

XBoard



Copyright © 1991 Digital Equipment Corporation, Maynard, Massachusetts.
All Rights Reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Digital not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Digital disclaims all warranties with regard to this software, including all implied warranties of merchantability and fitness. In no event shall Digital be liable for any special, indirect or consequential damages or any damages whatsoever resulting from loss of use, data or profits, whether in an action of contract, negligence or other tortious action, arising out of or in connection with the use or performance of this software.

Enhancements copyright © 1992-2003,2004,2005,2006,2007,2008,2009 Free Software Foundation, Inc.

Published by the Free Software Foundation
59 Temple Place - Suite 330
Boston, MA 02111-1307 USA

Permission is granted to make and distribute verbatim copies of this manual provided the copyright notice and this permission notice are preserved on all copies.

Permission is granted to copy and distribute modified versions of this manual under the conditions for verbatim copying, provided also that the section entitled “GNU General Public License,” is included exactly as in the original, and provided that the entire resulting derived work is distributed under the terms of a permission notice identical to this one.

Permission is granted to copy and distribute translations of this manual into another language, under the above conditions for modified versions, except that the section entitled “GNU General Public License,” and this permission notice, may be included in translations approved by the Free Software Foundation instead of in the original English.

Introduction

XBoard is a graphical chessboard that can serve as a user interface to chess engines (such as GNU Chess), the Internet Chess Servers, electronic mail correspondence chess, or your own collection of saved games.

This manual documents version 4.4.0j of XBoard.

1 Major modes

XBoard always runs in one of four major modes. You select the major mode from the command line when you start up XBoard.

`xboard [options]`

As an interface to GNU Chess or another chess engine running on your machine, XBoard lets you play a game against the machine, set up arbitrary positions, force variations, watch a game between two chess engines, interactively analyze your stored games or set up and analyze arbitrary positions. (Note: Not all chess engines support analysis.)

`xboard -ics -icshost hostname [options]`

As Internet Chess Server (ICS) interface, XBoard lets you play against other ICS users, observe games they are playing, or review games that have recently finished. Most of the ICS "wild" chess variants are supported, including bug-house.

`xboard -ncp [options]`

XBoard can also be used simply as an electronic chessboard to play through games. It will read and write game files and allow you to play through variations manually. You can use it to browse games off the net or review games you have saved. These features are also available in the other modes.

`|pxboard` If you want to pipe games into XBoard, use the supplied shell script '`pxboard`'. For example, from the news reader '`xrn`', find a message with one or more games in it, click the Save button, and type '`|pxboard`' as the file name.

`email [options]`

As an interface to electronic mail correspondence chess, XBoard works with the email program. See Chapter 10 [CMail], page 45 below for instructions.

2 Menus, buttons, and keys

To move a piece, you can drag it with the left mouse button, or you can click the left mouse button once on the piece, then once more on the destination square. To drop a new piece on a square (when applicable), press the middle or the right mouse button over the square and select from the pop-up menu. In cases where you can drop either a white or black piece, use the middle button (or shift+right) for white and the right button (or shift+middle) for black. When you are playing a bughouse game on an Internet Chess Server, a list of the off-board pieces that each player has available is shown in the window title after the player's name; in addition, the piece menus show the number of pieces available of each type. From version 4.3.14 on, it is also possible in crazyhouse, bughouse or shogi to drag and drop pieces to the board from the holdings squares displayed next to the board.

All other XBoard commands are available from the menu bar. The most frequently used commands also have shortcut keys or on-screen buttons.

When XBoard is iconized, its graphical icon is a white knight if it is White's turn to move, a black knight if it is Black's turn. See Iconize in Section 2.7 [Keys], page 16 below if you have problems getting this feature to work.

2.1 File Menu

New Game

Resets XBoard and the chess engine to the beginning of a new chess game. The `r` key is a keyboard equivalent. In Internet Chess Server mode, clears the current state of XBoard, then resynchronizes with the ICS by sending a refresh command. If you want to stop playing, observing, or examining an ICS game, use an appropriate command from the Action menu, not 'New Game'. See Section 2.3 [Action Menu], page 9.

New Shuffle Game

Similar to 'New Game', but allows you to specify a particular initial position (according to a standardized numbering system) in chess variants which use randomized opening positions (e.g. Chess960). The selected opening position will persistently be chosen on any following New Game command until you use this menu to select another. Selecting position number -1 will produce a newly randomized position on any new game. Using this menu item in variants that normally do not shuffle their opening position does cause these variants to become shuffle variants until you use the 'New Shuffle Game' menu to explicitly switch the randomization off, or select a new variant.

New Variant

Allows you to select a new chess variant in non-ICS mode. (In ICS play, the ICS is responsible for deciding which variant will be played, and XBoard adapts automatically.) If you play with an engine, the engine must be able to play the selected variant, or the command will be ignored. XBoard supports all major variants, such as xiangqi, shogi, chess, chess960, Capablanca Chess, shatranj, crazyhouse, bughouse.

Load Game

Plays a game from a record file. The `g` key is a keyboard equivalent. A pop-up dialog prompts you for the file name. If the file contains more than one game, a second pop-up dialog displays a list of games (with information drawn from their PGN tags, if any), and you can select the one you want. Alternatively, you can load the N th game in the file directly, by typing the number N after the file name, separated by a space.

The game file parser will accept PGN (portable game notation), or in fact almost any file that contains moves in algebraic notation. Notation of the form ‘`P@f7`’ is accepted for piece-drops in bughouse games; this is a nonstandard extension to PGN. If the file includes a PGN position (FEN tag), or an old-style XBoard position diagram bracketed by ‘`[--`’ and ‘`--]`’ before the first move, the game starts from that position. Text enclosed in parentheses, square brackets, or curly braces is assumed to be commentary and is displayed in a pop-up window. Any other text in the file is ignored. PGN variations (enclosed in parentheses) are treated as comments; XBoard is not able to walk variation trees. The nonstandard PGN tag `[Variant "varname"]` functions similarly to the `-variant` command-line option (see below), allowing games in certain chess variants to be loaded. There is also a heuristic to recognize chess variants from the Event tag, by looking for the strings that the Internet Chess Servers put there when saving variant ("wild") games.

Load Next Game

Loads the next game from the last game record file you loaded. The shifted N key is a keyboard equivalent.

Load Previous Game

Loads the previous game from the last game record file you loaded. The shifted P key is a keyboard equivalent. Not available if the last game was loaded from a pipe.

Reload Same Game

Reloads the last game you loaded. Not available if the last game was loaded from a pipe.

Save Game

Appends a record of the current game to a file. A pop-up dialog prompts you for the file name. If the game did not begin with the standard starting position, the game file includes the starting position used. Games are saved in the PGN (portable game notation) format, unless the `oldSaveStyle` option is true, in which case they are saved in an older format that is specific to XBoard. Both formats are human-readable, and both can be read back by the ‘Load Game’ command. Notation of the form ‘`P@f7`’ is accepted for piece-drops in bughouse games; this is a nonstandard extension to PGN.

Copy Game

Copies a record of the current game to an internal clipboard in PGN format and sets the X selection to the game text. The game can be pasted to another application (such as a text editor or another copy of XBoard) using that application’s paste command. In many X applications, such as `xterm` and `emacs`,

the middle mouse button can be used for pasting; in XBoard, you must use the Paste Game command.

Paste Game

Interprets the current X selection as a game record and loads it, as with Load Game.

Load Position

Sets up a position from a position file. A pop-up dialog prompts you for the file name. If the file contains more than one saved position, and you want to load the Nth one, type the number N after the file name, separated by a space. Position files must be in FEN (Forsythe-Edwards notation), or in the format that the Save Position command writes when `oldSaveStyle` is turned on.

Load Next Position

Loads the next position from the last position file you loaded.

Load Previous Position

Loads the previous position from the last position file you loaded. Not available if the last position was loaded from a pipe.

Reload Same Position

Reloads the last position you loaded. Not available if the last position was loaded from a pipe.

Save Position

Appends a diagram of the current position to a file. A pop-up dialog prompts you for the file name. Positions are saved in FEN (Forsythe-Edwards notation) format unless the `oldSaveStyle` option is true, in which case they are saved in an older, human-readable format that is specific to XBoard. Both formats can be read back by the ‘Load Position’ command.

Copy Position

Copies the current position to an internal clipboard in FEN format and sets the X selection to the position text. The position can be pasted to another application (such as a text editor or another copy of XBoard) using that application’s paste command. In many X applications, such as `xterm` and `emacs`, the middle mouse button can be used for pasting; in XBoard, you must use the Paste Position command.

Paste Position

Interprets the current X selection as a FEN position and loads it, as with Load Position.

Mail Move

Reload CMail Message

See Chapter 10 [CMail], page 45.

Exit

Exits from XBoard. The shifted `Q` key is a keyboard equivalent.

2.2 Mode Menu

Machine White

Tells the chess engine to play White.

Machine Black

Tells the chess engine to play Black.

Two Machines

Plays a game between two chess engines.

Analysis Mode

XBoard tells the chess engine to start analyzing the current game/position and shows you the analysis as you move pieces around. Note: Some chess engines do not support Analysis mode.

To set up a position to analyze, you do the following:

1. Select Edit Position from the Mode Menu
2. Set up the position. Use the middle and right buttons to bring up the white and black piece menus.
3. When you are finished, click on either the Black or White clock to tell XBoard which side moves first.
4. Select Analysis Mode from the Mode Menu to start the analysis.

The analysis function can also be used when observing games on an ICS with an engine loaded (zippy mode); the engine then will analyse the positions as they occur in the observed game.

Analyze File

This option lets you load a game from a file (PGN, XBoard format, etc.) and analyze it. When you select this menu item, a pop-up window appears and asks for a file name to load. If the file contains multiple games, another pop up appears that lets you select which game you wish to analyze. After a game is loaded, use the XBoard arrow buttons to step forwards/backwards through the game and watch the analysis. Note: Some chess engines do not support Analysis mode.

ICS Client This is the normal mode when XBoard is connected to a chess server. If you have moved into Edit Game or Edit Position mode, you can select this option to get out.

To use xboard in ICS mode, run it in the foreground with the `-ics` option, and use the terminal you started it from to type commands and receive text responses from the chess server. See Chapter 4 [Chess Servers], page 37 below for more information.

XBoard activates some special position/game editing features when you use the `examine` or `bsetup` commands on ICS and you have 'ICS Client' selected on the Mode menu. First, you can issue the ICS position-editing commands with the mouse. Move pieces by dragging with mouse button 1. To drop a new piece on a square, press mouse button 2 or 3 over the square. This brings up a menu of white pieces (button 2) or black pieces (button 3). Additional menu choices let you empty the square or clear the board. Click on the White or Black clock to set the side to play. You cannot set the side to play or drag pieces to arbitrary squares while examining on ICC, but you can do so in `bsetup` mode on FICS. In addition, the menu commands 'Forward', 'Backward', 'Pause', and 'Stop Examining' have special functions in this mode; see below.

Edit Game

Allows you to make moves for both Black and White, and to change moves after backing up with the **Backward** command. The clocks do not run.

In chess engine mode, the chess engine continues to check moves for legality but does not participate in the game. You can bring the chess engine into the game by selecting **Machine White**, **Machine Black**, or **Two Machines**.

In ICS mode, the moves are not sent to the ICS: **Edit Game** takes XBoard out of ICS Client mode and lets you edit games locally. If you want to edit games on ICS in a way that other ICS users can see, use the ICS *examine* command or start an ICS match against yourself.

Edit Position

Lets you set up an arbitrary board position. Use mouse button 1 to drag pieces to new squares, or to delete a piece by dragging it off the board or dragging an empty square on top of it. To drop a new piece on a square, press mouse button 2 or 3 over the square. This brings up a menu of white pieces (button 2) or black pieces (button 3). Additional menu choices let you empty the square or clear the board. You can set the side to play next by clicking on the word White or Black at the top of the screen. Selecting **Edit Position** causes XBoard to discard all remembered moves in the current game.

In ICS mode, changes made to the position by **Edit Position** are not sent to the ICS: **Edit Position** takes XBoard out of **ICS Client** mode and lets you edit positions locally. If you want to edit positions on ICS in a way that other ICS users can see, use the ICS *examine* command, or start an ICS match against yourself. (See also the ICS Client topic above.)

Training Training mode lets you interactively guess the moves of a game for one of the players. You guess the next move of the game by playing the move on the board. If the move played matches the next move of the game, the move is accepted and the opponent's response is auto-played. If the move played is incorrect, an error message is displayed. You can select this mode only while loading a game (that is, after selecting **Load Game** from the File menu). While XBoard is in **Training** mode, the navigation buttons are disabled.

Show Game List

Shows or hides the list of games generated by the last **Load Game** command.

Show Move History

Shows or hides a list of moves of the current game. This list allows you to move the display to any earlier position in the game by clicking on the corresponding move.

Show Engine Output

Shows or hides a window in which the thinking output of any loaded engines is displayed.

Edit Tags Lets you edit the PGN (portable game notation) tags for the current game. After editing, the tags must still conform to the PGN tag syntax:

```
<tag-section> ::= <tag-pair> <tag-section>
```

```

                                <empty>
<tag-pair> ::= [ <tag-name> <tag-value> ]
<tag-name> ::= <identifier>
<tag-value> ::= <string>

```

See the PGN Standard for full details. Here is an example:

```

[Event "Portoroz Interzonal"]
[Site "Portoroz, Yugoslavia"]
[Date "1958.08.16"]
[Round "8"]
[White "Robert J. Fischer"]
[Black "Bent Larsen"]
[Result "1-0"]

```

Any characters that do not match this syntax are silently ignored. Note that the PGN standard requires all games to have at least the seven tags shown above. Any that you omit will be filled in by XBoard with ‘?’ (unknown value), or ‘-’ (inapplicable value).

Edit Comment

Adds or modifies a comment on the current position. Comments are saved by ‘Save Game’ and are displayed by ‘Load Game’, ‘Forward’, and ‘Backward’.

ICS Input Box

If this option is set in ICS mode, XBoard creates an extra window that you can use for typing in ICS commands. The input box is especially useful if you want to type in something long or do some editing on your input, because output from ICS doesn’t get mixed in with your typing as it would in the main terminal window.

Pause

Pauses updates to the board, and if you are playing against a chess engine, also pauses your clock. To continue, select ‘Pause’ again, and the display will automatically update to the latest position. The ‘P’ button and keyboard *p* key are equivalents.

If you select Pause when you are playing against a chess engine and it is not your move, the chess engine’s clock will continue to run and it will eventually make a move, at which point both clocks will stop. Since board updates are paused, however, you will not see the move until you exit from Pause mode (or select Forward). This behavior is meant to simulate adjournment with a sealed move.

If you select Pause while you are observing or examining a game on a chess server, you can step backward and forward in the current history of the examined game without affecting the other observers and examiners, and without having your display jump forward to the latest position each time a move is made. Select Pause again to reconnect yourself to the current state of the game on ICS.

If you select ‘Pause’ while you are loading a game, the game stops loading. You can load more moves manually by selecting ‘Forward’, or resume automatic loading by selecting ‘Pause’ again.

2.3 Action Menu

- Accept** Accepts a pending match offer. If there is more than one offer pending, you will have to type in a more specific command instead of using this menu choice.
- Decline** Declines a pending offer (match, draw, adjourn, etc.). If there is more than one offer pending, you will have to type in a more specific command instead of using this menu choice.
- Call Flag** Calls your opponent's flag, claiming a win on time, or claiming a draw if you are both out of time. You can also call your opponent's flag by clicking on his clock or by pressing the keyboard `t` key.
- Draw** Offers a draw to your opponent, accepts a pending draw offer from your opponent, or claims a draw by repetition or the 50-move rule, as appropriate. The `d` key is a keyboard equivalent.
- Adjourn** Asks your opponent to agree to adjourning the current game, or agrees to a pending adjournment offer from your opponent.
- Abort** Asks your opponent to agree to aborting the current game, or agrees to a pending abort offer from your opponent. An aborted game ends immediately without affecting either player's rating.
- Resign** Resigns the game to your opponent. The shifted `R` key is a keyboard equivalent.
- Stop Observing**
Ends your participation in observing a game, by issuing the ICS `observe` command with no arguments. ICS mode only.
- Stop Examining**
Ends your participation in examining a game, by issuing the ICS `unexamine` command. ICS mode only.
- Adjudicate to White**
Adjudicate to Black
Adjudicate Draw
Terminate an ongoing game in Two-Machines mode (including match mode), with as result a win for white, for black, or a draw, respectively. The PGN file of the game will accompany the result string by the comment "user adjudication".

2.4 Step Menu

- Backward** Steps backward through a series of remembered moves. The '`[<]`' button and the `b` key are equivalents, as is turning the mouse wheel towards you. In addition, pressing the Control key steps back one move, and releasing it steps forward again.
- In most modes, '**Backward**' only lets you look back at old positions; it does not retract moves. This is the case if you are playing against a chess engine, playing or observing a game on an ICS, or loading a game. If you select '**Backward**' in any of these situations, you will not be allowed to make a different move. Use '**Retract Move**' or '**Edit Game**' if you want to change past moves.

If you are examining an ICS game, the behavior of ‘**Backward**’ depends on whether XBoard is in Pause mode. If Pause mode is off, ‘**Backward**’ issues the ICS backward command, which backs up everyone’s view of the game and allows you to make a different move. If Pause mode is on, ‘**Backward**’ only backs up your local view.

Forward Steps forward through a series of remembered moves (undoing the effect of ‘**Backward**’) or forward through a game file. The ‘[>]’ button and the *f* key are equivalents, as is turning the mouse wheel away from you.

If you are examining an ICS game, the behavior of Forward depends on whether XBoard is in Pause mode. If Pause mode is off, ‘**Forward**’ issues the ICS forward command, which moves everyone’s view of the game forward along the current line. If Pause mode is on, ‘**Forward**’ only moves your local view forward, and it will not go past the position that the game was in when you paused.

Back to Start

Jumps backward to the first remembered position in the game. The ‘[<<]’ button and the shifted *B* key are equivalents.

In most modes, Back to Start only lets you look back at old positions; it does not retract moves. This is the case if you are playing against a local chess engine, playing or observing a game on a chess server, or loading a game. If you select ‘**Back to Start**’ in any of these situations, you will not be allowed to make different moves. Use ‘**Retract Move**’ or ‘**Edit Game**’ if you want to change past moves; or use Reset to start a new game.

If you are examining an ICS game, the behavior of ‘**Back to Start**’ depends on whether XBoard is in Pause mode. If Pause mode is off, ‘**Back to Start**’ issues the ICS ‘**backward 999999**’ command, which backs up everyone’s view of the game to the start and allows you to make different moves. If Pause mode is on, ‘**Back to Start**’ only backs up your local view.

Forward to End

Jumps forward to the last remembered position in the game. The ‘[>>]’ button and the shifted *F* key are equivalents.

If you are examining an ICS game, the behavior of ‘**Forward to End**’ depends on whether XBoard is in Pause mode. If Pause mode is off, ‘**Forward to End**’ issues the ICS ‘**forward 999999**’ command, which moves everyone’s view of the game forward to the end of the current line. If Pause mode is on, ‘**Forward to End**’ only moves your local view forward, and it will not go past the position that the game was in when you paused.

Revert If you are examining an ICS game and Pause mode is off, issues the ICS command ‘**revert**’.

Truncate Game

Discards all remembered moves of the game beyond the current position. Puts XBoard into ‘**Edit Game**’ mode if it was not there already.

Move Now Forces the chess engine to move immediately. Chess engine mode only.

Retract Move

Retracts your last move. In chess engine mode, you can do this only after the chess engine has replied to your move; if the chess engine is still thinking, use ‘Move Now’ first. In ICS mode, ‘Retract Move’ issues the command ‘takeback 1’ or ‘takeback 2’ depending on whether it is your opponent’s move or yours.

2.5 Options Menu

Flip View Inverts your view of the chess board for the duration of the current game. Starting a new game returns the board to normal. The *v* key is a keyboard equivalent.

Adjudications

Pops up a sub-menu where you can enable or disable various adjudications that XBoard can perform in engine-engine games. You can instruct XBoard to detect and terminate the game on checkmate or stalemate, even if the engines would not do so, to verify engine result claims (forfeiting engines that make false claims), rather than naively following the engine, to declare draw on positions which can never be won for lack of mating material, (e.g. KBK), or which are impossible to win unless the opponent seeks its own demise (e.g. KBKN). For these adjudications to work, ‘Test Legality’ should be switched on. It is also possible to instruct XBoard to enforce a 50-move or 3-fold-repeat rule and automatically declare draw (after a user-adjustable number of moves or repeats) even if the engines are prepared to go on. It is also possible to have XBoard declare draw on games that seem to drag on forever, or adjudicate a loss if both engines agree (for 3 consecutive moves) that one of them is behind more than a user-adjustable score threshold. For the latter adjudication to work, XBoard should be able to properly understand the engine’s scores. To facilitate the latter, you can inform xboard here if the engines report scores from the viewpoint of white, or from that of their own color.

Engine Settings

Pops up a sub-menu where you can set some engine parameters common to most engines, such as hash-table size, tablebase cache size, maximum number of processors that SMP engines can use, and where to find the Polyglot adapter needed to run UCI engines under XBoard. The feature that allows setting of these parameters on engines is new since XBoard 4.3.15, so not many WinBoard engines respond to it yet, but UCI engines should. It is also possible to specify a GUI opening book here, i.e. an opening book that XBoard consults for any position a playing engine gets in. It then forces the engine to play the book move, rather than to think up its own, if that position is found in the book. The book can be switched on and off independently for either engine.

Time Control

Pops up a sub-menu where you can set the time-control parameters interactively. Allows you to select classical or incremental time controls, set the moves per session, session duration, and time increment. Also allows specification of time-odds factors for one or both engines. If an engine is given a time-odds

factor N, all time quota it gets, be it at the beginning of a session or through the time increment or fixed time per move, will be divided by N.

Always Queen

If this option is off, XBoard brings up a dialog box whenever you move a pawn to the last rank, asking what piece you want to promote it to. If the option is true, your pawns are always promoted to queens. Your opponent can still under-promote.

Animate Dragging

If Animate Dragging is on, while you are dragging a piece with the mouse, an image of the piece follows the mouse cursor. If Animate Dragging is off, there is no visual feedback while you are dragging a piece, but if Animate Moving is on, the move will be animated when it is complete.

Animate Moving

If Animate Moving is on, all piece moves are animated. An image of the piece is shown moving from the old square to the new square when the move is completed (unless the move was already animated by Animate Dragging). If Animate Moving is off, a moved piece instantly disappears from its old square and reappears on its new square when the move is complete.

Auto Comment

If this option is on, any remarks made on ICS while you are observing or playing a game are recorded as a comment on the current move. This includes remarks made with the ICS commands *say*, *tell*, *whisper*, and *kibitz*. Limitation: remarks that you type yourself are not recognized; XBoard scans only the output from ICS, not the input you type to it.

Auto Flag If this option is on and one player runs out of time before the other, XBoard will automatically call his flag, claiming a win on time. In ICS mode, Auto Flag will only call your opponent's flag, not yours, and the ICS may award you a draw instead of a win if you have insufficient mating material. In local chess engine mode, XBoard may call either player's flag and will not take material into account.

Auto Flip View

If the Auto Flip View option is on when you start a game, the board will be automatically oriented so that your pawns move from the bottom of the window towards the top.

Auto Observe

If this option is on and you add a player to your `gnotify` list on ICS, XBoard will automatically observe all of that player's games, unless you are doing something else (such as observing or playing a game of your own) when one starts. The games are displayed from the point of view of the player on your `gnotify` list; that is, his pawns move from the bottom of the window towards the top. Exceptions: If both players in a game are on your `gnotify` list, if your ICS `highlight` variable is set to 0, or if the ICS you are using does not properly support observing from Black's point of view, you will see the game from White's point of view.

Auto Raise Board

If this option is on, whenever a new game begins, the chessboard window is deiconized (if necessary) and raised to the top of the stack of windows.

Auto Save If this option is true, at the end of every game XBoard prompts you for a file name and appends a record of the game to the file you specify. Disabled if the `saveGameFile` command-line option is set, as in that case all games are saved to the specified file. See Section 3.4 [Load and Save options], page 27.

Blindfold If this option is on, XBoard displays the board as usual but does not display pieces or move highlights. You can still move in the usual way (with the mouse or by typing moves in ICS mode), even though the pieces are invisible.

Flash Moves

If this option is on, whenever a move is completed, the moved piece flashes. The number of times to flash is set by the `flashCount` command-line option; it defaults to 3 if Flash Moves is first turned on from the menu.

If you are playing a game on an ICS, the board is always oriented at the start of the game so that your pawns move from the bottom of the window towards the top. Otherwise, the starting orientation is determined by the `flipView` command line option; if it is false (the default), White's pawns move from bottom to top at the start of each game; if it is true, Black's pawns move from bottom to top. See Section 3.5 [User interface options], page 29.

Get Move List

If this option is on, whenever XBoard receives the first board of a new ICS game (or a different game from the one it is currently displaying), it retrieves the list of past moves from the ICS. You can then review the moves with the 'Forward' and 'Backward' commands or save them with 'Save Game'. You might want to turn off this option if you are observing several blitz games at once, to keep from wasting time and network bandwidth fetching the move lists over and over. When you turn this option on from the menu, XBoard immediately fetches the move list of the current game (if any).

Highlight Last Move

If Highlight Last Move is on, after a move is made, the starting and ending squares remain highlighted. In addition, after you use Backward or Back to Start, the starting and ending squares of the last move to be unmade are highlighted.

Move Sound

If this option is on, XBoard alerts you by playing a sound after each of your opponent's moves (or after every move if you are observing a game on the Internet Chess Server). The sound is not played after moves you make or moves read from a saved game file. By default, the sound is the terminal bell, but on some systems you can change it to a sound file using the `soundMove` option; see below.

If you turn on this option when using XBoard with the Internet Chess Server, you will probably want to give the `set bell 0` command to the ICS, since

otherwise the ICS will ring the terminal bell after every move (not just yours). (The `.icsrc` file is a good place for this; see Section 3.3 [ICS options], page 22.)

ICS Alarm

When this option is on, an alarm sound is played when your clock counts down to the `icsAlarmTime` (by default, 5 seconds) in an ICS game. For games with time controls that include an increment, the alarm will sound each time the clock counts down to the `icsAlarmTime`. By default, the alarm sound is the terminal bell, but on some systems you can change it to a sound file using the `soundIcsAlarm` option; see below.

Old Save Style

If this option is off, XBoard saves games in PGN (portable game notation) and positions in FEN (Forsythe-Edwards notation). If the option is on, a save style that is compatible with older versions of XBoard is used instead. The old position style is more human-readable than FEN; the old game style has no particular advantages.

Periodic Updates

If this option is off (or if you are using a chess engine that does not support periodic updates), the analysis window will only be updated when the analysis changes. If this option is on, the Analysis Window will be updated every two seconds.

Ponder Next Move

If this option is off, the chess engine will think only when it is on move. If the option is on, the engine will also think while waiting for you to make your move.

Popup Exit Message

If this option is on, when XBoard wants to display a message just before exiting, it brings up a modal dialog box and waits for you to click OK before exiting. If the option is off, XBoard prints the message to standard error (the terminal) and exits immediately.

Popup Move Errors

If this option is off, when you make an error in moving (such as attempting an illegal move or moving the wrong color piece), the error message is displayed in the message area. If the option is on, move errors are displayed in small pop-up windows like other errors. You can dismiss an error pop-up either by clicking its OK button or by clicking anywhere on the board, including down-clicking to start a move.

Premove

If this option is on while playing a game on an ICS, you can register your next planned move before it is your turn. Move the piece with the mouse in the ordinary way, and the starting and ending squares will be highlighted with a special color (red by default). When it is your turn, if your registered move is legal, XBoard will send it to ICS immediately; if not, it will be ignored and you can make a different move. If you change your mind about your premove, either make a different move, or double-click on any piece to cancel the move entirely.

Quiet Play

If this option is on, XBoard will automatically issue an ICS `set shout 0` command whenever you start a game and a `set shout 1` command whenever you finish one. Thus, you will not be distracted by shouts from other ICS users while playing.

Show Coords

If this option is on, XBoard displays algebraic coordinates along the board's left and bottom edges.

Hide Thinking

If this option is off, the chess engine's notion of the score and best line of play from the current position is displayed as it is thinking. The score indicates how many pawns ahead (or if negative, behind) the chess engine thinks it is. In matches between two machines, the score is prefixed by 'W' or 'B' to indicate whether it is showing White's thinking or Black's, and only the thinking of the engine that is on move is shown.

Test Legality

If this option is on, XBoard tests whether the moves you try to make with the mouse are legal and refuses to let you make an illegal move. Moves loaded from a file with 'Load Game' are also checked. If the option is off, all moves are accepted, but if a local chess engine or the ICS is active, they will still reject illegal moves. Turning off this option is useful if you are playing a chess variant with rules that XBoard does not understand. (Bughouse, suicide, and wild variants where the king may castle after starting on the d file are generally supported with Test Legality on.)

2.6 Help Menu

Info XBoard

Displays the XBoard documentation in info format. For this feature to work, you must have the GNU info program installed on your system, and the file 'xboard.info' must either be present in the current working directory, or have been installed by the 'make install' command when you built XBoard.

Man XBoard

Displays the XBoard documentation in man page format. For this feature to work, the file 'xboard.6' must have been installed by the 'make install' command when you built XBoard, and the directory it was placed in must be on the search path for your system's 'man' command.

Hint

Displays a move hint from the chess engine.

Book

Displays a list of possible moves from the chess engine's opening book. The exact format depends on what chess engine you are using. With GNU Chess 4, the first column gives moves, the second column gives one possible response for each move, and the third column shows the number of lines in the book that include the move from the first column. If you select this option and nothing happens, the chess engine is out of its book or does not support this feature.

About XBoard

Shows the current XBoard version number.

2.7 Other Shortcut Keys

Iconize Pressing the *i* or *c* key iconizes XBoard. The graphical icon displays a white knight if it is White's move, or a black knight if it is Black's move. If your X window manager displays only text icons, not graphical ones, check its documentation; there is probably a way to enable graphical icons. If you get black and white reversed, we would like to hear about it; see Chapter 8 [Problems], page 43 below for instructions on how to report this problem.

You can add or remove shortcut keys using the X resources `form.translations`. Here is an example of what would go in your `‘.Xresources’` file:

```
XBoard*form.translations: \
  Shift<Key>?: AboutGameProc() \n\
  <Key>y: AcceptProc() \n\
  <Key>n: DeclineProc() \n\
  <Key>i: NothingProc()
```

Binding a key to `NothingProc` makes it do nothing, thus removing it as a shortcut key. The XBoard commands that can be bound to keys are:

```
AbortProc, AboutGameProc, AboutProc, AcceptProc, AdjoinProc,
AlwaysQueenProc, AnalysisModeProc, AnalyzeFileProc,
AnimateDraggingProc, AnimateMovingProc, AutobsProc, AutoflagProc,
AutoflipProc, AutoraiseProc, AutosaveProc, BackwardProc,
BlindfoldProc, BookProc, CallFlagProc, CopyGameProc, CopyPositionProc,
DebugProc, DeclineProc, DrawProc, EditCommentProc, EditGameProc,
EditPositionProc, EditTagsProc, EnterKeyProc, FlashMovesProc,
FlipViewProc, ForwardProc, GetMoveListProc, HighlightLastMoveProc,
HintProc, Iconify, IcsAlarmProc, IcsClientProc, IcsInputBoxProc,
InfoProc, LoadGameProc, LoadNextGameProc, LoadNextPositionProc,
LoadPositionProc, LoadPrevGameProc, LoadPrevPositionProc,
LoadSelectedProc, MachineBlackProc, MachineWhiteProc, MailMoveProc,
ManProc, MoveNowProc, MoveSoundProc, NothingProc, OldSaveStyleProc,
PasteGameProc, PastePositionProc, PauseProc, PeriodicUpdatesProc,
PonderNextMoveProc, PopupExitMessageProc, PopupMoveErrorsProc,
PremoveProc, QuietPlayProc, QuitProc, ReloadCmailMsgProc,
ReloadGameProc, ReloadPositionProc, RematchProc, ResetProc,
ResignProc, RetractMoveProc, RevertProc, SaveGameProc,
SavePositionProc, ShowCoordsProc, ShowGameListProc, ShowThinkingProc,
StopExaminingProc, StopObservingProc, TestLegalityProc, ToEndProc,
ToStartProc, TrainingProc, TruncateGameProc, and TwoMachinesProc.
```

3 Options

This section documents the command-line options to XBoard. You can set these options in two ways: by typing them on the shell command line you use to start XBoard, or by setting them as X resources (typically in your `.Xresources` file). Many of the options cannot be changed while XBoard is running; others set the initial state of items that can be changed with the Chapter 3 [Options], page 17 menu.

Most of the options have both a long name and a short name. To turn a boolean option on or off from the command line, either give its long name followed by the value `true` or `false` (`-longOptionName true`), or give just the short name to turn the option on (`-opt`), or the short name preceded by `x` to turn the option off (`-xopt`). For options that take strings or numbers as values, you can use the long or short option names interchangeably.

Each option corresponds to an X resource with the same name, so if you like, you can set options in your `.Xresources` file or in a file named `XBoard` in your home directory. For options that have two names, the longer one is the name of the corresponding X resource; the short name is not recognized. To turn a boolean option on or off as an X resource, give its long name followed by the value `true` or `false` (`XBoard*longOptionName: true`).

3.1 Chess Engine Options

`-tc` or `-timeControl` minutes[:seconds]

Each player begins with his clock set to the `timeControl` period. Default: 5 minutes. The additional options `movesPerSession` and `timeIncrement` are mutually exclusive.

`-mps` or `-movesPerSession` moves

When both players have made `movesPerSession` moves, a new `timeControl` period is added to both clocks. Default: 40 moves.

`-inc` or `-timeIncrement` seconds

If this option is specified, `movesPerSession` is ignored. Instead, after each player's move, `timeIncrement` seconds are added to his clock. Use `-inc 0` if you want to require the entire game to be played in one `timeControl` period, with no increment. Default: -1, which specifies `movesPerSession` mode.

`-clock/-xclock` or `-clockMode` true/false

Determines whether or not to display the chess clocks. If `clockMode` is false, the clocks are not shown, but the side that is to play next is still highlighted. Also, unless `searchTime` is set, the chess engine still keeps track of the clock time and uses it to determine how fast to make its moves.

`-st` or `-searchTime` minutes[:seconds]

Tells the chess engine to spend at most the given amount of time searching for each of its moves. Without this option, the chess engine chooses its search time based on the number of moves and amount of time remaining until the next time control. Setting this option also sets `clockMode` to false.

`-depth` or `-searchDepth` number

Tells the chess engine to look ahead at most the given number of moves when searching for a move to make. Without this option, the chess engine chooses

its search depth based on the number of moves and amount of time remaining until the next time control. With the option, the engine will cut off its search early if it reaches the specified depth.

-firstNPS number

-secondNPS number

Tells the chess engine to use an internal time standard based on its node count, rather than wall-clock time, to make its timing decisions. The time in virtual seconds should be obtained by dividing the node count through the given number, like the number was a rate in nodes per second. Xboard will manage the clocks in accordance with this, relying on the number of nodes reported by the engine in its thinking output. If the given number equals zero, it can obviously not be used to convert nodes to seconds, and the time reported by the engine is used to decrement the XBoard clock in stead. The engine is supposed to report in CPU time it uses, rather than wall-clock time, in this mode. This option can provide fairer conditions for engine-engine matches on heavily loaded machines, or with very fast games (where the wall clock is too inaccurate). `showThinking` must be on for this option to work. Default: -1 (off). Not many engines might support this yet!

-firstTimeOdds factor

-secondTimeOdds factor

Reduces the time given to the mentioned engine by the given factor. If pondering is off, the effect is indistinguishable from what would happen if the engine was running on an n-times slower machine. Default: 1.

-timeOddsMode mode

This option determines how the case is handled where both engines have a time-odds handicap. If mode=1, the engine that gets the most time will always get the nominal time, as specified by the time-control options, and its opponent's time is renormalized accordingly. If mode=0, both play with reduced time. Default: 0.

-hideThinkingFromHuman true/false

Controls the Hide Thinking option. See Section 2.5 [Options Menu], page 11. Default: true. (Replaces the Show-Thinking option of older xboard versions.)

-thinking/-xthinking or -showThinking true/false

Forces the engine to send thinking output to xboard. Used to be the only way to control if thinking output was displayed in older xboard versions, but as the thinking output in xboard 4.3 is also used for several other purposes (adjudication, storing in PGN file) the display of it is now controlled by the new option Hide Thinking. See Section 2.5 [Options Menu], page 11. Default: false. (But if xboard needs the thinking output for some purpose, it makes the engine send it despite the setting of this option.)

-ponder/-xponder or -ponderNextMove true/false

Sets the Ponder Next Move menu option. See Section 2.5 [Options Menu], page 11. Default: true.

- smpCores** number
Specifies the maximum number of CPUs an SMP engine is allowed to use. Only works for engines that support the WinBoard-protocol cores feature.
- mg** or **-matchGames** n
Automatically runs an n-game match between two chess engines, with alternating colors. If the `loadGameFile` or `loadPositionFile` option is set, XBoard starts each game with the given opening moves or the given position; otherwise, the games start with the standard initial chess position. If the `saveGameFile` option is set, a move record for the match is appended to the specified file. If the `savePositionFile` option is set, the final position reached in each game of the match is appended to the specified file. When the match is over, XBoard displays the match score and exits. Default: 0 (do not run a match).
- mm/-xmm** or **-matchMode** true/false
Setting `matchMode` to true is equivalent to setting `matchGames` to 1.
- sameColorGames** n
Automatically runs an n-game match between two chess engines, without alternating colors. Otherwise the same applies as for the `-matchGames` option, over which it takes precedence if both are specified. (See there.) Default: 0 (do not run a match).
- fcp** or **-firstChessProgram** program
Name of first chess engine. Default: `'Fairy-Max'`.
- scp** or **-secondChessProgram** program
Name of second chess engine, if needed. A second chess engine is started only in Two Machines (match) mode. Default: `'Fairy-Max'`.
- fb/-xfb** or **-firstPlaysBlack** true/false
In games between two chess engines, `firstChessProgram` normally plays white. If this option is true, `firstChessProgram` plays black. In a multi-game match, this option affects the colors only for the first game; they still alternate in subsequent games.
- fh** or **-firstHost** host
-sh or **-secondHost** host
Hosts on which the chess engines are to run. The default for each is `'localhost'`. If you specify another host, XBoard uses `'rsh'` to run the chess engine there. (You can substitute a different remote shell program for `rsh` using the `remoteShell` option described below.)
- fd** or **-firstDirectory** dir
-sd or **-secondDirectory** dir
Working directories in which the chess engines are to be run. The default is "", which means to run the chess engine in the same working directory as XBoard itself. (See the `CHESSDIR` environment variable.) This option is effective only when the chess engine is being run on the local host; it does not work if the engine is run remotely using the `-fh` or `-sh` option.

`-initString` string

`-secondInitString` string

The string that is sent to initialize each chess engine for a new game. Default:

```
new
random
```

Setting this option from the command line is tricky, because you must type in real newline characters, including one at the very end. In most shells you can do this by entering a `\` character followed by a newline. It is easier to set the option from your `.Xresources` file; in that case you can include the character sequence `\n` in the string, and it will be converted to a newline.

If you change this option, don't remove the `new` command; it is required by all chess engines to start a new game.

You can remove the `random` command if you like; including it causes GNU Chess 4 to randomize its move selection slightly so that it doesn't play the same moves in every game. Even without `random`, GNU Chess 4 randomizes its choice of moves from its opening book. Many other chess engines ignore this command entirely and always (or never) randomize.

You can also try adding other commands to the `initString`; see the documentation of the chess engine you are using for details.

`-firstComputerString` string

`-secondComputerString` string

The string that is sent to the chess engine if its opponent is another computer chess engine. The default is `computer\n`. Probably the only useful alternative is the empty string (`'`), which keeps the engine from knowing that it is playing another computer.

`-reuse/-xreuse` or `-reuseFirst` true/false

`-reuse2/-xreuse2` or `-reuseSecond` true/false

If the option is false, XBoard kills off the chess engine after every game and starts it again for the next game. If the option is true (the default), XBoard starts the chess engine only once and uses it repeatedly to play multiple games. Some old chess engines may not work properly when reuse is turned on, but otherwise games will start faster if it is left on.

`-firstProtocolVersion` version-number

`-secondProtocolVersion` version-number

This option specifies which version of the chess engine communication protocol to use. By default, version-number is 2. In version 1, the "protover" command is not sent to the engine; since version 1 is a subset of version 2, nothing else changes. Other values for version-number are not supported.

`-firstScoreAbs` true/false

`-secondScoreAbs` true/false

If this option is set, the score reported by the engine is taken to be that in favor of white, even when the engine plays black. Important when XBoard uses the score for adjudications, or in PGN reporting.

-niceEngines priority

This option allows you to lower the priority of the engine processes, so that the generally insatiable hunger for CPU time of chess engines does not interfere so much with smooth operation of WinBoard (or the rest of your system). Negative values could increase the engine priority, which is not recommended.

-firstOptions string**-secondOptions string**

The given string is a comma-separated list of (option name=option value) pairs, like the following example: "style=Karpov,blunder rate=0". If the options announced by the engine at startup through the feature commands of WinBoard protocol matches one of the option names (i.e. "style" or "blunder rate"), it would be set to the given value (i.e. "Karpov" or 0) through a corresponding option command to the engine. This provided that the type of the value (text or numeric) matches as well.

-firstNeedsNoncompliantFEN string**-secondNeedsNoncompliantFEN string**

The castling rights and e.p. fields of the FEN sent to the mentioned engine with the setboard command will be replaced by the given string. This can for instance be used to run engines that do not understand Chess960 FENs in variant fischerandom, to make them at least understand the opening position, through setting the string to "KQkq -". (Note you also have to give the e.p. field!) Other possible applications are to provide work-arounds for engines that want to see castling and e.p. fields in variants that do not have castling or e.p. (shatranj, courier, xiangqi, shogi) so that WinBoard would normally omit them (string = "- -"), or to add variant-specific fields that are not yet supported by WinBoard (e.g. to indicate the number of checks in 3check).

3.2 UCI + WB Engine Settings

-fUCI or -firstIsUCI true/false**-sUCI or -secondIsUCI true/false**

Indicates if the mentioned engine executable file is an UCI engine, and should be run with the aid of the Polyglot adapter rather than directly. Xboard will then pass the other UCI options and engine name to Polyglot through a .ini temporary file created for the purpose.

-PolyglotDir filename

Gives the name of the directory in which the Polyglot adapter for UCI engines expects its files. Default: "/usr/local/share/polyglot".

-usePolyglotBook true/false

Specifies if the Polyglot book should be used.

-PolyglotBook filename

Gives the filename of the opening book that Polyglot should use. From XBoard 4.3.15 on, native WinBoard engines will also use the opening book specified here, provided the `usePolyglotBook` option is set to true, and the option `firstHasOwnBookUCI` or `secondHasOwnBookUCI` applying to the engine is set

to false. The engine will be kept in force mode as long as the current position is in book, and XBoard will select the book moves for it. Default "".

-fNoOwnBookUCI or -firstXBook or -firstHasOwnBookUCI true/false

-sNoOwnBookUCI or -secondXBook or -secondHasOwnBookUCI true/false

Indicates if the mentioned engine has its own opening book it should play from, rather than using the external book through XBoard. Default: false.

-defaultHashSize n

Sets the size of the hash table to n MegaBytes. Together with the EGTB cache size this number is also used to calculate the memory setting of WinBoard engines, for those that support the memory feature of WinBoard protocol. Default: 64.

-defaultCacheSizeEGTB n

Sets the size of the EGTB cache to n MegaBytes. Together with the hash-table size this number is also used to calculate the memory setting of WinBoard engines, for those that support the memory feature of WinBoard protocol. Default: 4.

-defaultPathEGTB filename

Gives the name of the directory where the end-game tablebases are installed, for UCI engines. Default: "/usr/local/share/egtb".

-egtFormats string

Specifies which end-game tables are installed on the computer, and where. The argument is a comma-separated list of format specifications, each specification consisting of a format name, a colon, and a directory path name, e.g. "nalimov:/usr/local/share/egtb". If the name part matches that of a format that the engine requests through a feature command, xboard will relay the path name for this format to the engine through an egtpath command. One egtpath command for each matching format will be sent. Popular formats are "nalimov" DTM tablebases and "scorpio" bitbases. Default: "".

3.3 ICS options

-ics/-xics or -internetChessServerMode true/false

Connect with an Internet Chess Server to play chess against its other users, observe games they are playing, or review games that have recently finished. Default: false.

-icshost or -internetChessServerHost host

The Internet host name or address of the chess server to connect to when in ICS mode. Default: **chessclub.com**. Another popular chess server to try is **freechess.org**. If your site doesn't have a working Internet name server, try specifying the host address in numeric form. You may also need to specify the numeric address when using the icshelper option with timestamp or timeseal (see below).

-icsport or -internetChessServerPort port-number

The port number to use when connecting to a chess server in ICS mode. Default: 5000.

`-icshelper` or `-internetChessServerHelper prog-name`

An external helper program used to communicate with the chess server. You would set it to "timestamp" for ICC (chessclub.com) or "timeseal" for FICS (freechess.org), after obtaining the correct version of timestamp or timeseal for your computer. See "help timestamp" on ICC and "help timeseal" on FICS. This option is shorthand for `-useTelnet -telnetProgram program`.

`-telnet/-xtelnet` or `-useTelnet true/false`

This option is poorly named; it should be called `useHelper`. If set to true, it instructs XBoard to run an external program to communicate with the Internet Chess Server. The program to use is given by the `telnetProgram` option. If the option is false (the default), XBoard opens a TCP socket and uses its own internal implementation of the telnet protocol to communicate with the ICS. See Chapter 5 [Firewalls], page 39.

`-telnetProgram prog-name`

This option is poorly named; it should be called `helperProgram`. It gives the name of the telnet program to be used with the `gateway` and `useTelnet` options. The default is 'telnet'. The telnet program is invoked with the value of `internetChessServerHost` as its first argument and the value of `internetChessServerPort` as its second argument. See Chapter 5 [Firewalls], page 39.

`-gateway host-name`

If this option is set to a host name, XBoard communicates with the Internet Chess Server by using 'rsh' to run the `telnetProgram` on the given host, instead of using its own internal implementation of the telnet protocol. You can substitute a different remote shell program for 'rsh' using the `remoteShell` option described below. See Chapter 5 [Firewalls], page 39.

`-internetChessServerCommPort` or `-icscomm dev-name`

If this option is set, XBoard communicates with the ICS through the given character I/O device instead of opening a TCP connection. Use this option if your system does not have any kind of Internet connection itself (not even a SLIP or PPP connection), but you do have dial-up access (or a hardwired terminal line) to an Internet service provider from which you can telnet to the ICS.

The support for this option in XBoard is minimal. You need to set all communication parameters and tty modes before you enter XBoard.

Use a script something like this:

```
stty raw -echo 9600 > /dev/tty00
xboard -ics -icscomm /dev/tty00
```

Here replace '/dev/tty00' with the name of the device that your modem is connected to. You might have to add several more options to these stty commands. See the man pages for 'stty' and 'tty' if you run into problems. Also, on many systems stty works on its standard input instead of standard output, so you have to use '<' instead of '>'.

If you are using linux, try starting with the script below. Change it as necessary for your installation.

```
#!/bin/sh -f
# configure modem and fire up XBoard

# configure modem
(
  stty 2400 ; stty raw ; stty hupcl ; stty -clocal
  stty ignbrk ; stty ignpar ; stty ixon ; stty ixoff
  stty -iexten ; stty -echo
) < /dev/modem
xboard -ics -icscomm /dev/modem
```

After you start XBoard in this way, type whatever commands are necessary to dial out to your Internet provider and log in. Then telnet to ICS, using a command like `telnet chessclub.com 5000`. Important: See the paragraph below about extra echoes, in Chapter 7 [Limitations], page 42.

`-icslogon` or `-internetChessServerLogonScript` file-name

Whenever XBoard connects to the Internet Chess Server, if it finds a file with the name given in this option, it feeds the file's contents to the ICS as commands. The default file name is `.icsrc`. Usually the first two lines of the file should be your ICS user name and password. The file can be either in `$CHESSDIR`, in XBoard's working directory if `CHESSDIR` is not set, or in your home directory.

`-msLoginDelay` delay

If you experience trouble logging on to an ICS when using the `-icslogon` option, inserting some delay between characters of the logon script may help. This option adds `delay` milliseconds of delay between characters. Good values to try are 100 and 250.

`-icsinput/-xicsinput` or `-internetChessServerInputBox` true/false

Sets the ICS Input Box menu option. See Section 2.2 [Mode Menu], page 5. Default: false.

`-autocomm/-xautocomm` or `-autoComment` true/false

Sets the Auto Comment menu option. See Section 2.5 [Options Menu], page 11. Default: false.

`-autoflag/-xautoflag` or `-autoCallFlag` true/false

Sets the Auto Flag menu option. See Section 2.5 [Options Menu], page 11. Default: false.

`-autobs/-xautobs` or `-autoObserve` true/false

Sets the Auto Observe menu option. See Section 2.5 [Options Menu], page 11. Default: false.

`-autoKibitz`

Enables kibitzing of the engines last thinking output (depth, score, time, speed, PV) before it moved to the ICS, in zippy mode. The option `showThinking` must be switched on for this option to work. Also diverts similar kibitz information of an opponent engine that is playing you through the ICS to the engine-output window, as if the engine was playing locally.

- moves/-xmoves or -getMoveList true/false
Sets the Get Move List menu option. See Section 2.5 [Options Menu], page 11.
Default: true.
 - alarm/-xalarm or -icsAlarm true/false
Sets the ICS Alarm menu option. See Section 2.5 [Options Menu], page 11.
Default: true.
 - icsAlarmTime ms
Sets the time in milliseconds for the ICS Alarm menu option. See Section 2.5 [Options Menu], page 11. Default: 5000.
 - lowTimeWarning true/false
Controls a color change of the board as a warning your time is running out. See Section 2.5 [Options Menu], page 11. Default: false.
 - pre/-xpre \fRor\fb -premove true/false
Sets the Premove menu option. See Section 2.5 [Options Menu], page 11. Default: true.
 - quiet/-xquiet or -quietPlay true/false
Sets the Quiet Play menu option. See Section 2.5 [Options Menu], page 11. Default: false.
 - colorizeMessages or -colorize
Setting colorizeMessages to true tells XBoard to colorize the messages received from the ICS. Colorization works only if your xterm supports ISO 6429 escape sequences for changing text colors.
 - colorShout foreground,background,bold
 - colorSShout foreground,background,bold
 - colorChannel1 foreground,background,bold
 - colorChannel foreground,background,bold
 - colorKibitz foreground,background,bold
 - colorTell foreground,background,bold
 - colorChallenge foreground,background,bold
 - colorRequest foreground,background,bold
 - colorSeek foreground,background,bold
 - colorNormal foreground,background,bold
- These options set the colors used when colorizing ICS messages. All ICS messages are grouped into one of these categories: shout, sshout, channel 1, other channel, kibitz, tell, challenge, request (including abort, adjourn, draw, pause, and takeback), or normal (all other messages).
- Each foreground or background argument can be one of the following: black, red, green, yellow, blue, magenta, cyan, white, or default. Here “default” means the default foreground or background color of your xterm. Bold can be 1 or 0. If background is omitted, “default” is assumed; if bold is omitted, 0 is assumed.
- Here is an example of how to set the colors in your `.Xresources` file. The colors shown here are the default values; you will get them if you turn `-colorize` on without specifying your own colors.

```

xboard*colorizeMessages: true
xboard*colorShout: green
xboard*colorSShout: green, black, 1
xboard*colorChannel1: cyan
xboard*colorChannel: cyan, black, 1
xboard*colorKibitz: magenta, black, 1
xboard*colorTell: yellow, black, 1
xboard*colorChallenge: red, black, 1
xboard*colorRequest: red
xboard*colorSeek: blue
xboard*colorNormal: default

```

-soundProgram progname

If this option is set to a sound-playing program that is installed and working on your system, XBoard can play sound files when certain events occur, listed below. The default program name is "play". If any of the sound options is set to "\$", the event rings the terminal bell by sending a ^G character to standard output, instead of playing a sound file. If an option is set to the empty string "", no sound is played for that event.

-soundShout filename

-soundSShout filename

-soundChannel filename

-soundKibitz filename

-soundTell filename

-soundChallenge filename

-soundRequest filename

-soundSeek filename

These sounds are triggered in the same way as the colorization events described above. They all default to "", no sound. They are played only if the colorizeMessages is on.

-soundMove filename

This sound is used by the Move Sound menu option. Default: "\$".

-soundIcsAlarm filename

This sound is used by the ICS Alarm menu option. Default: "\$".

-soundIcsWin filename

This sound is played when you win an ICS game. Default: "" (no sound).

-soundIcsLoss filename

This sound is played when you lose an ICS game. Default: "" (no sound).

-soundIcsDraw filename

This sound is played when you draw an ICS game. Default: "" (no sound).

-soundIcsUnfinished filename

This sound is played when an ICS game that you are participating in is aborted, adjourned, or otherwise ends inconclusively. Default: "" (no sound).

Here is an example of how to set the sounds in your '.Xresources' file:

```

xboard*soundShout: shout.wav
xboard*soundSShout: sshout.wav
xboard*soundChannel1: channel1.wav
xboard*soundChannel: channel.wav
xboard*soundKibitz: kibitz.wav
xboard*soundTell: tell.wav
xboard*soundChallenge: challenge.wav
xboard*soundRequest: request.wav
xboard*soundSeek: seek.wav
xboard*soundMove: move.wav
xboard*soundIcsWin: win.wav
xboard*soundIcsLoss: lose.wav
xboard*soundIcsDraw: draw.wav
xboard*soundIcsUnfinished: unfinished.wav
xboard*soundIcsAlarm: alarm.wav

```

3.4 Load and Save options

-lgf or -loadGameFile file

-lgi or -loadGameIndex index

If the `loadGameFile` option is set, XBoard loads the specified game file at startup. The file name '-' specifies the standard input. If there is more than one game in the file, XBoard pops up a menu of the available games, with entries based on their PGN (Portable Game Notation) tags. If the `loadGameIndex` option is set to 'N', the menu is suppressed and the Nth game found in the file is loaded immediately. The menu is also suppressed if `matchMode` is enabled or if the game file is a pipe; in these cases the first game in the file is loaded immediately. Use the 'pxboard' shell script provided with XBoard if you want to pipe in files containing multiple games and still see the menu. If the `loadGameIndex` specifies an index -1, this triggers auto-increment of the index in `matchMode`, which means that after every game the index is incremented by one, causing each game of the match to be played from the next game in the file. Similarly, specifying an index value of -2 causes the index to be incremented every two games, so that each game in the file is used twice (with reversed colors). The `rewindIndex` option causes the index to be reset to the first game of the file when it has reached a specified value.

-rewindIndex n

Causes a position file or game file to be rewound to its beginning after n positions or games in auto-increment `matchMode`. See `loadPositionIndex` and `loadGameIndex`. default: 0 (no rewind).

-td or -timeDelay seconds

Time delay between moves during 'Load Game'. Fractional seconds are allowed; try '-td 0.4'. A time delay value of -1 tells XBoard not to step through game files automatically. Default: 1 second.

-sgf or -saveGameFile file

If this option is set, XBoard appends a record of every game played to the specified file. The file name '-' specifies the standard output.

-autosave/-xautosave or -autoSaveGames true/false

Sets the Auto Save menu option. See Section 2.5 [Options Menu], page 11. Default: false. Ignored if `saveGameFile` is set.

-lpf or -loadPositionFile file

-lpi or -loadPositionIndex index

If the `loadPositionFile` option is set, XBoard loads the specified position file at startup. The file name '-' specifies the standard input. If the `loadPositionIndex` option is set to N, the Nth position found in the file is loaded; otherwise the first position is loaded. If the `loadPositionIndex` specifies an index -1, this triggers auto-increment of the index in `matchMode`, which means that after every game the index is incremented by one, causing each game of the match to be played from the next position in the file. Similarly, specifying an index value of -2 causes the index to be incremented every two games, so that each position in the file is used twice (with the engines playing opposite colors). The `rewindIndex` option causes the index to be reset to the first position of the file when it has reached a specified value.

-spf or -savePositionFile file

If this option is set, XBoard appends the final position reached in every game played to the specified file. The file name '-' specifies the standard output.

-pgnExtendedInfo true/false

If this option is set, WinBoard saves depth, score and time used for each move that the engine found as a comment in the PGN file. Default: false.

-pgnEventHeader string

Sets the name used in the PGN event tag to string. Default: "Computer Chess Game".

-saveOutOfBookInfo true/false

Include the information on how the engine(s) game out of its opening book in a special 'annotator' tag with the PGN file.

-oldsave/-xoldsave or -oldSaveStyle true/false

Sets the Old Save Style menu option. See Section 2.5 [Options Menu], page 11. Default: false.

-gameListTags string

The character string lists the PGN tags that should be printed in the Game List, and their order. The meaning of the codes is e=event, s=site, d=date, o=round, p=players, r=result, w=white Elo, b=black Elo, t=time control, v=variant, a=out-of-book info. Default: "eprd"

3.5 User interface options

- display
- geometry
- iconic These and most other standard Xt options are accepted.
- noGUI Suppresses all GUI functions of XBoard (to speed up automated ultra-fast engine-engine games, which you dont want to watch). There will be no board or clock updates, no printing of moves, and no update of the icon on the task bar in this mode.
- movesound/-xmovesound or -ringBellAfterMoves true/false
Sets the Move Sound menu option. See Section 2.5 [Options Menu], page 11. Default: false. For compatibility with old XBoard versions, -bell/-xbell are also accepted as abbreviations for this option.
- exit/-xexit or -popupExitMessage true/false
Sets the Popup Exit Message menu option. See Section 2.5 [Options Menu], page 11. Default: true.
- popup/-xpopup or -popupMoveErrors true/false
Sets the Popup Move Errors menu option. See Section 2.5 [Options Menu], page 11. Default: false.
- queen/-xqueen or -alwaysPromoteToQueen true/false
Sets the Always Queen menu option. See Section 2.5 [Options Menu], page 11. Default: false.
- legal/-xlegal or -testLegality true/false
Sets the Test Legality menu option. See Section 2.5 [Options Menu], page 11. Default: true.
- size or -boardSize (sizeName | n1,n2,n3,n4,n5,n6,n7)
Determines how large the board will be, by selecting the pixel size of the pieces and setting a few related parameters. The sizeName can be one of: Titanic, giving 129x129 pixel pieces, Colossal 116x116, Giant 108x108, Huge 95x95, Big 87x87, Large 80x80, Bulky 72x72, Medium 64x64, Moderate 58x58, Average 54x54, Middling 49x49, Mediocre 45x45, Small 40x40, Slim 37x37, Petite 33x33, Dinky 29x29, Teeny 25x25, or Tiny 21x21. Pieces of all these sizes are built into XBoard. Other sizes can be used if you have them; see the pixmapDirectory and bitmapDirectory options. The default depends on the size of your screen; it is approximately the largest size that will fit without clipping.
You can select other sizes or vary other layout parameters by providing a list of comma-separated values (with no spaces) as the argument. You do not need to provide all the values; for any you omit from the end of the list, defaults are taken from the nearest built-in size. The value n1 gives the piece size, n2 the width of the black border between squares, n3 the desired size for the clockFont, n4 the desired size for the coordFont, n5 the desired size for the default font, n6 the smallLayout flag (0 or 1), and n7 the tinyLayout flag (0 or 1). All dimensions are in pixels. If the border between squares is eliminated (0 width), the various highlight options will not work, as there is nowhere to

draw the highlight. If `smallLayout` is 1 and `titleInWindow` is true, the window layout is rearranged to make more room for the title. If `tinyLayout` is 1, the labels on the menu bar are abbreviated to one character each and the buttons in the button bar are made narrower.

`-coords/-xcoords` or `-showCoords true/false`

Sets the Show Coords menu option. See Section 2.5 [Options Menu], page 11. Default: false. The `coordFont` option specifies what font to use.

`-autoraise/-xautoraise` or `-autoRaiseBoard true/false`

Sets the Auto Raise Board menu option. See Section 2.5 [Options Menu], page 11. Default: true.

`-autoflip/-xautoflip` or `-autoFlipView true/false`

Sets the Auto Flip View menu option. See Section 2.5 [Options Menu], page 11. Default: true.

`-flip/-xflip` or `-flipView true/false`

If Auto Flip View is not set, or if you are observing but not participating in a game, then the positioning of the board at the start of each game depends on the `flipView` option. If `flipView` is false (the default), the board is positioned so that the white pawns move from the bottom to the top; if true, the black pawns move from the bottom to the top. In any case, the Flip menu option (see Section 2.5 [Options Menu], page 11) can be used to flip the board after the game starts.

`-title/-xtitle` or `-titleInWindow true/false`

If this option is true, XBoard displays player names (for ICS games) and game file names (for ‘Load Game’) inside its main window. If the option is false (the default), this information is displayed only in the window banner. You probably won’t want to set this option unless the information is not showing up in the banner, as happens with a few X window managers.

`-buttons/-xbuttons` or `-showButtonBar True/False`

If this option is False, xboard omits the [`<<`] [`<`] [`P`] [`>`] [`>>`] button bar from the window, allowing the message line to be wider. You can still get the functions of these buttons using the menus or their keyboard shortcuts. Default: true.

`-mono/-xmono` or `-monoMode true/false`

Determines whether XBoard displays its pieces and squares with two colors (true) or four (false). You shouldn’t have to specify `monoMode`; XBoard will determine if it is necessary.

`-flashCount count`

`-flashRate rate`

`-flash/-xflash`

These options enable flashing of pieces when they land on their destination square. `flashCount` tells XBoard how many times to flash a piece after it lands on its destination square. `flashRate` controls the rate of flashing (flashes/sec). Abbreviations: `flash` sets `flashCount` to 3. `xflash` sets `flashCount` to 0. Defaults: `flashCount=0` (no flashing), `flashRate=5`.

- highlight/-xhighlight or -highlightLastMove true/false
Sets the Highlight Last Move menu option. See Section 2.5 [Options Menu], page 11. Default: false.
- blind/-xblind or -blindfold true/false
Sets the Blindfold menu option. See Section 2.5 [Options Menu], page 11. Default: false.
- clockFont font
The font used for the clocks. If the option value is a pattern that does not specify the font size, XBoard tries to choose an appropriate font for the board size being used. Default: `-*-helvetica-bold-r-normal-_*_*_*_*_*_*_*_*_*_*`.
- coordFont font
The font used for rank and file coordinate labels if `showCoords` is true. If the option value is a pattern that does not specify the font size, XBoard tries to choose an appropriate font for the board size being used. Default: `-*-helvetica-bold-r-normal-_*_*_*_*_*_*_*_*_*_*`.
- font font
The font used for popup dialogs, menus, comments, etc. If the option value is a pattern that does not specify the font size, XBoard tries to choose an appropriate font for the board size being used. Default: `-*-helvetica-medium-r-normal-_*_*_*_*_*_*_*_*_*_*`.
- fontSizeTolerance tol
In the font selection algorithm, a nonscalable font will be preferred over a scalable font if the nonscalable font's size differs by `tol` pixels or less from the desired size. A value of -1 will force a scalable font to always be used if available; a value of 0 will use a nonscalable font only if it is exactly the right size; a large value (say 1000) will force a nonscalable font to always be used if available. Default: 4.
- bm or -bitmapDirectory dir
- pixmap or -pixmapDirectory dir
These options control what piece images xboard uses. The XBoard distribution includes one set of pixmap pieces in xpm format, in the directory 'pixmap', and one set of bitmap pieces in xbm format, in the directory 'bitmaps'. Pixmap pieces give a better appearance on the screen: the white pieces have dark borders, and the black pieces have opaque internal details. With bitmaps, neither piece color has a border, and the internal details are transparent; you see the square color or other background color through them.

If XBoard is configured and compiled on a system that includes libXpm, the X pixmap library, the xpm pixmap pieces are compiled in as the default. A different xpm piece set can be selected at runtime with the `pixmapDirectory` option, or a bitmap piece set can be selected with the `bitmapDirectory` option.

If XBoard is configured and compiled on a system that does not include libXpm (or the `--disable-xpm` option is given to the configure program), the bitmap pieces are compiled in as the default. It is not possible to use xpm pieces in this case, but pixmap pieces in another format called "xim" can be used by

giving the `pixmapDirectory` option. Or again, a different bitmap piece set can be selected with the `bitmapDirectory` option.

Files in the `bitmapDirectory` must be named as follows: The first character of a piece bitmap name gives the piece it represents ('p', 'n', 'b', 'r', 'q', or 'k'), the next characters give the size in pixels, the following character indicates whether the piece is solid or outline ('s' or 'o'), and the extension is '.bm'. For example, a solid 80x80 knight would be named 'n80s.bm'. The outline bitmaps are used only in monochrome mode. If bitmap pieces are compiled in and the `bitmapDirectory` is missing some files, the compiled in pieces are used instead.

If the `bitmapDirectory` option is given, it is also possible to replace xboard's icons and menu checkmark, by supplying files named 'icon_white.bm', 'icon_black.bm', and 'checkmark.bm'.

For more information about pixmap pieces and how to get additional sets, see Section 11.5 [zic2xpm], page 49 below.

-whitePieceColor color
 -blackPieceColor color
 -lightSquareColor color
 -darkSquareColor color
 -highlightSquareColor color
 -lowTimeWarningColor color

Colors to use for the pieces, squares, and square highlights. Defaults:

```
-whitePieceColor      #FFFFCC
-blackPieceColor     #202020
-lightSquareColor     #C8C365
-darkSquareColor      #77A26D
-highlightSquareColor #FFFF00
-premoveHighlightColor #FF0000
-lowTimeWarningColor  #FF0000
```

On a grayscale monitor you might prefer:

```
-whitePieceColor      gray100
-blackPieceColor     gray0
-lightSquareColor     gray80
-darkSquareColor      gray60
-highlightSquareColor gray100
-premoveHighlightColor gray70
-lowTimeWarningColor  gray70
```

-drag/-xdrag or -animateDragging true/false

Sets the Animate Dragging menu option. See Section 2.5 [Options Menu], page 11. Default: true.

-animate/-xanimate or -animateMoving true/false

Sets the Animate Moving menu option. See Section 2.5 [Options Menu], page 11. Default: true.

-animateSpeed n

Number of milliseconds delay between each animation frame when Animate Moves is on.

3.6 Adjudication Options

-adjudicateLossThreshold n

If the given value is non-zero, XBoard adjudicates the game as a loss if both engines agree for a duration of 6 consecutive ply that the score is below the given score threshold for that engine. Make sure the score is interpreted properly by XBoard, using `-firstScoreAbs` and `-secondScoreAbs` if needed. Default: 0 (no adjudication)

-adjudicateDrawMoves n

If the given value is non-zero, XBoard adjudicates the game as a draw if after the given number of moves it was not yet decided. Default: 0 (no adjudication)

-checkMates true/false

If this option is set, XBoard detects all checkmates and stalemates, and ends the game as soon as they occur. Legality-testing must be switched on for this option to work. Default: true

-testClaims true/false

If this option is set, XBoard verifies all result claims made by engines, and those who send false claims will forfeit the game because of it. Legality-testing must be switched on for this option to work. Default: true

-materialDraws true/false

If this option is set, XBoard adjudicates games as draws when there is no sufficient material left to inflict a checkmate. This applies to KBKB with like bishops (any number, actually), and to KBK, KNK and KK. Legality-testing must be switched on for this option to work. Default: true

-trivialDraws true/false

If this option is set, XBoard adjudicates games as draws that cannot be usually won without opponent cooperation. This applies to KBKB with unlike bishops, and to KBKN, KNKN, KNNK, KRKR and KQKQ. The draw is called after 6 ply into these end-games, to allow quick mates that can occur in some exceptional positions to be found by the engines. KQKQ does not really belong in this category, and might be taken out in the future. (When bitbase-based adjudications are implemented.) Legality-testing must be on for this option to work. Default: false

-ruleMoves n

If the given value is non-zero, XBoard adjudicates the game as a draw after the given number of consecutive reversible moves. Engine draw claims are always accepted after 50 moves, irrespective of the given value of n.

-repeatsToDraw n

If the given value is non-zero, xboard adjudicates the game as a draw if a position is repeated the given number of times. Engines draw claims are always

accepted after 3 repeats, (on the 3rd occurrence, actually), irrespective of the value of n. Beware that positions that have different castling or en-passant rights do not count as repeats, XBoard is fully e.p. and castling aware!

3.7 Other options

-ncp/-xncp or -noChessProgram true/false

If this option is true, XBoard acts as a passive chessboard; it does not start a chess engine at all. Turning on this option also turns off clockMode. Default: false.

-mode or -initialMode modename

If this option is given, XBoard selects the given modename from the Mode menu after starting and (if applicable) processing the loadGameFile or loadPositionFile option. Default: "" (no selection). Other supported values are MachineWhite, MachineBlack, TwoMachines, Analysis, AnalyzeFile, EditGame, EditPosition, and Training.

-variant varname

Activates preliminary, partial support for playing chess variants against a local engine or editing variant games. This flag is not needed in ICS mode. Recognized variant names are:

normal	Normal chess
wildcastle	Shuffle chess, king can castle from d file
nocastle	Shuffle chess, no castling allowed
fischerandom	Fischer Random shuffle chess
bughouse	Bughouse, ICC/FICS rules
crazyhouse	Crazyhouse, ICC/FICS rules
losers	Lose all pieces or get mated (ICC wild 17)
suicide	Lose all pieces including king (FICS)
giveaway	Try to have no legal moves (ICC wild 26)
twokings	Weird ICC wild 9
kriegspiel	Opponent's pieces are invisible
atomic	Capturing piece explodes (ICC wild 27)
3check	Win by giving check 3 times (ICC wild 25)
shatranj	An ancient precursor of chess (ICC wild 28)
xiangqi	Chinese Chess (on a 9x10 board)
shogi	Japanese Chess (on a 9x9 board & piece drops)
capablanca	Capablanca Chess (10x8 board, with Archbishop and Chancellor pieces)
gothic	similar, with a better initial position
caparandom	An FRC-like version of Capablanca Chess (10x8)
janus	A game with two Archbishops (10x8 board)
courier	Medieval intermediate between shatranj and modern Chess (on 12x8 board)
falcon	Patented 10x8 variant with two Falcon pieces
berolina	Pawns capture straight ahead, and move diagonal
cylinder	Pieces wrap around the board edge

<code>knightmate</code>	King moves as Knight, and vice versa
<code>super</code>	Superchess (shuffle variant with 4 exo-pieces)
<code>fairy</code>	A catchall variant in which all piece types known to XBoard can participate (8x8)
<code>unknown</code>	Catchall for other unknown variants

In the shuffle variants, XBoard now does shuffle the pieces, although you can still do it by hand using Edit Position. Some variants are supported only in ICS mode, including bughouse, and kriegspiel. The winning/drawing conditions in crazyhouse (off-board interposition on mate), losers, suicide, giveaway, atomic, and 3check are not fully understood. Berolina and cylinder chess can only be played with legality testing off. In crazyhouse, XBoard now does keep track of off-board pieces. In shatranj it does implement the barring rule when mate detection is switched on.

`-boardHeight N`

Allows you to set a non-standard number of board ranks in any variant. If the height is given as -1, the default height for the variant is used. Default: -1

`-boardWidth N`

Allows you to set a non-standard number of board files in any variant. If the width is given as -1, the default width for the variant is used. With a non-standard width, the initial position will always be an empty board, as the usual opening array will not fit. Default: -1

`-holdingsSize N`

Allows you to set a non-standard size for the holdings in any variant. If the size is given as -1, the default holdings size for the variant is used. The first N piece types will go into the holdings on capture, and you will be able to drop them on the board in stead of making a normal move. If size equals 0, there will be no holdings. Default: -1

`-defaultFrcPosition N`

Specifies the number of the opening position in shuffle games like Chess960. A value of -1 means the position is randomly generated by XBoard at the beginning of every game. Default: -1

`-pieceToSquareTable string`

The characters that are used to represent the piece types XBoard knows in FEN diagrams and SAN moves. The string argument has to have an even length (or it will be ignored), as white and black pieces have to be given separately (in that order). The last letter for each color will be the King. The letters before that will be PNBQR and then a whole host of fairy pieces in an order that has not fully crystallized yet (currently FEACWMOHIJGDVSLU, F=Ferz, Elephant, A=Archbishop, C=Chancellor, W=Wazir, M=Commoner, O=Cannon, H=Nightrider). You should list at least all pieces that occur in the variant you are playing. If you have less than 44 characters in the string, the pieces not mentioned will get assigned a period, and you will not be able to distinguish them in FENs. You can also explicitly assign pieces a period, in which case they will not be counted in deciding which captured pieces can go into the holdings. A tilde '~' as a piece name does mean this piece is used to

represent a promoted Pawn in crazyhouse-like games, i.e. on capture it turns back onto a Pawn. A '+' similarly indicates the piece is a shogi-style promoted piece, that should revert to its non-promoted version on capture (rather than to a Pawn). Note that promoted pieces are represented by pieces 11 further in the list. You should not have to use this option often: each variant has its own default setting for the piece representation in FEN, which should be sufficient in normal use. Default: ""

`-debug/-xdebug` or `-debugMode true/false`

Turns on debugging printout.

`-debugFile filename` or `-nameOfDebugFile filename`

Sets the name of the file to which WinBoard saves debug information (including all communication to and from the engines).

`-engineDebugOutput number`

Specifies how WinBoard should handle unsolicited output from the engine, with respect to saving it in the debug file. The output is further (hopefully) ignored. If `number=0`, WinBoard refrains from writing such spurious output to the debug file. If `number=1`, all engine output is written faithfully to the debug file. If `number=2`, any protocol-violating line is prefixed with a '#' character, as the engine itself should have done if it wanted to submit info for inclusion in the debug file. This option is provided for the benefit of applications that use the debug file as a source of information, such as the broadcaster of live games TLCV / TLCS. Such applications can be protected from spurious engine output that might otherwise confuse them.

`-rsh` or `-remoteShell shell-name`

Name of the command used to run programs remotely. The default is 'rsh' or 'remsh', determined when XBoard is configured and compiled.

`-ruser` or `-remoteUser user-name`

User name on the remote system when running programs with the `remoteShell`. The default is your local user name.

`-userName username`

Name under which the Human player will be listed in the PGN file. Default is the login name on your local computer.

`-delayBeforeQuit number`

`-delayAfterQuit number`

These options specify how long WinBoard has to wait before sending a termination signal to rogue engine processes, that do not want to react to the 'quit' command. The second one determines the pause after killing the engine, to make sure it dies.

4 Chess Servers

An *Internet Chess Server*, or *ICS*, is a place on the Internet where people can get together to play chess, watch other people's games, or just chat. You can use either `telnet` or a client program like XBoard to connect to the server. There are thousands of registered users on the different ICS hosts, and it is not unusual to meet 200 on both chessclub.com and freechess.org.

Most people can just type `xboard -ics` to start XBoard as an ICS client. Invoking XBoard in this way connects you to the Internet Chess Club (ICC), a commercial ICS. You can log in there as a guest even if you do not have a paid account. To connect to the largest Free ICS (FICS), use the command `xboard -ics -icshost freechess.org` instead, or substitute a different host name to connect to your favorite ICS. For a full description of command-line options that control the connection to ICS and change the default values of ICS options, see Section 3.3 [ICS options], page 22.

While you are running XBoard as an ICS client, you use the terminal window that you started XBoard from as a place to type in commands and read information that is not available on the chessboard.

The first time you need to use the terminal is to enter your login name and password, if you are a registered player. (You don't need to do this manually; the `icsLogon` option can do it for you. see Section 3.3 [ICS options], page 22.) If you are not registered, enter `g` as your name, and the server will pick a unique guest name for you.

Some useful ICS commands include

`help <topic>`

to get help on the given `<topic>`. To get a list of possible topics type `help` without topic. Try the help command before you ask other people on the server for help.

For example `help register` tells you how to become a registered ICS player.

`who <flags>`

to see a list of people who are logged on. Administrators (people you should talk to if you have a problem) are marked with the character '*', an asterisk. The `<flags>` allow you to display only selected players: For example, `who of` shows a list of players who are interested in playing but do not have an opponent.

`games` to see what games are being played

`match <player> [<mins>] [<inc>]`

to challenge another player to a game. Both opponents get `<mins>` minutes for the game, and `<inc>` seconds will be added after each move. If another player challenges you, the server asks if you want to accept the challenge; use the `accept` or `decline` commands to answer.

`accept`

`decline` to accept or decline another player's offer. The offer may be to start a new game, or to agree to a `draw`, `adjourn` or `abort` the current game. See Section 2.3 [Action Menu], page 9.

If you have more than one pending offer (for example, if more than one player is challenging you, or if your opponent offers both a draw and to adjourn the

game), you have to supply additional information, by typing something like *accept* <player>, *accept draw*, or *draw*.

draw

adjourn

abort asks your opponent to terminate a game by mutual agreement. Adjourned games can be continued later. Your opponent can either *decline* your offer or accept it (by typing the same command or typing *accept*). In some cases these commands work immediately, without asking your opponent to agree. For example, you can abort the game unilaterally if your opponent is out of time, and you can claim a draw by repetition or the 50-move rule if available simply by typing *draw*.

finger <player>

to get information about the given <player>. (Default: yourself.)

vars to get a list of personal settings

set <var> <value>

to modify these settings

observe <player>

to observe an ongoing game of the given <player>.

examine

oldmoves to review a recently completed game

Some special XBoard features are activated when you are in examine mode on ICS. See the descriptions of the menu commands 'Forward', 'Backward', 'Pause', 'ICS Client', and 'Stop Examining' on the Section 2.4 [Step Menu], page 9, Section 2.2 [Mode Menu], page 5, and Section 2.5 [Options Menu], page 11.

5 Firewalls

By default, XBoard communicates with an Internet Chess Server by opening a TCP socket directly from the machine it is running on to the ICS. If there is a firewall between your machine and the ICS, this won't work. Here are some recipes for getting around common kinds of firewalls using special options to XBoard. Important: See the paragraph in the below about extra echoes, in Chapter 7 [Limitations], page 42.

Suppose that you can't telnet directly to ICS, but you can telnet to a firewall host, log in, and then telnet from there to ICS. Let's say the firewall is called 'firewall.example.com'. Set command-line options as follows:

```
xboard -ics -icshost firewall.example.com -icsport 23
```

Or in your '.Xresources' file:

```
XBoard*internetChessServerHost: firewall.example.com
XBoard*internetChessServerPort: 23
```

Then when you run XBoard in ICS mode, you will be prompted to log in to the firewall host. This works because port 23 is the standard telnet login service. Do so, then telnet to ICS, using a command like 'telnet chessclub.com 5000', or whatever command the firewall provides for telnetting to port 5000.

If your firewall lets you telnet (or rlogin) to remote hosts but doesn't let you telnet to port 5000, you may be able to connect to the chess server on port 23 instead, which is the port the telnet program uses by default. Some chess servers support this (including chessclub.com and freechess.org), while some do not.

If your chess server does not allow connections on port 23 and your firewall does not allow you to connect to other ports, you may be able to connect by hopping through another host outside the firewall that you have an account on. For instance, suppose you have a shell account at 'foo.edu'. Follow the recipe above, but instead of typing 'telnet chessclub.com 5000' to the firewall, type 'telnet foo.edu' (or 'rlogin foo.edu'), log in there, and then type 'telnet chessclub.com 5000'.

Suppose that you can't telnet directly to ICS, but you can use rsh to run programs on a firewall host, and that host can telnet to ICS. Let's say the firewall is called 'rsh.example.com'. Set command-line options as follows:

```
xboard -ics -gateway rsh.example.com -icshost chessclub.com
```

Or in your '.Xresources' file:

```
XBoard*gateway: rsh.example.com
XBoard*internetChessServerHost: chessclub.com
```

Then when you run XBoard in ICS mode, it will connect to the ICS by using 'rsh' to run the command 'telnet chessclub.com 5000' on host 'rsh.example.com'.

Suppose that you can telnet anywhere you want, but you have to run a special program called 'ptelnet' to do so.

First, we'll consider the easy case, in which 'ptelnet chessclub.com 5000' gets you to the chess server. In this case set command line options as follows:

```
xboard -ics -telnet -telnetProgram ptelnet
```

Or in your '.Xresources' file:

```
XBoard*useTelnet: true
XBoard*telnetProgram: ptelnet
```

Then when you run XBoard in ICS mode, it will issue the command ‘ptelnet chessclub.com 5000’ to connect to the ICS.

Next, suppose that ‘ptelnet chessclub.com 5000’ doesn’t work; that is, your ‘ptelnet’ program doesn’t let you connect to alternative ports. As noted above, your chess server may allow you to connect on port 23 instead. In that case, just add the option ‘-icsport ""’ to the above command, or add ‘XBoard*internetChessServerPort:’ to your ‘.Xresources’ file. But if your chess server doesn’t let you connect on port 23, you will have to find some other host outside the firewall and hop through it. For instance, suppose you have a shell account at ‘foo.edu’. Set command line options as follows:

```
xboard -ics -telnet -telnetProgram ptelnet -icshost foo.edu -icsport ""
```

Or in your ‘.Xresources’ file:

```
XBoard*useTelnet: true
XBoard*telnetProgram: ptelnet
XBoard*internetChessServerHost: foo.edu
XBoard*internetChessServerPort:
```

Then when you run XBoard in ICS mode, it will issue the command ‘ptelnet foo.edu’ to connect to your account at ‘foo.edu’. Log in there, then type ‘telnet chessclub.com 5000’.

ICC timestamp and FICS timeseal do not work through some firewalls. You can use them only if your firewall gives a clean TCP connection with a full 8-bit wide path. If your firewall allows you to get out only by running a special telnet program, you can’t use timestamp or timeseal across it. But if you have access to a computer just outside your firewall, and you have much lower netlag when talking to that computer than to the ICS, it might be worthwhile running timestamp there. Follow the instructions above for hopping through a host outside the firewall (foo.edu in the example), but run timestamp or timeseal on that host instead of telnet.

Suppose that you have a SOCKS firewall that will give you a clean 8-bit wide TCP connection to the chess server, but only after you authenticate yourself via the SOCKS protocol. In that case, you could make a socksified version of XBoard and run that. If you are using timestamp or timeseal, you will to socksify it, not XBoard; this may be difficult seeing that ICC and FICS do not provide source code for these programs. Socksification is beyond the scope of this document, but see the SOCKS Web site at <http://www.socks.permeo.com/>. If you are missing SOCKS, try <http://www.funbureau.com/>.

6 Environment variables

Game and position files are found in a directory named by the `CHESSDIR` environment variable. If this variable is not set, the current working directory is used. If `CHESSDIR` is set, XBoard actually changes its working directory to `$CHESSDIR`, so any files written by the chess engine will be placed there too.

7 Limitations and known bugs

There is no way for two people running copies of XBoard to play each other without going through an Internet Chess Server.

Under some circumstances, your ICS password may be echoed when you log on.

If you are connecting to the ICS by running telnet on an Internet provider or firewall host, you may find that each line you type is echoed back an extra time after you hit ENTER. If your Internet provider is a Unix system, you can probably turn its echo off by typing `stty -echo` after you log in, and/or typing `^EENTER` (Ctrl+E followed by the Enter key) to the telnet program after you have logged into ICS. It is a good idea to do this if you can, because the extra echo can occasionally confuse XBoard's parsing routines.

The game parser recognizes only algebraic notation.

Many of the following points used to be limitations in XBoard 4.2.7 and earlier, but are now fixed: The internal move legality tester in XBoard 4.3.xx does look at the game history, and is fully aware of castling or en-passant-capture rights. It permits castling with the king on the d file because this is possible in some "wild 1" games on ICS. The piece-drop menu does not check piece drops in bughouse to see if you actually hold the piece you are trying to drop. But this way of dropping pieces should be considered an obsolete feature, now that pieces can be dropped by dragging them from the holdings to the board. Anyway, if you would attempt an illegal move when using a chess engine or the ICS, WinBoard will accept the error message that comes back, undo the move, and let you try another. FEN positions saved by XBoard do include correct information about whether castling or en passant are legal, and also handle the 50-move counter. The mate detector does not understand that non-contact mate is not really mate in bughouse. The only problem this causes while playing is minor: a "#" (mate indicator) character will show up after a non-contact mating move in the move list. XBoard will not assume the game is over at that point, not even when the option Detect Mates is on. Edit Game mode always uses the rules of the selected variant, which can be a variant that uses piece drops. You can load and edit games that contain piece drops. The (obsolete) piece menus are not active, but you can perform piece drops by dragging pieces from the holdings. Edit Position mode does not allow you to edit the crazyhouse holdings properly. You cannot drag pieces to the holding, and using the popup menu to put pieces there does not adapt the holding counts and leads to an inconsistent state. Set up crazyhouse positions by loading / pasting a bFEN, from there you can set the holdings. Fischer Random castling is fully understood. You can enter castlings by dragging the King on top of your Rook. You can probably also play Fischer Random successfully on ICS by typing castling moves into the ICS Interaction window.

The menus may not work if your keyboard is in Caps Lock or Num Lock mode. This seems to be a problem with the Athena menu widget, not an XBoard bug.

Also see the ToDo file included with the distribution for many other possible bugs, limitations, and ideas for improvement that have been suggested.

8 Reporting problems

Report bugs and problems with XBoard to <bug-xboard@gnu.org>.

Please use the ‘`script`’ program to start a typescript, run XBoard with the ‘`-debug`’ option, and include the typescript output in your message. Also tell us what kind of machine and what operating system version you are using. The command ‘`uname -a`’ will often tell you this. Here is a sample of approximately what you should type:

```
script
uname -a
./configure
make
./xboard -debug
exit
mail bug-xboard@gnu.org
Subject: Your short description of the problem
Your detailed description of the problem
~r typescript
.
```

The WinBoard / XBoard 4.3 line is being developed by H.G. Muller independently of the GNU Savannah xboard project. Bug reports on this version, and suggestions for improvements and additions, are best posted in the WinBoard forum, WinBoard-development section (<http://www.open-aurec.com/wbforum>).

If you improve XBoard, please send a message about your changes, and we will get in touch with you about merging them in to the main line of development. Also see our Web site at <http://savannah.gnu.org/projects/xboard/>.

9 Authors and contributors

Tim Mann has been responsible for XBoard versions 1.3 and beyond, and for WinBoard, a port of XBoard to Microsoft Win32 (Windows NT and Windows 95). H.G.Muller is responsible for version 4.3.

Mark Williams contributed the initial (WinBoard-only) implementation of many new features added to both XBoard and WinBoard in version 4.1.0, including copy/paste, premove, icsAlarm, autoFlipView, training mode, auto raise, and blindfold. Ben Nye contributed X copy/paste code for XBoard.

Hugh Fisher added animated piece movement to XBoard, and Henrik Gram (henrikg@funcom.com) added it to WinBoard. Frank McIngvale added click/click moving, the Analysis modes, piece flashing, ZIICS import, and ICS text colorization to XBoard. Jochen Wiedmann ported XBoard to the Amiga, creating AmyBoard, and converted the documentation to texinfo. Elmar Bartel contributed the new piece bitmaps introduced in version 3.2. John Chanak contributed the initial implementation of ICS mode. The color scheme and the old 80x80 piece bitmaps were taken from Wayne Christopher's *XChess* program.

Chris Sears and Dan Sears wrote the original XBoard. They were responsible for versions 1.0 through 1.2.

Evan Welsh wrote *CMail*. Patrick Surry helped in designing, testing, and documenting *CMail*.

Alessandro Scotti added many elements to the user interface of WinBoard, including the board textures and font-based rendering, the evaluation-graph, move-history and engine-output window. He was also responsible for adding the UCI support.

H.G. Muller made WinBoard castling- and e.p.-aware, added variant support with adjustable board sizes, the crazyhouse holdings, and the fairy pieces. In addition he added most of the adjudication options, made WinBoard more robust in dealing with buggy and crashing engines, and extended time control with a time-odds and node-count-based modes. Most of the options that initially were WinBoard only have now been back-ported to XBoard.

Michel van den Bergh provided the code for reading Polyglot opening books.

Arun Persaud worked with H.G. Muller to combine all the features of the never-released WinBoard 4.2.8 of the Savannah project (mainly by Daniel Mehrmann), and the never-released 4.3.16 into a unified WinBoard 4.4, which is now available both from the Savannah web site and the WinBoard forum.

10 CMail

The ‘`cmail`’ program can help you play chess by email with opponents of your choice using XBoard as an interface.

You will usually run ‘`cmail`’ without giving any options.

10.1 CMail options

- h Displays ‘`cmail`’ usage information.
- c Shows the conditions of the GNU General Public License. See [Copying], page 51.
- w Shows the warranty notice of the GNU General Public License. See [Copying], page 51.
- v
- xv Provides or inhibits verbose output from ‘`cmail`’ and XBoard, useful for debugging. The `-xv` form also inhibits the `cmail` introduction message.
- mail
- xmail Invokes or inhibits the sending of a mail message containing the move.
- xboard
- xxboard Invokes or inhibits the running of XBoard on the game file.
- reuse
- xreuse Invokes or inhibits the reuse of an existing XBoard to display the current game.
- remail Resends the last mail message for that game. This inhibits running XBoard.
- game <name>
 The name of the game to be processed.
- wgames <number>
- bgames <number>
- games <number>
 Number of games to start as White, as Black or in total. Default is 1 as white and none as black. If only one color is specified then none of the other color is assumed. If no color is specified then equal numbers of White and Black games are started, with the extra game being as White if an odd number of total games is specified.
- me <short name>
- opp <short name>
 A one-word alias for yourself or your opponent.
- wname <full name>
- bname <full name>
- name <full name>
- oppname <full name>
 The full name of White, Black, yourself or your opponent.

-wna <net address>

-bna <net address>

-na <net address>

-oppna <net address>

The email address of White, Black, yourself or your opponent.

-dir <directory>

The directory in which 'cmail' keeps its files. This defaults to the environment variable \$CMail_DIR or failing that, \$CHESSDIR, '\$HOME/Chess' or '~/Chess'. It will be created if it does not exist.

-arcdir <directory>

The directory in which 'cmail' archives completed games. Defaults to the environment variable \$CMail_ARCDIR or, in its absence, the same directory as cmail keeps its working files (above).

-mailprog <mail program>

The program used by cmail to send email messages. This defaults to the environment variable \$CMail_MAILPROG or failing that '/usr/ucb/Mail', '/usr/ucb/mail' or 'Mail'. You will need to set this variable if none of the above paths fit your system.

-gamesFile <file>

A file containing a list of games with email addresses. This defaults to the environment variable \$CMail_GAMES or failing that '.cmailgames'.

-aliasesFile <file>

A file containing one or more aliases for a set of email addresses. This defaults to the environment variable \$CMail_ALIASES or failing that '.cmailaliases'.

-logfile <file>

A file in which to dump verbose debugging messages that are invoked with the '-v' option.

-event <event>

The PGN Event tag (default 'Email correspondence game').

-site <site>

The PGN Site tag (default 'NET').

-round <round>

The PGN Round tag (default '-', not applicable).

-mode <mode>

The PGN Mode tag (default 'EM', Electronic Mail).

Other options

Any option flags not listed above are passed through to XBoard. Invoking XBoard through CMail changes the default values of two XBoard options: The default value for '-noChessProgram' is changed to true; that is, by default no chess engine is started. The default value for '-timeDelay' is changed to 0; that is, by default XBoard immediately goes to the end of the game as played so far, rather than stepping through the moves one by one. You can still set these

options to whatever values you prefer by supplying them on CMail's command line. See Chapter 3 [Options], page 17.

10.2 Starting a CMail Game

Type `'cmail'` from a shell to start a game as white. After an opening message, you will be prompted for a game name, which is optional—if you simply press ENTER, the game name will take the form `'you-VS-opponent'`. You will next be prompted for the short name of your opponent. If you haven't played this person before, you will also be prompted for his/her email address. `'cmail'` will then invoke XBoard in the background. Make your first move and select `'Mail Move'` from the `'File'` menu. See Section 2.1 [File Menu], page 3. If all is well, `'cmail'` will mail a copy of the move to your opponent. If you select `'Exit'` without having selected `'Mail Move'` then no move will be made.

10.3 Answering a Move

When you receive a message from an opponent containing a move in one of your games, simply pipe the message through `'cmail'`. In some mailers this is as simple as typing `| cmail` when viewing the message, while in others you may have to save the message to a file and do `cmail < file` at the command line. In either case `'cmail'` will display the game using XBoard. If you didn't exit XBoard when you made your first move then `'cmail'` will do its best to use the existing XBoard instead of starting a new one. As before, simply make a move and select `'Mail Move'` from the `'File'` menu. See Section 2.1 [File Menu], page 3. `'cmail'` will try to use the XBoard that was most recently used to display the current game. This means that many games can be in progress simultaneously, each with its own active XBoard.

If you want to look at the history or explore a variation, go ahead, but you must return to the current position before XBoard will allow you to mail a move. If you edit the game's history you must select `'Reload Same Game'` from the `'File'` menu to get back to the original position, then make the move you want and select `'Mail Move'`. As before, if you decide you aren't ready to make a move just yet you can either select `'Exit'` without sending a move or just leave XBoard running until you are ready.

10.4 Multi-Game Messages

It is possible to have a `'cmail'` message carry more than one game. This feature was implemented to handle IECG (International Email Chess Group) matches, where a match consists of one game as white and one as black, with moves transmitted simultaneously. In case there are more general uses, `'cmail'` itself places no limit on the number of black/white games contained in a message; however, XBoard does.

10.5 Completing a Game

Because XBoard can detect checkmate and stalemate, `'cmail'` handles game termination sensibly. As well as resignation, the `'Action'` menu allows draws to be offered and accepted for `'cmail'` games.

For multi-game messages, only unfinished and just-finished games will be included in email messages. When all the games are finished, they are archived in the user's archive

directory, and similarly in the opponent's when he or she pipes the final message through 'cmail'. The archive file name includes the date the game was started.

10.6 Known CMail Problems

It's possible that a strange conjunction of conditions may occasionally mean that 'cmail' has trouble reactivating an existing XBoard. If this should happen, simply trying it again should work. If not, remove the file that stores the XBoard's PID ('game.pid') or use the '-xreuse' option to force 'cmail' to start a new XBoard.

Versions of 'cmail' after 2.16 no longer understand the old file format that XBoard used to use and so cannot be used to correspond with anyone using an older version.

Versions of 'cmail' older than 2.11 do not handle multi-game messages, so multi-game correspondence is not possible with opponents using an older version.

11 Other programs you can use with XBoard

Here are some other programs you can use with XBoard

11.1 GNU Chess

The GNU Chess engine is available from:

<ftp://ftp.gnu.org/gnu/gnuchess/>

You can use XBoard to play a game against GNU Chess, or to interface GNU Chess to an ICS.

11.2 Fairy-Max

Fairy-Max is a derivative from the once World's smallest Chess program micro-Max, which measures only about 100 lines of source code. The main difference with micro-Max is that Fairy-Max loads its move-generator tables from a file, so that the rules for piece movement can be easily configured to implement unorthodox pieces. Fairy-Max can therefore play a large number of variants, normal Chess being one of those. In addition it plays Knightmate, Capablanca and Gothic Chess, Shatranj, Courier Chess, Cylinder chess, Berolina Chess, while the user can easily define new variants. It can be obtained from:

<http://home.hccnet.nl/h.g.muller/dwnldpage.html>

11.3 HoiChess

HoiChess is a not-so-very-strong Chess engine, which comes with a derivative HoiXiangqi, able to play Chinese Chess. It can be obtained from the standard Linux repositories through:

```
sudo apt-get install hoichess
```

11.4 Crafty

Crafty is a chess engine written by Bob Hyatt. You can use XBoard to play a game against Crafty, hook Crafty up to an ICS, or use Crafty to interactively analyze games and positions for you.

Crafty is a strong, rapidly evolving chess program. This rapid pace of development is good, because it means Crafty is always getting better. This can sometimes cause problems with backwards compatibility, but usually the latest version of Crafty will work well with the latest version of XBoard. Crafty can be obtained from its author's FTP site: <ftp://ftp.cis.uab.edu/hyatt/>.

To use Crafty with XBoard, give the `-fcp` and `-fd` options as follows, where `<crafty's directory>` is the directory in which you installed Crafty and placed its book and other support files.

11.5 zic2xpm

The "zic2xpm" program is used to import chess sets from the ZIICS(*) program into XBoard. "zic2xpm" is part of the XBoard distribution. ZIICS is available from:

<ftp://ftp.freechess.org/pub/chess/DOS/ziics131.exe>

To import ZIICS pieces, do this:

1. Unzip `ziics131.exe` into a directory:

```
unzip -L ziics131.exe -d ~/ziics
```

2. Use `zic2xpm` to convert a set of pieces to XBoard format.

For example, let's say you want to use the FRITZ4 set. These files are named "fritz4.*" in the ZIICS distribution.

```
mkdir ~/fritz4
cd ~/fritz4
zic2xpm ~/ziics/fritz4.*
```

3. Give XBoard the "-pixmap" option when starting up, e.g.:

```
xboard -pixmap ~/fritz4
```

Alternatively, you can add this line to your '.Xresources' file:

```
xboard*pixmapDirectory: ~/fritz4
```

(*) ZIICS is a separate copyrighted work of Andy McFarland. The "ZIICS pieces" are copyrighted works of their respective creators. Files produced by "zic2xpm" are for PERSONAL USE ONLY and may NOT be redistributed without explicit permission from the original creator(s) of the pieces.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc. <http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program—to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

“This License” refers to version 3 of the GNU General Public License.

“Copyright” also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

“The Program” refers to any copyrightable work licensed under this License. Each licensee is addressed as “you”. “Licensees” and “recipients” may be individuals or organizations.

To “modify” a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a “modified version” of the earlier work or a work “based on” the earlier work.

A “covered work” means either the unmodified Program or a work based on the Program.

To “propagate” a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To “convey” a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays “Appropriate Legal Notices” to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work’s System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users’ Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a. The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b. The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c. You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d. If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c. Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d. Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e. Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A “User Product” is either (1) a “consumer product”, which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, “normally used” refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

“Installation Information” for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source.

The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

“Additional permissions” are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a. Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b. Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c. Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d. Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e. Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f. Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered “further restrictions” within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance.

However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An “entity transaction” is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party’s predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A “contributor” is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor’s “contributor version”.

A contributor’s “essential patent claims” are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, “control” includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor’s essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a “patent license” is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To “grant” such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. “Knowingly relying” means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient’s use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is “discriminatory” if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others’ Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License “or any later version” applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy’s public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the “copyright” line and a pointer to where the full notice is found.

one line to give the program's name and a brief idea of what it does.

Copyright (C) year name of author

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

program Copyright (C) year name of author

This program comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands ‘show w’ and ‘show c’ should show the appropriate parts of the General Public License. Of course, your program’s commands might be different; for a GUI interface, you would use an “about box”.

You should also get your employer (if you work as a programmer) or school, if any, to sign a “copyright disclaimer” for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

Index

(Index is nonexistent)

Table of Contents

Introduction	1
1 Major modes	2
2 Menus, buttons, and keys	3
2.1 File Menu	3
2.2 Mode Menu	5
2.3 Action Menu	9
2.4 Step Menu	9
2.5 Options Menu	11
2.6 Help Menu	15
2.7 Other Shortcut Keys	16
3 Options	17
3.1 Chess Engine Options	17
3.2 UCI + WB Engine Settings	21
3.3 ICS options	22
3.4 Load and Save options	27
3.5 User interface options	29
3.6 Adjudication Options	33
3.7 Other options	34
4 Chess Servers	37
5 Firewalls	39
6 Environment variables	41
7 Limitations and known bugs	42
8 Reporting problems	43
9 Authors and contributors	44
10 CMail	45
10.1 CMail options	45
10.2 Starting a CMail Game	47
10.3 Answering a Move	47
10.4 Multi-Game Messages	47
10.5 Completing a Game	47
10.6 Known CMail Problems	48

11 Other programs you can use with XBoard	49
.....	
11.1 GNU Chess	49
11.2 Fairy-Max	49
11.3 HoiChess	49
11.4 Crafty	49
11.5 zic2xpm	49
GNU GENERAL PUBLIC LICENSE	51
Index	62