



# SPEC® CINT2006 Result

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## HITACHI

**SPECint®2006 = 27.9**

BladeSymphony BS2000 (Intel Xeon L5630)

**SPECint\_base2006 = 25.6**

CPU2006 license: 872

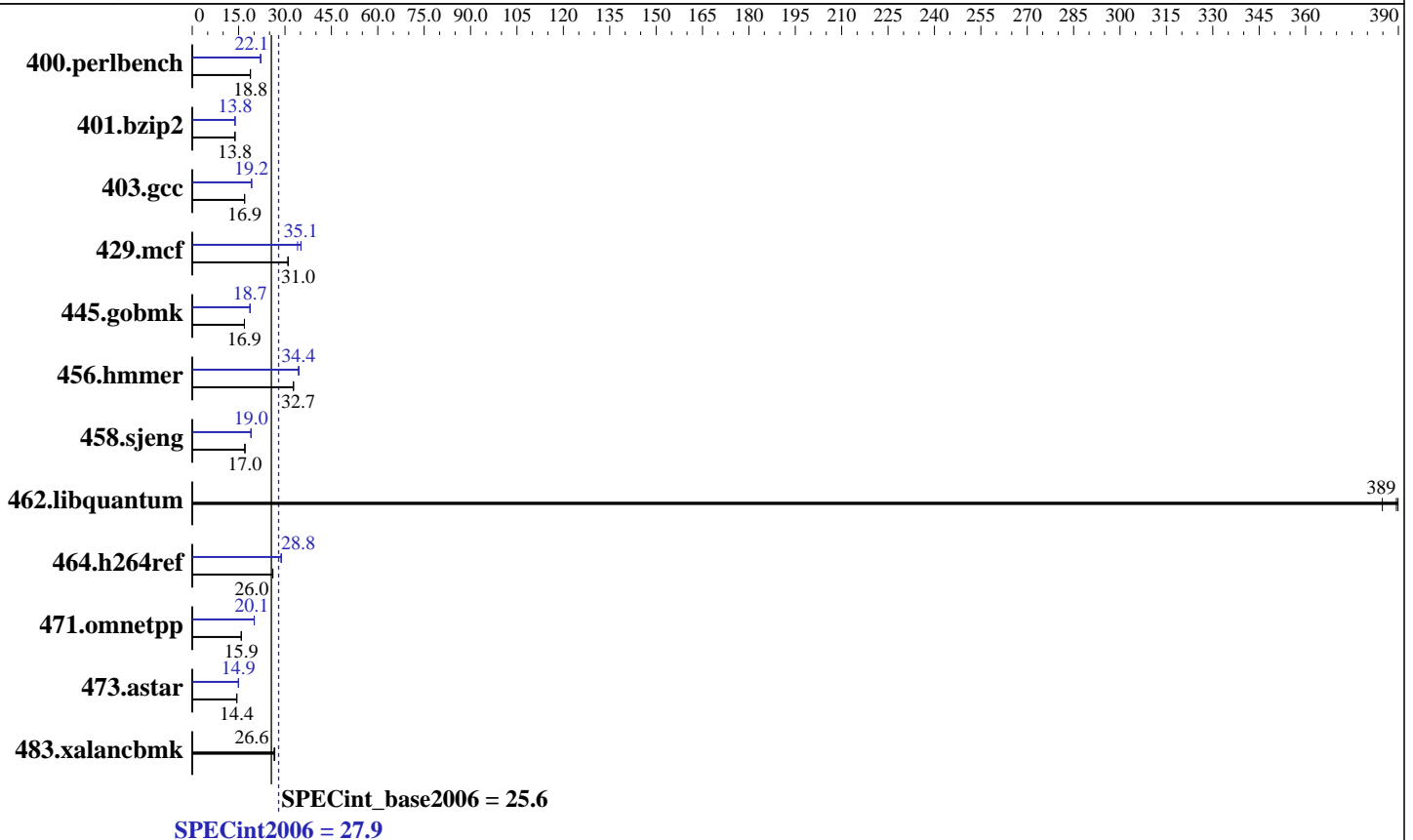
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Dec-2010

Hardware Availability: Apr-2010

Software Availability: Dec-2009



### Hardware

CPU Name: Intel Xeon L5630  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 2133  
 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 (12 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)  
 Disk Subsystem: 4 x 146 GB 10000 rpm SAS  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 5.4.3, Advanced Platform, Kernel 2.6.18-164.9.1.el5 on an x86\_64  
 Compiler: Intel C++ Compiler 11.1 for Linux Build 20091012 Package ID: l\_cproc\_p\_11.1.059  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	520	18.8	519	18.8	<b><u>520</u></b>	<b><u>18.8</u></b>	442	22.1	441	22.1	<b><u>442</u></b>	<b><u>22.1</u></b>
401.bzip2	699	13.8	<b><u>699</u></b>	<b><u>13.8</u></b>	698	13.8	697	13.8	<b><u>698</u></b>	<b><u>13.8</u></b>	698	13.8
403.gcc	477	16.9	475	16.9	<b><u>475</u></b>	<b><u>16.9</u></b>	<b><u>420</u></b>	<b><u>19.2</u></b>	420	19.2	419	19.2
429.mcf	<b><u>295</u></b>	<b><u>31.0</u></b>	295	31.0	294	31.1	268	34.1	<b><u>260</u></b>	<b><u>35.1</u></b>	259	35.2
445.gobmk	621	16.9	<b><u>622</u></b>	<b><u>16.9</u></b>	622	16.9	562	18.7	<b><u>561</u></b>	<b><u>18.7</u></b>	560	18.7
456.hammer	285	32.8	286	32.7	<b><u>285</u></b>	<b><u>32.7</u></b>	271	34.4	<b><u>271</u></b>	<b><u>34.4</u></b>	271	34.4
458.sjeng	711	17.0	<b><u>710</u></b>	<b><u>17.0</u></b>	710	17.0	<b><u>636</u></b>	<b><u>19.0</u></b>	637	19.0	636	19.0
462.libquantum	53.8	385	53.1	390	<b><u>53.2</u></b>	<b><u>389</u></b>	53.8	385	53.1	390	<b><u>53.2</u></b>	<b><u>389</u></b>
464.h264ref	<b><u>850</u></b>	<b><u>26.0</u></b>	848	26.1	850	26.0	770	28.8	768	28.8	<b><u>769</u></b>	<b><u>28.8</u></b>
471.omnetpp	<b><u>394</u></b>	<b><u>15.9</u></b>	394	15.9	393	15.9	312	20.1	<b><u>312</u></b>	<b><u>20.1</u></b>	312	20.0
473.astar	<b><u>488</u></b>	<b><u>14.4</u></b>	486	14.4	488	14.4	<b><u>470</u></b>	<b><u>14.9</u></b>	470	14.9	469	15.0
483.xalancbmk	<b><u>259</u></b>	<b><u>26.6</u></b>	258	26.7	261	26.5	<b><u>259</u></b>	<b><u>26.6</u></b>	258	26.7	261	26.5

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 stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter

## Platform Notes

BIOS Settings:  
Intel HT Technology = Disabled  
Data Reuse Optimization = Disabled

## Base Compiler Invocation

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

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64

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## Base Portability Flags (Continued)

```

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/bsc/smartheap/lib -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
```

```
471.omnetpp: icpc -m32
```



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## Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LINUX_X64
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_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-alloc
          -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.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
            -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) -unroll4

462.libquantum: basepeak = yes

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) -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/home/bsc/smartheap/lib -lsmartheap

```

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## Peak Optimization Flags (Continued)

```
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/bsc/smartheap/lib -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.20110118.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.20110118.xml>

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

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