

181.mcf

Datasets profile vs. Reference Dataset

The following are the profiles for the 181.mcf benchmark. For more details about our profile development and dataset reduction methodology, refer to the paper by AJ KleinOsowski and David J. Lilja, "MinneSPEC: A New SPEC Benchmark Workload for Simulation-Based Computer Architecture Research", Computer Architecture Letters, Volume 1, June 2002. This paper is available in electronic form at <http://www.arctic.umn.edu/~lilja/minnespec/index.html>



[http:// www.arctic.umn.edu](http://www.arctic.umn.edu)

Function level execution profile at optimization level O0

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets as compared to the full SPEC reference datasets. Note: the medium reduced (MdRed) dataset is the same as the test dataset for this benchmark. This data was gathered with the gprof profiling utility. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi
refresh_potential	31.64	17.16	6.63	2.73	26.42	5.60	21.43	4.71	22.92	2.51	26.82
internal_mcount	16.99	18.32	0.10	18.77	0.19	18.49	0.13	18.86	0.21	14.23	0.45
primal_bea_mpp	11.44	18.13	3.91	8.87	0.58	24.68	15.32	8.08	0.99	12.55	0.11
bea_compute_red_cost	11.31	15.03	1.22	9.56	0.27	12.30	0.09	8.42	0.74	8.79	0.56
price_out_impl	9.22	6.32	0.91	0.68	7.91	3.14	4.01	1.35	6.72	0.42	8.40
compute_red_cost	7.93	4.14	1.81	1.02	6.02	0.76	6.48	0.34	7.26	0.00	7.93
replace_weaker_arc	3.45	4.95	0.65		3.45	4.33	0.22		3.45		3.45
bea_is_dual_infeasible	3.00	5.23	1.66	6.83	4.89	5.85	2.71	6.40	3.85	7.95	8.17
sort_basket	2.42	5.16	3.10	13.31	49.01	8.65	16.04	12.79	44.44	7.95	12.64
update_tree	0.53	0.73	0.08	0.34	0.07	0.93	0.30	1.01	0.43	0.84	0.18
flow_cost	0.45	1.02	0.72	0.34	0.03	1.78	3.93	0.34	0.03	0.00	0.45
primal_iminus	0.40	0.60	0.10	0.34	0.01	0.25	0.06	1.01	0.93	0.00	0.40
_mcount	0.36	0.47	0.03	1.02	1.21	0.42	0.01	0.34	0.00	0.42	0.01
dual_feasible	0.34	0.77	0.54	0.00	0.34	1.27	2.54	0.34	0.00	0.00	0.34
insert_new_arc	0.14	0.47	0.78	1.37	10.81	1.44	12.07	0.34	0.29	0.42	0.56
memset	0.09	0.69	4.00	33.79	12618.78	8.23	736.22	34.01	12784.07	43.10	20554.00
write_circulations	0.08	0.21	0.21	0.00	0.08	0.76	5.78	0.00	0.08	0.00	0.08
refresh_neighbour_lists	0.06	0.18	0.24	0.00	0.06	0.59	4.68	0.34	1.31	0.00	0.06
primal_net_simplex	0.04	0.05	0.00	0.34	2.25	0.00	0.04	0.00	0.04	0.00	0.04
number	0.03	0.09	0.12	0.34	3.20	0.25	1.61	0.00	0.03	0.00	0.03
__doscan_u	0.02	0.04	0.02	0.00	0.02	0.08	0.18	0.67	21.13	0.00	0.02
.rem	0.01	0.05	0.16	0.00	0.01	0.00	0.01	0.34	10.89	0.00	0.01
.umul	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
read_min	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.34	10.89	0.00	0.01
__mul64	0.01	0.05	0.16	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
flow_cost	0.01	0.00	0.01	0.00	0.01	0.08	0.49	0.00	0.01	0.00	0.01
Sum	99.99	99.88	27.18	99.65	12735.63	99.88	834.39	100.03	12920.72	99.18	20624.74
	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi

90% Confidence level (26 entries) = 34.382

Function level execution profile at optimization level O1

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets as compared to the full SPEC reference datasets. Note: the medium reduced (MdRed) dataset is the same as the test dataset for this benchmark. This data was gathered with the gprof profiling utility. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi
refresh_potential	30.60	14.37	8.61	0.89	28.85	3.19	24.55	2.20	26.36	0.99	28.65
internal_mcount	20.80	24.44	0.64	20.89	0.00	23.49	0.35	19.82	0.05	14.85	1.70
bea_compute_red_cost	13.19	17.82	1.63	7.56	2.40	14.71	0.18	10.13	0.71	10.89	0.40
primal_bea_mpp	11.90	19.97	5.47	9.33	0.56	25.88	16.42	9.69	0.41	8.42	1.02
price_out_impl	10.58	6.55	1.54	0.00	10.58	4.90	3.05	0.88	8.89	0.50	9.60
compute_red_cost	5.93	3.32	1.15	1.78	2.90	0.57	4.84	1.32	3.58	0.50	4.97
replace_weaker_arc	1.41	2.00	0.25		1.41	1.82	0.12		1.41		1.41
bea_is_dual_infeasible	1.40	2.37	0.67	3.56	3.33	2.28	0.55	3.52	3.21	4.95	9.00
sort_basket	1.29	2.92	2.06	9.78	55.88	4.45	7.74	4.85	9.82	1.98	0.37
_mcount	0.75	1.02	0.10	0.44	0.13	1.37	0.51	0.44	0.13	0.99	0.08
flow_cost	0.46	1.11	0.92	0.00	0.46	1.94	4.76	0.44	0.00	0.00	0.46
update_tree	0.42	0.51	0.02	0.44	0.00	0.00	0.42	0.00	0.42	0.00	0.42
primal_iminus	0.41	0.70	0.21	0.00	0.41	0.34	0.01	0.00	0.41	0.00	0.41
dual_feasible	0.36	0.73	0.38	0.00	0.36	1.37	2.83	0.00	0.36	0.50	0.05
memset	0.11	0.92	5.96	43.56	17162.75	11.17	1112.03	44.05	17552.03	53.47	25884.45
write_circulations	0.08	0.35	0.91	0.00	0.08	0.80	6.48	0.44	1.62	0.50	2.21
insert_new_arc	0.06	0.21	0.38	0.44	2.41	0.57	4.34	1.32	26.46	0.00	0.06
refresh_neighbour_lists	0.05	0.19	0.39	0.44	3.04	0.68	7.94	0.00	0.05	0.00	0.05
number	0.04	0.15	0.30	0.00	0.04	0.00	0.04	0.44	4.00	0.00	0.04
primal_net_simplex	0.04	0.06	0.01	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04
__doscan_u	0.03	0.03	0.00	0.00	0.03	0.23	1.33	0.00	0.03	0.00	0.03
.rem	0.02	0.06	0.08	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02
__mul64	0.01	0.07	0.36	0.00	0.01	0.11	1.00	0.00	0.01	0.00	0.01
read_min	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
.umul	0.01	0.04	0.09	0.00	0.01	0.00	0.01	0.44	18.49	0.00	0.01
Sum	99.96	99.92	32.11	99.11	17275.71	99.87	1199.59	99.98	17658.53	98.54	25945.48
	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi

90% Confidence level (25 entries) = 33.196

Function level execution profile at optimization level O2

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets as compared to the full SPEC reference datasets. Note: the medium reduced (MdRed) dataset is the same as the test dataset for this benchmark. This data was gathered with the gprof profiling utility. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi
refresh_potential	31.18	14.50	8.92	2.27	26.81	3.17	25.16	2.22	26.90	0.00	31.18
internal_mcount	21.83	24.82	0.41	18.64	0.47	25.21	0.52	20.89	0.04	19.15	0.33
bea_compute_red_cost	12.78	16.33	0.99	7.73	2.00	11.72	0.09	8.89	1.18	7.98	1.80
primal_bea_mpp	11.90	20.08	5.62	12.27	0.01	27.20	19.67	6.22	2.71	9.04	0.69
price_out_impl	9.91	6.39	1.25	1.82	6.60	4.22	3.27	0.44	9.05	0.53	8.88
compute_red_cost	5.57	3.90	0.50	0.00	5.57	0.82	4.05	0.44	4.72	0.00	5.57
bea_is_dual_infeasible	1.44	2.66	1.03	2.27	0.48	3.63	3.33	4.44	6.25	3.19	2.13
replace_weaker_arc	1.41	2.09	0.33		1.41	1.76	0.09		1.41		1.41
sort_basket	1.16	2.74	2.15	6.82	27.62	3.75	5.78	7.56	35.31	3.72	5.65
_mcount	0.68	1.09	0.25	0.45	0.08	1.06	0.21	0.89	0.06	1.60	1.24
flow_cost	0.47	1.15	0.98	0.45	0.00	1.99	4.92	0.44	0.00	0.53	0.01
update_tree	0.43	0.50	0.01	0.00	0.43	0.23	0.09	0.44	0.00	0.00	0.43
primal_iminus	0.37	0.79	0.48	0.45	0.02	0.23	0.05	0.44	0.01	0.00	0.37
dual_feasible	0.33	0.77	0.59	0.00	0.33	1.06	1.61	0.00	0.33	0.00	0.33
memset	0.12	0.96	5.88	43.64	15783.25	11.61	1100.17	45.78	17373.63	53.72	23941.33
write_circulations	0.11	0.30	0.33	0.00	0.11	0.94	6.26	0.44	0.99	0.00	0.11
insert_new_arc	0.06	0.26	0.67	0.45	2.54	0.59	4.68	0.44	2.41	0.00	0.06
refresh_neighbour_lists	0.05	0.20	0.45	0.00	0.05	0.59	5.83	0.00	0.05	0.00	0.05
primal_net_simplex	0.04	0.07	0.02	0.00	0.04	0.00	0.04	0.00	0.04	0.53	6.00
number	0.04	0.08	0.04	2.27	124.32	0.12	0.16	0.00	0.04	0.00	0.04
__doscan_u	0.02	0.06	0.08	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02
.rem	0.02	0.02	0.00	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02
__mul64	0.02	0.06	0.08	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02
.umul	0.01	0.07	0.36	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
read_min	0.01	0.04	0.09	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Sum	99.96	99.93	31.51	99.53	15982.20	99.90	1186.08	99.97	17465.23	99.99	24007.69
	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi

90% Confidence level (25 entries) = 33.196

Function level execution profile at optimization level O3

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets as compared to the full SPEC reference datasets. Note: the medium reduced (MdRed) dataset is the same as the test dataset for this benchmark. This data was gathered with the gprof profiling utility. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi
refresh_potential	43.62	21.04	11.69	1.22	41.21	4.36	35.34	1.83	40.04	2.10	39.52
primal_bea_mpp	32.79	51.17	10.30	22.56	3.19	53.02	12.48	18.90	5.88	18.88	5.90
price_out_impl	16.67	11.33	1.71	3.05	11.13	6.21	6.56	1.83	13.21	1.40	13.99
replace_weaker_arc	1.88	3.02	0.69		1.88	2.01	0.01		1.88		1.88
sort_basket	1.29	3.42	3.52	6.10	17.93	4.87	9.94	9.76	55.61	3.50	3.79
internal_mcount	0.77	2.12	2.37	2.44	3.62	3.86	12.40	2.44	3.62	2.10	2.30
flow_cost	0.66	1.69	1.61	0.00	0.66	3.02	8.44	0.61	0.00	0.00	0.66
update_tree	0.56	0.75	0.06	0.00	0.56	0.00	0.56	0.61	0.00	0.00	0.56
primal_iminus	0.53	0.96	0.35	1.22	0.90	0.17	0.24	0.61	0.01	0.00	0.53
dual_feasible	0.48	1.04	0.65	0.00	0.48	1.85	3.91	0.00	0.48	0.00	0.48
memset	0.16	1.31	8.27	60.98	23119.20	16.44	1656.49	60.98	23119.20	71.33	31657.31
write_circulations	0.12	0.53	1.40	0.61	2.00	1.17	9.19	0.61	2.00	0.00	0.12
insert_new_arc	0.08	0.28	0.50	0.00	0.08	0.84	7.22	0.00	0.08	0.00	0.08
refresh_neighbour_lists	0.08	0.30	0.61	0.00	0.08	1.01	10.81	0.00	0.08	0.00	0.08
_mcount	0.06	0.20	0.33	0.61	5.04	0.17	0.20		0.06		0.06
number	0.06	0.13	0.08	0.61	5.04	0.34	1.31	0.61	5.04	0.00	0.06
primal_net_simplex	0.05	0.10	0.05	0.00	0.05	0.00	0.05	0.00	0.05	0.00	0.05
.umul	0.03	0.08	0.08	0.00	0.03	0.00	0.03	0.00	0.03	0.00	0.03
__doscan_u	0.02	0.11	0.41	0.00	0.02	0.17	1.13	0.00	0.02	0.00	0.02
__mul64	0.02	0.14	0.72	0.00	0.02	0.00	0.02	0.61	17.41	0.00	0.02
.rem	0.02	0.06	0.08	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02
read_min	0.01	0.06	0.25	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
memccpy	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
__fsetlocking	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
primal_start_artificial	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Sum	99.99	99.85	45.74	99.40	23213.20	99.51	1776.38	99.40	23264.78	99.31	31727.49
	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	Mdred Chi	SmRed	SmRed Chi

90% Confidence level (25 entries) = 33.196

Instruction Mix profile at optimization level o0

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets , as compared to the full SPEC dataset. Note: the medium reduced (MdRed) dataset is the same as the test dataset for this benchmark. This data was gathered with the sim-profile simulator for the SimpleScalar suite. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

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O0 program

Inst type	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi
load	38.80	37.12	0.07	30.90	1.61	34.65	0.44	30.90	1.61	29.74	2.12
store	12.25	11.34	0.07	14.84	0.55	11.52	0.04	14.84	0.55	17.63	2.36
unconditional branch	8.65	7.92	0.06	6.72	0.43	7.08	0.28	6.72	0.43	6.99	0.32
conditional branch	8.52	8.01	0.03	7.73	0.07	7.49	0.12	7.73	0.07	7.91	0.04
int computation	31.77	35.62	0.47	39.81	2.03	39.26	1.77	39.81	2.03	37.73	1.12
fp computation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
trap	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	99.99	100.01	0.70	100.00	4.69	100.00	2.66	100.00	4.69	100.00	5.96
	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi

90% Confidence level (7 entries) = 10.645

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Instruction Mix profile at optimization level o1

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets, as compared to the full SPEC dataset. Note: the medium reduced (MdRed) dataset is the same as the test dataset for this benchmark. This data was gathered with the sim-profile simulator for the SimpleScalar suite. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

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O1 program

Inst type	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi
load	29.62	27.89	0.10	21.11	2.44	25.14	0.68	21.11	2.44	18.65	4.06
store	4.62	5.81	0.31	15.81	27.10	9.17	4.48	15.81	27.10	19.97	51.00
unconditional branch	8.12	7.75	0.02	5.59	0.79	7.07	0.14	5.59	0.79	6.18	0.46
conditional branch	19.15	18.45	0.03	15.39	0.74	17.17	0.20	15.39	0.74	15.16	0.83
int computation	38.51	40.10	0.07	42.11	0.34	41.45	0.22	42.11	0.34	40.05	0.06
fp computation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
trap	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	100.02	100.00	0.52	100.01	31.41	100.00	5.72	100.01	31.41	100.01	56.42
	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi

90% Confidence level (7 entries) = 10.645

181.mcf

Instruction Mix profile at optimization level o2

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets, as compared to the full SPEC dataset. Note: the medium reduced (MdRed) dataset is the same as the test dataset for this benchmark. This data was gathered with the sim-profile simulator for the SimpleScalar suite. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

181.mcf

O2 program

Inst type	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi
load	32.00	29.51	0.19	22.12	3.05	26.36	0.99	22.12	3.05	19.63	4.78
store	4.66	5.91	0.34	16.43	29.73	9.54	5.11	16.43	29.73	20.98	57.16
unconditional branch	8.15	7.78	0.02	5.62	0.79	7.22	0.11	5.62	0.79	6.35	0.40
conditional branch	19.33	18.77	0.02	15.99	0.58	17.85	0.11	15.99	0.58	15.92	0.60
int computation	35.87	38.03	0.13	39.84	0.44	39.04	0.28	39.84	0.44	37.12	0.04
fp computation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
trap	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	100.01	100.00	0.69	100.00	34.58	100.01	6.60	100.00	34.58	100.00	62.98
	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi

90% Confidence level (7 entries) = 10.645

181.mcf

Instruction Mix profile at optimization level o3

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train, test, large (LgRed), medium (MdRed), and small (SmRed) reduced datasets , as compared to the full SPEC dataset. Note: the medium reduced (MdRed) is the same as the test dataset for this benchmark. This data was gathered with the sim-profile simulator for the SimpleScalar suite. *90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref, Train, Test, LgRed, MdRed, and SmRed columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train Chi, Test Chi, LgRed Chi, MdRed Chi, and SmRed Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

181.mcf

O3 program

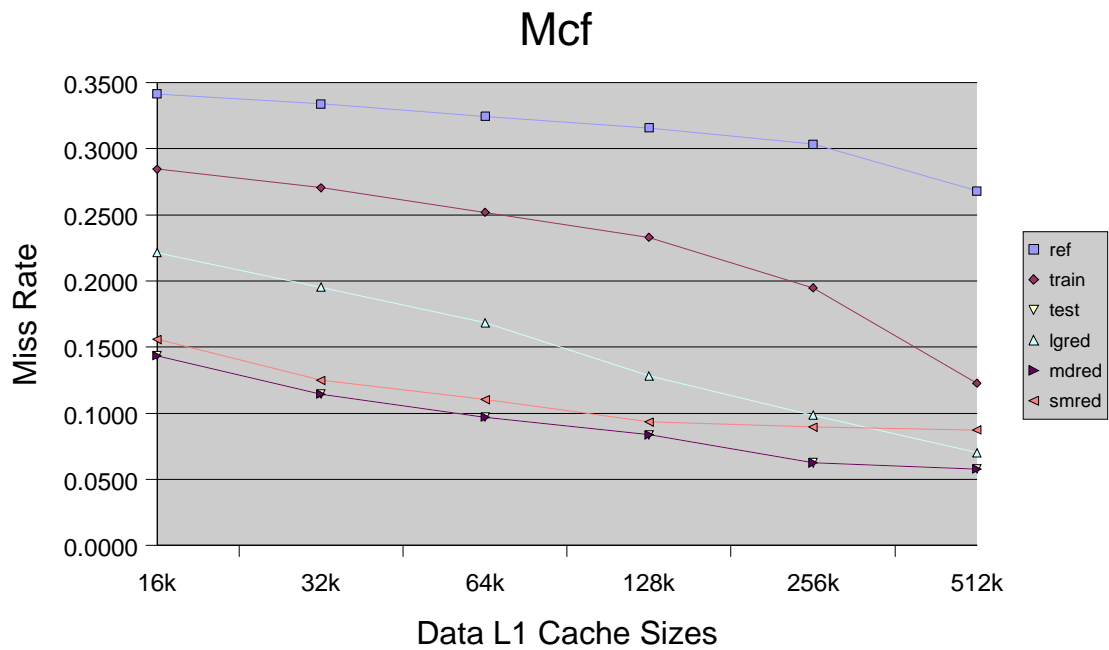
Inst type	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi
load	36.76	33.25	0.34	23.26	4.96	29.18	1.56	23.26	4.96	20.90	6.84
store	5.56	7.08	0.42	18.98	32.39	11.39	6.11	18.98	32.39	24.80	66.58
unconditional branch	1.49	1.53	0.00	1.05	0.13	1.20	0.06	1.05	0.13	0.70	0.42
conditional branch	23.07	22.54	0.01	18.50	0.91	21.34	0.13	18.50	0.91	18.84	0.78
int computation	33.12	35.60	0.19	38.22	0.79	36.89	0.43	38.22	0.79	34.77	0.08
fp computation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
trap	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	100.00	100.00	0.95	100.01	39.17	100.00	8.29	100.01	39.17	100.01	74.70
	Ref	Train	Train Chi	Test	Test Chi	Lgred	LgRed Chi	Mdred	MdRed Chi	Smred	Smred Chi

90% Confidence level (7 entries) = 10.645

181.mcf

Cache profile

The following chart shows level 1 data cache miss rates for the ref, train, test, LgRed, MdRed, and SmRed datasets. Note: the medium reduced (MdRed) is the same as the test dataset for this benchmark. This data was gathered with the sim-cache simulator from the SimpleScalar suite. Miss rate is stated as the ratio of level 1 misses to total level 1 accesses.



Instruction Counts for all Datasets

The following table shows the instruction counts and estimated simulation time for the reference (Ref), train, test, and large (LgRed), medium(MdRed), and small (SmRed) reduced datasets.

Note: The medium reduced (MdRed) is the same as the test dataset for this benchmark.

Instruction counts are from the simulated benchmark, compiled at optimization level O0 and run with each input dataset. Estimated simulation times are calculated using a 45,000 instructions per second factor. This factor was determined by observing the simulation rate of a simulator similar to sim-outorder, run on a machine similar to the SPEC 2000 reference machine (a 333 Mhz Sparc).

	<u>Ref</u>	<u>Train</u>	<u>Test</u>	<u>LgRed</u>	<u>MdRed</u>	<u>SmRed</u>
Instruction Count						
(in millions)	132949	20108	419	1714	419	278
Simulation Time						
(in hours)	820.7	124.1	2.6	10.6	2.6	1.7