



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 6027R-TRF (X9DRI-F, Intel E5-2650)

**SPECint\_rate2006 = 538**

**SPECint\_rate\_base2006 = 514**

CPU2006 license: 001176

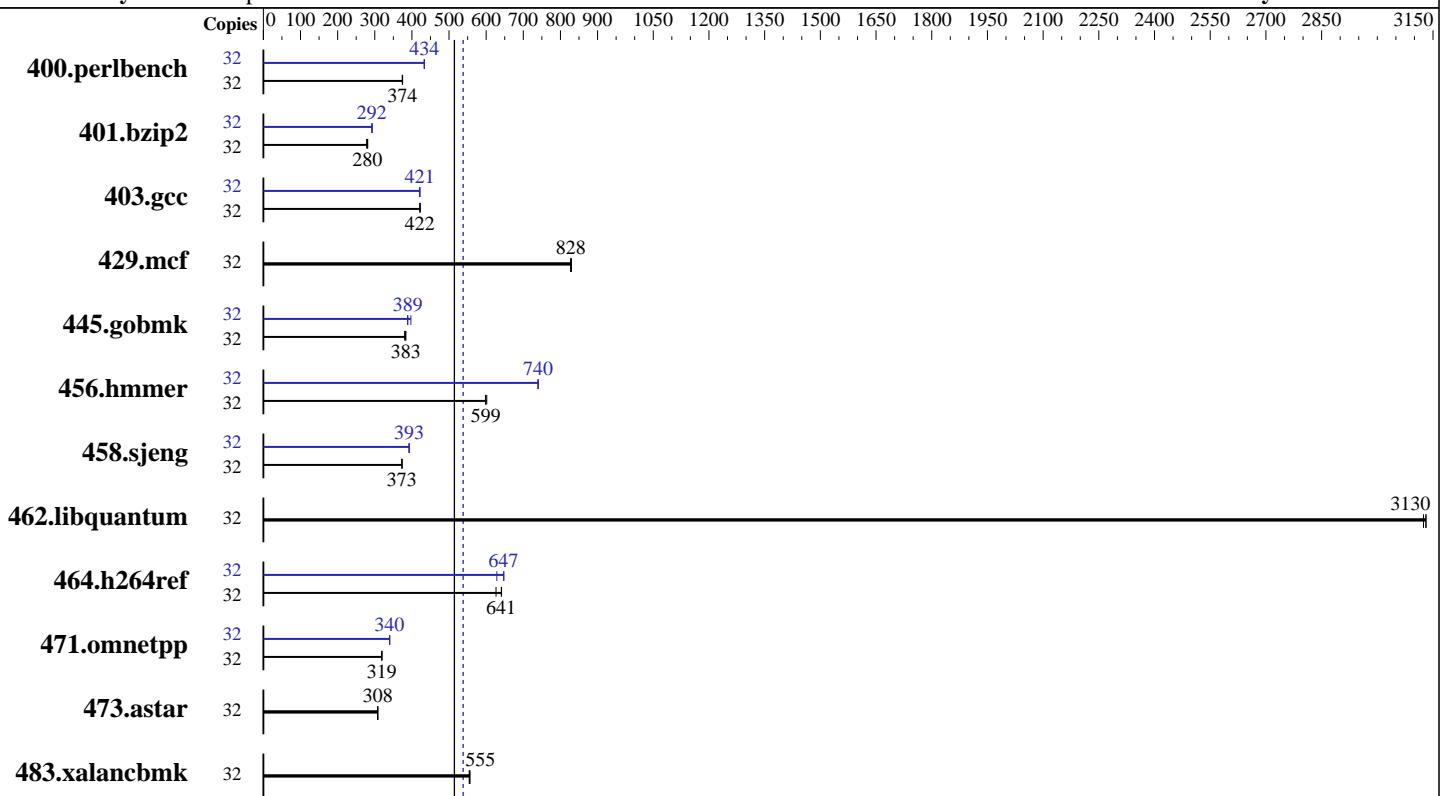
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Mar-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



**SPECint\_rate\_base2006 = 514**

**SPECint\_rate2006 = 538**

### Hardware

|                      |   |
|----------------------|---|
| CPU Name:            | Intel Xeon E5-2650                              |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.80 GHz     |
| CPU MHz:             | 2000  |
| FPU:                 | Integrated                                      |
| CPU(s) enabled:      | 16 cores, 2 chips, 8 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:            | 20 MB I+D on chip per chip                      |
| Other Cache:         | None  |
| Memory:              | 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)      |
| Disk Subsystem:      | 1 x 500 GB SATA II, 7200 RPM                    |
| Other Hardware:      | None  |

### Software

|                   |  |
|-------------------|--|
| Operating System: | Red Hat Enterprise Linux Server Release 6.2 (Santiago), Kernel 2.6.32-220.el6.x86_64 |
| Compiler:         | C/C++: Version 12.1.0.225 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 V9.01   |



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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  | 32     | 834        | 375         | <b>835</b>  | <b>374</b> | 836         | 374        | 32     | 721         | 434         | 722        | 433        | <b>721</b>  | <b>434</b> |
| 401.bzip2      | 32     | 1099       | 281         | <b>1103</b> | <b>280</b> | 1111        | 278        | 32     | <b>1056</b> | <b>292</b>  | 1054       | 293        | <b>1057</b> | <b>292</b> |
| 403.gcc        | 32     | 610        | 422         | 611         | 421        | <b>611</b>  | <b>422</b> | 32     | <b>611</b>  | <b>421</b>  | 613        | 420        | 611         | 422        |
| 429.mcf        | 32     | 352        | 830         | <b>353</b>  | <b>828</b> | 353         | 828        | 32     | 352         | 830         | <b>353</b> | <b>828</b> | 353         | 828        |
| 445.gobmk      | 32     | <b>876</b> | <b>383</b>  | 875         | 383        | 883         | 380        | 32     | 845         | 397         | 864        | 388        | <b>863</b>  | <b>389</b> |
| 456.hammer     | 32     | <b>499</b> | <b>599</b>  | 499         | 598        | 496         | 602        | 32     | <b>403</b>  | <b>740</b>  | 404        | 740        | 403         | 740        |
| 458.sjeng      | 32     | 1037       | 373         | <b>1037</b> | <b>373</b> | 1038        | 373        | 32     | <b>986</b>  | <b>393</b>  | 985        | 393        | 987         | 392        |
| 462.libquantum | 32     | <b>212</b> | <b>3130</b> | 212         | 3120       | 212         | 3130       | 32     | <b>212</b>  | <b>3130</b> | 212        | 3120       | 212         | 3130       |
| 464.h264ref    | 32     | 1130       | 627         | 1104        | 641        | <b>1105</b> | <b>641</b> | 32     | 1093        | 648         | 1126       | 629        | <b>1095</b> | <b>647</b> |
| 471.omnetpp    | 32     | <b>627</b> | <b>319</b>  | 627         | 319        | 627         | 319        | 32     | 588         | 340         | 588        | 340        | <b>588</b>  | <b>340</b> |
| 473.astar      | 32     | 729        | 308         | 730         | 308        | <b>729</b>  | <b>308</b> | 32     | 729         | 308         | 730        | 308        | <b>729</b>  | <b>308</b> |
| 483.xalancbmk  | 32     | 398        | 555         | <b>398</b>  | <b>555</b> | 397         | 557        | 32     | 398         | 555         | <b>398</b> | <b>555</b> | 397         | 557        |

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"

## General Notes

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

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

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop\_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>



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## Base Compiler Invocation

C benchmarks:

icc -m32

C++ benchmarks:

icpc -m32

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

462.libquantum: -DSPEC\_CPU\_LINUX

483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-Wl,-z,muldefs -L/smartheap -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



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## 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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div  
  
429.mcf: basepeak = yes  
  
445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -opt-mem-layout-trans=3  
  
456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll12 -auto-ilp32  
  
458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll14  
-auto-ilp32  
  
462.libquantum: basepeak = yes  
  
464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll12  
-ansi-alias

C++ benchmarks:

471.omnetpp: -xAVX(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/smartheap -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/Intel-ic12.1-official-linux64.20111122.html>  
<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>  
<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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