# SPEC® CINT2006 Result

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## HITACHI

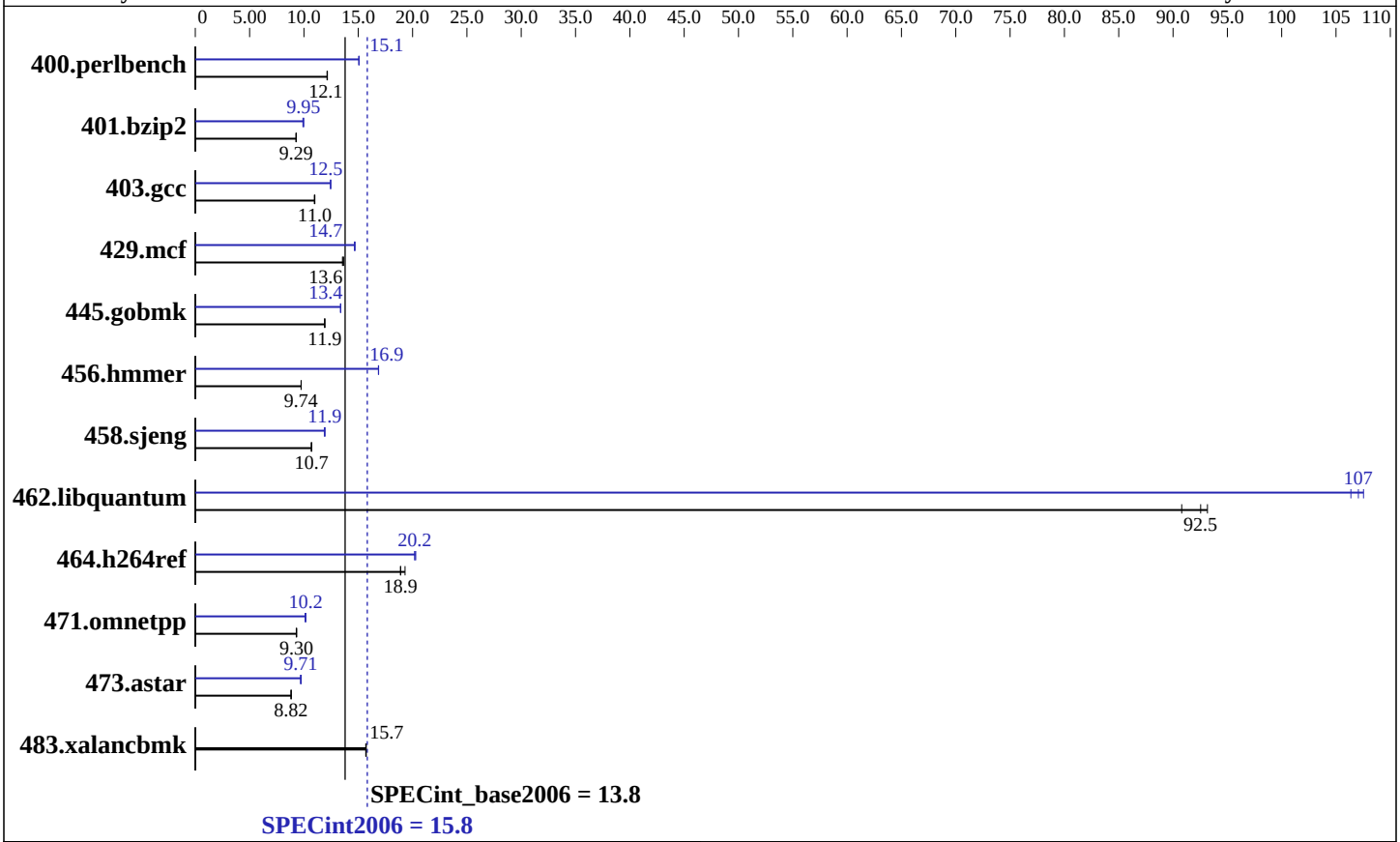
## BladeSymphony BS320 es (Intel Xeon L5320)

**SPECint®2006 = 15.8**

**SPECint_base2006 = 13.8**

**CPU2006 license:** 872
**Test sponsor:** HITACHI
**Tested by:** HITACHI

**Test date:** Mar-2008
**Hardware Availability:** Dec-2007
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon L5320 |
| CPU Characteristics: | 1066MHz system bus |
| CPU MHz: | 1860 |
| 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: | 8 MB I+D on chip per chip, 4 MB shared / 2 cores |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB(4 x 4 GB PC2-5300F CAS 5-5-5) |
| Disk Subsystem: | 1 x 147 GB 10000 rpm SAS |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 5.1 (Tikanga) Kernel 2.6.18-53.el5 on an x86_64 |
| Compiler: | Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| System State: | Multi-user run level 3 |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | SmartHeap library 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 | **804** | **12.1** | 806 | 12.1 | 803 | 12.2 | 649 | 15.0 | 648 | 15.1 | **648** | **15.1** |
| 401.bzip2 | 1042 | 9.26 | 1038 | 9.30 | **1039** | **9.29** | **970** | **9.95** | 967 | 9.98 | 974 | 9.91 |
| 403.gcc | **732** | **11.0** | 735 | 11.0 | 732 | 11.0 | **646** | **12.5** | 646 | 12.5 | 646 | 12.5 |
| 429.mcf | 673 | 13.5 | 668 | 13.6 | **670** | **13.6** | 623 | 14.6 | **621** | **14.7** | 621 | 14.7 |
| 445.gobmk | **880** | **11.9** | 881 | 11.9 | 880 | 11.9 | 784 | 13.4 | **784** | **13.4** | 784 | 13.4 |
| 456.hmmer | 958 | 9.74 | 957 | 9.75 | **958** | **9.74** | **553** | **16.9** | 554 | 16.9 | 553 | 16.9 |
| 458.sjeng | 1133 | 10.7 | 1129 | 10.7 | **1131** | **10.7** | 1019 | 11.9 | **1014** | **11.9** | 1014 | 11.9 |
| 462.libquantum | **224** | **92.5** | 228 | 90.8 | 222 | 93.2 | **194** | **107** | 193 | 108 | 195 | 106 |
| 464.h264ref | 1172 | 18.9 | **1170** | **18.9** | 1146 | 19.3 | 1091 | 20.3 | 1096 | 20.2 | **1095** | **20.2** |
| 471.omnetpp | **672** | **9.30** | 673 | 9.29 | 669 | 9.34 | **615** | **10.2** | 615 | 10.2 | 619 | 10.1 |
| 473.astar | 796 | 8.82 | 796 | 8.82 | **796** | **8.82** | 725 | 9.68 | **723** | **9.71** | 720 | 9.75 |
| 483.xalancbmk | 439 | 15.7 | 440 | 15.7 | **439** | **15.7** | 439 | 15.7 | 440 | 15.7 | **439** | **15.7** |

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

## General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
```

## Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Base Optimization Flags

C benchmarks:
`-fast -vec-guard-write -parallel -par-runtime-control`

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## Base Optimization Flags (Continued)

C++ benchmarks:
`-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs`
`-L/home/bsc/smartheap/lib -lsmartheap`

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icc`

401.bzip2: `/opt/intel/cce/10.1.008/bin/icc`
`-L/opt/intel/cce/10.1.008/lib`
`-I/opt/intel/cce/10.1.008/include`

456.hmmer: `/opt/intel/cce/10.1.008/bin/icc`
`-L/opt/intel/cce/10.1.008/lib`
`-I/opt/intel/cce/10.1.008/include`

C++ benchmarks:
`icpc`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -ansi-alias`
`-prefetch`

Continued on next page

## Peak Optimization Flags (Continued)

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive -auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/home/bsc/smartheap/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/home/bsc/smartheap/lib -lsmartheap

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-ic10.1-INT-ia32-linux-flags.20090713.01.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-INT-ia32-linux-flags.20090713.01.xml

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