

The hardest sudokus (new thread)

POSTREPLY

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Re: The hardest sudokus (new thread)

by RW » Sun May 29, 2011 11:12 am

dobrichev wrote:

Here are the results for the puzzles from Patterns Game 141

Very nice! There does seem to be quite strong correlation between sum(solved cells) and the difficulty. Of course there are some exceptions, but in general the harder puzzles have much fewer solved cells. Interesting to see a few with 0 solved cells, this means that you cannot solve a single cell in that puzzle without taking into account information from every single given clue! The high count for the last puzzle comes only from the fact that it starts with a hidden single, which is counted 18 times. Removing 18 of the 22 given clues we can still solve the same hidden single.

I'm planning to look more into this issue later, too busy at work right now. But maybe in a couple of weeks.

RW

Re: The hardest sudokus (new thread)

by coloin » Wed Jun 01, 2011 1:28 am

Of course my study was woefully small !

However your data is excellent - and indeed the large unavoidable sets are not so uncommon. I wonder what the important data is however -

the smallest max unavoidable seems important.

Also the figure for solved clues seems relevant [are you sure the value of the solved cells is 16 and not 1 for tarx075]

I cant see how the 3.6/3.6/3.6 comes out so favourable - except it does have a small max unavoidable for two of the clues.

It doesnt look as this is the complete picture - but we sure are a wee bit closer !

C

dobrichev

2010 Supporter

Posts: 1010

Joined: 16 March 2006

Re: The hardest sudokus (new thread)

by dobrichev » Wed Jun 01, 2011 4:37 am

coloin wrote:

are you sure the value of the solved cells is 16 and not 1 for tarx075

The results for this puzzle:

Hidden Text: Show

Additionally, the duplicates are counted, assuming the "solved cells" characterize the "removed clue" of the puzzle.

dobrichev

2010 Supporter

Posts: 1031

Joined: 24 May 2010

the tool

by dobrichev » Wed Jun 01, 2011 6:01 am

The tool (incl. source) is available for downloading. See [this post](#) for details.

dobrichev

2010 Supporter

Posts: 1031

Joined: 24 May 2010

Re: The hardest sudokus (new thread)

by coloin » Wed Jun 01, 2011 8:56 am

I see.

Those 15 clues are not in the uncovered unavoidable sets from the solution grid of the individual puzzle - but they are involved in the sets from the solution grids of the other [many] puzzle solutions. This makes those other puzzles with "0" solved cells perhaps more remarkable.

C

dobrichev

2010 Supporter

Posts: 1031

Joined: 24 May 2010

Re: The hardest sudokus (new thread)

by coloin » Wed Jun 01, 2011 8:47 pm

Running the program on Golden Nuggett, Silver Plate and Easter Monster

CODE: SELECT ALL

gridchecker --unav --minus1 < gn.txt
.....39.....1..5..3..5..8.....8..9...6..7...2...1..4.....9..8...5...2...6..4...7.....
{59,50,55,53,53,53,49,49,53,54,54,54,50,50,55,51,52,49,53,49,55}
Total time 0.256 seconds. 21 2842 55 109316 0
gridchecker --unav --minus1 < sp.txt
1.....7..2..4...6...3...5...9..4.....62..4...9...8...5...3..6..2...8..7...1...
{55,50,50,52,45,49,47,49,52,50,51,50,50,53,52,56,52,53,56,49,56}
Total time 0.279 seconds. 21 2974 56 113066 0
gridchecker --unav --minus1 < em.txt
1.....2..9..4...5...6...7...5..9..3.....7.....85..4..7...6...3...9..8...2....1
{53,48,53,51,53,53,52,48,51,50,52,51,55,53,49,53,52,53,53,51,51,51}
Total time 0.210 seconds. 21 2733 55 106068 0

looks promising and fast !

maybe suggest rating for gn to be some or all of 1093/21 * 48 * 55

will look at a few more puzzle perhaps

C

dobrichev

2010 Supporter

Posts: 1031

Joined: 24 May 2010

Re: The hardest sudokus (new thread)

by coloin » Wed Jun 01, 2011 11:15 pm

This puzzle = found by **eleven** - has a very high suexrat9/suexratt rating

CODE: SELECT ALL

rating: 10483 , 5762 , ..3.....4...8...36...8...1...4...6...73...9.....2...5...4..7...686.....7...6...5..

CODE: SELECT ALL

..3.....4...8...36...8...1...4...6...73...9.....2...5...4..7...686.....7...6...5..
{51,48,48,53,50,51,48,48,49,48,49,48,48,50,28,50,48,43,47,52,50,45,49}
1853 22 21523 53 813602 44

And there happens to be a plethora of unavoidsables with many of the clues. Which might explain suexrat9's problem.

The min UA of 28 and the 44 solved cells might be the puzzles weakness.

C

dobrichev

2010 Supporter

Posts: 1031

Joined: 24 May 2010

Re: The hardest sudokus (new thread)

by champagne » Wed Jun 15, 2011 8:34 am

Hi,

I continue to slowly explore the 22 clues field.

The current step if more productive than the first one, but for the time being, I will publish only some puzzles having specific properties.

Here is, as far as I know, the highest diamond ever found up to now.

98.7.....6.....8.....7.....5..4...3...2..96..4.....4..1...85..6.....1..4.....2..3;11.5;11.5;11.5

I hope to have in hands soon "skfr" (sudoku fast rating) the "quasi clone" rating version of Sudoku Explainer.

I'll then re rate all the puzzles that in my opinion worth it and try a summary complementary to the nice work done by eleven

champagne

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

New update next weekend

by tarek » Sat Jun 18, 2011 12:27 pm

The next update will hopefully take place next week. All the ratings have been done. What is left is the slow Suexrat 10000 rating which should be finished before then.

I found 4 posted puzzles that have been posted before as well

CODE: SELECT ALL

HardestSudokuThread-01458
1...5...9...7...1.....56..2...6...1...4...8...2..3.....7...4...6...2..9...83..... Posted Puzzle
1...5...9...7...1.....56..2...6...1...4...8...2..3.....7...4...6...2..9...83..... Canonical
1.....5..2..4...6...3...7...4...6...49..8...28.....5..1...6..9...2...7...3 col1803
HardestSudokuThread-01459
1...5...9...7...9...8..2...4...5...7...3..6...29.....1...62...3...8...6...4..3 Posted Puzzle
1...5...9...7...9...8..2...4...5...7...3..6...29.....1...62...3...8...6...4..3 Canonical
1.....5...6..2...4...3...7...4..69.....8...6...2...4...7...1...8..9...2..5.....3 colx022
HardestSudokuThread-01472
...5..7...4...9...3...8.....12...4..6...7...8...1..5...3..2...9...94...6...3... Posted Puzzle
...5..7...4...9...3...8.....12...4..6...7...8...1..5...3..2...9...94...6...3... Canonical
1.....5...6..2...4...3...7...4..69.....8...6...2...4...7...1...8..9...2..5.....3 colx015
HardestSudokuThread-01484
.....6..8...1...2...9...7...4...86...3...4...5...52.....3...74...1..9...3...7 Posted Puzzle
.....6..8...1...2...9...7...4...86...3...4...5...52.....3...74...1..9...3...7 Canonical
..1...7...2...4...6...3...5...9..4..6.....92..4.....8...7...3...6...2...8..5.....1 weekender2

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

Re: The hardest sudokus (new thread)

by champagne » Sun Jun 19, 2011 8:45 pm

To continue like in the pattern game, here a puzzle equalling the highest ED I have in my database (2 puzzles rating 11.8). So far, the highest rating for a 11.7 puzzle was 11.2 if I am right

98.7.....7.....9...6.5.....4...3...2...74..8.....1..4..86..5.....4...1.....2..3 ED=11.7/11.7/11.6

champagne

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

HardestDatabase110626

by tarek » Sun Jun 26, 2011 8:52 pm

The Database has been updated. The Top 5 lists in the head post have also been updated.

You can now download the latest database using a link in the head post.

The list subsumes the previous list (HardestDatabase101230)

Champagne,
Your last puzzle is an isomorph of HardestSudokuThread-00051 with a different ER/EP/ED rating
I have updated the database with this new **LOWER** rating.

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

Re: HardestDatabase110626

by champagne » Mon Jun 27, 2011 7:03 am

tarek wrote:

The Database has been updated. The Top 5 lists in the head post have also been updated.

You can now download the latest database using a link in the head post.

The list subsumes the previous list (HardestDatabase101230)

Champagne,
Your last puzzle is an isomorph of HardestSudokuThread-00051 with a different ER/EP/ED rating
I have updated the database with this new **LOWER** rating.

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

hi tarek,

You are right. At that point, I had not yet checked for duplication.

I have that puzzle coming from eleven database

elev 16 1...6.8...7..1.....5.6..9.4.....7.2...3.8...76..3...1..5.4.9.....2.7....

rated 11.8 11.8 11.6

BTW, rating in that area should be seen as an order of magnitude.

champagne

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

Re: The hardest sudokus (new thread)

by champagne » Thu Jul 21, 2011 8:46 am

deleted

Last edited by champagne on Wed Aug 10, 2011 8:13 pm, edited 1 time in total.

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

Re: The hardest sudokus (new thread)

by champagne » Fri Jul 22, 2011 9:01 am

Hi,

I am suspecting eleven was right thinking it would be possible to get more than SE ER 11.9.

I just got that puzzle with the highest known SE rating

CODE: SELECT ALL

98.7.....7.....6....6.5.....4...5.3...79...5.....2...1..85...9.....1...4.....3.2. ;11.9;11.9;11.8

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

champagne

EDIT: I checked how that puzzle is seen by my solver. It has an EXOCET pattern and is relatively easy to solve.

I did not make so far a complete analysis of the new "hardest", but I know some appear much tougher to solve.

EDIT2: Some more comments on that puzzle.

I tested the Allan Barker mode included in my solver.

up to 5 floors, nothing came.

This means that it should be difficult to find something using XSUDO, at least without the UR mode

For Golden Nugget, a five floors construction is possible.

Last edited by champagne on Fri Jul 22, 2011 1:25 pm, edited 1 time in total.

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

Re: The hardest sudokus (new thread)

by tarek » Fri Jul 22, 2011 10:33 am

champagne wrote:

I just got that puzzle with the highest known SE rating

CODE: SELECT ALL

98.7.....7.....6....6.5.....4...5.3...79...5.....2...1..85...9.....1...4.....3.2. ;11.9;11.9;11.8

Well done. I couldn't understand if this was a very recent find or that it had been there for some time but posted elsewhere.

tarek

dobrichev

2017 Supporter

Posts: 7269

Joined: 02 August 2007

Location: France Brittany

