test-factor-1.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-1.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-1.cnf
c reading problem ...
c ... done. Time 0.013 ms.
c #vars      12
c #constraints  0
c starts               : 1
c conflicts            : 0
c decisions            : 0
c propagations         : 0
c inspects             : 0
c learnt literals      : 0
c learnt binary clauses : 0
c learnt ternary clauses         : 0
c learnt clauses       : 0
c root simplifications  : 1
c removed literals (reason simplification)      : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB     : 0
c speed (decisions/second)       : 0.0
c non guided choices    0
c random choices        0
s SATISFIABLE
v 0
c Total CPU time (ms) : 0.026

real    0m0.154s
user    0m0.120s
sys     0m0.027s
```

test-factor-2.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-2.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-2.cnf
c reading problem ...
c ... done. Time 0.012 ms.
c #vars      11
c #constraints  0
c starts                : 1
c conflicts             : 0
c decisions             : 0
c propagations          : 0
c inspects              : 0
c learnt literals       : 0
c learnt binary clauses : 0
c learnt ternary clauses        : 0
c learnt clauses        : 0
c root simplifications  : 1
c removed literals (reason simplification)      : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB      : 0
c speed (decisions/second)      : 0.0
c non guided choices     0
c random choices         0
s SATISFIABLE
v 0
c Total CPU time (ms) : 0.021

real    0m0.134s
user    0m0.116s
sys     0m0.025s
```

test-factor-3.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-3.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-3.cnf
c reading problem ...
c ... done. Time 0.009 ms.
c #vars      82
c #constraints  0
c starts                : 1
c conflicts             : 0
c decisions             : 0
c propagations          : 0
c inspects              : 0
c learnt literals       : 0
c learnt binary clauses : 0
c learnt ternary clauses       : 0
c learnt clauses        : 0
c root simplifications  : 1
c removed literals (reason simplification)      : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB     : 0
c speed (decisions/second)      : 0.0
c non guided choices    0
c random choices        0
s SATISFIABLE
v 0
c Total CPU time (ms) : 0.011

real    0m0.141s
user    0m0.117s
sys     0m0.029s
```

test-factor-4.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-4.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-4.cnf
c reading problem ...
c ... done. Time 0.008 ms.
c #vars     964
c #constraints  0
c starts              : 1
c conflicts           : 0
c decisions           : 0
c propagations        : 0
c inspects            : 0
c learnt literals     : 0
c learnt binary clauses : 0
c learnt ternary clauses      : 0
c learnt clauses      : 0
c root simplifications  : 1
c removed literals (reason simplification)     : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB      : 0
c speed (decisions/second)     : 0.0
c non guided choices     0
c random choices         0
s SATISFIABLE
v 0
c Total CPU time (ms) : 0.01

real    0m0.148s
user    0m0.119s
sys     0m0.026s
```

test-factor-5.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-5.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-5.cnf
c reading problem ...
c ... done. Time 0.007 ms.
c #vars      1433
c #constraints  0
c starts             : 1
c conflicts          : 0
c decisions          : 0
c propagations       : 0
c inspects           : 0
c learnt literals    : 0
c learnt binary clauses : 0
c learnt ternary clauses      : 0
c learnt clauses     : 0
c root simplifications  : 1
c removed literals (reason simplification)     : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB     : 0
c speed (decisions/second)     : 0.0
c non guided choices    0
c random choices        0
s SATISFIABLE
v 0
c Total CPU time (ms) : 0.01

real    0m0.148s
user    0m0.122s
sys     0m0.024s
```

test-factor-6.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-6.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-6.cnf
c reading problem ...
c ... done. Time 0.009 ms.
c #vars      1433
c #constraints  0
c starts               : 1
c conflicts            : 0
c decisions            : 0
c propagations         : 0
c inspects             : 0
c learnt literals      : 0
c learnt binary clauses : 0
c learnt ternary clauses        : 0
c learnt clauses       : 0
c root simplifications  : 1
c removed literals (reason simplification)      : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB      : 0
c speed (decisions/second)      : 0.0
c non guided choices     0
c random choices         0
s SATISFIABLE
v 0
c Total CPU time (ms) : 0.014

real    0m0.149s
user    0m0.116s
sys     0m0.031s
```

test-factor-7.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-7.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-7.cnf
c reading problem ...
c ... done. Time 0.032 ms.
c #vars     155
c #constraints  495
c starts              : 1
c conflicts           : 63
c decisions           : 111
c propagations        : 1320
c inspects            : 2247
c learnt literals     : 5
c learnt binary clauses : 0
c learnt ternary clauses      : 4
c learnt clauses      : 52
c root simplifications  : 6
c removed literals (reason simplification)      : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB      : 0
c speed (decisions/second)     : 2134.6153846153848
c non guided choices    23
c random choices        0
s SATISFIABLE
v -1 -2 3 -4 -5 -6 -7 -8 -9 10 11 -12 -13 -14 -15 -16 -17 -18 19 -20 -21 22 -23 -24 -25 -26 -27 -28 -29 30 31 -32 -33 -34 -35 -36 -37 -38 39 -40 -41 42 -43 -4
4 -45 -46 -47 48 -49 -50 51 -52 -53 -54 -55 -56 57 -58 -59 -60 -61 -62 -63 64 -65 -66 -67 68 -69 -70 -71 -72 -73 -74 75 76 -77 -78 -79 -80 -81 82 -83 -84 -85
-86 -87 88 -89 -90 -91 -92 -93 94 -95 -96 -97 -98 -99 100 -101 -102 -103 -104 105 106 -107 -108 -109 -110 -111 -112 -113 114 -115 -116 -117 118 -119 -120 -121
 122 -123 -124 -125 -126 -127 128 -129 -130 -131 -132 -133 -134 -135 -136 137 -138 139 -140 -141 142 -143 -144 -145 -146 -147 148 149 -150 151 -152 -153 154 -
155 0
c Total CPU time (ms) : 0.086

real    0m0.263s
user    0m0.219s
sys     0m0.038s
```

test-factor-8.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-8.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-8.cnf
c reading problem ...
c ... done. Time 0.048 ms.
c #vars     256
c #constraints  16
c starts             : 2
c conflicts          : 217
c decisions          : 369
c propagations       : 4822
c inspects           : 3524
c learnt literals    : 0
c learnt binary clauses : 0
c learnt ternary clauses       : 0
c learnt clauses     : 217
c root simplifications : 2
c removed literals (reason simplification)     : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB  : 160
c speed (decisions/second)    : 5857.142857142857
c non guided choices   76
c random choices       0
s SATISFIABLE
v -1 -2 3 -4 -5 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 22 -23 -24 -25 -26 -27 -28 -29 -30 -31 -32 -33 34 -35 -36 -37 -38 -39 -40 -41 -42
-43 -44 -45 -46 -47 -48 -49 -50 -51 -52 -53 -54 -55 -56 57 -58 -59 -60 -61 -62 -63 -64 -65 -66 -67 -68 -69 -70 -71 -72 -73 -74 -75 76 -77 -78 -79 -80 -81 -82
-83 -84 -85 -86 -87 -88 -89 -90 -91 -92 -93 -94 -95 96 -97 -98 -99 -100 -101 -102 -103 -104 -105 -106 -107 -108 109 -110 -111 -112 -113 -114 -115 -116 -117 -1
18 -119 120 -121 -122 -123 -124 -125 -126 -127 -128 -129 -130 -131 -132 -133 -134 -135 -136 -137 138 -139 -140 -141 -142 -143 -144 -145 -146 -147 148 -149 -15
0 -151 -152 -153 -154 -155 -156 -157 -158 -159 -160 161 -162 -163 -164 -165 -166 -167 -168 -169 -170 -171 -172 -173 -174 -175 -176 -177 -178 -179 -180 -181 -1
82 -183 -184 -185 -186 -187 -188 -189 -190 191 -192 -193 -194 -195 -196 197 -198 -199 -200 -201 -202 -203 -204 -205 -206 -207 -208 -209 -210 -211 -212 -213 -2
14 215 -216 -217 -218 -219 -220 -221 -222 -223 -224 -225 -226 -227 -228 -229 -230 -231 -232 -233 -234 235 -236 -237 -238 -239 -240 -241 -242 -243 -244 -245 -2
46 -247 -248 -249 -250 -251 -252 -253 254 -255 -256 0
c Total CPU time (ms) : 0.112

real    0m0.244s
user    0m0.216s
sys     0m0.033s
```

test-factor-9.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-9.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-9.cnf
c reading problem ...
c ... done. Time 0.038 ms.
c #vars       718
c #constraints  2325
c starts              : 8
c conflicts           : 3761
c decisions           : 5757
c propagations        : 252896
c inspects            : 1167549
c learnt literals     : 9
c learnt binary clauses : 0
c learnt ternary clauses      : 88
c learnt clauses      : 3688
c root simplifications  : 17
c removed literals (reason simplification)     : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB      : 2
c speed (decisions/second)       : 19190.0
c non guided choices     156
c random choices          0
s SATISFIABLE
```

```
v 1 -2 -3 -4 -5 -6 -7 -8 -9 10 11 -12 -13 -14 -15 -16 17 -18 -19 -20 -21 -22 -23 -24 25 -26 -27 -28 -29 -30 -31 -32 33 -34 -35 36 -37 -38 -39 -40 -41 -42 43 4
4 -45 -46 47 -48 -49 -50 -51 -52 -53 54 -55 -56 -57 -58 -59 -60 61 -62 -63 -64 -65 -66 -67 68 -69 -70 71 -72 -73 -74 -75 -76 -77 -78 -79 -80 -81 -82 -83 -84 8
5 86 -87 88 -89 -90 -91 -92 -93 -94 95 -96 -97 -98 99 -100 -101 -102 -103 -104 -105 -106 107 -108 -109 -110 111 -112 -113 -114 -115 -116 117 118 119 -120 121
122 123 -124 -125 -126 -127 -128 -129 -130 -131 -132 -133 -134 -135 -136 -137 -138 -139 -140 141 -142 -143 -144 145 -146 -147 -148 -149 -150 -151 -152 153 -15
4 -155 -156 -157 -158 -159 160 -161 -162 163 -164 165 -166 -167 -168 169 -170 -171 -172 -173 -174 -175 176 -177 -178 -179 -180 -181 -182 -183 -184 -185 -186 1
87 188 -189 -190 -191 -192 193 -194 -195 -196 -197 -198 199 -200 -201 -202 -203 204 -205 -206 -207 -208 209 -210 211 212 213 -214 -215 -216 -217 218 219 -220
-221 -222 -223 -224 -225 -226 -227 -228 -229 -230 -231 -232 233 -234 -235 -236 -237 -238 239 -240 -241 -242 -243 -244 245 -246 -247 248 -249 -250 -251 -252 -2
53 -254 255 256 257 -258 -259 -260 -261 262 -263 -264 265 -266 -267 -268 -269 -270 -271 272 -273 -274 275 -276 -277 -278 -279 -280 -281 -282 -283 -284 285 -28
6 -287 -288 -289 -290 291 -292 -293 -294 -295 -296 -297 -298 299 -300 301 302 -303 -304 305 306 307 -308 -309 -310 -311 -312 -313 -314 -315 -316 -317 -318 -31
9 -320 321 -322 -323 -324 -325 -326 -327 -328 -329 -330 331 -332 -333 -334 -335 -336 337 -338 -339 -340 -341 342 -343 -344 -345 -346 347 -348 -349 350 -351 -3
52 353 -354 -355 -356 -357 -358 -359 -360 -361 362 -363 -364 -365 -366 367 -368 -369 -370 -371 -372 -373 -374 -375 -376 377 -378 379 -380 -381 -382 -383 -384
385 -386 -387 -388 389 -390 -391 -392 393 -394 -395 396 397 -398 -399 -400 -401 402 403 -404 -405 -406 -407 -408 -409 -410 -411 -412 413 -414 -415 -416 -417 -
418 -419 -420 -421 -422 423 -424 -425 -426 -427 -428 -429 -430 431 432 -433 -434 -435 -436 -437 -438 439 440 -441 -442 -443 -444 -445 -446 -447 -448 449 450 -
451 -452 -453 -454 -455 456 -457 -458 -459 -460 461 -462 -463 -464 -465 -466 -467 -468 469 -470 -471 -472 -473 -474 -475 476 477 -478 479 -480 -481 -482 -483
 -484 485 486 487 -488 489 490 491 -492 -493 -494 -495 -496 -497 -498 -499 -500 -501 -502 -503 -504 -505 -506 507 -508 -509 -510 -511 -512 -513 -514 515 -516
-517 -518 -519 -520 -521 -522 523 -524 -525 526 -527 -528 -529 -530 531 -532 533 534 -535 -536 537 -538 -539 540 -541 -542 -543 -544 -545 -546 -547 -548 -549
-550 -551 -552 553 -554 -555 556 -557 -558 559 -560 -561 -562 -563 -564 -565 -566 -567 -568 569 -570 -571 -572 -573 574 -575 -576 577 -578 579 -580 581 -582 -
583 -584 -585 -586 -587 -588 -589 590 591 -592 -593 -594 -595 -596 -597 -598 599 -600 -601 -602 -603 -604 605 -606 -607 -608 -609 -610 -611 -612 -613 -614 615
 616 -617 -618 -619 -620 -621 -622 623 624 625 -626 -627 -628 -629 630 -631 -632 -633 -634 -635 -636 637 -638 -639 640 -641 642 643 -644 -645 -646 -647 -648
-649 -650 651 -652 -653 -654 -655 -656 -657 -658 -659 -660 661 -662 -663 -664 665 -666 -667 -668 669 670 -671 -672 673 674 675 -676 -677 -678 -679 -680 -681 -
682 -683 -684 -685 -686 -687 -688 689 -690 -691 -692 -693 -694 -695 -696 697 -698 -699 -700 -701 -702 -703 -704 -705 -706 707 -708 -709 -710 -711 712 -713 -71
4 715 -716 -717 -718 0
c Total CPU time (ms) : 0.339

real    0m0.471s
user    0m0.652s
sys     0m0.032s
```

test-factor-10.cnf

```
bash-4.2$ time java -jar sat4j-1.5.jar test-factor-10.cnf
c SAT4J: a SATisfiability library for Java (c) 2004-2005 Daniel Le Berre
c This is free software under the GNU LGPL licence. See www.sat4j.org for details.
c version RELEASE_1_5.1.0.5
c --- Begin Solver configuration ---
c org.sat4j.minisat.uip.FirstUIP@e9e54c2
c org.sat4j.minisat.constraints.MixedDataStructureWithBinary@65ab7765
c org.sat4j.minisat.learning.MiniSATLearning@1b28cdfa
c conflictBoundIncFactor=1.5 learntBoundIncFactor=1.1 initLearntBoundConstraintFactor=0.5 initConflictBound=100
c VSIDS like heuristics from MiniSAT using a heap
c No reason simplification
c --- End Solver configuration ---
c timeout: 2147483647s
c solving test-factor-10.cnf
c reading problem ...
c ... done. Time 0.063 ms.
c #vars          3357
c #constraints   12168
c starts                    : 14
c conflicts                 : 39857
c decisions                 : 94773
c propagations              : 4982294
c inspects                  : 38493083
c learnt literals           : 306
c learnt binary clauses : 0
c learnt ternary clauses        : 1980
c learnt clauses            : 38502
c root simplifications  : 320
c removed literals (reason simplification)      : 0
c reason swapping (by a shorter reason) : 0
c Calls to reduceDB         : 2
c speed (decisions/second)      : 25306.542056074766
c non guided choices     6885
c random choices         0
s SATISFIABLE
```

v -1 -2 -3 -4 -5 6 7 8 9 10 -11 -12 -13 14 -15 -16 17 -18 -19 -20 21 22 23 24 25 -26 -27 -28 -29 -30 31 32 -33 -34 35 36 -37 -38 -39 40 41 42 -43 -44 45 -46 47 48 -49 50 51 -52 -53 54 -55 -56 -57 -58 -59 -60 -61 -62 63 -64 -65 -66 67 68 -69 70 -71 72 73 -74 75 76 77 -78 79 80 81 82 ... 3357 0

```
c Total CPU time (ms) : 3.812


real    0m3.952s
user    0m4.560s
sys     0m0.052s
```