



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

Supermicro A+ Server 1012G-MTF  
(H8SGL-F, AMD Opteron 6386 SE)

SPECint®\_rate2006 = 309

SPECint\_rate\_base2006 = 269

CPU2006 license: 001176

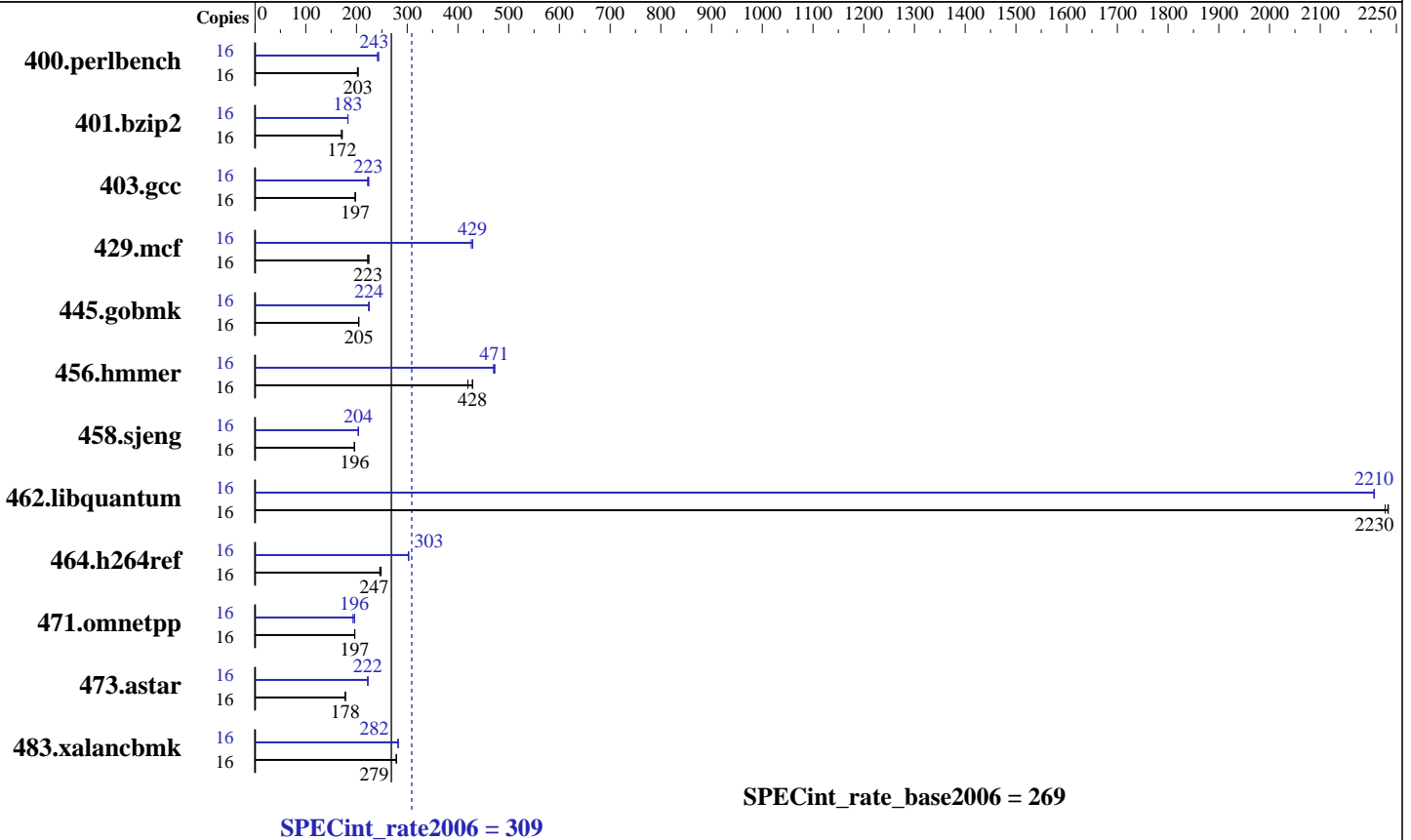
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Sep-2012

Hardware Availability: Nov-2012

Software Availability: Aug-2012



### Hardware

CPU Name: AMD Opteron 6386 SE  
 CPU Characteristics: AMD Turbo CORE technology up to 3.50 GHz  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 1 chip, 16 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 512 KB I on chip per chip,  
64 KB I shared / 2 cores;  
16 KB D on chip per core  
 Secondary Cache: 16 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 / 8 cores  
 Other Cache: None  
 Memory: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 x 2048 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.3,  
Kernel 2.6.32-279.el6.x86\_64  
 Compiler: C/C++: Version 4.5.2 of x86 Open64 Compiler Suite  
(from AMD)  
 Auto Parallel: No  
 File System: ext4  
 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 1012G-MTF  
(H8SGL-F, AMD Opteron 6386 SE)

SPECint\_rate2006 = 309

SPECint\_rate\_base2006 = 269

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Sep-2012

Hardware Availability: Nov-2012

Software Availability: Aug-2012

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	<b>770</b>	<b>203</b>	769	203	775	202	16	648	241	<b>643</b>	<b>243</b>	642	244
401.bzip2	16	899	172	908	170	<b>899</b>	<b>172</b>	16	843	183	844	183	<b>843</b>	<b>183</b>
403.gcc	16	650	198	653	197	<b>652</b>	<b>197</b>	16	574	224	580	222	<b>577</b>	<b>223</b>
429.mcf	16	650	225	<b>654</b>	<b>223</b>	657	222	16	340	429	342	426	<b>341</b>	<b>429</b>
445.gobmk	16	<b>820</b>	<b>205</b>	822	204	820	205	16	<b>748</b>	<b>224</b>	746	225	749	224
456.hammer	16	<b>349</b>	<b>428</b>	356	420	348	429	16	316	473	<b>317</b>	<b>471</b>	318	470
458.sjeng	16	990	196	<b>987</b>	<b>196</b>	986	196	16	<b>951</b>	<b>204</b>	951	204	950	204
462.libquantum	16	148	2230	149	2230	<b>148</b>	<b>2230</b>	16	150	2210	150	2210	<b>150</b>	<b>2210</b>
464.h264ref	16	1424	249	<b>1434</b>	<b>247</b>	1440	246	16	1172	302	1169	303	<b>1169</b>	<b>303</b>
471.omnetpp	16	<b>508</b>	<b>197</b>	509	196	508	197	16	510	196	<b>511</b>	<b>196</b>	518	193
473.astar	16	631	178	<b>631</b>	<b>178</b>	632	178	16	505	222	505	223	<b>505</b>	<b>222</b>
483.xalancbmk	16	397	278	<b>396</b>	<b>279</b>	396	279	16	<b>391</b>	<b>282</b>	391	282	391	282

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 vm/nr\_hugepages=14336 in /etc/sysctl.conf  
mount -t hugetlbfs nodev /mnt/hugepages

## General Notes

Environment variables set by runspec before the start of the run:

HUGETLB\_LIMIT = "896"

LD\_LIBRARY\_PATH = "/usr/cpu2006/amd1206-rate-libs-revA/32:/usr/cpu2006/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

## Supermicro

Supermicro A+ Server 1012G-MTF  
(H8SGL-F, AMD Opteron 6386 SE)

SPECint\_rate2006 = 309

SPECint\_rate\_base2006 = 269

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

Test date: Sep-2012  
Hardware Availability: Nov-2012  
Software Availability: Aug-2012

## 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

## Supermicro

Supermicro A+ Server 1012G-MTF  
(H8SGL-F, AMD Opteron 6386 SE)

SPECint\_rate2006 = 309

SPECint\_rate\_base2006 = 269

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Sep-2012

Hardware Availability: Nov-2012

Software Availability: Aug-2012

## 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

```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

**SPECint\_rate2006 = 309**

Supermicro A+ Server 1012G-MTF  
(H8SGL-F, AMD Opteron 6386 SE)

**SPECint\_rate\_base2006 = 269**

**CPU2006 license:** 001176

**Test date:** Sep-2012

**Test sponsor:** Supermicro

**Hardware Availability:** Nov-2012

**Tested by:** Supermicro

**Software Availability:** Aug-2012

## 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>



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

Supermicro A+ Server 1012G-MTF  
(H8SGL-F, AMD Opteron 6386 SE)

SPECint\_rate2006 = 309

SPECint\_rate\_base2006 = 269

**CPU2006 license:** 001176

**Test sponsor:** Supermicro

**Tested by:** Supermicro

**Test date:** Sep-2012

**Hardware Availability:** Nov-2012

**Software Availability:** Aug-2012

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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 14:23:11 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 2 January 2013.