

Results Using cplex_options

Branchdir

```
ampl: option cplex_options 'branchdir=-1';  
ampl: solve;  
CPLEX 12.8.0.0: branchdir=-1  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
300 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.313
```

```
ampl: option cplex_options 'branchdir=0';  
ampl: solve;  
CPLEX 12.8.0.0: branchdir=0  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.219
```

```
ampl: option cplex_options 'branchdir=1';  
ampl: solve;  
CPLEX 12.8.0.0: branchdir=1  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes
```

```
ampl: display _solve_elapsed_time;
```

```
solve_elapsed_time = 0.235
```

nodeselect

```
ampl: option cplex_options 'nodeselect=0';
```

```
ampl: solve;
```

```
CPLEX 12.8.0.0: nodeselect=0
```

```
CPLEX 12.8.0.0: optimal integer solution; objective 4
```

```
156 MIP simplex iterations
```

```
0 branch-and-bound nodes
```

```
ampl: display _solve_elapsed_time;
```

```
_solve_elapsed_time = 0.265
```

```
ampl: option cplex_options 'nodeselect=1';
```

```
ampl: solve;
```

```
CPLEX 12.8.0.0: nodeselect=1
```

```
CPLEX 12.8.0.0: optimal integer solution; objective 4
```

```
156 MIP simplex iterations
```

```
0 branch-and-bound nodes
```

```
ampl: display _solve_elapsed_time;
```

```
_solve_elapsed_time = 0.234
```

```
ampl: option cplex_options 'nodeselect=2';
```

```
ampl: solve;
```

```
CPLEX 12.8.0.0: nodeselect=2
```

CPLEX 12.8.0.0: optimal integer solution; objective 4

156 MIP simplex iterations

0 branch-and-bound nodes

ampl: display _solve_elapsed_time;

_solve_elapsed_time = 0.219

ampl: option cplex_options '**nodeselect=3**';

ampl: solve;

CPLEX 12.8.0.0: nodeselect=3

CPLEX 12.8.0.0: optimal integer solution; objective 4

156 MIP simplex iterations

0 branch-and-bound nodes

ampl: display _solve_elapsed_time;

_solve_elapsed_time = 0.25

fpheur

ampl: option cplex_options '**fpheur=-1**';

ampl: solve;

CPLEX 12.8.0.0: fpheur=-1

CPLEX 12.8.0.0: optimal integer solution; objective 4

156 MIP simplex iterations

0 branch-and-bound nodes

ampl: display _solve_elapsed_time;

_solve_elapsed_time = 0.265

```
ampl: option cplex_options 'fpheur=0';  
ampl: solve;  
CPLEX 12.8.0.0: fpheur=0  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.265
```

```
ampl: option cplex_options 'fpheur=1';  
ampl: solve;  
CPLEX 12.8.0.0: fpheur=1  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.343
```

```
ampl: option cplex_options 'fpheur=2';  
ampl: solve;  
CPLEX 12.8.0.0: fpheur=2  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.312
```

rinshuer

```
ampl: option cplex_options 'rinsheur=-1';  
ampl: solve;  
CPLEX 12.8.0.0: rinsheur=-1  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.281
```

```
ampl: option cplex_options 'rinsheur=0';  
ampl: solve;  
CPLEX 12.8.0.0: rinsheur=0  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.281
```

```
ampl: option cplex_options 'rinsheur=2';  
ampl: solve;  
CPLEX 12.8.0.0: rinsheur=2  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes
```

```
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.313
```

cuts

```
ampl: option cplex_options 'fraccuts=-1 disjcuts=-1 splitcuts=-1 zerohalfcuts=-1';  
ampl: solve;  
CPLEX 12.8.0.0: fraccuts=-1  
disjcuts=-1  
splitcuts=-1  
zerohalfcuts=-1  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.297
```

```
ampl: option cplex_options 'fraccuts=2 disjcuts=3 splitcuts=3 zerohalfcuts=2';  
ampl: solve;  
CPLEX 12.8.0.0: fraccuts=2  
disjcuts=3  
splitcuts=3  
zerohalfcuts=2  
CPLEX 12.8.0.0: optimal integer solution; objective 4  
156 MIP simplex iterations  
0 branch-and-bound nodes  
ampl: display _solve_elapsed_time;  
_solve_elapsed_time = 0.297
```