



# SPEC® CINT2006 Result

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## Fujitsu

**SPECint®2006 = 57.7**

### CELSIUS W520 (Intel Xeon E3-1280 v2)

**SPECint\_base2006 = 54.2**

CPU2006 license: 19

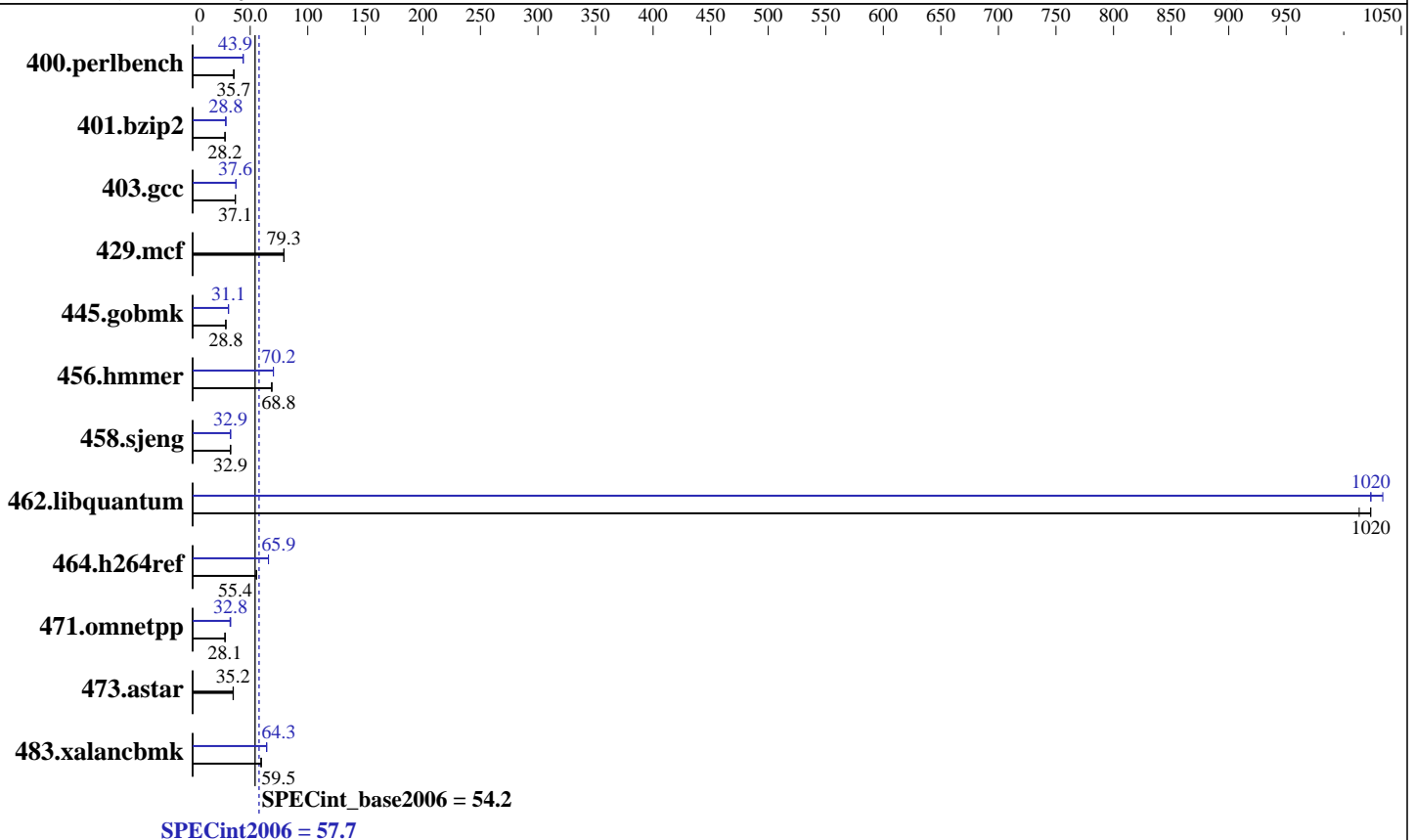
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: May-2012

Hardware Availability: May-2012

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E3-1280 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 3600  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)  
 Disk Subsystem: 1 x SATA III, 500 GB, 7200 rpm  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2, 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.3.293 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 10 (Multi-Core)



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	272	35.9	274	35.7	<u>273</u>	<u>35.7</u>	<u>223</u>	<u>43.9</u>	222	43.9	223	43.9
401.bzip2	343	28.1	343	28.2	<u>343</u>	<u>28.2</u>	335	28.8	<u>335</u>	<u>28.8</u>	335	28.8
403.gcc	217	37.0	217	37.1	<u>217</u>	<u>37.1</u>	214	37.7	214	37.6	<u>214</u>	<u>37.6</u>
429.mcf	115	79.4	115	79.2	<u>115</u>	<u>79.3</u>	115	79.4	115	79.2	<u>115</u>	<u>79.3</u>
445.gobmk	<u>364</u>	<u>28.8</u>	363	28.9	364	28.8	337	31.1	<u>337</u>	<u>31.1</u>	337	31.1
456.hammer	136	68.8	136	68.7	<u>136</u>	<u>68.8</u>	<u>133</u>	<u>70.2</u>	133	70.1	133	70.2
458.sjeng	367	32.9	<u>368</u>	<u>32.9</u>	368	32.9	368	32.9	368	32.9	<u>368</u>	<u>32.9</u>
462.libquantum	<u>20.2</u>	<u>1020</u>	20.4	1010	20.2	1020	20.0	1030	<u>20.2</u>	<u>1020</u>	20.2	1020
464.h264ref	400	55.3	399	55.5	<u>399</u>	<u>55.4</u>	336	65.9	336	65.9	<u>336</u>	<u>65.9</u>
471.omnetpp	221	28.2	222	28.1	<u>222</u>	<u>28.1</u>	192	32.5	<u>190</u>	<u>32.8</u>	189	33.0
473.astar	<u>199</u>	<u>35.2</u>	200	35.1	198	35.4	<u>199</u>	<u>35.2</u>	200	35.1	198	35.4
483.xalancbmk	116	59.6	<u>116</u>	<u>59.5</u>	116	59.4	107	64.3	<u>107</u>	<u>64.3</u>	108	64.2

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"

## 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 = "4"

Binaries were compiled on a system with  
2 x E5-2650 CPU + 96 GB memory using RHEL 6.2.

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

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