XBoard

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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 4.8.0 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 bughouse.

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.

cmail [options]
: As an interface to electronic mail correspondence chess, XBoard works with the cmail program. See Chapter 11 [CMail], page 67 below for instructions.

2 Basic operation

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. In crazyhouse, bughouse or shogi you can drag and drop pieces to the board from the holdings squares displayed next to the board.

Old behavior, where right-clicking a square brings up a menu where you can select what piece to drop on it can still be selected through the '`Drop Menu`' option. Only in Edit Position mode right and middle clicking a square is still used to put a piece on it, and the piece to drop is selected by sweeping the mouse vertically with the button held down.

The default function of the right mouse button in other modes is to display the position the chess program thinks it will end up in. While moving the mouse vertically with this button pressed XBoard will step through the principal variation to show how this position will be reached. Lines of play displayed in the engine-output window, or PGN variations in the comment window can similarly be played out on the board, by right-clicking on them. Only in Analysis mode, when you walk along a PV, releasing the mouse button will forward the game upto that point, like you entered all previous PV moves. As the display of the PV in that case starts after the first move a simple right-click will play the move the engine indicates.

In Analysis mode you can also make a move by grabbing the piece with a double-click of the left mouse button (or while keeping the Ctrl key pressed). In this case the move you enter will not be played, but will be excluded from the analysis of the current position. (Or included if it was already excluded; it is a toggle.) This only works for engines that support this feature.

When connected to an ICS, it is possible to call up a graphical representation of players seeking a game in stead of the chess board, when the latter is not in use (i.e. when you are not playing or observing). Left-clicking the display area will switch between this 'seek graph' and the chess board. Hovering the mouse pointer over a dot will show the details of the seek ad in the message field above the board. Left-clicking the dot will challenge that player. Right-clicking a dot will 'push it to the back', to reveal any dots that were hidden behind it. Right-clicking off dots will refresh the graph.

Most other XBoard commands are available from the menu bar. The most frequently used commands also have shortcut keys or on-screen buttons. These shortcut keystrokes are mostly non-printable characters. Typing a letter or digit while the board window has focus will bring up a type-in box with the typed letter already in it. You can use that to type a move in siuations where it is your turn to enter a move, type a move number to call up the position after that move in the display, or, in Edit Position mode, type a FEN. Some rarely used parameters can only be set through options on the command line used to invoke XBoard.

XBoard uses a settings file, in which it can remember any changes to the settings that are made through menus or command-line options, so they will still apply when you restart XBoard for another session. The settings can be saved into this file automatically when XBoard exits, or on explicit request of the user. The default name for the settings file is /etc/xboard/xboard.conf, but in a standard install this file is only used as a master settings file that determines the system-wide default settings, and defers reading and writing of user settings to a user-specific file like ~/.xboardrc in the user's home directory.

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.

3 Menus, buttons, and keys

3.1 File Menu

New Game

Resets XBoard and the chess engine to the beginning of a new chess game. The *Ctrl-N* 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 3.5 [Action Menu], page 15.

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). You can also press the '`Pick Fixed`' button to let XBoard generate a random number for you. The thus selected opening position will then persistently be chosen on any following New Game command until you use this menu to select another. Selecting position number -1 (or pushing the '`Randomize`' button) 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.) The shifted *Alt+V* key is a keyboard equivalent. 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. But not every board size has built-in bitmaps for un-orthodox pieces! Only sizes bulky (72) and middling (49) have all pieces, while size petite (33) has most. These sizes would have to be set at startup through the `size` command-line option when you start up XBoard for such variants to be playable.

You can overrule the default board format of the selected variant, (e.g. to play suicide chess on a 6 x 6 board), in this dialog, but normally you would not do that, and leave them at '-1', which means 'default'.

Load Game

Plays a game from a record file. The *Ctrl-O* 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 Nth 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) also are treated as comments; however, if you rights-click them in the comment window, XBoard will shelve the current line, and load the the selected variation, so you can step through it. You can later revert to the previous line with the '`Revert`' command. This way you can walk quite complex varation trees with XBoard. 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. Note that it must appear before any FEN tag for XBoard to recognize variant FENs appropriately. 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 Position
: Sets up a position from a position file. A pop-up dialog prompts you for the file name. The shifted *`Ctrl-O`* key is a keyboard equivalent. 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. The shifted *PgDn* key is a keyboard equivalent.

Load Previous Position
: Loads the previous position from the last position file you loaded. The shifted *PgUp* key is a keyboard equivalent. Not available if the last position was loaded from a pipe.

Save Game
: Appends a record of the current game to a file. The *`Ctrl-S`* key is a keyboard equivalent. 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.

Save Position
: Appends a diagram of the current position to a file. The shifted `Ctrl+S` key is a keyboard equivalent. 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.

Save Selected Games
: Will cause all games selected for display in the current Game List to be appended to a file of the user's choice.

Save Games as Book
: Creates an opening book from the currently loaded game file, incorporating only the games currently selected in the Game List. The book will be saved on the file specified in the '`Common Engine`' options dialog. The value of '`Book Depth`' specified in that same dialog will be used to determine how many moves of each game will be added to the internal book buffer. This command can take a long time to process, and the size of the buffer is currently limited. At the end the buffer will be saved as a Polyglot book, but the buffer will not be cleared, so that you can continue adding games from other game files.

Mail Move
Reload CMail Message
: See Chapter 11 [CMail], page 67.

Exit
: Exits from XBoard. The `Ctrl-Q` key is a keyboard equivalent.

3.2 Edit Menu

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 `Ctrl-C` key is a keyboard equivalent. 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.

Copy Position
: Copies the current position to an internal clipboard in FEN format and sets the X selection to the position text. The shifted `Ctrl-C` key is a keyboard equivalent. 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.

Copy Game List
: Copies the current game list to the clipboard, and sets the X selection to this text. A format of comma-separated double-quoted strings is used, including all tags, so it can be easily imported into spread-sheet programs.

Paste Game

Interprets the current X selection as a game record and loads it, as with Load Game. The *Ctrl-V* key is a keyboard equivalent.

Paste Position

Interprets the current X selection as a FEN position and loads it, as with Load Position. The shifted *Ctrl-V* key is a keyboard equivalent.

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. The *Ctrl-E* key is a keyboard equivalent.

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. The shifted *Ctrl-E* key is a keyboard equivalent. 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 puts a white or black pawn in the square, respectively, but you can change that to any other piece type by dragging the mouse down before you release the button. You will then see the piece on the originally clicked square cycle through the available pieces (including those of opposite color), and can release the button when you see the piece you want. To alter the side to move, you can click the clock (the words White and Black above the board) of the side you want to give the move to. To clear the board you can click the clock of the side that alread has the move (which is highlighted in black). The old behavior with a piece menu can still be configured with the aid of the pieceMenu option. 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.)

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`', PGN variations will also be printed in this window, and can be promoted to main line by right-clicking them. '`Forward`', and '`Backward`'.

Edit Book
: Pops up a window listing the moves available in the GUI book (specified in the '`Common Engine Settings`' dialog) from the currently displayed position, together with their weights and (optionally in braces) learn info. You can then edit this list, and the new list will be stored back into the book when you press OK. Note that the listed percentages are neither used, nor updated when you change the weights; they are just there as an optical aid.

Revert
Annotate
: If you are examining an ICS game and Pause mode is off, Revert issues the ICS command '`revert`'. In local mode, when you were editing or analyzing a game, and the `-variations` command-line option is switched on, you can start a new variation by holding the Shift key down while entering a move not at the end of the game. Variations can also become the currently displayed line by clicking a PGN variation displayed in the Comment window. This can be applied recursively, so that you can analyze variations on variations; each time you create a new variation by entering an alternative move with Shift pressed, or select a new one from the Comment window, the current variation will be shelved. '`Revert`' allows you to return to the most recently shelved variation. The difference between '`Revert`' and '`Annotate`' is that with the latter, the variation you are now abandoning will be added as a comment (in PGN variation syntax, i.e. between parentheses) to the original move where you deviated, for later recalling. The *`Home`* key is a keyboard equivalent to '`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. The *`End`* key is a keyboard equivalent.

Backward
: Steps backward through a series of remembered moves. The '`[<]`' button and the *`Alt+LeftArrow`* 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 *`Alt+RightArrow`* 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 *`Alt+Home`* 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 *`Alt+End`* 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.

3.3 View 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 *F2* key is a keyboard equivalent.

Show Engine Output
: Shows or hides a window in which the thinking output of any loaded engines is displayed. The shifted *Alt+O* key is a keyboard equivalent. XBoard will display lines of thinking output of the same depth ordered by score, (highest score on top), rather than in the order the engine produced them. Usually this amounts to the same, as a normal engine search will only find new PV (and emit it as thinking output) when it searches a move with a higher score than the previous variation. But when the engine is in multi-variation mode this needs not always be true, and it is more convenient for someone analyzing games to see the moves sorted by score. The order in which the engine found them is only of interest to the engine author, and can still be deduced from the time or node count printed with the line. Right-clicking a line in this window, and then moving the mouse vertically with the right button kept down, will make XBoard play through the PV listed there. The use of the board window as 'variation board' will normally end when you release the right button, or when the opponent plays a move. But beware: in Analysis mode, moves thus played out will be added to the game. The Engine-Output pane for each engine will contain a header displaying the multi-PV status and a list of excluded moves in Analysis mode, which are also responsive to right-clicking.

Show Move History
: Shows or hides a list of moves of the current game. The shifted *Alt+H* key is a keyboard equivalent. This list allows you to move the display to any earlier position in the game by clicking on the corresponding move.

Show Evaluation Graph
: Shows or hides a window which displays a graph of how the engine score(s) evolved as a function of the move number. The shifted *Alt+E* key is a keyboard equivalent. Clicking on the graph will bring the corresponding position in the board display.

Show Game List
: Shows or hides the list of games generated by the last 'Load Game' command. The shifted *Alt+G* key is a keyboard equivalent.

Tags
: Pops up a window which shows the PGN (portable game notation) tags for the current game. For now this is a duplicate of the 'Edit Tags' item in the 'Edit' menu.

Comments
: Pops up a window which shows any comments to or variations on the current move. For now this is a duplicate of the ‘`Edit Comment`’ item in the ‘`Edit`’ menu.

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.

Open Chat Window
: This menu item opens a window in which you can conduct upto 5 chats with other ICS users (or channels). To use the window, write the name of your chat partner, the channel number, or the words 'shouts', 'whispers', 'cshouts' in the upper field (closing with `<Enter>`). Everything you type in the lowest field will then automatically be sent to the mentioned party, while everything that party sends to you will appear in the central text box, rather than appear in the ICS console. The row of buttons allow you to choose between chat; to start a new chat, just select an empty button, and complete the ‘`Chat partner`’ field.

Board
: Summons a dialog where you can customize the look of the chess board. Here you can specify the directory from which piece images should be taken, when you don't want to use the built-in piece images (see `pieceImageDirectory` option), external images to be used for the board squares (`liteBackTextureFile` and `darkBackTextureFile` options), and square and piece colors for the default pieces.

Game List Tags
: a duplicate of the Game List dialog in the Options menu.

3.4 Mode Menu

Machine White
: Tells the chess engine to play White. The *`Ctrl-W`* key is a keyboard equivalent.

Machine Black
: Tells the chess engine to play Black. The *`Ctrl-B`* key is a keyboard equivalent.

Two Machines
: Plays a game between two chess engines. The *`Ctrl-T`* key is a keyboard equivalent.

Analysis Mode
: XBoard tells the chess engine to start analyzing the current game/position and shows you the analysis as you move pieces around. The *`Ctrl-A`* key is a keyboard equivalent. 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.

You can now play legal moves to create follow-up positions for the engine to analyze, while the moves will be remembered as a stored game, and then step backward through this game to take the moves back. Note that you can also click on the clocks to set the opposite side to move (adding a so-called '`null move`' to the game).

You can also tell the engine to exclude some moves from analysis. (Engines that do not support the exclude-moves feature will ignore this, however.) The general way to do this is to play the move you want to exclude starting with a double click on the piece. When you use drag-drop moving, the piece you grab with a double click will also remain on its square, to show you that you are not really making the move, but just forbid it from the current position. Playing a thus excluded move a second time will include it again. Excluded moves will be listed as text in a header line in the Engine Output window, and you can also re-include them by right-clicking them there. This header line will also contain the words 'best' and 'tail'; right-clicking those will exclude the currently best move, or all moves not explicitly listed in the header line. Once you leave the current position all memory of excluded moves will be lost when you return there.

Selecting this menu item while already in '`Analysis Mode`' will toggle the participation of the second engine in the analysis. The output of this engine will then be shown in the lower pane of the Engine Output window. 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 Game

This option subjects the currently loaded game to automatic analysis by the loaded engine. The *`Ctrl-G`* key is a keyboard equivalent. XBoard will start auto-playing the game from the currently displayed position, while the engine is analyzing the current position. The game will be annotated with the results of these analyses. In particlar, the score and depth will be added as a comment, and the PV will be added as a variation.

Normally the analysis would stop after reaching the end of the game. But when a game is loaded from a multi-game file while '`Analyze Game`' was already switched on, the analysis will continue with the next game in the file until the end of the file is reached (or you switch to another mode).

The time the engine spends on analyzing each move can be controlled through the command-line option '`-timeDelay`', which can also be set from the '`Load Game Options`' menu dialog. Note: Some chess engines do not support Analysis mode.

Edit Game
: Duplicate of the item in the Edit menu. Note that '`Edit Game`' is the idle mode of XBoard, and can be used to get you out of other modes. E.g. to stop analyzing, stop a game between two engines or stop editing a position.

Edit Position
: Duplicate of the item in the Edit menu.

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.

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 5 [Chess Servers], page 59 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.

Machine Match
: Starts a match between two chess programs, with a number of games and other parameters set through the '`Match Options`' menu dialog. When a match is already running, selecting this item will make XBoard drop out of match mode after the current game finishes.

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 *Pause* 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.

3.5 Action Menu

Accept
: Accepts a pending match offer. The *F3* key is a keyboard equivalent. 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.). The *F4* key is a keyboard equivalent. 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. The *F5* key is a keyboard equivalent. You can also call your opponent's flag by clicking on his clock.

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 *F6* 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. The *F7* key is a keyboard equivalent.

Abort
: Asks your opponent to agree to aborting the current game, or agrees to a pending abort offer from your opponent. The *F8* key is a keyboard equivalent. An aborted game ends immediately without affecting either player's rating.

Resign
: Resigns the game to your opponent. The *F9* 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. The *F10* key is a keyboard equivalent.

Stop Examining
: Ends your participation in examining a game, by issuing the ICS unexamine command. ICS mode only. The *F11* key is a keyboard equivalent.

Upload to Examine
: Create an examined game of the proper variant on the ICS, and send the game there that is currenty loaded in XBoard (e.g. through pasting or loading from file). You must be connected to an ICS for this to work.

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".

3.6 Engine Menu

Load Engine
: Pops up a dialog where you can select or specify an engine to be loaded. You will always have to indicate whether you want to load the engine as first or second engine, through the Load menitioned engine as drop-down list at the bottom of the dialog. You can even replace engines during a game, without disturbing that game. (Beware that after loading an engine, XBoard will always be in Edit Game mode, so you will have to tell the new engine what to do before it does anything!) When you select an already installed engine from the Select Engine from List drop-down list, all other fields of the dialog will be ignored. In other cases, you have to specify the engine executable, possible arguments on the engine command line (if the engine docs say the engine needs any), and the directory where the engine should look for its files (if this cannot be deduced automatically from the specification of the engine executable). You will also have to specify (with the aid of checkboxes) if the engine is UCI. If Add this engine to the list is ticked (which it is by default), the engine will be added to the list of installed engines in your settings file, (provided you save the settings!), so that next time you can select it from the drop-down list. You can also specify a nickname, under which the engine will then appear in that drop-down list, and even choose to use that nickname for it in PGN files for engine-engine games. The info you supply with the checkboxes whether the engine should use GUI book, or (for variant engines) automatically switch to the current variant when loaded, will also be included in the list. For obsolete XBoard engines, which would normally take a long delay to load because XBoard is waiting for a response they will not give, you can tick WB protocol v1 to speed up the loading process.

Engine #N Settings
: Pop up a menu dialog to alter the settings specific to the applicable engine. (The second engine is only accessible once it has been used in Two-Machines mode.) For each parameter the engine allows to be set, a control element will appear in this dialog that can be used to alter the value. Depending on the type of parameter (text string, number, multiple choice, on/off switch, instantaneous signal) the appropriate control will appear, with a description next to it. XBoard has no idea what these values mean; it just passes them on to the engine. How this dialog looks is completely determined by the engine, and XBoard just passes it on to the user. Many engines do not have any parameters that can be set by the user, and in that case the dialog will be empty (except for the OK and cancel buttons). UCI engines usually have many parameters. (But these are only visible with a sufficiently modern version of the Polyglot

adapter needed to run UCI engines, e.g. Polyglot 1.4.55b.) For native XBoard engines this is less common.

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.

Move Now
: Forces the chess engine to move immediately. Chess engine mode only. The *`Ctrl-M`* key is a keyboard equivalent.

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. The *`Ctrl-X`* key is a keyboard equivalent.

Recently Used Engines
: At the bottom of the engine menu there can be a list of names of engines that you recently loaded through the Load Engine menu dialog in previous sessions. Clicking on such a name will load that engine as first engine, so you won't have to search for it in your list of installed engines, if that is very long. The maximum number of displayed engine names is set by the `recentEngines`command-line option.

3.7 Options Menu

3.7.1 General Options

The following items to set option values appear in the dialog summoned by the general Options menu item.

Absolute Analysis Scores
: Controls if scores on the Engine Output window during analysis will be printed from the white or the side-to-move point-of-view.

Almost Always Queen
: If this option is on, 7th-rank pawns automatically change into Queens when you pick them up, and when you drag them to the promotion square and release them there, they will promote to that. But when you drag such a pawn backwards first, its identity will start to cycle through the other available pieces. This will continue until you start to move it forward; at which point the identity of the piece will be fixed, so that you can safely put it down on the promotion square. If this option is off, what happens depends on the option `alwaysPromoteToQueen`, which would force promotion to Queen when true. Otherwise XBoard would bring up a dialog box whenever you move a pawn to the last rank, asking what piece you want to promote to.

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. The shifted `Ctrl-A` key is a keyboard equivalent.

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. The shifted `Ctrl-F` key is a keyboard equivalent. 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.

  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 4.6 [User interface options], page 45.

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.

Drop Menu
: Controls if right-clicking the board in crazyhouse / bughouse will pop up a menu to drop a piece on the clicked square (old, deprecated behavior) or allow you to step through an engine PV (new, recommended behavior).

Enable Variation Trees
: If this option is on, playing a move in Edit Game or Analyze mode while keeping the Shift key pressed will start a new variation. You can then recall the previous line through the '`Revert`' menu item. When off, playing a move will truncate the game and append the move irreversibly.

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. The shifted *Ctrl-H* key is a keyboard equivalent.

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.

Highlight with Arrow
: Causes the highlighting described in Highlight Last Move to be done by drawing an arrow between the highlighted squares, so that it is visible even when the width of the grid lines is set to zero.

Move Sound
: Enables the sounding of an audible signal when the computer performs a move. For the selection of the sound, see 'Sound Options'. 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 4.4 [ICS options], page 38.)

One-Click Moving
: If this option is on, XBoard does not wait for you to click both the from- and the to-square, or drag the piece, but performs a move as soon as it is uniqely specified. This applies to clicking an own piece that only has a single legal move, clicking an empty square or opponent piece where only one of your pieces can move (or capture) to. Furthermore, a double-click on a piece that can only make a single capture will cause that capture to be made. Promoting a Pawn by clicking its to-square will suppress the promotion popup or other methods for selecting an under-promotion, and make it promote to Queen.

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.

Play Move(s) of Clicked PV
: If this option is on, right-clicking a PV in the Engine Output window during Analyze mode will cause the first move of that PV to be played. You could also play more than one (or no) PV move by moving the mouse to engage in the PV walk such a right-click will start, to seek out another position along the PV where you want to continue the analysis, before releasing the mouse button.

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. The shifted *Ctrl-P* key is a keyboard equivalent.

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.

Scores in Move List
: If this option is on, XBoard will display the depth and score of engine moves in the Move List, in the format of a PGN comment.

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

Show Target Squares
: If this option is on, all squares a piece that is 'picked up' with the mouse can legally move to are highighted with a fat colored dot in the highlightColor (non-captures) or premoveHighlightColor (captures). Legality testing must be on for XBoard to know how the piece moves.

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. The shifted *`Ctrl-L`* key is a keyboard equivalent. 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.)

Flash Moves
Flash Rate
: If this option is non-zero, whenever a move is completed, the moved piece flashes the specified number of times. The flash-rate setting determines how rapidly this flashing occurs.

Animation Speed
: Determines the duration (in msec) of an animation step, when '`Animate Moving`' is swiched on.

Zoom factor in Evaluation Graph
: Sets the valueof the `evalZoom` option, indicating the factor by which the score interval (-1,1) should be blown up on the vertical axis of the Evaluation Graph.

3.7.2 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. The shifted *`Alt+T`* key is a keyboard equivalent.

3.7.3 Common Engine

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 XBoard/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 switched on and off independently for either engine. The way book moves are chosen can be influenced through the settings of book depth and variety. After both sides have played more moves than the specified depth, the book will no longer be consulted. When the variety is set to 50, moves will be played with the probability specified in the book. When set to 0, only the move(s) with the highest probability will be played. When set to 100, all listed moves will be played with equal pobability. Other settings interpolate between that. The shifted *`Alt+U`* key is a keyboard equivalent.

3.7.4 Adjudications

Pops up a sub-menu where you can enable or disable various adjudications that XBoard can perform in engine-engine games. The shifted *`Alt+J`* key is a keyboard equivalent. 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.

3.7.5 ICS Options

The following options occur in a dialog summoned by the ICS Options menu item.

Auto Kibitz
: Setting this option when playing with or aginst a chess program on an ICS will cause the last line of thinking output of the engine before its move to be sent to the ICS in a kibitz command. In addition, any kibitz message received through the ICS from an opponent chess program will be diverted to the engine-output window, (and suppressed in the console), where you can play through its PV by right-clicking it.

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 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 4.5 [Load and Save options], page 43.

Background Observe
: Setting this option will make XBoard suppress display of any boards from observed games while you are playing. In stead the last such board will be remembered, and shown to you when you right-click the board. This allows you to peek at your bughouse partner's game when you want, without disturbing your own game too much.

Dual Board
: Setting this option in combination with '`Background Observe`' will display boards of observed games while you are playing on a second board next to that of your own game.

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).

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.

Seek Graph
: Setting this option will cause XBoard to display an graph of currently active seek ads when you left-click the board while idle and logged on to an ICS.

Auto-Refresh Seek Graph
: In combination with the '`Seek Graph`' option this will cause automatic update of the seek graph while it is up. This only works on FICS and ICC, and requires a lot of bandwidth on a busy server.

Premove
Premove White
Premove Black
First White Move
First Black Move
: 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.

  You can also enter premoves for the first white and black moves of the game.

ICS Alarm
ICS Alarm Time
: When this option is on, an alarm sound is played when your clock counts down to the icsAlarmTime in an ICS game. (By default, the time is 5 seconds, but you can pecify other values with the Alarm Time spin control.) 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.

Colorize Messages
: Ticking this options causes various types of ICS messages do be displayed with different foreground or background colors in the console. The colors can be individually selected for each type, through the accompanying text edits.

3.7.6 Match Options

Summons a dialog where you can set options important for playing automatic matches between two chess programs (e.g. by using the '`Machine Match`' menu item in the '`Mode`' menu).

Tournament file
: To run a tournament, XBoard needs a file to record its progress, so it can resume the tourney when it is interrupted. When you want to conduct anything more complex than a simple two-player match with the currently loaded engines, (i.e. when you select a list of participants), you must not leave this field blank. When you enter the name of an existing tournament file, XBoard will ignore all other input specified in the dialog, and will take them from that tournament file. This resumes an interrupted tournament, or adds another XBoard agent playing games for it to those that are already doing so. Specifying a not-yet-existing file will cause XBoard to create it, according to the tournament parameters specified in the rest of the dialog, before it starts the tournament on OK. Provided that you specify participants; without participants no tournament file will be made, but other entered values (e.g. for the file with opening positions) will take effect. Default: configured by the `defaultTourneyName` option.

Sync after round
Sync after cycle
: The sync options, when on, will cause WinBoard to refrain from starting games of the next round or cycle before all games of the previous round or cycle are finished. This guarantees correct ordering in the games file, even when multiple XBoard instances are concurrently playing games for the same tourney. Default: sync after cycle, but not after round.

Select Engine
Tourney participants
: With the Select Engine drop-down list you can pick an engine from your list of installed engines in the settings file, to be added to the tournament. The engines selected so far will be listed in the Tourney participants memo. The latter is a normal text edit, so you can use normal text-editing functions to delete engines you selected by accident, or change their order. Do not type names yourself there, because names that do not exactly match one of the names from the drop-down list will lead to undefined behavior.

Tourney type
: Here you can specify the type of tournament you want. XBoards intrinsic tournament manager support round-robins (type = 0), where each participant plays every other participant, and (multi-)gauntlets, where one (or a few) so-called gauntlet engines play an independent set of opponents. In the latter case, you specify the number of gauntlet engines. E.g. if you specified 10 engines, and tourney type = 2, the first 2 engines each play the remaining 8. A value of -1 instructs XBoard to play Swiss; for this to work an external pairing engine must be specified through the `pairingEngine` option. Each Swiss round will be considered a tourney cycle in that case. Default:0

Number of tourney cycles
Default number of Games

You can specify tourneys where every two opponents play each other multiple times. Such multiple games can be played in a row, as specified by the number of games per pairing, or by repeating the entire tournament schedule a number of times (specified by the number of tourney cycles). The total number of times two engine meet will be the product of these two. Default is 1 cycle; the number of games per pairing is the same as the default number of match games, stored in your settings file through the `defaultMatchGames` option.

Save Tourney Games

File where the tournament games are saved (duplicate of the item in the '`Save Game Options`').

Game File with Opening Lines
File with Start Positions
Game Number
Position Number
Rewind Index after

These items optionally specify the file with move sequences or board positions the tourney games should start from. The corresponding numbers specify the number of the game or position in the file. Here a value -1 means automatic stepping through all games on the file, -2 automatic stepping every two games. The Rewind-Index parameter causes a stepping index to reset to one after reaching a specified value. A setting of -2 for the game number will also be effective in a tournament without specifying a game file, but playing from the GUI book instead. In this case the first (odd) games will randomly select from the book, but the second (even) games will select the same moves from the book as the previous game. (Note this leads to the same opening only if both engines use the GUI book!) Default: No game or position file will be used. The default index if such a file is used is 1.

Disable own engine bools be default

Setting this option reverses the default situation for use of the GUI opening book in tournaments from what it normally is, namely not using it. So unless the engine is installed with an option to explicitly specify it should not use the GUI book (i.e. `-firstHasOwnBookUCI true`), it will be made to use the GUI book.

Replace Engine
Upgrade Engine

With these two buttons you can alter the participants of an already running tournament. After opening the Match Options dialog on an XBoard that is playing for the tourney, you will see all the tourney parameters in the dialog fields. You can then replace the name of one engine by that of another by editing the '`participants`' field. (But preserve the order of the others!) Pressing the button after that will cause the substitution. With the '`Upgrade Engine`' button the substitution will only affect future games. With '`Replace Engine`' all games the substituted engine has already played will be invalidated, and they will be replayed with the substitute engine. In this latter case the engine must not be playing when you do this, but otherwise there is no need to pause the tournament play for making a substitution.

Clone Tourney
: Pressing this button after you have specified an existing tournament file will copy the contents of the latter to the dialog, and then puts the originally proposed name for the tourney file back. You can then run a tourney with the same parameters (possibly after changing the proposed name of the tourney file for the new tourney) by pressing 'OK'.

3.7.7 Load Game Options

Summons a dialog where you can set the `autoDisplayComment` and `autoDisplayTags` options, (which control popups when viewing loaded games), and specify the rate at which loaded games are auto-played, in seconds per move (which can be a fractional number, like 1.6). You can also set search criteria for determining which games will be displayed in the Game List for a multi-game file, and thus be eligible for loading:

Elo of strongest player
Elo of weakest player
year
: These numeric fields set thresholds (lower limits) on the Elo rating of the mentioned player, or the date the game was played. Defaults: 0

Search mode
: This setting determines which positions in a game will be considered a match to the position currently displayed in the board window when you press the '`find position`' button in the Game List. You can search for an exact match, a position that has all shown material in the same place, but might contain additional material, a position that has all Pawns in the same place, but can have the shown material anywhere, a position that can have all shown material anywhere, or a position that has material between certain limits anywhere. For the latter you have to place the material that must be present in the four lowest ranks of the board, and optional additional material in the four highest ranks of the board. You can request the optional material to be balanced. The '`narrow`' button is similar in fuction to the '`find position`' button, but only searches in the already selected games, rather than the complete game file, and can thus be used to refine a search based on multiple criteria.

number of consecutive positions
: When you are searching by material, rather than for an exact match, this parameter indicates forhowmany consecutive game positions the same amount of material must be on the board before it is considered a match.

Also match reversed colors
Also match left-right flipped position
: When looking for matching positions rather than by material, these settings determine whether mirror images (in case of a vertical flip in combination with color reversal) will be also considered a match. The left-right flipping is only useful after all castling rights have expired (or in Xiangqi).

3.7.8 Save Game Options

Summons a dialog where you can specify the files on which XBoard should automatically save any played or entered games, (the `saveGameFile` option), or the final position of such games (the `savePositionfile` option). You can also select 'auto-save' without a file name, in which case XBoard will prompt the user for a file name after each game. In ICS mode you can limit the auto-saving to your own games (i.e. suppress saving of observed games). You can also set the default value for the PGN Event tag that will be used for each new game you start. Various options for the format of the game can be specified as well, such as whether scores and depths of engine games should be saved as comments, and if a tag with info about the score with which the engine came out of book should be included. For Chess, always set the format to PGN, rather than "old save stye"!

3.7.9 Game List

Pops up a dialog where you can select the PGN tags that should appear on the lines in the game list, and their order.

3.7.10 Sound Options

Summons a dialog where you can specify the sounds that should accompany various events that can occur XBoard. Most events are only relevant to ICS play, but the move sound is an important exception. For each event listed in the dialog, you can select a standard sound from a menu. You can also select a user-supplied sound file, by typing its name into the designated text-edit field first, and then selecting "Above WAV File" from the menu for the event. A dummy event has been provided for trying out the sounds with the "play" button next to it. The directory with standard sounds, and the external program for playing the sounds can be specified too, but normally you would not touch these once XBoard is properly installed. When a move sound other than 'None' is selected, XBoard alerts you by playing that 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.

3.7.11 Save Settings Now

Selecting this menu item causes the current XBoard settings to be written to the settings file, so they will also apply in future sessions. Note that some settings are 'volatile', and are not saved, because XBoard considers it too unlikely that you want those to apply next time. In particular this applies to the Chess program names, and all options giving information on those Chess programs (such as their directory, if they have their own opening book, if they are UCI or native XBoard), or the variant you are playing. Such options would still be understood when they appear in the settings file in case they were put there with the aid of a text editor, but they would disappear from the file as soon as you save the settings.

Note that XBoard no longer pays attention to options values specified in the .Xresources file. (Specifying key bindings there will still work, though.) To alter the default of volatile options, you can use the following method: Rename your ~/.xboardrc settings file (to ~/.yboardrc, say), and create a new file ~/.xboardrc, which only contains the options

```
-settingsFile  ~/.yboardrc
-saveSettingsFile  ~/.yboardrc
```

This will cause your settings to be saved on ~/.yboardrc in the future, so that ~/.xboardrc is no longer overwritten. You can then safely specify volatile options in ~/.xboardrc, either before or after the settingsFile options. Note that when you specify persistent options after the settingsFile options in ~/.xboardrc, you will essentially turn them into volatile options with the specified value as default, because that value will overrule the value loaded from the settings file (being read later).

3.7.12 Save Settings on Exit

Setting this option has no immediate effect, but causes the settings to be saved when you quit XBoard. What happens then is otherwise identical to what happens when you use select "Save Settings Now", see there.

3.8 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. The *F1* key is a keyboard equivalent. 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.

About XBoard
: Shows the current XBoard version number.

3.9 Other Shortcut Keys

Show Last Move
: By hitting *Enter* the last move will be re-animated.

Load Next Game
: Loads the next game from the last game record file you loaded. The *Alt+PgDn* key triggers this action.

Load Previous Game
: Loads the previous game from the last game record file you loaded. The *Alt+PgUp* key triggers this action. 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. Currently no keystroke is assigned to this ReloadGameProc.

Reload Same Position
: Reloads the last position you loaded. Not available if the last position was loaded from a pipe. Currently no keystroke is assigned to this ReloadPosition-Proc.

In the Xaw build of XBoard you can add or remove shortcut keys using the X resources `paneA.translations`. Here is an example of what could go into your `.Xdefaults` file:

```
XBoard*paneA.translations: \
  Shift<Key>?: MenuItem(Help.About) \n\
  Ctrl<Key>y: MenuItem(Action.Accept) \n\
  Ctrl<Key>n: MenuItem(Action.Decline) \n\
  Ctrl<Key>i: MenuItem(Nothing)
```

So the key should always be bound to the action 'MenuItem', with the (hierarchical) name of the menu item as argument. There are a few actions available for which no menu item exists: Binding a key to `Nothing` makes it do nothing, thus removing it as a shortcut key. Other such functions that can be bound to keys are:

```
AboutGame, DebugProc (switches the -debug option on or off),
LoadNextGame, LoadPrevGame, ReloadGame, ReloadPosition.
```

4 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 editing the settings file (usually ~/.xboardrc) to alter the value of the setting that was saved there. Some of the options cannot be changed while XBoard is running; others set the initial state of items that can be changed with the Chapter 4 [Options], page 30 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.

4.1 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 then 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 3.7 [Options Menu], page 17. 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 3.7 [Options Menu], page 17. 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 3.7 [Options Menu], page 17. Default: true.

-smpCores number

Specifies the maximum number of CPUs an SMP engine is allowed to use. Only works for engines that support the XBoard/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`.

-fe or -firstEngine nickname

This is an alternative to the `fcp` option for specifying the first engine, for engines that were already configured (using the '`Load Engine`' dialog) in XBoard's settings file. It will not only retrieve the real name of the engine, but also all options configured with it. (E.g. if it is UCI, whether it should use book.)

-se or -secondEngine nickname

As `fe`, but for the second engine.

-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 or -firstInitString
-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. Using the character sequence '`\n`' in the string should work too, though.

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 XBoard (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 an option announced by the engine at startup through the feature commands of the XBoard/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 XBoard would normally omit them (string = "- -"), or to add variant-specific fields that are not yet supported by XBoard (e.g. to indicate the number of checks in 3check).

-shuffleOpenings

Forces shuffling of the opening setup in variants that normally have a fixed initial position. Shufflings are symmetric for black and white, and exempt King and Rooks in variants with normal castling. Remains in force until a new variant is selected.

4.2 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 on its command line, according to the option `adapterCommand`.

-fUCCI
-sUCCI
-fUSI
-sUSI
: Options similar to `fUCI` and `sUCI`, except that they use the indicated engine with the protocol adapter specified in the '`uxiAdapter`' option. This can then be configured for running an UCCI or USI adapter, as the need arises.

-adapterCommand string
: The string conatins the command that should be issued by XBoard to start an engine that is accompanied by the `fUCI` option. Any identifier following a percent sign in the command (e.g. %fcp) will be considered the name of an XBoard option, and be replaced by the value of that option at the time the engine is started. For starting the second engine, any leading "f" or "first" in the option name will first be replaced by "s" or "second", before finding its value. Default: 'polyglot -noini -ec "%fcp" -ed "%fd"'

-uxiAdapter string
: Similar to `adapterCommand`, but used for engines accompanied by the `fUCCI` or `fUSI` option, so you can configure XBoard to be ready to handle more than one flavor of non-native protocols. Default: ""

-polyglotDir filename
: Gives the name of the directory in which the Polyglot adapter for UCI engines resides. Default: "".

-usePolyglotBook true/false
: Specifies if the Polyglot book should be used as GUI book.

-polyglotBook filename
: Gives the filename of the opening book. The book is only used when 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: depends on setting of the option `discourageOwnBooks`.

-discourageOwnBooks true/false
: When set, newly loaded engines will be assumed to use the GUI book, unless they explicitly specify differently. Otherwise they will be assumed to not use the GUI book, unless the specify differently (e.g. with `firstXBook`). Default: false.

-bookDepth n
: Limits the use of the GUI book to the first n moves of each side. Default: 12.

-bookVariation n
: A value n from 0 to 100 tunes the choice of moves from the GUI books from totally random to best-only. Default: 50

-mcBookMode
: When this volatile option is specified, the probing algorithm of the GUI book is altered to always select the move that is most under-represented based on its performance. When all moves are played in approximately the right proportion, a book miss will be reported, to give the engine opportunity to explore a new move. In addition score of the moves will be kept track of during the session in a book buffer. By playing an match in this mode, a book will be built from scratch. The only output are the saved games, which can be converted to an actual book later, with the '`Save Games as Book`' command. This command can also be used to pre-fill the book buffer before adding new games based on the probing algorithm.

-fn string or -firstPgnName string
-sn string or -secondPgnName string
: Indicates the name that should be used for the engine in PGN tags of engine-engine games. Intended to allow you to install verions of the same engine with different settings, and still distinguish them. Default: "".

-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 XBoard/WinBoard engines, for those that support the memory feature of the XBoard/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 XBoard/WinBoard engines, for those that support the memory feature of the XBoard/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: "".

-firstChessProgramNames={names}
: This option lets you customize the drop-down list of chess engine names that appears in the '`Load Engine`' and '`Match Options`' dialog. It consists of a list of strings, one per line. When an engine is loaded, the corresponding line is prefixed with "-fcp ", and processed like it appeared on the command line. That means that apart from the engine command, it can contain any list of

XBoard options you want to use with this engine. (Commonly used options here are -fd, -firstXBook, -fUCI, -variant.)

The value of this option is gradually built as you load new engines through the '`Load Engine`' menu dialog, with '`Add to list`' ticked. To change it, edit your settings file with a plain text editor.

4.3 Tournament options

-defaultMatchGames n
: Sets the number of games that will be used for a match between two engines started from the menu to n. Also used as games per pairing in other tournament formats. Default: 10.

-matchPause n
: Specifies the duration of the pause between two games of a match or tournament between engines as n milliseconds. Especially engines that do not support ping need this option, to prevent that the move they are thinking on when an opponent unexpectedly resigns will be counted for the next game, (leading to illegal moves there). Default: 10000.

-tf filename or -tourneyFile filename
: Specifies the name of the tournament file used in match mode to conduct a multi-player tournament. This file is a special settings file, which stores the description of the tournament (including progress info), through normal options (e.g. for time control, load and save files), and through some special-purpose options listed below.

-tt number or -tourneyType number
: Specifies the type of tourney: 0 = round-robin, N>0 = (multi-)gauntlet with N gauntlet engines, -1 = Swiss through external pairing engine. Volatile option, but stored in tourney file.

-cy number or -tourneyCycles number
: Specifies the number of cycles in a tourney. Volatile option, but stored in tourney file.

-participants list
: The list is a multi-line text string that specifies engines occurring in the `firstChesProgramNames` list in the settings file by their (implied or explicitly given) nicknames, one engine per line. The mentioned engines will play in the tourney. Volatile option, but stored in tourney file.

-results string
: The string of +=- characters lists the result of all played games in a toruney. Games currently playing are listed as *, while a space indicates a game that is not yet played or playing . Volatile option, but stored in tourney file.

-defaultTourneyName string
: Specifies the name of the tournament file XBoard should propose when the '`Match Options`' dialog is opened. Any %y, %M, %d, %h, %m, %s in the string are replaced by the current year, month, day of the month, hours, minutes,

seconds of the current time, respectively, as two-digit number. A %Y would be replaced by the year as 4-digit number. Default: empty string.

-pairingEngine filename
: Specifies the external program to be used to pair the participants in Swiss tourneys. XBoard communicates with this engine in the same way as it communicates with Chess engines. The only commands sent to the pairing engine are results N string, (where N is the number of participants, and string the results so far in the format of the results option), and pairing N, (where N is the number of the tourney game). To the latter the pairing engine should answer with A-B, where A and B are participant numbers (in the range 1-N). (There should be no reply to the results command.) Default: empty string.

-afterGame string
-afterTourney string
: When non-empty, the given string will be executed as a system command after each tournament game, orafterthe tourney completes, respectively. This can be used, for example, to autmatically run a cross-table generator on the PGN file where games are saved, to update the tourney standings. Default: `""`

-syncAfterRound true/false
-syncAfterCycle true/false
: Controls whether different instances of XBoard concurrently running the same tournament will wait for each other. Defaults: sync after cycle, but not after round.

-seedBase number
: Used to store the seed of the pseudo-random-number generator in the tourney-File, so that separate instances of XBoard working on the same tourney can take coherent 'random' decisions, such as picking an opening for a given game number.

4.4 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 6 [Firewalls], page 61.

-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 6 [Firewalls], page 61.

-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 6 [Firewalls], page 61.

-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 8 [Limitations], page 64.

-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 3.4 [Mode Menu], page 12. Default: false.

-autocomm/-xautocomm or -autoComment true/false
: Sets the Auto Comment menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-autoflag/-xautoflag or -autoCallFlag true/false
: Sets the Auto Flag menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-autobs/-xautobs or -autoObserve true/false
: Sets the Auto Observe menu option. See Section 3.7 [Options Menu], page 17. 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.

-seekGraph true/false or -sg
: Enables displaying of the seek graph by left-clicking the board when you are logged on to an ICS and currently idle. The seek graph show all players currently seeking games on the ICS, plotted according to their rating and the time control of the game they seek, in three different colors (for rated, unrated and wild games). Computer ads are displayed as squares, human ads are dots. Default: false.

-autoRefresh true/false
: Enables automatic updating of the seek graph, by having the ICS send a running update of all newly placed and removed seek ads. This consumes a substantial amount of communication bandwidth, and is only supported for FICS and ICC. Default: false.

-backgroundObserve true/false
: When true, boards sent to you by the ICS from other games while you are playing (e.g. because you are observing them) will not be automatically displayed. Only a summary of time left and material of both players will appear in the message field above the board. XBoard will remember the last board it has received this way, and will display it in stead of the position in your own game when you press the right mouse button. No other information is stored on such games observed in the background; you cannot save such a game later, or step through its moves. This feature is provided solely for the benefit of bughouse players, to enable them to peek at their partner's game without the need to logon twice. Default: false.

-dualBoard true/false
: In combination with -backgroundObserve true, this option will display the board of the background game side by side with that of your own game, so you can have it in view permanently. Any board or holdings info coming in will be displayed on the secondary board immediately. This feature is still experimental and largely unfinished. There is no animation or highlighting of moves on the secondary board. Default: false.

-disguisePromotedPieces true/false
: When set promoted Pawns in crazyhouse/bughouse are displayed identical to primordial pieces of the same type, rather than distinguishable. Default: true.

-moves/-xmoves or -getMoveList true/false
: Sets the Get Move List menu option. See Section 3.7 [Options Menu], page 17. Default: true.

-alarm/-xalarm or -icsAlarm true/false
: Sets the ICS Alarm menu option. See Section 3.7 [Options Menu], page 17. Default: true.

-icsAlarmTime ms
: Sets the time in milliseconds for the ICS Alarm menu option. See Section 3.7 [Options Menu], page 17. Default: 5000.

lowTimeWarning true/false

Controls a color change of the board as a warning your time is running out. See Section 3.7 [Options Menu], page 17. Default: false.

-pre/-xpre \fRor\fB -premove true/false

Sets the Premove menu option. See Section 3.7 [Options Menu], page 17. Default: true.

-prewhite/-xprewhite or -premoveWhite
-preblack/-xpreblack or -premoveBlack
-premoveWhiteText string
-premoveBlackText string

Set the menu options for specifying the first move for either color. See Section 3.7 [Options Menu], page 17. Defaults: false and empty strings, so no pre-moves.

-quiet/-xquiet or -quietPlay true/false

Sets the Quiet Play menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-colorizeMessages or -colorize/-xcolorize

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. Default: true.

-colorShout foreground,background,bold
-colorSShout foreground,background,bold
-colorCShout foreground,background,bold
-colorChannel1 foreground,background,bold
-colorChannel foreground,background,bold
-colorKibitz foreground,background,bold
-colorTell foreground,background,bold
-colorChallege 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.

-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.

-soundDirectory directoryname
: This option specifies where XBoard will look for sound files, when these are not given as an absolute path name.

-soundShout filename
-soundSShout filename
-soundCShout filename
-soundChannel filename
-soundChannel1 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. CShout is synonymous with SShout.

-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).

4.5 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 N th 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`' or '`Analyze File`'. 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 3.7 [Options Menu], page 17. Default: false. Ignored if `saveGameFile` is set.

-onlyOwnGames true/false
: Suppresses auto-saving of ICS observed games. Default: false.

-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, XBoard 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".

-pgnNumberTag true/false
: Include the (unique) sequence number of a tournament game into the saved PGN file as a 'number' tag. Default: false.

-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. Default: true.

-oldsave/-xoldsave or -oldSaveStyle true/false
: Sets the Old Save Style menu option. See Section 3.7 [Options Menu], page 17. 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, c=result comment. Default: "eprd"

-ini or -settingsFile filename
-saveSettingsFile filename
@filename
: When XBoard encounters an option -settingsFile (or -ini for short), or @filename, it tries to read the mentioned file, and substitutes the contents of it (presumaby more command-line options) in place of the option. In the case of -ini or -settingsFile, the name of a successfully read settings file is also remembered as the file to use for saving settings (automatically on exit, or on user command). An option of the form @filename does not affect saving. The option -saveSettingsFile does specify a name of the file to use for saving, without reading any options from it, and is thus also effective when the file did not exist yet. So the settings will be saved to the file specified in the last -saveSettingsFile or succesfull -settingsFile / -ini command, if any, and in /etc/xboard/xboard.conf otherwise. Usualy the latter is only accessible for the system administrator, though, and will be used to contain system-wide default setings, amongst which a -saveSettingsFile and -settingsFile options to specify a settings file accessible to the individual user, such as ~/.xboardrc in the user's home directory.

-saveSettingsOnExit true/false
: Controls saving of options on the settings file. See Section 3.7 [Options Menu], page 17. Default: true.

4.6 User interface options

-display
-geometry
-iconic
-name
: 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 don't 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.

-logoSize N
: This option controls the drawing of player logos next to the clocks. The integer N specifies the width of the logo in pixels; the logo height will always be half the width. When N = 0, no logos will be diplayed. Default: 0.

-firstLogo imagefile
-secondLogo imagefile
: Specify the images to be used as player logos when `logoSize` is non-zero, next to the white and black clocks, respectively.

-autoLogo true/false
-logoDir filename
: When `autoLogo` is set, XBoard will search for a PNG image file with the name of the engine or ICS in the directory specified by `logoDir`.

-recentEngines number
-recentEngineList list
: When the number is larger than zero, it determines how many recently used engines will be appended at the bottom of the '`Engines`' menu. The engines will be saved in your settings file as the option `recentEngineList`, by their nicknames, and the most recently used one will always be sorted to the top. If the list after that is longer than the specified number, the last one is discarded. Changes in the list will only become visible the next session, provided you saved the settings. Default: 6.

-autoInstall list
: When the list is set to a non-empty string, XBoard will scan the operating system's plugin directory for engines supporting UCI and XBoard protocol at startup. When it finds an engine that was installed after it last saved its settings, a line to launch that engine (as per specs in the plugin file) is appended to the -firstChessProgramNames list of installed engines. In the future it will be possible to use the list to limit this automatic adding of engines to a certain types of variants.

-oneClickMove true/false
: When set, this option allows you to enter moves by only clicking the to- or from-square, when only a single legal move to or from that square is possible. Double-clicking a piece (or clicking an already selected piece) will instruct that piece to make the only capture it can legally do. Default: false.

-movesound/-xmovesound or -ringBellAfterMoves true/false
: Sets the Move Sound menu option. See Section 3.7 [Options Menu], page 17. 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 3.7 [Options Menu], page 17. Default: true.

-popup/-xpopup or -popupMoveErrors true/false
: Sets the Popup Move Errors menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-queen/-xqueen or -alwaysPromoteToQueen true/false
: Sets the Always Queen menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-sweepPromotions true/false
: Sets the '`Almost Always Promote to Queen`' menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-legal/-xlegal or -testLegality true/false
: Sets the Test Legality menu option. See Section 3.7 [Options Menu], page 17. 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. Xboard installs with a set of scalable (svg) piece images, which it scales to any of the requested sizes. The square size can further be continuously scaled by sizing the board window, but this only adapts the size of the pieces, and has no effect on the width of the grid lines or the font choice (both of which would depend on he selected boardSize). 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 messageFont, `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.

-overrideLineGap n
: When n `>=` 0, this forces the width of the black border between squares to n pixels for any board size. Mostly used to suppress the grid entirely by setting n = 0, e.g. in xiangqi or just getting a prettier picture. When n `<` 0 this the size-dependent width of the grid lines is used. Default: -1.

-coords/-xcoords or -showCoords true/false
Sets the Show Coords menu option. See Section 3.7 [Options Menu], page 17. 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 3.7 [Options Menu], page 17. Default: true.

-autoflip/-xautoflip or -autoFlipView true/false
Sets the Auto Flip View menu option. See Section 3.7 [Options Menu], page 17. 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 3.7 [Options Menu], page 17) 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.

-evalZoom factor
The score interval (-1,1) is blown up on the vertical axis of the Evaluation Graph by the given factor. Default: 1

-evalThreshold n
Score below n (centiPawn) are plotted as 0 in the Evaluation Graph. Default: 25

-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.

-showTargetSquares true/false
Determines whether XBoard can highlight the squares a piece has legal moves to, when you grab that piece with the mouse. Default: false.

-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 3.7 [Options Menu], page 17. Default: false.

-highlightMoveWithArrow true/false
: Sets the Highlight with Arrow menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-blind/-xblind or -blindfold true/false
: Sets the Blindfold menu option. See Section 3.7 [Options Menu], page 17. Default: false.

-periodic/-xperiodic or -periodicUpdates true/false
: Controls updating of current move andnode counts in analysis mode. Default: true.

-fSAN
-sSAN
: Causes the PV in thinking output of the mentioned engine to be converted to SAN before it is further processed. Warning: this might lose engine output not understood by the parser, and uses a lot of CPU power. Default: the PV is displayed exactly as the engine produced it.

-showEvalInMoveHistory true/false
: Controls whether the evaluation scores and search depth of engine moves are displayed with the move in the move-history window. Default: true.

-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 Xaw: -*-helvetica-bold-r-normal–*-*-*-*-*-*-*-*. Default GTK: Sans Bold %d.

-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 Xaw: -*-helvetica-bold-r-normal–*-*-*-*-*-*-*-*. Default GTK: Sans Bold %d.

-messageFont font
: The font used for popup dialogs, menus, 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 Xaw: -*-helvetica-medium-r-normal–*-*-*-*-*-*-*-*. Default GTK: Sans Bold %d. The font used in the Edit Tags dialog.

If the option value contains %d, XBoard will replace it by an appropriate font for the board size being used. (Only used in GTK build.) Default: Sans Normal %d. The font used in the Edit Comment dialog. If the option value contains %d, XBoard will replace it by an appropriate font for the board size being used. (Only used in GTK build.) Default: Sans Normal %d. The font used to display ICS output in the ICS Chat window. As ICS output often contains tables aligned by spaces, a mono-space font is recommended here. If the option value contains %d, XBoard will replace it by an appropriate font for the board size being used. (Only used in GTK build.) Default: Monospace Normal %d. The font used in Move History and Engine Output windows. As these windows display mainly moves, one could use a figurine font here. If the option value contains %d, XBoard will replace it by an appropriate font for the board size being used. (Only used in GTK build.) Default: Sans Normal %d. The font used in the listbox of the Game List window. If the option value contains %d, XBoard will replace it by an appropriate font for the board size being used. (Only used in GTK build.) Default: Sans Bold %d.

-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.

-pid or -pieceImageDirectory dir

This options control what piece images xboard uses. XBoard will look in the specified directory for an image in png or svg format for every piece type, with names like BlackQueen.svg, WhiteKnight.svg etc. When neither of these is found (or no valid directory is specified) XBoard will use the svg piece that was installed with it (from the source-tree directory '`svg`'). Both svg and png images will be scaled by XBoard to the required size, but the png pieces lose much in quality when scaled too much.

-whitePieceColor color
-blackPieceColor color
-lightSquareColor color
-darkSquareColor color
-highlightSquareColor color
-preoveHighlightColor 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
```

The PieceColor options only work properly if the image files defining the pieces were pure black & white (possibly anti-aliased to produce gray scales and semi-transparancy), like the pieces images that come with the install. Their effect on colored pieces is undefined. The SquareColor option only have an effect when no board textures are used.

-trueColors true/false

When set, this option suppresses the effect of the PieceColor options mentioned above. This is recommended for images that are already colored.

-useBoardTexture true/false
-liteBackTextureFile filename
-darkBackTextureFile filename

Indicate the png image files to be used for drawing the board squares, and if they should be used rather than using simple colors. The algorithm for cutting squares out of a given bitmap is such that the picture is perfectly reproduced when a bitmap the size of the complete board is given. If the filename ends in "-NxM.png", with integer N and M, it is assumed to contain a bitmap of a complete board of N files and M ranks, and XBoard will scale it to exactly match the current square size. If N=M=0 it scales the entire bitmap to the size of the board, irrespective of the number of files and ranks of the latter. Without any -NxM suffix textures are only blown up by an integer factor when they are smaller than the square size, or, when the name starts with "xq", too small to cover the complete Xiangqi board. Default: false and ""

-drag/-xdrag or -animateDragging true/false

Sets the Animate Dragging menu option. See Section 3.7 [Options Menu], page 17. Default: true.

-animate/-xanimate or -animateMoving true/false

Sets the Animate Moving menu option. See Section 3.7 [Options Menu], page 17. Default: true.

-animateSpeed n

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

-autoDisplayComment true/false
-autoDisplayTags true/false

If set to true, these options cause the window with the move comments, and the window with PGN tags, respectively, to pop up automatically when such tags or comments are encountered during the replaying a stored or loaded game. Default: true.

-pasteSelection true/false
: If this option is set to true, the Paste Position and Paste Game options paste from the currently selected text. If false, they paste from the clipboard. Default: false.

-autoCopyPV true|false
: When this option is set, the position displayed on the board when you terminate a PV walk (initiated by a right-click on board or engine-output window) will be automatically put on the clipboard as FEN. Default: false.

-dropMenu true|false
: This option allows you to emulate old behavior, where the right mouse button brings up the (now deprecated) drop menu rather than displaying the position at the end of the principal variation. Default: False.

-pieceMenu true|false
: This option allows you to emulate old behavior, where the right mouse button brings up the (now deprecated) piece menu in Edit Position mode. From this menu you can select the piece to put on the square you clicked to bring up the menu, or select items such as *`clear board`*. You can also *`promote`* or *`demote`* a clicked piece to convert it into an unorthodox piece that is not directly in the menu, or give the move to *`black`* or *`white`*.

-variations true|false
: When this option is on, you can start new variations in Edit Game or Analyze mode by holding the Shift key down while entering a move. When it is off, the Shift key will be ignored. Default: False.

-appendPV true|false
: When this option is on, right-clicking a PV in the Engine Output window will play the first move of that PV in Analyze mode, or as many moves as you walk through by moving the mouse. Default: False.

-absoluteAnalysisScores true|false
: When true, scores on the Engine Output window during analysis will be printed from the white point-of-view, rather than the side-to-move point-of-view. Default: False.

-scoreWhite true|false
: When true, scores will always be printed from the white point-of-view, rather than the side-to-move point-of-view. Default: False.

-memoHeaders true|false
: When true, column headers will be displayed in the Engine Output window for the depth, score, time and nodes data. Right-clicking on these headers will hide or show the corresponding data. (Not intended for dynamic use, as already printed data of the current search will not be affected!) Defaul: False.

4.7 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!

4.8 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.

-viewer
-viewerOptions string

Presence of the volatile option `viewer` on the command line will cause the value of the persistent option `viewerOptions` as stored in the settings file to be appended to the command line. The `view` option will be used by desktop associations with game or position file types, so that `viewerOptions` can be used to configure the exact mode XBoard will start in when it should act on such a file (e.g. in -ncp mode, or analyzing with your favorite engine). The options are also automatically appended when Board is invoked with a single argument not being an option name, which is then assumed to be the name of a `loadGameFile` or (when the name ends in .fen) a `loadPositionFile`. Default: "-ncp -engineOutputUp false -saveSettingsOnExit false".

-tourneyOptions string

When XBoard is invoked with a single argument that is a file with .trn extension, it will assume this argument to be the value of a `tourneyFile` option, and apped the value of the persistent option `tourneyOptions` as stored in the settings file to the command line. Thus the value of `tourneyOptions` can be used to configure XBoard to automatically start running a tournament when it should act on such a file. Default: "-ncp -mm -saveSettingsOnExit 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
knightmate    King moves as Knight, and vice versa
super         Superchess (shuffle variant with 4 exo-pieces)
makruk        Thai Chess (shatranj-like, P promotes on 6th rank)
asean         ASEAN Chess (a modernized version of Makruk)
spartan       Spartan Chess (black has unorthodox pieces)
fairy         A catchall variant in which all piece types
              known to XBoard can participate (8x8)
unknown       Catchall for other unknown variants
```

NOT ALL BOARDSIZES PROVIDE A COMPLETE SET OF BUILT-IN BITMAPS FOR ALL UN-ORTHODOX PIECES, though. Only in `boardSize` middling and bulky all 22 piece types are provided, while -boardSize petite has most of them. Archbishop, Chancellor and Amazon are supported in every size from petite to bulky. Kings or Amazons are substituted for missing bitmaps. You can still play variants needing un-orthodox pieces in other board sizes providing your own bitmaps through the `bitmapDirectory` or `pixmapDirectory` options.

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) are not fully understood, but losers, suicide, giveaway, atomic, and 3check should be OK. 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 baring 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 nonstandard 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

-pieceToCharTable 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 PNBRQ 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: `""`

-pieceNickNames string
: The characters in the string are interpreted the same way as in the `pieceToCharTable` option. But on input, piece-ID letters are first looked up in the nicknames, and only if not defined there, in the normal pieceToCharTable. This allows you to have two letters designate the same piece, (e.g. N as an alternative to H for Horse in Xiangqi), to make reading of non-compliant notations easier. Default: `""`

-colorNickNames string
: The side-to-move field in a FEN will be first matched against the letters in the string (first character for white, second for black), before it is matched to the regular 'w' and 'b'. This makes it easier to read non-compliant FENs, which, say, use 'r' for white. Default: `""`

-debug/-xdebug or -debugMode true/false
: Turns on debugging printout.

-debugFile filename or -nameOfDebugFile filename
: Sets the name of the file to which XBoard saves debug information (including all communication to and from the engines). A `%d` in the given file name (e.g. game%d.debug) will be replaced by the unique sequence number of a tournament game, so that the debug output of each game will be written on a separate file.

-engineDebugOutput number
: Specifies how XBoard 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, XBoard 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 order pauses before and after sending the "quit" command to an engine that must be terminated. The pause between quit and the previous command is specified in milliseconds. The pause after quit is used to schedule a kill signal to be sent to the engine process after the number of specified seconds plus one. This signal is a different one as the terminiation signal described in the protocol specs which engines can suppress or ignore, and which is sent directly after the "quit" command. Setting `delayAfterQuit` to -1 will suppress sending of the kill signal. Default: 0

-searchMode n
: The integer n encodes the mode for the '`find position`' function. Default: 1 (= Exact position match)

-eloThresholdBoth elo
-eloThresholdAny elo

Defines a lower limit for the Elo rating, which has to be surpassed before a game will be considered when searching for a board position. Default: 0

-dateThreshold year

Only games not played before the given year will be considered when searching for a board position

5 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 4.4 [ICS options], page 38.

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 4.4 [ICS options], page 38.) 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 3.5 [Action Menu], page 15.

  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 3.2 [Edit Menu], page 7, Section 3.4 [Mode Menu], page 12, and Section 3.5 [Action Menu], page 15.

6 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 8 [Limitations], page 64.

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
```

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
```

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
```

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. 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 ""
```

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/.

7 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.

8 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, XBoard 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. 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.

9 Reporting problems

You can report bugs and problems with XBoard using the bug tracker at `https://savannah.gnu.org/projects/xboard/` or by sending mail to `<bug-xboard@gnu.org>`. It can also be useful to report or discuss bugs in the WinBoard Forum at `http://www.open-aurec.com/wbforum/`, WinBoard development section.

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.

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.

10 Authors and contributors

Chris Sears and Dan Sears wrote the original XBoard. They were responsible for versions 1.0 through 1.2. The color scheme was taken from Wayne Christopher's `XChess` program.

Tim Mann was primarily responsible for XBoard versions 1.3 through 4.2.7, and for WinBoard (a port of XBoard to Microsoft Win32) from its inception through version 4.2.7.

John Chanak contributed the initial implementation of ICS mode. Evan Welsh wrote `CMail`, and Patrick Surry helped in designing, testing, and documenting it. Elmar Bartel contributed the new piece bitmaps introduced in version 3.2. Jochen Wiedmann converted the documentation to texinfo. Frank McIngvale added click/click moving, the Analysis modes, piece flashing, ZIICS import, and ICS text colorization to XBoard. Hugh Fisher added animated piece movement to XBoard, and Henrik Gram added it to WinBoard. 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.

In a fork from version 4.2.7, 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 continued this fork of the project, producing version 4.3. He 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.

Meanwhile, some work continued on the GNU XBoard project maintained at savannah.gnu.org, but version 4.2.8 was never released. Daniel Mehrmann was responsible for much of this work.

Most recently, Arun Persaud worked with H. G. Muller to merge all the features of the never-released XBoard/WinBoard 4.2.8 of the GNU XBoard project and the never-released 4.3.16 from H. G.'s fork into a unified XBoard/WinBoard 4.4, which is now available both from the savannah.gnu.org web site and the WinBoard forum.

11 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.

11.1 CMail options

-h
: Displays cmail usage information.

-c
: Shows the conditions of the GNU General Public License. See [Copying], page 72.

-w
: Shows the warranty notice of the GNU General Public License. See [Copying], page 72.

-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>
-myname <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.

-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 4 [Options], page 30.

11.2 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 3.1 [File Menu], page 5. 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.

11.3 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 3.1 [File Menu], page 5. `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.

11.4 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.

11.5 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.

11.6 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.

12 Other programs you can use with XBoard

Here are some other programs you can use with XBoard

12.1 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.

12.2 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

12.3 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

12.4 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.

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```
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
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your option) any later version.

This program is distributed in the hope that it will be useful, but
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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`.

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