



# SPEC® CINT2006 Result

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## Fujitsu

**SPECint®2006 = 52.3**

PRIMERGY RX500 S7, Intel Xeon E5-4617, 2.90 GHz

**SPECint\_base2006 = 49.1**

CPU2006 license: 19

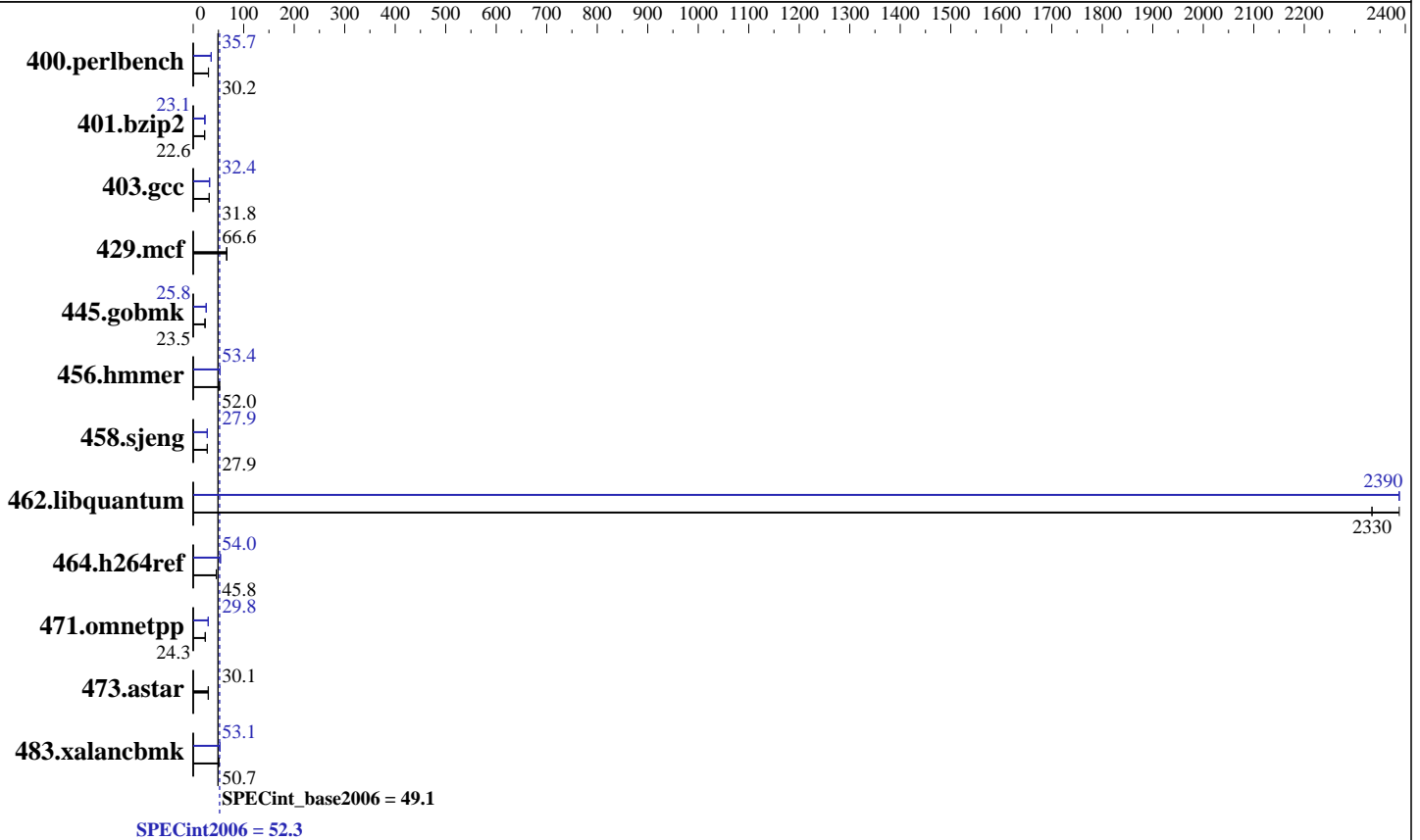
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2012

Hardware Availability: Jul-2012

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E5-4617  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz  
 CPU MHz: 2900  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 4 chips, 6 cores/chip  
 CPU(s) orderable: 2,4 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: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3L-12800R-11, ECC)  
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.293 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  | 323               | 30.3               | <b><u>324</u></b> | <b><u>30.2</u></b> | 324                | 30.1               | 274               | 35.7               | 274               | 35.6               | <b><u>274</u></b>  | <b><u>35.7</u></b> |
| 401.bzip2      | 427               | 22.6               | <b><u>427</u></b> | <b><u>22.6</u></b> | 427                | 22.6               | 418               | 23.1               | <b><u>418</u></b> | <b><u>23.1</u></b> | 416                | 23.2               |
| 403.gcc        | 253               | 31.8               | 254               | 31.7               | <b><u>253</u></b>  | <b><u>31.8</u></b> | <b><u>249</u></b> | <b><u>32.4</u></b> | 249               | 32.4               | 248                | 32.4               |
| 429.mcf        | 138               | 66.1               | 137               | 66.7               | <b><u>137</u></b>  | <b><u>66.6</u></b> | 138               | 66.1               | 137               | 66.7               | <b><u>137</u></b>  | <b><u>66.6</u></b> |
| 445.gobmk      | <b><u>446</u></b> | <b><u>23.5</u></b> | 446               | 23.5               | 446                | 23.5               | <b><u>406</u></b> | <b><u>25.8</u></b> | 407               | 25.8               | 406                | 25.8               |
| 456.hammer     | 179               | 52.1               | <b><u>179</u></b> | <b><u>52.0</u></b> | 179                | 52.0               | <b><u>175</u></b> | <b><u>53.4</u></b> | 175               | 53.4               | 175                | 53.4               |
| 458.sjeng      | <b><u>433</u></b> | <b><u>27.9</u></b> | 433               | 27.9               | 434                | 27.9               | 434               | 27.9               | 434               | 27.9               | <b><u>434</u></b>  | <b><u>27.9</u></b> |
| 462.libquantum | 8.68              | 2390               | 8.88              | 2330               | <b><u>8.88</u></b> | <b><u>2330</u></b> | 8.68              | 2390               | 8.68              | 2390               | <b><u>8.68</u></b> | <b><u>2390</u></b> |
| 464.h264ref    | 482               | 45.9               | 484               | 45.7               | <b><u>484</u></b>  | <b><u>45.8</u></b> | 409               | 54.1               | 417               | 53.1               | <b><u>410</u></b>  | <b><u>54.0</u></b> |
| 471.omnetpp    | 257               | 24.3               | <b><u>258</u></b> | <b><u>24.3</u></b> | 266                | 23.5               | <b><u>209</u></b> | <b><u>29.8</u></b> | 209               | 29.8               | 210                | 29.7               |
| 473.astar      | 233               | 30.2               | <b><u>233</u></b> | <b><u>30.1</u></b> | 237                | 29.6               | 233               | 30.2               | <b><u>233</u></b> | <b><u>30.1</u></b> | 237                | 29.6               |
| 483.xalancbmk  | 136               | 50.7               | <b><u>136</u></b> | <b><u>50.7</u></b> | 137                | 50.2               | 130               | 53.2               | <b><u>130</u></b> | <b><u>53.1</u></b> | 130                | 53.0               |

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

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## Platform Notes

BIOS configuration:  
Intel HT Technology = Disable  
Frequency Floor Override = Enable

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,scatter"  
LD\_LIBRARY\_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"  
OMP\_NUM\_THREADS = "24"

Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB  
memory using RHEL6.2  
For information about Fujitsu please visit: <http://www.fujitsu.com>

## Base Compiler Invocation

C benchmarks:  
icc -m64

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## Base Compiler Invocation (Continued)

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:  
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/opt/SmartHeap/lib64 -lsmartheap64

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64  
400.perlbench: icc -m32  
445.gobmk: icc -m32

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## Peak Compiler Invocation (Continued)

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

## 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\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4

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## Peak Optimization Flags (Continued)

462.libquantum: -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-auto-p32

464.h264ref: -xSSE4.2(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: -xSSE4.2(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/opt/SmartHeap/lib -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/opt/SmartHeap/lib -lsmartheap

## 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/Fujitsu-Platform.20120320.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/Fujitsu-Platform.20120320.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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