



# SPEC® CINT2006 Result

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## Fujitsu

SPECint®2006 = 44.5

## CELSIUS W410, Intel Core i5-2500

SPECint\_base2006 = 42.7

CPU2006 license: 19

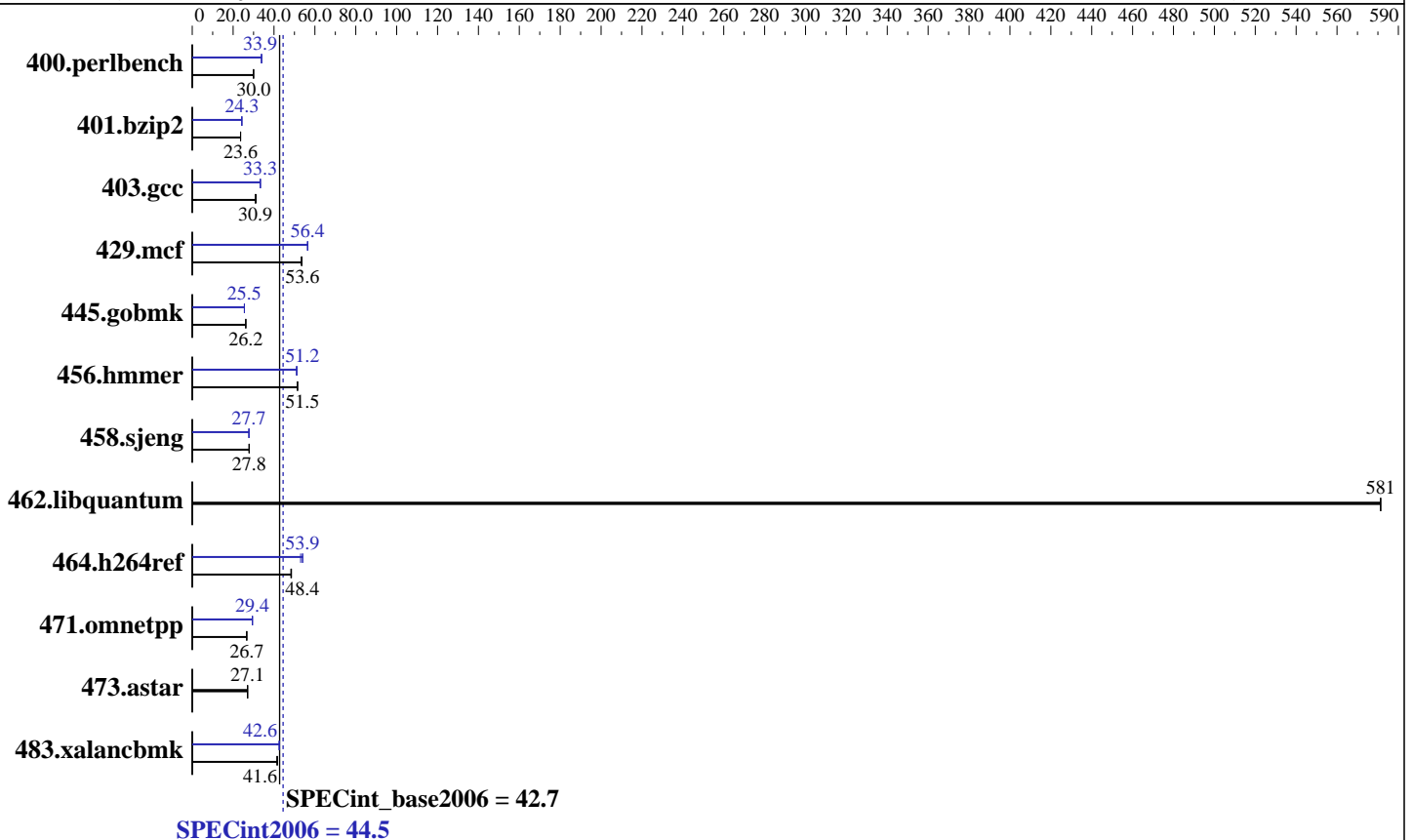
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: May-2011

Hardware Availability: Mar-2011

Software Availability: Jan-2011



### Hardware

CPU Name: Intel Core i5-2500  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.7 GHz  
 CPU MHz: 3300  
 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: 6 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600U-9)  
 Disk Subsystem: 1 x SATA II, 400 GB, 7200 rpm  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) SP1, kernel 2.6.32.12-0.6-default  
 Compiler: Intel C++ Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.2.137 Build 20110112  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run Level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	325	30.0	326	30.0	<b><u>326</u></b>	<b><u>30.0</u></b>	289	33.8	288	33.9	<b><u>288</u></b>	<b><u>33.9</u></b>
401.bzip2	407	23.7	409	23.6	<b><u>408</u></b>	<b><u>23.6</u></b>	398	24.2	397	24.3	<b><u>398</u></b>	<b><u>24.3</u></b>
403.gcc	257	31.3	261	30.8	<b><u>261</u></b>	<b><u>30.9</u></b>	242	33.3	241	33.4	<b><u>242</u></b>	<b><u>33.3</u></b>
429.mcf	170	53.7	171	53.3	<b><u>170</u></b>	<b><u>53.6</u></b>	<b><u>162</u></b>	<b><u>56.4</u></b>	161	56.5	162	56.4
445.gobmk	<b><u>400</u></b>	<b><u>26.2</u></b>	400	26.2	401	26.2	<b><u>411</u></b>	<b><u>25.5</u></b>	411	25.5	411	25.5
456.hammer	<b><u>181</u></b>	<b><u>51.5</u></b>	181	51.5	181	51.4	183	51.0	182	51.2	<b><u>182</u></b>	<b><u>51.2</u></b>
458.sjeng	435	27.8	<b><u>435</u></b>	<b><u>27.8</u></b>	435	27.8	436	27.7	<b><u>436</u></b>	<b><u>27.7</u></b>	436	27.8
462.libquantum	35.6	581	<b><u>35.6</u></b>	<b><u>581</u></b>	35.6	581	<b><u>35.6</u></b>	<b><u>581</u></b>	<b><u>35.6</u></b>	<b><u>581</u></b>	35.6	581
464.h264ref	<b><u>458</u></b>	<b><u>48.4</u></b>	456	48.6	458	48.3	409	54.1	417	53.0	<b><u>411</u></b>	<b><u>53.9</u></b>
471.omnetpp	234	26.7	235	26.6	<b><u>234</u></b>	<b><u>26.7</u></b>	213	29.4	212	29.5	<b><u>212</u></b>	<b><u>29.4</u></b>
473.astar	<b><u>259</u></b>	<b><u>27.1</u></b>	259	27.2	260	27.0	<b><u>259</u></b>	<b><u>27.1</u></b>	259	27.2	260	27.0
483.xalancbmk	<b><u>166</u></b>	<b><u>41.6</u></b>	165	41.7	167	41.4	<b><u>162</u></b>	<b><u>42.6</u></b>	162	42.6	162	42.5

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

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
Hugepages were enabled by:
mount -t hugetlbfs nodev /mnt/hugepages
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## General Notes

OMP\_NUM\_THREADS set to number of cores

## Base Compiler Invocation

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

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

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## Base Portability Flags (Continued)

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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

C++ benchmarks:  
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/opt/smartheap/intel64 -lsmarheap64  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

400.perlbench: icc -m32

429.mcf: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):  
icpc -m32

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## Peak Compiler Invocation (Continued)

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -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: -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  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

429.mcf: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32  
-ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-auto-ilp32 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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

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## Peak Optimization Flags (Continued)

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  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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/opt/smartheap/ia32 -lsmartheap  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/opt/smartheap/ia32 -lsmartheap  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

## 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-ic12.0-linux64-revB.html>  
[http://www.spec.org/cpu2006/flags/Fujitsu\\_CELSIUS\\_Platform.html](http://www.spec.org/cpu2006/flags/Fujitsu_CELSIUS_Platform.html)

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>  
[http://www.spec.org/cpu2006/flags/Fujitsu\\_CELSIUS\\_Platform.xml](http://www.spec.org/cpu2006/flags/Fujitsu_CELSIUS_Platform.xml)

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