



SPEC® CINT2006 Result

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Supermicro

Supermicro Processor Blade SBA-7142G-T4 (BHQGE,
Opteron 6348)
AMD Opteron 6348

SPECint®_rate2006 = 798

SPECint_rate_base2006 = 705

CPU2006 license: 001176

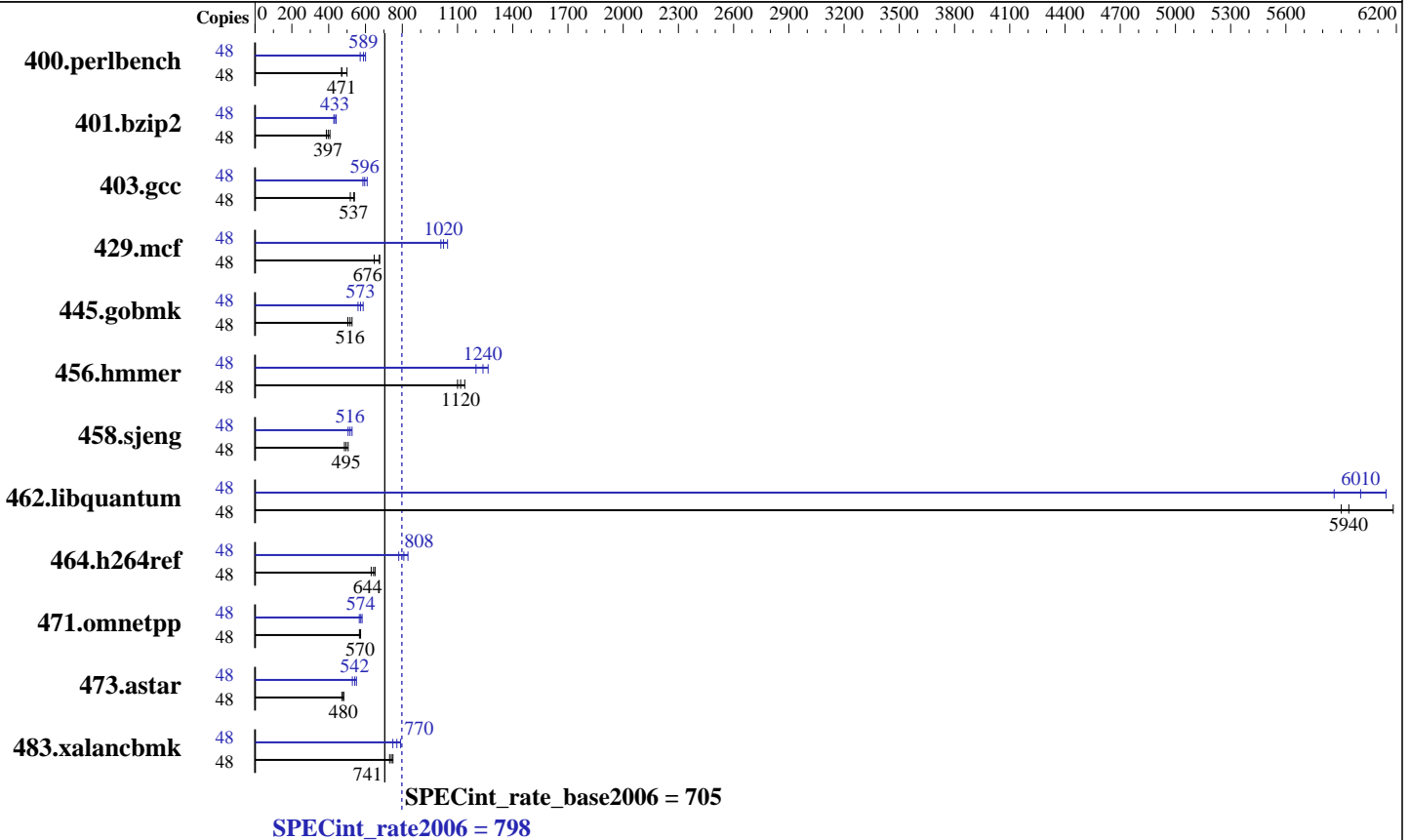
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2012

Hardware Availability: Nov-2012

Software Availability: Aug-2012



Hardware

CPU Name: AMD Opteron 6348
 CPU Characteristics: AMD Turbo CORE technology up to 3.40 GHz
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 48 cores, 4 chips, 12 cores/chip
 CPU(s) orderable: 2,4 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: 128 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 4.5.2 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	48	996	471	996	471	939	500	48	821	571	796	589	781	600
401.bzip2	48	1196	387	1166	397	1138	407	48	1082	428	1071	433	1050	441
403.gcc	48	747	517	720	537	716	540	48	659	586	649	596	634	609
429.mcf	48	676	647	647	676	648	676	48	434	1010	428	1020	419	1050
445.gobmk	48	999	504	976	516	956	527	48	900	559	879	573	857	587
456.hammer	48	407	1100	393	1140	401	1120	48	373	1200	362	1240	354	1270
458.sjeng	48	1196	486	1173	495	1148	506	48	1149	505	1126	516	1102	527
462.libquantum	48	167	5940	169	5900	161	6180	48	170	5860	166	6010	162	6140
464.h264ref	48	1683	631	1629	652	1650	644	48	1361	781	1314	808	1279	831
471.omnetpp	48	523	573	526	570	529	567	48	530	566	522	574	516	582
473.astar	48	700	482	702	480	715	472	48	637	529	622	542	612	551
483.xalancbmk	48	447	741	442	749	453	731	48	442	749	430	770	419	791

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.

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/spec/amd1206-rate-libs-revA/32:/home/spec/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



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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

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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:bdt=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:bdt=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:bdt=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:bdt=2m:heap=2m
           -CG:p2align=0 -CG:load_exe=3 -CG:dsched=on -march=bdver1

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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:bd=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:bd=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:bd=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>



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For other inquiries, please contact webmaster@spec.org.

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