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Betsabé ^[2]

Betsabe II, (Betsabe, Betsabé II) a [Chess Engine Communication Protocol](#) compliant [open source chess engine](#) under the [GPL](#) written by [Juan Benitez](#) in [C](#), able to run under [Windows](#), [Linux](#), [Mac OS](#) and [Android](#) platforms. Betsabe II is successor of Betsabe, which already played various [Spanish Computer Chess Championships](#) in the 90s, notably the [SCCC 1993](#) where it became first Spanish Champion with a 100% score, and the [SCCC 1994](#) as runner-up behind [Zeus II](#). Betsabe was initially based on [Dieter Steinwender](#) and [Chrilly Donninger's](#) program [Minimax](#) ^[1], but differences in [search](#) and [evaluation](#) are substantial.

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Description

Board Representation

Betsabe II maintains a [10x12 board](#) as internal [board representation](#) and to [generate moves](#). Definition of (part of) the [initial position](#) ^[3]:

```
const int Tablero_Inicio[120] = {  
FUERA, FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,    
FUERA,   
FUERA, FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,    
FUERA,   
FUERA,  T_B,      C_B ,   A_B ,   D_B ,   R_B ,   A_B ,   C_B ,   T_B,    
FUERA,   
FUERA,  P_B,      P_B ,   P_B ,   P_B ,   P_B ,   P_B ,   P_B ,   P_B,    
FUERA,   
FUERA, VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,    
FUERA,   
FUERA, VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,    
FUERA,   
FUERA, VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,    
FUERA,   
FUERA, VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,  VACIO,    
FUERA,   
FUERA,  P_N ,    P_N ,    P_N ,    P_N ,    P_N ,    P_N ,    P_N ,    P_N,    
FUERA,   
FUERA,  T_N,      C_N ,    A_N ,    D_N ,    R_N ,    A_N ,    C_N ,    T_N,    
FUERA,   
FUERA, FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,    
FUERA,   
FUERA, FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,  FUERA,    
FUERA} ;
```

Search

Betsabe II applies [PVS](#) with [transposition table](#) inside an [iterative deepening fractional ply](#) framework in conjunction with [mate distance pruning](#), [IID](#), [adaptive null move pruning](#), [LMR](#), [razoring](#), [futility pruning](#), [SEE pruning](#) in [quiescence](#), and [check-](#) and [capture extensions](#) with transitions to [pawn endings](#). [Move](#)

[ordering](#) is enhanced by [history-](#) and [killer heuristic](#) with two ordinary [killer moves](#) and one [mate killer](#) per [ply](#).

Evaluation

The [evaluation](#) might be [lazy](#) using [material](#) and [piece-square tables](#) with respect to [bounds](#), and otherwise considers [mobility](#), [pawn structure](#), [king safety](#) and various [piece terms](#).

Selected Games

[SCCC 1999](#), round 7, [Betsabe](#) - [Genesis](#) ^[4]

```
[Event "SCCC 1999"]
[Site "Parets del Valles"]
[Date "29.12.99"]
[Round "7"]
[White "Betsabe"]
[Black "Genesis"]
[Result "1-0"]
```

```
1.d4 e6 2.e4 d5 3.Nc3 Bb4 4.e5 Bxc3+ 5.bxc3 c5 6.Qg4 g6 7.Nf3 f5 8.Qg5
Qc7
9.Qd2 Nc6 10.Ba3 b6 11.Rb1 Bb7 12.Bd3 Nge7 13.O-
O c4 14.Be2 h6 15.Rb2 Qd7
16.Rfb1 g5 17.h3 O-O-
O 18.Nh2 Ng6 19.Bd6 Nf4 20.Bf3 Qf7 21.Nf1 Rxd6 22.exd6
Rh7 23.Ng3 Qd7 24.Ne2 Nxe2+ 25.Qxe2 Qxd6 26.a4 Re7 27.Ra1 e5 28.Qd2 e4
29.Bh5
Na5 30.Rba2 f4 31.Re1 Kb8 32.Qc1 Ka8 33.Qb2 e3 34.Raa1 exf2+ 35.Kxf2 Q
f6
36.Rxe7 Qxe7 37.Re1 Qd7 38.Re8+ Bc8 39.Rf8 Qe6 40.Bg4 Qe3+ 41.Kf1 Kb7
42.Bxc8+
Kc7 43.Bg4 Nc6 44.Rc8+ Kb7 45.Rxc6 Kxc6 46.Qb5+ Kb7 47.Qxd5+ Kc7 48.Qd
7+
1-0
```

See also

- [David](#)
- [Minimax \(program\)](#)

- [Mythology](#)
- [Nobility](#)

Forum Posts

- [New engine - Betsabé II 1.0](#) by Tony Mokonen, [Winboard Forum](#), February 18, 2011
- [Betsabe II 1.47](#) by [Graham Banks](#), [CCC](#), August 12, 2014
- [Betsabe II 1.75 released](#) by [Graham Banks](#), [CCC](#), July 22, 2017

External Links

Chess Engine

- [Index of /chess/engines/Jim Ablett/BETSABE II](#) hosted by [Kirill Kryukov](#)
- [Mac Chess Engines Repository](#) hosted by [Julien Marcel](#)
- [Betsabe II 1.30 64-bit](#) in [CCRL 40/40](#)

Misc

- [Betsabé - Wikipedia.es](#) (Spanish)
- [Bathsheba from Wikipedia](#)
- [Books of Samuel from Wikipedia](#)
- [Bathsheba is One of the Most Beguiling Characters in the Bible](#) by [Jessica Feinstein](#), [US News & World Report](#), January 25, 2008
- [David and Bathsheba \(film\) from Wikipedia](#)

References

1. [^](#) [betsabe-II-109-ja-jm/readme.txt](#)
2. [^](#) [Bathsheba holding King David's letter](#) by [Willem Drost](#), 1654, [Louvre Museum](#), [Bathsheba from Wikipedia](#)
3. [^](#) [data.h](#)
4. [^](#) [Spanish Championship: Final Round](#) by Sergio Martinez, [CCC](#), December 29, 1999

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Che ES	Aug 18, 2015
David	Jul 20, 2016
Engine releases	Apr 23, 2018
Engines	Mar 10, 2018
Juan Benitez	Dec 27, 2013

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Minimax (program)	Dec 27, 2013
SCCC 1993	Dec 15, 2017
SCCC 1994	Dec 15, 2017
SCCC 1998	Dec 15, 2017
SCCC 1999	Aug 15, 2015
Spanish Computer Chess Championship	Aug 15, 2015
Tigran ES	Aug 18, 2015

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