



SPEC® CINT2006 Result

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Supermicro

Supermicro H8DCL-iF motherboard
(AMD Opteron 4226, 2.70 GHz)

SPECint®_rate2006 = 216

SPECint_rate_base2006 = 190

CPU2006 license: 001176

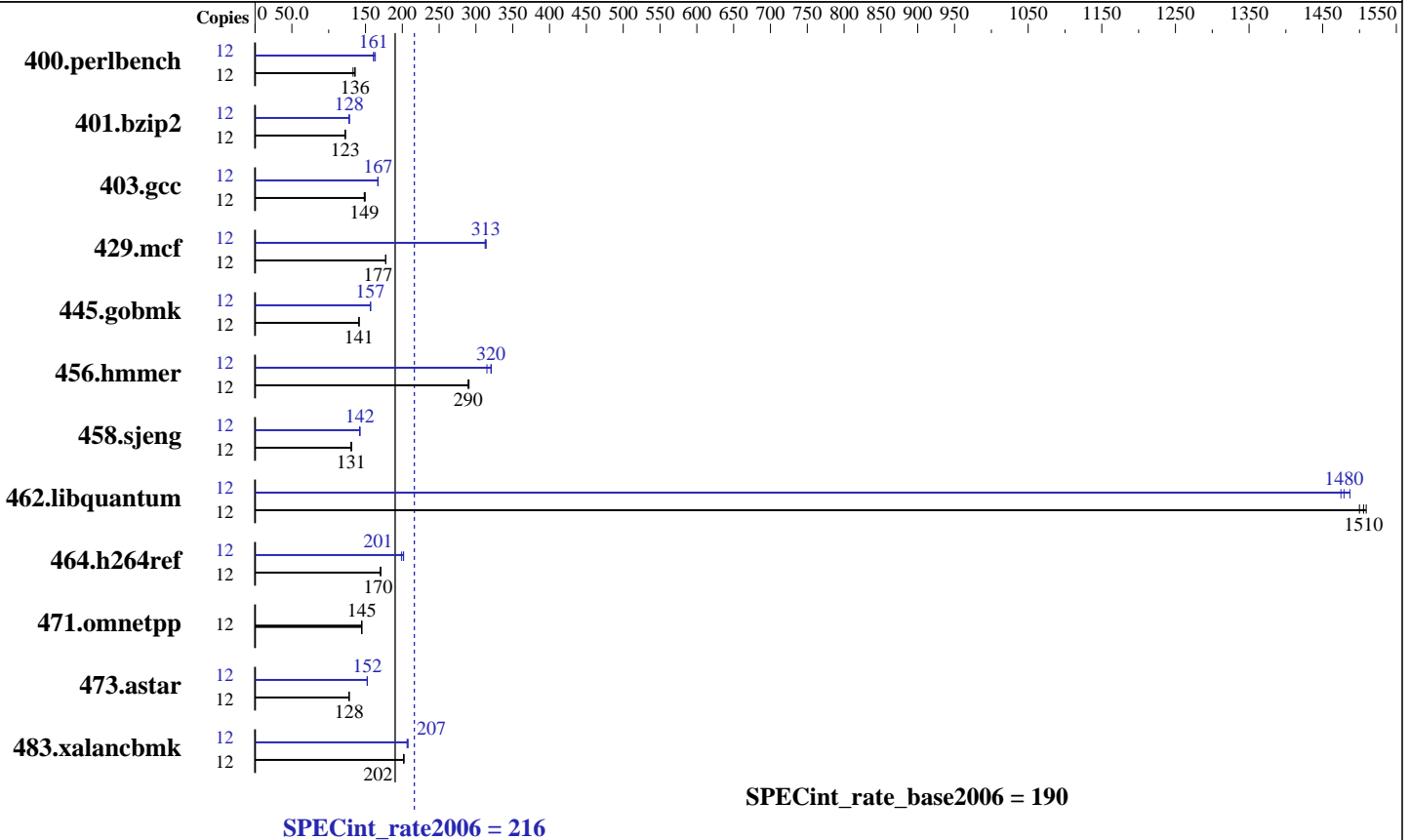
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2012

Hardware Availability: Nov-2011

Software Availability: Dec-2011



Hardware

CPU Name: AMD Opteron 4226
 CPU Characteristics: AMD Turbo CORE technology up to 3.10 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 192 KB I on chip per chip,
64 KB I shared / 2 cores;
16 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip, 2 MB shared / 2 cores
 L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (4 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.2,
Kernel 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 4.5.1 of x86 Open64 Compiler Suite
(from AMD)
 Auto Parallel: No
 File System: ext3
 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



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	12	864	136	881	133	862	136	12	728	161	728	161	718	163
401.bzip2	12	943	123	947	122	944	123	12	906	128	906	128	903	128
403.gcc	12	649	149	646	150	651	148	12	578	167	579	167	579	167
429.mcf	12	616	178	617	177	617	177	12	350	312	349	313	349	314
445.gobmk	12	892	141	891	141	892	141	12	802	157	804	157	803	157
456.hammer	12	385	291	387	290	387	290	12	356	315	350	320	349	321
458.sjeng	12	1115	130	1107	131	1111	131	12	1020	142	1019	143	1023	142
462.libquantum	12	165	1510	166	1500	165	1510	12	167	1490	169	1470	168	1480
464.h264ref	12	1560	170	1558	170	1555	171	12	1316	202	1336	199	1319	201
471.omnetpp	12	517	145	518	145	517	145	12	517	145	518	145	517	145
473.astar	12	660	128	660	128	658	128	12	553	152	553	152	553	152
483.xalancbmk	12	411	202	409	202	410	202	12	399	208	401	206	399	207

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

Transparent huge pages were enabled for this run (OS default)

Huge pages were not configured for this run.

Platform Notes

As tested, the system used a Supermicro CSE-743TQ-865B chassis.
The chassis is configured with a PWS-865-PQ power supply, 2 SNK-P0024AP4 heatsink,
as well as 4 FAN-0074L4 middle cooling fan.

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/amd1104-rate-libs-revC/32:/home/cpu2006/amd1104-rate-libs-revC/64"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at

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General Notes (Continued)

<http://developer.amd.com/cpu/open64>

Binaries were compiled on a system with 2x AMD Opteron 6274 chips + 64GB Memory using RHEL 6.1

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.hmmr: -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:
-march=bdver1 -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

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

Peak Compiler Invocation

C benchmarks:
opencc

C++ benchmarks:
openCC



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Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
 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
 483.xalanbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -march=bdver1 -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

401.bzip2: -march=bdver1 -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

403.gcc: -march=bdver1 -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

429.mcf: -march=bdver1 -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

445.gobmk: -march=bdver1 -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

456.hmmer: -march=bdver1 -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

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Peak Optimization Flags (Continued)

458.sjeng: -march=bdver1 -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

462.libquantum: -march=bdver1 -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:bd=2m:heap=2m,limit=300

464.h264ref: -march=bdver1 -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:bd=2m:heap=2m

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -march=bdver1 -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -TENV:frame_pointer=off
-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 -m32
-HP:bd=2m:heap=2m

483.xalancbmk: -march=bdver1 -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
-L/root/work/libraries/SmartHeap-10/lib -lsmartheap

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

<http://www.spec.org/cpu2006/flags/x86-open64-451-flags-rate-revC-I.html>

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

<http://www.spec.org/cpu2006/flags/x86-open64-451-flags-rate-revC-I.xml>



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

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