



# SPEC® CINT2006 Result

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## Fujitsu

**SPECint®2006 = 60.3**

Fujitsu CELSIUS R920 (2x Intel Xeon E5-2690)

**SPECint\_base2006 = 55.5**

CPU2006 license: 19

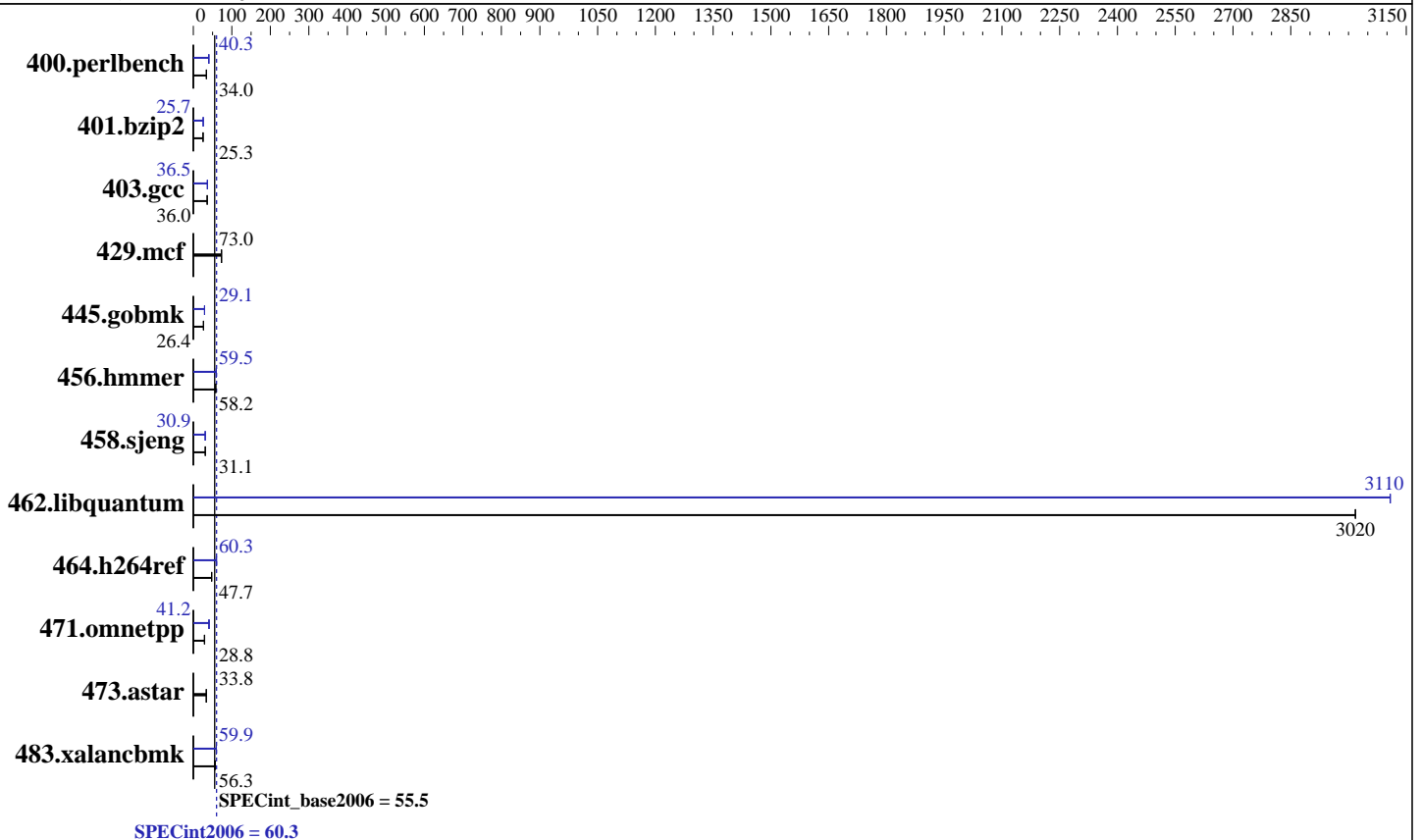
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Feb-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2690  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 2900  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip  
 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 SATA II, 500 GB, 7200 rpm  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.1, 2.6.32-131.0.15.el6.x86\_64  
 Compiler: C/C++; Version 12.1.2.273 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi - user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10mc



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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	33.9	242	40.3	<b><u>243</u></b>	<b><u>40.3</u></b>	243	40.3
401.bzip2	382	25.3	<b><u>382</u></b>	<b><u>25.3</u></b>	382	25.3	375	25.7	376	25.7	<b><u>376</u></b>	<b><u>25.7</u></b>
403.gcc	223	36.1	224	36.0	<b><u>223</u></b>	<b><u>36.0</u></b>	220	36.5	<b><u>220</u></b>	<b><u>36.5</u></b>	220	36.6
429.mcf	<b><u>125</u></b>	<b><u>73.0</u></b>	124	73.7	125	72.7	<b><u>125</u></b>	<b><u>73.0</u></b>	124	73.7	125	72.7
445.gobmk	398	26.4	398	26.4	<b><u>398</u></b>	<b><u>26.4</u></b>	<b><u>360</u></b>	<b><u>29.1</u></b>	360	29.1	360	29.1
456.hammer	160	58.2	160	58.2	<b><u>160</u></b>	<b><u>58.2</u></b>	<b><u>157</u></b>	<b><u>59.5</u></b>	157	59.3	157	59.6
458.sjeng	389	31.1	<b><u>389</u></b>	<b><u>31.1</u></b>	389	31.1	<b><u>392</u></b>	<b><u>30.9</u></b>	391	30.9	392	30.9
462.libquantum	6.87	3020	<b><u>6.87</u></b>	<b><u>3020</u></b>	6.86	3020	6.67	3110	<b><u>6.67</u></b>	<b><u>3110</u></b>	6.67	3110
464.h264ref	464	47.7	466	47.5	<b><u>464</u></b>	<b><u>47.7</u></b>	<b><u>367</u></b>	<b><u>60.3</u></b>	367	60.4	374	59.1
471.omnetpp	212	29.5	<b><u>217</u></b>	<b><u>28.8</u></b>	217	28.8	<b><u>152</u></b>	<b><u>41.2</u></b>	157	39.9	151	41.3
473.astar	<b><u>208</u></b>	<b><u>33.8</u></b>	208	33.8	208	33.7	<b><u>208</u></b>	<b><u>33.8</u></b>	208	33.8	208	33.7
483.xalancbmk	123	56.3	121	57.1	<b><u>123</u></b>	<b><u>56.3</u></b>	<b><u>115</u></b>	<b><u>59.9</u></b>	115	60.0	116	59.7

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"

## Platform Notes

BIOS settings:  
Frequency Floor Override = Enabled  
Hyper-Threading Technology = Disabled

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,scatter"  
LD\_LIBRARY\_PATH = "/work/cpu2006/libs/32:/work/cpu2006/libs/64"  
OMP\_NUM\_THREADS = "16"

Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64



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## 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`

`464.h264ref: icc -m32`

C++ benchmarks (except as noted below):

`icpc -m32`

`473.astar: icpc -m64`



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## 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

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

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## Peak Optimization Flags (Continued)

471.omnetpp (continued):

`-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.20120313.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.20120313.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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