

The hardest sudokus (new thread)

Re: The hardest sudokus (new thread)

By ronk » Thu Oct 28, 2010 7:25 pm

eleven wrote:
Sorry, I dont even know, what EP and ED stands for. One of them is the rating of the first step, if I remember right.
My Explainer version just gives me the rating and the techniques used.
[Added:] Ah, I see, there is an explanation in the Patterns game intro. So whats the command line for serate you would like ?

Congratulations eleven. Your puzzle with its ER/EP/ED rating:

```
CODE: SELECT ALL
+-----+-----+-----+
| . . . 9 . . . . 4 . . |
| 7 . . 3 . . . 2 . . |
| 8 . . 6 . . . . 7 . . |
+-----+-----+-----+
| 1 . . 8 . . . . . 6 . |
| . . . 4 . . . . . 7 . |
| . . . . 5 6 . . . . . |
+-----+-----+-----+
| 3 . . . . 5 1 . . . 1 |
| 4 . . . . . . 9 . . |
| . 2 . . . . . 7 . . |
+-----+-----+-----+
eLeven's ED=11.7/11.7/11.6
```

The rating may apparently be affected by the BUG recently fixed by Iksudoku [here](#).

Re: The hardest sudokus (new thread)

By ronk » Thu Oct 28, 2010 8:02 pm

champagne wrote:
I had a quick look at the path proposed by the solver for that puzzle.
No SK loop, no pure EXOCET, but something very close (I voluntarily don't say where).

Would it be this or something else?

Hidden Text: [Show](#)

Re: The hardest sudokus (new thread)

By eleven » Thu Oct 28, 2010 8:30 pm

Thanks Ron,

so i will use the fixed version. Hope i can generate some more interesting puzzles for your solvers. For manual players they are just boring hard.

btw if the Patterns game results should be more interesting for manual players, the reverse of your rating for puzzles with the same ER would be better. Manual players like the hardest step with as few candidates as possible.

Re: The hardest sudokus (new thread)

By champagne » Fri Oct 29, 2010 5:31 am

ronk wrote:
champagne wrote:
I had a quick look at the path proposed by the solver for that puzzle.
No SK loop, no pure EXOCET, but something very close (I voluntarily don't say where).

Would it be this or something else?

My solver does not extract so complex SLG's, but the weak point is the same, r56c4 working as a "nearly EXOCET".

Regarding the SLG, it has just seen the potential using rookeries 2479. Your SLG (using no AUD) cover nearly all the potential.

I am travelling to day so I'll stop working on sudoku for a while, but I assume that my solver path has AURS
It starts with scenario analysis based on r56c4.

champagne

Re: The hardest sudokus (new thread)

By champagne » Fri Oct 29, 2010 6:08 am

eleven wrote:
Thanks Ron,
so i will use the fixed version. Hope i can generate some more interesting puzzles for your solvers. For manual players they are just boring hard.
btw if the Patterns game results should be more interesting for manual players, the reverse of your rating for puzzles with the same ER would be better. Manual players like the hardest step with as few candidates as possible.

It's not so difficult to extract puzzles manual players could like to solve, but this can not be done using serate output.

serate rates in the same way all puzzles having the same "hardest point".
What you are looking for has, for my solver, a short print compared to the "hardest point". So, based on the print size, it is easy to do it.

The final questions are:

who is interested in getting such puzzles
where should they be posted.

champagne

change over to Iksudoku's newest version

By Pat » Fri Oct 29, 2010 7:49 am

eleven wrote:
so i will use the fixed version
yes, of course Iksudoku's fixed version is better
but when comparing ratings --
we should all be using the same version
so, are we all prepared to change over to Iksudoku's newest version ?

Re: The hardest sudokus (new thread)

By eleven » Fri Oct 29, 2010 4:55 pm

champagne wrote:
The final questions are:
who is interested in getting such puzzles
where should they be posted.

Good question.
I have offered two newspapers hand selected puzzles with a nice pattern and solution path (not hard, max. UR). but I did not even get an answer (they continued to bring those boring naked triple puzzles as "tricky").

Re: The hardest sudokus (new thread)

By eleven » Fri Oct 29, 2010 7:18 pm

ronk wrote:
Your puzzle with its ER/EP/ED rating:
CODE: SELECT ALL
+-----+-----+-----+
| . 9 4 . . |
| 7 . . 3 . . . 2 . . |
| 8 . . 6 7 . . |
+-----+-----+-----+
| 1 . . 8 6 . |
| . . . 4 7 . |
| 5 6 |
+-----+-----+-----+
| 3 5 . . . 1 |
| 4 9 . . |
| . 2 7 . . |
+-----+-----+-----+
eLeven's ED=11.7/11.7/11.6

The rating may apparently be affected by the BUG recently fixed by Iksudoku [here](#).

Hm, there seems to be still a problem or did i something wrong ?
I rerated the canonicalized version (first of many puzzles):

```
CODE: SELECT ALL
java -Xrs -Xmx500m -cp FIXED2SudokuExplainer.jar diuf.sudoku.test.serate -f%g;%r;%p;%d;%e -itest.txt -otestr.txt
1...6.8...7.1.....5.6..9.4....7.2...3.8...76..3...1..5.4.9.....2.7....;11.8;11.8;11.6;56m34s
```

Re: The hardest sudokus (new thread)

By ronk » Sat Oct 30, 2010 12:39 am

eleven wrote:
Hm, there seems to be still a problem or did i something wrong ?
I rerated the canonicalized version (first of many puzzles):
CODE: SELECT ALL
java -Xrs -Xmx500m -cp FIXED2SudokuExplainer.jar diuf.sudoku.test.serate -f%g;%r;%p;%d;%e -itest.txt -otestr.txt
1...6.8...7.1.....5.6..9.4....7.2...3.8...76..3...1..5.4.9.....2.7....;11.8;11.8;11.6;56m34s

Is "FIXED2" a typo? For this bug, the "FIXED3" version is required. But even then, it's still possible for some morphs to give different ratings. Always rating the row minlex canonicalization ("c14n") would get around this problem.
It's been suggested a few times for the Patterns Game, but not yet adopted.

I'll check the row minlex rating later. Right now my CPU is choking on the current patterns game. ☹

Re: The hardest sudokus (new thread)

By eleven » Sat Oct 30, 2010 9:49 pm

ronk wrote:
Is "FIXED2" a typo?

This was the version i found from the link you gave, where this problem should be fixed. ☹

I have searched the neighbourhood of the known hardest now for a week and I found over 30 more 11+ puzzles (but no harder one). This was a test for a "hardest sudoku gotchi", not bad.
But the hard work now would be to find new areas with extremely hard puzzles. With a random starting set it probably would take weeks to get the first 11+.

Re: The hardest sudokus (new thread)

By ronk » Sun Oct 31, 2010 1:06 am

eleven wrote:
ronk wrote:
Is "FIXED2" a typo?

This was the version i found from the link you gave, where this problem should be fixed. ☹

Sorry, I posted that link because it had the best description of the bug ... but I assumed from Iksudoku's post [here](#) that FIXED1, FIXED2 and FIXED3 addressed three bugs in the sequence listed [there](#). I'm sure you know the saying about the word "assume." ☹

Suggest you get FIXED3 from [here](#). That it fixes all three bugs is a safer assumption.

Re: The hardest sudokus (new thread)

By tarek » Thu Nov 11, 2010 2:24 pm

ronk wrote:
Suggest you get FIXED3 from [here](#). That it fixes all three bugs is a safer assumption.

I have been away for a while but I'm looking to update the Hardest database
Is everybody happy to use Fixed3 for SE rating ?
I will use gsf sudoko's row-normal minlex version for rating at all fronts.
I will try to target next weekend to do some work.

tarek

Re: The hardest sudokus (new thread)

By champagne » Thu Nov 11, 2010 3:09 pm

tarek wrote:
ronk wrote:
Suggest you get FIXED3 from [here](#). That it fixes all three bugs is a safer assumption.

Is everybody happy to use Fixed3 for SE rating ?
tarek

Let me answer in my own way.

- 1) Sudoku Explainer is the referee for the pattern game.
All players must use the same version as gremlin in that game.
- 2) Out of the pattern game, SE rating is not a key issue.
As SE gives a "well known" ??? rating, it's good to have it for "hardest puzzles", although this is the weakest part of the program.
For such ratings, it's better to use a version "as clean as possible", but the rating problems encountered in SE are not so common.
- 3) An attempt is made to produce a C++ version of SE much faster. Working on that issue, plasson and I have found other bugs in the rating that shoul be fixed as well.

I use already the FIXED3 version of SE in my tests to produce the C++ version of SE, but I'll stick for sure to the common one for the game.

champagne

Re: The hardest sudokus (new thread)

By eleven » Thu Nov 11, 2010 5:02 pm

tarek wrote:
I have been away for a while but I'm looking to update the Hardest database

Here are the 11.5+ puzzles, which i found in (-1+1) clusters of the known ones.
The first one also got 11.8 with FIXED3 rating (the canonicalized puzzle.

```
CODE: SELECT ALL
11.8 11.8 11.6 1...6.8...7.1.....5.6..9.4....7.2...3.8...76..3...1..5.4.9.....2.7...
11.7 11.7 11.2 ...567...1...6..37.....4...13...6.9...8...2.5...73...2...8.1....4
11.7 1.2 1.2 1...5...9.....3..79.....7.1...65...42..6..8.....5.6...7...2.4...3...8..
11.5 11.5 11.2 ...567...1...9...6..37.....4...13...6.9...8...2.5...73...2...8.1....4
11.5 11.5 11.2 1...7.2.4...6...3...5...4.2.9.....46.9...5.....7...1...8.9...2.5...3
11.5 11.5 10.6 ...2...67.....8.1.2...2..4.6...89.....1...2..79...3...3.....59.....4...16..
11.5 1.2 1.2 ...3..6...4....2...9..7..1...59.....1...8.6...7.5..1.7...9...2...38...4...
```

I didn't come far with looking for hard puzzles from randoms. However i found 11.0's and 11.1's with unfamiliar patterns. One example:

```
CODE: SELECT ALL
+-----+-----+-----+
| . 2 . . 5 . 7 . . |
| 4 . . . 9 | 2 . . |
| . . . . . . 6 . . |
+-----+-----+-----+
| . . . . . 7 4 . |
| 9 . 6 . . . . . |
| 8 . 4 | . 1 | 9 . . |
+-----+-----+-----+
| 3 . . . 1 | 4 . . |
| . 4 . . . 3 | 2 8 |
| . . 8 . . . 1 3 . . |
+-----+-----+-----+
24 clues, 11.1/11.1/9.8
```

Re: The hardest sudokus (new thread)

By tarek » Thu Nov 11, 2010 8:54 pm

Thanks champagne & eleven,

I was under the impression that FIXED3 was a C++ version of SE ... It was actually a bug fix JAVA version (thanks to Iksudoku)

That means that ultra hard sudokus would still need long rating times ...

I'm therefore (for SE ratings) will rely on the poster's ratings when adding to the database and would check for isomorphs & other (q1,q2,...) ratings.

When a quicker rating version comes out hopefully ... or when I'm extremely motivated to use the JAVA version , I will attempt rating the entire collection to verify the posted ratings.

tarek

