



# SPEC® CINT2006 Result

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Fujitsu

**SPECint®2006 = 31.8**

PRIMERGY BX920 S2, Intel Xeon E5620, 2.40 GHz

**SPECint\_base2006 = 29.5**

CPU2006 license: 19

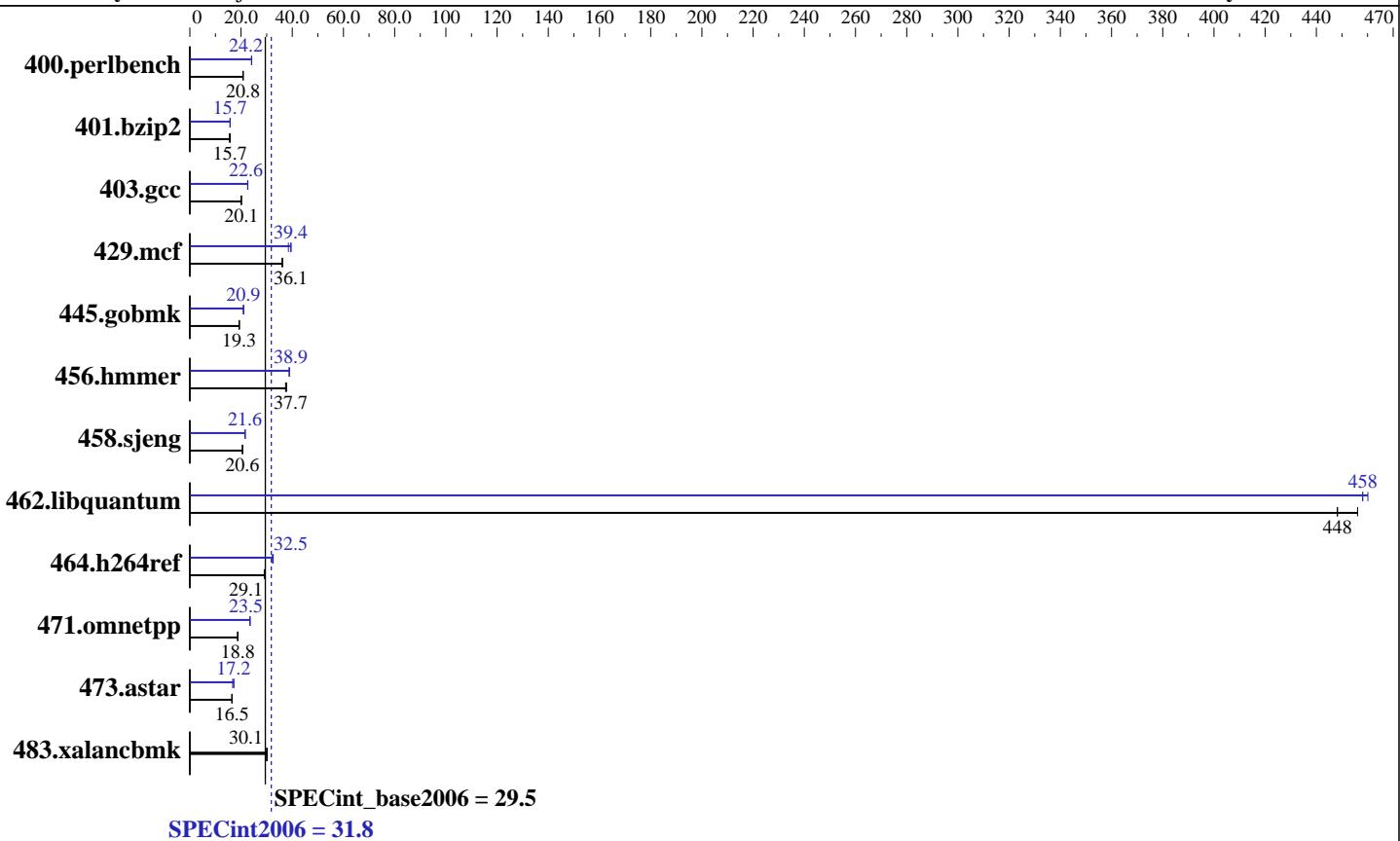
Test sponsor: Fujitsu

Tested by: Fujitsu

**Test date:** Apr-2010

**Hardware Availability:** May-2010

**Software Availability:** Jan-2010



## Hardware

CPU Name:	Intel Xeon E5620
CPU Characteristics:	Intel Turbo Boost Technology up to 2.67 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6x8 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem:	1 x SSD, 64 GB
Other Hardware:	None

## Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler:	Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064
Auto Parallel:	Yes
File System:	ext3
System State:	Multi-User Run Level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>470</b>	<b>20.8</b>	469	20.8	470	20.8	<b>404</b>	<b>24.2</b>	<b>405</b>	<b>24.2</b>	406	24.1
401.bzip2	625	15.4	612	15.8	<b>613</b>	<b>15.7</b>	612	15.8	<b>614</b>	<b>15.7</b>	615	15.7
403.gcc	400	20.1	401	20.1	<b>400</b>	<b>20.1</b>	<b>356</b>	<b>22.6</b>	357	22.6	355	22.7
429.mcf	<b>252</b>	<b>36.1</b>	252	36.2	253	36.1	237	38.5	<b>231</b>	<b>39.4</b>	230	39.6
445.gobmk	<b>543</b>	<b>19.3</b>	543	19.3	544	19.3	<b>501</b>	<b>20.9</b>	502	20.9	498	21.1
456.hmmer	247	37.7	249	37.4	<b>248</b>	<b>37.7</b>	240	38.8	<b>240</b>	<b>38.9</b>	240	38.9
458.sjeng	588	20.6	589	20.5	<b>588</b>	<b>20.6</b>	560	21.6	561	21.6	<b>561</b>	<b>21.6</b>
462.libquantum	46.2	448	<b>46.2</b>	<b>448</b>	45.4	456	45.2	458	<b>45.2</b>	<b>458</b>	45.0	460
464.h264ref	761	29.1	<b>761</b>	<b>29.1</b>	756	29.3	680	32.6	<b>681</b>	<b>32.5</b>	686	32.3
471.omnetpp	336	18.6	<b>333</b>	<b>18.8</b>	333	18.8	266	23.5	<b>266</b>	<b>23.5</b>	266	23.5
473.astar	426	16.5	<b>427</b>	<b>16.5</b>	427	16.4	<b>409</b>	<b>17.2</b>	409	17.2	420	16.7
483.xalancbmk	<b>229</b>	<b>30.1</b>	228	30.2	231	29.9	<b>229</b>	<b>30.1</b>	228	30.2	231	29.9

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 stacksize to unlimited prior to run

## Platform Notes

The system automatically configures the memory to run at 1067 MHz.  
BIOS configuration:

Data Reuse Optimization = Disable

Intel HT Technology = Disable

Turbo Boost Technology: Performance/Power Setting = Traditional

## General Notes

OMP\_NUM\_THREADS set to number of cores

KMP\_AFFINITY set to granularity=fine,scatter

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## 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 -static -parallel -opt-prefetch
```

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/home/cmpllr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -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
```

```
429.mcf: icc -m32
```

```
445.gobmk: icc -m32
```

```
464.h264ref: icc -m32
```

C++ benchmarks (except as noted below):

```
icpc -m64
```

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## Peak Compiler Invocation (Continued)

471.omnetpp: icpc -m32

## Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
 401.bzip2: -DSPEC_CPU_LP64
 403.gcc: -DSPEC_CPU_LP64
 456.hammer: -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_LP64 -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) -static(pass 2)
  -prof-use(pass 2) -ansi-alias -opt-prefetch

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div -static(pass 2) -prof-use(pass 2)
  -auto-ilp32 -opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
  -opt-malloc-options=3 -auto-ilp32

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
  -ipo -no-prec-div -ansi-alias

456.hammer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll12
  -ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
  -prof-use(pass 2) -unroll14

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel
  -opt-prefetch -par-schedule-static=32768 -ansi-alias

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
  -prof-use(pass 2) -unroll12 -ansi-alias
```

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## Peak Optimization Flags (Continued)

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap
```

```
473.astar: -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=routine -Wl,-z,muldefs
             -L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64
```

```
483.xalancbmk: basepeak = yes
```

## Peak Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.02.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.02.xml>

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

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