Empirical Results

An Improved Decision-DNNF Compiler

CRIL - CNRS & U. Artois

The following table gives some details about the computations achieved by the compilers d4, c2d, and Dsharp and the exact model counters Cachet and sharpSAT of the input CNF instance Σ. 703 instances Σ have been considered in our experiments.

The columns of this table make precise, from the leftmost one to the right most one:

- some information concerning the input instance, namely:
  - the family of the input CNF instance, among the eight families considered in the experiments (Bayesian network, BMC, Circuit, Configuration, Handmade, Planning, Random, Qif);
  - the name of the instance;
  - the number of variables occurring in the instance;
  - the number of clauses of the instance;
- the time (in seconds) required by d4 to compile Σ;
- the size (number of edges) of the Decision-DNNF compiled by d4;
- the time (in seconds) required by c2d to compile Σ;
- the size (number of edges) of the Decision-DNNF compiled by c2d;
- the time (in seconds) required by Dsharp to compile Σ;
- the size (number of compressed edges) of the Decision-DNNF compiled by Dsharp;
- the time (in seconds) required by Cachet to count the number of models of Σ;
- the time (in seconds) required by sharpSAT to count the number of models of Σ.

"TO" means that the method considered did not succeed in compiling the formula Σ into a Decision-DNNF representation (or in computing the number of models of the instance for the model counters), within the time limit of 3600s; time); when "TO" happens, we did not report the information about the size (we put a "?" instead). "MO" means that the compiler under consideration ran out of memory; when "MO" happens, we did not report the information about the time (we put a "?" instead).

Benchmark Information				D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
Qif	binsearch.16.pp	251	1925	0.61	1122	24.15	2316785	42.07	5779342	1.02	17.75
Qif	binsearch.16	2003	5637	1632.88	39852310	24.15	2316785	TO	?	TO	17.75
Qif	mixdup	309	452	0.46	118	1.99	503	0.92	436	0.59	0.53
Qif	binsearch.32	4473	14011	TO	?	TO	?	TO	?	TO	3700
Qif	binsearch.32.pp	251	1917	0.60	1354	23.69	1858608	44.63	5645095	0.82	6.07
Qif	10random	587	1685	0.50	510	6.12	4430	0.86	4459	0.60	0.61
Qif	sum.32	639	1708	177.76	3533299	123.80	22379346	TO	?	3.92	3700
Handmade	5_140_sd_schur	700	51600	TO	?	TO	?	TO	?	TO	TO
Handmade	5_100_sd_schur	500	26860	?	MO	TO	?	TO	?	TO	3700
Handmade	qg2-08	512	148957	3.01	30	TO	?	41.04	810	44.30	12.15
Handmade	qg5-11	1331	64054	0.39	48	711.77	4543	1.29	4487	1.18	0.76
Handmade	qg3-08	512	10469	0.19	132	28.09	4746	0.64	4281	0.94	0.43
Handmade	ls15-normalized	2562	31136	TO	?	TO	?	TO	?	TO	TO
Handmade	ls9-normalized	456	2864	TO	?	TO	?	TO	?	TO	TO
Handmade	qg7-09	729	22060	0.28	10	3.30	1672	0.80	1259	0.66	0.42
Handmade	ls16-normalized	3165	41595	TO	?	TO	?	TO	?	TO	TO
Handmade	ls10-normalized	657	4761	TO	?	TO	?	TO	?	TO	TO
Handmade	ls12-normalized	1221	11231	TO	?	TO	?	TO	?	TO	TO
Handmade	qg6-09	729	21844	0.40	24	3.79	1773	0.96	1277	0.88	0.42
Handmade	ls13-normalized	1596	16248	TO	?	TO	?	TO	?	TO	TO
Handmade	ls11-normalized	910	7480	TO	?	TO	?	TO	?	TO	TO

	Benchmark Information			D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
Handmade	ls8-normalized	301	1603	?	MO	TO	?	TO	?	TO	TO
Handmade	qg4-09	729	15580	3.82	2054	TO	?	22.87	55804	18.38	20.20
Handmade	qg1-08	512	148957	3.50	196	TO	?	70.69	4136	102.83	64.61
Handmade	qg1-07	343	68083	0.66	62	19.20	1462	1.10	1380	0.85	0.76
Handmade	qg2-07	343	68083	0.68	78	20.02	2579	1.16	2474	0.88	0.74
Handmade	qg7-13	2197	97072	8.47	1050	TO	?	324.97	79536	93.62	54.97
Handmade	ls14-normalized	2041	22789	TO	?	TO	?	TO	?	TO	TO
Handmade	23_rd_r45	253	42504	TO	?	TO	?	TO	?	TO	TO
Handmade	20_rd_r45	190	20349	?	MO	TO	?	TO	?	TO	TO
Handmade	par8-3	350	1171	1.03	10	1.43	75	0.95	350	0.58	0.58
Handmade	par16-2-c	349	1392	0.49	4	5.96	349	4.18	349	1.78	0.69
Handmade	par8-1-c	64	254	0.04	0	1.38	64	0.84	64	0.58	0.40
Handmade	par16-4-c	324	1292	0.11	14	2.35	324	1.84	324	1.11	0.50
Handmade	par16-2	1015	3374	0.74	12	5.96	349	8.61	1015	2.85	0.69
Handmade	par16-3-c	334	1332	0.60	10	6.35	334	12.03	334	1.36	0.59
Handmade	par8-2	350	1157	0.56	0	1.32	68	0.87	350	0.57	0.36
Handmade	par8-4-c	67	266	0.59	2	1.19	67	0.78	67	0.57	0.38
Handmade	par8-2-c	68	270	0.76	0	1.32	68	0.77	68	0.16	0.36
Handmade	par16-1-c	317	1264	0.86	12	3.08	317	3.52	317	1.34	0.80
Handmade	par8-4	350	1155	0.18	4	1.19	67	0.85	350	0.58	0.38
Handmade	par16-4	1015	3324	0.82	12	2.35	324	9.01	1015	1.12	0.50
Handmade	par8-5	350	1171	0.64	0	1.33	75	0.86	350	0.58	0.64
Handmade	par8-5-c	75	298	0.67	0	1.33	75	0.17	75	0.56	0.64
Handmade	par16-1	1015	3310	0.92	8	4.97	1017	6.05	1015	1.49	0.74
Handmade	par16-3	1015	3344	0.96	6	11.78	1017	41.25	1015	2.65	0.69
Handmade	par8-3-c	75	298	0.87	0	1.43	75	0.96	75	0.61	0.58
Handmade	par16-5-c	341	1360	0.96	8	5.22	341	3.85	341	1.35	0.59
Handmade	par8-1	350	1149	0.94	0	3.30	352	0.78	350	0.56	0.54
Handmade	par16-5	1015	3358	1.11	10	10.97	1017	5.58	1015	3.10	0.78
Handmade	fphp-015-020	300	4965	TO	?	TO	?	TO	?	TO	3700
Handmade	fphp-010-020	200	2810	?	MO	?	MO	TO	?	TO	105.92
Handmade	ais12	265	5666	338.74	21100	1347.16	262582	TO	?	1081.49	TO
Handmade	ais10	181	3151	3.02	3446	40.19	40979	17.54	39509	17.88	5.87
Handmade	ais6	61	581	0.83	142	1.35	1220	0.84	1274	0.56	0.65
Handmade	ais8	113	1520	0.88	426	2.23	3962	1.24	3904	0.88	0.41
Handmade	lang12	576	13584	1494.29	1607530	3559.15	29518527	TO	?	3300.24	3061.78
Handmade	lang28	3136	174160	TO	?	?	MO	TO	?	TO	3700
Handmade	lang23	2116	96370	TO	?	?	MO	TO	?	TO	TO
Handmade	lang20	1600	63280	TO	?	?	MO	TO	?	TO	TO
Handmade	lang16	1024	32320	TO	?	TO	?	TO	?	TO	TO
Handmade	lang15	1024	32320	TO	?	TO	?	TO	?	TO	TO
Handmade	lang24	2304	109536	TO	?	?	MO	TO	?	TO	TO
Handmade	lang27	2916	156114	TO	?	?	MO	TO	?	TO	3700
Handmade	lang19	1444	54226	TO	?	TO	?	TO	?	TO	TO
Planning	bw_large.a	459	4675	0.09	0	11.93	459	0.88	459	0.55	0.72
Planning	log-2	1337	24777	1.76	11666	36.49	604731	1.97	86076	2.25	0.80
Planning	prob005.pddl	2701	29534	54.02	464778	1138.85	39732637	TO	?	74.40	73.09
Planning	tire-1	352	1038	0.87	1382	4.22	5011	0.91	31065	0.83	0.41
Planning	bw_large.c	3016	50457	1.05	8	179.55	3300	5.85	3103	6.49	1.26
Planning	huge	459	7054	0.14	0	12.20	459	0.83	459	0.54	0.47
Planning	logistics.b	843	7301	5.26	145204	3414.02	20199660	5.70	357997	7.62	2.81
Planning	logistics.c	1141	10719	317.43	6122523	TO	?	TO	?	395.70	36.79
Planning	hanoi5	1931	14468	0.78	32	TO	?	TO	?	TO	TO
Planning	anomaly	48	261	0.84	0	1.31	48	0.83	48	0.56	0.70
Planning	tire-3	577	2004	1.03	6258	5.04	20338	1.05	20333	0.60	0.53
Planning	bomb_b10_t10_p_t20	18480	36820	1.24	107780	334.71	187233	3.46	256880	1.10	1.52
Planning	emptyroom_d4_g2_p_t6	224	698	0.33	468	3.45	3388	1.00	7536	0.58	0.56
Planning	emptyroom_d12_g6_p_t8	952	3350	0.58	4582	9.09	99828	108.48	3112967	11.38	0.76
Planning	safe_safe_10_p_t5	166	356	0.65	298	1.93	2227	0.81	1620	0.56	0.56
Planning	safe_safe_30_p_t8	759	1892	0.73	1534	4.90	13284	0.84	13190	0.58	0.36
Planning	comm_p01_p_t8	1218	3657	4.54	92556	14.04	292730	11.90	3147432	25.60	5.46
Planning	coins_p04_p_t8	1376	3757	511.17	22576679	46.04	7078795	TO	?	TO	3700
Planning	coins_p02_p_t6	1040	2821	63.27	2261112	17.53	1881385	TO	?	TO	3700
Planning	bomb_b5_t5_p_t5	1340	2610	0.37	4290	22.37	10190	0.88	11600	0.86	0.62
Planning	uts_k2_p_t6	631	2275	74.03	3125821	16.84	3496027	TO	?	503.66	214.85
Planning	blocks_right_6_p_t5	2790	25961	?	MO	TO	?	TO	?	TO	3700
Planning	bomb_b10_t10_p_t6	5600	11060	0.70	32460	88.51	50549	1.27	67040	0.87	0.50
Planning	ring_3_p_t8	392	1008	2.18	52496	4.53	81319	5.75	331338	0.99	0.83
Planning	flip_no_action_1_p_t8	57	152	0.81	110	1.65	476	0.89	497	0.55	0.33
Planning	ring2_r6_p_t5	308	957	3.10	51370	4.53	25948	8.76	310840	3.34	0.44
Planning	emptyroom_d8_g4_p_t8	624	2066	1.03	16180	9.54	211826	63.61	6619697	7.10	4.58
Planning	coins_p04_p_t5	872	2353	37.18	1615987	14.41	1483400	TO	?	TO	3700
Planning	bomb_b10_t10_p_t16	14800	29460	0.97	86260	259.50	198000	1.40	198040	0.96	1.36
Planning	emptyroom_d16_g8_p_t10	1592	5702	0.93	11746	25.19	1154920	1376.29	71929058	228.03	2.40
Planning	uts_k1_p_t5	164	499	0.32	2061	2.44	8573	0.53	7350	0.55	0.36
Planning	bomb_b10_t10_p_t13	12040	23940	0.90	70120	207.86	117049	1.29	156020	0.93	0.91
Planning	coins_p10_p_t5	1988	4959	?	MO	?	MO	TO	?	TO	3700
Planning	coins_p05_p_t8	1376	3757	528.47	23146033	37.88	7930875	TO	?	TO	3700
Planning	safe_safe_2_p_t10	166	331	0.27	319	2.23	1788	0.78	1439	0.71	0.32
Planning	bomb_b10_t10_p_t18	16640	33140	1.23	97020	296.75	167529	1.63	227000	0.70	1.48
Planning	sort_num_s_3_p_t6	189	594	0.37	3207	2.32	22010	1.01	32449	0.46	0.34
Planning	ring_3_p_t10	484	1256	6.10	195312	4.52	152333	18.06	2673750	4.47	2.79
Planning	ring2_r8_p_t8	632	2029	171.72	1733372	137.87	10201418	TO	?	TO	13.63
Planning	bomb_b5_t5_p_t8	2120	4170	0.83	6810	37.38	17069	0.64	19500	0.84	0.58
Planning	comm_p05_p_t6	4026	14709	265.54	9285972	93.52	11810670	TO	?	237.75	209.79
Planning	flip_1_p_t6	25	60	0.54	54	1.00	180	0.83	199	0.69	0.31
Planning	sort_num_s_4_p_t8	768	2884	80.39	1092449	54.21	18761091	TO	?	TO	154.77
Planning	uts_k5_p_t10	5631	27806	?	MO	TO	?	TO	?	TO	3700
Planning	sort_num_s_7_p_t10	7049	30422	?	MO	?	MO	TO	?	TO	3700

Benchmark Information				D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
Planning	ring_5_p_t8	632	1679	45.68	653693	10.74	881857	4.06	476438	5.10	0.91
Planning	sort_num_s_6_p_t5	2091	8715	?	MO	?	MO	TO	?	TO	3700
Planning	bomb_b10_t10_p_t15	13880	27620	2.15	80880	241.96	136756	1.41	183600	0.66	1.00
Planning	ring_4_p_t10	632	1673	65.22	670858	6.65	385365	21.85	2737450	5.45	3.56
Planning	sort_num_s_5_p_t10	2175	8770	TO	?	TO	?	TO	?	TO	TO
Planning	uts_k5_p_t6	3427	16738	?	MO	TO	?	TO	?	TO	3700
Planning	coins_p01_p_t10	1712	4693	1257.58	50758952	85.09	13206429	TO	?	TO	3700
Planning	comm_p04_p_t8	4041	14370	439.78	3361434	73.93	8635181	TO	?	3294.42	3700
Planning	comm_p03_p_t6	2228	7503	22.74	688133	33.11	1708929	45.99	13286809	27.53	20.18
Planning	blocks_right_3_p_t10	1589	8628	782.83	6577202	TO	?	TO	?	TO	3700
Planning	uts_k3_p_t6	1315	5332	TO	?	TO	?	TO	?	TO	3700
Planning	coins_p05_p_t10	1712	4693	1371.28	55453910	110.93	14582954	TO	?	TO	3700
Planning	sort_num_s_3_p_t10	309	986	1.73	7329	4.12	65555	1.62	123997	1.10	0.40
Planning	safe_safe_2_p_t5	86	171	0.87	153	1.64	837	0.87	665	0.93	0.30
Planning	bomb_b5_t1_p_t5	564	1086	0.29	1194	9.73	3854	0.78	3996	1.00	0.30
Planning	safe_safe_2_p_t8	134	267	0.44	243	2.19	1360	0.87	1115	0.44	0.62
Planning	emptyroom_d20_g10_corners_p_t8	1608	5524	1940.48	4449873	?	MO	476.70	35119801	39.05	35.95
Planning	coins_p10_p_t8	3134	7911	?	MO	?	MO	TO	?	TO	3700
Planning	sort_num_s_7_p_t8	5649	24346	?	MO	?	MO	TO	?	TO	3700
Planning	ring2_r6_p_t6	366	1144	8.56	152981	10.15	1141701	51.61	5042640	38.18	0.44
Planning	coins_p01_p_t6	1040	2821	60.54	2159579	16.64	1890314	TO	?	TO	3700
Planning	sort_num_s_7_p_t6	4249	18270	?	MO	?	MO	TO	?	TO	3700
Planning	emptyroom_d16_g8_p_t6	968	3518	0.63	3482	9.83	103913	32.06	2813939	5.13	0.97
Planning	coins_p03_p_t8	1376	3757	535.98	22871634	36.79	7195465	TO	?	TO	3700
Planning	ring_3_p_t6	300	760	0.77	11569	3.56	29589	1.03	42776	0.52	0.33
Planning	flip_1_p_t10	41	100	0.84	74	1.33	324	0.13	351	0.73	0.32
Planning	comm_p10_p_t10	17539	75516	?	MO	?	MO	TO	?	TO	3700
Planning	coins_p02_p_t8	1376	3757	524.83	22432514	42.56	6991863	TO	?	TO	3700
Planning	safe_safe_30_p_t6	577	1528	0.52	1078	2.99	10194	0.78	9836	0.45	0.40
Planning	blocks_right_3_p_t8	1275	6914	138.77	2295211	478.61	13388613	TO	?	3062.57	3700
Planning	ring_4_p_t5	332	848	1.57	19652	2.80	59156	0.91	21193	0.47	0.38
Planning	bomb_b10_t5_p_t10	5460	10815	0.83	24735	89.53	49558	0.95	60660	0.53	0.47
Planning	blocks_right_2_p_t8	643	3029	1.16	12619	13.90	118794	17.32	1659768	3.91	3.74
Planning	blocks_right_5_p_t5	1996	14681	?	MO	TO	?	TO	?	TO	3700
Planning	flip_no_action_1_p_t6	43	114	0.50	86	1.33	335	0.86	361	0.19	0.29
Planning	bomb_b10_t10_p_t11	10200	20260	0.94	59360	172.54	97934	1.19	129360	0.54	0.74
Planning	uts_k4_p_t8	2969	13381	?	MO	TO	?	TO	?	TO	3700
Planning	coins_p02_p_t5	872	2353	37.90	1552131	33.55	649610	TO	?	TO	3700
Planning	comm_p01_p_t10	1510	4569	7.07	171534	20.59	573495	51.70	11903231	45.30	19.77
Planning	emptyroom_d16_g8_p_t8	1280	4610	0.80	6242	51.07	347295	361.86	21341006	19.43	12.80
Planning	emptyroom_d16_g8_p_t5	812	2972	0.57	2624	11.98	65892	8.21	885808	1.19	1.10
Planning	bomb_b20_t5_p_t6	8500	16825	0.93	60075	135.31	78450	1.07	113550	0.51	0.60
Planning	emptyroom_d24_g12_p_t6	1936	7226	1.35	10872	58.28	595316	1308.29	66456223	40.00	29.16
Planning	blocks_right_4_p_t5	1334	8343	514.64	10616484	1040.27	104237153	TO	?	2351.99	320.85
Planning	comm_p05_p_t5	3384	12261	286.41	5313857	59.00	8667060	112.41	33295809	48.82	259.88
Planning	blocks_right_4_p_t8	2117	13257	?	MO	TO	?	TO	?	TO	3700
Planning	comm_p02_p_t8	1995	6444	12.81	286892	29.69	942308	79.24	18504756	54.61	44.57
Planning	blocks_right_3_p_t6	961	5200	19.42	268358	77.95	6124283	117.82	14082252	62.82	35.54
Planning	flip_1_p_t5	21	50	0.46	26	1.00	132	0.92	147	0.43	0.29
Planning	blocks_right_6_p_t10	5525	48741	TO	?	TO	?	TO	?	TO	3700
Planning	comm_p05_p_t10	6594	24501	TO	?	197.24	36046454	TO	?	TO	3700
Planning	uts_k1_p_t8	257	796	0.53	6903	2.98	20605	0.19	53200	0.51	0.33
Planning	uts_k1_p_t10	319	994	0.70	10127	4.16	33048	1.35	208160	0.61	0.45
Planning	safe_safe_5_p_t8	134	267	0.42	243	1.45	1389	0.29	1115	0.71	0.69
Planning	sort_num_s_3_p_t8	249	790	0.61	4953	3.34	37596	0.73	58303	0.88	0.36
Planning	bomb_b5_t1_p_t6	672	1302	0.60	1422	11.49	4662	0.66	4908	0.71	0.79
Planning	emptyroom_d12_g6_p_t5	604	2144	0.84	1630	7.30	30597	3.04	329435	1.00	0.94
Planning	ring_5_p_t5	410	1061	3.00	49533	4.55	15623	0.90	26538	0.62	0.64
Planning	bomb_b10_t10_p_t17	15720	31300	1.65	91640	277.32	157905	1.67	212100	0.84	1.52
Planning	coins_p05_p_t6	1040	2821	60.41	2146430	19.21	1525464	TO	?	TO	3700
Planning	blocks_right_6_p_t6	3337	30517	TO	?	TO	?	TO	?	TO	3700
Planning	coins_p01_p_t8	1376	3757	544.17	23653985	57.63	8868241	TO	?	TO	3700
Planning	flip_no_action_1_p_t10	71	190	0.99	150	1.93	589	0.86	633	0.43	0.30
Planning	bomb_b20_t5_p_t10	14100	28025	0.66	99975	238.28	137493	0.91	196850	0.92	1.23
Planning	comm_p10_p_t6	10691	45324	?	MO	?	MO	TO	?	TO	3700
Planning	uts_k2_p_t8	833	3027	361.59	12191560	26.48	6551620	TO	?	TO	3700
Planning	safe_safe_2_p_t6	102	203	0.14	188	1.79	1020	0.81	811	0.48	0.54
Planning	comm_p01_p_t6	926	2745	2.00	62359	10.29	180108	2.98	746018	4.78	1.50
Planning	ring_5_p_t10	780	2091	91.88	2433245	13.86	1658228	30.85	3433272	1639.32	5.00
Planning	sort_num_s_4_p_t10	956	3602	241.88	2933665	458.57	55585575	TO	?	TO	1290.97
Planning	bomb_b10_t10_p_t14	12960	25780	1.31	75500	225.79	126759	1.42	170000	0.82	0.92
Planning	ring_4_p_t6	392	1013	1.76	30810	4.81	246644	1.07	53885	1.01	0.62
Planning	coins_p05_p_t5	872	2353	35.51	1489935	12.86	588987	TO	?	TO	3700
Planning	sort_num_s_5_p_t5	1100	4395	?	MO	?	MO	TO	?	2291.48	3700
Planning	comm_p10_p_t8	14115	60420	TO	?	?	MO	TO	?	TO	3700
Planning	uts_k10_p_t10	21451	148891	?	MO	TO	?	TO	?	TO	3700
Planning	bomb_b10_t10_p_t19	17560	34980	1.33	102400	314.77	177397	1.04	241520	0.90	1.32
Planning	emptyroom_d28_g14_corners_p_t5	1436	4894	8.53	123564	20.27	1399889	9.15	1374569	2.80	4.29
Planning	safe_safe_30_p_t10	941	2256	0.54	1932	4.51	25928	0.57	16664	0.43	0.55
Planning	bomb_b20_t5_p_t5	7100	14025	0.77	50100	112.30	64492	1.03	93125	0.45	0.52
Planning	coins_p10_p_t6	2370	5943	?	MO	?	MO	TO	?	TO	3700
Planning	uts_k10_p_t6	13047	89563	?	MO	TO	?	TO	?	TO	3700
Planning	emptyroom_d28_g14_corners_p_t6	1712	5872	28.23	355793	35.14	4909297	40.80	4779133	8.62	5.29
Planning	coins_p03_p_t6	1040	2821	63.45	2321831	20.55	2822051	TO	?	TO	3700
Planning	uts_k3_p_t8	1737	7094	TO	?	TO	?	TO	?	TO	3700
Planning	safe_safe_10_p_t10	321	666	0.78	636	2.58	4415	0.76	3434	0.75	0.30
Planning	blocks_right_2_p_t10	801	3781	2.61	22025	20.42	277733	209.23	16397535	109.33	48.89
Planning	emptyroom_d12_g6_p_t10	1184	4154	1.23	7834	14.91	785443	186.86	13017836	140.20	1.47
Planning	blocks_right_5_p_t8	3169	23162	?	MO	TO	?	TO	?	TO	3700

Benchmark Information				D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
Planning	sort_num_s_3_p_t5	159	496	0.92	2443	2.51	16493	0.99	23556	0.82	0.57
Planning	ring_4_p_t8	512	1343	9.64	208576	6.18	219152	2.84	362030	2.21	0.67
Planning	bomb_b5_t5_p_t6	1600	3130	0.98	5130	26.39	12407	0.95	14220	0.47	0.34
Planning	emptyroom_d24_g12_p_t6	1464	5558	0.64	5652	19.03	177744	91.15	6780551	10.70	1.82
Planning	comm_p04_p_t5	2577	8988	40.77	966240	39.72	3541094	38.57	12026341	53.25	24.49
Planning	bomb_b5_t1_p_t10	1104	2166	0.32	2334	19.18	8168	0.89	8712	0.39	0.36
Planning	sort_num_s_5_p_t8	1745	7020	?	MO	TO	?	TO	?	TO	TO
Planning	ring2_r8_p_t10	784	2527	473.73	8447191	258.46	47677137	TO	?	TO	162.16
Planning	uts_k10_p_t8	17249	119227	?	MO	TO	?	TO	?	TO	3700
Planning	emptyroom_d24_g12_p_t10	2408	8894	1.91	17698	203.59	1698754	TO	?	447.18	58.49
Planning	emptyroom_d28_g14_corners_p_t8	2264	7828	293.45	3031379	?	MO	760.95	54022935	89.38	63.73
Planning	uts_k1_p_t6	195	598	0.61	3210	3.41	12858	0.76	15644	0.38	0.31
Planning	uts_k4_p_t6	2247	10057	?	MO	TO	?	TO	?	TO	3700
Planning	coins_p03_p_t5	872	2353	33.92	1437581	12.43	604038	TO	?	TO	3700
Planning	emptyroom_d28_g14_corners_p_t10	2816	9784	?	MO	?	MO	TO	?	966.47	3700
Planning	uts_k5_p_t8	4529	22272	?	MO	TO	?	TO	?	TO	3700
Planning	sort_num_s_7_p_t5	3549	15232	?	MO	TO	?	TO	?	TO	3700
Planning	comm_p02_p_t6	1515	4836	7.16	205184	19.32	580808	12.18	3377945	7.37	4.61
Planning	sort_num_s_5_p_t6	1315	5270	?	MO	TO	?	TO	?	TO	3700
Planning	comm_p10_p_t5	8979	37776	?	MO	?	MO	TO	?	3415.68	3700
Planning	sort_num_s_4_p_t6	580	2166	31.22	547083	44.81	14138767	520.90	35754792	280.82	39.20
Planning	bomb_b10_t10_p_t8	7440	14740	0.81	43220	121.57	68987	1.02	91400	0.75	0.55
Planning	safe_safe_10_p_t8	259	542	0.48	487	6.00	3509	0.81	2680	0.64	0.35
Planning	emptyroom_d8_g4_p_t6	472	1550	0.98	8604	19.40	225875	5.86	855756	1.26	0.70
Planning	bomb_b10_t10_p_t10	9280	18420	0.84	53980	450.73	87924	1.22	116680	1.07	0.52
Planning	comm_p02_p_t10	2475	8052	29.44	626610	46.21	1771775	TO	?	363.90	112.73
Planning	emptyroom_d8_g4_p_t5	396	1292	0.80	6174	5.63	181747	1.93	250023	0.79	0.47
Planning	ring2_r6_p_t8	482	1518	22.36	402920	14.95	1487908	TO	?	TO	0.90
Planning	ring_3_p_t5	254	636	0.98	6574	3.14	24048	0.91	15914	0.36	0.31
Planning	safe_safe_10_p_t6	197	418	0.52	368	2.10	2640	0.85	1966	0.66	0.29
Planning	safe_safe_5_p_t10	166	331	0.59	319	2.17	1789	0.85	1439	0.67	0.64
Planning	emptyroom_d20_g10_corners_p_t5	1020	3454	4.19	72516	17.11	874275	6.45	903373	1.55	1.23
Planning	ring2_r8_p_t5	404	1282	10.74	357260	5.11	33482	TO	?	165.94	0.55
Planning	emptyroom_d4_g2_p_t8	296	926	0.53	808	4.95	4610	0.83	16426	0.70	0.29
Planning	uts_k2_p_t5	530	1899	22.39	573807	14.67	3212733	27.27	7882344	14.65	19.65
Planning	emptyroom_d20_g10_corners_p_t6	1216	4144	12.14	201060	76.05	86220529	26.48	3127442	3.98	3.03
Planning	comm_p03_p_t8	2936	9999	40.83	916707	48.95	3309077	TO	?	299.62	88.45
Planning	uts_k3_p_t10	2159	8856	?	MO	TO	?	TO	?	TO	3700
Planning	blocks_right_4_p_t10	2639	16533	?	MO	TO	?	TO	?	TO	3700
Planning	coins_p10_p_t10	3898	9879	?	MO	?	MO	TO	?	TO	3700
Planning	coins_p04_p_t10	1712	4693	1371.99	54656381	138.95	22759154	TO	?	TO	3700
Planning	bomb_b10_t10_p_t12	11120	22100	1.19	64740	553.12	107277	1.15	142880	0.74	1.02
Planning	safe_safe_5_p_t5	86	171	0.52	153	1.70	844	0.84	665	0.65	0.57
Planning	coins_p02_p_t10	1712	4693	1397.72	56117753	68.45	12913785	TO	?	TO	3700
Planning	emptyroom_d8_g4_p_t10	776	2582	2.24	31120	11.50	362546	479.81	35263240	68.50	13.03
Planning	bomb_b10_t10_p_t5	4680	9220	0.56	27080	72.97	41757	0.86	54900	0.70	0.41
Planning	uts_k3_p_t5	1104	4451	?	MO	1188.71	156431691	TO	?	TO	3700
Planning	bomb_b10_t5_p_t8	4380	8655	0.83	19815	71.39	39011	0.87	47400	0.71	0.43
Planning	sort_num_s_6_p_t8	3324	13926	?	MO	TO	?	TO	?	TO	3700
Planning	blocks_right_4_p_t6	1595	9981	1953.64	17530301	TO	?	TO	?	TO	3700
Planning	emptyroom_d4_g2_p_t10	368	1154	0.74	1128	5.47	7024	0.94	29516	0.70	0.30
Planning	bomb_b20_t5_p_t8	11300	22425	1.82	80025	184.72	107860	1.20	154500	0.78	0.78
Planning	flip_1_p_t8	33	80	0.58	66	1.31	256	0.83	275	0.64	0.28
Planning	blocks_right_2_p_t6	485	2277	1.74	5725	9.40	65063	1.99	171523	1.00	0.54
Planning	uts_k10_p_t5	10946	74731	TO	?	TO	?	TO	?	TO	3700
Planning	bomb_b10_t5_p_t5	2760	5415	0.86	12435	43.06	23629	1.02	28350	0.73	0.30
Planning	bomb_b5_t5_p_t10	2640	5210	0.60	8490	46.09	21676	1.05	25040	0.61	0.32
Planning	emptyroom_d4_g2_p_t5	188	584	0.68	356	3.18	1951	0.77	3588	0.69	0.28
Planning	uts_k2_p_t10	1035	3779	989.06	27035633	159.21	34886418	TO	?	TO	3700
Planning	ring_5_p_t6	484	1267	3.82	82312	13.67	1618108	1.07	67806	1.63	0.77
Planning	coins_p04_p_t6	1040	2821	65.22	2427683	16.77	1477677	TO	?	TO	3700
Planning	safe_safe_5_p_t6	102	203	0.88	188	1.21	1038	0.82	811	0.62	0.62
Planning	blocks_right_3_p_t5	804	4343	7.61	118222	17.67	2357112	18.92	2600991	25.95	5.92
Planning	blocks_right_6_p_t8	4431	39629	TO	?	TO	?	TO	?	TO	3700
Planning	emptyroom_d20_g10_corners_p_t10	2000	6904	1267.04	7728164	?	MO	TO	?	1275.19	429.12
Planning	comm_p04_p_t10	5017	17958	402.20	6296381	348.46	15867126	TO	?	TO	3700
Planning	sort_num_s_6_p_t6	2502	10452	?	MO	TO	?	TO	?	TO	3700
Planning	coins_p01_p_t5	872	2353	35.59	1466971	12.16	585273	TO	?	TO	3700
Planning	uts_k5_p_t5	2876	13971	?	MO	TO	?	TO	?	TO	3700
Planning	sort_num_s_4_p_t5	486	1807	16.68	279338	30.68	9726150	165.73	15017514	29.17	16.59
Planning	emptyroom_d24_g12_p_t5	1228	4724	1.00	4276	13.15	1084743	57.94	1936918	1.54	1.07
Planning	blocks_right_2_p_t5	406	1901	0.61	3105	7.54	58537	1.18	62409	0.71	0.37
Planning	flip_no_action_1_p_t5	36	95	0.67	66	1.26	286	0.81	271	0.64	0.30
Planning	comm_p03_p_t10	3644	12495	110.75	1869448	65.14	5691825	TO	?	2567.59	3700
Planning	bomb_b10_t5_p_t6	3300	6495	0.84	14895	52.18	28701	0.90	34680	0.72	0.51
Planning	uts_k4_p_t10	3691	16705	?	MO	TO	?	TO	?	TO	3700
Planning	coins_p03_p_t10	1712	4693	1413.68	57245293	54.92	11348177	TO	?	TO	3700
Planning	uts_k4_p_t5	1886	8395	?	MO	TO	?	TO	?	TO	3700
Planning	comm_p02_p_t5	1275	4032	5.49	134084	16.30	397415	13.25	1392752	2.76	2.29
Planning	ring2_r6_p_t10	598	1892	78.30	2243666	107.48	13723503	TO	?	TO	14.94
Planning	comm_p04_p_t6	3065	10782	79.44	2521103	50.82	4510293	139.27	36920679	239.73	55.61
Planning	emptyroom_d12_g6_p_t6	720	2546	0.62	2496	9.30	50614	45.31	1615582	1.49	1.25
Planning	comm_p03_p_t5	1874	6255	13.25	348948	23.99	1228910	13.45	4144033	7.75	18.68
Planning	blocks_right_5_p_t10	3951	28816	?	MO	TO	?	TO	?	TO	3700
Planning	comm_p05_p_t8	5310	19605	1268.12	9921927	142.72	22884975	TO	?	TO	3700
Planning	safe_safe_30_p_t5	486	1346	0.54	926	3.18	8526	0.78	8190	0.55	0.55
Planning	ring2_r8_p_t6	480	1531	33.16	436022	6.67	48971	TO	?	2372.23	1.49
Planning	bomb_b5_t1_p_t8	888	1734	0.54	1878	14.82	6364	0.88	6756	0.60	0.29
Planning	blocks_right_5_p_t6	2387	17508	?	MO	TO	?	TO	?	TO	3700

Benchmark Information				D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
Planning	sort_num_s_6_p_t10	4146	17400	?	MO	TO	?	TO	?	TO	3700
Planning	comm_p01_p_t5	780	2289	1.88	41928	7.93	132503	1.75	359988	1.13	1.06
Planning	4blocksb	410	24758	0.59	64	5.63	677	1.07	884	1.16	0.61
Planning	logistics.a	828	6718	14.89	353910	TO	?	1.30	79707	2.64	0.41
Planning	medium	116	953	0.47	2	2.11	231	0.16	138	0.57	0.30
Planning	prob012.pddl	2324	31857	774.08	7690786	TO	?	112.83	25390719	57.44	8.92
Planning	prob004.pddl	2303	20963	4.62	91567	381.40	4693428	15.17	3511594	28.79	1.74
Planning	4blocks	758	47820	4.49	6516	424.23	3314448	636.66	1321127	149.32	23.68
Planning	4step	165	418	0.56	129	2.69	695	0.83	769	0.66	0.89
Planning	tire-2	550	2001	0.64	724	6.38	6298	0.81	9296	0.69	0.27
Planning	3blocks	283	9690	0.79	330	2.62	13965	0.99	5587	1.82	0.54
Planning	prob003.pddl	1413	29487	1.48	4964	19.14	167460	1.43	38703	6.00	0.67
Planning	bw_large.d	6325	131973	2.14	306	TO	?	610.34	101262	119.28	7.69
Planning	hanoi4	718	4934	0.52	12	9.87	720	5.26	718	58.26	0.89
Planning	prob001.pddl	939	3785	0.61	927	12.99	5997	0.84	8524	0.67	0.61
Planning	5step	177	475	0.68	58	2.02	364	0.80	343	0.62	0.50
Planning	log-4	2303	20963	4.99	94685	194.46	4466322	15.14	3511594	28.86	4.96
Planning	bw_large.b	1087	13772	0.51	10	33.62	1110	0.87	1109	1.08	0.67
Planning	log-5	2701	29534	54.97	457453	364.10	25686606	TO	?	212.44	25.06
Planning	logistics.d	4713	21991	?	MO	TO	?	TO	?	TO	3700
Planning	log-1	939	3785	0.54	927	12.00	5484	0.78	8524	0.60	0.64
Planning	log-3	1413	29487	1.26	4964	19.98	128280	1.42	38703	2.41	0.64
Planning	prob002.pddl	1337	24777	2.11	11666	30.04	802189	1.92	86076	2.26	0.91
Planning	tire-4	812	3222	0.54	3634	29.74	24410	0.89	58657	0.74	0.64
Planning	prob004-log-a	1790	18026	2.49	24926	58.33	1344580	4.92	900437	5.07	1.80
Circuit	2bitmax_6	252	766	1.89	416863	19.62	953046	3.73	1122697	2.57	1.76
Circuit	ssa7552-160	1391	3126	0.76	1318	11.70	15513	0.85	18545	0.63	0.34
Circuit	ssa7552-159	1363	3032	0.89	1765	12.77	17023	0.80	16013	0.62	0.57
Circuit	ssa7552-158	1363	3034	0.45	868	14.84	7558	0.90	10019	0.61	0.41
Circuit	ssa7552-038	1501	3575	0.60	2471	13.70	29114	0.85	27923	0.72	0.40
Circuit	alu2_gr_rcs_w8.shuffled	4080	83902	?	MO	TO	?	TO	?	TO	3700
Circuit	2bitmax_6	252	766	1.89	416863	19.62	953046	3.73	1122697	2.57	1.76
Circuit	2bitcomp_5	125	310	0.18	40651	1.91	108219	0.90	67953	0.78	0.36
Circuit	2bitadd_11	649	1562	?	MO	TO	?	TO	?	TO	TO
Circuit	3bitadd_31	8432	31310	TO	?	TO	?	TO	?	TO	TO
Circuit	3bitadd_32	8704	32316	TO	?	TO	?	TO	?	TO	3700
Circuit	2bitadd_12	708	1702	?	MO	TO	?	TO	?	TO	3700
Circuit	rb	1854	11324	4.96	705842	212.96	2538102	19.34	3318797	2.26	8.19
Circuit	rc	2472	17942	61.94	15415490	TO	?	200.96	45949407	37.64	3700
Circuit	ra	1236	11416	1.68	304169	42.26	1342400	2.83	1650384	1.36	0.64
Circuit	c880_gr_rcs_w7.shuffled	4592	61745	?	MO	TO	?	TO	?	TO	3700
Circuit	3bitadd_32	8704	32316	TO	?	TO	?	TO	?	TO	3700
Circuit	c880.isc	417	1060	919.89	24937469	145.19	31049239	TO	?	TO	3700
Circuit	c499.isc	243	714	25.19	1408016	4.58	1704573	TO	?	TO	TO
Circuit	c2670.isc	1230	2876	?	MO	341.30	29043437	TO	?	TO	3700
Circuit	c432.isc	196	514	0.59	2664	6.48	25954	0.80	14679	0.73	0.68
Circuit	c7552.isc	3185	8588	?	MO	804.71	44946672	TO	?	TO	3700
Circuit	c1908.isc	751	2053	1106.34	9485839	178.34	15348416	TO	?	754.00	531.96
Circuit	c1355.isc	555	1546	399.92	9434734	9.02	2094245	TO	?	TO	3700
Circuit	s953.bench	417	1138	0.61	8979	4.50	67598	0.50	110972	1.00	0.32
Circuit	s820.bench	312	1046	0.70	2414	4.37	23156	0.84	23223	0.75	0.53
Circuit	s838.1.bench	512	1233	0.80	1420	9.26	11411	0.75	10552	0.58	0.50
Circuit	s1488.bench	667	2040	0.93	3249	6.20	54255	0.31	45670	0.57	0.30
Circuit	s1494.bench	661	2040	0.53	3076	6.28	49359	0.34	44082	0.57	0.49
Circuit	s1196.bench	560	1538	1.05	17484	5.30	150278	2.32	353739	0.79	0.50
Circuit	s510.bench	236	635	0.62	512	2.49	6174	0.84	5540	0.57	0.52
Circuit	s526.bench	217	638	0.15	1980	2.78	12559	0.95	25717	0.59	0.26
Circuit	s713.bench	447	984	0.81	18233	10.65	45472	0.43	90402	0.67	0.52
Circuit	s526n.bench	218	639	0.57	4239	2.57	12916	0.36	43513	0.58	0.30
Circuit	s832.bench	310	1056	0.92	2416	4.63	22299	0.46	23259	0.56	0.58
Circuit	s444.bench	205	533	0.95	921	3.24	5153	0.82	10360	0.54	0.25
Circuit	s400.bench	189	486	0.49	821	7.35	4803	0.86	8343	0.60	0.24
Circuit	s641.bench	433	918	0.87	15286	3.86	49383	1.12	87329	0.64	0.28
Circuit	s420.1.bench	252	601	0.57	602	4.31	4302	0.96	4024	0.61	0.24
Circuit	s1423.bench	748	1821	9.97	397833	25.49	372394	23.87	3409456	9.01	3700
Circuit	s1238.bench	539	1549	0.92	41283	4.55	160409	2.00	341248	1.48	0.85
Configuration	C169_FW	1411	1982	0.54	72	6.53	1556	0.80	1527	0.33	0.45
Configuration	C210_FW	2024	9705	?	MO	?	MO	TO	?	TO	3700
Configuration	D1119_M20	1400	1698	0.48	238	12.86	2001	0.07	2173	0.52	0.46
Configuration	C169_FV	1411	1982	0.56	72	17.40	1569	0.82	1527	0.53	0.25
Configuration	C170_FR	1874	10610	38.59	1111172	1049.75	28185427	106.81	21208581	37.23	3700
Configuration	C220_FV	1933	6580	233.67	7082186	1000.05	14790103	TO	?	1084.56	3700
Configuration	C638_FVK	1761	3162	0.68	5134	9.57	12169	1.42	45921	0.58	0.53
Configuration	C163_FW	1815	4797	3.65	87135	32.49	1604597	4.88	1178473	2.17	2.52
Configuration	C171_FR	1758	4005	3.40	108286	11.34	131634	2.78	1021037	1.13	0.69
Configuration	C129_FR	1888	7404	43.57	1464009	69.08	4475868	TO	?	71.49	42.46
Configuration	C203_FW	2030	7234	613.09	16599315	502.92	24390051	TO	?	237.10	254.10
Configuration	C215_FC	1848	4898	18.96	723102	47.70	2134662	21.91	5874425	6.55	59.74
Configuration	C211_FW	1665	5929	7.73	188943	27.12	1100231	2.26	521668	1.69	0.76
Configuration	C209_FC	1922	4805	5.38	161071	31.61	2322844	72.19	23111791	25.82	15.29
Configuration	C638_FKA	1787	7612	5.21	84552	16.53	435832	14.41	1337964	3.01	1.19
Configuration	C230_FR	1808	4767	27.55	1419589	24.88	1258862	59.13	21336009	20.87	15.61
Configuration	C168_FW	1909	7477	209.40	8469120	1252.09	55485255	TO	?	620.08	3700
Configuration	C203_FS	1931	6275	34.01	989901	1455.57	13344051	TO	?	139.98	3700
Configuration	C140_FV	1843	8056	159.23	2712777	2416.98	40952719	244.68	22377035	21.94	22.67
Configuration	C210_FS	1990	7982	?	MO	1539.39	97485988	TO	?	TO	3700
Configuration	C210_FVF	1934	3985	27.91	1011238	24.68	1136885	3.69	1338550	2.21	1.41
Configuration	C202_FS	1990	8883	?	MO	TO	?	TO	?	1695.26	3700
Configuration	C208_FA	1876	7219	334.81	5525290	TO	?	TO	?	102.60	3700

	Benchmark Information			D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
Configuration	C202_FW	2038	11342	?	MO	TO	?	TO	?	TO	3700
Configuration	C638_FKB	1784	3774	1.52	45681	11.47	35369	4.67	641712	1.28	0.80
Configuration	D1119_M23	1414	1997	0.59	416	5.59	2472	0.75	2408	0.73	0.22
Configuration	C203_FCL	1914	5225	182.76	5678917	47.05	3939148	136.88	30665500	45.49	13.84
Configuration	C140_FC	1828	5451	10.67	696169	26.95	1642570	23.38	7069536	11.69	2.59
Configuration	C250_FW	1465	2356	0.74	182	8.50	2021	0.72	1965	0.52	0.23
Configuration	C208_FC	1922	7518	433.23	6984458	795.79	39036697	TO	?	359.67	3700
Configuration	C209_FA	1885	4093	5.61	195046	43.66	249803	8.48	2734421	2.73	1.76
Configuration	C220_FW	1932	6631	184.39	6443985	247.05	6013932	TO	?	472.23	3700
Configuration	C140_FW	1841	6306	42.42	1629484	82.59	8313702	136.74	36485227	55.48	12.58
Configuration	C250_FV	1465	2356	0.57	182	8.80	2029	0.83	1965	0.52	0.48
Configuration	C211_FS	1635	3662	0.68	1759	10.53	9389	0.82	16788	0.77	0.25
Random	wff.3.150.525	150	525	396.74	88982560	?	MO	TO	?	129.98	369.59
Random	wff.3.100.150	100	150	?	MO	?	MO	TO	?	3092.75	3700
Random	wff.4.100.500	100	500	?	MO	?	MO	TO	?	TO	3700
Random	uf250-024	250	1065	5.68	68	106.26	846	42.74	382	20.91	15.00
Random	uf250-026	250	1065	4.82	103	51.75	701	24.59	520	18.31	10.42
Random	uf250-095	250	1065	13.89	195414	550.02	653470	89.79	477998	57.97	53.07
Random	uf250-075	250	1065	3.83	1651	73.91	10223	25.70	10676	17.14	9.08
Random	uf250-051	250	1065	3.67	236	56.78	1197	36.64	1054	23.71	11.13
Random	uf250-015	250	1065	3.47	8272	68.87	38647	25.21	40060	17.26	9.26
Random	uf250-014	250	1065	4.37	2979	249.57	17472	46.48	10971	24.98	26.40
Random	uf250-062	250	1065	3.77	207	95.30	607	28.34	1063	19.13	11.69
Random	uf250-09	250	1065	2.79	289	273.19	870	28.59	1812	10.93	19.81
Random	uf250-060	250	1065	5.70	976	118.02	6155	39.78	5597	18.80	13.92
Random	uf250-038	250	1065	10.81	178	333.53	1178	75.19	924	50.29	32.10
Random	uf250-017	250	1065	2.45	532	51.93	4482	25.64	4408	13.82	6.37
Random	uf250-081	250	1065	11.18	18792	351.22	65119	98.20	116409	58.73	65.84
Random	uf250-094	250	1065	6.70	133	273.19	870	44.11	716	25.59	19.81
Random	uf250-030	250	1065	5.01	3482	180.99	15376	49.05	14398	27.28	20.18
Random	uf250-039	250	1065	7.26	73040	138.48	108913	47.45	133411	26.32	21.87
Random	uf250-055	250	1065	4.94	4272	220.69	16235	47.70	18024	31.37	29.64
Random	uf250-078	250	1065	8.19	6099	116.78	21218	51.29	19824	35.27	22.78
Random	uf250-090	250	1065	3.33	3893	42.58	13184	62.49	8773	17.01	7.79
Random	uf250-058	250	1065	7.23	680	103.75	4151	43.23	3115	22.73	15.15
Random	uf250-054	250	1065	3.68	26	94.28	247	29.36	463	17.36	7.50
Random	uf250-08	250	1065	6.32	12289	319.57	26962	60.24	47497	87.70	22.88
Random	uf250-070	250	1065	3.56	1651	55.61	7914	49.31	6427	22.52	9.80
Random	uf250-041	250	1065	2.84	856	39.73	3905	26.17	3208	14.20	6.03
Random	uf250-043	250	1065	3.95	56	72.30	414	32.01	540	15.91	8.27
Random	uf250-037	250	1065	25.21	261991	387.95	1080487	107.49	826276	69.29	75.76
Random	uf250-076	250	1065	3.98	209	103.46	745	32.50	1084	24.34	11.89
Random	uf250-098	250	1065	14.88	15445	102.12	42220	131.17	67177	21.86	15.89
Random	uf250-02	250	1065	4.50	208	753.84	4767177	48.74	2637	31.59	195.00
Random	uf250-057	250	1065	5.08	805	110.11	4289	46.21	3712	19.25	11.16
Random	uf250-0100	250	1065	7.64	2773	111.90	7074	58.75	7063	34.10	24.74
Random	uf250-091	250	1065	17.76	325184	384.27	926813	101.43	904813	72.20	66.57
Random	uf250-01	250	1065	21.46	454858	1981.72	1537597	114.83	1351244	194.54	106.22
Random	uf250-036	250	1065	4.72	75	108.26	614	51.79	552	34.60	25.67
Random	uf250-096	250	1065	12.39	680	125.77	5263	56.44	3909	27.79	22.89
Random	uf250-071	250	1065	5.05	28	197.78	279	44.88	271	24.93	15.51
Random	uf250-082	250	1065	5.50	618	140.88	5626	33.67	3107	21.75	16.60
Random	uf250-053	250	1065	5.09	1706	83.22	5436	34.78	6772	16.80	11.74
Random	uf250-020	250	1065	3.53	6066	77.03	39871	40.16	68575	20.59	11.91
Random	uf250-084	250	1065	15.31	11497	361.40	41277	76.55	52560	60.31	46.89
Random	uf250-012	250	1065	1.99	45089	43.06	120932	15.65	112057	11.99	4.04
Random	uf250-042	250	1065	11.75	9320	298.00	29293	67.51	42857	38.03	31.14
Random	uf250-046	250	1065	5.31	442	77.20	3199	33.97	2710	18.95	11.26
Random	uf250-027	250	1065	8.39	4408	78.87	16937	77.17	16669	17.67	8.20
Random	uf250-068	250	1065	6.69	15760	124.11	62855	43.90	56385	32.12	19.39
Random	uf250-089	250	1065	7.47	313426	231.52	510233	41.79	302923	33.43	16.50
Random	uf250-045	250	1065	2.36	106	43.46	990	13.30	887	9.88	4.60
Random	uf250-074	250	1065	5.65	114770	104.83	398247	38.86	524769	25.28	16.74
Random	uf250-066	250	1065	15.39	34686	457.56	140470	86.21	155784	52.60	47.59
Random	uf250-052	250	1065	10.49	341	43.60	1942	23.17	1659	17.50	10.40
Random	uf250-010	250	1065	5.27	1383	111.90	7074	39.98	6588	28.01	24.74
Random	uf250-087	250	1065	6.13	937	367.63	4097	56.57	2839	37.56	28.71
Random	uf250-093	250	1065	3.21	108	87.89	530	23.79	653	11.98	6.97
Random	uf250-011	250	1065	8.85	44	176.34	302	63.95	301	44.34	26.99
Random	uf250-031	250	1065	6.12	372	255.16	2855	62.96	2325	52.22	34.34
Random	uf250-063	250	1065	5.21	3623	129.60	24164	40.93	20004	28.28	15.60
Random	uf250-03	250	1065	3.65	495	255.16	2855	31.76	3578	21.24	34.34
Random	uf250-067	250	1065	6.93	191	63.99	1854	16.86	949	36.85	5.03
Random	uf250-05	250	1065	5.47	196	60.63	4371	27.90	993	18.92	13.36
Random	uf250-099	250	1065	6.35	671	91.20	6268	39.74	2492	29.47	15.74
Random	uf250-035	250	1065	9.46	84836	140.25	234691	57.10	274176	36.82	34.49
Random	uf250-013	250	1065	3.13	515	50.08	2271	28.00	1811	15.35	6.68
Random	uf250-064	250	1065	3.07	40586	78.80	123237	24.25	127513	13.17	8.69
Random	uf250-056	250	1065	10.52	1019	294.83	6731	67.87	6110	32.00	31.52
Random	uf250-028	250	1065	4.28	281	100.53	1769	35.38	1830	44.28	12.40
Random	uf250-083	250	1065	18.16	3848	319.57	26962	48.65	19719	28.86	22.88
Random	uf250-034	250	1065	6.01	54	90.32	501	32.41	338	21.24	10.49
Random	uf250-029	250	1065	6.97	24	325.26	261	48.39	260	28.46	23.99
Random	uf250-033	250	1065	15.10	18593	221.47	63750	68.81	72974	43.55	41.68
Random	uf250-07	250	1065	7.28	124	103.46	745	50.57	561	32.73	11.89
Random	uf250-061	250	1065	2.35	40797	34.67	94302	18.30	63853	11.43	6.07
Random	uf250-016	250	1065	3.48	109902	104.32	287678	45.32	240553	28.95	16.19
Random	uf250-097	250	1065	2.41	314	52.41	1603	22.12	1983	14.10	6.37
Random	uf250-077	250	1065	2.94	1323	50.48	6478	35.34	6181	56.99	8.53

Benchmark Information				D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
Random	uf250-032	250	1065	8.83	342	217.59	1999	42.25	1802	26.77	21.96
Random	uf250-025	250	1065	9.57	52301	191.80	159080	72.88	137994	35.62	28.73
Random	uf250-065	250	1065	6.39	881	140.21	6529	48.86	4537	29.20	20.87
Random	uf250-050	250	1065	2.62	634	45.11	3511	22.41	3994	10.91	5.81
Random	uf250-048	250	1065	4.38	2447	89.79	9850	31.32	8016	20.95	12.85
Random	uf250-085	250	1065	7.14	19596	58.74	70817	102.86	77393	20.10	12.56
Random	uf250-044	250	1065	4.89	23743	230.79	76701	41.73	89095	21.03	18.58
Random	uf250-022	250	1065	5.37	46	75.31	306	36.00	301	23.59	13.93
Random	uf250-059	250	1065	2.45	765	60.63	4371	26.76	3736	18.91	13.36
Random	uf250-088	250	1065	9.15	5453	818.00	17698	62.33	27957	39.43	32.39
Random	uf250-072	250	1065	3.05	85	59.17	618	30.03	607	15.23	9.64
Random	uf250-049	250	1065	10.96	199380	528.18	806094	74.17	681099	40.56	44.87
Random	uf250-040	250	1065	3.35	1478	54.25	5614	31.68	6154	51.70	11.33
Random	uf250-086	250	1065	13.25	123	123.42	496	40.30	710	26.37	12.96
Random	uf250-06	250	1065	8.04	24845	377.99	13199	191.34	85246	40.84	24.27
Random	uf250-092	250	1065	4.38	1154	69.74	4899	26.20	5408	19.06	10.98
Random	uf250-080	250	1065	3.71	215	163.61	1309	36.36	899	19.33	11.72
Random	uf250-079	250	1065	10.19	5120	354.01	20802	80.92	17964	59.36	43.05
Random	uf250-047	250	1065	8.32	3680	176.40	14046	56.23	16561	36.26	28.20
Random	uf250-021	250	1065	65.73	2129408	753.84	4767177	172.74	3500028	118.46	195.00
Random	uf250-018	250	1065	2.99	2490	80.98	4533	28.78	3991	16.48	8.55
Random	uf250-073	250	1065	19.82	71115	580.88	197114	109.83	289942	194.29	64.50
Random	uf250-019	250	1065	74.07	2315658	359.30	5614637	104.61	2478701	50.22	74.08
Random	uf250-069	250	1065	7.37	3228	377.99	13199	63.88	13653	35.03	24.27
Random	uf250-04	250	1065	36.79	3126113	77.20	3199	102.47	4025903	62.07	11.26
Random	uf250-023	250	1065	7.81	512	90.02	4069	42.56	2988	24.60	13.66
Random	wff.3.75.315	75	315	0.45	18	1.36	150	0.76	155	0.59	0.21
BMC	bmc-ibm-7	8710	39774	?	MO	TO	?	TO	?	TO	3700
BMC	cnt06.shuffled	762	2469	0.89	4	12.11	767	0.36	762	1.34	0.20
BMC	bmc-ibm-10	59056	323700	118.90	166380	TO	?	TO	?	TO	227.97
BMC	cnt09.shuffled	9207	30678	3.00	22	TO	?	TO	?	TO	3700
BMC	bmc-ibm-11	32109	150027	2394.40	1484805	TO	?	TO	?	1430.60	303.00
BMC	bmc-ibm-1	9685	55870	7.60	60773	TO	?	23.19	1508501	15.40	303.00
BMC	bmc-galileo-9	63624	326999	75.99	18392	TO	?	703.04	1072921	313.56	42.24
BMC	bmc-ibm-13	13215	65728	7.59	17053	TO	?	TO	?	TO	114.12
BMC	bmc-ibm-2	2810	11683	0.89	349	198.80	1728656	0.77	10667	0.73	1.02
BMC	bmc-ibm-12	39598	194778	360.81	429733	TO	?	709.85	2281603	302.26	15.52
BMC	bmc-ibm-3	14930	72106	0.81	480	308.62	32833	35.67	16754	52.13	1.81
BMC	bmc-ibm-4	28161	139716	14.07	25523	2027.40	163164332	82.58	3450950	TO	3.24
BMC	bmc-ibm-6	51639	368352	?	MO	TO	?	TO	?	TO	3700
BMC	bmc-ibm-5	9396	41207	29.12	184614	TO	?	TO	?	431.55	7.03
BMC	cnt07.shuffled	1786	5856	0.66	6	39.91	1787	327.00	1785	8.48	2.11
BMC	bmc-galileo-8	58074	294821	852.77	453507	TO	?	2180.69	1192670	233.93	132.92
BMC	cnt10.shuffled	20470	68561	16.53	13	TO	?	TO	?	TO	3700
BMC	cnt08.shuffled	4089	13531	0.81	17	2356.39	4090	TO	?	122.45	471.05
BN	blockmap_10_02.net	12562	26022	1.27	362	106.78	239341	16.32	438328	0.85	0.99
BN	blockmap_05_03.net	2055	4143	0.49	400	14.16	19994	1.24	55704	0.54	0.60
BN	blockmap_15_03.net	37709	78239	15.91	5136	300.99	2343113	662.83	10803067	6.13	42.82
BN	fs-13.net	21788	37154	?	MO	TO	?	TO	?	TO	3700
BN	blockmap_22_01.net	108698	224008	3.21	42	911.73	1269995	524.42	1261774	1.82	38.19
BN	blockmap_22_03.net	119003	247486	253.97	15786	1388.10	25411084	TO	?	74.13	1075.92
BN	mastermind_06_08_03.net	3979	8833	14.64	159572	47.96	6487056	101.02	10943602	5.66	3700
BN	fs-07.net	3710	6104	?	MO	TO	?	TO	?	TO	3700
BN	mastermind_04_08_04.net	5484	12596	51.10	478212	65.10	31241716	389.33	36071370	21.35	3700
BN	blockmap_15_02.net	35386	72866	3.80	852	260.15	1047878	90.27	1497413	1.90	7.82
BN	mastermind_05_08_03.net	3502	7816	7.56	84214	50.76	3695765	31.13	4649029	2.77	3700
BN	blockmap_20_03.net	86889	178682	108.49	11824	753.52	12101679	TO	?	29.16	401.12
BN	fs-29.net	229100	399794	TO	?	TO	?	TO	?	TO	3700
BN	blockmap_05_02.net	1738	3452	0.45	110	13.81	11979	0.85	15873	0.77	0.22
BN	blockmap_10_03.net	13786	28826	8.24	2284	106.01	534225	120.48	2852685	1.65	4.87
BN	blockmap_10_01.net	11328	23175	0.48	22	105.46	71830	5.64	66997	0.56	0.91
BN	mastermind_03_08_04.net	4720	10920	8.91	82998	38.94	7197546	49.32	5880171	3.75	3700
BN	blockmap_20_01.net	78650	160055	1.88	40	583.95	821296	308.12	785345	1.59	14.64
BN	fs-10.net	10220	17210	?	MO	?	MO	TO	?	TO	3700
BN	fs-22.net	101420	175934	TO	?	?	MO	TO	?	TO	3700
BN	blockmap_15_01.net	33035	67424	1.20	32	288.96	281610	47.69	266057	0.74	5.06
BN	blockmap_05_01.net	1411	2737	0.43	8	10.39	4811	0.80	4492	0.46	0.20
BN	blockmap_20_02.net	82786	169415	22.48	1538	677.34	4126206	1502.07	6224934	7.50	42.35
BN	fs-01.net	32	38	0.56	18	0.84	92	0.76	102	0.49	0.44
BN	fs-16.net	39872	68528	TO	?	TO	?	TO	?	TO	3700
BN	blockmap_22_02.net	113870	235801	58.27	1964	910.63	7328894	3193.54	11135881	36.37	118.71
BN	fs-19.net	65930	113924	TO	?	TO	?	TO	?	TO	3700
BN	mastermind_10_08_03.net	5887	12901	2269.82	8554941	112.87	47684960	TO	?	45.26	3700
BN	mastermind_03_08_05.net	7564	17690	1728.26	1538127	359.10	88639035	810.98	58028184	44.15	3700
BN	fs-25.net	147800	257150	TO	?	?	MO	TO	?	TO	3700
BN	fs-28.net	206528	360164	TO	?	?	MO	TO	?	TO	3700
BN	sat-grid-pbl-0010	110	191	0.41	659	1.87	1633	0.87	57822	0.62	0.50
BN	sat-grid-pbl-0025	650	1226	19.31	1285923	?	MO	TO	?	TO	3700
BN	sat-grid-pbl-0015	240	436	0.52	5069	11.20	52648	TO	?	TO	3700
BN	sat-grid-pbl-0020	420	781	1.18	29041	232.36	7346900	TO	?	TO	3700
BN	sat-grid-pbl-0030	930	1771	593.45	2484382	?	MO	TO	?	TO	3700
BN	75-22-9-q	2332	3696	201.93	6092532	226.91	35603952	TO	?	TO	3700
BN	75-14-9-q	924	1456	17.91	307417	16.79	1628681	TO	?	TO	21.05
BN	75-17-9-q	1377	2176	37.43	1123074	20.46	1035006	TO	?	TO	346.61
BN	75-24-9-q	2784	4416	TO	?	TO	?	TO	?	TO	3700
BN	75-19-9-q	1729	2736	179.52	1672581	24.70	6231696	TO	?	TO	3700
BN	75-15-9-q	1065	1680	1.79	45755	2.60	258293	TO	?	1465.56	23.31
BN	75-23-9-q	2553	4048	?	MO	489.69	61659699	TO	?	TO	3700
BN	75-18-9-q	1548	2448	215.03	2326913	51.91	15718970	TO	?	TO	3700

	Benchmark Information			D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
BN	75-26-9-q	3276	5200	?	MO	570.02	98820834	TO	?	TO	3700
BN	75-20-9-q	1920	3040	163.28	2066026	9.70	1164018	TO	?	TO	3700
BN	75-25-9-q	3025	4800	?	MO	?	MO	TO	?	TO	3700
BN	75-12-9-q	672	1056	0.80	7848	2.29	38947	2.79	276611	6.32	0.65
BN	75-16-9-q	1216	1920	16.67	744246	6.82	1378001	TO	?	TO	3700
BN	75-10-9-q	460	720	0.92	7367	1.84	33785	4.57	484807	1.62	1.11
BN	90-10-9-q	460	720	0.38	531	1.53	1748	0.75	1400	0.34	0.43
BN	90-30-9-q	4380	6960	6.25	137690	16.65	992848	TO	?	TO	67.90
BN	90-22-9-q	2332	3696	2.78	68913	3.60	93409	5.39	211001	53.16	0.58
BN	90-16-9-q	1216	1920	0.97	4054	2.70	18609	2.06	97391	1.02	0.51
BN	90-17-9-q	1377	2176	0.56	2131	2.88	45700	1.16	25883	0.70	0.48
BN	90-14-9-q	924	1456	0.65	568	2.35	4291	0.91	14674	0.47	0.41
BN	90-38-9-q	7068	11248	53.27	442184	13.49	443457	TO	?	TO	5.82
BN	90-46-9-q	10396	16560	865.20	7618371	TO	?	TO	?	TO	3700
BN	90-25-9-q	3025	4800	21.31	96138	7.43	303933	TO	?	TO	40.60
BN	90-18-9-q	1548	2448	0.66	1217	2.62	12636	0.75	14069	1.08	0.41
BN	90-24-9-q	2784	4416	3.78	22735	4.79	134543	35.63	3238943	235.82	1.21
BN	90-34-9-q	5644	8976	842.40	1707362	25.59	1749993	TO	?	TO	29.37
BN	90-21-9-q	2121	3360	6.64	50736	3.58	40978	7.56	815890	32.82	0.49
BN	90-20-9-q	1920	3040	1.04	5116	3.33	16401	5.70	530539	7.29	0.54
BN	90-50-9-q	12300	19600	TO	?	TO	?	TO	?	TO	3700
BN	90-42-9-q	8652	13776	?	MO	TO	?	TO	?	TO	3700
BN	50-18-9-q	1548	2448	TO	?	?	MO	TO	?	TO	3700
BN	50-10-9-q	460	720	3.95	235047	5.21	135035	TO	?	TO	1149.58
BN	50-20-9-q	1920	3040	?	MO	TO	?	TO	?	TO	3700
BN	50-12-9-q	672	1056	100.26	4720292	13.16	902392	TO	?	TO	3700
BN	50-14-9-q	924	1456	238.47	13348665	21.97	4324838	TO	?	TO	3700
BN	50-16-9-q	1216	1920	?	MO	89.00	32553771	TO	?	TO	3700
BN	or-50-5-4-UC-10	100	250	5.65	723360	2.69	642064	3.47	1298833	1.88	1.29
BN	or-50-5-10-UC-10	100	250	0.81	11545	1.80	38627	0.82	42267	0.41	0.52
BN	or-50-20-2-UC-10	100	250	12.17	1474624	5.93	2576620	9.31	3642859	4.26	2.78
BN	or-50-5-2-UC-10	100	250	6.65	828760	3.29	1078493	3.19	1179956	1.72	1.17
BN	or-50-5-1-UC-10	100	250	1.03	36140	1.59	79910	1.20	246135	0.57	0.51
BN	or-50-5-3-UC-10	100	250	0.49	3313	1.67	9994	0.76	11479	0.41	0.48
BN	or-50-10-4-UC-10	100	250	1.87	179483	1.89	100390	1.09	148281	0.65	0.57
BN	or-50-20-10-UC-10	100	250	0.74	53814	1.90	168670	1.30	295743	0.67	0.62
BN	or-50-20-8-UC-10	100	250	0.94	20682	1.49	38977	0.98	126543	0.53	0.49
BN	or-50-5-8-UC-10	100	250	1.12	102878	1.94	191102	1.76	562425	1.06	0.60
BN	or-50-20-9-UC-10	100	250	2.50	370722	2.56	584414	2.48	812709	1.62	1.09
BN	or-50-5-6-UC-10	100	250	0.60	4159	1.72	7140	0.74	15594	0.41	0.45
BN	or-50-10-10-UC-10	100	250	0.72	9575	1.60	31461	0.85	31640	0.69	0.45
BN	or-50-10-2-UC-10	100	250	0.83	5997	1.71	25337	0.73	16159	0.72	0.46
BN	or-50-10-5-UC-10	100	250	0.85	62323	1.81	100989	1.19	215787	0.56	0.53
BN	or-50-10-1-UC-10	100	250	1.56	174893	2.33	302787	1.69	441038	0.81	0.66
BN	or-50-10-3-UC-10	100	250	0.85	35961	1.66	48209	0.68	91018	0.52	0.53
BN	or-50-20-4-UC-10	100	250	0.62	20843	1.68	31634	0.85	53668	0.72	0.40
BN	or-50-5-5-UC-10	100	250	2.96	433295	3.22	1226001	4.26	1617945	2.45	1.51
BN	or-50-10-6-UC-10	100	250	0.95	77241	1.78	90375	1.13	170774	0.53	0.52
BN	or-50-20-1-UC-10	100	250	5.71	847076	5.03	2080840	7.08	2843716	3.01	1.97
BN	or-50-20-7-UC-10	100	250	1.35	65458	4.26	245033	1.22	242337	0.92	0.59
BN	or-50-20-5-UC-10	100	250	1.34	139546	1.95	359928	1.52	438687	1.15	0.24
BN	or-50-5-7-UC-10	100	250	2.68	310941	8.30	916081	2.58	925363	1.81	0.66
BN	or-50-20-6-UC-10	100	250	1.63	154495	1.27	306986	1.64	478658	0.96	0.40
BN	or-50-10-8-UC-10	100	250	0.75	7926	1.81	20224	0.70	29387	0.42	0.14
BN	or-50-10-9-UC-10	100	250	1.26	54697	1.71	146576	1.93	622488	0.76	1.30
BN	or-50-5-9-UC-10	100	250	0.75	54696	1.88	172462	1.17	219918	0.87	0.14
BN	or-50-10-7-UC-10	100	250	4.89	603802	5.20	1952088	5.76	2507437	4.01	2.02
BN	or-50-20-3-UC-10	100	250	1.91	338349	8.58	1004807	3.47	1456746	1.92	1.47
BN	or-60-5-10-UC-10	120	300	0.62	19619	1.97	94670	0.95	120695	0.85	0.50
BN	or-60-20-3-UC-10	120	300	1.02	48524	1.69	54555	0.78	246284	0.89	0.54
BN	or-60-20-8-UC-10	120	300	3.86	507247	3.53	948843	3.01	1168992	2.29	1.23
BN	or-60-5-5-UC-10	120	300	1.48	74969	2.03	177696	1.32	238854	0.61	0.56
BN	or-60-20-2-UC-10	120	300	9.68	1793933	7.30	3529310	15.58	6305812	10.28	4.83
BN	or-60-10-10-UC-10	120	300	12.17	1306793	8.88	3268147	10.19	4095201	5.30	3.05
BN	or-60-10-9-UC-10	120	300	1.48	95602	4.01	64866	1.00	129316	0.81	0.44
BN	or-60-10-2-UC-10	120	300	2.37	298139	7.28	785220	4.03	1484151	1.77	1.27
BN	or-60-5-3-UC-10	120	300	12.76	1491544	10.80	4386499	17.23	6627155	7.93	5.23
BN	or-60-10-1-UC-10	120	300	7.03	756395	5.40	2456450	15.17	5923473	9.86	5.10
BN	or-60-5-6-UC-10	120	300	0.79	131723	6.51	518945	1.96	621854	1.20	0.80
BN	or-60-5-8-UC-10	120	300	8.35	880556	4.78	2176022	8.43	3367931	4.36	2.56
BN	or-60-10-7-UC-10	120	300	2.38	170116	2.22	307752	1.61	443918	1.12	1.01
BN	or-60-20-5-UC-10	120	300	46.56	5315487	38.27	6391122	44.92	16601942	20.23	9.22
BN	or-60-20-9-UC-10	120	300	2.36	252336	2.99	634464	1.92	692407	1.02	0.81
BN	or-60-20-7-UC-10	120	300	15.56	3503638	12.57	6382521	33.68	13126275	13.87	5.79
BN	or-60-10-6-UC-10	120	300	10.86	1891317	14.67	6885528	19.47	7475114	8.00	5.72
BN	or-60-5-1-UC-10	120	300	0.55	25110	1.55	47443	1.15	94233	0.49	0.39
BN	or-60-10-4-UC-10	120	300	2.01	192955	2.24	385857	0.93	359868	0.91	0.71
BN	or-60-5-7-UC-10	120	300	0.63	31145	1.81	39530	0.37	66644	0.76	0.47
BN	or-60-20-10-UC-10	120	300	20.83	2568249	4.75	1893925	11.98	4487724	6.39	3.50
BN	or-60-5-4-UC-10	120	300	0.72	10844	1.58	31949	0.09	35114	0.79	0.53
BN	or-60-10-8-UC-10	120	300	0.93	16446	1.59	25670	0.78	46769	0.43	0.47
BN	or-60-10-3-UC-10	120	300	17.66	2306309	21.55	11310911	27.47	10364196	12.81	7.26
BN	or-60-10-5-UC-10	120	300	1.31	54406	2.14	177431	1.66	164560	0.55	0.44
BN	or-60-20-1-UC-10	120	300	12.12	1577312	7.61	3413665	29.26	4384444	5.32	2.86
BN	or-60-5-2-UC-10	120	300	0.88	56983	2.01	142270	1.33	290617	0.70	0.86
BN	or-60-20-4-UC-10	120	300	18.89	2243026	20.18	9417655	25.23	9569677	12.17	8.33
BN	or-60-5-9-UC-10	120	300	1.41	95857	2.03	235450	0.89	265838	0.98	0.48
BN	or-60-20-6-UC-10	120	300	45.88	5213071	21.33	10987735	41.94	15128130	24.48	8.99
BN	or-100-20-8-UC-10	200	500	?	MO	TO	?	TO	?	TO	3700

	Benchmark Information			D4(Σ)		C2D(Σ)		Dsharp(Σ)		Cachet(Σ)	SharpSAT(Σ)
Family	Name	#var	#cl	time	size	time	size	time	size	time	time
BN	or-100-10-6-UC-10	200	500	?	MO	?	MO	TO	?	1800.70	3700
BN	or-100-10-1-UC-10	200	500	418.49	29997638	?	MO	TO	?	265.44	173.93
BN	or-100-20-3-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-5-4-UC-10	200	500	?	MO	?	MO	TO	?	1088.25	3700
BN	or-100-20-6-UC-10	200	500	TO	?	?	MO	TO	?	TO	3700
BN	or-100-20-2-UC-10	200	500	?	MO	?	MO	TO	?	579.60	3700
BN	or-100-10-10-UC-10	200	500	?	MO	?	MO	TO	?	1829.62	3700
BN	or-100-10-5-UC-10	200	500	?	MO	?	MO	TO	?	2695.79	3700
BN	or-100-10-9-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-10-7-UC-10	200	500	546.83	52900428	?	MO	TO	?	1288.72	3700
BN	or-100-20-7-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-20-5-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-10-8-UC-10	200	500	702.60	57138078	?	MO	TO	?	402.68	243.69
BN	or-100-10-3-UC-10	200	500	?	MO	?	MO	TO	?	3242.35	3700
BN	or-100-5-6-UC-10	200	500	59.07	5008212	70.43	24317210	31.15	11328875	10.84	8.73
BN	or-100-5-3-UC-10	200	500	13.27	1158017	3.63	899310	2.87	910285	1.59	1.00
BN	or-100-5-5-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-20-4-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-10-4-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-5-1-UC-10	200	500	55.48	4785916	175.61	55869936	44.05	14900624	26.24	13.10
BN	or-100-20-9-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-20-10-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-5-10-UC-10	200	500	192.66	13246253	65.81	29396013	TO	?	654.19	167.25
BN	or-100-5-2-UC-10	200	500	630.21	46685484	?	MO	TO	?	631.79	3700
BN	or-100-5-7-UC-10	200	500	170.55	12840571	105.33	36329389	TO	?	194.50	143.49
BN	or-100-10-2-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-100-5-9-UC-10	200	500	103.15	9078422	?	MO	TO	?	198.55	134.30
BN	or-100-5-8-UC-10	200	500	?	MO	?	MO	TO	?	1549.90	3700
BN	or-100-20-1-UC-10	200	500	?	MO	?	MO	TO	?	TO	3700
BN	or-70-20-2-UC-10	140	350	9.42	1200475	6.23	2396673	15.82	6433992	7.03	4.74
BN	or-70-20-1-UC-10	140	350	3.01	390340	5.37	1968194	7.86	3045739	4.08	2.52
BN	or-70-10-4-UC-10	140	350	47.76	5271046	39.75	19977189	85.84	29560777	36.06	18.22
BN	or-70-20-7-UC-10	140	350	18.17	1849138	19.30	7664812	30.11	11047863	13.54	7.38
BN	or-70-10-3-UC-10	140	350	1.41	119049	3.10	617289	1.87	553942	0.86	0.95
BN	or-70-5-8-UC-10	140	350	4.01	375150	8.46	3607561	6.15	2400557	1.92	1.84
BN	or-70-5-6-UC-10	140	350	69.29	7566262	32.98	16311998	TO	?	84.32	55.63
BN	or-70-5-10-UC-10	140	350	4.20	466800	4.90	1397415	4.51	1673756	2.27	1.29
BN	or-70-10-5-UC-10	140	350	14.51	2217116	20.70	8555208	30.76	11142259	12.12	9.94
BN	or-70-20-4-UC-10	140	350	195.75	20660853	109.50	50136982	TO	?	81.63	38.93
BN	or-70-10-9-UC-10	140	350	1.02	77594	2.67	370216	1.24	268796	0.98	0.68
BN	or-70-20-6-UC-10	140	350	21.24	2365351	17.52	7876851	34.65	12610202	17.07	11.46
BN	or-70-20-8-UC-10	140	350	88.25	12132174	339.66	115153606	TO	?	77.60	42.96
BN	or-70-5-1-UC-10	140	350	6.23	671475	3.71	912435	2.98	1056070	1.47	0.97
BN	or-70-10-10-UC-10	140	350	20.31	2526714	21.06	9214709	24.44	9190153	8.37	5.91
BN	or-70-10-6-UC-10	140	350	11.48	954973	3.95	1221516	19.52	7551524	7.95	3.75
BN	or-70-5-7-UC-10	140	350	10.47	1124942	8.12	2988277	9.45	3578954	4.90	3.06
BN	or-70-5-2-UC-10	140	350	4.42	653719	5.55	2087209	4.09	1507973	2.96	1.39
BN	or-70-20-10-UC-10	140	350	39.15	3838947	20.86	8467370	35.30	13143313	15.56	11.35
BN	or-70-5-3-UC-10	140	350	0.48	4382	1.86	13976	0.56	14008	0.66	0.42
BN	or-70-10-1-UC-10	140	350	3.50	269226	2.46	319897	1.75	434723	0.75	0.59
BN	or-70-5-9-UC-10	140	350	0.66	12433	1.95	209122	0.74	86154	0.36	0.48
BN	or-70-5-5-UC-10	140	350	2.02	165248	3.41	693139	2.23	695650	1.30	0.73
BN	or-70-10-7-UC-10	140	350	73.91	7557165	43.13	18581248	73.40	25578737	21.27	15.83
BN	or-70-10-8-UC-10	140	350	1.06	85155	1.87	392078	2.43	811293	1.45	0.90
BN	or-70-5-4-UC-10	140	350	16.35	1573932	14.73	6060054	17.58	6772420	5.87	6.03
BN	or-70-20-3-UC-10	140	350	158.47	21653630	?	MO	TO	?	572.94	104.74
BN	or-70-20-5-UC-10	140	350	49.64	5733995	21.24	9218090	TO	?	101.56	44.74
BN	or-70-10-2-UC-10	140	350	44.37	4337002	23.72	11685655	51.28	18007230	26.94	20.33
BN	or-70-20-9-UC-10	140	350	1.36	75702	1.92	90285	1.11	193574	0.44	0.61