Appendix C Raw Benchmark Data

This appendix includes the raw data for all the performance measurements reported in Chapter 14 and Appendix B. For each row, from left to right, the tables report the running time for the benchmark (in seconds), the compile time for the benchmark (in seconds), and the size in bytes of the compiled instructions generated by the compiler for the benchmark. Smalltalk-80 compile time and compiled code space measurements are unavailable. Other blank rows correspond to configurations where the compiler consumed too much internal memory (over 30MB) when compiling the benchmark. Note that the Local Reluctant Splitting (Lazy) and Late Block Zapping configurations are identical to the Normal SELF configuration.

C.1 recur

language/configuration	run	compile	space
Optimized C	0.293	1.1	88
Smalltalk-80	1.459		
T (normal)	3.316	0.73	1400
T (integer only)	0.55	0.35	404
Normal SELF	0.495	0.485	616
No Splitting (Not Lazy)	0.715	2.745	6840
No Splitting (Lazy)	0.666	0.484	792
Local Reluctant Splitting (Not Lazy)	0.495	0.475	616
Local Reluctant Splitting (Lazy)	0.495	0.485	616
Global Reluctant Splitting (Not Lazy)	0.496	0.464	616
Global Reluctant Splitting (Lazy)	0.495	0.475	616
Divided No Splitting (Not Lazy)	0.697	1.583	3920
Divided No Splitting (Lazy)	0.666	0.474	792
Divided Local Reluctant Splitting (Not Lazy)	0.496	0.474	616
Divided Local Reluctant Splitting (Lazy)	0.495	0.475	616
Divided Global Reluctant Splitting (Not Lazy)	0.496	0.474	616
Divided Global Reluctant Splitting (Lazy)	0.496	0.484	616
Eager Splitting (Not Lazy)	0.496	0.844	1000
Eager Splitting (Lazy)	0.495	0.845	1000
Eager Splitting and Tail Merging (Not Lazy)	0.496	0.484	628
Eager Splitting and Tail Merging (Lazy)	0.495	0.495	628
Eager Splitting and Requirements Analysis (Not Lazy)	0.496	0.724	616
Eager Splitting and Requirements Analysis (Lazy)	0.496	0.724	616
Type Predict for Vectors (with Local Splitting)	0.497	0.473	616
Type Predict for Vectors (with Global Splitting)	0.497	0.473	616
Vectors Are More Common (with Local Splitting)	0.496	0.464	616
Without Inlining	22.513	2.137	616
Without In-Line Caching	0.495	0.475	616
Without Compile-Time Lookup Caching	0.495	0.465	724
Without Customization	0.535	0.875	616
Without Value-Based Type Analysis	0.768	0.512	6552
Without Range Analysis	0.516	0.614	616
Without Type Prediction	0.497	0.463	616
Without Deferred Block Creation	4.997	3.833	616
Without Exposed Block Analysis	0.498	0.912	976
Without CSE	0.506	0.464	1636
Without CSE of Constants	0.496	0.474	1364
Without CSE of Arithmetic Operations	0.507	0.473	832
Without CSE of Memory References	0.495	0.465	624
Without CSE of Memory Cell Type Information	0.496	0.474	616
Without CSE of Memory Cell Array Bounds Checking	0.497	0.473	624
Without Eliminating Unneeded Computations	0.504	0.486	616
Without Delay Slot Filling	0.607	0.443	616
No Integer Type Tests	0.496	0.464	616
No Boolean Type Tests	0.497	0.463	616
No Overflow Checking	0.496	0.474	720
No Array Bounds Checking	0.496	0.474	616
No Block Zapping	0.497	0.463	592
Early Block Zapping	0.497	0.483	616
Late Block Zapping	0.495	0.485	616
No Primitive Failure Checking	0.497	0.473	520
No Debugger-Visible Names	0.497	0.463	584
No Interrupt Checking at Calls	0.457	0.443	616
No Interrupt Checking at _Restarts	0.496	0.454	616
No LRU Compiled Method Reclamation Support	0.416	0.474	616
Fast	0.415	0.435	616
Fastest	0.416	0.414	616

C.2 sumTo

language/configuration	run	compile	space
Optimized C	0.245	1.1	96
Smalltalk-80	2.366		
T (normal)	4.682	0.81	1440
T (integer only)	0.303	0.4	348
Normal SELF	0.67	0.65	632
No Splitting (Not Lazy)	2.013	4.167	8512
No Splitting (Lazy)	1.099	0.631	760
Local Reluctant Splitting (Not Lazy)	1.586	2.944	5104
Local Reluctant Splitting (Lazy)	0.67	0.65	632
Global Reluctant Splitting (Not Lazy)	0.915	10.385	19524
Global Reluctant Splitting (Lazy)	0.671	0.649	632
Divided No Splitting (Not Lazy)	1.221	3.199	6500
Divided No Splitting (Lazy)	1.099	0.641	760
Divided Local Reluctant Splitting (Not Lazy)	0.854	2.696	4788
Divided Local Reluctant Splitting (Lazy)	0.671	0.659	632
Divided Global Reluctant Splitting (Not Lazy)	0.854	3.136	4900
Divided Global Reluctant Splitting (Lazy)	0.671	0.649	632
Eager Splitting (Not Lazy)	0.733	6.107	9356
Eager Splitting (Lazy)	0.732	1.368	1120
Eager Splitting and Tail Merging (Not Lazy)	0.732	3.008	4788
Eager Splitting and Tail Merging (Lazy)	0.732	0.748	660
Eager Splitting and Requirements Analysis (Not Lazy)	0.978	3.652	4864
Eager Splitting and Requirements Analysis (Lazy)	0.672	1.228	632
Type Predict for Vectors (with Local Splitting)	0.671	0.649	632
Type Predict for Vectors (with Global Splitting)	0.672	0.648	632
Vectors Are More Common (with Local Splitting)	0.671	0.649	632
Without Inlining	254.721	1.519	632
Without In-Line Caching	0.671	0.639	632
Without Compile-Time Lookup Caching	0.672	0.648	720
Without Customization	0.672	1.038	632
Without Value-Based Type Analysis	2.627	0.733	5380
Without Range Analysis	0.671	0.789	632
Without Type Prediction	0.673	0.647	632
Without Deferred Block Creation	18.107	1.943	632
Without Exposed Block Analysis	2.02	2.32	1044
Without CSE	0.671	0.639	1996
Without CSE of Constants	0.672	0.648	3928
Without CSE of Arithmetic Operations	0.671	0.639	812
Without CSE of Memory References	0.671	0.639	632
Without CSE of Memory Cell Type Information	0.671	0.649	632
Without CSE of Memory Cell Array Bounds Checking	0.671	0.649	632
Without Eliminating Unneeded Computations	0.694	0.626	632
Without Delay Slot Filling	1.099	0.601	632
No Integer Type Tests	0.671	0.639	632
No Boolean Type Tests	0.672	0.648	632
No Overflow Checking	0.55	0.62	716
No Array Bounds Checking	0.672	0.648	608
No Block Zapping	0.672	0.648	616
Early Block Zapping	0.672	0.678	632
Late Block Zapping	0.67	0.65	632
No Primitive Failure Checking	0.671	0.649	568
No Debugger-Visible Names	0.672	0.638	488
No Interrupt Checking at Calls	0.671	0.619	632
No Interrupt Checking at _Restarts	0.489	0.571	552
No LRU Compiled Method Reclamation Support	0.672	0.648	632
Fast	0.488	0.542	632
Fastest	0.427	0.493	632

C.3 sumFromTo

language/configuration	run	compile	space
Optimized C	0.245	1.1	96
Smalltalk-80	2.364		
T (normal)	4.627	0.81	1432
T (integer only)	0.305	0.37	344
Normal SELF	0.672	0.648	664
No Splitting (Not Lazy)	2.013	4.277	8720
No Splitting (Lazy)	1.098	0.642	792
Local Reluctant Splitting (Not Lazy)	1.585	3.075	5256
Local Reluctant Splitting (Lazy)	0.672	0.648	664
Global Reluctant Splitting (Not Lazy)	0.916	9.084	19656
Global Reluctant Splitting (Lazy)	0.671	0.649	664
Divided No Splitting (Not Lazy)	1.221	3.289	6704
Divided No Splitting (Lazy)	1.099	0.641	792
Divided Local Reluctant Splitting (Not Lazy)	0.854	2.806	4956
Divided Local Reluctant Splitting (Lazy)	0.672	0.648	664
Divided Global Reluctant Splitting (Not Lazy)	0.855	3.045	5068
Divided Global Reluctant Splitting (Lazy)	0.671	0.649	664
Eager Splitting (Not Lazy)	0.733	5.667	9632
Eager Splitting (Lazy)	0.732	1.368	1184
Eager Splitting and Tail Merging (Not Lazy)	0.733	2.907	4940
Eager Splitting and Tail Merging (Lazy)	0.733	0.747	700
Eager Splitting and Requirements Analysis (Not Lazy)	0.978	3.432	5072
Eager Splitting and Requirements Analysis (Lazy)	0.671	1.229	672
Type Predict for Vectors (with Local Splitting)	0.671	0.649	664
Type Predict for Vectors (with Global Splitting)	0.672	0.648	664
Vectors Are More Common (with Local Splitting)	0.672	0.648	664
Without Inlining	254.801	1.509	664
Without In-Line Caching	0.672	0.648	664
Without Compile-Time Lookup Caching	0.672	0.648	748
Without Customization	0.672	1.058	664
Without Value-Based Type Analysis	2.75	0.58	5516
Without Range Analysis	0.671	0.779	1172
Without Type Prediction	46.915	1.465	664
Without Deferred Block Creation	18.11	1.98	664
Without Exposed Block Analysis	2.021	2.349	836
Without CSE	0.672	0.628	2036
Without CSE of Constants	0.671	0.639	4016
Without CSE of Arithmetic Operations	0.671	0.629	852
Without CSE of Memory References	0.672	0.638	664
Without CSE of Memory Cell Type Information	0.672	0.648	664
Without CSE of Memory Cell Array Bounds Checking	0.672	0.638	664
Without Eliminating Unneeded Computations	0.674	0.666	664
Without Delay Slot Filling	1.099	0.611	664
No Integer Type Tests	0.671	0.639	664
No Boolean Type Tests	0.672	0.648	664
No Overflow Checking	0.549	0.631	752
No Array Bounds Checking	0.672	0.638	616
No Block Zapping	0.671	0.649	648
Early Block Zapping	0.672	0.678	664
Late Block Zapping	0.672	0.648	664
No Primitive Failure Checking	0.672	0.648	600
No Debugger-Visible Names	0.671	0.639	520
No Interrupt Checking at Calls	0.671	0.639	664
No Interrupt Checking at _Restarts	0.488	0.572	584
No LRU Compiled Method Reclamation Support	0.672	0.638	664
Fast	0.488	0.542	664
Fastest	0.428	0.502	664

C.4 fastSumTo

language/configuration	run	compile	space
Optimized C	0.245	1.1	80
Smalltalk-80	2.368		
T (normal)	4.194	0.76	1344
T (integer only)	0.432	0.34	260
Normal SELF	0.732	0.528	368
No Splitting (Not Lazy)	2.012	20.508	28024
No Splitting (Lazy)	1.219	0.531	460
Local Reluctant Splitting (Not Lazy)	0.975	9.455	11552
Local Reluctant Splitting (Lazy)	0.732	0.528	368
Global Reluctant Splitting (Not Lazy)	0.854	2.256	3148
Global Reluctant Splitting (Lazy)	0.732	0.538	368
Divided No Splitting (Not Lazy)	1.28	2.75	4188
Divided No Splitting (Lazy)	1.22	0.53	460
Divided Local Reluctant Splitting (Not Lazy)	0.915	2.485	3348
Divided Local Reluctant Splitting (Lazy)	0.731	0.529	368
Divided Global Reluctant Splitting (Not Lazy)	0.854	2.466	3376
Divided Global Reluctant Splitting (Lazy)	0.732	0.538	368
Eager Splitting (Not Lazy)	0.793	26.337	30636
Eager Splitting (Lazy)	0.731	23.289	26268
Eager Splitting and Tail Merging (Not Lazy)	0.793	13.037	15368
Eager Splitting and Tail Merging (Lazy)	0.732	11.398	13184
Eager Splitting and Requirements Analysis (Not Lazy)	1.038	3.182	3392
Eager Splitting and Requirements Analysis (Lazy)	0.732	1.348	368
Type Predict for Vectors (with Local Splitting)	0.732	0.538	368
Type Predict for Vectors (with Global Splitting)	0.732	0.538	368
Vectors Are More Common (with Local Splitting)	0.732	0.538	368
Without Inlining	254.883	1.487	368
Without In-Line Caching	0.733	0.527	368
Without Compile-Time Lookup Caching	0.732	0.528	380
Without Customization	0.732	0.908	368
Without Value-Based Type Analysis	2.075	0.575	5332
Without Range Analysis	0.793	1.257	368
Without Type Prediction	0.733	0.527	368
Without Deferred Block Creation	18.211	1.669	368
Without Exposed Block Analysis	0.796	4.774	556
Without CSE	0.732	0.518	1636
Without CSE of Constants	0.732	0.538	5232
Without CSE of Arithmetic Operations	0.732	0.528	864
Without CSE of Memory References	0.732	0.528	368
Without CSE of Memory Cell Type Information	0.732	0.538	368
Without CSE of Memory Cell Array Bounds Checking	0.731	0.539	368
Without Eliminating Unneeded Computations	0.817	0.443	368
Without Delay Slot Filling	1.098	0.502	368
No Integer Type Tests	0.732	0.528	368
No Boolean Type Tests	0.732	0.528	368
No Overflow Checking	0.671	0.509	420
No Array Bounds Checking	0.732	0.538	368
No Block Zapping	0.732	0.538	360
Early Block Zapping	0.732	0.548	368
Late Block Zapping	0.732	0.528	368
No Primitive Failure Checking	0.732	0.528	336
No Debugger-Visible Names	0.732	0.538	200
No Interrupt Checking at Calls	0.732	0.528	368
No Interrupt Checking at _Restarts	0.61	0.39	328
No LRU Compiled Method Reclamation Support	0.732	0.538	368
Fast	0.609	0.381	368
Fastest	0.549	0.351	368

C.5 nestedLoop

language/configuration	run	compile	space
Optimized C	0.25	1.1	88
Smalltalk-80	2.027		
T (normal)	4.469	1.02	1796
T (integer only)	1.285	0.49	492
Normal SELF	0.618	0.762	604
No Splitting (Not Lazy)	1.794	16.846	26756
No Splitting (Lazy)	1.115	0.755	752
Local Reluctant Splitting (Not Lazy)	0.869	6.151	8092
Local Reluctant Splitting (Lazy)	0.618	0.762	604
Global Reluctant Splitting (Not Lazy)	0.741	2.619	3536
Global Reluctant Splitting (Lazy)	0.618	0.762	604
Divided No Splitting (Not Lazy)	1.242	3.548	6016
Divided No Splitting (Lazy)	1.116	0.764	752
Divided Local Reluctant Splitting (Not Lazy)	0.805	2.665	3644
Divided Local Reluctant Splitting (Lazy)	0.618	0.762	604
Divided Global Reluctant Splitting (Not Lazy)	0.804	2.716	3720
Divided Global Reluctant Splitting (Lazy)	0.619	0.781	604
Eager Splitting (Not Lazy)	0.682	18.218	24736
Eager Splitting (Lazy)	0.679	15.131	20344
Eager Splitting and Tail Merging (Not Lazy)	0.682	9.148	12524
Eager Splitting and Tail Merging (Lazy)	0.679	7.631	10328
Eager Splitting and Requirements Analysis (Not Lazy)	0.928	3.452	3680
Eager Splitting and Requirements Analysis (Lazy)	0.618	1.572	604
Type Predict for Vectors (with Local Splitting)	0.619	0.761	604
Type Predict for Vectors (with Global Splitting)	0.619	0.771	604
Vectors Are More Common (with Local Splitting)	0.619	0.761	604
Without Inlining	310.865	1.965	604
Without In-Line Caching	0.619	0.761	604
Without Compile-Time Lookup Caching	0.619	0.771	664
Without Customization	0.618	1.162	604
Without Value-Based Type Analysis	1.856	0.814	5988
Without Range Analysis	0.68	1.59	604
Without Type Prediction	0.62	0.76	604
Without Deferred Block Creation	18.87	2.44	604
Without Exposed Block Analysis	3.252	5.998	884
Without CSE	0.619	0.741	2440
Without CSE of Constants	0.619	0.761	8136
Without CSE of Arithmetic Operations	0.619	0.751	1240
Without CSE of Memory References	0.618	0.762	604
Without CSE of Memory Cell Type Information	0.618	0.752	604
Without CSE of Memory Cell Array Bounds Checking	0.618	0.762	604
Without Eliminating Unneeded Computations	0.622	0.778	604
Without Delay Slot Filling	0.989	0.721	604
No Integer Type Tests	0.619	0.771	604
No Boolean Type Tests	0.619	0.771	604
No Overflow Checking	0.557	0.753	696
No Array Bounds Checking	0.619	0.761	604
No Block Zapping	0.619	0.741	588
Early Block Zapping	0.619	0.791	604
Late Block Zapping	0.618	0.762	604
No Primitive Failure Checking	0.618	0.762	540
No Debugger-Visible Names	0.619	0.761	404
No Interrupt Checking at Calls	0.618	0.752	604
No Interrupt Checking at _Restarts	0.494	0.616	564
No LRU Compiled Method Reclamation Support	0.619	0.771	604
Fast	0.494	0.576	604
Fastest	0.434	0.546	604

C.6 atAllPut

language/configuration	run	compile	space
Optimized C	0.065	1.1	88
Smalltalk-80	1.046		
T (normal)	0.322	0.53	992
T (integer only)	0.095	0.36	368
Normal SELF	0.13	0.29	404
No Splitting (Not Lazy)	0.266	2.204	4644
No Splitting (Lazy)	0.173	0.287	440
Local Reluctant Splitting (Not Lazy)	0.143	0.367	532
Local Reluctant Splitting (Lazy)	0.13	0.29	404
Global Reluctant Splitting (Not Lazy)	0.112	0.698	1040
Global Reluctant Splitting (Lazy)	0.099	0.511	636
Divided No Splitting (Not Lazy)	0.186	0.654	1300
Divided No Splitting (Lazy)	0.173	0.287	440
Divided Local Reluctant Splitting (Not Lazy)	0.143	0.727	1264
Divided Local Reluctant Splitting (Lazy)	0.131	0.289	404
Divided Global Reluctant Splitting (Not Lazy)	0.112	1.088	1748
Divided Global Reluctant Splitting (Lazy)	0.1	0.51	636
Eager Splitting (Not Lazy)	0.118	2.552	3660
Eager Splitting (Lazy)	0.106	1.314	1148
Eager Splitting and Tail Merging (Not Lazy)	0.111	1.309	1924
Eager Splitting and Tail Merging (Lazy)	0.099	0.711	680
Eager Splitting and Requirements Analysis (Not Lazy)	0.136	1.814	2020
Eager Splitting and Requirements Analysis (Lazy)	0.1	1.2	656
Type Predict for Vectors (with Local Splitting)	0.13	0.29	404
Type Predict for Vectors (with Global Splitting)	0.1	0.52	636
Vectors Are More Common (with Local Splitting)	0.13	0.29	404
Without Inlining	27.572	1.168	636
Without In-Line Caching	0.131	0.289	404
Without Compile-Time Lookup Caching	0.13	0.29	1024
Without Customization	1.381	0.849	404
Without Value-Based Type Analysis	0.396	0.334	5312
Without Range Analysis	0.136	0.424	404
Without Type Prediction	0.131	0.299	404
Without Deferred Block Creation	2.365	0.505	404
Without Exposed Block Analysis	0.13	0.71	608
Without CSE	0.148	0.282	1076
Without CSE of Constants	0.13	0.29	1008
Without CSE of Arithmetic Operations	0.13	0.29	564
Without CSE of Memory References	0.149	0.281	408
Without CSE of Memory Cell Type Information	0.13	0.29	404
Without CSE of Memory Cell Array Bounds Checking	0.131	0.289	404
Without Eliminating Unneeded Computations	0.13	0.29	408
Without Delay Slot Filling	0.167	0.283	404
No Integer Type Tests	0.13	0.29	404
No Boolean Type Tests	0.131	0.289	404
No Overflow Checking	0.131	0.299	464
No Array Bounds Checking	0.118	0.282	404
No Block Zapping	0.13	0.29	388
Early Block Zapping	0.13	0.3	404
Late Block Zapping	0.13	0.29	404
No Primitive Failure Checking	0.131	0.289	340
No Debugger-Visible Names	0.13	0.3	328
No Interrupt Checking at Calls	0.13	0.28	404
No Interrupt Checking at _Restarts	0.118	0.252	404
No LRU Compiled Method Reclamation Support	0.131	0.289	380
Fast	0.117	0.233	404
Fastest	0.106	0.224	404

C.7 sumAll

language/configuration	run	compile	space
Optimized C	0.055	1.1	88
Smalltalk-80	0.698		
T (normal)	0.505	0.71	1196
T (integer only)	0.098	0.33	372
Normal SELF	0.13	0.49	580
No Splitting (Not Lazy)	0.269	4.921	9448
No Splitting (Lazy)	0.172	0.498	652
Local Reluctant Splitting (Not Lazy)	0.16	2.29	3512
Local Reluctant Splitting (Lazy)	0.13	0.49	580
Global Reluctant Splitting (Not Lazy)	0.147	2.403	3756
Global Reluctant Splitting (Lazy)	0.129	0.501	580
Divided No Splitting (Not Lazy)	0.184	2.516	4688
Divided No Splitting (Lazy)	0.172	0.488	652
Divided Local Reluctant Splitting (Not Lazy)	0.147	2.693	4492
Divided Local Reluctant Splitting (Lazy)	0.129	0.501	580
Divided Global Reluctant Splitting (Not Lazy)	0.147	2.703	4504
Divided Global Reluctant Splitting (Lazy)	0.129	0.501	580
Eager Splitting (Not Lazy)	0.134	5.466	8752
Eager Splitting (Lazy)	0.129	1.101	1020
Eager Splitting and Tail Merging (Not Lazy)	0.135	2.755	4504
Eager Splitting and Tail Merging (Lazy)	0.129	0.591	620
Eager Splitting and Requirements Analysis (Not Lazy)	0.16	3.29	4588
Eager Splitting and Requirements Analysis (Lazy)	0.129	1.021	580
Type Predict for Vectors (with Local Splitting)	0.129	0.491	580
Type Predict for Vectors (with Global Splitting)	0.128	0.492	580
Vectors Are More Common (with Local Splitting)	0.129	0.491	580
Without Inlining	36.196	1.274	580
Without In-Line Caching	0.13	0.5	580
Without Compile-Time Lookup Caching	0.129	0.511	1860
Without Customization	10.94	1.11	580
Without Value-Based Type Analysis	0.453	0.587	5928
Without Range Analysis	0.135	0.505	580
Without Type Prediction	0.129	0.491	580
Without Deferred Block Creation	2.762	0.888	580
Without Exposed Block Analysis	0.283	2.157	1012
Without CSE	0.147	0.473	1600
Without CSE of Constants	0.128	0.502	3660
Without CSE of Arithmetic Operations	0.129	0.491	644
Without CSE of Memory References	0.147	0.483	588
Without CSE of Memory Cell Type Information	0.13	0.5	580
Without CSE of Memory Cell Array Bounds Checking	0.129	0.491	580
Without Eliminating Unneeded Computations	0.129	0.501	588
Without Delay Slot Filling	0.177	0.473	580
No Integer Type Tests	0.117	0.483	580
No Boolean Type Tests	0.129	0.491	580
No Overflow Checking	0.122	0.488	668
No Array Bounds Checking	0.117	0.473	532
No Block Zapping	0.129	0.501	564
Early Block Zapping	0.129	0.521	580
Late Block Zapping	0.13	0.49	580
No Primitive Failure Checking	0.129	0.491	516
No Debugger-Visible Names	0.129	0.491	472
No Interrupt Checking at Calls	0.129	0.491	580
No Interrupt Checking at _Restarts	0.117	0.423	540
No LRU Compiled Method Reclamation Support	0.129	0.491	532
Fast	0.117	0.423	580
Fastest	0.086	0.354	580

C.8 incrementAll

language/configuration	run	compile	space
Optimized C	0.113	1.1	96
Smalltalk-80	1.754		
T (normal)	0.538	0.7	1188
T (integer only)	0.152	0.32	376
Normal SELF	0.173	0.347	440
No Splitting (Not Lazy)	0.369	4.061	8220
No Splitting (Lazy)	0.216	0.334	476
Local Reluctant Splitting (Not Lazy)	0.218	0.912	1428
Local Reluctant Splitting (Lazy)	0.173	0.347	440
Global Reluctant Splitting (Not Lazy)	0.218	0.932	1464
Global Reluctant Splitting (Lazy)	0.172	0.348	440
Divided No Splitting (Not Lazy)	0.228	4.132	8412
Divided No Splitting (Lazy)	0.216	0.334	476
Divided Local Reluctant Splitting (Not Lazy)	0.191	0.949	1504
Divided Local Reluctant Splitting (Lazy)	0.173	0.347	440
Divided Global Reluctant Splitting (Not Lazy)	0.192	0.958	1500
Divided Global Reluctant Splitting (Lazy)	0.172	0.348	440
Eager Splitting (Not Lazy)	0.179	1.841	2752
Eager Splitting (Lazy)	0.173	0.697	712
Eager Splitting and Tail Merging (Not Lazy)	0.18	0.97	1484
Eager Splitting and Tail Merging (Lazy)	0.173	0.387	464
Eager Splitting and Requirements Analysis (Not Lazy)	0.203	5.327	8700
Eager Splitting and Requirements Analysis (Lazy)	0.173	0.657	440
Type Predict for Vectors (with Local Splitting)	0.173	0.347	440
Type Predict for Vectors (with Global Splitting)	0.173	0.347	440
Vectors Are More Common (with Local Splitting)	0.173	0.347	440
Without Inlining	34.257	1.463	440
Without In-Line Caching	0.173	0.347	440
Without Compile-Time Lookup Caching	0.173	0.347	2048
Without Customization	8.968	1.202	440
Without Value-Based Type Analysis	0.588	0.402	6148
Without Range Analysis	0.18	0.52	604
Without Type Prediction	0.306	0.394	440
Without Deferred Block Creation	3.6	0.72	440
Without Exposed Block Analysis	0.173	0.837	736
Without CSE	0.215	0.345	1268
Without CSE of Constants	0.173	0.347	1116
Without CSE of Arithmetic Operations	0.173	0.347	644
Without CSE of Memory References	0.216	0.344	472
Without CSE of Memory Cell Type Information	0.173	0.347	440
Without CSE of Memory Cell Array Bounds Checking	0.182	0.358	440
Without Eliminating Unneeded Computations	0.173	0.337	472
Without Delay Slot Filling	0.22	0.33	440
No Integer Type Tests	0.164	0.336	464
No Boolean Type Tests	0.172	0.348	440
No Overflow Checking	0.168	0.332	508
No Array Bounds Checking	0.161	0.339	416
No Block Zapping	0.173	0.347	424
Early Block Zapping	0.173	0.367	440
Late Block Zapping	0.173	0.347	440
No Primitive Failure Checking	0.173	0.347	376
No Debugger-Visible Names	0.173	0.347	364
No Interrupt Checking at Calls	0.172	0.338	440
No Interrupt Checking at _Restarts	0.16	0.31	420
No LRU Compiled Method Reclamation Support	0.173	0.337	416
Fast	0.16	0.28	440
Fastest	0.133	0.257	440

C.9 tak

language/configuration	run	compile	space
Optimized C	0.065	1.1	152
Smalltalk-80	0.309		
T (normal)	0.55	0.88	1592
T (integer only)	0.133	0.43	532
Normal SELF	0.146	0.234	700
No Splitting (Not Lazy)	0.238	1.062	3576
No Splitting (Lazy)	0.176	0.234	772
Local Reluctant Splitting (Not Lazy)	0.166	1.194	3428
Local Reluctant Splitting (Lazy)	0.146	0.234	700
Global Reluctant Splitting (Not Lazy)	0.162	1.498	4364
Global Reluctant Splitting (Lazy)	0.147	0.233	700
Divided No Splitting (Not Lazy)	0.189	2.021	6644
Divided No Splitting (Lazy)	0.177	0.233	772
Divided Local Reluctant Splitting (Not Lazy)	0.162	2.188	6332
Divided Local Reluctant Splitting (Lazy)	0.147	0.233	700
Divided Global Reluctant Splitting (Not Lazy)	0.163	2.037	5820
Divided Global Reluctant Splitting (Lazy)	0.147	0.233	700
Eager Splitting (Not Lazy)	0.154	3.346	9600
Eager Splitting (Lazy)	0.146	0.484	1280
Eager Splitting and Tail Merging (Not Lazy)	0.154	2.216	6324
Eager Splitting and Tail Merging (Lazy)	0.146	0.294	712
Eager Splitting and Requirements Analysis (Not Lazy)	0.171	2.349	6432
Eager Splitting and Requirements Analysis (Lazy)	0.146	0.384	700
Type Predict for Vectors (with Local Splitting)	0.146	0.234	700
Type Predict for Vectors (with Global Splitting)	0.146	0.244	700
Vectors Are More Common (with Local Splitting)	0.146	0.234	700
Without Inlining	7.079	1.001	700
Without In-Line Caching	0.147	0.243	700
Without Compile-Time Lookup Caching	0.147	0.243	712
Without Customization	0.147	0.613	700
Without Value-Based Type Analysis	0.2	0.28	2600
Without Range Analysis	0.146	0.244	1864
Without Type Prediction	5.771	0.419	700
Without Deferred Block Creation	1.233	0.317	700
Without Exposed Block Analysis	0.146	0.244	928
Without CSE	0.147	0.223	1088
Without CSE of Constants	0.146	0.234	700
Without CSE of Arithmetic Operations	0.146	0.234	700
Without CSE of Memory References	0.147	0.233	700
Without CSE of Memory Cell Type Information	0.146	0.234	700
Without CSE of Memory Cell Array Bounds Checking	0.146	0.234	700
Without Eliminating Unneeded Computations	0.147	0.233	700
Without Delay Slot Filling	0.176	0.224	700
No Integer Type Tests	0.129	0.231	700
No Boolean Type Tests	0.146	0.244	700
No Overflow Checking	0.143	0.237	816
No Array Bounds Checking	0.146	0.234	604
No Block Zapping	0.147	0.243	684
Early Block Zapping	0.146	0.244	700
Late Block Zapping	0.146	0.234	700
No Primitive Failure Checking	0.146	0.234	636
No Debugger-Visible Names	0.146	0.234	700
No Interrupt Checking at Calls	0.139	0.221	700
No Interrupt Checking at _Restarts	0.146	0.234	640
No LRU Compiled Method Reclamation Support	0.13	0.23	700
Fast	0.131	0.239	700
Fastest	0.11	0.2	700

C.10 takl

language/configuration	run	compile	space
Optimized C	2.66	1.7	448
Smalltalk-80	8.279		
T (normal)	0.782	0.97	1584
T (integer only)	0.776	0.65	1044
Normal SELF	4.239	0.741	2872
No Splitting (Not Lazy)	4.776	1.064	4292
No Splitting (Lazy)	4.744	0.686	2996
Local Reluctant Splitting (Not Lazy)	4.248	1.162	4160
Local Reluctant Splitting (Lazy)	4.239	0.741	2872
Global Reluctant Splitting (Not Lazy)	4.418	1.122	4612
Global Reluctant Splitting (Lazy)	4.238	0.812	3220
Divided No Splitting (Not Lazy)	4.752	1.168	4772
Divided No Splitting (Lazy)	4.745	0.695	2996
Divided Local Reluctant Splitting (Not Lazy)	4.248	1.252	4612
Divided Local Reluctant Splitting (Lazy)	4.238	0.722	2872
Divided Global Reluctant Splitting (Not Lazy)	4.291	1.309	5064
Divided Global Reluctant Splitting (Lazy)	4.239	0.811	3220
Eager Splitting (Not Lazy)	4.135	2.475	9104
Eager Splitting (Lazy)	4.177	1.403	5932
Eager Splitting and Tail Merging (Not Lazy)	4.162	1.418	5284
Eager Splitting and Tail Merging (Lazy)	4.212	0.788	3376
Eager Splitting and Requirements Analysis (Not Lazy)	4.134	1.796	5484
Eager Splitting and Requirements Analysis (Lazy)	4.123	1.287	3276
Type Predict for Vectors (with Local Splitting)	4.239	0.731	2872
Type Predict for Vectors (with Global Splitting)	4.242	0.818	3220
Vectors Are More Common (with Local Splitting)	4.241	0.729	2872
Without Inlining	82.578	2.612	3220
Without In-Line Caching	4.248	0.722	2872
Without Compile-Time Lookup Caching	4.248	0.722	4212
Without Customization	8.346	1.294	2872
Without Value-Based Type Analysis	4.828	0.792	6996
Without Range Analysis	4.241	0.729	3416
Without Type Prediction	9.352	0.678	2872
Without Deferred Block Creation	9.873	1.087	2872
Without Exposed Block Analysis	4.26	0.73	3344
Without CSE	4.104	0.686	3324
Without CSE of Constants	4.104	0.716	2872
Without CSE of Arithmetic Operations	4.243	0.727	2872
Without CSE of Memory References	4.241	0.709	2868
Without CSE of Memory Cell Type Information	4.238	0.742	2868
Without CSE of Memory Cell Array Bounds Checking	4.242	0.728	2872
Without Eliminating Unneeded Computations	4.338	0.662	2872
Without Delay Slot Filling	4.447	0.703	2872
No Integer Type Tests	4.25	0.71	2872
No Boolean Type Tests	4.235	0.725	2872
No Overflow Checking	4.24	0.72	3376
No Array Bounds Checking	4.242	0.738	2720
No Block Zapping	4.242	0.748	2808
Early Block Zapping	4.242	0.768	2872
Late Block Zapping	4.239	0.741	2872
No Primitive Failure Checking	4.24	0.72	2632
No Debugger-Visible Names	4.243	0.727	2888
No Interrupt Checking at Calls	4.177	0.693	2836
No Interrupt Checking at _Restarts	4.242	0.738	2852
No LRU Compiled Method Reclamation Support	4.11	0.73	2872
Fast	4.107	0.693	2868
Fastest	4.107	0.813	2872

C.11 sieve

language/configuration	run	compile	space
Optimized C	0.165	1.5	224
Smalltalk-80	2.953		
T (normal)	1.146	1.63	2756
T (integer only)	0.423	0.67	668
Normal SELF	0.49	0.97	856
No Splitting (Not Lazy)	1.03	20.79	41440
No Splitting (Lazy)	0.722	0.988	1128
Local Reluctant Splitting (Not Lazy)	0.742	18.218	26684
Local Reluctant Splitting (Lazy)	0.49	0.97	856
Global Reluctant Splitting (Not Lazy)	0.524	2.576	3908
Global Reluctant Splitting (Lazy)	0.489	0.961	856
Divided No Splitting (Not Lazy)	0.807	3.773	7300
Divided No Splitting (Lazy)	0.727	1.003	1128
Divided Local Reluctant Splitting (Not Lazy)	0.576	2.754	4140
Divided Local Reluctant Splitting (Lazy)	0.489	0.971	856
Divided Global Reluctant Splitting (Not Lazy)	0.575	2.795	4208
Divided Global Reluctant Splitting (Lazy)	0.489	0.981	856
Eager Splitting (Not Lazy)	0.532	51.768	72776
Eager Splitting (Lazy)	0.525	48.445	68312
Eager Splitting and Tail Merging (Not Lazy)	0.532	33.078	47328
Eager Splitting and Tail Merging (Lazy)	0.525	31.585	45096
Eager Splitting and Requirements Analysis (Not Lazy)	0.539	8.241	9696
Eager Splitting and Requirements Analysis (Lazy)	0.503	3.467	1588
Type Predict for Vectors (with Local Splitting)	0.489	0.961	856
Type Predict for Vectors (with Global Splitting)	0.49	0.97	856
Vectors Are More Common (with Local Splitting)	0.49	0.97	856
Without Inlining	83.298	2.342	856
Without In-Line Caching	0.487	0.983	856
Without Compile-Time Lookup Caching	0.486	0.984	3152
Without Customization	4.428	2.672	856
Without Value-Based Type Analysis	1.002	1.108	9248
Without Range Analysis	0.601	1.719	2476
Without Type Prediction	3.381	1.359	856
Without Deferred Block Creation	9.089	2.901	856
Without Exposed Block Analysis	0.824	3.966	1524
Without CSE	0.484	0.936	3376
Without CSE of Constants	0.485	0.965	5864
Without CSE of Arithmetic Operations	0.49	0.96	1984
Without CSE of Memory References	0.49	0.96	852
Without CSE of Memory Cell Type Information	0.489	0.971	852
Without CSE of Memory Cell Array Bounds Checking	0.49	0.96	856
Without Eliminating Unneeded Computations	0.492	0.988	856
Without Delay Slot Filling	0.605	0.925	856
No Integer Type Tests	0.487	0.973	856
No Boolean Type Tests	0.473	0.977	856
No Overflow Checking	0.475	0.965	964
No Array Bounds Checking	0.49	0.97	856
No Block Zapping	0.49	0.95	840
Early Block Zapping	0.49	1.0	856
Late Block Zapping	0.49	0.97	856
No Primitive Failure Checking	0.489	0.961	792
No Debugger-Visible Names	0.489	0.961	592
No Interrupt Checking at Calls	0.49	0.96	828
No Interrupt Checking at _Restarts	0.438	0.792	816
No LRU Compiled Method Reclamation Support	0.49	0.98	856
Fast	0.438	0.752	856
Fastest	0.422	0.718	856

C.12 perm

language/configuration	run	compile	space
Optimized C	0.11	2.8	2400
Smalltalk-80	1.456		
T (normal)	1.16	2.1	3600
T (integer only)	0.28	1	1300
Normal SELF	0.203	1.207	1320
No Splitting (Not Lazy)	0.44	22.8	39876
No Splitting (Lazy)	0.243	1.467	1884
Local Reluctant Splitting (Not Lazy)	0.288	4.642	7332
Local Reluctant Splitting (Lazy)	0.203	1.207	1320
Global Reluctant Splitting (Not Lazy)	0.211	3.459	5448
Global Reluctant Splitting (Lazy)	0.178	1.272	1368
Divided No Splitting (Not Lazy)	0.278	9.662	20312
Divided No Splitting (Lazy)	0.244	1.496	1884
Divided Local Reluctant Splitting (Not Lazy)	0.234	7.276	13672
Divided Local Reluctant Splitting (Lazy)	0.203	1.217	1320
Divided Global Reluctant Splitting (Not Lazy)	0.21	14.0	21952
Divided Global Reluctant Splitting (Lazy)	0.178	1.272	1368
Eager Splitting (Not Lazy)	0.203	27.787	39232
Eager Splitting (Lazy)	0.179	20.801	25156
Eager Splitting and Tail Merging (Not Lazy)	0.204	15.126	22704
Eager Splitting and Tail Merging (Lazy)	0.311	9.759	12016
Eager Splitting and Requirements Analysis (Not Lazy)	0.224	9.076	14684
Eager Splitting and Requirements Analysis (Lazy)	0.178	2.582	1372
Type Predict for Vectors (with Local Splitting)	0.203	1.217	1320
Type Predict for Vectors (with Global Splitting)	0.178	1.282	1368
Vectors Are More Common (with Local Splitting)	0.204	1.206	1320
Without Inlining	22.427	2.523	1368
Without In-Line Caching	0.204	1.216	1320
Without Compile-Time Lookup Caching	0.204	1.226	3504
Without Customization	2.911	2.059	1320
Without Value-Based Type Analysis	0.562	1.468	11440
Without Range Analysis	0.215	2.075	2784
Without Type Prediction	3.795	1.535	1320
Without Deferred Block Creation	4.252	3.198	1320
Without Exposed Block Analysis	0.625	6.195	2356
Without CSE	0.221	1.129	5368
Without CSE of Constants	0.219	1.201	6580
Without CSE of Arithmetic Operations	0.206	1.204	2104
Without CSE of Memory References	0.203	1.127	1176
Without CSE of Memory Cell Type Information	0.203	1.207	1360
Without CSE of Memory Cell Array Bounds Checking	0.204	1.206	1328
Without Eliminating Unneeded Computations	0.205	1.385	1128
Without Delay Slot Filling	0.237	1.153	1320
No Integer Type Tests	0.194	1.216	1320
No Boolean Type Tests	0.204	1.216	1320
No Overflow Checking	0.2	1.21	1492
No Array Bounds Checking	0.197	1.193	1272
No Block Zapping	0.203	1.187	1304
Early Block Zapping	0.203	1.257	1268
Late Block Zapping	0.203	1.207	1320
No Primitive Failure Checking	0.203	1.207	1264
No Debugger-Visible Names	0.203	1.207	1212
No Interrupt Checking at Calls	0.198	1.202	1320
No Interrupt Checking at _Restarts	0.201	1.089	1280
No LRU Compiled Method Reclamation Support	0.193	1.217	1264
Fast	0.19	1.03	1316
Fastest	0.17	0.97	1320

C.13 towers

language/configuration	run	compile	space
Optimized C	0.191	3.7	3100
Smalltalk-80	1.927		
T (normal)	0.73	3.4	6500
T (integer only)	0.36	2.3	5900
Normal SELF	0.399	2.061	4024
No Splitting (Not Lazy)	0.583	11.507	30260
No Splitting (Lazy)	0.426	2.084	4440
Local Reluctant Splitting (Not Lazy)	0.565	5.915	16124
Local Reluctant Splitting (Lazy)	0.399	2.061	4024
Global Reluctant Splitting (Not Lazy)	0.484	18.016	34256
Global Reluctant Splitting (Lazy)	0.382	2.178	4176
Divided No Splitting (Not Lazy)	0.449	10.541	31008
Divided No Splitting (Lazy)	0.43	2.08	4440
Divided Local Reluctant Splitting (Not Lazy)	0.436	9.474	25760
Divided Local Reluctant Splitting (Lazy)	0.399	2.061	4024
Divided Global Reluctant Splitting (Not Lazy)	0.415	16.615	37748
Divided Global Reluctant Splitting (Lazy)	0.382	2.178	4176
Eager Splitting (Not Lazy)	0.394	20.786	50072
Eager Splitting (Lazy)	0.38	8.86	15128
Eager Splitting and Tail Merging (Not Lazy)	0.396	13.834	33236
Eager Splitting and Tail Merging (Lazy)	0.381	5.929	9996
Eager Splitting and Requirements Analysis (Not Lazy)	0.417	15.883	31456
Eager Splitting and Requirements Analysis (Lazy)	0.42	7.35	6224
Type Predict for Vectors (with Local Splitting)	0.4	2.06	4024
Type Predict for Vectors (with Global Splitting)	0.382	2.168	4176
Vectors Are More Common (with Local Splitting)	0.399	2.061	4024
Without Inlining	9.633	3.397	4176
Without In-Line Caching	0.399	2.061	4024
Without Compile-Time Lookup Caching	0.399	2.111	7280
Without Customization	4.163	3.037	4024
Without Value-Based Type Analysis	0.635	2.385	16032
Without Range Analysis	0.403	2.537	5788
Without Type Prediction	5.188	2.222	4024
Without Deferred Block Creation	3.998	4.092	4024
Without Exposed Block Analysis	0.399	3.391	6016
Without CSE	0.426	1.844	8548
Without CSE of Constants	0.407	2.023	6492
Without CSE of Arithmetic Operations	0.4	2.05	4816
Without CSE of Memory References	0.418	1.892	3984
Without CSE of Memory Cell Type Information	0.405	2.065	4080
Without CSE of Memory Cell Array Bounds Checking	0.399	2.051	4048
Without Eliminating Unneeded Computations	0.404	2.076	3904
Without Delay Slot Filling	0.454	1.966	4128
No Integer Type Tests	0.374	2.016	4024
No Boolean Type Tests	0.399	2.071	4032
No Overflow Checking	0.396	2.044	4596
No Array Bounds Checking	0.386	2.034	3560
No Block Zapping	0.399	2.021	3992
Early Block Zapping	0.399	2.101	3628
Late Block Zapping	0.399	2.061	4024
No Primitive Failure Checking	0.402	1.998	3912
No Debugger-Visible Names	0.399	2.041	3908
No Interrupt Checking at Calls	0.393	2.037	4024
No Interrupt Checking at _Restarts	0.399	1.971	3904
No LRU Compiled Method Reclamation Support	0.388	2.062	3796
Fast	0.387	1.863	4020
Fastest	0.344	1.696	4024

C.14 queens

language/configuration	run	compile	space
Optimized C	0.092	3.1	2500
Smalltalk-80	0.8219		
T (normal)	0.64	3.4	5200
T (integer only)	0.24	1.6	1700
Normal SELF	0.174	3.116	4860
No Splitting (Not Lazy)	0.41	32.38	78500
No Splitting (Lazy)	0.229	2.941	5092
Local Reluctant Splitting (Not Lazy)	0.294	31.956	63244
Local Reluctant Splitting (Lazy)	0.174	3.116	4860
Global Reluctant Splitting (Not Lazy)			
Global Reluctant Splitting (Lazy)	0.171	2.289	3576
Divided No Splitting (Not Lazy)	0.273	45.077	96248
Divided No Splitting (Lazy)	0.23	2.96	5092
Divided Local Reluctant Splitting (Not Lazy)	0.214	48.726	90740
Divided Local Reluctant Splitting (Lazy)	0.174	3.126	4860
Divided Global Reluctant Splitting (Not Lazy)	0.209	41.031	71936
Divided Global Reluctant Splitting (Lazy)	0.172	2.298	3576
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)	0.16	10.11	13160
Eager Splitting and Tail Merging (Not Lazy)	0.198	47.982	92256
Eager Splitting and Tail Merging (Lazy)	0.159	5.321	6932
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)			
Type Predict for Vectors (with Local Splitting)	0.173	3.137	4860
Type Predict for Vectors (with Global Splitting)	0.172	2.298	3576
Vectors Are More Common (with Local Splitting)	0.174	3.126	4860
Without Inlining	19.996	3.594	3576
Without In-Line Caching	0.175	3.125	4860
Without Compile-Time Lookup Caching	0.174	3.276	10780
Without Customization	1.628	4.992	4860
Without Value-Based Type Analysis	0.49	4.17	16060
Without Range Analysis	0.174	3.256	8572
Without Type Prediction	4.307	3.483	4860
Without Deferred Block Creation	3.212	5.808	4860
Without Exposed Block Analysis	0.291	6.879	8672
Without CSE	0.179	2.841	11344
Without CSE of Constants	0.178	3.022	13184
Without CSE of Arithmetic Operations	0.177	3.113	5268
Without CSE of Memory References	0.173	3.017	5120
Without CSE of Memory Cell Type Information	0.174	3.126	5180
Without CSE of Memory Cell Array Bounds Checking	0.174	3.116	5076
Without Eliminating Unneeded Computations	0.174	3.466	4748
Without Delay Slot Filling	0.213	3.027	4860
No Integer Type Tests	0.174	3.076	4748
No Boolean Type Tests	0.167	3.043	4860
No Overflow Checking	0.168	3.022	5388
No Array Bounds Checking	0.164	3.016	4660
No Block Zapping	0.173	3.107	4836
Early Block Zapping	0.174	3.206	4808
Late Block Zapping	0.174	3.116	4860
No Primitive Failure Checking	0.175	3.105	4764
No Debugger-Visible Names	0.174	3.096	2788
No Interrupt Checking at Calls	0.173	3.117	4464
No Interrupt Checking at _Restarts	0.163	2.027	4364
No LRU Compiled Method Reclamation Support	0.173	3.127	4260
Fast	0.162	1.918	4860
Fastest	0.137	1.743	4860

C.15 intmm

language/configuration	run	compile	space
Optimized C	0.278	2.9	2500
Smalltalk-80	2.788		
T (normal)	2.5	3	5400
T (integer only)	0.9	1.5	2100
Normal SELF	0.723	1.987	2496
No Splitting (Not Lazy)	0.94	52.76	85436
No Splitting (Lazy)	0.77	1.99	2824
Local Reluctant Splitting (Not Lazy)	0.788	18.732	29640
Local Reluctant Splitting (Lazy)	0.723	1.987	2496
Global Reluctant Splitting (Not Lazy)	0.752	14.328	32248
Global Reluctant Splitting (Lazy)	0.725	1.995	2508
Divided No Splitting (Not Lazy)	0.795	42.055	72972
Divided No Splitting (Lazy)	0.786	1.984	2824
Divided Local Reluctant Splitting (Not Lazy)	0.746	31.034	48436
Divided Local Reluctant Splitting (Lazy)	0.724	1.966	2496
Divided Global Reluctant Splitting (Not Lazy)	0.749	28.351	46752
Divided Global Reluctant Splitting (Lazy)	0.724	1.996	2508
Eager Splitting (Not Lazy)	0.738	72.432	108444
Eager Splitting (Lazy)	0.73	45.75	62632
Eager Splitting and Tail Merging (Not Lazy)	0.744	35.706	54696
Eager Splitting and Tail Merging (Lazy)	0.728	22.732	31548
Eager Splitting and Requirements Analysis (Not Lazy)	0.757	45.983	60576
Eager Splitting and Requirements Analysis (Lazy)	0.724	4.096	2516
Type Predict for Vectors (with Local Splitting)	0.582	3.928	4444
Type Predict for Vectors (with Global Splitting)	0.571	4.679	6372
Vectors Are More Common (with Local Splitting)	0.582	4.648	4996
Without Inlining	25.486	2.064	6372
Without In-Line Caching	0.725	1.985	4996
Without Compile-Time Lookup Caching	0.724	2.016	6620
Without Customization	3.578	5.502	4444
Without Value-Based Type Analysis	1.131	2.259	9360
Without Range Analysis	0.762	4.158	3436
Without Type Prediction	0.864	2.106	2496
Without Deferred Block Creation	4.866	4.024	2496
Without Exposed Block Analysis	0.934	8.926	3588
Without CSE	0.725	1.925	6608
Without CSE of Constants	0.725	1.975	12500
Without CSE of Arithmetic Operations	0.724	1.956	4856
Without CSE of Memory References	0.724	1.946	2508
Without CSE of Memory Cell Type Information	0.724	1.986	2496
Without CSE of Memory Cell Array Bounds Checking	0.724	1.966	2496
Without Eliminating Unneeded Computations	0.729	2.001	2504
Without Delay Slot Filling	0.819	1.901	2496
No Integer Type Tests	0.699	1.951	2496
No Boolean Type Tests	0.725	1.995	2496
No Overflow Checking	0.72	1.93	2876
No Array Bounds Checking	0.682	1.968	2328
No Block Zapping	0.724	2.006	2448
Early Block Zapping	0.725	2.085	2356
Late Block Zapping	0.723	1.987	2496
No Primitive Failure Checking	0.711	1.929	2304
No Debugger-Visible Names	0.725	1.955	2292
No Interrupt Checking at Calls	0.707	1.943	2496
No Interrupt Checking at _Restarts	0.716	1.814	2356
No LRU Compiled Method Reclamation Support	0.69	1.98	2416
Fast	0.681	1.719	2496
Fastest	0.596	1.564	2496

C.16 quick

language/configuration	run	compile	space
Optimized C	0.13	3	2800
Smalltalk-80	1.276		
T (normal)	1.545	3.4	5800
T (integer only)	0.65	1.7	2700
Normal SELF	0.289	2.371	3604
No Splitting (Not Lazy)	0.568	20.922	48408
No Splitting (Lazy)	0.356	2.184	3980
Local Reluctant Splitting (Not Lazy)	0.428	15.962	33740
Local Reluctant Splitting (Lazy)	0.289	2.371	3604
Global Reluctant Splitting (Not Lazy)			
Global Reluctant Splitting (Lazy)	0.283	2.917	3796
Divided No Splitting (Not Lazy)	0.462	40.998	91292
Divided No Splitting (Lazy)	0.357	2.193	3980
Divided Local Reluctant Splitting (Not Lazy)	0.365	38.435	75676
Divided Local Reluctant Splitting (Lazy)	0.29	2.37	3604
Divided Global Reluctant Splitting (Not Lazy)			
Divided Global Reluctant Splitting (Lazy)	0.282	2.778	3796
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)			
Eager Splitting and Tail Merging (Not Lazy)			
Eager Splitting and Tail Merging (Lazy)			
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)			
Type Predict for Vectors (with Local Splitting)	0.29	2.36	3604
Type Predict for Vectors (with Global Splitting)	0.282	2.768	3796
Vectors Are More Common (with Local Splitting)	0.29	2.37	3604
Without Inlining	29.753	3.797	3796
Without In-Line Caching	0.294	2.376	3604
Without Compile-Time Lookup Caching	0.294	2.486	9280
Without Customization	2.506	4.284	3604
Without Value-Based Type Analysis	0.657	3.463	17148
Without Range Analysis	0.304	2.736	8716
Without Type Prediction	4.006	3.404	3604
Without Deferred Block Creation	4.449	4.551	3608
Without Exposed Block Analysis	0.449	5.261	7692
Without CSE	0.281	2.199	8888
Without CSE of Constants	0.276	2.304	9808
Without CSE of Arithmetic Operations	0.29	2.34	4400
Without CSE of Memory References	0.294	2.316	3640
Without CSE of Memory Cell Type Information	0.291	2.389	3476
Without CSE of Memory Cell Array Bounds Checking	0.291	2.369	3604
Without Eliminating Unneeded Computations	0.296	2.394	3748
Without Delay Slot Filling	0.341	2.269	3676
No Integer Type Tests	0.279	2.311	3604
No Boolean Type Tests	0.294	2.376	3624
No Overflow Checking	0.289	2.331	4032
No Array Bounds Checking	0.262	2.318	3212
No Block Zapping	0.29	2.31	3576
Early Block Zapping	0.29	2.41	3428
Late Block Zapping	0.289	2.371	3604
No Primitive Failure Checking	0.287	2.333	3496
No Debugger-Visible Names	0.29	2.38	2948
No Interrupt Checking at Calls	0.289	2.351	3604
No Interrupt Checking at _Restarts	0.262	2.088	3508
No LRU Compiled Method Reclamation Support	0.288	2.362	3312
Fast	0.259	1.961	3556
Fastest	0.218	1.782	3568

C.17 bubble

language/configuration	run	compile	space
Optimized C	0.195	2.9	2700
Smalltalk-80	2.83		
T (normal)	1	2.7	4700
T (integer only)	0.34	1.3	1900
Normal SELF	0.271	1.669	2428
No Splitting (Not Lazy)	0.849	49.191	113356
No Splitting (Lazy)	0.375	1.615	2752
Local Reluctant Splitting (Not Lazy)	0.486	5.364	10780
Local Reluctant Splitting (Lazy)	0.271	1.669	2428
Global Reluctant Splitting (Not Lazy)	0.439	6.651	12952
Global Reluctant Splitting (Lazy)	0.272	1.808	2572
Divided No Splitting (Not Lazy)	0.407	44.173	105364
Divided No Splitting (Lazy)	0.375	1.615	2752
Divided Local Reluctant Splitting (Not Lazy)	0.325	8.025	15544
Divided Local Reluctant Splitting (Lazy)	0.272	1.668	2428
Divided Global Reluctant Splitting (Not Lazy)	0.325	9.595	18012
Divided Global Reluctant Splitting (Lazy)	0.272	1.818	2572
Eager Splitting (Not Lazy)	0.291	19.319	38568
Eager Splitting (Lazy)	0.268	6.222	9616
Eager Splitting and Tail Merging (Not Lazy)	0.292	10.088	19984
Eager Splitting and Tail Merging (Lazy)	0.268	3.602	5400
Eager Splitting and Requirements Analysis (Not Lazy)	0.357	61.083	114656
Eager Splitting and Requirements Analysis (Lazy)	0.275	3.835	2852
Type Predict for Vectors (with Local Splitting)	0.271	1.669	2428
Type Predict for Vectors (with Global Splitting)	0.272	1.808	2572
Vectors Are More Common (with Local Splitting)	0.272	1.668	2428
Without Inlining	37.954	3.416	2572
Without In-Line Caching	0.272	1.678	2428
Without Compile-Time Lookup Caching	0.272	1.748	6836
Without Customization	6.37	3.69	2428
Without Value-Based Type Analysis	0.865	2.095	14764
Without Range Analysis	0.28	2.67	5376
Without Type Prediction	5.832	2.128	2428
Without Deferred Block Creation	8.735	4.985	2428
Without Exposed Block Analysis	0.404	4.296	4384
Without CSE	0.409	1.621	6496
Without CSE of Constants	0.279	1.651	7060
Without CSE of Arithmetic Operations	0.338	1.692	3648
Without CSE of Memory References	0.366	1.664	2856
Without CSE of Memory Cell Type Information	0.319	1.711	2444
Without CSE of Memory Cell Array Bounds Checking	0.28	1.69	2564
Without Eliminating Unneeded Computations	0.282	1.688	2748
Without Delay Slot Filling	0.353	1.597	2576
No Integer Type Tests	0.249	1.621	2476
No Boolean Type Tests	0.272	1.688	2464
No Overflow Checking	0.271	1.659	2716
No Array Bounds Checking	0.229	1.641	2188
No Block Zapping	0.273	1.607	2404
Early Block Zapping	0.271	1.709	2292
Late Block Zapping	0.271	1.669	2428
No Primitive Failure Checking	0.272	1.638	2348
No Debugger-Visible Names	0.272	1.668	2144
No Interrupt Checking at Calls	0.272	1.658	2428
No Interrupt Checking at _Restarts	0.257	1.543	2368
No LRU Compiled Method Reclamation Support	0.272	1.678	2276
Fast	0.256	1.444	2380
Fastest	0.191	1.289	2388

C.18 tree

language/configuration	run	compile	space
Optimized C	0.869	3.9	3300
Smalltalk-80	1.658		
T (normal)	1.25	3.5	5800
T (integer only)	0.96	2.4	3600
Normal SELF	1.114	1.566	3260
No Splitting (Not Lazy)	1.333	13.057	29736
No Splitting (Lazy)	1.205	1.555	3672
Local Reluctant Splitting (Not Lazy)	1.164	4.676	10624
Local Reluctant Splitting (Lazy)	1.114	1.566	3260
Global Reluctant Splitting (Not Lazy)	1.232	5.618	12792
Global Reluctant Splitting (Lazy)	1.116	1.604	3272
Divided No Splitting (Not Lazy)	1.274	14.456	33260
Divided No Splitting (Lazy)	1.233	1.557	3672
Divided Local Reluctant Splitting (Not Lazy)	1.16	7.4	16184
Divided Local Reluctant Splitting (Lazy)	1.114	1.576	3260
Divided Global Reluctant Splitting (Not Lazy)	1.242	8.438	18344
Divided Global Reluctant Splitting (Lazy)	1.114	1.606	3272
Eager Splitting (Not Lazy)	1.231	17.169	37792
Eager Splitting (Lazy)	1.199	5.131	10092
Eager Splitting and Tail Merging (Not Lazy)	1.215	8.385	18148
Eager Splitting and Tail Merging (Lazy)	1.117	2.593	4436
Eager Splitting and Requirements Analysis (Not Lazy)	1.231	23.489	41184
Eager Splitting and Requirements Analysis (Lazy)	1.196	4.024	4328
Type Predict for Vectors (with Local Splitting)	1.114	1.576	3260
Type Predict for Vectors (with Global Splitting)	1.116	1.594	3272
Vectors Are More Common (with Local Splitting)	1.115	1.575	3260
Without Inlining	22.771	2.529	3272
Without In-Line Caching	1.124	1.576	3260
Without Compile-Time Lookup Caching	1.127	1.603	8024
Without Customization	2.004	3.096	3260
Without Value-Based Type Analysis	1.324	1.846	16632
Without Range Analysis	1.12	2.18	7548
Without Type Prediction	12.748	1.762	3260
Without Deferred Block Creation	6.801	1.399	3260
Without Exposed Block Analysis	1.213	2.767	4628
Without CSE	1.12	1.52	6512
Without CSE of Constants	1.116	1.544	5408
Without CSE of Arithmetic Operations	1.115	1.575	4116
Without CSE of Memory References	1.119	1.561	3524
Without CSE of Memory Cell Type Information	1.116	1.594	3344
Without CSE of Memory Cell Array Bounds Checking	1.115	1.575	3260
Without Eliminating Unneeded Computations	1.137	1.583	3412
Without Delay Slot Filling	1.197	1.513	3344
No Integer Type Tests	1.092	1.538	3260
No Boolean Type Tests	1.124	1.566	3280
No Overflow Checking	1.115	1.545	3768
No Array Bounds Checking	1.114	1.576	2988
No Block Zapping	1.116	1.584	3220
Early Block Zapping	1.115	1.645	3176
Late Block Zapping	1.114	1.566	3260
No Primitive Failure Checking	1.113	1.547	3124
No Debugger-Visible Names	1.116	1.564	3212
No Interrupt Checking at Calls	1.106	1.544	3160
No Interrupt Checking at _Restarts	1.115	1.525	3200
No LRU Compiled Method Reclamation Support	1.095	1.555	3260
Fast	1.094	1.456	3260
Fastest	1.142	1.268	3260

C.19 oo-perm

language/configuration	run	compile	space
Optimized C	0.11	2.8	2400
Smalltalk-80	1.381		
T (normal)	1.16	2.1	3600
T (integer only)	0.28	1	1300
Normal SELF	0.2	1.82	2040
No Splitting (Not Lazy)	0.419	30.081	54536
No Splitting (Lazy)	0.24	2.44	3168
Local Reluctant Splitting (Not Lazy)	0.285	6.365	10400
Local Reluctant Splitting (Lazy)	0.2	1.82	2040
Global Reluctant Splitting (Not Lazy)	0.217	5.483	8280
Global Reluctant Splitting (Lazy)	0.182	1.948	2136
Divided No Splitting (Not Lazy)	0.279	18.181	37672
Divided No Splitting (Lazy)	0.241	2.459	3168
Divided Local Reluctant Splitting (Not Lazy)	0.235	13.495	24372
Divided Local Reluctant Splitting (Lazy)	0.201	1.829	2040
Divided Global Reluctant Splitting (Not Lazy)	0.216	23.724	39156
Divided Global Reluctant Splitting (Lazy)	0.182	1.958	2136
Eager Splitting (Not Lazy)	0.21	41.19	60072
Eager Splitting (Lazy)	0.185	25.415	29152
Eager Splitting and Tail Merging (Not Lazy)	0.331	21.779	33284
Eager Splitting and Tail Merging (Lazy)	0.184	10.936	13024
Eager Splitting and Requirements Analysis (Not Lazy)	0.241	16.519	26340
Eager Splitting and Requirements Analysis (Lazy)	0.183	4.067	2132
Type Predict for Vectors (with Local Splitting)	0.201	1.809	2040
Type Predict for Vectors (with Global Splitting)	0.183	1.947	2136
Vectors Are More Common (with Local Splitting)	0.201	1.819	2040
Without Inlining	22.891	2.929	2136
Without In-Line Caching	0.201	1.829	2040
Without Compile-Time Lookup Caching	0.201	1.849	4236
Without Customization	2.891	2.409	2040
Without Value-Based Type Analysis	0.729	2.461	12664
Without Range Analysis	0.204	2.676	3924
Without Type Prediction	3.769	1.961	2040
Without Deferred Block Creation	4.256	5.334	2040
Without Exposed Block Analysis	0.625	7.605	4308
Without CSE	0.248	1.732	8908
Without CSE of Constants	0.322	1.818	8344
Without CSE of Arithmetic Operations	0.203	1.807	2828
Without CSE of Memory References	0.243	1.767	2064
Without CSE of Memory Cell Type Information	0.201	1.819	2040
Without CSE of Memory Cell Array Bounds Checking	0.21	1.87	2056
Without Eliminating Unneeded Computations	0.21	2.38	2048
Without Delay Slot Filling	0.239	1.751	2040
No Integer Type Tests	0.192	1.808	2184
No Boolean Type Tests	0.202	1.818	2040
No Overflow Checking	0.198	1.812	2304
No Array Bounds Checking	0.181	1.739	1944
No Block Zapping	0.201	1.819	2016
Early Block Zapping	0.201	1.899	1988
Late Block Zapping	0.2	1.82	2040
No Primitive Failure Checking	0.201	1.819	1952
No Debugger-Visible Names	0.201	1.819	1892
No Interrupt Checking at Calls	0.196	1.804	2040
No Interrupt Checking at _Restarts	0.197	1.663	1980
No LRU Compiled Method Reclamation Support	0.19	1.82	1760
Fast	0.187	1.573	2036
Fastest	0.154	1.456	2040

C.20 oo-towers

language/configuration	run	compile	space
Optimized C	0.191	3.7	3100
Smalltalk-80	1.032		
T (normal)	0.73	3.4	6500
T (integer only)	0.36	2.3	5900
Normal SELF	0.223	1.077	2588
No Splitting (Not Lazy)	0.325	5.135	14612
No Splitting (Lazy)	0.247	1.173	2952
Local Reluctant Splitting (Not Lazy)	0.269	3.811	10624
Local Reluctant Splitting (Lazy)	0.223	1.077	2588
Global Reluctant Splitting (Not Lazy)	0.263	6.837	16204
Global Reluctant Splitting (Lazy)	0.231	1.089	2612
Divided No Splitting (Not Lazy)	0.258	6.322	19244
Divided No Splitting (Lazy)	0.246	1.194	2952
Divided Local Reluctant Splitting (Not Lazy)	0.24	5.8	16420
Divided Local Reluctant Splitting (Lazy)	0.223	1.087	2588
Divided Global Reluctant Splitting (Not Lazy)	0.249	6.521	17064
Divided Global Reluctant Splitting (Lazy)	0.231	1.089	2612
Eager Splitting (Not Lazy)	0.244	9.816	26940
Eager Splitting (Lazy)	0.236	2.434	5484
Eager Splitting and Tail Merging (Not Lazy)	0.24	6.18	17180
Eager Splitting and Tail Merging (Lazy)	0.25	1.44	3240
Eager Splitting and Requirements Analysis (Not Lazy)	0.258	7.192	18456
Eager Splitting and Requirements Analysis (Lazy)	0.23	1.72	2660
Type Predict for Vectors (with Local Splitting)	0.223	1.077	2588
Type Predict for Vectors (with Global Splitting)	0.231	1.089	2612
Vectors Are More Common (with Local Splitting)	0.223	1.067	2588
Without Inlining	3.578	2.472	2612
Without In-Line Caching	0.223	1.077	2588
Without Compile-Time Lookup Caching	0.224	1.076	4500
Without Customization	1.52	1.55	2588
Without Value-Based Type Analysis	0.324	1.316	10780
Without Range Analysis	0.223	1.237	3812
Without Type Prediction	1.943	1.227	2588
Without Deferred Block Creation	1.625	1.685	2588
Without Exposed Block Analysis	0.224	1.536	3536
Without CSE	0.231	0.979	4656
Without CSE of Constants	0.225	1.055	3416
Without CSE of Arithmetic Operations	0.224	1.076	2872
Without CSE of Memory References	0.227	1.003	2464
Without CSE of Memory Cell Type Information	0.223	1.067	2624
Without CSE of Memory Cell Array Bounds Checking	0.223	1.077	2612
Without Eliminating Unneeded Computations	0.225	1.085	2400
Without Delay Slot Filling	0.253	1.027	2588
No Integer Type Tests	0.209	1.051	2588
No Boolean Type Tests	0.224	1.076	2592
No Overflow Checking	0.221	1.049	3000
No Array Bounds Checking	0.218	1.072	2340
No Block Zapping	0.223	1.077	2556
Early Block Zapping	0.223	1.107	2352
Late Block Zapping	0.223	1.077	2588
No Primitive Failure Checking	0.263	1.027	2476
No Debugger-Visible Names	0.223	1.067	2572
No Interrupt Checking at Calls	0.217	1.053	2588
No Interrupt Checking at _Restarts	0.223	1.047	2476
No LRU Compiled Method Reclamation Support	0.211	1.069	2524
Fast	0.211	0.999	2584
Fastest	0.191	0.889	2588

C.21 oo-queens

language/configuration	run	compile	space
Optimized C	0.092	3.1	2500
Smalltalk-80	0.72		
T (normal)	0.64	3.4	5200
T (integer only)	0.24	1.6	1700
Normal SELF	0.147	3.973	4524
No Splitting (Not Lazy)	0.316	38.254	71652
No Splitting (Lazy)	0.187	3.803	4896
Local Reluctant Splitting (Not Lazy)	0.179	16.311	25100
Local Reluctant Splitting (Lazy)	0.147	3.973	4524
Global Reluctant Splitting (Not Lazy)			
Global Reluctant Splitting (Lazy)	0.141	3.119	3696
Divided No Splitting (Not Lazy)	0.204	50.326	86244
Divided No Splitting (Lazy)	0.186	3.814	4896
Divided Local Reluctant Splitting (Not Lazy)	0.168	52.092	78468
Divided Local Reluctant Splitting (Lazy)	0.147	4.003	4524
Divided Global Reluctant Splitting (Not Lazy)	0.164	37.206	57100
Divided Global Reluctant Splitting (Lazy)	0.141	3.159	3696
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)	0.132	13.338	13312
Eager Splitting and Tail Merging (Not Lazy)	0.172	53.808	78940
Eager Splitting and Tail Merging (Lazy)	0.133	8.097	8572
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)			
Type Predict for Vectors (with Local Splitting)	0.147	3.973	4524
Type Predict for Vectors (with Global Splitting)	0.141	3.109	3696
Vectors Are More Common (with Local Splitting)	0.147	3.973	4524
Without Inlining	21.28	2.67	3696
Without In-Line Caching	0.147	3.993	4524
Without Compile-Time Lookup Caching	0.147	4.213	9244
Without Customization	1.529	5.271	4524
Without Value-Based Type Analysis	0.314	2.396	11964
Without Range Analysis	0.156	4.664	3500
Without Type Prediction	3.418	2.152	4524
Without Deferred Block Creation	3.153	7.427	4524
Without Exposed Block Analysis	0.345	8.135	3496
Without CSE	0.144	3.646	13136
Without CSE of Constants	0.145	3.935	11964
Without CSE of Arithmetic Operations	0.151	3.999	5484
Without CSE of Memory References	0.145	3.765	4496
Without CSE of Memory Cell Type Information	0.147	3.973	4668
Without CSE of Memory Cell Array Bounds Checking	0.145	3.865	4692
Without Eliminating Unneeded Computations	0.148	4.572	4232
Without Delay Slot Filling	0.18	3.83	4524
No Integer Type Tests	0.147	3.923	4232
No Boolean Type Tests	0.137	3.873	4524
No Overflow Checking	0.143	3.837	5108
No Array Bounds Checking	0.142	3.838	4356
No Block Zapping	0.147	4.013	4500
Early Block Zapping	0.147	4.263	4472
Late Block Zapping	0.147	3.973	4524
No Primitive Failure Checking	0.147	3.983	4428
No Debugger-Visible Names	0.148	3.952	4176
No Interrupt Checking at Calls	0.146	3.944	4148
No Interrupt Checking at _Restarts	0.141	3.889	4100
No LRU Compiled Method Reclamation Support	0.145	3.975	4164
Fast	0.139	3.681	4524
Fastest	0.12	3.21	4524

C.22 oo-intmm

language/configuration	run	compile	space
Optimized C	0.278	2.9	2500
Smalltalk-80	4.638		
T (normal)	2.5	3	5400
T (integer only)	0.9	1.5	2100
Normal SELF	0.691	2.239	2728
No Splitting (Not Lazy)	0.878	56.312	85744
No Splitting (Lazy)	0.72	2.83	3680
Local Reluctant Splitting (Not Lazy)	0.752	20.318	29908
Local Reluctant Splitting (Lazy)	0.691	2.239	2728
Global Reluctant Splitting (Not Lazy)	0.729	11.801	20104
Global Reluctant Splitting (Lazy)	0.69	2.25	2740
Divided No Splitting (Not Lazy)	0.746	53.534	83716
Divided No Splitting (Lazy)	0.729	2.851	3680
Divided Local Reluctant Splitting (Not Lazy)	0.902	35.178	51796
Divided Local Reluctant Splitting (Lazy)	0.69	2.23	2728
Divided Global Reluctant Splitting (Not Lazy)	0.717	35.473	56084
Divided Global Reluctant Splitting (Lazy)	0.69	2.24	2740
Eager Splitting (Not Lazy)	0.716	80.774	113524
Eager Splitting (Lazy)	0.695	49.565	63048
Eager Splitting and Tail Merging (Not Lazy)	0.71	39.82	57368
Eager Splitting and Tail Merging (Lazy)	0.696	24.614	31852
Eager Splitting and Requirements Analysis (Not Lazy)	0.738	47.472	64480
Eager Splitting and Requirements Analysis (Lazy)	0.694	4.936	2748
Type Predict for Vectors (with Local Splitting)	0.577	4.223	4380
Type Predict for Vectors (with Global Splitting)	0.518	4.862	6268
Vectors Are More Common (with Local Splitting)	0.508	4.672	4608
Without Inlining	27.52	2.34	6268
Without In-Line Caching	0.691	2.239	4608
Without Compile-Time Lookup Caching	0.691	2.259	5724
Without Customization	6.772	2.218	4380
Without Value-Based Type Analysis	1.203	2.517	10840
Without Range Analysis	0.702	4.638	3524
Without Type Prediction	0.798	2.352	2728
Without Deferred Block Creation	4.252	5.128	2728
Without Exposed Block Analysis	1.185	9.775	3864
Without CSE	0.704	2.126	8224
Without CSE of Constants	0.69	2.23	12884
Without CSE of Arithmetic Operations	0.69	2.21	5024
Without CSE of Memory References	0.703	2.167	2748
Without CSE of Memory Cell Type Information	0.689	2.231	2728
Without CSE of Memory Cell Array Bounds Checking	0.691	2.219	2728
Without Eliminating Unneeded Computations	0.697	2.253	2744
Without Delay Slot Filling	0.785	2.135	2728
No Integer Type Tests	0.665	2.205	2728
No Boolean Type Tests	0.691	2.239	2728
No Overflow Checking	0.687	2.183	3164
No Array Bounds Checking	0.64	2.18	2584
No Block Zapping	0.69	2.27	2672
Early Block Zapping	0.691	2.349	2588
Late Block Zapping	0.691	2.239	2728
No Primitive Failure Checking	0.677	2.173	2504
No Debugger-Visible Names	0.692	2.198	2524
No Interrupt Checking at Calls	0.679	2.171	2728
No Interrupt Checking at _Restarts	0.691	2.039	2588
No LRU Compiled Method Reclamation Support	0.656	2.214	2568
Fast	0.648	1.942	2728
Fastest	0.555	1.775	2728

C.23 oo-quick

language/configuration	run	compile	space
Optimized C	0.13	3	2800
Smalltalk-80	2.705		
T (normal)	1.545	3.4	5800
T (integer only)	0.65	1.7	2700
Normal SELF	0.257	2.933	3964
No Splitting (Not Lazy)	0.53	21.77	48916
No Splitting (Lazy)	0.318	2.712	4312
Local Reluctant Splitting (Not Lazy)	0.429	19.131	38632
Local Reluctant Splitting (Lazy)	0.257	2.933	3964
Global Reluctant Splitting (Not Lazy)			
Global Reluctant Splitting (Lazy)	0.252	3.328	4556
Divided No Splitting (Not Lazy)	0.373	46.837	100160
Divided No Splitting (Lazy)	0.316	2.734	4312
Divided Local Reluctant Splitting (Not Lazy)	0.324	52.336	98508
Divided Local Reluctant Splitting (Lazy)	0.257	2.923	3964
Divided Global Reluctant Splitting (Not Lazy)			
Divided Global Reluctant Splitting (Lazy)	0.252	3.328	4556
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)			
Eager Splitting and Tail Merging (Not Lazy)			
Eager Splitting and Tail Merging (Lazy)			
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)			
Type Predict for Vectors (with Local Splitting)	0.257	2.933	3964
Type Predict for Vectors (with Global Splitting)	0.251	3.339	4556
Vectors Are More Common (with Local Splitting)	0.258	2.942	3964
Without Inlining	30.654	3.906	4556
Without In-Line Caching	0.271	2.919	3964
Without Compile-Time Lookup Caching	0.27	3.09	8756
Without Customization	2.448	4.032	3964
Without Value-Based Type Analysis	0.734	4.326	17436
Without Range Analysis	0.262	2.838	9332
Without Type Prediction	3.884	3.986	3964
Without Deferred Block Creation	4.439	5.671	3964
Without Exposed Block Analysis	0.36	5.45	9036
Without CSE	0.289	3.381	10396
Without CSE of Constants	0.248	2.872	9632
Without CSE of Arithmetic Operations	0.257	2.883	4156
Without CSE of Memory References	0.297	3.473	5228
Without CSE of Memory Cell Type Information	0.26	3.46	3868
Without CSE of Memory Cell Array Bounds Checking	0.26	3.02	3964
Without Eliminating Unneeded Computations	0.28	2.96	5300
Without Delay Slot Filling	0.32	2.81	4656
No Integer Type Tests	0.244	2.876	4252
No Boolean Type Tests	0.277	2.933	4004
No Overflow Checking	0.255	2.895	4476
No Array Bounds Checking	0.24	2.83	3612
No Block Zapping	0.257	2.883	3932
Early Block Zapping	0.257	3.013	3736
Late Block Zapping	0.257	2.933	3964
No Primitive Failure Checking	0.254	2.866	3852
No Debugger-Visible Names	0.257	2.923	3300
No Interrupt Checking at Calls	0.256	2.914	3964
No Interrupt Checking at _Restarts	0.237	2.653	3836
No LRU Compiled Method Reclamation Support	0.255	2.925	3568
Fast	0.234	2.516	3916
Fastest	0.199	2.261	3924

C.24 oo-bubble

language/configuration	run	compile	space
Optimized C	0.195	2.9	2700
Smalltalk-80	2.587		
T (normal)	1	2.7	4700
T (integer only)	0.34	1.3	1900
Normal SELF	0.235	2.195	2644
No Splitting (Not Lazy)	0.773	63.097	98548
No Splitting (Lazy)	0.331	2.119	2924
Local Reluctant Splitting (Not Lazy)	0.435	8.785	14836
Local Reluctant Splitting (Lazy)	0.235	2.195	2644
Global Reluctant Splitting (Not Lazy)	0.394	58.526	104520
Global Reluctant Splitting (Lazy)	0.235	2.475	3188
Divided No Splitting (Not Lazy)	0.368	57.582	96232
Divided No Splitting (Lazy)	0.332	2.128	2924
Divided Local Reluctant Splitting (Not Lazy)	0.289	21.091	35112
Divided Local Reluctant Splitting (Lazy)	0.235	2.195	2644
Divided Global Reluctant Splitting (Not Lazy)			
Divided Global Reluctant Splitting (Lazy)	0.235	2.475	3188
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)	0.258	7.832	7816
Eager Splitting and Tail Merging (Not Lazy)	0.258	28.252	44788
Eager Splitting and Tail Merging (Lazy)	0.231	4.449	4108
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)	0.238	6.842	3452
Type Predict for Vectors (with Local Splitting)	0.235	2.185	2644
Type Predict for Vectors (with Global Splitting)	0.234	2.466	3188
Vectors Are More Common (with Local Splitting)	0.235	2.205	2644
Without Inlining	48.937	4.183	3188
Without In-Line Caching	0.235	2.195	2644
Without Compile-Time Lookup Caching	0.235	2.275	5816
Without Customization	5.831	3.259	2644
Without Value-Based Type Analysis	1.162	3.018	15400
Without Range Analysis	0.243	2.617	5556
Without Type Prediction	5.71	2.6	2644
Without Deferred Block Creation	9.001	6.209	2644
Without Exposed Block Analysis	0.501	6.759	5312
Without CSE	0.444	2.736	7540
Without CSE of Constants	0.235	2.165	8528
Without CSE of Arithmetic Operations	0.293	2.177	3084
Without CSE of Memory References	0.424	2.786	4060
Without CSE of Memory Cell Type Information	0.275	2.735	2640
Without CSE of Memory Cell Array Bounds Checking	0.259	2.311	2704
Without Eliminating Unneeded Computations	0.245	2.215	4032
Without Delay Slot Filling	0.319	2.101	3360
No Integer Type Tests	0.211	2.149	2964
No Boolean Type Tests	0.235	2.195	2692
No Overflow Checking	0.234	2.166	2980
No Array Bounds Checking	0.197	2.143	2476
No Block Zapping	0.235	2.155	2612
Early Block Zapping	0.234	2.276	2452
Late Block Zapping	0.235	2.195	2644
No Primitive Failure Checking	0.235	2.145	2532
No Debugger-Visible Names	0.235	2.185	2404
No Interrupt Checking at Calls	0.234	2.166	2644
No Interrupt Checking at _Restarts	0.219	2.011	2544
No LRU Compiled Method Reclamation Support	0.235	2.205	2524
Fast	0.219	1.881	2596
Fastest	0.157	1.693	2604

C.25 oo-tree

language/configuration	run	compile	space
Optimized C	0.869	3.9	3300
Smalltalk-80	1.101		
T (normal)	1.25	3.5	5800
T (integer only)	0.96	2.4	3600
Normal SELF	0.874	2.476	4016
No Splitting (Not Lazy)	1.143	15.377	32460
No Splitting (Lazy)	0.984	2.406	4696
Local Reluctant Splitting (Not Lazy)	0.95	9.01	17260
Local Reluctant Splitting (Lazy)	0.874	2.476	4016
Global Reluctant Splitting (Not Lazy)	1.03	51.22	106636
Global Reluctant Splitting (Lazy)	0.876	2.754	4428
Divided No Splitting (Not Lazy)	1.041	21.419	45016
Divided No Splitting (Lazy)	0.984	2.406	4696
Divided Local Reluctant Splitting (Not Lazy)	0.937	21.693	38604
Divided Local Reluctant Splitting (Lazy)	0.875	2.485	4016
Divided Global Reluctant Splitting (Not Lazy)			
Divided Global Reluctant Splitting (Lazy)	0.875	2.745	4428
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)	0.951	8.459	10776
Eager Splitting and Tail Merging (Not Lazy)	0.977	29.053	48396
Eager Splitting and Tail Merging (Lazy)	0.883	4.887	5984
Eager Splitting and Requirements Analysis (Not Lazy)	0.983	35.827	55792
Eager Splitting and Requirements Analysis (Lazy)	1.0	7.18	5304
Type Predict for Vectors (with Local Splitting)	0.874	2.496	4016
Type Predict for Vectors (with Global Splitting)	0.876	2.754	4428
Vectors Are More Common (with Local Splitting)	0.875	2.485	4016
Without Inlining	26.367	3.253	4428
Without In-Line Caching	0.877	2.493	4016
Without Compile-Time Lookup Caching	0.876	2.554	9676
Without Customization	2.263	3.307	4016
Without Value-Based Type Analysis	1.181	3.159	19936
Without Range Analysis	0.878	2.642	8200
Without Type Prediction	8.63	2.71	4016
Without Deferred Block Creation	7.612	2.598	4016
Without Exposed Block Analysis	2.255	3.445	6940
Without CSE	0.903	2.907	9148
Without CSE of Constants	0.875	2.435	6368
Without CSE of Arithmetic Operations	0.875	2.475	4372
Without CSE of Memory References	0.903	3.007	5312
Without CSE of Memory Cell Type Information	0.88	3.03	4024
Without CSE of Memory Cell Array Bounds Checking	0.878	2.552	4016
Without Eliminating Unneeded Computations	0.883	2.517	5288
Without Delay Slot Filling	0.939	2.391	4708
No Integer Type Tests	0.862	2.438	4256
No Boolean Type Tests	0.877	2.503	4056
No Overflow Checking	0.873	2.467	4616
No Array Bounds Checking	0.885	2.475	3656
No Block Zapping	0.875	2.465	3960
Early Block Zapping	0.875	2.585	3876
Late Block Zapping	0.874	2.476	4016
No Primitive Failure Checking	0.871	2.459	3848
No Debugger-Visible Names	0.876	2.484	3956
No Interrupt Checking at Calls	0.866	2.454	3980
No Interrupt Checking at _Restarts	0.875	2.425	3916
No LRU Compiled Method Reclamation Support	0.856	2.494	3968
Fast	0.853	2.287	4000
Fastest	0.905	2.045	4016

C.26 puzzle

language/configuration	run	compile	space
Optimized C	0.69	9.1	5000
Smalltalk-80	16.058		
T (normal)	4.5	24	32000
T (integer only)	3.1	9.1	9900
Normal SELF	3.107	19.293	16688
No Splitting (Not Lazy)			
No Splitting (Lazy)	3.538	19.392	19348
Local Reluctant Splitting (Not Lazy)			
Local Reluctant Splitting (Lazy)	3.107	19.293	16688
Global Reluctant Splitting (Not Lazy)			
Global Reluctant Splitting (Lazy)	3.115	19.785	17788
Divided No Splitting (Not Lazy)			
Divided No Splitting (Lazy)	3.535	19.465	19348
Divided Local Reluctant Splitting (Not Lazy)			
Divided Local Reluctant Splitting (Lazy)	3.11	19.3	16688
Divided Global Reluctant Splitting (Not Lazy)			
Divided Global Reluctant Splitting (Lazy)	3.116	19.784	17788
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)			
Eager Splitting and Tail Merging (Not Lazy)			
Eager Splitting and Tail Merging (Lazy)			
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)			
Type Predict for Vectors (with Local Splitting)	2.394	21.566	19232
Type Predict for Vectors (with Global Splitting)	2.398	23.522	22144
Vectors Are More Common (with Local Splitting)	2.431	19.889	17532
Without Inlining	506.631	14.849	22144
Without In-Line Caching	3.102	19.438	17532
Without Compile-Time Lookup Caching	3.099	19.911	33832
Without Customization	21.77	25.59	19232
Without Value-Based Type Analysis	5.139	19.541	46652
Without Range Analysis	3.111	71.609	19688
Without Type Prediction	21.622	18.878	16688
Without Deferred Block Creation	39.234	29.576	16688
Without Exposed Block Analysis	4.453	256.907	20968
Without CSE	3.029	18.681	61728
Without CSE of Constants	3.026	19.334	299328
Without CSE of Arithmetic Operations	3.111	19.069	55240
Without CSE of Memory References	3.107	18.983	16536
Without CSE of Memory Cell Type Information	3.105	19.335	16616
Without CSE of Memory Cell Array Bounds Checking	3.104	19.236	16688
Without Eliminating Unneeded Computations	3.228	20.162	16616
Without Delay Slot Filling	3.773	18.587	16688
No Integer Type Tests	2.995	19.345	16688
No Boolean Type Tests	2.917	19.363	16696
No Overflow Checking	3.066	18.844	19308
No Array Bounds Checking	2.851	19.189	16088
No Block Zapping	3.11	19.3	16512
Early Block Zapping	3.108	20.242	16520
Late Block Zapping	3.107	19.293	16688
No Primitive Failure Checking	3.11	19.3	16000
No Debugger-Visible Names	3.107	19.203	14460
No Interrupt Checking at Calls	3.009	19.161	16144
No Interrupt Checking at _Restarts	2.989	17.341	15428
No LRU Compiled Method Reclamation Support	2.917	19.363	16084
Fast	2.767	16.433	16664
Fastest	2.21	15.41	16688

C.27 richards

language/configuration	run	compile	space
Optimized C	0.73	13.4	6100
Smalltalk-80	7.74		
T (normal)	9.8	11.5	18000
T (integer only)	8.1	13.7	18000
Normal SELF	2.27	4.39	11592
No Splitting (Not Lazy)	2.86	14.52	36996
No Splitting (Lazy)	2.536	4.274	12724
Local Reluctant Splitting (Not Lazy)	2.462	9.658	24872
Local Reluctant Splitting (Lazy)	2.27	4.39	11592
Global Reluctant Splitting (Not Lazy)	2.652	14.268	35980
Global Reluctant Splitting (Lazy)	2.292	5.388	11992
Divided No Splitting (Not Lazy)	2.692	18.538	46820
Divided No Splitting (Lazy)	2.521	4.369	12724
Divided Local Reluctant Splitting (Not Lazy)	2.306	13.664	33996
Divided Local Reluctant Splitting (Lazy)	2.282	4.368	11592
Divided Global Reluctant Splitting (Not Lazy)	2.348	16.872	37908
Divided Global Reluctant Splitting (Lazy)	2.269	5.411	11992
Eager Splitting (Not Lazy)	2.551	135.679	266876
Eager Splitting (Lazy)	2.311	84.189	166132
Eager Splitting and Tail Merging (Not Lazy)	2.504	89.966	80984
Eager Splitting and Tail Merging (Lazy)	2.446	75.254	45056
Eager Splitting and Requirements Analysis (Not Lazy)	2.465	26.685	53748
Eager Splitting and Requirements Analysis (Lazy)	2.544	8.846	15288
Type Predict for Vectors (with Local Splitting)	2.156	4.914	12452
Type Predict for Vectors (with Global Splitting)	2.308	6.122	13240
Vectors Are More Common (with Local Splitting)	2.204	4.886	12168
Without Inlining	127.488	10.342	13240
Without In-Line Caching	2.182	4.438	12168
Without Compile-Time Lookup Caching	2.185	4.465	25100
Without Customization	5.829	6.521	12452
Without Value-Based Type Analysis	2.747	4.953	41052
Without Range Analysis	2.286	4.934	16236
Without Type Prediction	39.554	6.846	11592
Without Deferred Block Creation	11.461	9.039	11592
Without Exposed Block Analysis	2.625	5.925	14680
Without CSE	2.372	3.948	17228
Without CSE of Constants	2.403	4.187	14176
Without CSE of Arithmetic Operations	2.284	4.366	12436
Without CSE of Memory References	2.34	4.14	11896
Without CSE of Memory Cell Type Information	2.235	4.395	11848
Without CSE of Memory Cell Array Bounds Checking	2.285	4.345	11592
Without Eliminating Unneeded Computations	2.365	4.965	11640
Without Delay Slot Filling	2.59	4.27	11688
No Integer Type Tests	2.209	4.371	11592
No Boolean Type Tests	2.184	4.396	11592
No Overflow Checking	2.209	4.341	13440
No Array Bounds Checking	2.185	4.385	11136
No Block Zapping	2.301	4.419	11408
Early Block Zapping	2.325	4.495	11536
Late Block Zapping	2.27	4.39	11592
No Primitive Failure Checking	2.269	4.361	10984
No Debugger-Visible Names	2.27	4.34	11520
No Interrupt Checking at Calls	2.135	4.275	11340
No Interrupt Checking at _Restarts	2.313	4.307	11400
No LRU Compiled Method Reclamation Support	2.11	4.34	11536
Fast	2.178	4.162	11592
Fastest	1.914	3.946	11592

C.28 parser

language/configuration	run	compile	space
Optimized C			
Smalltalk-80			
T (normal)			
T (integer only)			
Normal SELF	0.076	55.714	128960
No Splitting (Not Lazy)	0.106	150.324	332840
No Splitting (Lazy)	0.077	51.763	133016
Local Reluctant Splitting (Not Lazy)	0.089	107.941	242624
Local Reluctant Splitting (Lazy)	0.076	55.714	128960
Global Reluctant Splitting (Not Lazy)			
Global Reluctant Splitting (Lazy)	0.083	82.177	192784
Divided No Splitting (Not Lazy)			
Divided No Splitting (Lazy)	0.078	51.962	133016
Divided Local Reluctant Splitting (Not Lazy)			
Divided Local Reluctant Splitting (Lazy)	0.076	55.714	128960
Divided Global Reluctant Splitting (Not Lazy)			
Divided Global Reluctant Splitting (Lazy)	0.084	81.996	192784
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)			
Eager Splitting and Tail Merging (Not Lazy)			
Eager Splitting and Tail Merging (Lazy)			
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)			
Type Predict for Vectors (with Local Splitting)	0.079	62.851	137436
Type Predict for Vectors (with Global Splitting)	0.081	101.259	218952
Vectors Are More Common (with Local Splitting)	0.089	105.881	232424
Without Inlining	0.939	18.481	218952
Without In-Line Caching	0.08	56.02	232424
Without Compile-Time Lookup Caching	0.076	57.674	107380
Without Customization	0.241	33.849	137436
Without Value-Based Type Analysis	0.113	51.217	100620
Without Range Analysis	0.077	59.213	118016
Without Type Prediction	0.198	36.722	128960
Without Deferred Block Creation	0.193	61.817	128960
Without Exposed Block Analysis	0.102	78.208	134760
Without CSE	0.082	45.728	174484
Without CSE of Constants	0.076	54.094	163308
Without CSE of Arithmetic Operations	0.075	55.475	134556
Without CSE of Memory References	0.078	47.242	120152
Without CSE of Memory Cell Type Information	0.079	49.511	131584
Without CSE of Memory Cell Array Bounds Checking	0.076	55.264	128960
Without Eliminating Unneeded Computations	0.077	58.933	118072
Without Delay Slot Filling	0.082	53.788	116248
No Integer Type Tests	0.075	55.215	128960
No Boolean Type Tests	0.075	55.665	128960
No Overflow Checking	0.076	55.384	147852
No Array Bounds Checking	0.076	55.654	124832
No Block Zapping	0.078	51.082	127328
Early Block Zapping	0.078	54.942	128176
Late Block Zapping	0.076	55.714	128960
No Primitive Failure Checking	0.076	55.554	125396
No Debugger-Visible Names	0.076	54.914	129752
No Interrupt Checking at Calls	0.073	54.687	126504
No Interrupt Checking at _Restarts	0.075	54.565	127564
No LRU Compiled Method Reclamation Support	0.073	55.497	128612
Fast	0.074	49.256	120748
Fastest	0.073	46.267	124492

C.29 primMaker

language/configuration	run	compile	space
Optimized C			
Smalltalk-80			
T (normal)			
T (integer only)			
Normal SELF	1.18	147.89	432396
No Splitting (Not Lazy)	1.373	411.817	1023888
No Splitting (Lazy)	1.288	142.932	444412
Local Reluctant Splitting (Not Lazy)	1.394	294.986	762780
Local Reluctant Splitting (Lazy)	1.18	147.89	432396
Global Reluctant Splitting (Not Lazy)			
Global Reluctant Splitting (Lazy)	1.208	156.972	450364
Divided No Splitting (Not Lazy)	1.248	320.122	889716
Divided No Splitting (Lazy)	1.242	143.498	444412
Divided Local Reluctant Splitting (Not Lazy)	1.225	326.075	843484
Divided Local Reluctant Splitting (Lazy)	1.197	148.073	432396
Divided Global Reluctant Splitting (Not Lazy)			
Divided Global Reluctant Splitting (Lazy)	1.213	157.357	450364
Eager Splitting (Not Lazy)			
Eager Splitting (Lazy)			
Eager Splitting and Tail Merging (Not Lazy)			
Eager Splitting and Tail Merging (Lazy)			
Eager Splitting and Requirements Analysis (Not Lazy)			
Eager Splitting and Requirements Analysis (Lazy)			
Type Predict for Vectors (with Local Splitting)	1.22	154.14	439524
Type Predict for Vectors (with Global Splitting)	1.219	217.421	488652
Vectors Are More Common (with Local Splitting)	1.244	171.226	476800
Without Inlining	11.686	79.764	488652
Without In-Line Caching	1.378	148.582	476800
Without Compile-Time Lookup Caching	1.159	153.041	470020
Without Customization	3.612	144.428	439524
Without Value-Based Type Analysis	1.355	163.325	438896
Without Range Analysis	1.216	157.014	494596
Without Type Prediction	3.402	150.098	432396
Without Deferred Block Creation	4.381	177.569	432396
Without Exposed Block Analysis	2.265	208.335	504336
Without CSE	1.198	134.562	603940
Without CSE of Constants	1.199	143.081	515156
Without CSE of Arithmetic Operations	1.198	147.322	446040
Without CSE of Memory References	1.192	140.118	437744
Without CSE of Memory Cell Type Information	1.214	152.256	437336
Without CSE of Memory Cell Array Bounds Checking	1.198	145.322	432308
Without Eliminating Unneeded Computations	1.18	153.59	432812
Without Delay Slot Filling	1.261	142.329	436124
No Integer Type Tests	1.173	147.827	432444
No Boolean Type Tests	1.138	147.342	432396
No Overflow Checking	1.18	147.51	499932
No Array Bounds Checking	1.197	146.793	428012
No Block Zapping	1.197	138.643	426060
Early Block Zapping	1.193	142.917	431108
Late Block Zapping	1.18	147.89	432396
No Primitive Failure Checking	1.213	147.727	409012
No Debugger-Visible Names	1.182	145.728	428872
No Interrupt Checking at Calls	1.153	143.857	423536
No Interrupt Checking at _Restarts	1.199	145.241	430732
No LRU Compiled Method Reclamation Support	1.175	146.835	429084
Fast	1.163	134.767	424096
Fastest	1.125	127.905	426700

C.30 pathCache

language/configuration	run	compile	space
Optimized C			
Smalltalk-80			
T (normal)			
T (integer only)			
Normal SELF	23.587	6.173	17644
No Splitting (Not Lazy)	24.04	18.33	47688
No Splitting (Lazy)	23.958	5.942	18372
Local Reluctant Splitting (Not Lazy)	23.218	15.332	37936
Local Reluctant Splitting (Lazy)	23.587	6.173	17644
Global Reluctant Splitting (Not Lazy)	23.139	47.361	81280
Global Reluctant Splitting (Lazy)	23.233	6.687	19408
Divided No Splitting (Not Lazy)	23.335	15.125	43460
Divided No Splitting (Lazy)	23.636	5.944	18372
Divided Local Reluctant Splitting (Not Lazy)	23.158	15.382	40320
Divided Local Reluctant Splitting (Lazy)	23.687	6.163	17644
Divided Global Reluctant Splitting (Not Lazy)	23.587	23.183	49076
Divided Global Reluctant Splitting (Lazy)	23.021	6.679	19408
Eager Splitting (Not Lazy)	26.783	47.807	101272
Eager Splitting (Lazy)	25.493	29.667	58940
Eager Splitting and Tail Merging (Not Lazy)	23.291	23.749	54044
Eager Splitting and Tail Merging (Lazy)	23.104	15.606	33796
Eager Splitting and Requirements Analysis (Not Lazy)	23.101	23.399	47320
Eager Splitting and Requirements Analysis (Lazy)	24.058	12.482	21116
Type Predict for Vectors (with Local Splitting)	23.449	6.501	18296
Type Predict for Vectors (with Global Splitting)	23.705	7.335	20468
Vectors Are More Common (with Local Splitting)	23.358	6.272	17704
Without Inlining	96.002	7.498	20468
Without In-Line Caching	11.488	6.002	17704
Without Compile-Time Lookup Caching	24.051	6.099	27196
Without Customization	32.775	7.785	18296
Without Value-Based Type Analysis	25.653	6.607	37576
Without Range Analysis	23.133	6.717	20132
Without Type Prediction	35.611	6.079	17644
Without Deferred Block Creation	40.83	7.49	17644
Without Exposed Block Analysis	24.604	9.396	20932
Without CSE	23.364	5.706	23300
Without CSE of Constants	23.855	6.045	24624
Without CSE of Arithmetic Operations	23.699	6.141	18376
Without CSE of Memory References	23.897	5.863	17984
Without CSE of Memory Cell Type Information	23.776	6.174	17740
Without CSE of Memory Cell Array Bounds Checking	23.701	6.109	17644
Without Eliminating Unneeded Computations	24.474	6.796	17884
Without Delay Slot Filling	24.296	5.794	17684
No Integer Type Tests	23.434	5.966	17644
No Boolean Type Tests	23.721	5.999	17644
No Overflow Checking	23.368	6.112	20524
No Array Bounds Checking	23.116	6.124	17228
No Block Zapping	23.227	6.063	17060
Early Block Zapping	23.576	6.244	15952
Late Block Zapping	23.587	6.173	17644
No Primitive Failure Checking	23.676	5.914	15452
No Debugger-Visible Names	23.314	6.106	17448
No Interrupt Checking at Calls	23.126	5.784	17528
No Interrupt Checking at _Restarts	23.618	5.972	17432
No LRU Compiled Method Reclamation Support	23.912	6.058	17516
Fast	23.468	5.662	17476
Fastest			