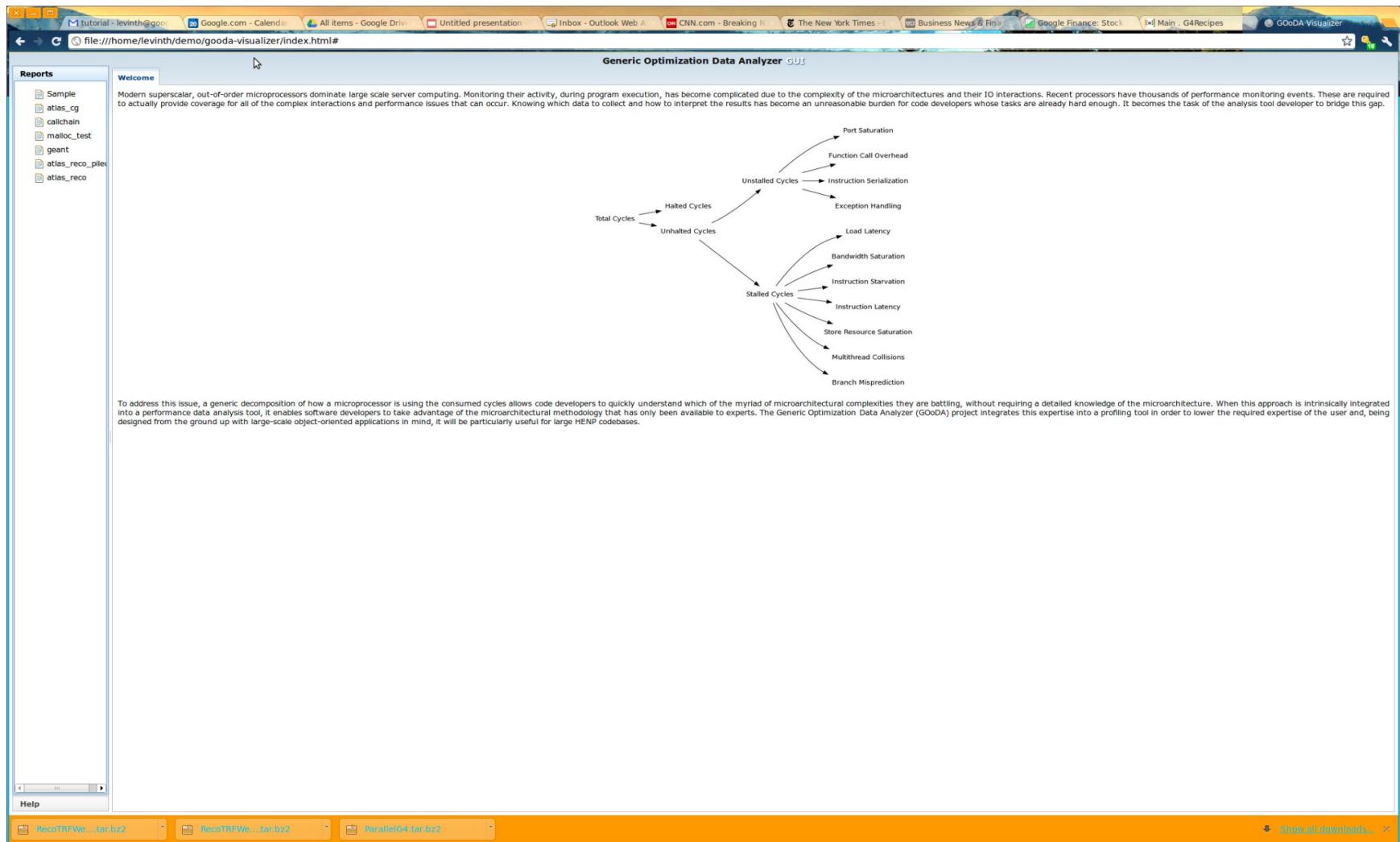


# Driving The Gooda Visualizer

# point browser at gooda-visualizer/index.html



# Open a report (click on Samples)

## Metrics in GREEN are in cycles

Screenshot of the Generic Optimization Data Analyzer (GODA) Visualizer showing two reports: Sample Hotspots and Cycles Samples.

**Sample Hotspots Report:**

process path	module path	unhalted_core_cycles	uops_retired_stall_cycles	instruction_retired	uops_retired_any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store_resources_saturated	instruction_latency	exception_handling
ccl		578999 (99%)	434163 (74%)	423477 610859	186639 (17%)	216550 (37%)	6646 (1%)	39787 (6%)	13853 (2%)	411 (0%)	2931 (0%)	
as		512719 (100%)	371649 (72%)	369217 534338	48010 (16%)	203952 (39%)	7878 (1%)	37259 (7%)	11796 (2%)	185 (0%)	2057 (0%)	
genautomata		28610 (100%)	18868 (65%)	23935 32843	5368 (18%)	6829 (23%)	782 (2%)	1244 (4%)	740 (2%)	185 (0%)	555 (1%)	
genatrrtab		21491 (100%)	14895 (69%)	18684 27208	6520 (30%)	761 (3%)	596 (2%)	134 (0%)	699 (3%)	72 (0%)		
vmlinux		8711 (100%)	5885 (60%)	8061 18191	1471 (16%)	689 (7%)	21 (0%)	195 (2%)	62 (0%)		31 (0%)	
gcc		4854 (100%)	4359 (89%)	2397 3508	1810 (37%)	3895 (63%)	247 (5%)	596 (12%)	370 (7%)		62 (1%)	
make		432 (100%)	372 (86%)	333 524	370 (85%)	123 (28%)	31 (7%)	72 (16%)	51 (11%)		31 (7%)	
ld		584 (100%)	427 (84%)	324 513	144 (28%)	93 (18%)	16 (1%)		51 (10%)		31 (6%)	
perf		165 (100%)	238 (13%)	182 171	41 (24%)	144 (87%)	16 (6%)		10 (6%)			
ar		31 (100%)	110 (354%)	60 137	21 (67%)	21 (67%)			10			
flush-253:3				77	51	125	31	21				
sh				77	17	114	10					

**Cycles Samples Report:**

function_name	offset	length	module	process	unhalted_core_cycles	uops_retired_stall_cycles	instruction_retired	co_retired	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store_resources_saturated	instruction_latency	exception_handling	
__cpp_lex_direct	0x0f09f1	0x1151	ccl	ccl	12588 (100%)	9693 (77%)	9893 11821	1183 (9%)	3085 (24%)	21 (0%)	926 (7%)	62 (0%)	41 (0%)			
record_reg_classes	0x7458ac	0x177a	ccl	ccl	10387 (100%)	6352 (61%)	9323 13577	298 (2%)	442 (4%)		370 (3%)		10 (0%)	10 (0%)		
gcc_internal_alloc_stat	0x530df8	0x31c	ccl	ccl	8052 (100%)	5914 (73%)	6457 7923	1861 (23%)	2129 (26%)		411 (5%)	51 (0%)		10 (0%)		
ht_lookup_with_hash	0xefce74	0x40a	ccl	ccl	9091 (100%)	8959 (98%)	2883 4035	8371 (2%)	2188 (23%)	18 (0%)	389 (3%)	10 (0%)		31 (0%)		
lex_identifier	0xeeec01	0x295	ccl	ccl	6859 (100%)	4811 (63%)	7157 8652	216 (3%)	823 (11%)	21 (0%)	286 (3%)			21 (0%)		
acc_char_cmp	0xed99f8	0x59	ccl	ccl	5656 (100%)	2996 (45%)	6645 10009		62 (1%)		10 (0%)	154 (2%)	10 (0%)	10 (0%)		
find_reloads	0x80d69e	0x63c5	ccl	ccl	6222 (100%)	4589 (73%)	4837 6959	93 (1%)	1913 (30%)	10 (0%)	247 (3%)			21 (0%)		
cpp_get_token_1	0xef82cf	0x446	ccl	ccl	5882 (100%)	4644 (78%)	4717 5723	584 (8%)	1584 (26%)	10 (0%)	452 (7%)	226 (3%)				
extractInsn	0x7ea5f8	0x4e1	ccl	ccl	5327 (100%)	3834 (56%)	5476 6429	566 (10%)	987 (18%)		298 (5%)	31 (0%)		21 (0%)		
preprocess_constraints	0x7aa70	0x375	ccl	ccl	4905 (100%)	2793 (56%)	3753 5871	51 (1%)	113 (2%)		62 (1%)		41 (0%)			
search_line_acc_char	0xedad46	0x138	ccl	ccl	4052 (100%)	2234 (55%)	3873 7934	41 (1%)	93 (2%)		10 (0%)	154 (3%)		21 (0%)		
grokdeclarator	0x496bb6	0x31e2	ccl	ccl	4432 (100%)	3965 (89%)	1638 2611	247 (5%)	4391 (99%)	165 (3%)	545 (12%)	10 (0%)		10 (0%)		
c_parser_peak_token	0x4c6339	0x3c	ccl	ccl	3589 (100%)	2311 (64%)	2653 4286	72 (2%)	1429 (39%)	10 (0%)	389 (8%)	51 (1%)		10 (0%)		
df_ref_create_structure	0x5d5ee5	0x291	ccl	ccl	3188 (100%)	1884 (59%)	3156 5016	62 (1%)	41 (1%)			206 (6%)				
get_attr_enabled	0xbd0b1b	0x1758	ccl	ccl	3239 (100%)	1959 (49%)	4052 6133		154 (4%)		10 (0%)			21 (0%)		
lineimap_position_for_co...	0xef377e	0x7d	ccl	ccl	2921 (100%)	1522 (52%)	3792 4902	82 (2%)	566 (15%)		31 (1%)	31 (1%)	10 (0%)	21 (0%)		
gcc_round_alloc_size_1	0x530d1f	0x8d	ccl	ccl	3383 (100%)	2281 (65%)	2192 4252	617 (18%)	915 (27%)		41 (1%)	103 (3%)		21 (0%)		
c_lexer_one_token	0x4c5f6f	0x3ca	ccl	ccl	3311 (100%)	2377 (71%)	2354 3295	401 (12%)	1368 (41%)		381 (11%)			21 (0%)		
bitmap_find_bit	0x539f57	0x12b	ccl	ccl	2355 (100%)	1388 (58%)	3327 4628	31 (1%)	144 (6%)		21 (0%)	10 (0%)				
ix86_decompose_address	0xaa9103	0x759	ccl	ccl	2540 (100%)	1873 (73%)	2243 3340	113 (4%)	1142 (44%)	41 (1%)	93 (3%)	62 (2%)	10 (0%)	10 (0%)		
cpp_lex_token	0xef06c9	0x21d	ccl	ccl	2869 (100%)	1884 (65%)	2098 2884	82 (2%)	967 (33%)		278 (9%)			10 (0%)		
reserv_sets_are_interse...	0x4b06c77	0x33e	genautomata	genautomata	2201 (100%)	1205 (54%)	2678 3944	31 (1%)	10 (0%)		62 (2%)			10 (0%)		
cpp_clean_line	0xeedb7c	0x4c9	ccl	ccl	2736 (100%)	2048 (74%)	1817 2827		751 (27%)	10 (0%)	72 (2%)	31 (1%)			21 (0%)	
htab_find_slot_with_hash	0xf288e9	0x230	ccl	ccl	2972 (100%)	2453 (82%)	1288 2166	1409 (47%)	720 (24%)		247 (8%)	10 (0%)		10 (0%)		
find_costs_and_classes	0x74990bd	0x10f4	ccl	ccl	2232 (100%)	1435 (64%)	2405 2975	123 (5%)	51 (2%)		62 (2%)			10 (0%)		
pool_alloc	0x538fd1	0x15f	ccl	ccl	2448 (100%)	1719 (70%)	2998 2725	51 (2%)	165 (6%)			82 (3%)				
c_lexer_with_flags	0x516c24	0x6c2	ccl	ccl	2797 (100%)	1968 (70%)	1254 2417	298 (10%)	617 (22%)		216 (7%)	247 (8%)		21 (0%)		
de_rar_uncompress	0x4e4400	0x1000	ccl	ccl	1033 (100%)	1141 (60%)	1000 3360		31 (1%)							

# expand the process to show modules

Generic Optimization Data Analyzer GUI

Reports

Sample

atlas\_cg

callchain

malloc\_test

geant

atlas\_reco\_pile

atlas\_reco

Sample Hotspots

process path	module path	unhalted_core_cycles	oops_retired_stall_cycles	instruction_retired	oops_retired:any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store_resources_saturated	instruction_latency	exception_handling			
		578999 (99%)	434163 (74%)	423477 6108659 108639 (17%)	2165580 (37%)	9646 (1%)	39787 (6%)	13853 (2%)	411 (0%)	2931 (0%)					
cc1		512719 (100%)	371649 (72%)	369217 534338 84010 (16%)	283952 (39%)	7878 (1%)	37259 (7%)	11796 (2%)	185 (0%)	2057 (0%)					
/data/home/vitillo/install...	463747 (100%)	331638 (71%)	342867 496753 68605 (14%)	177450 (38%)	6345 (1%)	32569 (7%)	8688 (1%)	165 (0%)	1450 (0%)						
/lib64/libc-2.12.so	26759 (100%)	20218 (75%)	18596 23837 7415 (27%)	12084 (45%)	586 (2%)	2581 (9%)	833 (3%)			257 (0%)					
/vmlinux	19375 (100%)	17688 (91%)	5911 11696 7353 (37%)	13225 (68%)	915 (4%)	1769 (9%)	2355 (12%)	10 (0%)	309 (1%)						
/lib64/libc-2.12.so	2499 (100%)	1789 (68%)	1740 1881 381 (15%)	748 (29%)		216 (8%)				21 (0%)					
/lib/modules/3.3.0-rc7/ker...	195 (100%)	186 (95%)	68 114 93 (47%)	237 (121%)	21 (10%)	72 (36%)									
/lib/modules/3.3.0-rc7/ker...	51 (100%)	77 (150%)	26 23		113 (221%)					10 (19%)					
/lib64/ld-2.12.so	93 (100%)	120 (129%)	17 34 31 (33%)												
/lib/modules/3.3.0-rc7/ker...		11													
/lib64/ld-2.12.so		11													
/data/home/vitillo/install...															
/lib/modules/3.3.0-rc7/ker...															
function name	offset	length	module	process	unhalted_core_cycles	oops_retired_stall_cycles	instruction_retired	oops_retired:any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store_resources_saturated	instruction_latency	exception_handling
					578999 (99%)	434163 (74%)	423477 6108659 108639 (17%)	2165580 (37%)	9646 (1%)	39787 (6%)	13853 (2%)	411 (0%)	2931 (0%)		
cc1					13588 (100%)	9693 (77%)	9893 11821 (78%)	3085 (24%)	21 (0%)	926 (78%)	62 (0%)	41 (0%)			
cc1	0x0f091	0x1151	cc1	cc1	13588 (100%)	9693 (77%)	9893 11821 (78%)	3085 (24%)	21 (0%)	926 (78%)	62 (0%)	41 (0%)			
cc1	0x7458ac	0x17a	cc1	cc1	10387 (100%)	6352 (61%)	9233 13577 (29%)	442 (4%)		370 (3%)		10 (0%)	10 (0%)		
cc1	0x530d8f8	0x31c	cc1	cc1	8052 (100%)	5914 (73%)	6457 7923 (1861 (23%))	2129 (26%)		411 (5%)	51 (0%)	10 (0%)			
cc1	0x7e0c74	0x40a	cc1	cc1	9091 (100%)	8959 (98%)	2883 4835 (8371 (92%))	2188 (23%)	18 (0%)	309 (3%)	10 (0%)	31 (0%)			
cc1	0xexcc01	0x295	cc1	cc1	6859 (100%)	4381 (63%)	7157 8652 (216 (3%))	823 (11%)	21 (0%)	206 (3%)		21 (0%)			
cc1	0xacc_char_cmp	0x59	cc1	cc1	5656 (100%)	2596 (45%)	6645 10009 (62 (1%))		10 (0%)	154 (2%)	10 (0%)	10 (0%)			
cc1	0xb80660e	0x63c5	cc1	cc1	6222 (100%)	4589 (73%)	4837 6999 (93 (1%))	1913 (30%)	10 (0%)	247 (3%)		21 (0%)			
cc1	0x0f82cf	0x446	cc1	cc1	5882 (100%)	4644 (78%)	4717 5723 (504 (88%))	1584 (26%)	10 (0%)	452 (7%)	226 (3%)				
cc1	0x7e5a5f8	0x4e1	cc1	cc1	5327 (100%)	3034 (56%)	5476 6429 (566 (16%))	987 (18%)		298 (5%)	31 (0%)	21 (0%)			
cc1	0xpreprocess_constraints	0x7eaat0	0x757	cc1	4905 (100%)	2793 (56%)	3753 5871 (51 (1%))	113 (2%)		62 (1%)		41 (0%)			
cc1	0xsearch_line_acc_char	0x130	cc1	cc1	4052 (100%)	2234 (55%)	3873 7934 (41 (1%))	93 (2%)		10 (0%)	154 (3%)		21 (0%)		
cc1	0xgrokdeclarator	0x496b6be	0x31e2	cc1	4432 (100%)	3965 (89%)	1638 2611 (247 (5%))	4391 (99%)	165 (3%)	545 (12%)	10 (0%)	10 (0%)			
cc1	0xc_parser.Peek_token	0x4c6339	0x3c	cc1	3589 (100%)	2311 (64%)	2653 4286 (72 (2%))	1429 (39%)	10 (0%)	309 (8%)	51 (1%)	10 (0%)			
cc1	0xdf_ref_create_structure	0x5d5ee5	0x291	cc1	3188 (100%)	1884 (59%)	3156 5016 (62 (1%))	41 (1%)			266 (6%)				
cc1	0xget_attr_enabled	0xbdb61b	0x1750	cc1	3239 (100%)	1599 (49%)	4852 6133 (154 (4%))			10 (0%)		21 (0%)			
cc1	0xlinemap_position_for_co...	0xeff377e	0xd7	cc1	2921 (100%)	1522 (52%)	3702 4902 (82 (2%))	566 (19%)		31 (1%)	31 (1%)	10 (0%)	21 (0%)		
cc1	0xgcc_round_alloc_size_1	0x530d1f	0x8d	cc1	3383 (100%)	2201 (65%)	2192 4252 (617 (18%))	915 (27%)		41 (1%)	103 (3%)		21 (0%)		
cc1	0x_c_lexer_one_token	0x4c5161	0x3ca	cc1	3311 (100%)	2377 (71%)	2354 3295 (401 (12%))	1368 (41%)		381 (11%)		21 (0%)			
cc1	0xbitmap_find_bit	0x539f57	0x12b	cc1	2355 (100%)	1388 (58%)	3327 4628 (31 (1%))	144 (6%)		21 (0%)	10 (0%)				
cc1	0x186_decompose_address	0xaa9103	0x759	cc1	2540 (100%)	1873 (73%)	2243 3340 (113 (4%))	1142 (44%)	41 (1%)	93 (3%)	62 (2%)	10 (0%)	10 (0%)		
cc1	0x_cpp_lex_token	0xef86c9	0x21d	cc1	2869 (100%)	1884 (65%)	2986 2804 (82 (2%))	967 (33%)		278 (9%)		10 (0%)			
cc1	0xreserv_sets_are_interse...	0x406c77	0x23e	genautomata	2281 (100%)	1205 (54%)	2678 3944 (31 (1%))	10 (0%)		62 (2%)		10 (0%)			
cc1	0x_cpp_clean_line	0xeedb7c	0x4c9	cc1	2736 (100%)	2048 (74%)	1817 2827 (751 (27%))		10 (0%)	72 (2%)	31 (1%)				
cc1	0xhtab_find_slot_with_h...	0xf288e9	0x230	cc1	2972 (100%)	2453 (82%)	1288 2166 (1489 (47%))	728 (24%)		247 (8%)	10 (0%)	10 (0%)			
cc1	0xfind_costs_and_classes	0x74980d	0x10f4	cc1	2232 (100%)	1435 (64%)	2405 2975 (123 (5%))	51 (2%)		62 (2%)		10 (0%)			
cc1	0xpool_alloc	0x538fd1	0x15f	cc1	2448 (100%)	1719 (70%)	2989 2725 (51 (2%))	165 (6%)			82 (3%)				
cc1	0xc_lexer_with_flags	0x516c24	0x6c2	cc1	2797 (100%)	1968 (70%)	1254 2417 (298 (18%))	617 (22%)		216 (7%)	247 (8%)	21 (0%)			
cc1	0x_c_lexer_with_flags	0x516c24	0x6c2	cc1	2797 (100%)	1968 (70%)	1254 2417 (298 (18%))	617 (22%)		216 (7%)	247 (8%)	21 (0%)			

**Click on the Magnifying glass to expand the metric**

Generic Optimization Data Analyzer (GODA) Visualizer

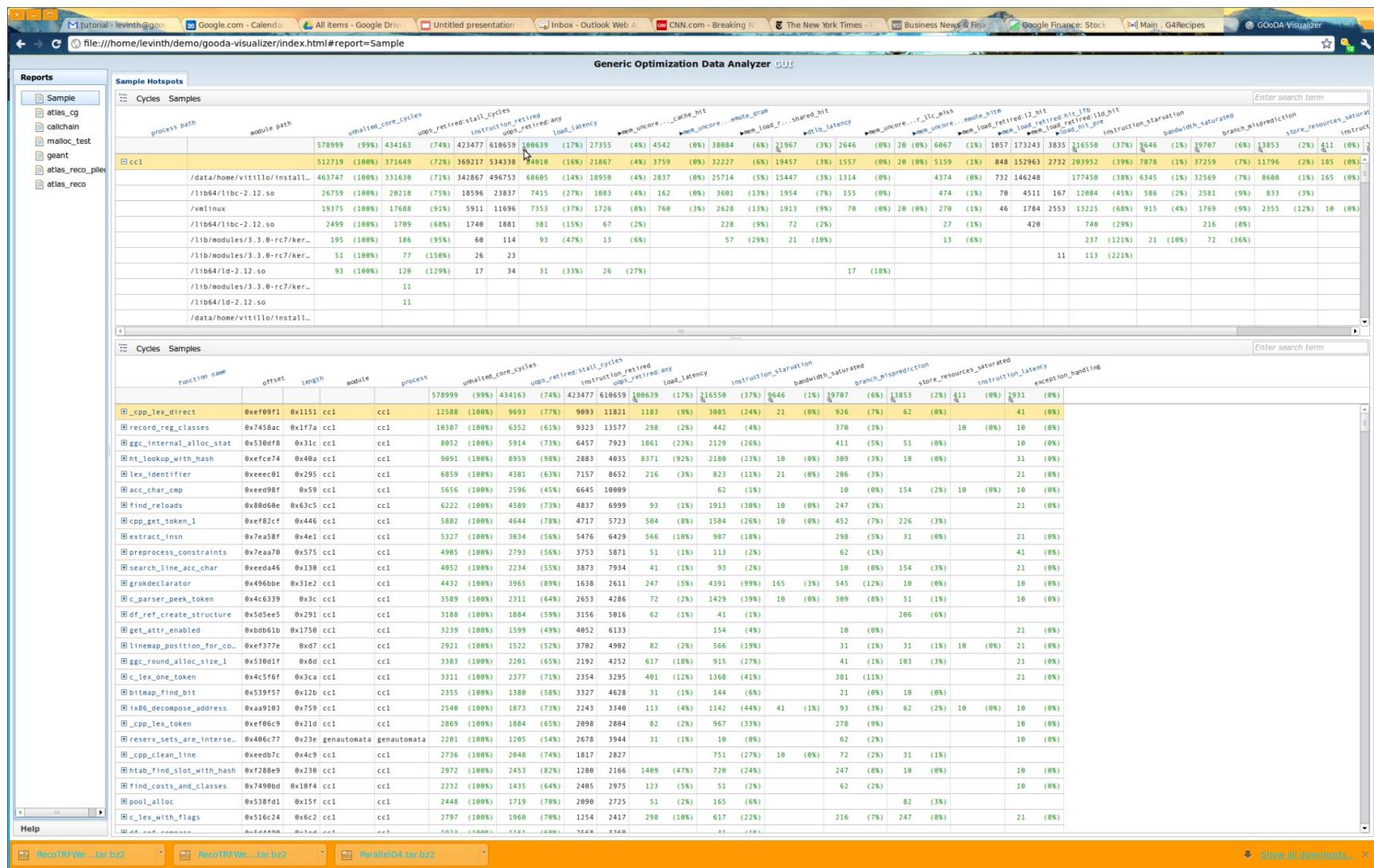
Reports

- Sample
- atlas\_cg
- callchain
- malloc\_test
- geant
- atlas\_reco\_pile
- atlas\_reco

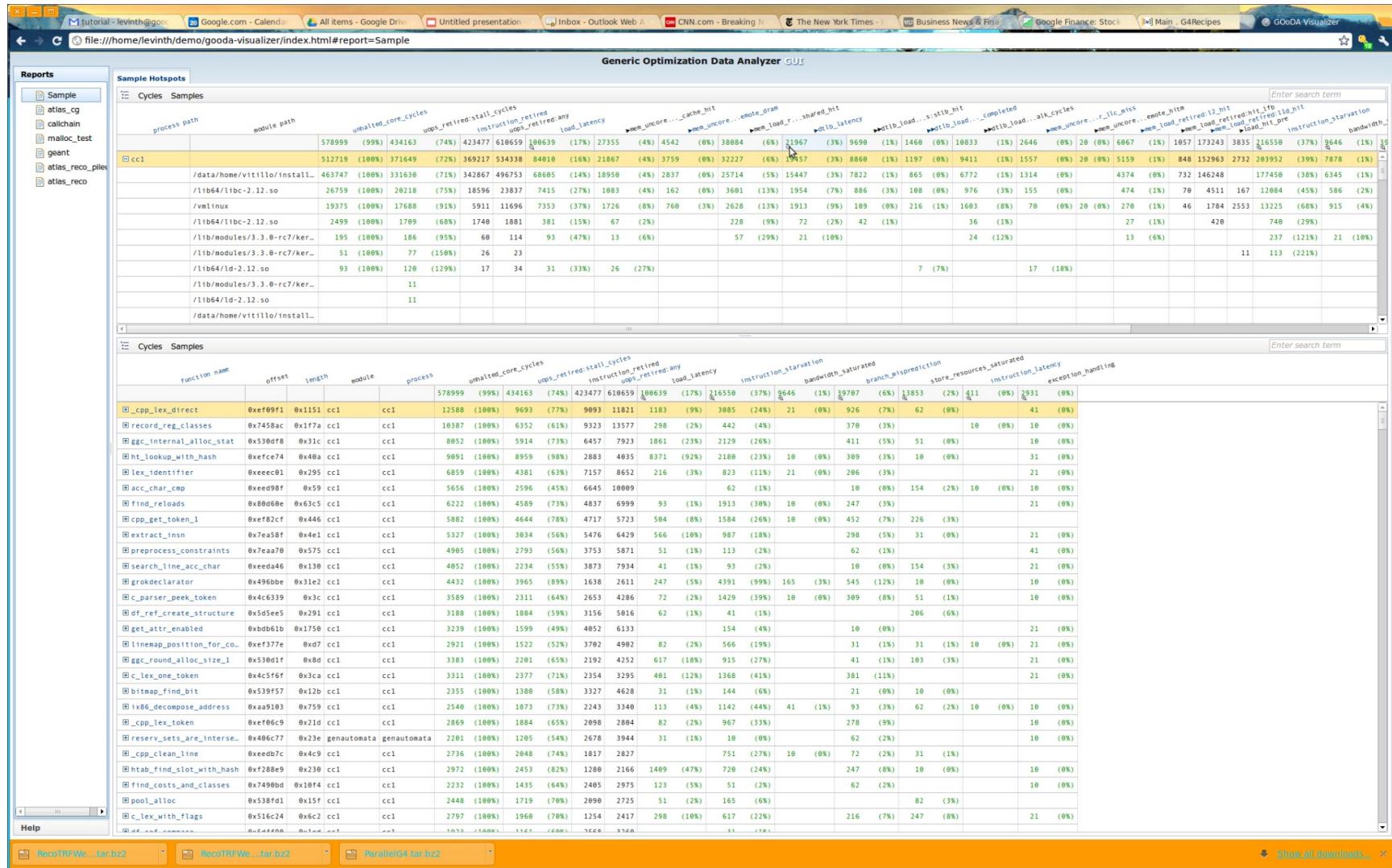
Sample Hotspots

process path	module path	unhalted_core_cycles	ups_retried_stall_cycles	instruction_retried	ups_retried:any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store_resources_saturated	instruction_latency	exception_handling			
		578999 (99%)	434163 (74%)	423477 61659	108639 (17%)	216550 (37%)	9846 (1%)	19707 (6%)	13853 (2%)	411 (0%)	1931 (0%)				
cc1		512719 (100%)	371649 (72%)	369217 53438	8 20018 (16%)	203952 (39%)	7878 (1%)	37259 (7%)	11796 (2%)	185 (0%)	2057 (0%)				
/data/home/vitillo/install...		463747 (100%)	331658 (75%)	342867 49675	5550 (14%)	177450 (38%)	6345 (1%)	32569 (7%)	8668 (1%)	165 (0%)	1450 (0%)				
/lib64/libc-2.12.so		26759 (100%)	20218 (75%)	18596 23837	7415 (27%)	12084 (45%)	586 (2%)	2581 (5%)	833 (3%)	257 (0%)					
/vmlinux		19375 (100%)	17688 (91%)	5911 11696	7353 (37%)	13225 (68%)	915 (4%)	1769 (9%)	2355 (12%)	10 (0%)	309 (1%)				
/lib64/libc-2.12.so		2499 (100%)	1709 (68%)	1740 1881	381 (15%)	740 (29%)		216 (8%)		21 (0%)					
/lib/modules/3.3.8-rc7/ker...		195 (100%)	186 (95%)	60 114	93 (47%)	237 (121%)	21 (10%)	72 (36%)							
/lib/modules/3.3.8-rc7/ker...		51 (100%)	77 (150%)	26 23		113 (221%)				10 (19%)					
/lib64/ld-2.12.so		93 (100%)	120 (129%)	17 34	31 (33%)										
/lib/modules/3.3.8-rc7/ker...			11												
/lib64/ld-2.12.so			11												
/data/home/vitillo/install...															
/lib/modules/3.3.8-rc7/ker...															
function_name	offset	length	module	process	unhalted_core_cycles	ups_retried_stall_cycles	instruction_retried	ups_retried:any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store_resources_saturated	instruction_latency	exception_handling
					578999 (99%)	434163 (74%)	423477 61659	108639 (17%)	216550 (37%)	2646 (1%)	19707 (6%)	13853 (2%)	411 (0%)	1931 (0%)	
cc1	0xeff091	0x1151	cc1	cc1	12558 (100%)	9693 (71%)	9093 11821	1183 (9%)	3085 (24%)	21 (0%)	926 (7%)	62 (0%)	41 (0%)		
record_reg_classes	0x7458ac	0x1f7a	cc1	cc1	18387 (100%)	6352 (61%)	9323 13577	298 (1%)	442 (4%)		378 (3%)		10 (0%)	10 (0%)	
__gcc_internal_alloc_stat	0x530df8	0x31c	cc1	cc1	8052 (100%)	5914 (73%)	6457 7923	1861 (23%)	2129 (26%)		411 (5%)	51 (0%)	10 (0%)		
ht_lookup_with_hash	0xeffc74	0x40a	cc1	cc1	9091 (100%)	8959 (98%)	2883 4035	8371 (92%)	2180 (23%)	10 (0%)	309 (3%)	10 (0%)	31 (0%)		
lex_identifier	0xeccc01	0x295	cc1	cc1	6859 (100%)	4381 (63%)	7157 8652	216 (3%)	823 (11%)	21 (0%)	206 (3%)		21 (0%)		
acc_char_cmp	0xeed98f	0x59	cc1	cc1	5656 (100%)	2596 (45%)	6645 10009		62 (1%)		10 (0%)	154 (2%)	10 (0%)	10 (0%)	
find_reloads	0x80d606	0x63c5	cc1	cc1	6222 (100%)	4589 (73%)	4837 6999	93 (1%)	1913 (30%)	10 (0%)	247 (3%)		21 (0%)		
cpp_get_token_1	0xeff82cf	0x446	cc1	cc1	5882 (100%)	4644 (78%)	4717 5723	504 (8%)	1584 (26%)	10 (0%)	452 (7%)	226 (3%)			
extract_insn	0x7eaf58f	0x4e1	cc1	cc1	5327 (100%)	3034 (56%)	5476 6429	566 (10%)	987 (18%)		298 (5%)	31 (0%)	21 (0%)		
preprocess_constraints	0x7ea7a0	0x575	cc1	cc1	4905 (100%)	2793 (56%)	3753 5871	51 (1%)	113 (2%)		62 (1%)		41 (0%)		
search_line_acc_char	0xdead46	0x130	cc1	cc1	4052 (100%)	2234 (55%)	3873 7934	41 (1%)	93 (2%)		10 (0%)	154 (3%)	21 (0%)		
grokdeclarator	0x496bb	0x31e2	cc1	cc1	4432 (100%)	3965 (69%)	1638 2611	247 (5%)	4391 (99%)	165 (3%)	545 (12%)	10 (0%)	10 (0%)		
c_parser.Peek_token	0x4c6339	0x3c	cc1	cc1	3589 (100%)	2311 (64%)	2653 4286	72 (2%)	1429 (39%)	10 (0%)	309 (8%)	51 (1%)	10 (0%)		
def.ref_create_structure	0x5d50ee5	0x291	cc1	cc1	3180 (100%)	1884 (59%)	3150 5016	62 (1%)	41 (1%)		206 (6%)				
get_attr_enabled	0xbdb61b	0x1750	cc1	cc1	3239 (100%)	1599 (49%)	4852 6133		154 (4%)		10 (0%)		21 (0%)		
linemap_position_for_co...	0xeff377e	0x077	cc1	cc1	2922 (100%)	1522 (52%)	3782 4902	82 (2%)	566 (19%)		31 (1%)	31 (1%)	10 (0%)	21 (0%)	
__gcc_round_alloc_size_1	0x530df1f	0x8d	cc1	cc1	3383 (100%)	2201 (65%)	2192 4252	617 (18%)	915 (27%)		41 (1%)	103 (3%)		21 (0%)	
c_lexer_one_token	0x4c5f6f	0x3ca	cc1	cc1	3311 (100%)	2377 (71%)	2354 3295	401 (12%)	1368 (41%)		381 (11%)		21 (0%)		
bitsmap_find_bit	0x539f57	0x12b	cc1	cc1	2355 (100%)	1380 (58%)	3327 4628	31 (1%)	144 (6%)		21 (0%)	10 (0%)			
ix86_decompose_address	0xaa9103	0x759	cc1	cc1	2540 (100%)	1873 (73%)	2243 3348	113 (4%)	1142 (44%)	41 (1%)	93 (3%)	62 (2%)	10 (0%)	10 (0%)	
cpp_lex_token	0xeff66c	0x21d	cc1	cc1	2869 (100%)	1884 (65%)	2098 2884	82 (2%)	967 (33%)		278 (5%)		10 (0%)		
reserv_sets_are_interse...	0x406c77	0x23e	genautomata	genautomata	2201 (100%)	1205 (54%)	2678 3944	31 (1%)	10 (0%)		62 (2%)		10 (0%)		
cpp_clean_line	0x8e0d7c	0x4c9	cc1	cc1	2730 (100%)	2048 (74%)	1817 2827		751 (27%)	10 (0%)	72 (2%)	31 (1%)			
htab_find_slot_with_hash	0x7288e9	0x238	cc1	cc1	2972 (100%)	2453 (82%)	1289 2166	1409 (47%)	728 (24%)		247 (8%)	10 (0%)	10 (0%)		
find_costs_and_classes	0x7498bd	0x10f4	cc1	cc1	2232 (100%)	1435 (64%)	2495 2975	123 (5%)	51 (2%)		62 (2%)		10 (0%)		
pool_alloc	0x538fd1	0x15f	cc1	cc1	2448 (100%)	1719 (78%)	2899 2725	51 (2%)	165 (6%)			82 (3%)			
c_lexer_with_flags	0x516c24	0x6c2	cc1	cc1	2797 (100%)	1968 (70%)	1254 2417	298 (10%)	617 (22%)		216 (7%)	247 (8%)	21 (0%)		
def.ref_common	0x4dd400	0x3d1	cc1	cc1	1033 (100%)	1161 (64%)	1620 3760		31 (1%)						

# expand the Load\_latency metric to display its components



# Expand the sub-component: Dtlb\_latency



**Double click on Function name to go to source view**

# Three pane source view

Generic Optimization Data Analyzer GUI

Reports

- Sample
- atlas\_cg
- callchain
- malloc\_test
- geant
- atlas\_reco\_pile
- atlas\_reco

Sample Hotspots \_cpp\_lex\_direct

cycles	samples	address	princ_16	disassembly	unhalted_core_cycles	ups_retired	instruction_retired	ups_retiredany	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store		
12588	(100%)	9693	(77%)	9093	11821	183	(9%)	8085	(24%)	51	(8%)	26	(7%)	62	(8%)
740	(100%)	350	(47%)	640	798			134	(18%)	10	(1%)	31			
0x0ef09f1	1988	Basic Block 1 <0xef0a2...													
0x0ef09f1	1984	push %rbp			31 (100%)	55 (177%)	51	11	51 (164%)			31 (164%)			
0x0ef09f2	1984	mov %rsp,%rbp			31 (100%)	55 (177%)	51	11	51 (164%)			31 (164%)			
0x0cf09f5	1984	push %rbx			103 (100%)	33 (32%)	111	103							
0x0ef09f6	1984	sub \$0x98,%rsp			103 (100%)	33 (32%)	111	103							
0x0ef09f7	1984	mov %rdi,-0x98(%rbp)			103 (100%)	33 (32%)	17	46	31 (30%)						
0x0ef0a04	1988	mov -0x98(%rbp),%rax			103 (100%)	33 (32%)	17	46	31 (30%)						
0x0ef0a08	1988	mov %0xb0(%rax),%rax			113 (100%)	153 (135%)	171	262							
0x0ef0a12	1988	mov %rax,-0x38(%rbp)			309 (100%)	66 (21%)	256	331							
0x0ef0a16	1988	lea 0x18(%rax),%rdx			10 (100%)		9	34							
0x0ef0a18	1988	mov -0x98(%rbp),%rax			10 (100%)										
0x0ef0a21	1988	mov %rdx,0x1b0(%rax)			72 (100%)	11 (15%)	26	11							
0x0ef0a28	1993	Basic Block 2 <0xef0b7...			1923 (100%)	1388 (71%)	1646	2371	134 (6%)	401 (20%)	41 (2%)				
0x0ef0a28	1991	mov -0x38(%rbp),%rax			185 (100%)	77 (41%)	188	148							
0x0ef0a2c	1991	movw %0x0,%rax			144 (100%)	44 (30%)	171	148							
0x0ef0a32	1992	mov -0x98(%rbp),%rax			381 (100%)	361 (94%)	486	673	103 (27%)		21 (5%)				
0x0ef0a39	1992	mov (%rax),%rax			10 (100%)		26	23	10 (100%)						
0x0ef0a3c	1992	mov %rax,-0x48(%rbp)			267 (100%)	120 (44%)	281	410	21 (7%)						
0x0ef0a40	1993	mov -0x48(%rbp),%rax			21 (100%)		26	34							
0x0ef0a44	1993	movzbl 0x0(%rax),%eax			339 (100%)	197 (58%)	222	331	82 (24%)	72 (21%)					
0x0ef0a48	1993	test %al,%al			576 (100%)	580 (100%)	247	604	31 (5%)	165 (28%)	10 (1%)				
0x0ef0a4d	1993	je ef0b76													
0x0ef0a50	1995	Basic Block 3 <0xef0aa...			11		11								
0x0ef0a50	1995	mov -0x98(%rbp),%rax			11		11								
0x0ef0a57	1995	movzbl 0x0(%rax),%eax													
0x0ef0a5b	1995	test %al,%al													
0x0ef0a5d	1995	je ef0aa2													

Cycles Samples

line number	source	unhalted_core_cycles	ups_retired	instruction_retired	ups_retiredany	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store	resources_sa	branch_misprediction_sa	store_resources_sa	except
1993	if (buffer->need_line)	936 (100%)	9693 (77%)	9093	11821	183 (9%)	8085 (24%)	51 (8%)	26 (7%)	62 (8%)	113 (12%)	237 (25%)	10 (1%)	10 (1%)
1994	{													
1995	if (pfile->state.in_...										11		11	
1996	{													
1997	result->type = C...													
1998	pfile->state.in_...													
1999	if (!pfile->stat...													
2000	pfile->state.p...													
2001	return result;													
2002														
2003	if (!_cpp_get_fresh_...	21 (100%)	44 (209%)	26	34						10 (47%)			
2004	{													
2005	result->type = C...										9			
2006	if (!pfile->stat...	31 (100%)	11 (35%)	26	57									
2007	{													
2008	/* Tell the _...													
2009	result->src_...													
2010	result->flag_...													
2011	)													
2012	return result;										22	17	11	
2013	)													
2014	if (!pfile->keep_tok...	82 (100%)	11 (13%)	77	125						10 (12%)			
2015	{													
2016	pfile->cur_run =...	31 (100%)		26	34									
2017	result = pfile->...	72 (100%)	22 (30%)	85	68									
2018	pfile->cur_token_...	82 (100%)	33 (40%)	51	91									
2019	)													

Diagram

```

graph TD
    B31[Basic Block 31] --> B32[Basic Block 32]
    B32 --> B1[Basic Block 1]
    B32 --> B33[Basic Block 33]
    B1 --> B4[Basic Block 4]
    B4 --> B5[Basic Block 5]
    B5 --> B6[Basic Block 6]
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    B312 --&gt
```

# Collapse the basic blocks

Generic Optimization Data Analyzer GUI

Reports

Sample

atios\_cg  
calchain  
malloc\_test  
geant  
atios\_reco\_piles  
atios\_reco

Sample Hotspots \_cpp\_lex\_direct

Cycles Samples

address	princ_18	disassembly	unaligned_core_cycles	oops_retired	stall_cycles	instruction_retired	oops_retired:any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store	Enter search term
0xef09f1	1988	Basic Block 1 <0xef0a2...	12588 (100%)	9693 (77%)	9893	11821 (1183)	(9%)	3085 (24%)	21 (8%)	226 (7%)	62 (8%)	41 (8%)	
0xef0a28	1993	Basic Block 2 <0xef0b7...	740 (100%)	350 (47%)	640	798		134 (18%)	10	10 (1%)	31	1	
0xef0a50	1995	Basic Block 3 <0xef0aa...		11		11							
0xef0a5f	1997	Basic Block 4 <0xef0a9...											
0xef0a81	2000	Basic Block 5 <0xef0a9...											
0xef0a99	2001	Basic Block 6 <0xef1b3...											
0xef0a02	2003	Basic Block 7 <0xef08e...	21 (100%)	22 (104%)	9	11							
0xef0ab1	2003	Basic Block 8 <0xef0af...		22	17	23		10					
0xef0a05	2006	Basic Block 9 <0xef0a5...	31 (100%)	11 (35%)	34	57							
0xef0acc	2009	Basic Block 10 <0xef0a...											
0xef0aea	2012	Basic Block 11 <0xef1b...		22	17	11							
0xef0af3	2014	Basic Block 12 <0xef0b...	82 (100%)	11 (13%)	77	125		18 (12%)					
0xef0b04	2018	Basic Block 13 <0xef0b...	185 (100%)	55 (29%)	162	194							
0xef0b48	2021	Basic Block 14 <0xef0b...	82 (100%)	99 (120%)	51	103	31 (37%)						
0xef0b61	2022	Basic Block 15 <0xef0b...	18 (100%)										
0xef0b76	2024	Basic Block 16 <0xef0b...	154 (100%)	110 (71%)	60	91		31 (20%)	62 (40%)				
0xef0b84	2026	Basic Block 17 <0xef0b...	360 (100%)	383 (106%)	179	422	103 (28%)	165 (45%)	31 (8%)	10			
0xef0b98	2029	Basic Block 18 <0xef0b...	1265 (100%)	953 (75%)	913	1872	144 (11%)	123 (9%)					
0xef0bc0	2030	Basic Block 19 <0xef0b...		9									
0xef0bd0	2032	Basic Block 20 <0xeee0...											
0xef0be4	2033	Basic Block 21 <0xef0b...		11	9	11							
0xef0bf8	2035	Basic Block 22 <0xef0c...	720 (100%)	594 (70%)	870	570	82 (11%)	82 (11%)	10 (18%)				
0xef0c26	2038	Basic Block 23 <0xef0c...	18 (100%)										
0xef0c3e	2040	Basic Block 24 <0xef37...	740 (100%)	570 (77%)	964	809	31 (4%)	51 (6%)					
0xef0c66	2040	Basic Block 25 <0xef0c...	288 (100%)	230 (79%)	299	353		21 (7%)					
0xef0c6c	2043	Basic Block 26 <0xef1a...	566 (100%)	350 (61%)	452	616		72 (12%)					
0xef0c76	2043	Basic Block 27 <0xdead...	946 (100%)	778 (82%)	614	1129	432 (45%)	288 (30%)	10 (1%)	31 (3%)			

Line number source unaligned\_core\_cycles oops\_retired:stall\_cycles instruction\_starvation bandwidth\_saturated branch\_misprediction store bandwidth\_saturated branch\_misprediction store\_resources\_except

Cycles Samples

Line number	source	unaligned_core_cycles	oops_retired:stall_cycles	instruction_starvation	bandwidth_saturated	branch_misprediction	store	bandwidth_saturated	branch_misprediction	store_resources_except	Enter search term
1993	if (buffer->need_line)	936 (100%)	778 (83%)	495	969	113 (12%)	237 (25%)	10 (1%)	10 (1%)	10 (1%)	
1994	{					11	11				
1995	if (pfile->state.in_...										
1996	{										
1997	result->type = C...										
1998	pfile->state.in_...										
1999	if (!pfile->stat...										
2000	pfile->state.p...										
2001	return result;										
2002	}										
2003	if (!_cpp_get_fresh_...	21 (100%)	44 (28%)	26	34			10 (47%)			
2004	{										
2005	result->type = C...							9			
2006	if (!pfile->stat...	31 (100%)	11 (35%)	26	57						
2007	{										
2008	/* Tell the ...										
2009	result->src_...										
2010	result->flag...										
2011	)										
2012	return result;							22	17	11	
2013	)										
2014	if (!pfile->keep Tok...	82 (100%)	11 (13%)	77	125			10 (12%)			
2015	{										
2016	pfile->cur_run =...	31 (100%)						26	34		
2017	result = pfile->...	72 (100%)	22 (30%)	85	68						
2018	pfile->cur_token...	82 (100%)	33 (48%)	51	91						
2019	)										

Help

RecoTRFW...tar.bz2

RecoTRFW...tar.bz2

ParallelG4.tar.bz2

Show all downloads...

```

graph TD
    BB31[Basic Block 31] --> BB32[Basic Block 32]
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# Sort by cycles

Generic Optimization Data Analyzer GUI

Reports

Sample Hotspots \_cpp\_lex\_direct

Sample Hotspots

address	princ_ip	disassembly	unhalted_core_cycles	uops_retired_stall_cycles	instruction_retired	uops_retired_any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store
0xef0a28 1993	Basic Block 2 <0xef0b...	1923 (100%) 1380 (71%) 1646 2371 134 (6%) 401 (20%) 41 (2%)	12588 (100%) 9693 (77%) 9093 11821 1183 (9%) 3085 (24%) 31 (8%) 826 (7%) 62 (8%)								
0xef0b98 2029	Basic Block 18 <0xef0b...	1265 (100%) 953 (75%) 913 1072 144 (11%) 123 (9%)									
0xef0c76 2043	Basic Block 27 <0xedead...	940 (100%) 778 (82%) 614 1129 432 (45%) 288 (30%) 10 (1%) 31 (3%)									
0xef0ecc 2104	Basic Block 55 <0xeccc...	823 (100%) 668 (81%) 264 388 113 (13%) 10 (1%) 267 (32%)									
0xef0f91 1988	Basic Block 1 <0xef0a2...	740 (100%) 350 (47%) 640 798 134 (18%) 10 (1%) 31 (3%)									
0xef0c3e 2040	Basic Block 24 <0xef37...	740 (100%) 570 (77%) 964 809 31 (4%) 51 (6%)									
0xef0bf8 2035	Basic Block 22 <0xef0c...	720 (100%) 584 (78%) 870 570 82 (11%) 82 (11%) 10 (1%)									
0xef0c83 2046	Basic Block 28 <0xeccc...	570 (100%) 471 (81%) 256 467 10 (1%) 41 (7%) 72 (12%)									
0xef0cc6 2043	Basic Block 26 <0xef1a...	566 (100%) 350 (61%) 452 616 72 (12%)									
0xef0cc9 2052	Basic Block 31 <0xef34...	514 (100%) 449 (87%) 239 274 31 (6%) 288 (56%) 10 (1%)									
0xef0f31 2113	Basic Block 57 <0xef1a...	381 (100%) 153 (46%) 418 650 82 (21%)									
0xef0b84 2026	Basic Block 17 <0xef0b...	360 (100%) 383 (100%) 179 422 103 (28%) 165 (45%) 31 (8%) 10 (1%)									
0xef0c66 2040	Basic Block 25 <0xefcc...	288 (100%) 238 (79%) 299 353 21 (7%)									
0xef1995 2317	Basic Block 167 <0xef1...	257 (100%) 175 (68%) 60 88 10 (3%)									
0xef0cb1 2051	Basic Block 30 <0xef0d...	237 (100%) 285 (120%) 60 91 21 (8%) 62 (26%)									
0xef0b04 2018	Basic Block 13 <0xef0b...	185 (100%) 55 (29%) 162 194									
0xef1038 2350	Basic Block 209 <0xedea...	175 (100%) 186 (100%) 68 171 10 (5%) 103 (58%)									
0xef0b76 2024	Basic Block 16 <0xef0b...	154 (100%) 110 (71%) 60 91 31 (20%) 62 (40%)									
0xef1988 2316	Basic Block 166 <0xef1...	154 (100%) 131 (85%) 60 103 21 (13%)									
0xef19a2 2318	Basic Block 164 <0xef1...	134 (100%) 238 (171%) 43 137 21 (15%)									
0xef0d4c 2054	Basic Block 32 <0xef0a...	123 (100%) 110 (89%) 145 125 10 (8%)									
0xef1aeb 2118	Basic Block 183 <0xef1...	123 (100%) 77 (62%) 77 148 51 (41%)									
0xef192e 2312	Basic Block 161 <0xef1...	113 (100%) 110 (97%) 17 11 41 (36%)									
0xef19e3 2323	Basic Block 173 <0xef1...	113 (100%) 88 (77%) 9 11 82 (72%)									
0xef0f0f 2109	Basic Block 56 <0xeccc...	103 (100%) 131 (127%) 179 168 21 (20%) 62 (60%)									
0xef0ba3 2014	Basic Block 12 <0xef0b...	82 (100%) 11 (13%) 77 125 10 (12%)									
0xef0b48 2021	Basic Block 14 <0xef0b...	82 (100%) 99 (120%) 51 103 31 (37%)									

Cycles Samples

line number	source	unhalted_core_cycles	uops_retired_stall_cycles	instruction_retired	uops_retired_any	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store_resources_except
1993	if (buffer->need_line)	936 (100%) 778 (83%) 495 969 113 (12%) 237 (25%) 10 (1%) 10 (1%)								
1994	{	11	11							
1995	if (pfile->state.in_...									
1996	{									
1997	result->type = C...									
1998	pfile->state.in_...									
1999	if (!pfile->stat...									
2000	pfile->state.p...									
2001	return result;									
2002	}									
2003	if (!cpp_get_fresh_...	21 (100%) 44 (20%) 26 34	10 (47%)							
2004	{									
2005	result->type = C...	9								
2006	if (!pfile->stat...	31 (100%) 11 (35%) 26 57								
2007	{									
2008	/* Tell the ...									
2009	result->src_...									
2010	result->flag_...									
2011	)									
2012	return result;	22 17 11								
2013										
2014	if (!pfile->keep_tok_...	82 (100%) 11 (13%) 77 125	10 (12%)							
2015	{									
2016	pfile->cur_run_...	31 (100%) 26 34								
2017	result = pfile->...	72 (100%) 22 (30%) 85 68								
2018	pfile->cur_token_...	82 (100%) 33 (40%) 51 91								
2019	)									

Diagram showing control flow graph with nodes representing basic blocks and edges representing transitions between them. The graph includes nodes for Addr 6, Addr 1, Addr 13, Addr 14, Addr 18, Addr 19, and various basic blocks numbered 1 through 86.

Bottom navigation bar: RecoTRFW...tar.bz2, RecoTRFW...tar.bz2, ParallelG4.tar.bz2, Show all download...

# Move all 3 panes in unison

Generic Optimization Data Analyzer GUI

Sample Hotspots: \_cpp\_lexer

Reports: Sample, atoll\_cg, calchain, malloc\_test, geant, atoll\_reco\_pile, atoll\_reco

Sample: \_cpp\_lexer

Disassembly: address, princ\_16, disassembly, unlatched\_core\_cycles, uops\_retired\_stall\_cycles, instruction\_retired, load\_latency, instruction\_starvation, bandwidth\_saturated, branch\_misprediction, store

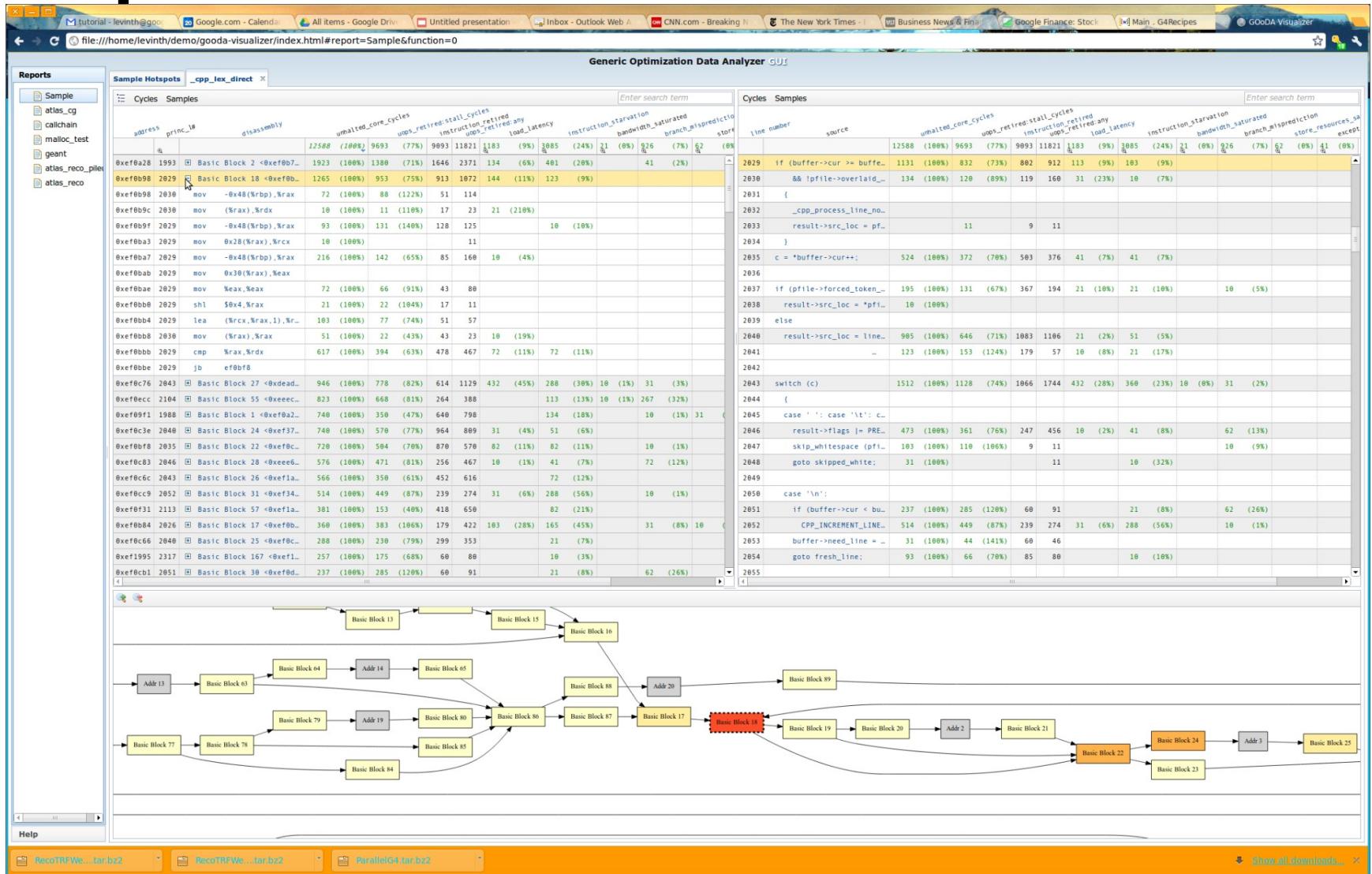
Enter search term:

line number	source	unlatched_core_cycles	uops_retired_stall_cycles	instruction_retired	load_latency	instruction_starvation	bandwidth_saturated	branch_misprediction	store	store_resources_except
2029	if (buffer->cur >= buff...	1131 (100%)	832 (73%)	802 912 113 (9%)	1085 (24%)	81 (8%) 826 (7%) 82 (8%)	826 (7%) 82 (8%) 81 (8%)	111 (9%)	111 (9%)	
2030	&& !pfile->overlaid...	134 (100%)	120 (89%)	119 160 31 (23%)	10 (7%)					
2031	{									
2032	_cpp_process_line_no...									
2033	result->src_loc = pf...		11	9 11						
2034	}									
2035	c = *buffer->cur++;	524 (100%)	372 (70%)	503 376 41 (7%)	41 (7%)					
2036										
2037	if (pfile->forced_token...	195 (100%)	131 (67%)	367 194 21 (10%)	21 (10%)	10 (5%)				
2038	result->src_loc = pfi...	10 (100%)								
2039	else									
2040	result->src_loc = line...	905 (100%)	646 (71%)	1883 1186 21 (2%)	51 (5%)					
2041	--	123 (100%)	153 (124%)	179 57 10 (8%)	21 (17%)					
2042										
2043	switch (c)	1512 (100%)	1128 (74%)	1066 1744 432 (28%)	360 (23%) 10 (8%) 31 (28%)					
2044	{									
2045	case ' ' : case '\t' : c...									
2046	result->flags  = PRE...	473 (100%)	361 (76%)	247 456 10 (2%)	41 (8%)	62 (13%)				
2047	skip_whitespace (pfi...	103 (100%)	110 (106%)	9 11		10 (9%)				
2048	goto skipped_white;	31 (100%)		11	10 (32%)					
2049										
2050	case '\n' :									
2051	if (buffer->cur < bu...	237 (100%)	205 (128%)	60 91	21 (8%)	62 (26%)				
2052	CPP_INCREMENT_LINE...	514 (100%)	449 (87%)	239 274 31 (6%)	288 (56%)	10 (1%)				
2053	buffer->need_line = ...	31 (100%)	44 (141%)	60 46						
2054	goto fresh_line;	93 (100%)	66 (70%)	85 80	10 (10%)					
2055										

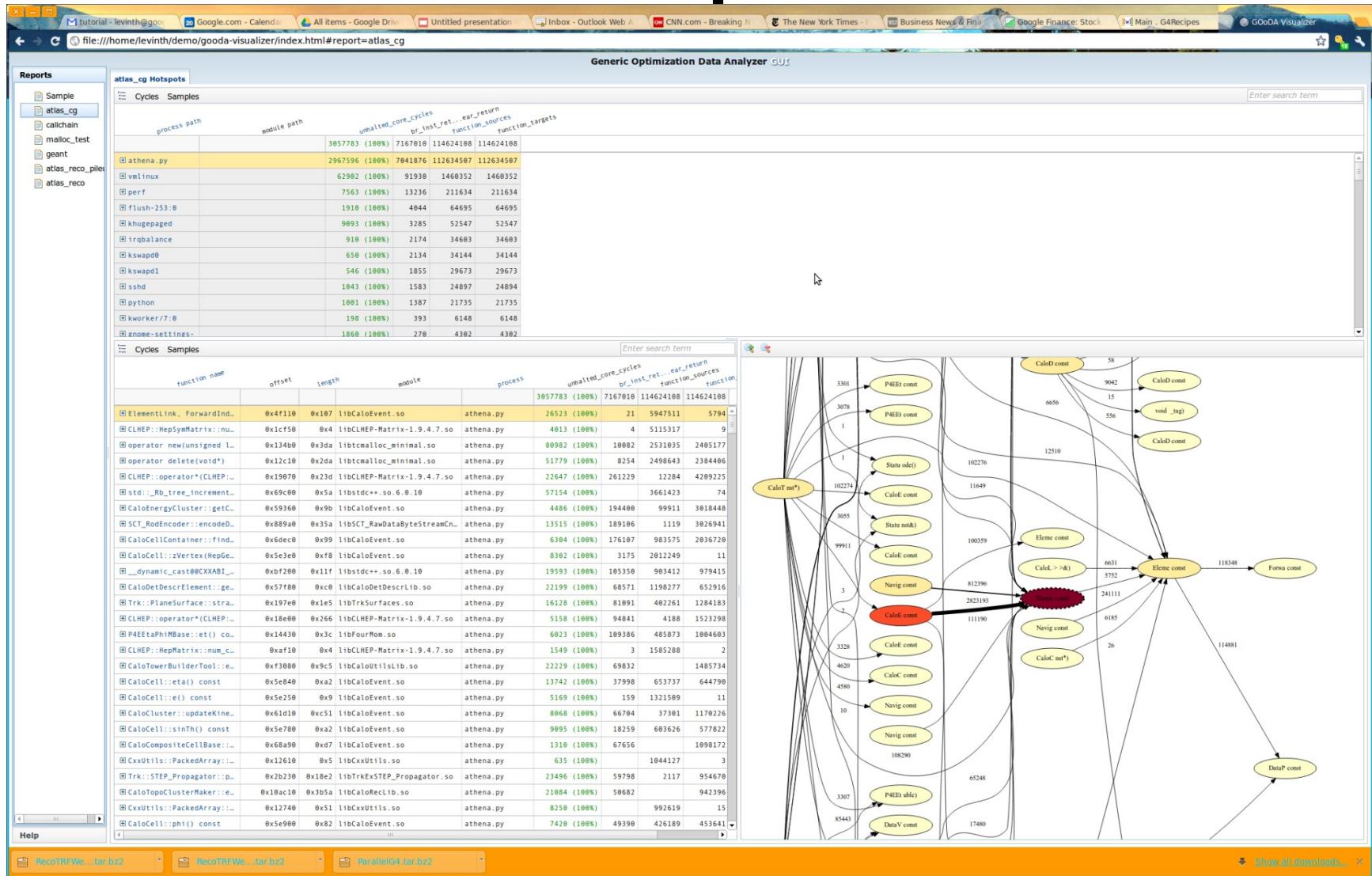
Diagram: A flowchart showing the control flow between various basic blocks. The blocks are represented as rectangles with labels like Basic Block 13, Basic Block 15, Basic Block 16, etc. Edges represent transitions between blocks, with some edges being solid and others dashed. A specific block, Basic Block 13, is highlighted with a red border.

Bottom navigation: Help, RecoTRFW...tar.bz2, RecoTRFW...tar.bz2, ParallelG4.tar.bz2, Show all download...

# Expand 1 basic block



# The Call Count Graph



# Expand to see immediate sources and targets

Generic Optimization Data Analyzer GUI

Reports

atlas\_cg Hotspots

process path	module path	urhized_core_cycles	br_inst_ret...ear_return	function_sources	function_targets
		3057783 (100%) 7167610 114624108	N14624108		
athena.py		2967596 (100%) 7041876 112634507	112634507		
vmlinux		62982 (100%) 91930 1460352	1460352		
perf		7563 (100%) 13236 211634	211634		
flush-253:0		1910 (100%) 4644 64695	64695		
khugepaged		9093 (100%) 3285 52547	52547		
irbalance		918 (100%) 2174 34603	34603		
kswapd0		650 (100%) 2134 34144	34144		
kswapd1		546 (100%) 1855 29673	29673		
sshd		1043 (100%) 1583 24897	24894		
python		1001 (100%) 1387 21735	21735		
kworker/7:0		198 (100%) 393 6148	6148		
gnome-settings-		1868 (100%) 270 4302	4302		

atlas\_cg Samples

function name	offset	length	module	process	urhized_core_cycles	br_inst_ret...ear_return	function_sources	function_targets
					3057783 (100%) 7167610 114624108	114624108		
ElementLink, ForwardInd...	0x4f110	0x107	libCaloEvent.so	athena.py	26523 (100%)	21	5947511	5794
CaloEnergyCluster::getC...	0x59390		libCaloEvent.so				2823193	
CaloCompositeCellBase::...	0x60a8f		libCaloEvent.so				996446	
Navigable, ForwardIndex...	0x5a150		libCaloEvent.so				812396	
CaloCompositeCellBase::...	0x605c0		libCaloEvent.so				689170	
Navigable, ForwardIndex...	0x4d9bd		libCaloEvent.so				111190	
CaloTopTowerBuilderToo...	0xd9af		libCaloUtilsLib.so				108290	
softsTopBuilder::AddTo...	0x1bd998		libgammaRecLib.so				75810	
Navigable, ForwardIndex...	0x4db35		libCaloEvent.so				66891	
Navigable, ForwardIndex...	0x4e4dd		libCaloEvent.so				65248	
CaloCompositeCellBase::...	0x68adf		libCaloEvent.so				17783	
ElementLink, ForwardInd...	0x4f07a		libCaloEvent.so				5752	
	0x50b129		vmlinux				42	
CLHEP::HepSymMatrix::nu...	0x1cf50	0x4	libCLHEP-Matrix-1.9.4.7.so	athena.py	4013 (100%)	4	5115317	9
operator new(unsigned l...	0x134b0	0x3d0	libtcmalloc_minimal.so	athena.py	80982 (100%)	10082	2531015	2405177
operator delete(void*)	0x12c10	0x2d0	libtcmalloc_minimal.so	athena.py	51779 (100%)	8254	2498643	2384466
CLHEP::operator<(CLHEP...	0x19070	0x2d0	libCLHEP-Matrix-1.9.4.7.so	athena.py	22647 (100%)	261229	12284	4209225
std::Rb_tree<Increment...	0x69c00	0x5a	libstdc++.so.6.0.10	athena.py	57154 (100%)	3661423		74
CaloEnergyCluster::getC...	0x59360	0x9b	libCaloEvent.so	athena.py	4486 (100%)	194406	99911	3018448
SCT_RodEncoder::encodeD...	0x889a0	0x35a	libSCT_RawDataByteStreamCn...	athena.py	13515 (100%)	189186	1119	3026941
CaloCellContainer::find...	0x6dec0	0x99	libCaloEvent.so	athena.py	6304 (100%)	176107	983575	2836728
CaloCell::zVertex(HepGe...	0x5e3e0	0x8f8	libCaloEvent.so	athena.py	8302 (100%)	3175	201249	11
dynamic_cast<@CXXABI_...	0xb7f00	0x11f	libstdc++.so.6.0.10	athena.py	19593 (100%)	105358	903412	979415
CaloDetectorElement::ge...	0x57f80	0xc0	libCaloDescribLib.so	athena.py	22199 (100%)	68571	1198277	65916
Trk::PlaneSurface::stra...	0x197e0	0x1e5	libTrkSurfaces.so	athena.py	16128 (100%)	81091	402261	1284183
CLHEP::operator<(CLHEP...	0x18e00	0x266	libCLHEP-Matrix-1.9.4.7.so	athena.py	5158 (100%)	94841	4188	1523298
P4EEtaPhiMBase::et() co...	0x14430	0x3c	libFourMom.so	athena.py	6023 (100%)	109386	485873	1004603

Diagram showing immediate sources and targets for a selected node (CaloD cont). The diagram is a complex network of nodes and edges, with nodes representing various C++ objects and their states. The selected node, 'CaloD cont', is highlighted in red. Numerous edges connect it to other nodes like 'P4EEt const', 'CaloL const', 'CaloL > &', 'Eleme const', 'DataV const', etc. The diagram is highly interconnected, illustrating the flow of data and control between different parts of the system.

# Shrink the graph

Generic Optimization Data Analyzer GUI

Reports

- Sample
- atlas\_cg
- calchain
- malloc\_test
- geant
- atlas\_reco\_pile
- atlas\_reco

atlas\_cg Hotspots

process	path	module	unhalted_core_cycles	br_inst_ret...ear_return	function_sources	function_targets
			3057783 (100%)	7167018	114624108	114624108
athena.py	2967596 (100%)	7041876	112634507	112634507		
vmlinux	62982 (100%)	91930	1468352	1468352		
perf	7563 (100%)	13236	211634	211634		
flush-253:0	1910 (100%)	4044	64695	64695		
khugepaged	9893 (100%)	3285	52547	52547		
irbalance	918 (100%)	2174	34683	34683		
kswapd0	650 (100%)	2134	34144	34144		
kswapd1	546 (100%)	1855	29673	29673		
sshd	1843 (100%)	1583	24897	24894		
python	1801 (100%)	1387	21735	21735		
kworker/7:0	198 (100%)	393	6148	6148		
zname-settles-	1868 (100%)	278	4302	4302		

atlas\_cg Samples

function name	offset	length	module	process	unhalted_core_cycles	br_inst_ret...ear_return	function_sources	function_targets
					3057783 (100%)	7167018	114624108	114624108
ElementLink, ForwardIndex_	0x4f110	0x107	libCaloEvent.so	athena.py	26523 (100%)	21	5947511	5794
CaloEnergyCluster::getC...	0x59390		libCaloEvent.so				2823193	
CaloCompositeCellBase::...	0x6ba8f		libCaloEvent.so				996446	
Navigable, ForwardIndex_	0x5a150		libCaloEvent.so				812396	
CaloCompositeCellBase::...	0x685c0		libCaloEvent.so				689170	
Navigable, ForwardIndex_	0x4d9bd		libCaloEvent.so				111190	
CaloTopTowerBuilderToo...	0xd99af		libCaloUtilsLib.so				108290	
softsTopoBuilder::AddTo...	0x1bd998		libgammaRecib.so				75818	
Navigable, ForwardIndex_	0x4d835		libCaloEvent.so				66891	
Navigable, ForwardIndex_	0x4e44d		libCaloEvent.so				65248	
CaloCompositeCellBase::...	0x68ad0		libCaloEvent.so				17783	
ElementLink, ForwardIndex_	0x4f07a		libCaloEvent.so				5752	
	0x50b129		vmlinux				42	
CLHEP::HepSymMatrix::nu...	0x1cf0	0x4	libCLHEP-Matrix-1.9.4.7.so	athena.py	4013 (100%)	4	5115317	9
operator new(unsigned l...	0x134b0	0x3d0	libtcmalloc_minimal.so	athena.py	89982 (100%)	10882	2531035	2405177
operator delete(void*)	0x12c10	0x2d0	libtcmalloc_minimal.so	athena.py	51779 (100%)	8254	2498643	2384406
CLHEP::operator*(CLHEP::...	0x19070	0x3d0	libCLHEP-Matrix-1.9.4.7.so	athena.py	22647 (100%)	261229	12284	4209225
std::Rb_tree_increment_	0x69c00	0x5a	libstdc++.so.6.0.10	athena.py	57154 (100%)		3661423	74
CaloEnergyCluster::getC...	0x59360	0x9b	libCaloEvent.so	athena.py	4486 (100%)	194400	99911	3018448
SCT_RodEncoder::encodeD...	0x889a0	0x35a	libSCT_RawDataByteStreamCn...	athena.py	13515 (100%)	189186	1119	3026941
CaloCellContainer::find...	0x6de00	0x99	libCaloEvent.so	athena.py	6394 (100%)	176107	983575	2836729
CaloCell::zVertex(HepGe...	0x5e3e0	0x8f8	libCaloEvent.so	athena.py	8302 (100%)	3175	201249	11
__dynamic_cast@@CXXABI_...	0xbf200	0x11f	libstdc++.so.6.0.10	athena.py	19593 (100%)	105350	903412	979415
CaloObjectDescriptor::ge...	0x57f80	0xc0	libCaloDescriptorLib.so	athena.py	22199 (100%)	68571	1198277	652916
Trk::PlaneSurface::stra...	0x197e0	0x1e5	libTrkSurfaces.so	athena.py	16120 (100%)	81091	402261	1284183
CLHEP::operator*(CLHEP::...	0x18e00	0x266	libCLHEP-Matrix-1.9.4.7.so	athena.py	5158 (100%)	94841	4188	1523298
P4EtaPhiMBase::et()	0x14430	0x3c	libFourMom.so	athena.py	6823 (100%)	109386	485873	1004693

Graph visualization on the right side of the interface.

Help

RecoTRFW...tar.bz2

RecoTRFW...tar.bz2

ParallelG4.tar.bz2

Show all downloads

# Basic Block execution counts with LBRs

GOoDA Visualizer - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Ubuntu Start Page Reference GOoDA Visualizer

file:///home/levinth/demo/gooda-visualizer/index.html#report=bb\_exec

Generic Optimization Data Analyzer GUI

Reports

- Sample
- atlas\_cg
- callchain
- malloc\_test
- geant
- atlas\_reco\_pile
- atlas\_reco
- bb\_exec

bb\_exec Hotspots triad

Cycles Samples Enter search term

process	path	module	instruction	inst	retired	bb	exec
			110277	110277	34151		
bb_test_icc_02			110277	110277	34151		
aggregated_kernel_object			122	277			

Cycles Samples Enter search term

function	name	offset	length	module	process	instruction	inst	retired	bb	exec	sw	inst	retired	rob	misc	br	inserts	next	taken
triad		0x4016d0	0x70	bb_test_icc_02	bb_test_icc_02	110154	109997	34151	113138	207089	3106335								
main		0x400b80	0xab0	bb_test_icc_02	bb_test_icc_02	1	3					3	14						
usage		0x401630	0xa0	bb_test_icc_02	bb_test_icc_02														6

Hot Functions

# Basic block execution, source view

GOoDA Visualizer - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Ubuntu Start Page Reference file:///home/levinth/demo/gooda-visualizer/index.html#report=bb\_exec&function=0

Generic Optimization Data Analyzer GUI

Reports

- Sample
- atlas\_cg
- callchain
- malloc\_test
- geant
- atlas\_reco\_pile
- atlas\_reco
- bb\_exec

bb\_exec Hotspots triad x

Cycles Samples Enter search term

address	princ_#	disassembly	110154	109997	34151	113138	207079	3105902
0x4016e2	8	Basic Block 3 <0x40173...	14	9	1023	4092	52	153454
0x4016e2	8	movslq (%r8,%rax,4),%r1...				1023	2	153454
0x4016e6	9	xor %ebp,%ebp	14	5		1023	50	
0x4016e8	9	test %esi,%esi				1023		
0x4016ea	9	jle 401732		4		1023		
0x4016ec	11	Basic Block 4 <0x4016f...	5	26746	9662	19325	16352	1296005
0x4016ec	11	test \$0x1,%r9d	3			9662	16346	1296004
0x4016f3	11	jne 4016ff	2	26746		9662	6	1
0x4016f5	13	Basic Block 5 <0x40170...	2787	24571	5521	16564	11838	4
0x4016f5	13	mov (%rcx,%r10,8),%r...	2		5521	11707		
0x4016f9	13	mov %r11,(%rdx,%r10,...	56	57		5521	116	
0x4016fd	13	jmp 40170b	2729	24514		5521	15	4
0x4016ff	17	Basic Block 6 <0x40170...	91877	9113	5521	11043	138133	828245
0x4016ff	17	sqrtsd (%rcx,%r10,8),%...	7		5521	48910	828242	
0x401705	17	movsd %xmm0,(%rdx,%r10...	91870	9113		5521	89223	3
0x40170b	9	Basic Block 7 <0x4016e...	15470	43106	11042	55213	40698	828194
0x40170b	9	inc %ebp	12853	10657		11042	10747	828191
0x40170d	19	inc %r10	5	10		11042	19	
0x401710	20	inc %r9d	18	11492		11042	29921	2
0x401713	9	cmp %esi,%ebp	2593	15693		11042	8	1
0x401715	9	jl 4016ec	1	5254		11042	3	
0x401717	6	Basic Block 8 <0x4016e...	1	6452	1380	6900	6	
0x401717	6	lea 0x0(%rs1,%r1,1)...			1380			
0x40171e	6	null			1380			
0x40171f	6	inc %rax			1380			
0x401722	6	cmp %rd1,%rax	1	8		1380	6	
0x401725	6	jl 4016e2		6444		1380		
0x401727	6	Basic Block 9 <0x40172...						

Cycles Samples Enter search term

line number	source	110154	109997	34151	113138	207079	3105902
2	int triad(int len, int inner, double * a, double * ...						
3 {							
4     int i,j,k, count, bytes=24;							
5     k = 0;							
6     count = 0;							
7     for(i=0; i < len; i++)							
8         {							
9             k = index[i];		15461	31613				10808
10             for(j=0; j < inner; j++)							
11                 {							
12                     if((count & 1) == 0)							
13                         {		2787	24571				11838
14                             a[k] = b[k];							
15                         }							
16                     else							
17                         {		91877	9113				138133
18                             a[k] = sqrt(b[k]);							
19                         }							
20                     k++;							
21                     count++;							
22         }	Source Inspector						
23     }							
24     return bytes;							
25 }							

Diagram showing the control flow graph (CFG) of the program. The graph consists of 13 basic blocks (1-12, 17) and an exit node (Addr 1). The blocks are colored: 1, 2, 3, 11, 12, 17 are yellow; 4, 5, 6, 7, 8, 9, 10 are red; 13 is green. Edges represent transitions between blocks. For example, Basic Block 1 leads to Basic Block 2, which leads to Basic Block 3. Basic Block 3 has two outgoing edges: one to Basic Block 11 and one to Basic Block 11. Basic Block 11 leads to Basic Block 5, which leads to Basic Block 7. Basic Block 7 leads to Basic Block 8, which leads to Basic Block 9. Basic Block 9 leads to Basic Block 10, which leads to the exit node (Addr 1). Basic Block 6 is also shown as a separate node with an incoming edge from Basic Block 11 and an outgoing edge to Basic Block 7.