



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 2028R-C1R  
(X10DRH-C , Intel Xeon E5-2623 v3)

SPECint®\_rate2006 = 424

SPECint\_rate\_base2006 = 406

CPU2006 license: 001176

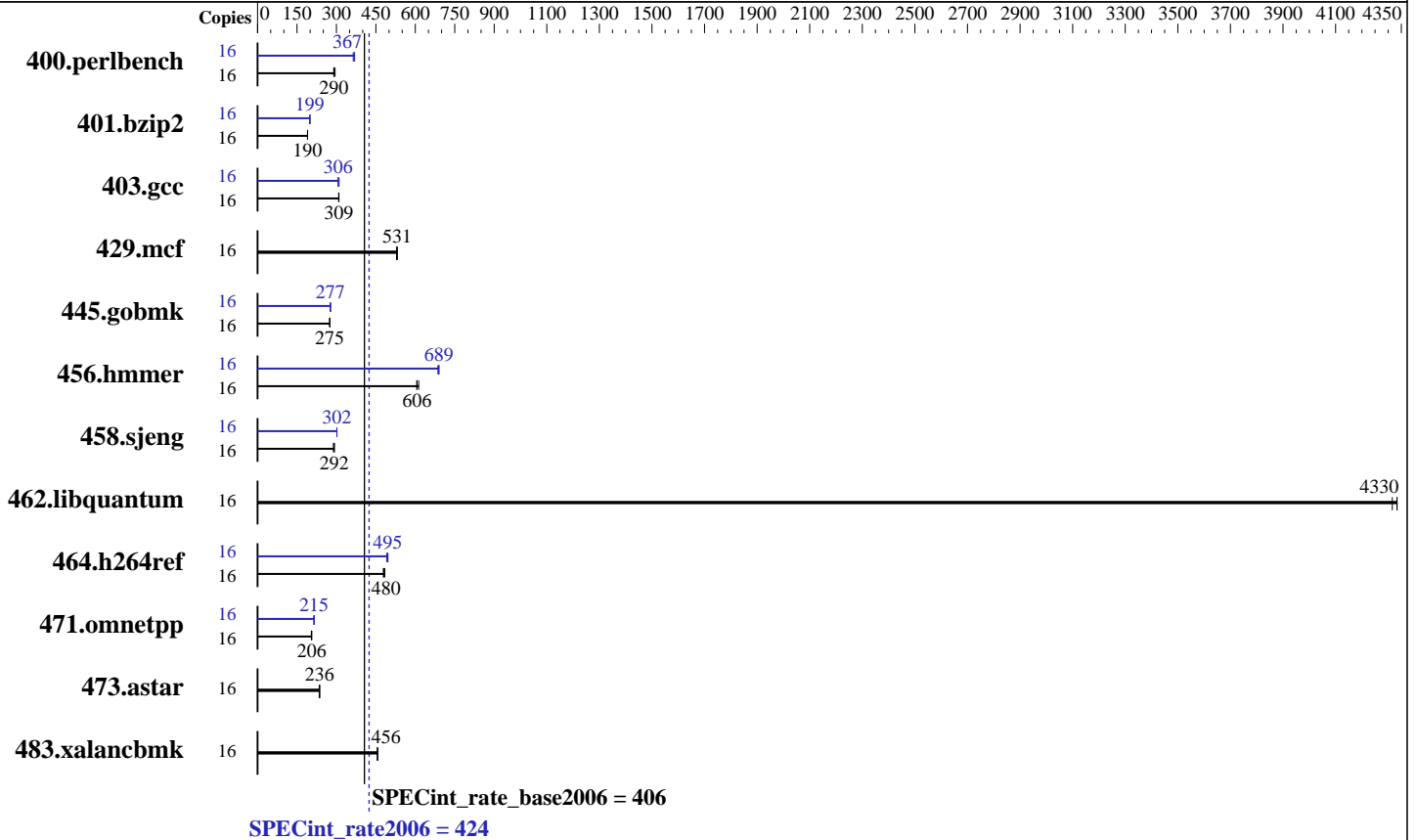
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jan-2014

Hardware Availability: Nov-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2623 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 600 GB SATA III SSD  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.0, Kernel 3.10.0-123.el7.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 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  | 16     | 530        | 295        | 539        | 290        | <u>538</u>  | <u>290</u>  | 16     | <u>426</u> | <u>367</u> | 430        | 364        | 423         | 369         |
| 401.bzip2      | 16     | 813        | 190        | 811        | 190        | <u>813</u>  | <u>190</u>  | 16     | 777        | 199        | 775        | 199        | <u>776</u>  | <u>199</u>  |
| 403.gcc        | 16     | 416        | 309        | <u>416</u> | <u>309</u> | 418         | 308         | 16     | 415        | 310        | <u>420</u> | <u>306</u> | 421         | 306         |
| 429.mcf        | 16     | 275        | 531        | 276        | 529        | <u>275</u>  | <u>531</u>  | 16     | 275        | 531        | 276        | 529        | <u>275</u>  | <u>531</u>  |
| 445.gobmk      | 16     | 611        | 275        | 612        | 274        | <u>611</u>  | <u>275</u>  | 16     | <u>606</u> | <u>277</u> | 606        | 277        | 604         | 278         |
| 456.hmmer      | 16     | <u>246</u> | <u>606</u> | 246        | 606        | 244         | 613         | 16     | 216        | 690        | 218        | 686        | <u>217</u>  | <u>689</u>  |
| 458.sjeng      | 16     | 663        | 292        | 671        | 289        | <u>664</u>  | <u>292</u>  | 16     | 642        | 302        | 641        | 302        | <u>642</u>  | <u>302</u>  |
| 462.libquantum | 16     | 76.8       | 4320       | 76.5       | 4330       | <u>76.5</u> | <u>4330</u> | 16     | 76.8       | 4320       | 76.5       | 4330       | <u>76.5</u> | <u>4330</u> |
| 464.h264ref    | 16     | 740        | 479        | <u>738</u> | <u>480</u> | 731         | 484         | 16     | 721        | 491        | <u>715</u> | <u>495</u> | 714         | 496         |
| 471.omnetpp    | 16     | <u>486</u> | <u>206</u> | 489        | 204        | 486         | 206         | 16     | <u>466</u> | <u>215</u> | 466        | 215        | 466         | 215         |
| 473.astar      | 16     | 479        | 234        | <u>476</u> | <u>236</u> | 475         | 236         | 16     | 479        | 234        | <u>476</u> | <u>236</u> | 475         | 236         |
| 483.xalancbmk  | 16     | <u>242</u> | <u>456</u> | 242        | 457        | 242         | 456         | 16     | <u>242</u> | <u>456</u> | 242        | 457        | 242         | 456         |

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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"

## Platform Notes

BIOS Settings:  
Enforce POR = Disabled  
Memory Frequency = Auto  
Enable COD = Disabled  
Early Snoop = Disabled

## General Notes

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

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent\_hugepage/enabled

Filesystem page cache cleared with:

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### General Notes (Continued)

```
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

### Base Compiler Invocation

C benchmarks:  
icc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

C++ benchmarks:  
icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

### 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  
-opt-mem-layout-trans=3

C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3 -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 -L/opt/intel/composer\_xe\_2015/lib/ia32

400.perlbench: icc -m64

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## Peak Compiler Invocation (Continued)

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

## 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  
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 -opt-mem-layout-trans=3

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

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## Peak Optimization Flags (Continued)

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

## 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-revH.html>  
<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.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-revH.xml>  
<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.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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