Office 2007, where it has radically improved the usability of all Office programs. The first thing you will notice is that all menus and toolbars have been replaced with a single container that organizes Aquarium's full feature set into a series of tabs. This container is known as the "Ribbon".
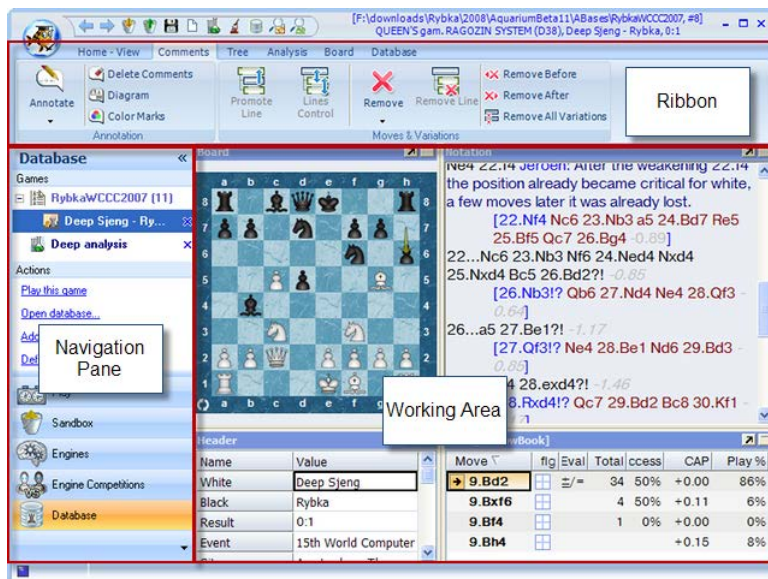
The Aquarium user interface consists of the following major parts.

The Ribbon. Almost all Aquarium functions are accessible directly via the Ribbon. The Ribbon is divided into tabs that group related functions and show them together. The Ribbon is context-sensitive, automatically displaying functions relevant to the task that you are performing. Functions that cannot be used in the current context are grayed out.

The Navigation Pane (the sidebar). The Navigation Pane allows switching between the different modes (e.g. play, analysis and engine competitions) and provides access to data objects (such as databases, lists and games). By clicking links or buttons in the Navigation Pane you can switch modes and load the corresponding objects into the Working Area.

The Working Area. The Working Area is where you do all your work. You will spend most of your time playing, analyzing, examining or commenting games, browsing a list of games etc.

These and other elements of the Aquarium user interface are described in the following sections.

2.1. The Aquarium Menu

The Aquarium Menu appears when the user clicks the Aquarium Button in the

upper-left corner of the application window. This menu displays controls to open a database, play against a chess engine, analyze a game etc. The Aquarium menu also provides a list of recent databases, access to application options for changing user settings and preferences and application exit.
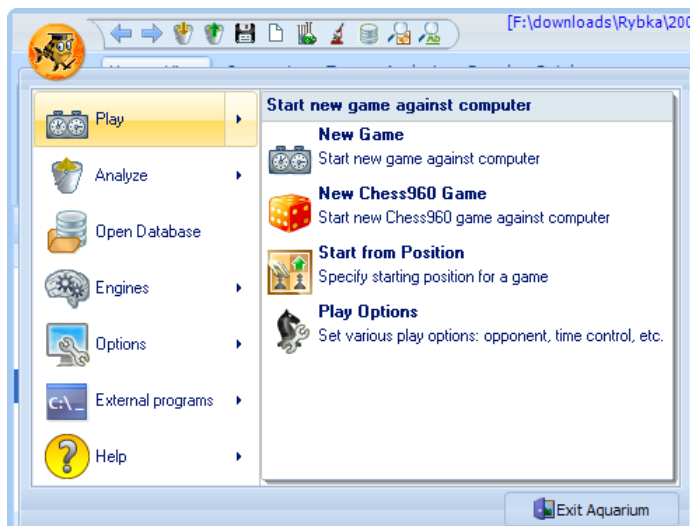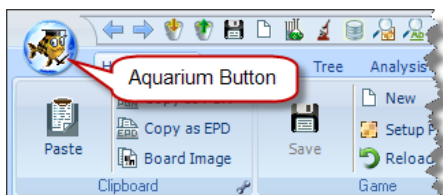
The Aquarium Menu has two vertical panes. The left pane displays controls for some of the main functions of Aquarium. When the menu opens, the right pane displays a list of recent databases. When the mouse pointer hovers over a menu control in the left pane it automatically opens and displays the menu items over the right pane. In the screenshot "Play" is active in the left pane and has opened the corresponding menu over the right pane.

The application exit button is at the bottom of the Aquarium Menu.

2.2. The Ribbon

The Ribbon is the primary replacement for menus and toolbars (e.g. File, Edit, View, Insert, Window etc.) in Aquarium. The Ribbon is positioned at the top of the application window.

The Ribbon contains the following three elements:

Tabs. Tabs are used to organize controls in the Ribbon around the core scenarios and tasks that users perform with Aquarium.

Groups. Each tab contains one or more groups which show related controls together.

Controls. Different types of controls can be hosted in the Ribbon. Examples of controls are menus, split buttons, combo boxes, and spinner controls.

The main appeal of the Ribbon is that it exposes commonly used features. What's more, the Ribbon exposes useful features that many users wouldn't know about otherwise or wouldn't bother with because they don't want to spend the time hunting for the feature.

Tabs

Tabs are used to organize controls in the Ribbon around the activities that users perform in Aquarium. The leftmost tab includes the controls used to accomplish the most frequently performed actions, depending on the current view (list, game view, analysis, engine tournaments etc.).
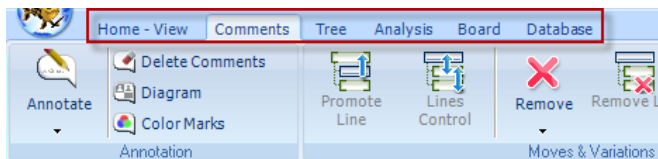
Clicking a tab selects that tab and displays the controls for that tab.

Groups

Groups are used to organize related controls on a tab. They make it easier to browse the Ribbon by formalizing the relationship among controls on a particular tab. Groups also make it easier to find controls that are not located on the Ribbon by using Dialog Box Launchers (or tool buttons) to provide quick access to less commonly used controls with closely related functionality.

Every control on the Ribbon is displayed in a group, even when there is only one control in the group. If a control is not active, then it is grayed out, rather than removed from the group.

Every group has a label positioned below the group. The screenshot below shows the Annotation group, which contains various controls to annotate games.
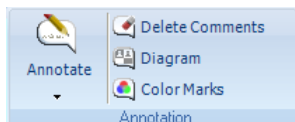
Controls

The Ribbon can display several types of controls. In addition the Ribbon can display both a large and a small version of many controls. By using a combination of large and small controls organized into groups the relative importance and the relationship among controls on the Ribbon is visually conveyed to the user. This arrangement of controls makes it easy for users to browse the Ribbon and discover new functionality.

Some groups in the Ribbon have little icons in the bottom right corner (a Dialog Box Launcher/tool button). Clicking these icons displays a full dialog of options for that function group.

Other controls in the Ribbon have menu icons that display a normal menu of options when you click them. These menu options open new dialogs as a rule. Note the drop-down arrow below the label of the Annotate control.
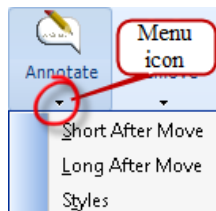
Additional examples of controls are split buttons, combo boxes, and spinner controls. Text labels are used whenever possible to describe a control. Controls are automatically disabled (grayed out) if the criteria required for their activation have not been met.

2.3. The Quick Access Toolbar (QAT)

Controls on The Quick Access Toolbar (QAT) are always available to the user, regardless of which tab is selected on the Ribbon. For this reason the QAT is the single location in Aquarium where controls that must always be quickly available to the user are displayed.

Quick Access Toolbar

The QAT can be customized by users to include any control to which they need frequent access in order to accommodate their specific work style. Right-clicking over the QAT or clicking the highlighted control to the right of the QAT displays the customization menu.

2.4. The Navigation Pane
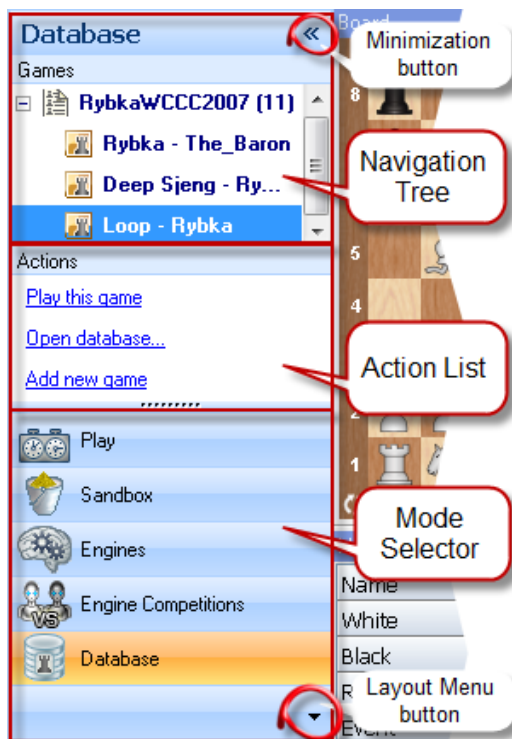
The Navigation Pane or the sidebar, contains 3 panels:

- **Navigation Tree**
- **Action List**
- **Mode Selector**

See the following sections for a description of these panels.

There are two additional controls, one at the top and the other one at the bottom of the Navigation Pane:

Use the **Minimization Button** « to hide/show the Navigation Pane.

The **Layout Menu button** ▼ opens a menu where you can select one of the functions to control the layout of the Working Area. You can load one of the predefined layouts, including the default layout. The current layout can also be saved under a name chosen by the user. *If one of the Working Area panels has been hidden (intentionally or accidentally) you can always restore it using the Layout Menu button.*

2.4.1.1. The Mode Selector

The buttons in the Mode Selector switch to the specified mode. The Navigation Tree and the layout of the Working Area are changed correspondingly.

Another way to switch to a different mode is by using the Aquarium Menu. It requires a few more clicks but offers additional options for each mode.

Understanding the Mode Selector is the key to efficient use of Aquarium. When you select a mode, the user interface only shows the features relevant to that mode. The features you need will be found there and there is no need to switch to other modes unless you want to perform an unrelated task. Instead of having to wade through every available feature of Aquarium you only need to look through those that are relevant for the current mode. This makes Aquarium much more user friendly for new users.

Play. In this mode you can play against the program. You can play a normal game of chess, handicap chess (material or engine strength handicap) and Fischerandom or Chess960.

Sandbox. Here you can view and analyze a game without committing it to a database. This is the ideal place to do a quick analysis of a game or a position you pick up from the Internet before you decide if it is worth saving. You can always save the game in the Sandbox to a database.

Engines. This mode is for managing chess engines: Installing new engines, modifying parameters and removing engines.

Engine Competitions is the place where you organize and run tournaments and matches between chess engines.

IDeA (Interactive Deep Analysis) is an advanced analysis method which stores all analyzed positions in a tree structure. This method is very popular for opening analysis and is used by many of the best opening analysts. This is also the preferred analysis method of many correspondence players, including many strong players.

Database allows you to manage game databases, lists of games and individual games. You can analyze individual games and positions or a whole list of games. Games can also be commented, copied and pasted. This mode also offers advanced tree operations and iBook authoring.

2.4.1.2. The Navigation Tree

The Navigation Tree provides centralized navigation and easy access to all currently available views, such as lists and games. All open views are listed in a tree structure. A view can, for instance, be a list of games or a single game.

In the example shown in the image, the following views are available:

- A list containing all 11 games from the RybkaWCCC2007 database.
- Three open games from the RybkaWCCC2007 list.
- The game Loop - Rybka is highlighted as it is the current game in the Working Area.
- A list of over three million games from the Hugebase database.

Note the small 'x' after each view. Clicking the 'x' closes the corresponding view.

2.4.1.3. Action List
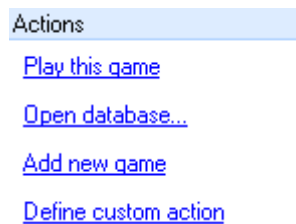
The Action List provides access to some of the most used functions in the current mode. Most often these functions are also available on the Ribbon. Clicking one of the hyperlinks in the Action List performs the corresponding function.

You can add your favorite functions to the Action List by clicking "Define custom action", and then clicking a button on the Ribbon. After that, the link text will reflect the new function and clicking the hyperlink is equivalent to clicking the corresponding Ribbon button.

2.5. The Working Area

The Working Area is used to display game lists, individual games, games played against the program etc. Each such view is normally composed of several windows or panes. These are dockable windows, which means that you can drag them with your mouse and place them anywhere you like.

Board

Notation

weakening 22.f4 the position already became critical for white, a few moves later it was already lost.

[22.Nf4 Nc6 23.Nb3 a5 24.Bd7 Re6 25.Bf5 Qc7 26.Bg4]

22...Nc6 23.Nb3 Nf6 24.Ned4 Nxd4 25.Nxd4 Bc5 26.Bd2?!

[26.Nb3!? Qb6 27.Nd4 Ne4 28.Qf3]

26...a5 27.Be1?!

[27.Qf3!? Ne4 28.Be1 Nd6 29.Bd3]

27...Bxd4 28.exd4?!

[28.Rxd4?! Qc7 29.Bd2 Bc8 30.Kf1]

28...Re2 Jeroen: Rybka's pieces entered the white position one by one, winning the queen for rook and bishop. Another fluid win. 29.Bd2 Qb6 30.Bc1

Header

Name	Value
White	Deep Sjeng
Black	Rybka
Result	0:1
Event	15th World Computer Chess

Tree [NoAnnotations]

Move		Eval	Total	cess	CAP	Play %
9.Bd2		=/=	34	50%	+0.00	86%
9.Bxf6			4	50%	+0.11	6%
9.Bf4			1	0%	+0.00	0%
9.Bh4					+0.15	8%

Users can choose which windows are displayed and which are hidden. Windows can also be stacked, rolled up or undocked and in short, you can arrange the various windows in Aquarium to create a configuration most comfortable for your use. Then you can save that configuration using the Layout Menu button.

A window, for example the game header window, can be dragged by grabbing its title bar with the mouse. The right-click menu for the title bar shows additional options (Float, Rollup and Hide).

3. Playing against Aquarium

You can play against various chess engines in Aquarium. Today's programs are extremely strong and even superior to grandmasters in many positions, so games are by default started in easy mode (i.e. Fun mode). This mode allows you to get help from the program and take back moves. Tournament mode, on the other hand, is recommended for serious training, as it lets you play according to normal tournament conditions.

If you don't want to play the program running at full strength, you can select a skill handicap that lets you adjust the rating of the program from 700 to 2400. Besides rating handicap you can also select a material handicap.

3.1. Entering Play Mode

Play
Sandbox
Engines
Engine Competitions
Database

The first time you run Aquarium after installation, Play mode is opened automatically. Later, Aquarium starts in the mode that was active when exiting the program. You can always switch to Play mode by clicking the Play button in the Mode Selector. Aquarium then returns to the game and position that was on the board the last time you left Play mode. You can also start a new game from the Aquarium

Menu. A third method is to click the clock icon in the Quick Access Toolbar (provided that you have added it to the toolbar).

When in Play mode, you can immediately start a game by making a move on the chessboard. The program will reply and then you make your next move etc. After
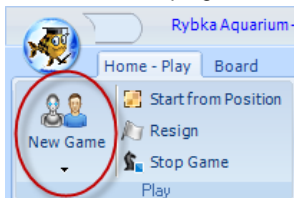
playing your first game you will in all likelihood find out that the program is much too strong for you. That's because it was set to play at full strength. Don't despair though, as Aquarium can easily be set to play at any level you choose as described in the following sections.

Any time you want to start a new game in Play mode you can click the New Game button on the Play tab.

3.2. Setting playing options

So you have played your first game and now you want to set the playing options to your liking and start a new game..

The level of play of Aquarium users varies greatly, from novice users with perhaps a 900 rating to top grandmasters rated above 2600. Players at the same level can have different goals such as serious training before a tournament, relaxing by playing a few easy games, practice playing from a specific position and even preparing for a handicap match. Aquarium can easily accommodate all these different situations.

The easiest method to change the most common parameters is to click the links in

the Action List shown here on the left.
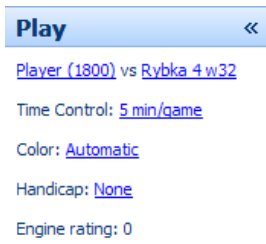
You can select the chess engine you want to play against (here: Rybka 4). The time control has been set to a 5-minute blitz game, but you can change it by clicking the 5 min/game link. Color is set to automatic, meaning that colors will be switched after every game. The most interesting setting, the handicap, is set to None which means that the chess engine will play at full strength. This is probably the first parameter you want to change.

3.3. Material and rating handicaps

Modern chess engines practically never make tactical blunders. With better understanding of strategic ideas, especially in the endgame, a human may occasionally outplay even the strongest chess engines, but in most cases he would either need to take moves back or use some help from the engine side. Another option is to use handicaps when playing against an engine.

There are three ways to specify handicap settings in Aquarium:

1. You can specify the *rating level* at which you want the engine play. Note, however, that it's impossible to emulate a real human opponent. Additionally rating levels differ widely from one rating system to another. Therefore you need to experiment a little to be able to map the rating scale in Aquarium to the one used for your own real rating. This could, for instance, mean that a 1600 rating in Aquarium would score 50% against a real player with a rating of 1800.

2. You can use *material handicaps*. This is very easy to do in Aquarium. A wide selection of material handicaps is offered in Aquarium. Although a rating is specified for every handicap position you should not take it literally. Every material handicap position demands a different style of play.

3. *Time handicap* allows you to give the chess engine less time to play the game than you get. You could, for instance, give the engine 1 minute to your 15 minutes. Just remember that chess engines can play amazingly well on a powerful computer, even when given very little time to think. This type of handicap can be specified when setting the time-controls for a game.

Click the Handicap link in Action List (shown in the image above) to change the rating or material handicap. This displays the Handicap dialog box which allows you to specify the handicap settings.

The radio buttons in the Handicap pane allow you to choose between no handicap (None), a rating handicap (Skill) and material handicap (Material).

None – The chess engine plays at full strength.

Skill – Allows you to set the desired rating, causing the engine to play weak moves from time to time. Aquarium actually offers three different rating handicap methods: Special engine (700-1900), multi-variation mode (1200-2400) and Engine based. You should experiment with the different methods to see which one you like best. Use the slider at the bottom to select the desired rating. If you specify a rating under 1200 a special handicap engine will play against you instead of the one specified as opponent. The reason for this decision is that it is hard to emulate non-professional human play with professional engines. So for low level play a special module was programmed that can better emulate human-like thinking. It can naturally lose a queen due a trap or miss a deep threat or allow forking of a queen and king or rook.

Material - Material handicap is the oldest way of equalizing the chances when games are played between players of different strength. If you don't have much experience in playing chess you could start by facing a chess engine without its queen. Aquarium comes with many predefined material handicaps, so everyone should be able to find a suitable level.

This screenshot shows a partial list of predefined material handicaps in Aquarium. In this case a „Queen and move" odds has been selected and the diagram shows the corresponding position. Clicking „Next position" below the board displays the next starting position of this type. The list of handicap positions is stored in the file Config\ RBaseMaterialHandicap.xml that can be easily updated by users who are familiar with XML.
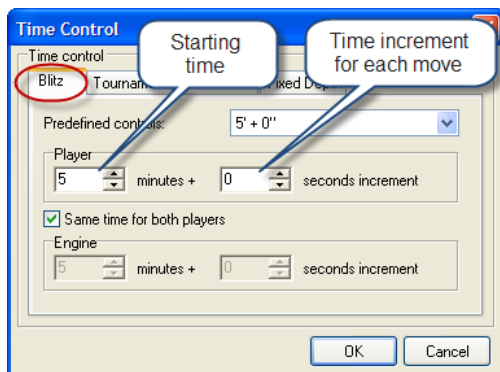
3.4. Time handicaps

Time odds can be specified when setting the time controls for a game. The time controls can be set by clicking the corresponding link in the Action List. The key is to uncheck the **Same time for both players** box which allows you to specify a different time control for you and the chess engine. For further information see the Time controls section.

3.5. Time controls

By default the time control for playing games against Aquarium is set to 5 minutes per game. To change the time control, click the time control link in the Action List. There are four types of time controls available in Aquarium: Blitz, tournament, time/move and fixed depth. Here you see an example illustrating the blitz time control settings. You specify how much time you (Player) and the computer (Engine) get for the whole game (5 minutes for both sides in this example). You can also set an increment to be added to the time for every move made in the game. As the name indicates, this type of time control is frequently used in blitz games, but it can also be used for longer games.

For your convenience you may select one of the predefined time controls using **Predefined controls** drop-down list.

3.6. Moving the pieces

You can use one of 4 different methods for moving the pieces on the chess board. Click the Move Input button on the Board tab and select the method that suits you best:
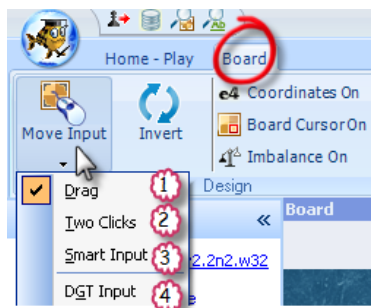
1. Drag: Move the piece by dragging it to the destination square, i.e. you click the piece and **hold** down the mouse button while dragging it. This is the default option.

2. Two clicks: Move the piece by first clicking it and then click the destination square. Some blitz players consider this the fastest method.

3. Smart Input: After clicking, the originating or the destination square, the program suggests a destination, or the piece to move, based on simple chess knowledge. When you release the mouse button the program makes the move. If the program doesn't suggest the correct move, you can drag the mouse to the desired square. You can also use another method to choose the correct piece or destination square. While holding down the left mouse button, press the right

button. This allows you to cycle through the possible destination squares for a piece or which piece should move to the selected square. Smart Input is preferred by many for mass input of chess games. Smart Input is not enabled in Play Mode.

4. DGT Input: Selecting an electronic DGT chess board as input doesn't disable mouse input, but additionally you can enter the moves on the DGT board. The details of linking the DGT board to computer are described in the manual supplied with the board. Note that when using a DGT board you should not only make your own moves on the board, but also the engine's moves.

3.7. Fun Mode

Fun mode is designed for playing casual games. You are allowed to use help from the engine and your Aquarium rating is not updated after games played in this mode. Fun mode is the default setting when playing against Aquarium.
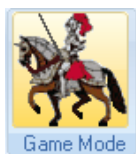
You can switch between Fun and Tournament modes by clicking the Game Mode button on the Ribbon before starting a new game. If the Game Mode button shows an image of a rocking horse you know that you are playing in Fun mode. The other mode for playing games is Tournament mode and is identified by a knight in medieval armor on a horseback. In Fun mode, all the buttons in the Game Control and Assist groups on the Play tab on the Ribbon are available. This gives you full control over how much assistance you receive during play.
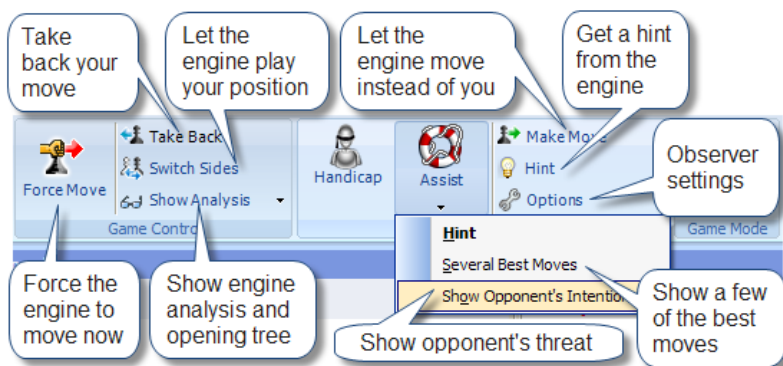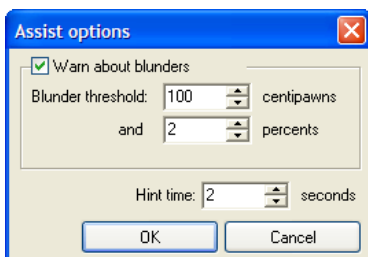

Additionally you will be warned about possible blunders, i.e. moves that the engine sees as blunders.

Confirm

I'm afraid you've made a blunder. Do you want to think a bit more?

Yes   No
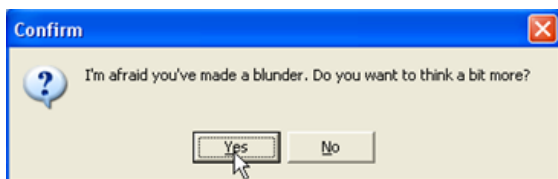
You can click **Yes** to take the move back or you can ignore this message and continue the game by clicking **No**.

The help you receive while playing comes from the engine you are playing against.

Assist options

☑ Warn about blunders

Blunder threshold: 100 centipawns

and 2 percents

Hint time: 2 seconds

OK   Cancel

You can change the blunder check settings in the Assist opitons dialog box which is available via the Options button.

The warnings are enabled by selecting Warn about blunders. The Blunder threshold defines the how big a mistake must be to be considered a blunder (100 centipawns in this example). A blunder must also affect the winning chances by the percentage specified (2 percent in the image). This means that you are not warned about mistakes when the position is already lost. Hint time is the time given to the engine to evaluate your move and decide if it is a blunder or not.

3.8. Tournament mode

Tournament mode is designed for playing games where you must follow strict chess rules, just like you were playing in a real tournament. This means that you can't use engine help and can't take moves back. Your Aquarium rating is updated after every game.

Confirm

This action is forbidden in Tournament Mode
Do you want to switch to Fun Mode?

OK   Cancel
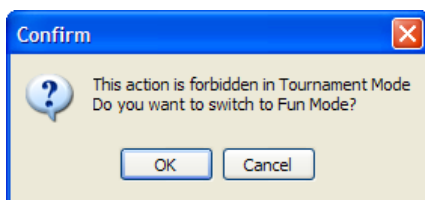
If you try to use the help functions in the Game Control and Assist groups on the Ribbon, Aquarium reminds you that you must switch to Fun mode before using assistance. Once you switch to Fun mode you can't return to Tournament mode until the next game starts.

All available handicap modes can be used when playing games, both in Tournament mode and Fun mode.
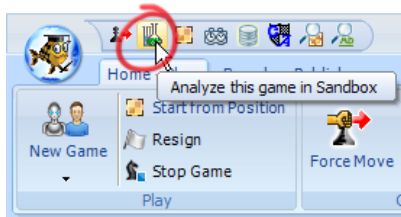
3.9. Analyzing a finished game in the Sandbox

When playing a game against Aquarium, it can end in several different ways such as with checkmate, draw by repetition, the chess engine resigns or you choose to resign or stop the game manually. The Home - Play tab contains two methods for ending the game. You can click the Resign button to resign the game or the Stop Game button to end it and manually assign the result. In both cases the game is saved to the my_games database (unless you choose not to save it with Stop Game) and you have the complete game in front of you on the screen. Sometimes you may just want to start then next game immediately by clicking the New Game button, but at other times you want to find out what went wrong in the game. In that case you can copy it to the Sandbox and analyze it there. However, the quickest way to start analysis from Play mode is to click Analyze this game in Sandbox in the Quick Access Toolbar.

Clicking this button automatically copies the game to the Sandbox. If the Sandbox is not empty you will see the following message asking if you want to overwrite the current Sandbox game:
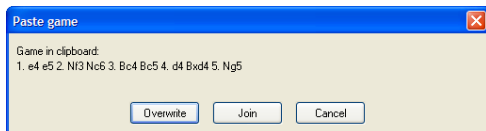
Click **Overwrite** (keyboard shortcut: Alt-O) to replace the current contents of the Sandbox with your game. Click **Join** (keyboard shortcut: Alt-J) to add your game as a variation to the existing Sandbox game. Click **Cancel** (keyboard shortcut: ESC) to cancel the operation. If the game you were playing against the computer was not finished, you will see an additional message asking if you want to finish it: Click **Yes**, if you've finished the game and don't want to continue playing. Click **No**, if you are going to continue playing the game after working in Sandbox mode. Note that in this case you can't analyze the game using the same engine that you are playing against.
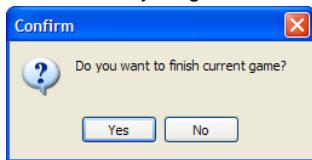
After this, Aquarium will switch to Sandbox mode and you can start analyzing the game. Note that all your played games are automatically stored in the my_games database which you can open like any other game database. So you can also analyze your games at any time by opening this database in Database mode.

4. More About the User Interface

4.1. Minimizing the Navigation Panel

Depending on how you work, sometimes you may want more space for your Work Area in Aquarium. At other times, you may need easy access to all open games and lists, or you may want to switch quickly between different views such as engine tournaments and database games. The Navigation Pane provides flexibility that helps you to work as efficiently as possible depending on your needs.

You can minimize the Navigation Pane (the sidebar) to increase the space in your Work Area by clicking the minimize button which is highlighted in the image on the right. The slim profile of the minimized Navigation Pane, as shown on the left, increases your Work Area, while still providing quick access to the Mode buttons and the Layout Menu at the bottom of the pane.
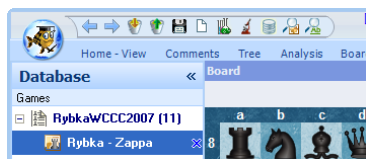
To expand the minimized Navigation Pane, click the arrow at the top.
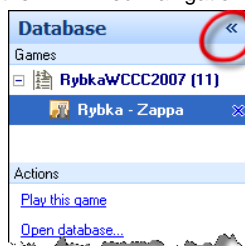
4.2. Minimizing the Ribbon
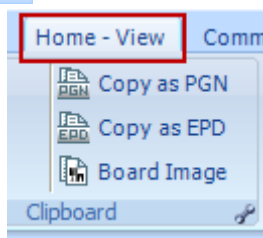
Users can minimize the Ribbon by pressing Ctrl-F1 or double-clicking the currently selected tab (where the name of the tab is displayed as shown in the image). The tabs are the only parts of the Ribbon that are displayed when the Ribbon is minimized. The image below shows that the Ribbon has been reduced to a horizontal list of tabs, giving more space to the Work Area. The Ribbon remains minimized until you double-click a tab.

In addition, when a user clicks a tab when the Ribbon is minimized, the controls on the Ribbon for that tab are displayed over the workspace. The Ribbon will continue to be displayed regardless of the location of the mouse pointer. The Ribbon returns to minimized state after a control on the Ribbon or an item from a menu is chosen. Clicking anywhere else also returns the Ribbon to minimized state.

4.3. Maximizing the Working Area

Pressing the F11 button on the keyboard maximizes the application window and minimizes the Ribbon as well as the sidebar. This gives you maximum space for

the Working Area. Pressing F11 again restores the Aquarium window to its previous state.
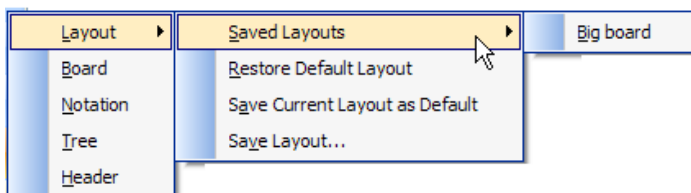
4.4. The Layout Menu
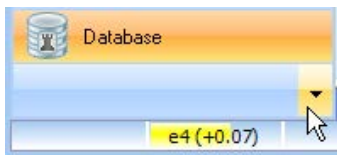
The Layout Menu at the bottom of the Navigation Pane allows you to restore hidden windows and save and load layout profiles.

The Layout Menu is displayed by clicking on the small triangle as shown in the screenshot.

The expanded Layout menu can be seen in the next image.

After you have arranged the windows in the Working Area to your liking, you can use the Layout Menu to store the layout under a name by selecting Save Layout. In the screenshot you can see that the user has one saved layout called Big board which he can restore by clicking the layout name. You can always restore the default layout for any view by choosing Restore Default Layout from the menu.

5. Databases, Lists and Games

Aquarium supports game databases in various formats.

CDP is the Chess Assistant database format giving you lightning fast access to millions of games. This is the recommended database format for Aquarium.

DSN is the Aquarium native database. It is a relational database. DSN databases are very reliable, but not as fast as CDP for large databases.

PGN stands for Portable Game Notation, the generally accepted standard for distributing and exchanging games in text format. Aquarium can import and export games in PGN format. Games can also be copied and pasted in this format.

CBH is the database format used by Chessbase. This type of database can be used in Aquarium (open, view games, search), but if you want to update the games you must convert the database to one of the other formats supported by Aquarium.
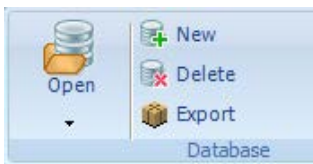
EPD stands for Extended Position Description. This is the standard way of exchanging chess positions and position databases. Like PGN, it is text based.

5.1. Databases

The Database tab is available in Database mode, the Sandbox and Engine Competitions.
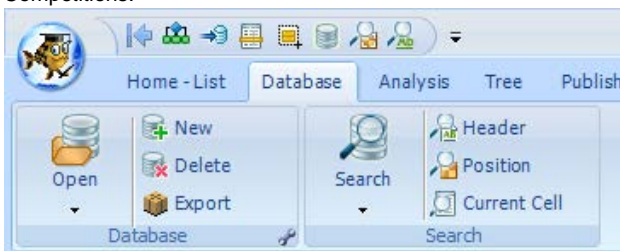
The controls on the Database tab allow you to manage and search databases.

The **Open** button opens a database. This is a split button and clicking the black, downward pointing triangle displays a list of recently used databases.

**New** creates a new database (CDP, DSN, PGN or EPD).

Delete displays a standard dialog box which allows you to locate any type of database supported by Aquarium and delete it as long as it's not open in Aquarium.

Export allows you to convert the current database to one of the writeable database formats (DSN, CDP, PGN, EPD). If you only want to convert selected games from the database you can use Home – List > Save as New Base which saves the current game list to a new database.

5.2. Browsing a list of games
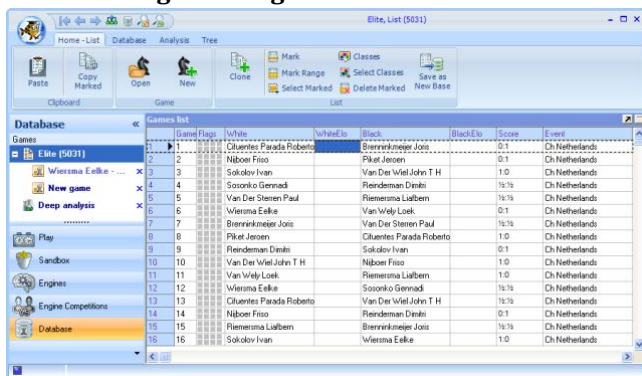
When you open a database it is opened in list mode, meaning that a list of the games in the database is displayed in the Working Area. Aquarium allows you to perform various operations on a game list, such as copy and paste games, add new games, create a new list based on searching or marking games, save the list to a new database, analyze the games in the list etc. The Home - List tab is displayed in the Ribbon in the image above and is shown in greater detail below.
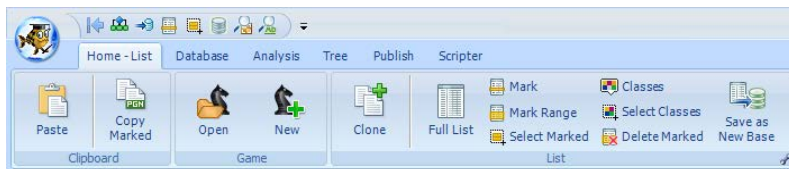
The following commands are available on the Home-List tab:

Paste or Ctrl+V, allows you to paste a game or a collection of games in PGN format from the clipboard into the current database.

Copy Marked or Ctrl+C, copies all marked games, or the currently selected game if no game is marked, to the clipboard in PGN format.

Open or Ctrl+O, opens the currently selected game for viewing.

New or Ctrl+N, creates a new game in the database.

Clone copies the current list to a new list. You can switch between the current list and the newly created copy by selecting them in the Navigation Tree.

Full List resets the game list so it displays all the games in the database.

Mark or [Insert] or Ctrl+Click marks the current game. Marked games are highlighted with a different background color. When one or more games are

marked, certain operations will process just the marked games instead of the whole list or the currently selected game.

Mark Range allows you to mark several games by specifying the number (GameNo) of the first and the last game that should be marked. A range of games can also be selected by holding down the Shift key while pressing the up or down arrow keys. A different method is to click the first game and then hold down the Shift key while clicking the last game.

Select Marked creates a new list which consists of all marked games.

Delete Marked deletes all marked games from the database.

Classes allow you to classify the marked games or the current game if no games are marked. You can select from several predefined classes, such as My own games, Endgames etc. Each game can belong to any number of classes. The Flags column in the game list shows the classes that a game belongs to. When the mouse pointer hovers over a class in the Flags column a tooltip with the class name is displayed. Clicking a class toggles the class membership.

Select Classes allows you to create a list of games that belong to one or more classes.

Save as New Base saves the current list as a new database. The new database can be in Chess Assistant (CDP), native Aquarium database format (DSN), PGN or EPD format.

5.3. Viewing games

To view a game from the Games list in Database mode, select the game you want to view and press the Open button in the Ribbon. Alternatively you could either press the Enter key after having selected a game, or double click the game you want to view.

This screenshot shows the Notation pane at the right hand side of the screen where you can browse the game by using the arrow keys on the keyboard.

The right arrow takes you one move forward.

The left arrow moves one move backwards.

The up arrow and the down arrow move into, between and out of variations.

You can also use the navigation buttons below to board to view the game.

Below the Notation window we have the Tree window. Here you can browse through all the positions that are stored in the tree. Additionally all moves from the Notation are shown in the Tree window. This means that the Tree window can be used to browse the game and also add variations from the tree to the notation.

In order to browse the tree, first click one of the moves in the Move column and then double click the move or press the right-arrow key. In the example shown in the Notation window above we wanted to see how 9.Ne1 would play through, so we selected it in the Tree window, double clicked it and a new variation appeared in the Notation window. We can scroll through the various moves and variations in the Tree window in a similar way as scrolling through the moves in the Notation window.

With the cursor in the Move column, the up and down arrows select the next move above or below the current move. To get back to the main line, select the move that was played in the original game or click directly in the Notation window.
The right arrow moves one move forward in the tree.
The left arrow moves one move backwards.

6. The Chessboard

The Aquarium chess board and piece sets scale perfectly so they look good even when you fill a high resolution screen with the board window alone.

The coordinates (files/ranks) around the board are optional and you can also change the board design and select from several different piece sets.

In the lower left corner of the board there are two white arrows which form circle. Clicking this icon flips the board.

You can always see whose turn it is to move by looking at the small square in the right-hand corner of the board. If it's Black's move a black square is displayed on his side of the board. If White is to move a white square is displayed on his side of the board.

The pieces below the board show the material imbalance. In this example the material is equal except that White has a rook and pawn against Black's bishop and knight.

The buttons below the board allow you to navigate the game. The leftmost button takes you to the beginning of the game. The next button moves back one move. The third one moves forward one move and the rightmost navigation button goes to the end of the game.

The right-click menu for the board allows you to invert or flip it, enlarge it to fill the

board window or reduce the size of the window to fit the board.
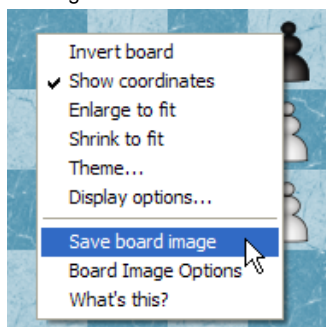
Selecting Save board image saves the board as a graphics file (PNG, JPG or BMP). The location and size of the image can be set with Board Image Options. This method of saving board images can be convenient when you need several screenshots and want to make sure that they are all exactly the same size, regardless of the on-screen board size. Aquarium can create animated GIFs from saved board images.

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The Theme menu item allows you to select a new board or piece theme. Here you can either select from available themes or add new themes, for instance if you have created a new theme yourself.


7. Commenting Games

When viewing a game, the second Ribbon tab is the "Comments" tab where you'll find various tools for commenting your games.
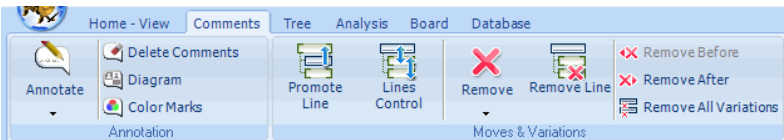
The annotation editor is displayed when you click the Annotate button in the Annotation group. You can also use the keyboard shortcut Ctrl+A to display it. A third option is to use the Annotation button in the Quick Access Toolbar (you may need to configure it to display the Annotate button).
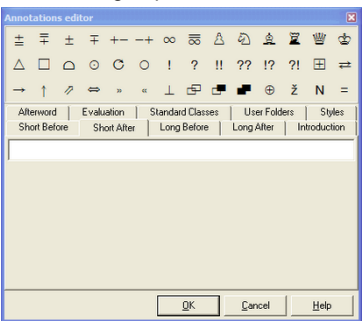

The tabs in the annotation editor allow you to add many types of annotations to a game. You can either type text explanation into the text box or use the palette at the top of the dialog box to add Informator-type signs to the annotation. If you are unsure of the meaning of a specific sign,

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place the mouse pointer over it and a tooltip will appear, explaining the sign.

Other buttons in the Annotation group allow you to delete comments from the current move and add diagrams and graphic annotations.

If you want to promote a variation, click the variation you want to promote and press the Promote Line button in the Moves & Variations group. Alternatively you can press Ctrl+L.
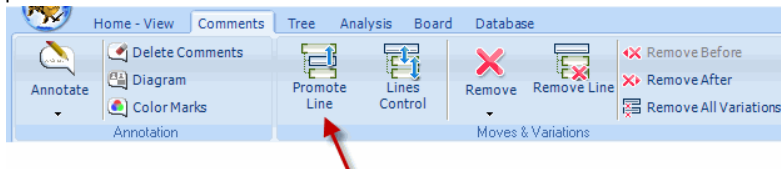
For a more complex management of variations you can use the **Lines Control** button which is to the right of Promote Line.

To delete multiple comments from a game in one operation, click the **Remove** button in the Moves & Variations group.

The **Remove Line** button removes the current variation.

**Remove Before** deletes all moves before the current position.

Remove After deletes all moves after the current position.

Remove All Variations deletes all variations from the notation.

8. Infinite Analysis

Infinite analysis is the oldest and most basic but at the same time the most widely used analysis method in chess. You will not find chess analysis software that doesn't offer this method and over the years many chess players have perfected their ways of using it for their analysis.

When you are viewing a game in Aquarium, starting infinite analysis can be as simple as hitting the space bar, but to get the most out of it you should familiarize yourself with all the available options.
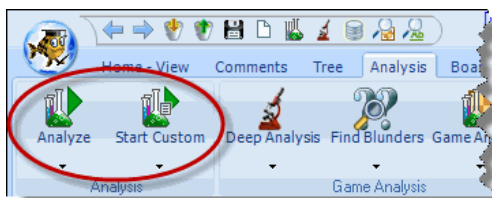

The two buttons that are highlighted in the image, Analyze and Start Custom, are different ways of configuring and starting infinite analysis.

If you click the Analyze button directly it is equal to hitting the space bar and starts infinite analysis. There are many options you can set for the analysis which you can access by clicking the small, black downward-pointing triangle at the bottom of the Analyze button. Many

users are probably familiar with this type of button which is called a split button. Clicking the triangle will open a menu where you can select "Options" to display the "Infinite analysis options." We'll have a look at those options later.

Aquarium displays the analysis window when you start analyzing and the Ribbon for an active analysis looks like this.
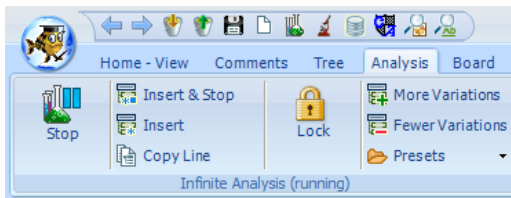

You can stop the analysis either by clicking Stop or pressing the Esc button. You can also select Insert & Stop which inserts the analysis into the notation as a new variation and stops the analysis. In all cases, the analysis window stays open when the analysis stops but you can close it by pressing Esc, allowing other windows to take advantage of the additional space.

Like other types of analysis, infinite analysis can be started in Database mode or in the Sandbox. If you have a game in PGN format you can paste it either as a new database game or into the Sandbox and analyze it there. A game can be sent to the Sandbox (e.g. from a database) either by clicking the Copy Game to Sandbox button on the QAT (available in practically all modes), or by using the Windows clipboard.

8.1. The Analysis Pane

When you start the analysis (via the Analyze button, the Start Custom button or by pressing the space bar) Aquarium displays the analysis.
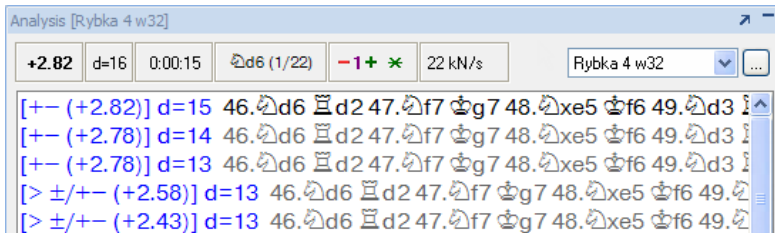
At the top of this window we see a panel displaying information based on the current status of the analysis. We call this the information and control panel for the infinite analysis. The list of variations displayed below that is familiar to most users. Note that the most recent (deepest) variation is conveniently displayed at the top of the list, next to the information and control panel.

One convenient feature is that you can click a variation in the analysis window and replay it on the chessboard. Here is one example. The normal starting position is being analyzed, but the board shows the position after White's third move (3.Bf4) in the second variation from the top in the analysis window.

Any variation (not only the most recent one) in the analysis window can be selected and inserted into the notation by right-clicking on it. You can also insert all variations in the window into the notation.

The screenshot below shows the right-click menu for the analyzed variations. Right-clicking on any of them displays this menu allowing you to copy it (Ctrl+Ins), e.g. for pasting into a forum post, or inserting it into the game notation (Ins). Additionally, you can copy all the analysis either as text (Ctrl+Alt+Ins) or in PGN format.
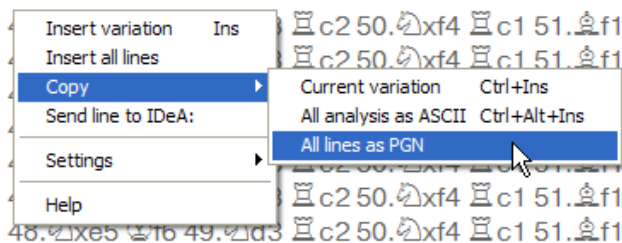

Many chess players trust the first move, but less so the following moves, in the variations produced by infinite analysis. Others don't like to add the full variations for other reasons. Aquarium allows you to add just the first move of the current variation to the notation by pressing Enter as shown in the next image.
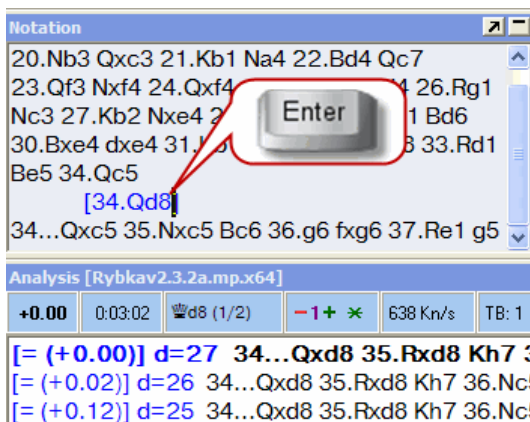
In this example I first placed the cursor before White's 34th move (34.Qc5) and pressed Enter. As you can see the move 34.Qd8 was picked up from the analysis pane and added to the notation as a variation. The cursor moved automatically to the position after 34.Qd8 and now that position is being analyzed by the engine. At depth 27 it sees 34...Qxd8 as the best move. If I press Enter again 34...Qxd8 would also be added to the notation.

If you want to examine or comment the game while infinite analysis is running, you can do so without affecting the analysis by locking it to a specific position (click the Lock button in the Ribbon).

One of the shortcomings of infinite analysis (running in single variation mode) is that it only gives you what the chess engine considers the best move. You don't get any information about the second best move, the third best etc. unless you switch to multi-variation mode. Aquarium has a nice little feature that allows you to see the 10 best moves – even in single variation mode.
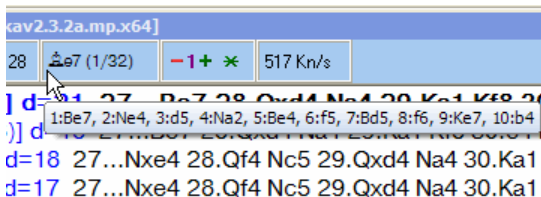
To view the list of moves just place the mouse pointer over the current move display in the information and control panel and a tooltip will pop up with a list of the best moves.

Now that we have seen the simplest type of Aquarium's infinite analysis in action, let's have a closer look at the information and control panel at the top of the analysis pane.

8.2. The Information and Control Panel
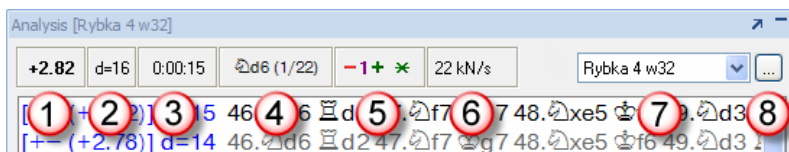
The title bar shows that this is an analysis window and the name of the chess engine (here Rybka 4 w32) is also displayed there. Below that we see the following eight items (marked 1-8 in the image):

1. The current engine evaluation, where +2.82 means that White has an evaluation advantage of 2 pawns and 82 centipawns.

2. The current iteration or depth.

3. The total analysis time; in this case it's 15 seconds.

4. The engine is currently evaluating the move Nd6 and this is the first of 22 legal moves in the position.

5. Allows you to set various options for the analysis as described below.

6. The number of positions the chess engine is evaluating per second. Here we see the number "22 Kn/s" which means 22,000 positions per second.

7. A drop-down list with all available engines. It shows that we are currently using Houdini or another engine, but you can switch to a different engine at any time by selecting it from the drop-down list.

8. Clicking this button displays the "Engine options" dialog box for the currently selected engine. This feature is described below.

Item 5 and item 8 require further explanation and are discussed in the following sections.

8.2.1.   Advanced analysis options

Item 5 above holds an interesting feature of infinite analysis in Aquarium. We are currently analyzing in single variation mode as shown by the number "1" between the minus and the plus sign. Clicking the green plus will switch to multi-variation mode and each additional click increases the number of variations. Likewise, clicking the red minus sign decreases the number of variations. For more information see the discussion of Multi-Variation Infinite Analysis.

Clicking the green asterisk allows you to choose which moves to analyze. There are several options here as shown in the next screenshot.
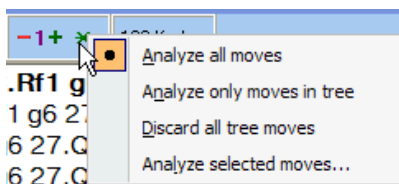
Analyze all moves is the default. All legal moves are considered in the analysis.

Analyze only moves in tree. This option analyzes only the moves that you see in the tree window. It creates some interesting possibilities for opening book authors and players developing their opening repertoire. It lets you to analyze only the moves that you have included in your repertoire/opening book. Since moves that occur in the notation are displayed in the tree window this option is also of general interest to anyone doing serious analysis as it can be used to limit the analysis to moves that occur in the game and the analysis.

Discard all tree moves. Let's say that you have been developing your opening repertoire or an engine opening book. You think it's pretty solid, but you want to check if some of the moves you have not considered so far in a certain position might bust your opening line. All you need to do is start infinite analysis, select this option and Aquarium takes care of the rest. The evaluations will tell you if you

possibly missed a critical move. Again, remember that all moves in the notation are displayed and treated as part of the tree.

Analyze selected moves... Here you can decide precisely which moves are analyzed and which ones are excluded from the analysis.

You can also exclude moves without opening a dialog box. While the analysis is running hold down the Ctrl key and then use the mouse to make the moves which you want to exclude.

8.2.2. Engine options
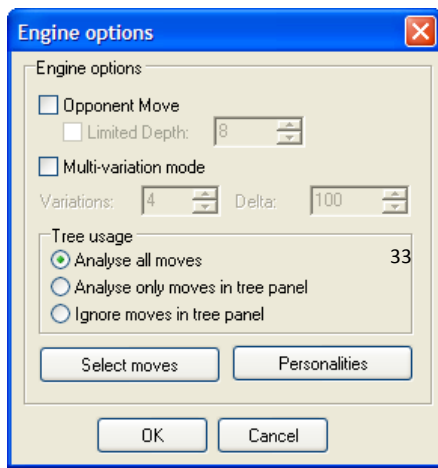
The button to the right of the engine drop-down list, item 8 above, displays the "Engine options" dialog box for the currently selected engine.

The "Tree usage" options are already familiar. They are equivalent to the options when you

click the asterisk in the information and control panel as discussed above. The same goes for the "Select moves" button which allows you to exclude selected moves from the analysis.

If you select "Opponent move" the engine will analyze the threats of the side that just moved. "Limited Depth" displays the opponent's main threat graphically on the chessboard when starting infinite analysis. This unique, little feature can be quite helpful, even for strong players. Select "Limited depth" and set the depth to the desired value. Normally you would choose some low depth value (depending on the speed of your computer) as you don't want this step to take too much time before the actual analysis of the position starts. The threat found by the analysis is displayed on the chessboard with a curved red arrow.

"Multi-variation mode" let's the engine analyze not only the best move it finds in the position, but also additional moves. For more information see the section on Multi-Variation Infinite Analysis below.

The "Personalities" button allows you to change the engine parameters of the currently selected engine. The parameter changes only affect the infinite analysis of the engine.

8.2.3. Multi-variation infinite analysis

Unlike single variation mode, multi-variation mode analyzes several variations with different first moves. The additional information usually costs longer analysis time, but in rare situations where the best move is not evident, multi-variation mode may find the right variation faster than single variation mode.

You should experiment with different ways of analyzing and select the best method based on your experience and the type of position you have on the board. Experienced chess players use both single and multi-variation modes in their analysis. Frequently they run multi-variation mode for a short period of time and then use longer single variation analysis for the moves which they believe are best. There are two different methods which you can use to switch to multi-variation mode.
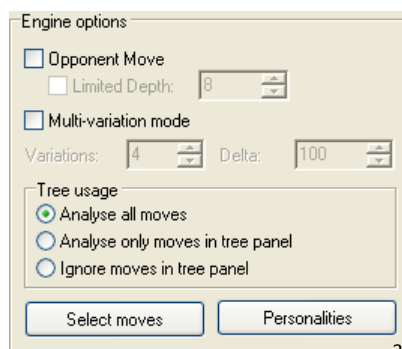
Method 1. Click the Start Custom button in the Infinite Analysis group (instead of the Analyze button) or use the keyboard shortcut Ctrl-Space. The Infinite Analysis Options window will be displayed where you select Multi-variation mode.

When you select Multi-variation mode, two additional controls are activated: Variations and Delta. Change the

number of variations to the desired number.

Delta is used to reduce the number of variations and make the analysis more efficient. It is the maximum evaluation difference (in centipawns) between the best variation and the worst displayed variation. Variations with a worse evaluation are not displayed. The value of Delta shown in the image is 100 and corresponds to a difference in evaluations of 1 pawn. This feature is not supported by all engines.

Finally, click the OK button to start the multi-variation analysis.

Method 2. If single variation analysis is already in progress, then you can click the ➕ button in the ➖1➕ box one or more times to increase the number of displayed variations. Clicking ➖ decreases number of variations. Note that every click on these buttons restarts the analysis. It is an engine feature and cannot be controlled by the GUI.

The most recent settings for infinite analysis are stored. This means that the next time you start the analysis the same settings will be used.

8.3. Stored infinite analysis

One of the unique features of Aquarium is that it stores the results of all infinite analysis that is sufficiently deep. In the past, you either had to save the results of infinite analysis in the notation or it was lost forever. If you spent a long time analyzing a specific position you might or might not remember that analysis if you ran into the same position in a different game. No chess analysis software reminded you of your previous analysis. This is all changed with Aquarium. If you run into a position that you have analyzed previously, Aquarium will let you know. It makes no difference if the position was reached through a different move order or even if it's found in a different database.
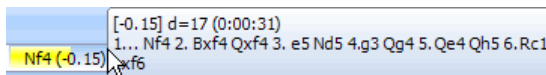
The screenshot shows a part of the Aquarium status bar when the position you are viewing has been analyzed before. The best move that was found is displayed along with its evaluation: Nf5 (-0.15). If you hover with the mouse pointer over the move, the variation is displayed similar to when it was displayed in the analysis pane when you ran infinite analysis.
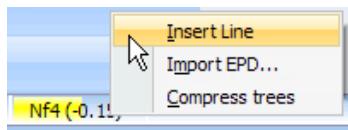

Right-clicking the status bar displays a menu allowing you to insert your old analysis into the current game.

If you like you can also display the infinite analysis evaluations in the tree window.

8.4. Infinite analysis presets

Aquarium allows you to store infinite analysis presets. This is especially helpful for those running multi-processor or multi-core computers. If you are running a dual-core computer, you can for instance create a preset which allows you to run two different engines with a single click, one on each core. You can run them both in the same analysis pane or each engine in its own pane. On a quad-core, one engine can be given 3 processors and then you could use the fourth core for a different engine. While infinite analysis is running, you can switch between the stored analysis presets on the fly by selecting them from the Presets drop-down menu as shown in the image.
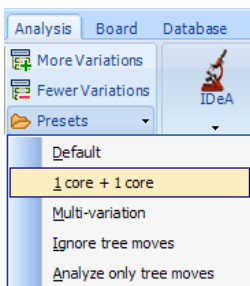
9. Interactive Deep Analysis (IDeA)

Interactive Deep Analysis (IDeA) is one of the most advanced analysis methods available to chess players.

The purpose of IDeA is to dig deeply into a position and return as much information about it as possible. IDeA keeps its analysis in a tree structure which the user can browse at will, even while the analysis is in progress.

Besides having a live view of the evolving analysis, the user can direct the analysis into the most interesting positions by excluding or adding positions and variations to the analysis queue. Don't forget that the 'I' in IDeA stands for 'Interactive' and your involvement in the analysis process is the key to understanding and improving the analysis.

In short IDeA is is highly selective search, controlled by Aquarium (and the user). Interesting lines are analyzed deeply but weak moves are only considered briefly or not at all.

There is no doubt that Interactive Deep Analysis is a very powerful tool in the hands of the serious chess player.

9.1. Switching to IDeA View

Click the IDeA button in the sidebar to switch to IDeA. The first time you do that you will see the IDeA Control Center. You can also switch to the IDeA Control Center from the IDeA button menu on the Ribbon as shown in the screenshot on the right.

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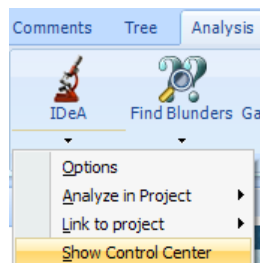
9.2. The IDeA Control Center

IDeA can keep track of multiple analysis projects. You can analyze one or more projects at the same time and revisit older projects and restart them where you left off. Each project has its own settings and the same project can even have multiple root positions, allowing you to analyze different positions in the tree at the same time. Older projects can be deleted when they are no longer needed.

IDeA can be used both for analyzing a set of positions (without expanding the analysis tree, e.g. a list of EPD records) and for traditional IDeA analysis, based on expanding the tree from the root position(s). A project setting determines which kind of analysis the project will perform.

The IDeA Control Center keeps track of all the projects you have defined. It consists of the three windows shown in this screenshot.
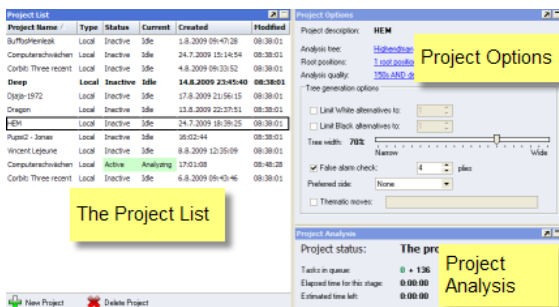
The *Project List* window lists all available projects and some basic information about them.

The Project *Options* show most of the options defined for the project that is currently selected in the Project List window.

The *Project Analysis* displays the current analysis status of the selected project.

9.2.1.   The Project List window

The IDeA Project List window displays one line for each project that you have defined.

Project List

Project Name ∕	Type	Status	Current	Created	Modified
Buffos	Local	Inactive	Idle	1.8.2009 09:47:28	08:38:01
Computerschwächen	Local	Inactive	Idle	24.7.2009 15:14:54	08:38:01
Corbit: Three recent	Local	Inactive	Idle	4.8.2009 09:33:52	08:38:01
Deep	**Local**	**Inactive**	**Idle**	**14.8.2009 23:45:40**	**08:38:01**
Djaja-1972	Local	Inactive	Idle	17.8.2009 21:56:15	08:38:01
Dragon	Local	Inactive	Idle	13.8.2009 22:37:51	08:38:01
HEM	Local	Inactive	Idle	24.7.2009 18:39:25	08:38:01

➕ New Project   👓 View Project   ❌ Delete Project

Project Name is the name that you gave the project.

Type can be either Local or Remote. Local projects are run on the same computer as Aquarium, but in remote projects the analysis is run on a different computer and the results manually transferred to the local computer. Note that a local project can use a mixture of local and remote UCI engines.

Status can be Inactive, Active or set to a certain CPU usage percentage. When IDeA starts analyzing, it only analyzes projects that are marked as Active or show a CPU usage percentage.

Current shows if the project is Idle, Analyzing, Generating Tasks, Minimizing or Waiting for tasks.

Created shows when the project was created. It's only a reminder for the user.

Modified shows when the project was last modified.

The New Project and Delete Project buttons at the bottom of the window add a new project or delete the currently selected project. View Project opens the project view.

If you right-click over one of the projects, the following menu is displayed.

View opens the selected project view. It's equivalent to pressing Enter on the keyboard or double-clicking on the project.

Edit... allows you edit the project parameters.

Make Default makes the project the default target for certain operations, such as sending positions from the Sandbox to IDeA for analysis.

Make Active changes the project's status to Active. This means that it will be included in the analysis the next time that IDeA is started. If IDeA is running when a project is made active it is started immediately.

9.2.2.   The Project Analysis window
The Project Analysis window displays the status of the project that is currently selected in the project list. It also allows you to add new tasks and analysis results to the project and minimax the project tree.

Here we see the Project Analysis window for a project that is currently being analyzed. The 'Project status' shows that eight tasks are being analyzed simultaneously. This means that at least eight instances of the analysis engine are being used.

'Tasks in queue' shows two numbers: 8 (displayed in green color) and 10. The green number shows the number of tasks that are currently being analyzed (corresponds to the number in 'Project status'). The number after the '+' sign shows the number of tasks in the queue that are waiting to be analyzed (10 in this example). In case you have manually added tasks to the queue they will be shown in red color.

The Add tasks link let's you add tasks (EPD records) from an EPD file to the analysis queue.

The Add results link is similar to Add tasks, but in this case the EPD records have already been analyzed and the positions and the analysis results are added to the tree.

The Minimax now link allows you to minimax the project tree any time you like.

The 'Elapsed time for this stage' shows how much time has been used for the current stage in the project, and the 'Estimated time left' is also shown.

9.2.3.   The Project Options window
The Project Options window let's you change the options for the currently selected IDeA project.

These options are initially set when you create the project, but you can use the Project Options window to quickly change them at any time after that. The changes take effect the next time you start analysis of the project or at the start of the next analysis stage if you change the options while the project is being analyzed (except that switching to another Analysis tree takes effect immediately).

You can see how the options are split into two panels: Three basic options (the tree and master tree, the root positions and the analysis quality) and several 'Tree generation options' which can greatly influence the shape of the analysis tree.

All the options available in the Project Options window are described in the next section about creating projects.

9.3. Creating a project
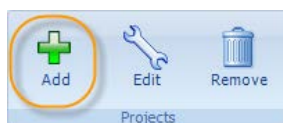
When you want to create a project, click the 'Add' button in the Projects group on the Ribbon or the 'New Project' button at the bottom of 'Project List' window. The IDeA Project Properties dialog box will be brought up.
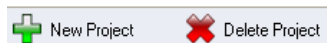
As you can see in the image below, the Project Properties dialog has two tabs: Common and IDeA. We are looking at the Common tab.

Project description is a text area where you can choose any name you like to identify your project. The name will be displayed in the Project Name column of the project list window.
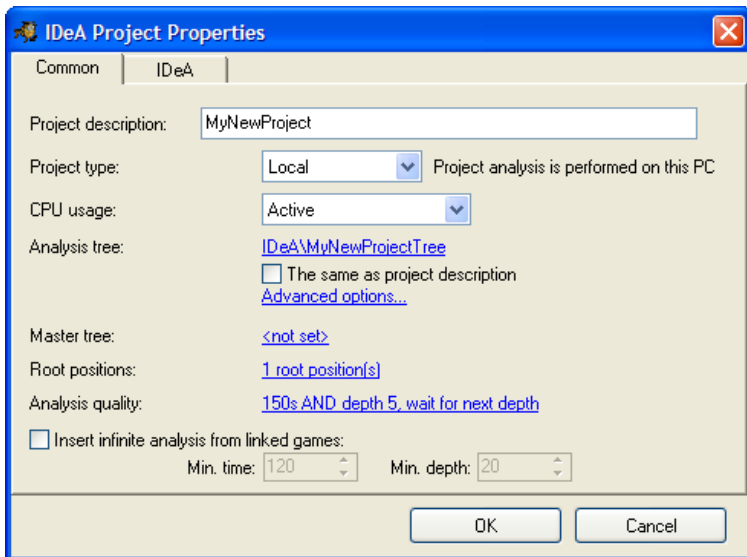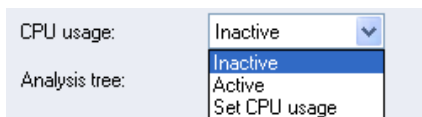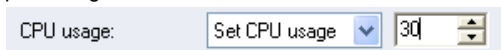
Project type can be either local or remote. Local projects are analyzed on the computer where Aquarium is running, but remote projects are analyzed on a different computer or computers. While you are learning how to use the new features of IDeA it is recommended that you stick to local projects.

CPU usage. You can select one of three values from this drop-down list: Inactive, Active and Set CPU usage. This field corresponds to the Status column in the project list and determines if the project is analyzed by IDeA or not. When set to Active it will be analyzed the next time IDeA is started or immediately, if IDeA was running when the status was changed. Inactive projects are not analyzed. If you select the third option, 'Set CPU usage', a new field is displayed where you can enter a CPU usage percentage. Here I have selected 30%, which means that IDeA will allocate 30% of its analysis time to this particular project.

You should make sure that the total percentage for all active projects doesn't add up to more than 100%. If that happens, Aquarium scales the percentages you have

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specified so that they add up to 100. In that case other projects will not be given any CPU time, even if they are marked as Active.

Analysis tree specifies the Aquarium tree where IDeA will store the analysis for this project. Clicking the link with the tree name shows the 'Open' dialog box where you can either select an existing tree or type in the name of a new tree.

Master tree. A master tree can store analysis results from one or more projects. When creating a new project you can pull the relevant data from the master tree, add it to your project and use it as a starting point for additional analysis. You can create as many master trees as you like. If you have several projects with analysis of related opening variations (e.g. different variations of the Scotch Game), it may be convenient to create a single master tree for storing all the variations. Some users even store all their analysis in a single master tree. One of the advantages of master trees is that they allow you to keep your active analysis trees smaller.

Root positions let's you specify one or more "root positions" for the project. Each root serves as a starting position for expanding the tree. If more than one root is active, IDeA splits the project's analysis time equally between them. When you click the link (in this example '1 root position(s)') the Root Node List dialog box appears. In this case it is taken from a project which has two root nodes.

A list of root nodes is displayed to the right of the diagram. There are four columns displayed for each root position:

En is short for enabled and if it is selected, the corresponding root position is active. In other words, IDeA will analyze variations originating from that position. While you are getting used to IDeA it is best to have only one active root position.

Eval is the current minimaxed score of the root position. It is updated as the analysis progresses.
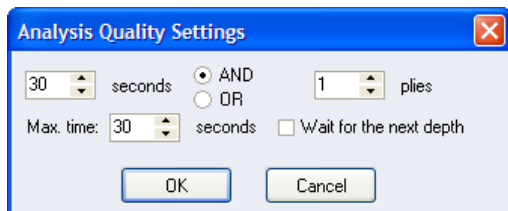
Position shows either the FEN string of the position or the moves leading to the position (as in this case), depending on how you defined the position.

Comment is a text field where you can enter your comments about the position.

You can add more root positions to the project by clicking the Add button which displays the familiar position setup dialog box. You can also add a new position by pasting it (Ctrl+V) instead of clicking the Add button. If you paste a PGN game fraction, the final position of the game is added to the root node list.

The Edit button (or double-clicking the EPD string/move sequence) displays the position setup dialog and allows you to modify the selected position. If you want to delete a root position from the list, highlight it and click the Remove button.

Analysis quality defines how much time or how deeply each position will be analyzed. When you click the link, the Analysis Quality Settings dialog is displayed.

You can specify any combination of time and depth. With the parameters specified as in the screenshot, each position will be analyzed for exactly 30 seconds. Specifying "30 seconds AND 1 plies" ensures that each position will be analyzed for at least 30 seconds. If the specified depth hasn't been reached by that time (highly unlikely for depth 1) the analysis continues. Max. time ensures that the analysis time will not exceed 30 seconds.

When "Wait for next depth" is selected, IDeA will not finish the analysis when the required combination of seconds and plies has been reached. Instead it will continue until the engine has completed the search at the current depth (or exceeded Max. time) before stopping the analysis.

Insert infinite analysis from linked games. This option has no effect unless you have linked an IDeA project to a database game or the Sandbox. If you run infinite analysis in the game, the positions corresponding to the best variation found by the chess engine (the PV or principal variation) are sent to the IDeA queue for analysis by the IDeA engine. You can use any chess engine you like for the infinite analysis. This option takes two parameters, Min. time and Min. depth. The positions are not sent to IDeA unless the infinite analysis has run for the number of seconds specified by Min. time and the engine has reached at least Min. depth. If you set Min. depth to zero, only the first move of the variation is sent to IDeA. Note that these parameters also apply to infinite analysis IDeA tasks as described in section 9.4.

Next, switch to the IDeA tab.
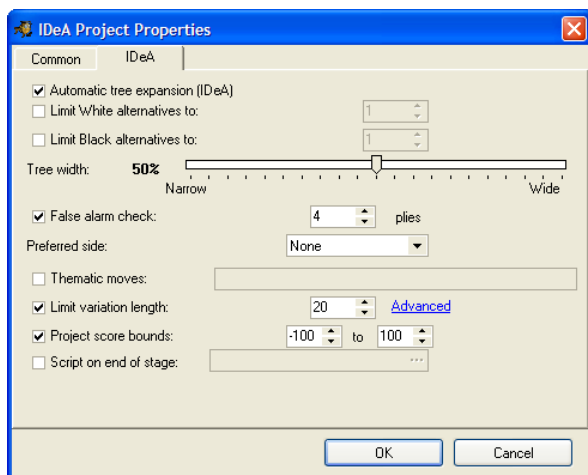
Here you can set parameters which affect the shape of the analysis tree.

Automatic tree expansion (IDEA). When this option is selected, a traditional IDeA analysis will be performed, expanding the analysis tree from the root positions. If it is not selected, IDeA will only analyze the positions given to it (e.g. from an EPD file) and not expand them. It only adds the positions with their evaluation to the analysis tree.

Limit White alternatives to ensures that IDeA will not generate more alternatives for White in a position where the specified number of alternatives has already been reached*. Limit Black alternatives to* works in the same way for Black.

Tree width affects the shape of the analysis tree. Increasing the tree width will cause more varied alternatives to be considered and create a "wider" tree.

False alarm check immediately investigates further a new alternative which seems to be better than previously explored alternatives. It often happens that a new move looks very good when it is first evaluated, but further analysis quickly finds a refutation. If a new alternative has a better evaluation than the best move found so far (based on its minimaxed score), then the new alternative is immediately extended by the number of plies specified in this option. If this option is not selected, IDeA may need to pass through a few stages before the move is refuted.

Preferred side can be set to None (which disables it), White, Black or Both. If it is set to None, IDeA creates a comprehensive analysis of the root position and the white and black sides are treated exactly the same. This can be very useful in many cases, but in other cases you may prefer more focused analysis. A typical situation is a player preparing an opening repertoire. When analyzing a variation that he will only play as White, he will analyze differently than when preparing for playing the

black side of the same variation. Basically, preparing for the white side, he is only interested in finding (and playing) White's best moves against all reasonable Black moves. Of course it may require the analysis of several White moves before the best move can be determined, so this is not the same as analyzing only a single White move in every position. This is also how *Preferred side* works and setting *Preferred side* to White in this situation can result in considerable savings in analysis time.

Thematic moves allows you to list one or more moves separated by commas (e.g. Bxh7, Ng5) which will always be tried by IDeA. Normally, you would use Project score bounds (see below) in combination with this option.

Limit variation length prevents IDeA from extending variations beyond the specified number of plies.

Project score bounds limits the analysis to variations which have a centipawn evaluation within the specified bounds.

Script on end of stage is an advanced feature which runs the specified Aquarium script at the end of each IDeA stage. Such a script can be used modify how IDeA works. Some programming experience is required to write scripts.
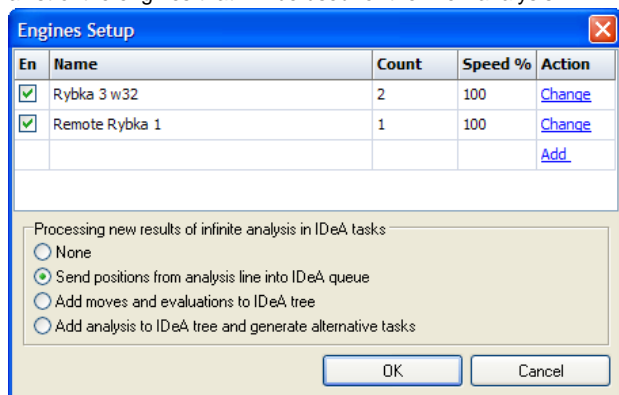
9.4. Starting IDeA

After setting all the options for a project, you can start IDeA from the IDeA Control
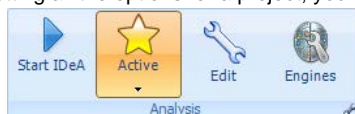
Center.

First you must decide the engine configuration to use for the analysis by clicking the Engines button which opens the Engines Setup dialog box shown below. It displays a list of the engines that will be used for the IDeA analysis.
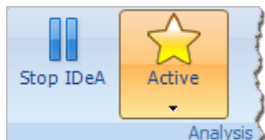
Use the Change link in the Action column to change to a different engine and Add to add more engines. The check box in the first column is used to enable or disable the corresponding engine. The second column shows the selected engine. The third column (Count) determines how many instances of the engine will work on the analysis. If you run the analysis on a multi-core computer you can use all the cores for the analysis or leave one of them for other tasks that Aquarium must perform during the analysis. It is recommended to have one free core for Aquarium when you are using many engines and low analysis quality. If you double-click a cell in this column you can change the number of instances. The number cannot be changed for remote engines.

The panel below the engine list determines how the results of infinite analysis tasks are handled by IDeA. You can turn any active task in the IDeA queue into an infinite analysis task. The analysis results are handled depending on the option you choose here. The minimum depth and minimum time parameters specified in the Common tab of the IDeA Project Properties dialog box also apply here.

After completing the engine setup, click the Start IDeA button on the Ribbon to start the analysis.

9.5. Running IDeA

While IDeA is running, you can view your active project(s) by opening the project view as was explained above. IDeA gives you excellent tools to monitor the progress; which positions are being analyzed; the evaluation, time and PV for the positions etc. You can also jump straight to one of the positions being analyzed, view it on the chessboard and see the variation leading to the position in the notation.

When you want to stop IDeA, click the Stop IDeA button on the Ribbon.

You can switch between the project view and the IDeA Control Center by selecting them in the sidebar. The project view has five windows: the familiar board, notation and tree windows and two IDeA specific windows: Project Status and Stage status. An overview of the project windows is shown in the image below.
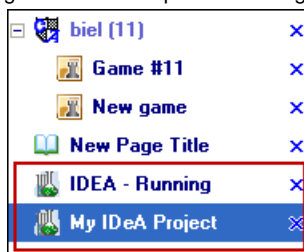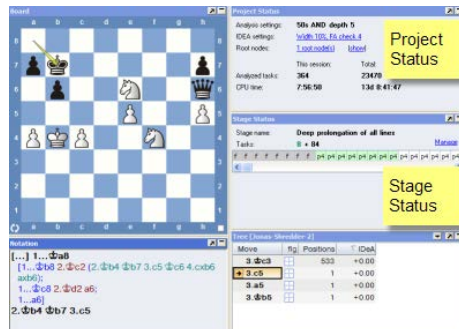
These windows can be used for interacting with the IDeA analysis at the task, stage or project level. IDeA displays the results of its analysis in the tree window. The notation window can be used for browsing the tree, adding new positions to the analysis etc.

9.5.1.   The Project Status window

The Project Status window gives an overview of the current project settings, the number of tasks that have been analyzed and the CPU time used.

Analysis settings correspond to the Analysis Quality Settings which are accessible from the IDeA Control Center (Project Options window and the IDeA Project Properties). Note that the Project Status window doesn't display the full Analysis Quality Settings for the project.

IDeA settings show a part of the settings which determine the shape of the analysis tree. Clicking the link displays the IDeA Tree Expand Options which allows you to view and modify all the settings. These options are the same as you saw on the IDeA tab of the IDeA Project Properties dialog box described above.

Root nodes displays the number of root nodes in the project. Clicking the link brings up the Root Node List described above. The second link "(1/1)" shows two

numbers. The first number is the currently selected root node and the other one is the total number of active root nodes in the project. If the project has multiple root nodes, clicking the link repeatedly cycles through the root nodes and displays them on the chessboard.

Analyzed tasks and CPU time show two columns. The first column displays statistics for the current session, but the second column shows the total number of tasks analyzed in the project and the total CPU time used for the analysis.

At the bottom of the Project Status window there are four lists that you can use for storing important positions along with verbal commentary. The names of the lists indicate what kind of positions they are intended for: "Good," "Interesting," "Critical," and "Dubious." As you can see when you look at the Project Status window image above, each list is displayed as two links, similar to the root nodes, and the links work in a similar manner. The two links are the name of the list (e.g., "Critical") and a link with two numbers separated by a slash. The first number stands for the current position in the list and the second number is the total number of positions in the list. Clicking the numbers displays the next position in the list. When you reach the end of the list, it rewinds to the start of the list. Using this feature you can quickly scan the positions in each list. Clicking the name of the list displays the "Note List" dialog box. An example is shown in the next image.
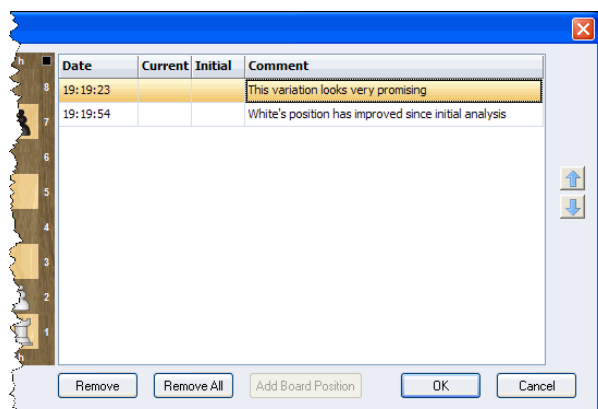
As you can see, the Note List dialog box is similar to the Root Node List. For every position, you can see when it was added to the list, it's current and initial score (the score when it was added to the list) and the most important piece of information, your notes about the position. You can edit, copy and paste the commentary. Right-clicking an item in the list opens a menu where you can copy or move the position to other note lists. Double-clicking an item in the list opens the position setup dialog box.

There are five buttons at the bottom of the Note List. The leftmost button let's you Remove the currently selected position, while Remove All deletes all positions from the list.

The next button is Add Board Position; this is a quick way of adding the position displayed on the main board to the list. If you run into an interesting position that you want to remember, click the Interesting link in the Project Status window and then this button. It is disabled in the screenshot, because the current position is already in the list. When you are done, click the OK button to store your changes, or Cancel to ignore them.

Once you have opened the "Note List" dialog box, there is a drop-down list below the chess board (not shown in the image above), which lets you switch between the available lists.

Whenever you open a list and the current position is in the list, it will be highlighted. This applies both to the note lists and the root node list. An example can be seen in the image above, where the first position in the list is the current position.

9.5.2. The Stage Status window

The Stage Status window shows an overview of the current analysis stage and the tasks that belong to the stage.
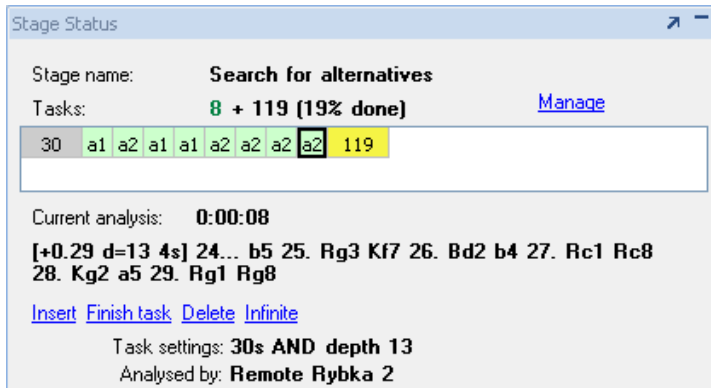
Stage name displays the current stage ('Search for alternatives' in this example).

Tasks shows the same information as 'Tasks in queue' in the Project Analysis window in the IDeA Control Center: The number of tasks currently being analyzed (green) and the number of tasks in the queue waiting to be analyzed (red: manually added; black: automatically generated).

Below the *Tasks*, all the tasks belonging to this stage are displayed as colored squares. Gray squares are finished tasks (there are 30 finished tasks). The green squares show tasks that are currently being analyzed. In this case we see eight

green squares, which correspond to the green number in the *Tasks*. The yellow squares are tasks which are waiting in the queue (there are 119 tasks waiting). Manually added tasks are displayed as red squares while they wait in the queue.

As you can see by its thick, black border, one of the green squares has been selected, either by clicking it or by jumping to the corresponding position in the notation. The 'a2' means that it is a search for the second alternative in the position. The lower half of the window displays information about the selected task.

Current analysis is shows that the total analysis time for this position is 8 seconds. Note that a single task may consist of the analysis of multiple positions. Below that the PV from the engine is displayed. In the square brackets at the start of the line, we see that the current evaluation is +0.29 and the engine has reached depth 13. The displayed evaluation and depth were recorded after 4 seconds of analysis (4s). After that the PV itself follows and in the next line there are four links:

Insert adds the PV to the notation in the Notation window.

Finish immediately finishes the analysis of the current task.
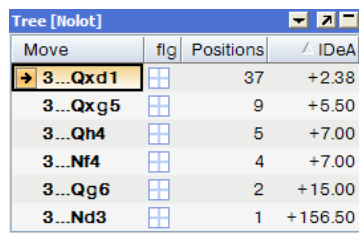
Delete deletes the current task from the queue.

Infinite switches to infinite analysis of the position.

The last two lines show the *Task settings* for the selected task (Note that there may be different settings for different tasks in the queue) and the name of the engine analyzing the task.

9.6. Monitoring the analysis

While IDeA is running it updates the tree window regularly. The tree window does

more than just show the moves that have been evaluated in the root position. This is an interactive tree that you can browse even while analyzing. This means that you can monitor very closely where the analysis is going.

Here you see the tree window after IDeA has been running for some time. The analysis was started from a position where White was supposed to be winning and we can see that the scores in the IDeA column support that. The Positions column shows how many positions have been analyzed in the branch starting with the move displayed in the Move column.

The screenshot shows that we are examining Black's third move options. You can browse the moves in the tree by first clicking a move and then using the arrow keys to go back and forth in the variations. As you browse the tree the notation window is updated with the variations that you examine.

You can see that the cursor in the notation window is located before 3...Qxd1, corresponding to the highlighted move in the tree window above. All the variations that have been browsed in the tree are displayed in the notation. Using this method you can quickly get an overview of the analyzed variations that are of interest to you. You can also press F4 to copy the best variation from the tree to the notation.

Notation

[...] 1.Nxh6 Rxh6
  [1...c3 2.Nf5 cxb2 3.Qg4]
2.Nxd6 Qh5 3.Rg5|
  [3.Qxh5 Rxh5 4.Nxb7 (4.Re5)]
3...Qxd1

9.7. Control the focus of analysis

If you run into a position where you want to concentrate the analysis on a particular move or moves, then you can mark them so that no other moves will be considered. If you think that 3...Qxd1 is the only interesting move in the current position and you don't want IDeA to spend time analyzing other moves, you can color the move green, as shown in the image. Note that you can mark the moves while IDeA is running.

Tree [Nolot]

Move	flg	Positions	IDeA
→ 3...Qxd1		37	+2.38
3...Qxg5		9	+5.50
3...Nf4		6	+7.00
3...Qh4		5	+7.00
3...Qg6		3	+156.50
3...Nd3		1	+156.50

Right-clicking a move in the tree window allows you to choose the color. In some cases you may not be sure about the best move, but you still want to eliminate certain moves from further analysis to make better use of the analysis time. These moves should then be colored red in the tree. The image shows an example where 3...Qxg5 has been excluded from further analysis. Other moves will continue to be analyzed, and IDeA may add new alternatives to the analysis in this position.

Tree [Nolot]

Move	flg	Positions	IDeA
→ 3...Qxd1		37	+2.38
3...Qxg5		9	+5.50
3...Nf4		6	+7.00
3...Qh4		5	+7.00
3...Qg6		3	+156.50
3...Nd3		1	+156.50

You can color as many positions in the tree as you like and thereby focus the analysis on the positions that you think are most important. Only the green and red colors affect the IDeA analysis.

9.8. Adding positions to the analysis

The move coloring method only allows you to mark moves that are already in the tree. If you want to request analysis of positions that are not there, you can add

your own moves to the tree. When you browse the tree, the moves are automatically added to the notation window. If you run into a position that you find interesting, you can start experimenting with it by making moves on the board; those moves are also added to the notation window. After a while it may look like the notation window in the image on the left.

When you request analysis of a specific position, it is marked (here with an underline, and a light-blue background color). If you look at the notation window you can see that analysis of four different positions has been requested; these will be handled by IDeA as high priority tasks.

There are several options to choose from when you request analysis of a new position or deeper analysis of positions that are already in the tree. The next image shows the seven buttons used to create analysis tasks and send them to IDeA.
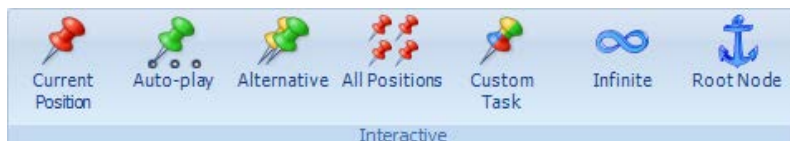
Current Position. When you click this button, the position on the board is scheduled for analysis. It is analyzed in the same way as if IDeA had selected the position automatically.

Auto-play. The chess engine plays a number of moves starting from the current position and stores them in the tree with their evaluation. The user decides how many moves should be played.

Alternative. This option searches for a new alternative in the current position.

All positions. You are not limited to adding a single position to the analysis. You can add as many moves and variations to the notation window as you wish and then send them all at once to the analysis queue by clicking "All Positions."

Custom Task is a very flexible way of specifying an analysis task. When you click the button, the Custom Task Properties dialog box is displayed where you can define the parameters for the task.

Infinite adds an infinite analysis task of the current position to the queue. When you click the button you get a choice of engine to use for the analysis.

Root Node creates a root node for the current position.

10. Searching

Aquarium allows you to search for games based on position or header information, such as player's name or rating. Database searches are directly supported in Database mode and Sandbox mode, but can also be accessed while in other modes through the Quick Access Toolbar.

The Search group is in the Database tab on the Ribbon in Database mode, the Sandbox and Engine Competitions. The two most common ways of searching for a game are through the Header and Position search options shown in the image below.
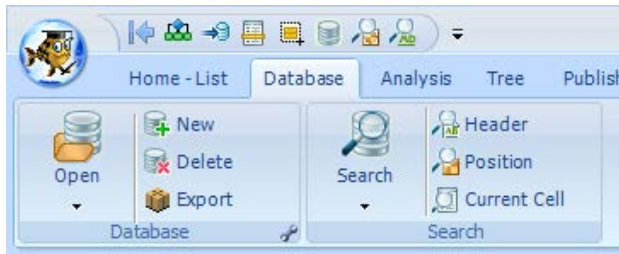
Additionally, you can search for games based on the value of the currently highlighted cell in the game list with Current Cell. Header search is activated by clicking the Header button or using the Ctrl+H keyboard shortcut. Header search gives you the option to search a database based on various fields in the game header as can be seen in the Header search dialog box.

Once you're satisfied with your search criteria, press the OK button and Aquarium will display a list of games matching your criteria.

Position search allows you to search for games based on a specific position. Either press the Position button on the Ribbon or use the Ctrl+F keyboard shortcut to display the Search position dialog box.

Set up the position you want to search for, fill out the parameters and press OK. You can also use the Paste FEN button to set up a position based on a FEN that you have copied earlier.

You can select pieces from the palette in the top-right corner with a mouse click and place them on the board by clicking the squares where you want to put them. You can change the currently selected piece type (as displayed in the mouse pointer) with the mouse wheel. If you click with the middle mouse button (or the mouse wheel) on a square, the square will be cleared and the piece on that square will become the new mouse cursor.

Selecting Chess960 allows you to set up a Fischerandom/Chess960 position.

The **En passant line** drop down list allows you to specify if a pawn can be captured en passant. In that case select the line on which the pawn stands. The **Turn** option shows whose move it is.

The blue left-right arrow button flips the position horizontally and the up-down arrow button flips it vertically and changes the color of the pieces.

In addition to Header search and Position search, Aquarium also supports the very powerful CQL (Chess Query Language). It is accessible through the drop-down menu on the Search button.

11. Trees

Chess players who are mostly used to working with game notation, comments and variations are in for a bit of shock when they realize how much Aquarium relies on chess trees and the new opportunities offered by that approach. Chess trees can be created for the opening, middlegame or the endgame. You can even create a chess tree for a whole database including every move in every game. Aquarium can store game commentary in trees which makes them much more useful for studying openings. Aquarium also uses trees for storing and displaying the results of engine analysis, from simple infinite analysis to the advanced IDeA analysis method.

The advantage of storing analysis and commentary in a tree is that it is accessible in any game where the same position occurs. Aquarium will not be fooled by transpositions: Regardless of the move order used to reach a position you will see all the data that is available for it.

The real power of trees in Aquarium becomes clear when you understand the concept of tree configurations. Tree configurations allow you to combine several trees to create a single view of all the data in the trees which comprise the tree configuration.

Here is an example showing a tree configuration which among other things allows you to compare the evaluations of two different engines in the same view.

Move ▽	flg	Eval	Total	CAP	Rybka	Hiarcs
3.♘c3		±/=	27497	+0.15	+0.07	+0.07
→ 3.exd5		±/=	26218	+0.22	+0.18	+0.29
3.e5		±/=	21055	+0.29	+0.29	+0.29
3.♘d2		±/=	12706	+0.15	+0.15	+0.15
3.f3		=	2259	+0.00	+0.00	+0.00
3.♗d3			122	+0.04	+0.04	+0.04
3.c4			28	-0.41	-0.41	-0.41

The *Move* column shows the moves in the tree configuration. Note that when viewing a game, Aquarium also displays moves from the game notation in the Tree window, both the mainline and variations. Moves that are present in the notation are marked with a small arrow to the left of the move. The mainline move is distinguished from other moves by a colored rectangle around the arrow (3.exd5 in this example).

The *flg* column allows users to mark moves with four different flags.

The *Eval* column contains Informator signs depicting a human evaluation of the position after the move in the *Move* column. This data is stored in a special evaluation tree.

The *Total* column is a statistics column taken from a tree which was built from a large database. Here it displays the number of games. That same tree contains several other fields which the user has chosen not to show in this tree configuration. These are fields like the success of the given move (%); when it was last played; the highest rated player making that move etc. This shows that you cannot only decide which trees go into a configuration, but you can also select exactly the information you display from each tree.

The *CAP* column comes from a huge tree of computer evaluations. The complete CAP tree contains millions of analyzed positions.

The *Rybka* column shows Rybka's evaluation of the position after the move in the *Move* column.

The *Hiarcs* column shows the evaluation of the HIARCS chess engine.

This means that here we have the evaluations of two different chess engines side by side. You can even color the evaluations where the difference between the two engines exceeds a user specified threshold. Such differences might indicate a position that needs further analysis.

This small example already shows that tree configurations are very flexible and allow you to use trees for purposes that have not been possible in the past.

Aquarium comes with several tree configurations, but of course you can tailor those to your needs or create new ones from scratch. Click the small button with the triangle in the tree window title bar to show the list of available configurations. You can quickly switch to the one which you need. You can also use the Ribbon to switch between trees as shown below.
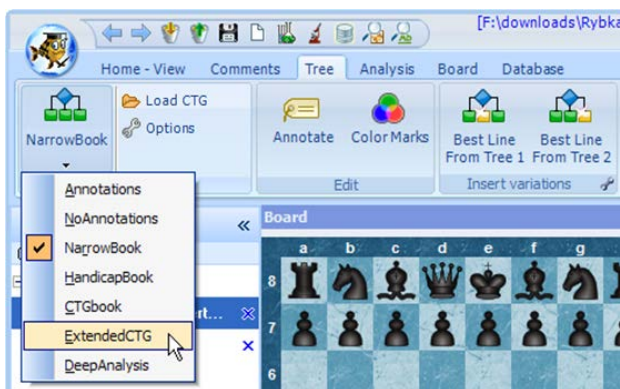

Here the Tree tab is displayed in the Ribbon. The leftmost group on the tab is the tree configuration group. The menu button to the far left displays a list of available configurations, just like we saw above.
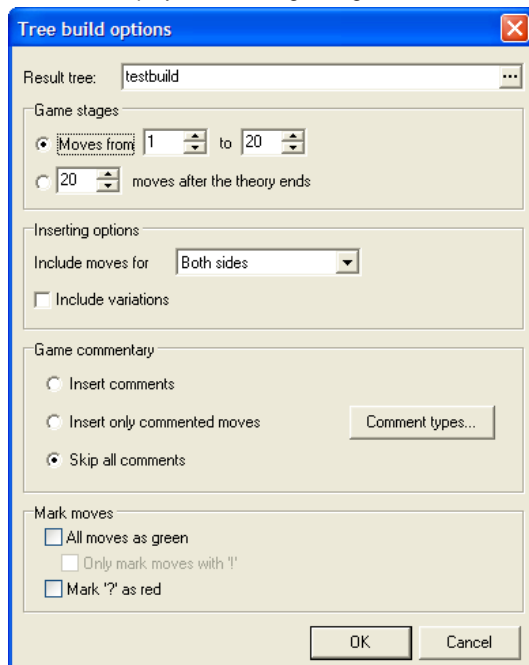
The *Load CTG* button allows you to view a CTG tree from Fritz or Chessbase.

The *Options* button opens a dialog box where you can set all options for the current tree configuration and each tree in the configuration.

11.1. Creating a new tree from a list of games
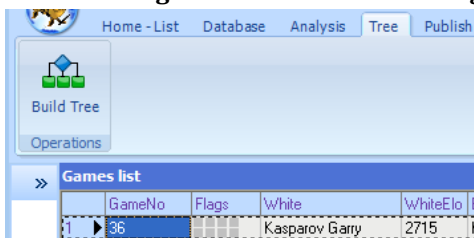
The easiest way to build a new tree is to build it from a list of database games. First select the games you want to build the tree from and then click the **Build Tree** button in the Tree tab to display the following dialog box:

Here you set the parameters to be used in building the tree. After the tree has been built the *Add tree to configuration* wizard helps you build a tree configuration.

Selecting *Don't add the tree to any configuration* builds a standalone tree which you can add to a configuration at a later time.

Add to existing configuration lets you to pick an existing tree configuration from the drop-down list and add the new tree to it.

Create new configuration displays a tree configuration wizard which helps you create the new configuration.

11.2. Move coloring

You can color moves in a tree to mark them as good, interesting, dubious etc. Most of your work on the tree will be performed in the tree window while viewing a game in Database mode or in the Sandbox. When you right-click on a move in the tree window the following menu is displayed.
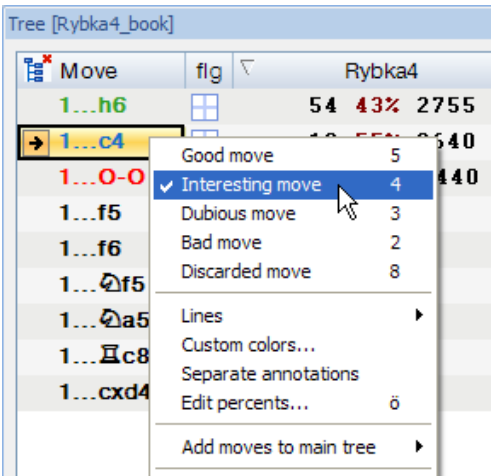

The first five items in the menu color the selected move. The move colors can be used for many different purposes, such as preventing certain moves in opening books from being played. In order to speed up your work with trees you should learn the keyboard shortcuts shown in the menu for coloring the moves (5 colors a move green, 2 colors it red etc.).

You can change the playing probability of a move in an opening book by selecting *Edit percents.*

The *Add moves to main tree* option allows you to add new moves to the tree, either just the moves you make on the board or all moves added to the notation.

11.3. The Main tree and the Discarded moves tree
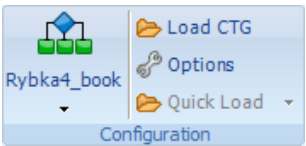
When viewing a game, the Options button on the Tree tab in the Ribbon allows you to specify options for the current tree configuration as shown in the following dialog box.

Tree configurations

Select configuration: Opening Books\Rybka4_book

Configuration columns:

Name	Tree	Visible	Quick
Games	Rybka4book\rybka4_Jiri_Dufek	☑	☐
Move%	Rybka4book\rybka4_Jiri_Dufek	☐	☐
Success	Rybka4book\rybka4_Jiri_Dufek	☑	☐
Rating	Rybka4book\rybka4_Jiri_Dufek	☑	☐
Year	Rybka4book\rybka4_Jiri_Dufek	☐	☐
CAP	Rybka4book\cap	☑	☐
Human (d2m)	Statistics\\d2m	☑	☐
d2m - succ	statistics\d2m	☑	☐
d2m Year	statistics\d2m	☑	☐
d2m%	statistics\d2m	☐	☐

[Add...] [Remove] [Add DST...] [Groups...] [Variables...]

Main tree path: Rybka4book\rybka4_Jiri_Dufek [...]

Discarded tree path: Rybka4book\discarded_rybka4 [...]

[Opening book settings...]

☐ Show main tree moves only

[OK] [Cancel]

When you add moves to a tree configuration (See *Add moves to main tree* above) they are added to the main tree which is specified in the Main tree path in the screenshot. If *Show main tree moves only* is selected, then the tree window will only display moves from the main tree instead of moves from all trees in the configuration (see the Tree column in the Configuration columns panel).

The *Discarded tree path* is very interesting, in particular for opening book experts. After you have created an opening book you can use the discarded moves tree to create a "mask" for it to play or not play certain moves or openings. You can have one opening book and as many "discarded moves" trees as you like. This means that if you store your whole opening repertoire in a single opening book you can, for instance, define the following "discarded moves" trees:

1) One that only plays the gambit openings in your opening book

2) One that never plays the Sicilian

3) One that only plays queen pawn openings as white.

4) One that whenever possible plays the Sicilian Dragon as black.

If you want to practice the Sicilian Dragon variations that you have in your opening book, just activate the discarded moves tree corresponding to 4) and as White you will always face that variation. The beauty of discarded moves trees is that you never have to modify your opening book to make these switches. That is, you don't have to touch the coloring of moves in the opening book. And the discarded moves trees will continue to work the same way even if you modify your opening book.

12. Chess Engines
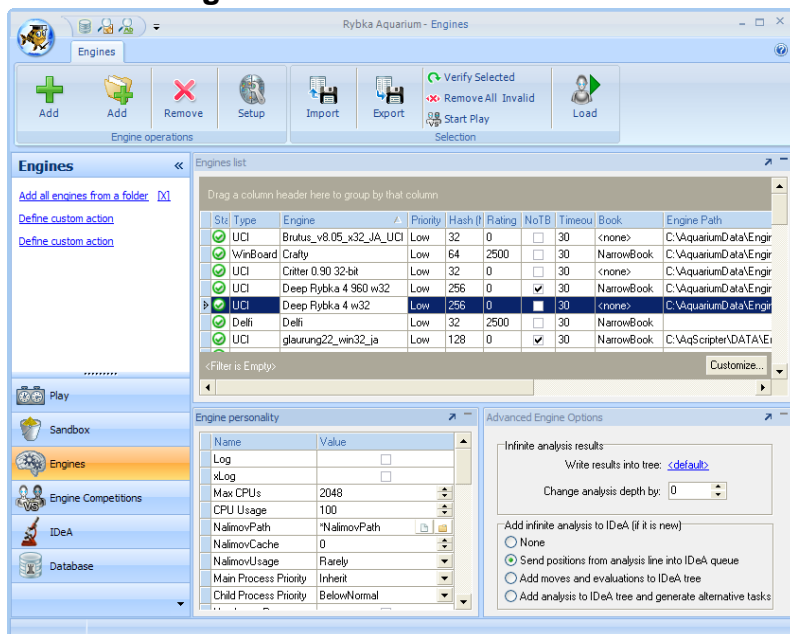
Aquarium allows you to add as many chess engines as you like to the program. You can use the engines for playing against them, analyzing your games, playing engine matches and tournaments etc.

The screenshot above shows the Engines mode in Aquarium. Here you can add and remove engines, set the parameters for each engine etc.
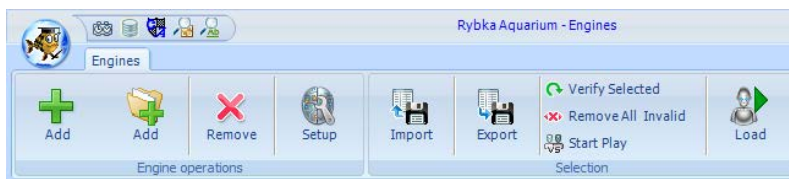
Here you see the available options for managing chess engines.

Add installs a new engine in Aquarium.

Folder **Add** installs all engines stored in the specified folder (and its subfolders). Aquarium can automatically determine if the engine is a Winboard or a UCI engine. When using this option, make sure that there are no programs besides chess engines in the folders because Aquarium needs to run every executable file it finds.

Remove removes the selected engine(s).

Setup defines the default parameters to be used when installing new engines. This includes the Nalimov tablebase path, the default opening book, the default engine folder, hash size etc. Setting the correct parameters here can save you a lot of time when installing many engines.

Import allows you to import engine definitions which you previously saved with Export.

Export allows you to export selected engine definitions to an XML file (see Import).

Verify Selected verifies that the selected engines are working correctly.

Remove All Invalid removes all engines which did not install correctly.

Start Play starts a match or a tournament between the highlighted engines.

The Engines list window shows a list of all installed engines and some basic information about them. You can edit the cells in this list directly. If you, for

instance, want to change the hash size of an engine, just double-click in the Hash (MB) column, enter the size of the hash table in megabytes and then press Enter.

The green icon in the leftmost column shows that the engine installed successfully. If the icon is red it means that there is some problem with the installation. In that case click the icon and Aquarium will try to fix the problem. If the problem can't be solved click the **Remove All Invalid** button.
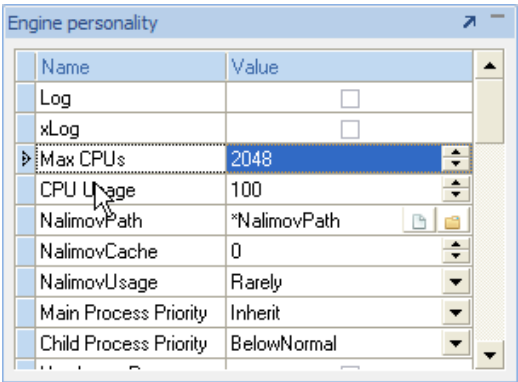
The Engine personality window shows the available parameters for the engine which is currently selected in the Engines list. The Name column shows the name of the parameter and the Value column shows its current value. You can edit those values directly in the same way as the values in the Engines list.

We mentioned earlier that Aquarium supports both UCI and Winboard engines. In fact it is compatible with several other engine types and setups. It can, for instance, play remote matches against an engine running in a different GUI (and on a different computer) by using Auto232.
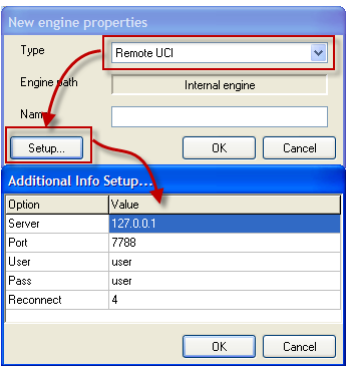
An even more useful option is the Remote UCI engine type. It allows you to run Aquarium on one computer, let's say your laptop, while the chess engine runs on your multi-core desktop computer. As long as both computers are connected to the Internet (or just your local area network) you can configure them to allow this setup. When installing a new engine, set Type to Remote UCI in the New engine properties and then click Setup.

The Advanced Engines Options window provides options related to infinite analysis

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for the selected engine. If you don't see this window in Engines mode, you can enable it with the Layout menu (Select Advanced Engines Options from the menu).
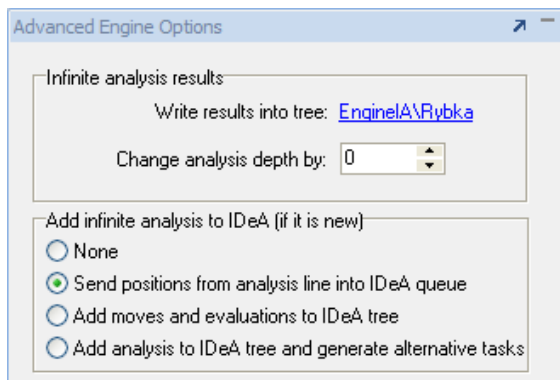
You start by selecting an engine in the Engines list and then modify these options depending on how you want infinite analysis of that engine to be handled by Aquarium.

The Infinite analysis results panel has two options. The first one, **Write results into tree**, specifies the tree where the infinite analysis results of the selected engine are to be stored. By default they are written to the infinite_analysis tree. In this example I want the results instead to be written to a tree called Rybka in the EnginesIA subdirectory of ATrees.

The **Change analysis depth by** option affects the depth stored in the tree and the minimum depth required for sending positions to IDeA. Let's say that you set this parameter to -3 for a certain engine. If you analyze a position with that engine to depth 20, the depth value written to the tree will be 20-3 or 17. You can use this parameter if you want to normalize the depth of different engines. If you set it to a very low value, such as -30, the analysis for that engine will never be written to the infinite analysis tree.

The options in **Add infinite analysis to IDeA (if it is new)** affect if and how results of infinite analysis are sent to IDeA. This option has no effect unless you run infinite analysis with the selected engine in a game that is linked to an IDeA project.

If you select **None** the results will not be sent to IDeA.

Send positions from analysis line into IDeA queue adds positions from the infinite analysis variation (PV) to the IDeA queue. IDeA will analyze the positions with the IDeA chess engines.

Add moves and evaluations to IDeA tree treats the positions from the infinite analysis variation (PV) as if they had been analyzed by IDeA and adds them directly to the tree, bypassing the task queue.

Add analysis to IDeA tree and generate alternative tasks. In addition to adding the analyzed positions to the tree, IDeA will also generate an alternative for each added position.

13. iBooks

An Aquarium iBook is an electronic book (e-book) with special features for composing and reading chess texts. Both during writing and viewing, a link can be maintained between the iBook and the underlying game database. Aquarium iBooks are not only for professional writers. Any Aquarium user can create an iBook; e.g., for private use, for publishing on a website, etc. An iBook can consist of hundreds of pages, or just a few paragraphs. The image shows a typical, short i-Book consisting of some text, analysis, images and diagrams.

Aquarium comes with tools for both reading and writing iBooks and there is no doubt that users will take the opportunity to write their own notes, articles and books either for private use or for publishing; e.g., on the Internet. In addition this is an excellent media for professional chess books, so we can expect commercial books that will take advantage of the features offered by iBooks.
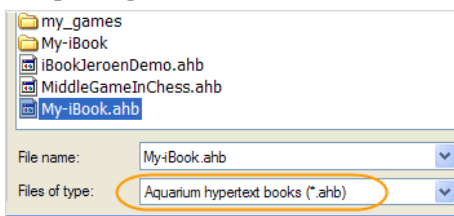
13.1. Creating an iBook

When starting an iBook, you should have a DSN database ready with the games that you want to use for the book. You must tell Aquarium that you want to use the database for creating an iBook. Switch to the Database tab in the Ribbon and make sure that the correct database is highlighted in the sidebar.
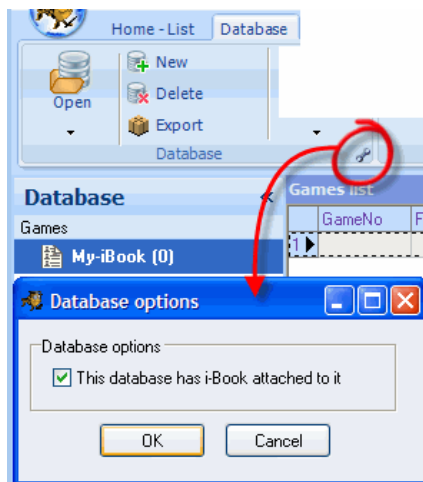
Click the tool button in the lower right-corner of the Database group and then select "This database has i-Book attached to it" as shown in the image below. Finally click OK and an iBook will be created with the same name as the database. You only need to go through the above steps once for each new iBook. From now on you can use the games in the database as input for your iBook.

Aquarium keeps a live connection from the database to the iBook so you can be sure that the moves and variations in the iBook are an exact copy of the moves in the database. This eliminates many types of errors that are common in chess books.

Database   iBook

13.2. Opening an iBook

After creating (or downloading) an iBook, you can open it just like a normal database. After clicking the Open button on the Database tab, the standard Windows file open dialog box will be shown.

Here you should set the file type to *.ahb which is the file type for iBooks, and then locate and select the book you want to open.

When you open a newly created iBook for the first time, you will see a chessboard, a "Game" window below the board and a "Page text" window on the right. The book itself will be displayed in the page text window. It can automatically load the correct game into the game window. The game window also shows moves that you play through in the book, solutions to tactical exercises, etc.

13.3. The iBook Ribbon Tab

The iBook ribbon tab is split into three groups: "Browse," "Edit" and "Options."
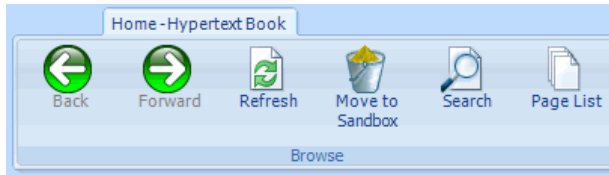

Back/Forward: These buttons have similar function as in web browsers where you can go backward and forward through recently viewed pages.

Refresh: This button updates all windows in the working area.

Move to Sandbox: Moves the contents of the game window to the Sandbox. This function can be useful if you run into an interesting position or game in an iBook and want to analyze it further.

Search: Searches for text in the current iBook.

Page List: Displays a list of all pages in the iBook and allows you to jump directly to the selected page. A page in an iBook is usually a section or a chapter.
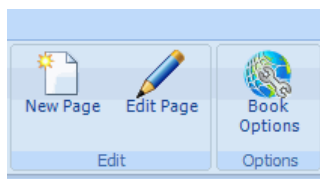
These three buttons are the most interesting for iBook authors.

New Page adds a new page to the book. It also lets you choose options for the page, such as if the board and game window should be displayed and actions that are performed when the page is displayed. You can change all these options at a later time and we'll have a closer look at them when we change the options for the pages in our new iBook.

Edit Page opens the book editing window where you can enter the iBook text and commands.

Book Options opens a dialog box where you can set global options for the book.

13.4. Editing an iBook

Let's add some content to our new iBook. When you click the "Edit Page" button on the ribbon, Aquarium opens the "Page text edit" window where you enter your text.
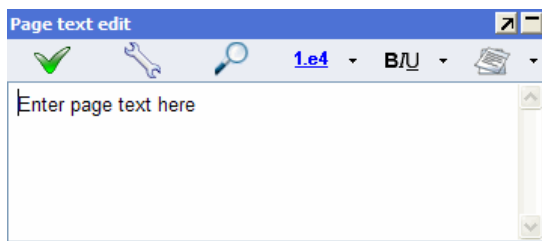
There are several buttons and menus across the top of the window. The most important one is the checkmark button (the leftmost button), which saves the page text, so use it often! As an additional incentive for saving often, this button also updates the book itself, so you can see it formatted in the "Page text" window.

Let's start with something simple and see some of the text formatting options that are available. iBooks use simple Wiki-type formatting which is widely used on the
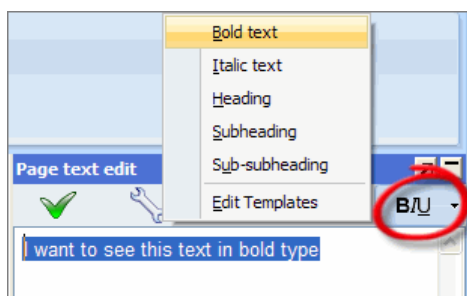

web. Those who are familiar with Wikis may choose to enter formatting commands manually, but others will probably prefer to use the iBook formatting menus. If you want to format your text, first highlight it with the mouse and then select the formatting option from the **B**/U menu as shown here. When you click the save button, the formatted text is displayed in the "Page text" window. As you can see from the menu, you can choose three levels of headings (Heading, Subheading and Sub-subheading), besides bold and italic text.

Using the formatting commands, you can write a whole book, but we still need some chess content. The following text comes from Jeroen Noomen's introduction to his Rybka Aquarium Opening Book:

A stunning novelty in the Petroff IM Merijn van Delft showed me a fantastic new idea in the Petroff (which already has been played a few times in practice): 1.e4 e5 2.Nf3 Nf6 3.Nxe5 d6 4.Nf3 Nxe4 5.Nc3 Nxc3 6.dxc3 Be7 7. Bf4 Nc6 8.Qd2 Be6 9.O-O-O Bxa2! Now black loses a piece after 10.b3 a5 11.Kb2, but of course that is not the end of the story. After the unfortunate bishop on a2 has been captured, black obtains dangerous counterplay leading to very interesting 'non Petroff like' positions.

Here we have some chess moves, but if we copy this text as it stands into our new iBook, it will just be normal text and you won't be able to view the positions that Jeroen is discussing on the chessboard. Additionally, there is a missing diagram, which should be displayed after Black's ninth move. We never want to show chess moves without being able to view them on the board as the "i" in "iBook" stands for "interactive" and there isn't much interactivity involved in staring at the text of a normal book. We could of course add these moves manually to our iBook database and then pick them up from there, but let's use some iBook magic instead. We start by pasting the above text into the iBook. Then highlight the first nine moves with your mouse. Next select "line: style 0" from the "1.e4" menu. Save your book and voilà, the moves come to life!
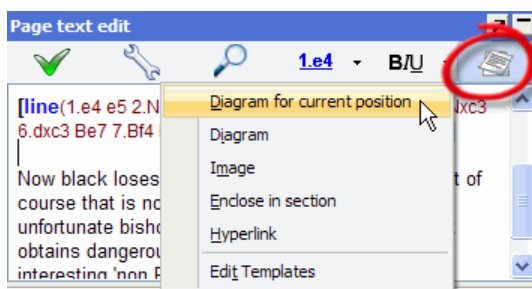
We still don't have the diagram that was in Jeroen's introduction, following Black's ninth move. Normally, you would need the FEN string for a position in order to create a diagram, but again there is an easier way. Place the cursor below the move sequence and select "Diagram for current position" from the rightmost menu button ("Other options"). When you save the text, the diagram will be displayed, showing the correct position after the ninth move.

We have only seen a small part of features available to authors of Aquarium iBooks. For more detailed information, see the Aquarium help file and the iBook Command Reference.

14. External modules

Aquarium comes with several external modules, each one serving a specialized function. This includes several chess engines and a client for the Chess Planet Internet chess server.

14.1. Chess Engines

Aquarium comes with Rybka and other chess engines, installed and ready to run. It supports both UCI and WinBoard engines and you can install an engine based on those protocols, whether it is a free or a commercial engine. There are literally hundreds of chess engines. Almost all free chess engines support either UCI or WinBoard and the number of commercial chess engines offering only proprietary protocols is diminishing quickly.

14.2. ChessOK Playing Zone

ChessOK Playing Zone is a free Internet chess server where you can play chess
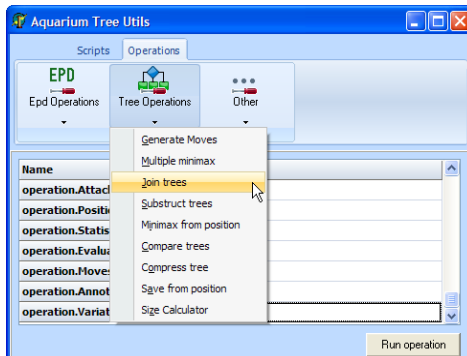

against opponents all over the world. It supports team events and correspondence chess tournaments are regularly organized on the server. There is of course no lack of blitz tournaments and you can challenge other users whenever you feel like playing a game or two. Broadcasts from major international tournaments with live Aquarium annotations are a regular feature on the server.

You can start playing by clicking the Aquarium Button and selecting ChessPlanet from the External programs menu in Aquarium. Users can either access the server as guests or register for free to take advantage of all the features of the server.

14.3. Tree Utilities

Aquarium uses chess trees extensively to store analysis, opening books,

annotations etc. No similar program is based so heavily on chess trees. The Tree Utils allow you to manage trees and perform operations such as joining or subtracting trees, minimaxing trees, saving trees to EPD files etc. You can access the Tree Utils through External Programs on the Aquarium Menu.

15. Bonus: DVD Chess Openings Encyclopedia

With a copy of ChessOK Aquarium you will also get a bonus of **DVD Chess Openings Encylopedia**, which includes rich theoretical material on all the openings, more than **8000 annotations from GM Kalinin** and **500 000 expert evaluations** to key opening positions as well as powerful search system.

RUFFIAN, DELFI, CRAFTY and DRAGON are built-in to Openings Encyclopedia 2011 and do not require linking. All other programs you plan on using, must be linked to OPENING ENCYCLOPEDIA according to the following procedure. Naturally, the program you're linking to OPENING ENCYCLOPEDIA must already be installed on your computer.

The window shown in the next figure can be called up in five ways:

- By selecting **Engines | Engines setup**;
- By selecting **Tools | Options | Engines**;
- By selecting **Tools | Chess engines setup**;
- By clicking on the small arrow to the right of the ![icon] icon in the toolbar and selecting *Chess engines setup* from the drop-down menu;
- By pressing [Alt] [F11].
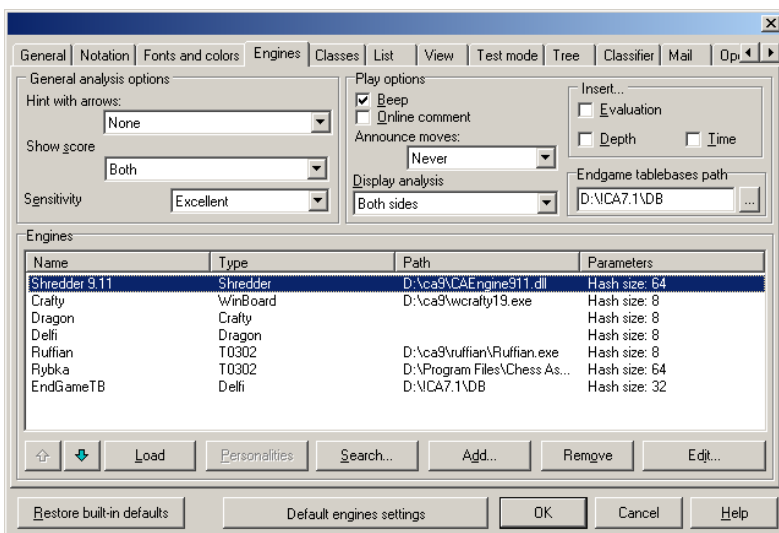
In the lower pane there is a list of the linked *Engines* with their *Name*, *Type*, *Path* and *Parameters*, and built-in engines are already present in the list. To link other programs, as example, Houdini from DVD Houdini Aquarium, click on *Add*, and the *Edit chess program parameters* window will appear.

Choose engine's *Type* from the drop-down list, specify the *Path* with the help of the button with three dots and enter the program name in the *Name* text box.

16. Opening Book for Aquarium

Rybka Aquarium Opening Book by Juri Dufek provides latest chess theory approved on millions of advanced chess games and matches of top human players. It includes over 18,000,000 positions.

Houdini Opening Book by Roger E. Zibell is a thoroughly researched and up to date collection of modern opening lines. It can be used as an opening book in chess engine matches, an opening guide in correspondence chess, as well as a source for general opening studies and tournament preparation by players at all levels.

The opening books are based on a careful selection of the most important theoretical games, both by human players and chess engines. All variations were carefully reviewed and moves were classified and color coded with green color (recommended moves), red (not recommended), blue (recommended for human tournaments but not computer tournaments) and black (neutral moves). If you want to build a successful opening repertoire, based on active but solid lines, this is the opening book for you!

Dear customer,

This program was produced by **CONVEKTA Ltd.** (UK)

Please contact us:

Sales: sales@convekta.com and sales@chessok.com

Support: info@chessok.com

Skype: ChessOK and ChessOK1

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http://www.ChessOK.com

New Training Courses

We recommend these new courses for *club players* and *intermediate* players:

1. Elementary Combinations

This excellent tactics course from beginners till club players. This program includes more than 5,000 new training exercises.

2. CT-ART 4.0

This excellent tactics course has been voted more than once by the chess experts as the best chess training program. CT-ART is an indispensable training tool for intermediate players. The new version sports a convenient user interface and adds 1,000 training exercises (**2,200 basic exercises** and **1,800 auxiliary exercises** altogether).

3. CT-ART. Mating Combinations

The most interesting positions can be viewed on the additional board and played against the built-in chess program. The course is prepared by the famous coach Victor Khenkin and includes **1200 instructive examples** on 14 themes, each of them illustrates the peculiarities of using certain pieces for mating combinations and **700 exercises** for you to solve. While solving, you are shown refutations of wrong moves as well as other hints to help.

4. Chess: From Beginner to Club Player

This teaching program is a kind of guide. It will introduce you to the rules and laws of chess and let you work your way of improvement from the level of Beginner to the one of Club Player. In the course **100 chess topics** are considered including rules of chess game; methods of playing in opening, middle game and ending; combinational techniques and basic elements of strategy. All in all, the course contains **500 teaching examples** and **700 exercises** useful for consolidation of acquired knowledge.

5. Total Chess Training IV

Total Chess Training IV consists of five magnificent educational programs and covers such aspects of chess as Opening, Combinations, Attack and Defense. This package includes nearly 50,000 positions to be solved with difficulty from 1300 to 2000 ELO.

http://www.ChessOK.com

ChessOK Playing Zone

Play Chess Online for Free

- Games with different time controls, including freestyle. In ChessOK Playing Zone you can filter your challenges according to playing strength or game time, or according to whether you want a friendly or a rated game.

- Free tournaments with prize money. There are regular one-player, team and mixed one-player+team tournaments. There are opportunities to create a team and to participate in team tournaments. Check out the Daily Prize Tournaments.

- Free online broadcasts of the super tournaments and the best matches.

- Online technical support and refereeing.

- Unique system Anti-Computer Control.

- Online game database and computer analysis.

- There's unlimited access to tournaments on Wednesday and Sunday. On other days of the week, tournaments are only available for paid members. 1 Year Membership = 12 Euro only. **www.ChessOK.com**