



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

SPECint®_rate2006 = 207

Supermicro A+ Server 2022TC-HTRF4
(H8DCT-HLN4F, AMD Opteron 4228 HE)

SPECint_rate_base2006 = 185

CPU2006 license: 001176

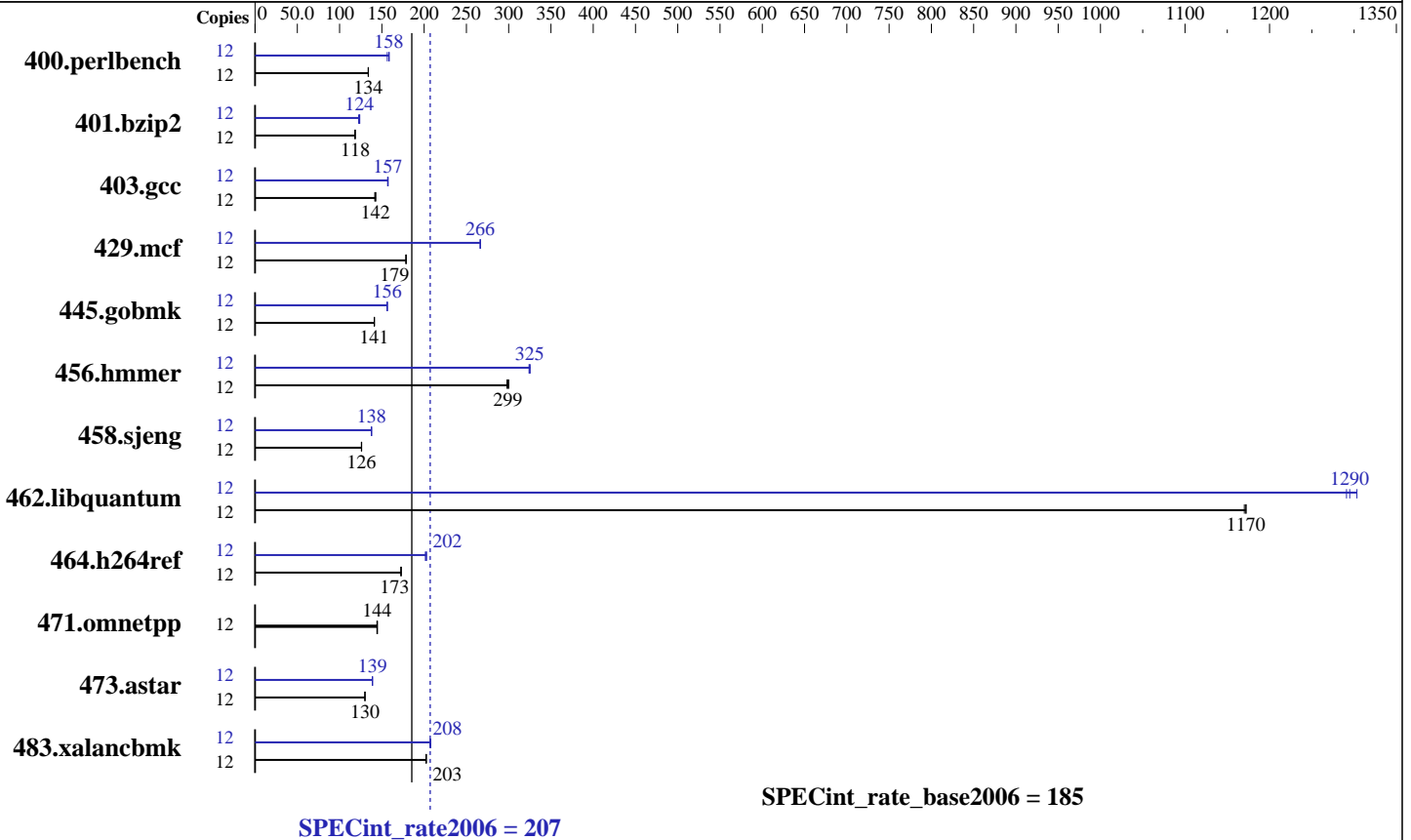
Test date: Feb-2012

Test sponsor: Supermicro

Hardware Availability: Nov-2011

Tested by: Supermicro

Software Availability: Dec-2011



Hardware

CPU Name: AMD Opteron 4228 HE
 CPU Characteristics: AMD Turbo CORE technology up to 3.60 GHz
 CPU MHz: 2800
 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 4.2.5.2 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



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

Supermicro A+ Server 2022TC-HTRF4
(H8DCT-HLN4F, AMD Opteron 4228 HE)

SPECint_rate2006 = 207

SPECint_rate_base2006 = 185

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Feb-2012
Hardware Availability: Nov-2011
Software Availability: Dec-2011

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	12	874	134	875	134	876	134	12	750	156	740	158	739	159
401.bzip2	12	977	119	981	118	977	118	12	945	123	936	124	936	124
403.gcc	12	682	142	676	143	678	142	12	616	157	613	157	615	157
429.mcf	12	613	179	613	178	612	179	12	410	267	411	266	411	266
445.gobmk	12	893	141	891	141	893	141	12	804	157	805	156	807	156
456.hammer	12	376	298	374	299	373	300	12	345	324	345	325	344	325
458.sjeng	12	1155	126	1152	126	1152	126	12	1053	138	1054	138	1055	138
462.libquantum	12	212	1170	212	1170	212	1170	12	193	1290	191	1300	192	1290
464.h264ref	12	1538	173	1540	172	1535	173	12	1318	201	1309	203	1313	202
471.omnetpp	12	520	144	520	144	518	145	12	520	144	520	144	518	145
473.astar	12	648	130	648	130	648	130	12	607	139	606	139	606	139
483.xalancbmk	12	410	202	409	203	409	203	12	400	207	399	208	399	208

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

Set transparent_hugepage=never as a boot parameter in /boot/grub/menu.lst
Set kernel/randomize_va_space=0 in /etc/sysctl.conf

Huge pages were not configured for this run.

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/amd1104-rate-libs-revB/32:/usr/cpu2006/amd1104-rate-libs-revB/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 6282SE chips + 64GB Memory using RHEL 6.1



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

Supermicro A+ Server 2022TC-HTRF4
(H8DCT-HLN4F, AMD Opteron 4228 HE)

SPECint_rate2006 = 207

SPECint_rate_base2006 = 185

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Feb-2012
Hardware Availability: Nov-2011
Software Availability: Dec-2011

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:
-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

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

Supermicro

SPECint_rate2006 = 207

Supermicro A+ Server 2022TC-HTRF4
(H8DCT-HLN4F, AMD Opteron 4228 HE)

SPECint_rate_base2006 = 185

CPU2006 license: 001176

Test date: Feb-2012

Test sponsor: Supermicro

Hardware Availability: Nov-2011

Tested by: Supermicro

Software Availability: Dec-2011

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
 483.xalancbmk: -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
 -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

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

SPECint_rate2006 = 207

Supermicro A+ Server 2022TC-HTRF4
(H8DCT-HLN4F, AMD Opteron 4228 HE)

SPECint_rate_base2006 = 185

CPU2006 license: 001176

Test date: Feb-2012

Test sponsor: Supermicro

Hardware Availability: Nov-2011

Tested by: Supermicro

Software Availability: Dec-2011

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:bd=2m:heap=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
-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
-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 -GRA:unspill=on -TENV:frame_pointer=off
-fno-emit-exceptions
-L/root/work/libraries/SmartHeap-10/lib -lsmartheap

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/amd-platform-rate-revB.20120103.html>

<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/amd-platform-rate-revB.20120103.xml>

<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revB.xml>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

Supermicro A+ Server 2022TC-HTRF4
(H8DCT-HLN4F, AMD Opteron 4228 HE)

SPECint_rate2006 = 207

SPECint_rate_base2006 = 185

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Feb-2012

Hardware Availability: Nov-2011

Software Availability: Dec-2011

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 07:53:05 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 April 2012.