

The parallel dual simplex method

Public benchmark set – Mittelmann LP

Instances	Xpress 7.6	Xpress 7.7	Solution time reduction
Linf_520c	5798	1132	-412%
rail4284	1073	509	-111%
fome13	210	112	-88%
df1001	9	5	-75%
self	57	34	-65%
fome12	62	38	-63%
LP22	18	12	-58%
watson_2	36	23	-58%
stormG2_1000	207	132	-56%
stat96v1	70	45	-56%
dano3mip_lp	15	10	-54%
L30	5	3	-43%
cont1	462	341	-35%
ns1687037	8932	6766	-32%
PDS-100	43	33	-32%
MOD2	16	13	-28%
cont4	538	421	-28%
stormG2-125	6	5	-20%
WORLD	20	17	-17%
dbic1	34	29	-17%

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Public benchmark set – Mittelmann LP (cont.)

Instances	Xpress 7.6	Xpress 7.7	Solution time reduction
stat96v4	302	265	-14%
QAP15	996	906	-10%
nug08-3rd	1090	1005	-8%
QAP12	66	61	-7%
PDS-40	7	7	-3%
neos3	43	42	-2%
NUG15	1016	1009	-1%
L1_d10_40	25000	25000	0%
NUG20	25000	25000	0%
GEN4	1	1	0%
ken-18	3	3	0%
neos1	6	6	0%
neos2	12	12	0%
NSCT2	1	1	0%
SGPF5Y6	1	1	0%
stp3d	92	94	2%
cont11	3255	3354	3%
neos	27	29	7%
RLFPRIM	1	1	18%
ns1688926	22	28	25%

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Performance improvements summary

	Public benchmark	Custom instances
Geo-mean Improvement	25%	36%
Improvement breakdown / Total	40	120
(100%+) Great improvement!	1	11
(30% ~ 100%) Significantly better	14	58
(5% ~ 30%) Slightly better	9	23
(-5% ~ +5%) Equal	13	20
(-25%~ -5%) Slightly worse	3	8