



# SPEC® CINT2006 Result

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## Fujitsu

SPECint®2006 = **61.8**

PRIMERGY RX300 S8, Intel Xeon E5-2690 v2, 3.00 GHz

SPECint\_base2006 = **57.6**

CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Sep-2013

Hardware Availability: Oct-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2690 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)  
 Disk Subsystem: 1 x SATA, 450 GB, 15000 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 2.6.32-358.11.1.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

| Benchmark      | Base              |                    |                   |                    |                    |                    | Peak              |                    |                   |                    |                    |                    |
|----------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|
|                | Seconds           | Ratio              | Seconds           | Ratio              | Seconds            | Ratio              | Seconds           | Ratio              | Seconds           | Ratio              | Seconds            | Ratio              |
| 400.perlbench  | 287               | 34.0               | <b><u>287</u></b> | <b><u>34.0</u></b> | 288                | 34.0               | 241               | 40.6               | 242               | 40.4               | <b><u>241</u></b>  | <b><u>40.5</u></b> |
| 401.bzip2      | <b><u>392</u></b> | <b><u>24.6</u></b> | 392               | 24.6               | 391                | 24.7               | 386               | 25.0               | <b><u>386</u></b> | <b><u>25.0</u></b> | 386                | 25.0               |
| 403.gcc        | <b><u>226</u></b> | <b><u>35.7</u></b> | 226               | 35.6               | 226                | 35.7               | 221               | 36.4               | <b><u>221</u></b> | <b><u>36.5</u></b> | 221                | 36.5               |
| 429.mcf        | 138               | 66.2               | <b><u>131</u></b> | <b><u>69.8</u></b> | 129                | 70.9               | 138               | 66.2               | <b><u>131</u></b> | <b><u>69.8</u></b> | 129                | 70.9               |
| 445.gobmk      | <b><u>404</u></b> | <b><u>26.0</u></b> | 404               | 26.0               | 404                | 26.0               | <b><u>369</u></b> | <b><u>28.4</u></b> | 369               | 28.4               | 370                | 28.4               |
| 456.hammer     | 151               | 61.9               | 148               | 62.9               | <b><u>149</u></b>  | <b><u>62.6</u></b> | 151               | 61.9               | 148               | 62.9               | <b><u>149</u></b>  | <b><u>62.6</u></b> |
| 458.sjeng      | 402               | 30.1               | <b><u>402</u></b> | <b><u>30.1</u></b> | 402                | 30.1               | 391               | 31.0               | 391               | 30.9               | <b><u>391</u></b>  | <b><u>31.0</u></b> |
| 462.libquantum | 5.68              | 3650               | 5.28              | 3920               | <b><u>5.32</u></b> | <b><u>3900</u></b> | 5.68              | 3650               | 5.28              | 3920               | <b><u>5.32</u></b> | <b><u>3900</u></b> |
| 464.h264ref    | 439               | 50.4               | 440               | 50.3               | <b><u>439</u></b>  | <b><u>50.4</u></b> | 374               | 59.1               | 375               | 59.1               | <b><u>374</u></b>  | <b><u>59.1</u></b> |
| 471.omnetpp    | 186               | 33.6               | 193               | 32.3               | <b><u>188</u></b>  | <b><u>33.3</u></b> | 131               | 47.6               | <b><u>132</u></b> | <b><u>47.5</u></b> | 133                | 47.0               |
| 473.astar      | <b><u>212</u></b> | <b><u>33.1</u></b> | 213               | 33.0               | 210                | 33.4               | <b><u>212</u></b> | <b><u>33.2</u></b> | 212               | 33.1               | 211                | 33.3               |
| 483.xalancbmk  | 115               | 59.8               | <b><u>115</u></b> | <b><u>59.9</u></b> | 115                | 60.0               | 115               | 59.8               | <b><u>115</u></b> | <b><u>59.9</u></b> | 115                | 60.0               |

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.

## Operating System Notes

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

## Platform Notes

BIOS configuration:  
Energy Performance = Performance  
Utilization Profile = Unbalanced

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact,1,0"  
LD\_LIBRARY\_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"  
OMP\_NUM\_THREADS = "20"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

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## General Notes (Continued)

For information about Fujitsu please visit: <http://www.fujitsu.com>

## Base Compiler Invocation

C benchmarks:  
icc -m64  
  
C++ benchmarks:  
icpc -m64

## 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  
471.omnetpp: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32  
  
C++ benchmarks:  
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs  
-L/sh -lsmartheap64

## Base Other Flags

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



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

471.omnetpp: icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -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) -opt-prefetch  
-ansi-alias  
  
401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch  
-ansi-alias  
  
403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32  
  
429.mcf: basepeak = yes  
  
445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

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## Peak Optimization Flags (Continued)

456.hmmcr: basepeak = yes

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4

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) -unroll2  
-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)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64

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/Intel-ic14.0-official-linux64.20140128.html>  
<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>  
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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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