

Kingsrow-hub version 1.63, October 11, 2020

This version of kingsrow does not include a user interface. It communicates with a separate UI (not supplied) using text messages at standard input and standard output. The communication is defined by Fabien Letouzey's Hub 2.1 protocol. See Fabien's [protocol.txt](#) document for a full description.

To run kingsrow-hub, change directory to the location of the kingrow-hub files and run the executable `kr_hub.exe`.

set-param settings

Name	Type	Values	Description
egdb-wld	bool	true, false	Enable the WLD endgame db.
egdb-wld-pieces	int	min 2, max 8	The maximum number of pieces in positions that kingrow will lookup in the WLD endgame db. Kingsrow will use the smaller of this setting or the highest number of pieces for which there is data in the db.
egdb-wld-mem	int	min 1, max 70000	The size of memory used by the WLD egdb driver in MiB (2 ²⁰ bytes)
egdb-wld-path	dir		The path to the WLD db files
egdb-parallel-init	bool	true, false	Determines whether or not the "wait" reply to "init" waits for EGDB initialization. If false, kingsrow does not respond with "wait" until EGDB initialization has completed. This could take a minute or more with the 8-piece db.
egdb-aux	bool	true, false	Enable the DTW or MTC endgame db.
egdb-aux-path	dir		The path to the DTW or MTC db files.
book	bool	true, false	Enable the opening book.
book-quality	enum	best, good, allkinds	The quality of moves that will be played from opening book. Best moves are the strongest but give the least variation in play.
threads	int	min 1, max 16	The number of parallel search threads
tt-mem	int	min 32, max 1024	The size of transposition table memory in MiB (2 ²⁰ bytes); should be an integer power of 2
tt-load	bool	true, false	When true, search info returns "tt-load" <factor>, where <factor> is the ratio (used / total) of transposition table entries. If the load factor frequently indicates a nearly full table (values > 0.95), you may benefit from increasing the tt-mem param setting.
multi-pv	bool	true, false	When true, go analyze returns info for every move
ponder	bool	true, false	Enable kingsrow to use pondering

Most settings can be set at any time before or after "init" if the engine is not searching. However, all the egdb settings, and the tt-mem setting can only be set before init. If any of these are changed, init must be sent again, and the UI must wait for a ready response.

Ini file

Parameter settings can also be put in a `kr_hub.ini` file. Kingsrow-hub will look in the current directory for this file and read it before it listens for the “hub” command. Any of the set-param settings can be set in the ini file, one per line. The syntax is “name = value”, which is a little different from the hub syntax. Comments can be started using a pound-sign (#) and extend to the end of the line.

Searching

Kingsrow-hub implements all the Hub pos commands, including “pos start” which is not documented in the Hub 2.1 documentation.

For the “level” commands, kingsrow-hub implements moves, time, inc, move-time, and infinite. It does not implement depth or nodes. For the moves, time, and inc combinations, it implements time, moves + time and time + inc. This version does not implement moves + time + inc.

Kingsrow-hub implements “go think”, “go analyze”, and “go ponder”. The “ponder” set-param must be set true to use pondering. Ponder moves are only returned for “go think” and “go ponder”.

Search status includes depth, mean depth, score, node count, time, speed in millions of nodes per second, and PV. Additionally, if the tt-load set-param is set true, it will include the transposition table load factor, a number between 0 and 1 that indicates how full the TT is.

For “go analyze” searches, the format of the search status depends on the setting of “multi-pv”. If set true, then at each depth scores and other stats are returned for every move (not just the best move). Multi-pv “info” replies include the additional tags “move”, “move-num” and “move-count”, so that the UI can know when all the moves have been searched at a given depth. Move info is returned in the order sorted at the previous depth, best moves first, so the best move might not be first if it changed from the last depth. “Nodes” and “mean-depth” are excluded from multi-pv info messages.

Egdb initialization

Egdb initialization is the process of reading and caching the index files, and caching some of the most frequently used WLD data. With the 8-piece db this can take a minute or longer. Kingsrow creates a log file that can be helpful in troubleshooting egdb problems. The file is written in a directory under the user’s Documents directory, in `Documents\Ed Gilbert\Kingsrow International\egdb.log`.