



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SPECint®_rate2006 = 440

SGI Rackable C2108-G9 (AMD Opteron 6344, 2.60 GHz)

SPECint_rate_base2006 = 395

CPU2006 license: 4

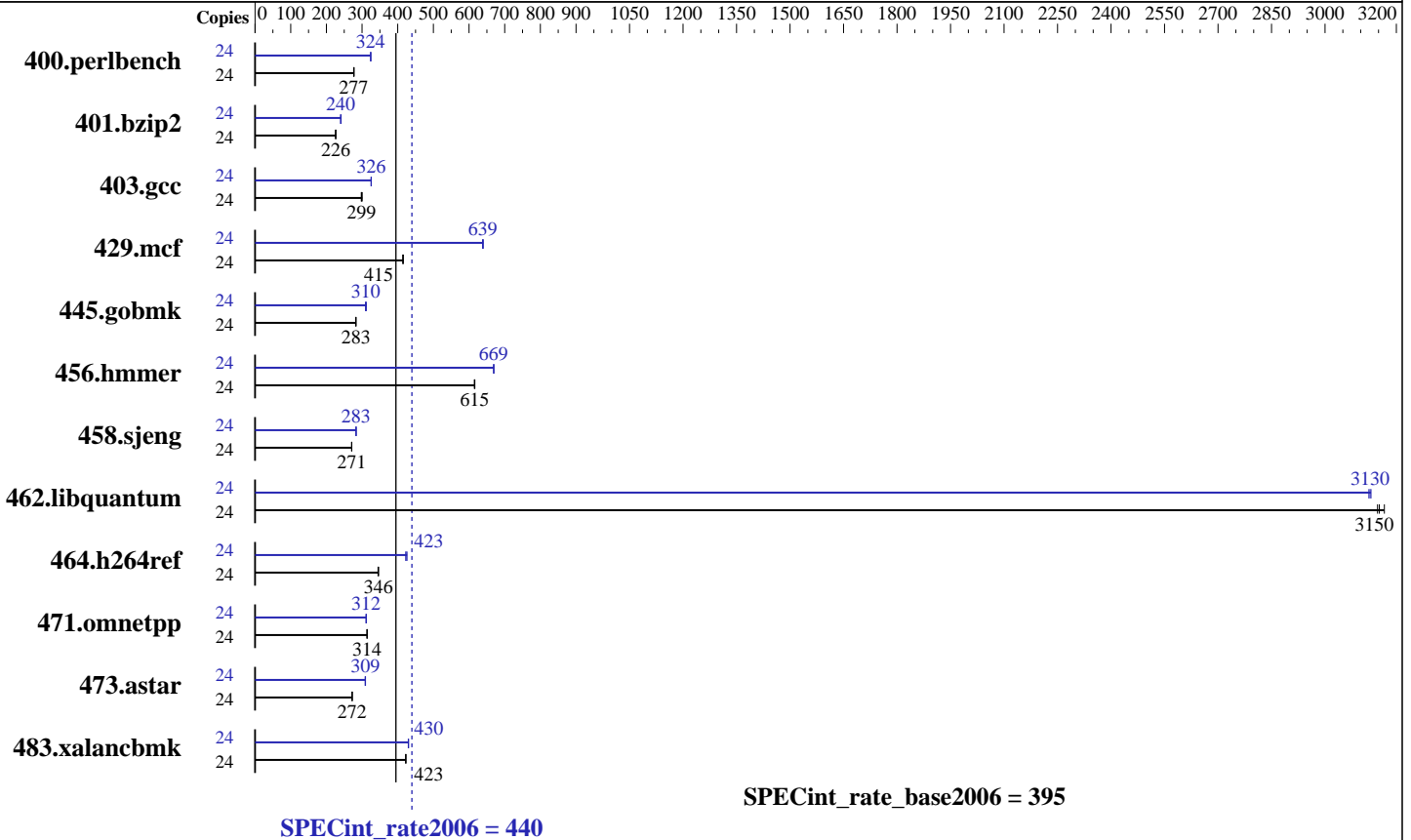
Test sponsor: SGI

Tested by: SGI

Test date: Sep-2013

Hardware Availability: Mar-2013

Software Availability: Feb-2013



Hardware

CPU Name: AMD Opteron 6344
 CPU Characteristics: AMD Turbo CORE technology up to 3.20 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 384 KB I on chip per chip,
 64 KB I shared / 2 cores;
 16 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 2 MB shared / 2 cores
 L3 Cache: 16 MB I+D on chip per chip, 8 MB shared / 6 cores
 Other Cache: None
 Memory: 64 GB (4 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 3000 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.4,
 (Santiago)
 Kernel version 2.6.32-358.el6.x86_64
 Compiler: C/C++: Version 4.5.2 of x86 Open64 Compiler Suite
 (from AMD)
 Auto Parallel: No
 File System: xfs
 System State: Run level 3 (Full multiuser with network)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: SmartHeap 10.0 32-bit Library for Linux



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SPECint_rate2006 = 440

SGI Rackable C2108-G9 (AMD Opteron 6344, 2.60 GHz)

SPECint_rate_base2006 = 395

CPU2006 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Sep-2013

Hardware Availability: Mar-2013

Software Availability: Feb-2013

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	847	277	847	277	844	278	24	724	324	723	324	723	324
401.bzip2	24	1023	226	1022	227	1027	226	24	960	241	965	240	964	240
403.gcc	24	647	299	649	298	643	300	24	593	326	593	326	594	325
429.mcf	24	527	416	528	415	528	414	24	343	638	342	639	342	640
445.gobmk	24	889	283	891	283	892	282	24	807	312	813	310	811	310
456.hammer	24	363	616	364	615	364	615	24	334	669	335	669	335	669
458.sjeng	24	1072	271	1070	271	1072	271	24	1024	284	1027	283	1025	283
462.libquantum	24	158	3150	158	3150	157	3170	24	159	3120	159	3130	159	3130
464.h264ref	24	1537	346	1533	346	1540	345	24	1246	426	1256	423	1256	423
471.omnetpp	24	477	314	477	314	478	314	24	481	312	482	311	481	312
473.astar	24	618	273	619	272	619	272	24	544	310	545	309	545	309
483.xalancbmk	24	392	423	392	423	392	423	24	385	430	385	430	385	430

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.

Operating System Notes

'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2097152' was used to set environment locked pages in memory limit
Huge pages were not configured for this run.

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/data1/cpu2006-v1.2/amd1206-rate-libs-revA/32:/data1/cpu2006-v1.2/amd1206-rate-libs-revA/64"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
<http://developer.amd.com/cpu/open64>

Binaries were compiled on a system with 2x AMD Opteron 6386SE chips + 128GB Memory using RHEL 6.3



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SPECint_rate2006 = 440

SGI Rackable C2108-G9 (AMD Opteron 6344, 2.60 GHz)

SPECint_rate_base2006 = 395

CPU2006 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Sep-2013

Hardware Availability: Mar-2013

Software Availability: Feb-2013

Base Compiler Invocation

C benchmarks:
opencc

C++ benchmarks:
openCC

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-Ofast -CG:local_sched_alg=1 -INLINE:aggressive=ON -IPA:plimit=8000
-IPA:small_pu=100 -HP:bd=2m:heap=2m -mso -LNO:prefetch=2
-march=bdver1

C++ benchmarks:
-Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on -D__OPEN64_FAST_SET
-march=bdver1 -L/root/work/libraries/SmartHeap-10/lib -lsmarheap

Peak Compiler Invocation

C benchmarks:
opencc

C++ benchmarks:
openCC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SPECint_rate2006 = 440

SGI Rackable C2108-G9 (AMD Opteron 6344, 2.60 GHz)

SPECint_rate_base2006 = 395

CPU2006 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Sep-2013

Hardware Availability: Mar-2013

Software Availability: Feb-2013

Peak Portability Flags (Continued)

401.bzip2: -DSPEC_CPU_LP64
 445.gobmk: -DSPEC_CPU_LP64
 456.hmmer: -DSPEC_CPU_LP64
 458.sjeng: -DSPEC_CPU_LP64
 462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
 464.h264ref: -DSPEC_CPU_LP64
 473.astar: -DSPEC_CPU_LP64
 483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
 -LNO:prefetch=2 -LNO:opt=0 -IPA:plimit=20000
 -OPT:unroll_times_max=8 -OPT:unroll_size=256
 -OPT:unroll_level=2 -OPT:keep_ext=on -WOPT:if_conv=0
 -WOPT:sib=on -CG:local_sched_alg=1 -CG:unroll_fb_req=on
 -CG:movext_icmp=off -HP:bd=2m:heap=2m -march=bdver1
 -GRA:aggr_loop_splitting=off -GRA:loop_splitting=off

401.bzip2: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
 -LNO:prefetch=2 -LNO:pf2=0 -OPT:alias=disjoint
 -OPT:goto=off -CG:local_sched_alg=1 -HP:bd=2m:heap=2m
 -march=bdver2

403.gcc: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
 -LNO:trip_count=256 -CG:cmp_peep=on -CG:pre_minreg_level=2
 -m32 -HP:bd=2m:heap=2m -GRA:unspill=on -IPA:small_pu=200
 -WOPT:sib=on -march=bdver2 -mno-fma4

429.mcf: -O3 -OPT:unroll_times_max=5 -ipa -INLINE:aggressive=on
 -CG:gcm=off -CG:dsched=on -GRA:prioritize_by_density=on
 -m32 -HP:bd=2m:heap=2m -mso -march=bdver1

445.gobmk: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
 -OPT:unroll_size=256 -OPT:unroll_times_max=8
 -OPT:keep_ext=on -IPA:plimit=750 -IPA:min_hotness=300
 -IPA:pu_reorder=1 -LNO:ignore_feedback=off -WOPT:if_conv=2
 -HP:bd=2m:heap=2m -march=bdver1

456.hmmer: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
 -LNO:prefetch=2 -OPT:alias=disjoint
 -OPT:unroll_times_max=16 -OPT:unroll_size=512
 -OPT:unroll_level=2 -OPT:keep_ext=on -CG:cflow=0
 -CG:cmp_peep=on -CG:pre_local_sched=off -HP:bd=2m:heap=2m
 -CG:p2align=0 -CG:load_exe=3 -CG:dsched=on -march=bdver1

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SPECint_rate2006 = 440

SGI Rackable C2108-G9 (AMD Opteron 6344, 2.60 GHz)

SPECint_rate_base2006 = 395

CPU2006 license: 4

Test date: Sep-2013

Test sponsor: SGI

Hardware Availability: Mar-2013

Tested by: SGI

Software Availability: Feb-2013

Peak Optimization Flags (Continued)

458.sjeng: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-CG:ptr_load_use=0 -CG:divrem_opt=on -CG:movext_icmp=off
-CG:locs_best=on -LNO:full_unroll=10 -IPA:pu_reorder=2
-HP:heap=2m:bd=2m -WOPT:sib=on -march=bdver1

462.libquantum: -Ofast -mso -OPT:unroll_size=512 -OPT:unroll_times_max=16
-LNO:prefetch=2 -LNO:prefetch_ahead=4 -LNO:pf2=0
-CG:local_sched_alg=1 -CG:p2align=0 -INLINE:aggressive=ON
-IPA:plimit=15000 -IPA:small_pu=100
-HP:bdt=2m:heap=2m,limit=300 -march=bdver2

464.h264ref: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:unroll_size=256 -OPT:unroll_times_max=2
-IPA:plimit=20000 -OPT:alias=disjoint -CG:ptr_load_use=0
-CG:local_sched_alg=1 -HP:bdt=2m:heap=2m -march=bdver1

C++ benchmarks:

471.omnetpp: -Ofast -m32 -INLINE:aggressive=on -CG:cmp_peep=on
-WOPT:sib=on -D__OPEN64_FAST_SET -march=bdver2 -mno-fma4
-L/root/work/libraries/SmartHeap-10/lib -lsmarheap

473.astar: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-WOPT:if_conv=0 -WOPT:sib=on -CG:divrem_opt=on
-CG:p2align=1 -CG:dsched=on -GRA:optimize_boundary=on
-OPT:alias=disjoint -INLINE:aggressive=on
-IPA:small_pu=3000 -IPA:plimit=3000 -HP:bdt=2m:heap=2m
-march=bdver1

483.xalancbmk: -Ofast -LNO:prefetch=2 -OPT:unroll_size=512
-OPT:unroll_times_max=8 -D__OPEN64_FAST_SET
-INLINE:aggressive=on -m32 -CG:cmp_peep=on
-CG:local_sched=off -CG:p2align=1 -GRA:unspill=on
-TENV:frame_pointer=off -fno-emit-exceptions -march=bdver2
-mno-fma4
-L/root/work/libraries/SmartHeap-10/lib -lsmarheap

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/x86-open64-452-flags-rate-revA-I.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/x86-open64-452-flags-rate-revA-I.xml>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SPECint_rate2006 = 440

SGI Rackable C2108-G9 (AMD Opteron 6344, 2.60 GHz)

SPECint_rate_base2006 = 395

CPU2006 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Sep-2013

Hardware Availability: Mar-2013

Software Availability: Feb-2013

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 17:15:54 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 October 2013.