```
1 82562, 82792): (0, 1, 10), (82563, 82793): (0, 1, 10), (82564, 82794): (0, 1, 10
   ), (82565, 82795): (0, 1, 10), (82566, 82796): (0, 1, 10), (82567, 82797): (0, 1,
   10), (82568, 82798): (0, 1, 10), (82569, 82799): (0, 1, 10), (82586, 82800): (0, 1
   , 1790), (82816, 82800): (0, 1, 1800)}
 2 presolving:
3 (round 1, fast)
                        39606 del vars, 210917 del conss, 0 add conss, 29355 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 186 clgs
 4 (round 2, fast)
                    51127 del vars, 214679 del conss, 0 add conss, 29982 chg
  bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 187 clgs
 5 (round 3, fast)
                        52565 del vars, 215144 del conss, 0 add conss, 30450 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 189 clgs
 6 (round 4, fast)
                        53669 del vars, 215470 del conss, 0 add conss, 30912 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 192 clgs
 7 (round 5, fast)
                        54757 del vars, 215792 del conss, 0 add conss, 31366 chg
  bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 195 clgs
 8 (round 6, fast)
                        55825 del vars, 216109 del conss, 0 add conss, 31813 chq
  bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 196 clgs
 9 (round 7, fast)
                        56868 del vars, 216418 del conss, 0 add conss, 32251 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 200 clgs
10 (round 8, fast)
                        57882 del vars, 216720 del conss, 0 add conss, 32676 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 205 clgs
11 (round 9, fast)
                        58857 del vars, 217010 del conss, 0 add conss, 33085 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 211 clgs
12 (round 10, fast)
                    59787 del vars, 217288 del conss, 0 add conss, 33477 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 216 clgs
13 (round 11, fast) 60673 del vars, 217552 del conss, 0 add conss, 33851 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 222 clgs
```

```
14 (round 12, fast)
                          61507 del vars, 217801 del conss, 0 add conss, 34203 chg
   bounds. O chq sides, O chq coeffs, O upqd conss, O impls, 230 clqs
15 (round 13, fast)
                         62281 del vars, 218034 del conss, 0 add conss, 34530 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 237 clgs
16 (round 14, fast)
                         62999 del vars, 218249 del conss, 0 add conss, 34833 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 244 clgs
17 (round 15, fast)
                        63664 del vars, 218448 del conss, 0 add conss, 35113 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 250 clgs
18 (round 16, fast)
                         64495 del vars, 218645 del conss, 0 add conss, 35401 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 257 clgs
19 (round 17, fast)
                        65235 del vars, 218894 del conss, 0 add conss, 35647 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 270 clgs
20 (round 18, fast)
                        65773 del vars, 219037 del conss, 0 add conss, 35851 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upqd conss, 0 impls, 277 clgs
21 (round 19, fast)
                         66342 del vars, 219225 del conss, 0 add conss, 36116 chq
   bounds, 0 chq sides, 0 chq coeffs, 0 upqd conss, 0 impls, 288 clqs
22 (round 20, fast)
                         66654 del vars, 219319 del conss, 0 add conss, 36234 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 295 clgs
23 (round 21, fast)
                         66916 del vars, 219397 del conss, 0 add conss, 36334 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 299 clgs
24 (round 22, fast)
                         67137 del vars, 219462 del conss, 0 add conss, 36416 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 304 clgs
25 (round 23, fast)
                         67321 del vars, 219515 del conss, 0 add conss, 36481 chq
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 308 clgs
26 (round 24, fast)
                         67470 del vars, 219558 del conss, 0 add conss, 36529 chg
   bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 314 clgs
27 (round 25, fast)
                         67603 del vars, 219597 del conss, 0 add conss, 36578 chg
```

- 27 bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 318 clqs
- 28 (round 26, exhaustive) 67720 del vars, 219641 del conss, 0 add conss, 36638 chg bounds, 0 chg sides, 0 chg coeffs, 0 upgd conss, 0 impls, 326 clqs
- 29 (round 27, exhaustive) 67724 del vars, 219643 del conss, 0 add conss, 36640 chg bounds, 0 chg sides, 0 chg coeffs, 329 upgd conss, 0 impls, 329 clgs
- 30 (round 28, medium) 67844 del vars, 219763 del conss, 0 add conss, 36640 chg bounds, 0 chg sides, 0 chg coeffs, 329 upgd conss, 0 impls, 307 clqs
- 31 (round 29, fast) 67844 del vars, 219822 del conss, 59 add conss, 36640 chg bounds, 0 chg sides, 0 chg coeffs, 329 upgd conss, 0 impls, 404 clqs
- 32 (round 30, exhaustive) 67866 del vars, 219845 del conss, 60 add conss, 36640 chg bounds, 0 chg sides, 0 chg coeffs, 389 upgd conss, 0 impls, 405 clqs
- 33 (round 31, medium) 67920 del vars, 219899 del conss, 60 add conss, 36640 chg bounds, 0 chg sides, 0 chg coeffs, 389 upgd conss, 0 impls, 345 clqs
- 34 (round 32, exhaustive) 67926 del vars, 219921 del conss, 76 add conss, 36640 chg bounds, 0 chg sides, 0 chg coeffs, 405 upgd conss, 0 impls, 380 clqs
- 35 (15.0s) probing: 1000/145184 (0.7%) 0 fixings, 0 aggregations, 164883 implications, 0 bound changes
- 36 (15.0s) probing: 1001/145184 (0.7%) 0 fixings, 0 aggregations, 164883 implications, 0 bound changes
- 37 (15.0s) probing aborted: 1000/1000 successive useless probings
- 38 (15.1s) symmetry computation started: requiring (bin +, int +, cont +), (fixed : bin -, int -, cont -)
- 39 (15.3s) no symmetry present (symcode time: 0.04)
- 40 presolving (33 rounds: 33 fast, 7 medium, 5 exhaustive):
- 41 67942 deleted vars, 219935 deleted constraints, 77 added constraints, 36640 tightened bounds, 0 added holes, 0 changed sides, 0 changed coefficients
- 42 0 implications, 165253 cliques

```
43 presolved problem has 145184 variables (145184 bin, 0 int, 0 impl, 0 cont) and
  60531 constraints
      114 constraints of type <setppc>
44
   60417 constraints of type <linear>
46 transformed objective value is always integral (scale: 1)
47 Presolving Time: 14.93
48
49 time | node | left |LP iter|LP it/n|mem/heur|mdpt |vars |cons |rows |cuts |sepa
   |confs|strbr| dualbound | primalbound | gap
                                                  | compl.
50 p16.5sl
           1 |
                      0 |
                             0 |
                                     - | locks|
                                                   0 | 145k| 60k| 60k|
                                                                          0 | 0
             0 |-1.002000e+03 | 5.380000e+03 |
                                              Inf | unknown
51 *57.1sl 1 l
                      0 | 22931 | - | LP |
                                                   0 | 145k| 60k| 60k|
                                                                          0 l
                                                                              0
      44 |
             0 | 1.200000e+03 | 1.200000e+03 | 0.00% | unknown
52 57.1sl 1 l
                     0 | 22931 | - | 1059M | 0 | 145k| 60k|
                                                                   60k|
                                                                          0 | 0
      44 |
             0 | 1.200000e+03 | 1.200000e+03 | 0.00% | unknown
53
54 SCIP Status
                    : problem is solved [optimal solution found]
55 Solving Time (sec): 57.06
56 Solving Nodes
                     : 1
57 Primal Bound : +1.200000000000e+03 (2 solutions)
58 Dual Bound : +1.200000000000e+03
59 Gap
                    : 0.00 %
60 Optimal value: 1200.0
61 Solution:
62 \times 2 \times 2 \times 394 = 1.0
63 \times 2_{3}94_{7}86 = 1.0
64 \times 2_{786} = 1.0
```

```
65 \times 2_{1178} = 1.0
66 \times 2_{1570} = 1.0
67 \times 2_{1962} \times 2354 = 1.0
68 \times 2_2354_2746 = 1.0
69 \times 2 \times 2746 \times 3138 = 1.0
70 \times 2 \ 3138 \ 3530 = 1.0
71 \times 2 \times 3530 \times 3924 = 1.0
72 \times 2 \quad 3924 \quad 4316 = 1.0
73 \times 2_4316_4702 = 1.0
74 \times 2_4702_5094 = 1.0
75 \times 2_{5094} \times 5488 = 1.0
76 \times 2_{5488} = 1.0
77 \times 2_{5880} = 1.0
78 \times 2_{6266} = 1.0
79 \times 2_{6658} = 1.0
80 x2 7052 7444 = 1.0
81 x2_7444_7674 = 1.0
82 \times 2_{7674_{7904}} = 1.0
83 \times 2_{7904} \times 8134 = 1.0
84 \times 2_{8134} \times 8364 = 1.0
85 \times 2_{8364} \times 8594 = 1.0
86 \times 2_{8594} = 1.0
87 \times 2_{8824} = 1.0
88 \times 2_{9054} = 1.0
89 x2 9284 9514 = 1.0
90 \times 2_{9514} = 1.0
91 \times 2_{9906} = 1.0
```

```
92 x2_10136_10366 = 1.0
93 \times 2_{10366} = 1.0
94
95 Process finished with exit code 0
96
```