

The hardest sudokus (new thread)

Re: The hardest sudokus (new thread)
by champagne » Thu Jun 07, 2012 11:19 am

the file of potential hardest puzzles has shown it had a cut-off to high for the search done on exotic patterns used to solve such puzzles.

I prepared in the skfr google project the entire file of puzzles rating (skfr) 10.0 and more I had available

warning: that file contains all the puzzles I used as seed in my search including already known (see the readme file)

[5million puzzles file](#)

Re: The hardest sudokus (new thread)

by RW » Tue Jul 03, 2012 9:55 am

Another front page puzzle by AI in my morning paper claiming to be the new world's hardest

8.....36.....7..9..2...5...7.....457.....1..3..1....68..85...1..9...4..

ER only 10.7, q1 95991 and q2 97638. Can't get suexrat on my 64-bit system (is there any way to use this program under win7 647). Doesn't seem hard enough to make the hardest database anyway.

Is this even a new puzzle, or has it been posted here before?

Re: The hardest sudokus (new thread)

by champagne » Tue Jul 03, 2012 10:08 am

does not seem to be part of the 5 millions puzzles file

champagne

Re: The hardest sudokus (new thread)

by ronk » Tue Jul 03, 2012 12:31 pm

“ RW wrote:

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8.....36.....7..9..2...5...7.....457.....1..3..1....68..85...1..9...4..

ER only 10.7, q1 95991 and q2 97638.

And an overlay of <1368>-jellyfish for 23 exclusions at the start reduces the ER from 10.7 to 9.0.

CODE: SELECT ALL

```
base \ ----- cover -----
1r3459\c19 + r3c6 +(r4c5)+ r4c7 + r5c2 + r9c5 + r9c6
3r3459\c149 + r3c6 + r4c5 +(r4c7)+ r5c2 + r9c5 + r9c6
6r3459\c139 +(r3c6)+ r4c5 + r4c7 + r5c2 + r9c5 + r9c6
8r3459\c48 + r3c6 + r4c5 + r4c7 + r5c2 + r9c5 + r9c6

"(rMcN)" indicates cell void of candidate
```

logic set pastable into Xsудо: Show

Re: The hardest sudokus (new thread)

by champagne » Tue Jul 03, 2012 3:56 pm

“ ronk wrote:

“ RW wrote:

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8.....36.....7..9..2...5...7.....457.....1..3..1....68..85...1..9...4..

ER only 10.7, q1 95991 and q2 97638.

And an overlay of <1368>-jellyfish for 23 exclusions at the start reduces the ER from 10.7 to 9.0.

Interesting point that I did not check

So we have now a puzzle with an "exotic pattern" identical to what has been found in our file of "potential hardest"

Re: The hardest sudokus (new thread)

by David P Bird » Wed Jul 04, 2012 8:23 am

“ champagne wrote:

So we have now a puzzle with an "exotic pattern" identical to what has been found in our file of "potential hardest"

[Edit] What follows is mistaken - I should have double checked it.

Please check out that puzzle with this one:

98.7..6.....96.....5.7...94...3.4.....287...6..8.7..2.....3..1.....5,9470,GP,cy4,1235;

which you published <here>

If found this completely by chance as I recognised the multi-fish Shark pattern it needed as being familiar.

I think the solution grids are morphs of one another, but I haven't the tools to analyse the similarities between the givens further.

DPB

Last edited by David P Bird on Wed Jul 04, 2012 9:50 am, edited 1 time in total.

Re: The hardest sudokus (new thread)

by champagne » Wed Jul 04, 2012 8:56 am

“ David P Bird wrote:

“ champagne wrote:

So we have now a puzzle with an "exotic pattern" identical to what has been found in our file of "potential hardest"

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which you published <here>

If found this completely by chance as I recognised the multi-fish Shark pattern it needed as being familiar.

I think the solution grids are morphs of one another, but I haven't the tools to analyse the similarities between the givens further.

DPB

I checked for a possible morph, but it is not unless my canonicalisation process is bugged.

After that, I don't see clearly what I can do.

champagne

Re: The hardest sudokus (new thread)

by David P Bird » Wed Jul 04, 2012 9:45 am

champagne, sorry for wasting your time, it was my mistake. I had two instances of my helper spreadsheet running but through my bad typing both were using the same input source.

DPB

Re: The hardest sudokus (new thread)

by champagne » Sat Jul 07, 2012 3:23 pm

“ David P Bird wrote:

champagne, sorry for wasting your time, it was my mistake. I had two instances of my helper spreadsheet running but through my bad typing both were using the same input source.

DPB

no problem David.

I had not yet introduced in my solver the use of multi_fishes.

It's done now.

here is the start for the last "*AI claimed to be the new world's hardest*"

as noticed ronk, after that, the most difficult step is in serate a dynamic contradiction chain

Hidden Text: Show

EDIT changed initial table (PM limited to floors) and print of Truths Links

changed 23 eliminations and not 22

Last edited by champagne on Sun Jul 08, 2012 4:33 pm, edited 2 times in total.

Re: The hardest sudokus (new thread)

by ronk » Sun Jul 08, 2012 11:44 am

“ champagne wrote:

16 Truths = {3R1368 4R1368 5R1368 9R1368 }

16 Links = {1c136 3c6 4c38 8c8 9c136 3n6 4n57 5n2 9n56 }

Dyslexia? 🤔

Re: The hardest sudokus (new thread)

by champagne » Sun Jul 08, 2012 12:54 pm

“ ronk wrote:

“ champagne wrote:

16 Truths = {3R1368 4R1368 5R1368 9R1368 }

16 Links = {1c136 3c6 4c38 8c8 9c136 3n6 4n57 5n2 9n56 }

Dyslexia? 🤔

I must agree that Allan put digits first and rows or columns after the letter.

This is against my own logic, but I have to stick to Allan's rules

I looked at old posts to see what is done for a mix of sets rows and columns.

It seems that here the form 1368R3459 would be correct for the sets, but I am no sure.

I'll adjust the code and revise the post above.

Do you have the expected form for a mix of rows and columns in Truths or links

Re: The hardest sudokus (new thread)

by ronk » Sun Jul 08, 2012 2:29 pm

“ champagne wrote:

Do you have the expected form for a mix of rows and columns in Truths or links

Separate terms are required.

“ champagne wrote:

It seems that here the form 1368R3459 would be correct for the sets, but I am no sure.

I've witten that form and Xsудо reads it just fine, even though it doesn't write it.

“ champagne wrote:

I must agree that Allan put digits first and rows or columns after the letter.

This is against my own logic ...

Row number(s) before the letter 'r'? AFAIK no one does that! What are you smoking? 🤔

Re: The hardest sudokus (new thread)

by daj95376 » Sun Jul 08, 2012 4:03 pm

While champagne is updating his post:

“ champagne wrote:

22 eliminations

1r1c9 1r2c1 1r2c9 3r1c4 3r1c9 3r7c1 3r7c4 3r8c1

3r8c9 6r1c3 6r1c9 6r6c1 6r6c3 6r6c9 6r8c1 8r2c8

4r3c6 2r4c5 9r4c7 2r5c2 2r79c5 2r9c6

23 eliminations

1r1c9 1r2c1 1r2c9 3r1c4 3r1c9 3r7c1 3r7c4 3r8c1

3r8c9 6r1c3 6r1c9 6r6c1 6r6c3 6r6c9 6r8c1 8r2c8

4r3c6 2r4c5 9r4c7 2r5c2 2r79c5 2r9c6

Re: The hardest sudokus (new thread)

by champagne » Sun Jul 08, 2012 4:14 pm

“ daj95376 wrote:

While champagne is updating his post:

“ champagne wrote:

22 eliminations

1r1c9 1r2c1 1r2c9 3r1c4 3r1c9 3r7c1 3r7c4 3r8c1

3r8c9 6r1c3 6r1c9 6r6c1 6r6c3 6r6c9 6r8c1 8r2c8

4r3c6 2r4c5 9r4c7 2r5c2 2r79c5 2r9c6

23 eliminations

1r1c9 1r2c1 1r2c9 3r1c4 3r1c9 3r7c1 3r7c4 3r8c1

3r8c9 6r1c3 6r1c9 6r6c1 6r6c3 6r6c9 6r8c1 8r2c8

4r3c6 2r4c5 9r4c7 2r5c2 2r79c5 2r9c6

the post is updated, the fix has been easier than expected,

this is a counting mistake, the number of eliminations was not in my print

I missed the double digit in r9c5

I'll add the count in my print to avoid the same mistake later

thanks

Re: The hardest sudokus (new thread)

by ronk » Tue Jul 17, 2012 9:02 pm

Andrew Stuart has proposed the number of *quads backdoors* of maximum size as a [new metric for difficult puzzles](#).

"Quads backdoors" means, in addition to the backdoors guesses, the techniques used are singles, locked candidates, naked and hidden subsets (pairs, triples, and quads).

