



# SPEC<sup>®</sup> CINT2006 Result

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## Supermicro

SuperServer 5038AD-T (C7Z87-OCE, Intel Core i5-4670K, 3.40 GHz)

SPECint<sup>®</sup>\_rate2006 = 179

SPECint\_rate\_base2006 = 173

CPU2006 license: 001176

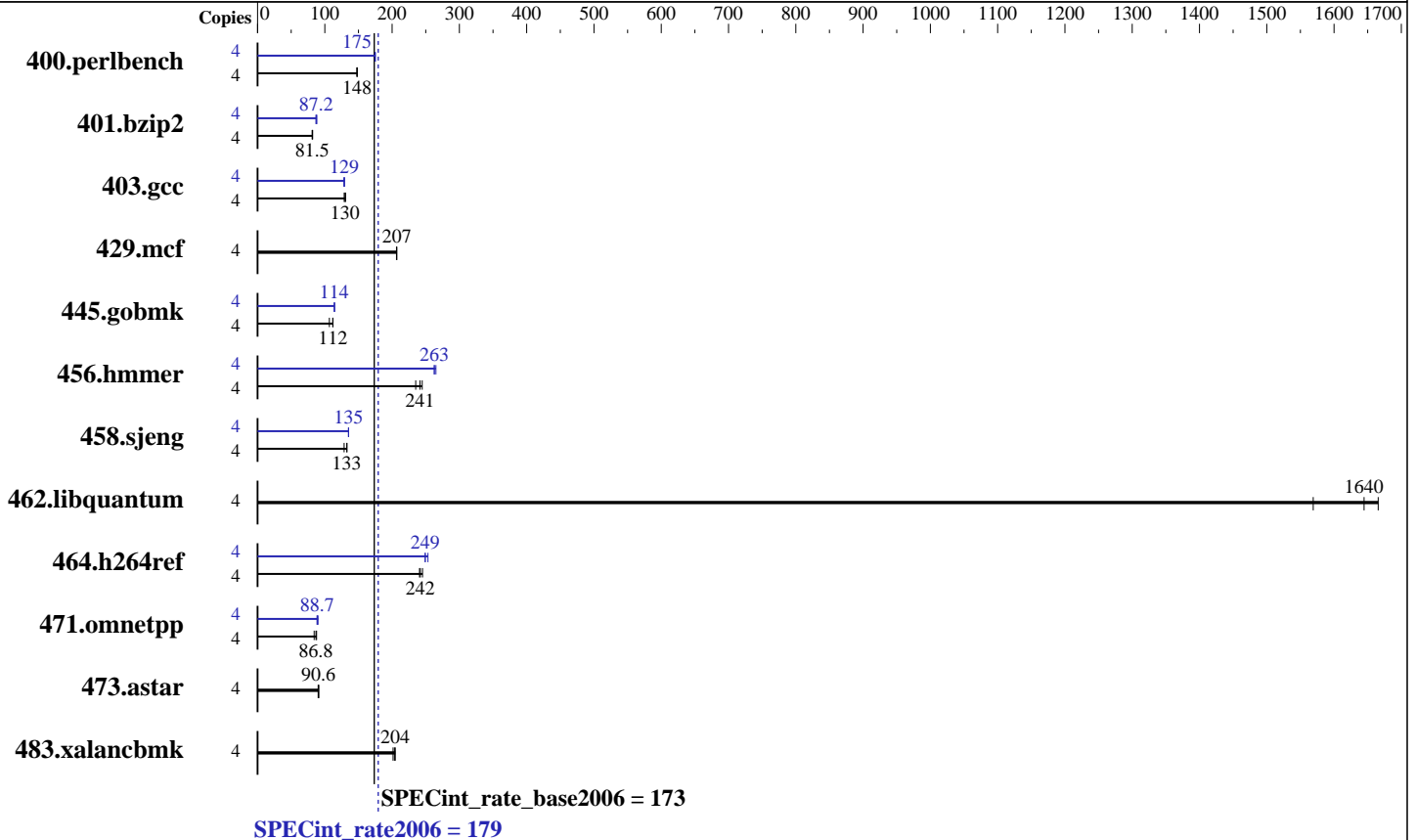
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2013

Hardware Availability: Jun-2013

Software Availability: May-2013



### Hardware

CPU Name: Intel Core i5-4670K  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 6 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (4 x 4 GB 2Rx4 PC3-12800U-11)  
 Disk Subsystem: 1 x 300 GB SATA II, 10000 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.el6.x86\_64  
 Compiler: C/C++: Version 13.1.1.163 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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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  | 4      | 265               | 148                | <b><u>264</u></b> | <b><u>148</u></b>  | 264                | 148                | 4      | 224               | 174                | <b><u>224</u></b> | <b><u>175</u></b>  | 223                | 175                |
| 401.bzip2      | 4      | 476               | 81.1               | <b><u>473</u></b> | <b><u>81.5</u></b> | 471                | 81.9               | 4      | 444               | 86.9               | <b><u>443</u></b> | <b><u>87.2</u></b> | 438                | 88.1               |
| 403.gcc        | 4      | <b><u>248</u></b> | <b><u>130</u></b>  | 246               | 131                | 250                | 129                | 4      | <b><u>250</u></b> | <b><u>129</u></b>  | 251               | 128                | 249                | 129                |
| 429.mcf        | 4      | 176               | 207                | 177               | 206                | <b><u>176</u></b>  | <b><u>207</u></b>  | 4      | 176               | 207                | 177               | 206                | <b><u>176</u></b>  | <b><u>207</u></b>  |
| 445.gobmk      | 4      | 393               | 107                | <b><u>375</u></b> | <b><u>112</u></b>  | 375                | 112                | 4      | 367               | 114                | 367               | 114                | <b><u>367</u></b>  | <b><u>114</u></b>  |
| 456.hammer     | 4      | 159               | 235                | <b><u>155</u></b> | <b><u>241</u></b>  | 153                | 245                | 4      | <b><u>142</u></b> | <b><u>263</u></b>  | 142               | 263                | 141                | 265                |
| 458.sjeng      | 4      | 376               | 129                | <b><u>365</u></b> | <b><u>133</u></b>  | 364                | 133                | 4      | <b><u>358</u></b> | <b><u>135</u></b>  | 358               | 135                | 358                | 135                |
| 462.libquantum | 4      | 49.8              | 1670               | 52.8              | 1570               | <b><u>50.4</u></b> | <b><u>1640</u></b> | 4      | 49.8              | 1670               | 52.8              | 1570               | <b><u>50.4</u></b> | <b><u>1640</u></b> |
| 464.h264ref    | 4      | 368               | 241                | 361               | 245                | <b><u>366</u></b>  | <b><u>242</u></b>  | 4      | 350               | 253                | <b><u>355</u></b> | <b><u>249</u></b>  | 355                | 249                |
| 471.omnetpp    | 4      | 297               | 84.1               | <b><u>288</u></b> | <b><u>86.8</u></b> | 285                | 87.7               | 4      | 283               | 88.4               | 278               | 89.9               | <b><u>282</u></b>  | <b><u>88.7</u></b> |
| 473.astar      | 4      | <b><u>310</u></b> | <b><u>90.6</u></b> | 309               | 91.0               | 312                | 90.0               | 4      | <b><u>310</u></b> | <b><u>90.6</u></b> | 309               | 91.0               | 312                | 90.0               |
| 483.xalancbmk  | 4      | <b><u>136</u></b> | <b><u>204</u></b>  | 137               | 201                | 135                | 205                | 4      | <b><u>136</u></b> | <b><u>204</u></b>  | 137               | 201                | 135                | 205                |

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

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## Base Compiler Invocation

C benchmarks:  
icc -m32

C++ benchmarks:  
icpc -m32



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/sh -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32  
400.perlbench: icc -m64  
401.bzip2: icc -m64  
456.hmmer: icc -m64  
458.sjeng: icc -m64  
C++ benchmarks:  
icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
-L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes



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## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

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

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.html>

<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.html>

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

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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