



# SPEC® CINT2006 Result

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## Fujitsu

### SPECint®\_rate2006 = 106

PRIMERGY TX150 S8, Intel Xeon E5-2407, 2.20 GHz

### SPECint\_rate\_base2006 = 102

CPU2006 license: 19

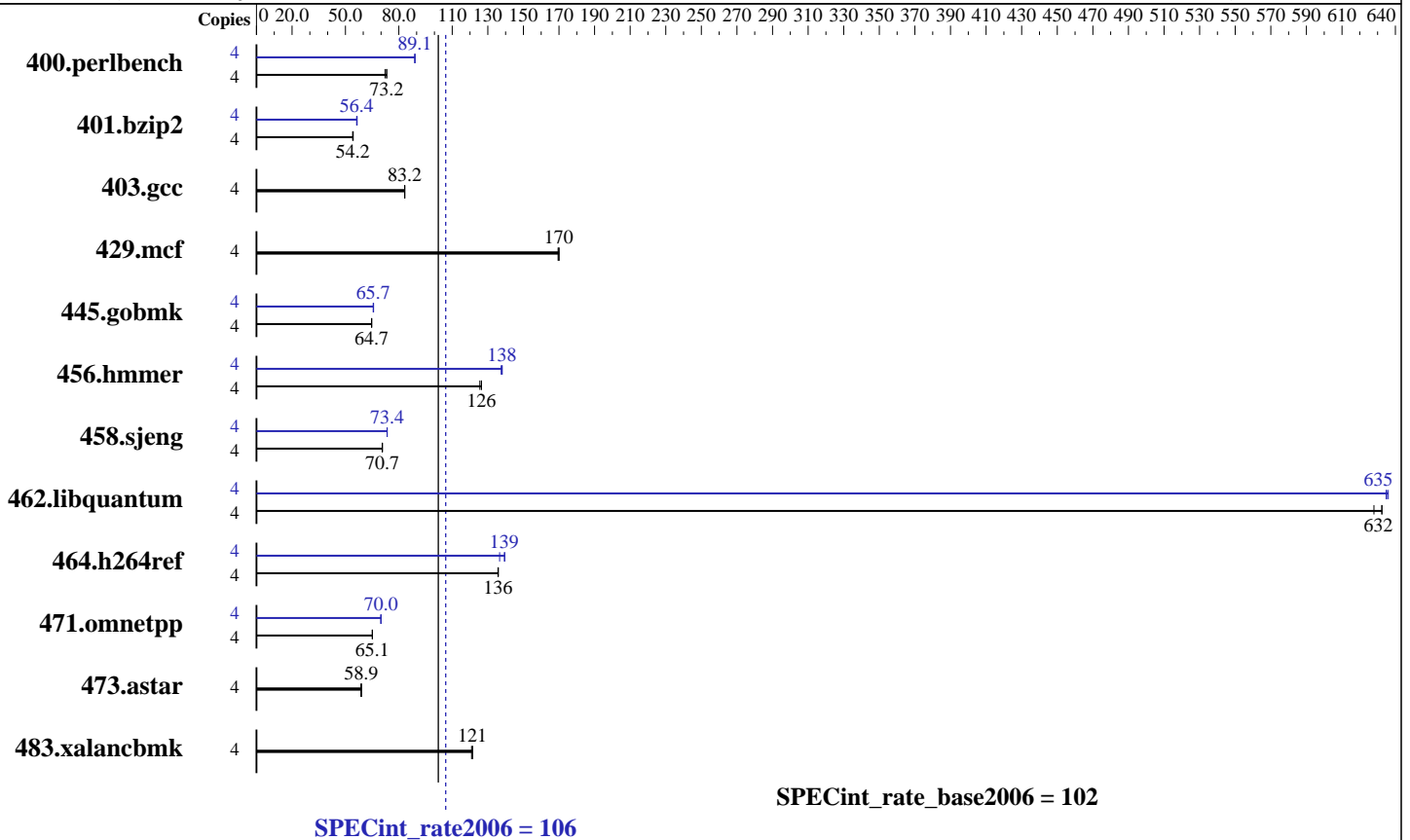
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jun-2012

Hardware Availability: Jul-2012

Software Availability: Feb-2012



SPECint\_rate\_base2006 = 102

### Hardware

CPU Name: Intel Xeon E5-2407  
 CPU Characteristics:  
 CPU MHz: 2200  
 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: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1067 MHz and CL7)  
 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: 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      | 541        | 72.2        | 534        | 73.2        | <b>534</b> | <b>73.2</b> | 4      | <b>439</b> | <b>89.1</b> | 439        | 89.1        | 439        | 89.0        |
| 401.bzip2      | 4      | 710        | 54.4        | <b>713</b> | <b>54.2</b> | 713        | 54.1        | 4      | 682        | 56.6        | 686        | 56.3        | <b>684</b> | <b>56.4</b> |
| 403.gcc        | 4      | 386        | 83.4        | 387        | 83.2        | <b>387</b> | <b>83.2</b> | 4      | 386        | 83.4        | 387        | 83.2        | <b>387</b> | <b>83.2</b> |
| 429.mcf        | 4      | 215        | 170         | <b>215</b> | <b>170</b>  | 215        | 170         | 4      | 215        | 170         | <b>215</b> | <b>170</b>  | 215        | 170         |
| 445.gobmk      | 4      | <b>649</b> | <b>64.7</b> | 649        | 64.7        | 648        | 64.7        | 4      | <b>639</b> | <b>65.7</b> | 639        | 65.6        | 638        | 65.8        |
| 456.hammer     | 4      | <b>295</b> | <b>126</b>  | 297        | 126         | 295        | 126         | 4      | 270        | 138         | 271        | 138         | <b>271</b> | <b>138</b>  |
| 458.sjeng      | 4      | 684        | 70.7        | <b>684</b> | <b>70.7</b> | 685        | 70.7        | 4      | 659        | 73.5        | <b>659</b> | <b>73.4</b> | 659        | 73.4        |
| 462.libquantum | 4      | 132        | 628         | <b>131</b> | <b>632</b>  | 131        | 632         | 4      | 131        | 635         | <b>130</b> | <b>635</b>  | 130        | 636         |
| 464.h264ref    | 4      | <b>652</b> | <b>136</b>  | 652        | 136         | 651        | 136         | 4      | 648        | 137         | 634        | 140         | <b>635</b> | <b>139</b>  |
| 471.omnetpp    | 4      | <b>384</b> | <b>65.1</b> | 384        | 65.1        | 384        | 65.1        | 4      | 357        | 69.9        | <b>357</b> | <b>70.0</b> | 357        | 70.0        |
| 473.astar      | 4      | <b>477</b> | <b>58.9</b> | 478        | 58.8        | 476        | 59.0        | 4      | <b>477</b> | <b>58.9</b> | 478        | 58.8        | 476        | 59.0        |
| 483.xalancbmk  | 4      | 227        | 121         | <b>227</b> | <b>121</b>  | 228        | 121         | 4      | 227        | 121         | <b>227</b> | <b>121</b>  | 228        | 121         |

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"  
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>

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

Binaries compiled on a system with 2x E5-2650 CPU + 96 GB memory using RHEL6.2  
For information about Fujitsu please visit: <http://www.fujitsu.com>

## Base Compiler Invocation

C benchmarks:  
icc -m32

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## Base Compiler Invocation (Continued)

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:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-Wl,-z,muldefs -L/opt/SmartHeap/lib -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: -xSSE4.2(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: -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 -auto-ilp32 -ansi-alias  
403.gcc: basepeak = yes  
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: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
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 -auto-ilp32  
462.libquantum: -xAVX -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3  
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)  
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
-L/opt/SmartHeap/lib -lsmartheap  
473.astar: basepeak = yes

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## Peak Optimization Flags (Continued)

483.xalanbmk: 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-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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