

The hardest sudokus (new thread)

POSTREPLY

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Re: The hardest sudokus (new thread)

Day champagne • Sun Nov 28, 2010 9:25 pm

rank wrote:

champagne wrote:
checked your puzzle and I made a run including the former 11.8

0090004000703000200006000710080000600010070000560003000050010A0000090002000700 11.8
0030006000010020600070050040000003000040900900200003000800000000107000500000 11.5

...
If we now look for special tools

I think I already noticed that your 11.8 puzzle has something close to an EXOCET (r5c4). The second one has an EXOCET (r4c1).
None have the SK loop nor a rank0 logic (I did not check for more than 4 floors).

Using the adequate special tool, the print is significantly reduced, but still around 150K.

For the ER=11.5 puzzle, what "special tool" was used ... and what were the exclusions?

champagne

The special tool was just indicated above, it is an EXOCET based in r4c1. I just got it in my stat file, but I will dig in the print to morrow and give a more precise answer.

champagne

champagne

2017 Supporter

Posts: 7269
Joined: 02 August 2007
Location: France Brittany

Re: The hardest sudokus (new thread)

Day eleven • Mon Nov 29, 2010 10:11 am

Thanks for the analysis, Champagne.

eleven

2012 Supporter

Posts: 2020
Joined: 10 February 2008

Re: The hardest sudokus (new thread)

Day champagne • Mon Nov 29, 2010 10:59 am

champagne wrote:

The special tool was just indicated above, it is an EXOCET based in r4c1. I just got it in my stat file, but I will dig in the print to morrow and give a more precise answer.

champagne

CODE: SELECT ALL

1124579 12457 3 | 249 459 6 | 1479 8 149
114579 4578 578 | 1 34589 359 | 2 347 6
116 1248 129 | 23489 7 239 | 349 134 5

11257 12567 4 | 36789 135689 13579 | 35678 12357 1238
118 12567 12567 878 1568 4 | 3678 9 128
1157 9 8 | 197 2 1357 | 134567 13457 134

1124579 3 12579 2479 149 8 | 459 6 249
118 2456 2569 | 23469 3469 239 | 1 2345 7
112479 12467 12679 | 5 13469 12379 | 3469 234 23469

We have an Exocet base r46c1 target r1c2 r7c3
so r1c2=1257 r7c3=1257
Then, no to hard to show

1&5r46c1 not valid (nothing in r1c5)
5&7r46c1 not valid (nothing in r1c5=
1&2r46c1 not valid (conflicting in r7 digit 2)

we have now r4c1 <5>
and new strong links
1r46c1 = 2r4c1
5r6c1 = 7r46c1

this helps, but it's not enough.

May-be a new search for rank0 logic should be restarted??
but from the past I have doubts it would give anything.

Here the PM after the start

```
CODE: SELECT ALL
1124579 1257 3 | 249 459 6 | 1479 8 149
114579 4578 578 | 1 34589 359 | 2 347 6
116 1248 129 | 23489 7 239 | 349 134 5
-----
1127 12567 4 | 36789 135689 13579 | 35678 12357 1238
118 12567 12567 878 1568 4 | 3678 9 128
1157 9 8 | 197 2 1357 | 134567 13457 134
-----
1124579 3 1257 2479 149 8 | 459 6 249
118 2456 2569 | 23469 3469 239 | 1 2345 7
112479 12467 12679 | 5 13469 12379 | 3469 234 23469
```

champagne

eleven

2012 Supporter

Posts: 2020
Joined: 10 February 2008

champagne

2017 Supporter

Posts: 7269
Joined: 02 August 2007
Location: France Brittany

Re: The hardest sudokus (new thread)

Day rank • Mon Nov 29, 2010 1:33 pm

champagne wrote:

We have an Exocet base r46c1 target r1c2 r7c3
so r1c2=1257 r7c3=1257
Then, no to hard to show

1&5r46c1 not valid (nothing in r1c5)
5&7r46c1 not valid (nothing in r1c5=
1&2r46c1 not valid (conflicting in r7 digit 2)

we have now r4c1 <5>

rank

2012 Supporter

Posts: 4764
Joined: 02 November 2005
Location: Southeastern USA

Thanks champagne. I had the r1c2=1257 and r7c3=1257 ... but nothing beyond that. Now, even with your hints above, I still can't prove r4c1<5.

Re: The hardest sudokus (new thread)

Day champagne • Mon Nov 29, 2010 1:50 pm

rank wrote:

champagne wrote:
We have an Exocet base r46c1 target r1c2 r7c3
so r1c2=1257 r7c3=1257
Then, no to hard to show

1&5r46c1 not valid (nothing in r1c5)
5&7r46c1 not valid (nothing in r1c5)
1&2r46c1 not valid (conflicting in r7 digit 2)

we have now r4c1 <5>

champagne

Thanks champagne. I had the r1c2=1257 and r7c3=1257 ... but nothing beyond that. Now, even with your hints above, I still can't prove r4c1<5.

That's not to difficult and , if I remind correctly, this is something we already found in Golden Nugget

5 r46c1 can only be 5&1; 5&2; 5&7
as the others are not possible, it must be (if 5 is true) 5&2 . We can erase 5r4c1

champagne

champagne

2017 Supporter

Posts: 7269
Joined: 02 August 2007
Location: France Brittany

Re: The hardest sudokus (new thread)

Day tit • Mon Nov 29, 2010 6:43 pm

champagne wrote:

rank wrote:
champagne wrote:
We have an Exocet base r46c1 target r1c2 r7c3
so r1c2=1257 r7c3=1257
Then, no to hard to show

1&5r46c1 not valid (nothing in r1c5)
5&7r46c1 not valid (nothing in r1c5)
1&2r46c1 not valid (conflicting in r7 digit 2)

we have now r4c1 <5>

tit

2012 Supporter

Posts: 105
Joined: 20 October 2006
Location: Vietnam

Wow.... I had spend over hour to study about that then see that. OK, **r4c1<5** but the presenting for that deduction seems too, too... complex so I think that weâ€™ll have to study it more time... 😊

tit

Re: The hardest sudokus (new thread)

Day tit • Tue Nov 30, 2010 5:46 am

champagne wrote:

We can erase 5r4c1

tit

2012 Supporter

Posts: 105
Joined: 20 October 2006
Location: Vietnam

Yes, I did study more and remind me **Silver Plate** 🙏

```
CODE: SELECT ALL
003000600000100206600070005004000000300005400009002000003000800608000001070000500000 11.5
```

elevenâ€™s puzzle ER11.5: Raw Rank = 5 (linksets - sets)
17 Sets = (1R157 5R157 7R157 157C6 157C8 46N1)
22 Links = (157c1 1n2 5n57 7n3 10r4568 50r4569 70r4568)
2 AURs = (51)r6r4c1, (75)r6r4c81 AUR points (aur 5r4c1 1r6c8 7r6c8)
1 Elimination -> **r4c1<5**



tit

Re: The hardest sudokus (new thread)

Day champagne • Tue Nov 30, 2010 7:08 am

tit

No surprise, using Allan model, many things can be done in once.
Such SLG's remain out of the scope of my solver. I stop at "nearly rank 0 logic"

I don't know if you had a look to "swampy soil", I forward here a "finding" of abi

9....8....7...6....8.5.4.3.8....4...2.9...1.6.3...41.....6...7...5...4...2 swampy soil

In that puzzle, after the rank 0 logic (floors 1367) has been applied, we are there

```
CODE: SELECT ALL
A B C D E F G H I
1|9 12457 23567 23456 136 12345 8 127 137
2|1238 2458 258 1 359 2459 123 6 139
3|1367 127 287 2369 6 1239 5 1279 4
-----
4|267 3 259 18 1a579 459 12467 245 1567
5|14 578 5678 13450 2 1A305 9 1578 167
6|1778 2589 3 1459 579 6 1247 3 578
-----
7|12378 289 4 1 3569 2589 1367 589 356789
8|1238 6 289 259 359 7 134 4589 13589
9|5 1789 3789 369 4 389 1367 1789 2
```

not to hard to show here 1r4c5 = 5r5c46
so we have somehow a link between the floors "1" and "5"

abi makes the following remark
in boxes 1,5,9 the "5" belonging to the solution are on a diagonal.
They are paired with "4", giving a kind of "conditional elimination"

I don't know if anything new can get out of it, but it is worth being investigated

I have no free time to do it now.

champagne

champagne

2017 Supporter

Posts: 7269
Joined: 02 August 2007
Location: France Brittany

Re: The hardest sudokus (new thread)

Day eleven • Tue Nov 30, 2010 8:32 am

Here is another one (11.8/11.8/10.7)

CODE: SELECT ALL

1 2 | 3 | . | . | . |
4 | 6 | 5 | 7 | . |

5 | 2 | . | . | . |
3 | . | 1 | . | 4 |

9 | . | . | . | 7 |
1 | . | 9 | . | . |

9 | . | 6 | 8 |
First Peak

Last edited by eleven on Tue Nov 30, 2010 12:39 pm, edited 1 time in total.

eleven

2012 Supporter

Posts: 2020
Joined: 10 February 2008

Re: The hardest sudokus (new thread)

Day champagne • Tue Nov 30, 2010 9:01 am

eleven wrote:

Here is another one (11.8/11.8/10.7)

champagne

Good catch; that one is closer to "golden Nugget" "Silver Plate".

Same magnitude of difficulty without special tool

- .print over 600K
- .necessity to pass AAHS 2 cells
- .nested derived links level 5

An efficient EXOCET in r8c89 reducing significantly the final complexity (final print below 200K, but same level of nested derived weak links)

for "tit", there is a potential for a nice SLG using floors 12345, but I did not find a "rank 0" logic

is worth a name

champagne

eleven

2012 Supporter

Posts: 2020
Joined: 10 February 2008

Re: The hardest sudokus (new thread)

Day champagne • Tue Nov 30, 2010 12:38 pm

Thanks again,
so i will call it "First Peak" in the hope, that there are more ones.

This one has ER 11.7/11.7/10.7

CODE: SELECT ALL

1 2 | 3 | . | . | . |
3 | 5 | 4 | 2 | 3 |

5 | . | 6 | 1 | 1 |
1 | 6 | . | . | 8 |

5 | 6 | 1 | 6 | . |
1 | 9 | . | 4 | . |

8 | . | . | 7 |

[edit: removed a redundant clue - guess changes the ER to 11.7/11.7/12]

eleven

2012 Supporter

Posts: 2020
Joined: 10 February 2008

Re: The hardest sudokus (new thread)

Day champagne • Tue Nov 30, 2010 3:29 pm

That one is not too difficult

(print slightly below 200K and solved just using AAHS 2 cells)

An EXOCET in r12c3 push down the difficulty in a reasonable area (print about 130K)
No rank 0 logic, but a promising 5 floors situation to find a big SLG (EXOCET digits plus digit '5')

would be in the low part of my hardest file

I am preparing a lot of puzzles coming out of the last game with much lower SE rating but seen as tougher by my solver

champagne

champagne

2017 Supporter

Posts: 7269
Joined: 02 August 2007
Location: France Brittany

Re: The hardest sudokus (new thread)

Day tit • Tue Nov 30, 2010 4:58 pm

champagne wrote:

eleven wrote:
Here is another one (11.8/11.8/10.7)

tit

2012 Supporter

Posts: 105
Joined: 20 October 2006
Location: Vietnam

is worth a name

Yes, they should be named... 😊

I'll study this one and present for you if I would be found something news 😊

Wow.... one bottle vodka is enough for me... 😊

tit

Last edited by tit on Tue Nov 30, 2010 5:06 pm, edited 1 time in total.

Re: The hardest sudokus (new thread)

Day eleven • Tue Nov 30, 2010 5:03 pm

champagne wrote:

I am preparing a lot of puzzles coming out of the last game with much lower SE rating but seen as tougher by my solver

eleven

2012 Supporter

Posts: 2020
Joined: 10 February 2008

It seems that I can find top puzzles for each public rating *now* (at least for so different ones like ER and Q2).

Since I respect your rating most, a public version of your rating program would be very appreciated. Any plans for that ?
(Otherwise we have little chances to get into your top list)

Re: The hardest sudokus (new thread)

Day champagne • Tue Nov 30, 2010 5:35 pm

eleven wrote:

champagne wrote:
I am preparing a lot of puzzles coming out of the last game with much lower SE rating but seen as tougher by my solver

tit

2012 Supporter

Posts: 7269
Joined: 02 August 2007
Location: France Brittany

It seems that I can find top puzzles for each public rating *now* (at least for so different ones like ER and Q2).

Since I respect your rating most, a public version of your rating program would be very appreciated. Any plans for that ?
(Otherwise we have little chances to get into your top list)

Up to now, nobody expressed the willingness to use it, so I did not do any cleaning work to go in that way, but I can give it to anybody, that's not a problem.

It would be easier now that I am using the free microsoft visual c++ platform to compile it.

In fact I have only one program to solve, generate, work out a canonical form ..., so I would have at least to comment on the options panels

If you want to go deeper, we can start thru PM or email.

champagne

champagne

2017 Supporter

Posts: 7269
Joined: 02 August 2007
Location: France Brittany

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