# SPEC® CINT2006 Result



## IBM Corporation

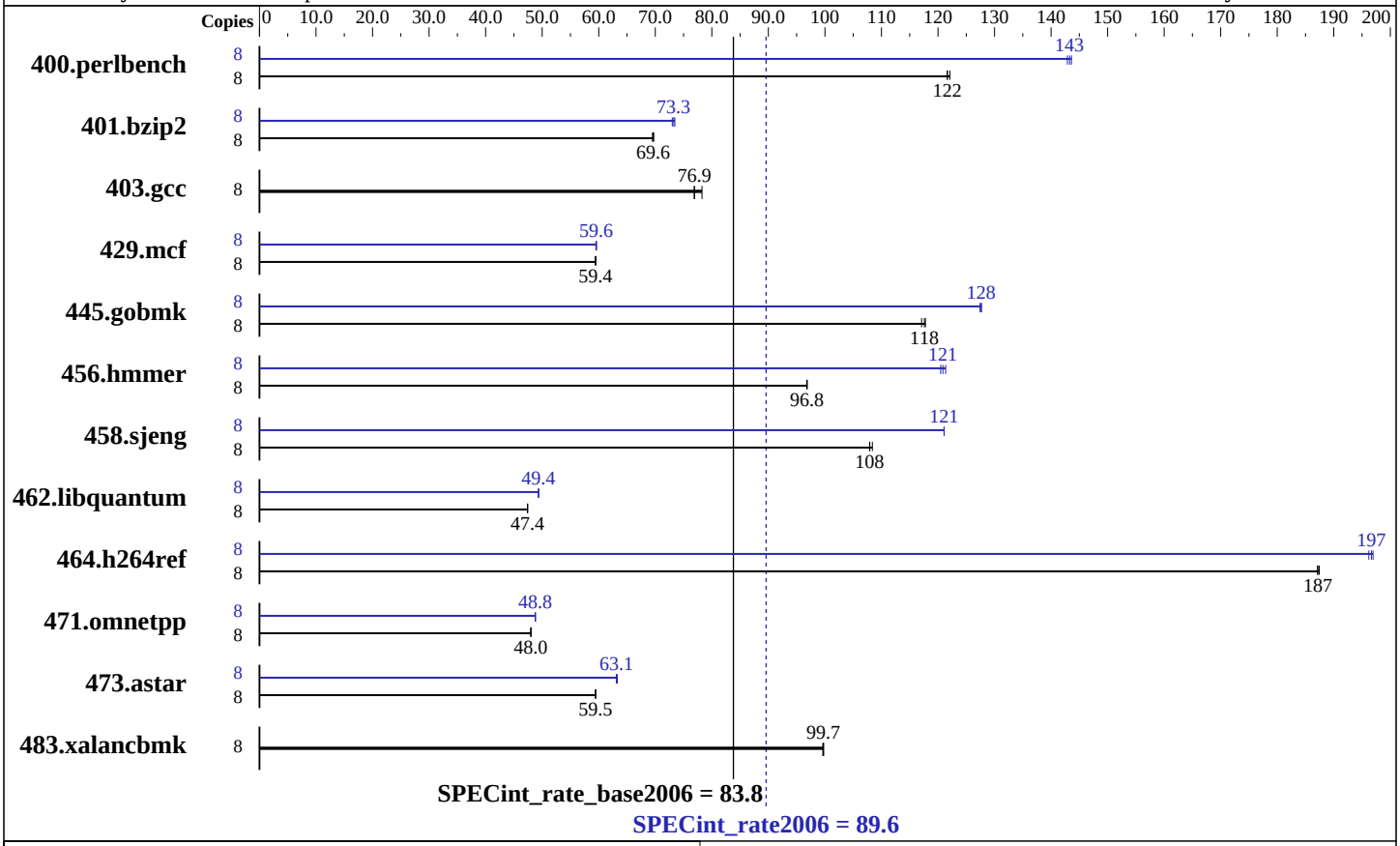
## IBM BladeCenter HS21 XM (Intel Xeon E5345)

**SPECint®_rate2006 = 89.6**

**SPECint_rate_base2006 = 83.8**

**CPU2006 license:** 11
**Test sponsor:** IBM Corporation
**Tested by:** IBM Corporation

**Test date:** Aug-2007
**Hardware Availability:** Feb-2007
**Software Availability:** Jul-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5345 |
| CPU Characteristics: | 1333MHz system bus |
| CPU MHz: | 2333 |
| 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 (8 x 2GB DDR2-5300F ECC) |
| Disk Subsystem: | 1 x 36 GB SAS, 10000 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SLES 10 (x86_64), 2.6.16.21-0.8-smp |
| Compiler: | Intel C++ Compiler for Linux version 10.0 Build 20070426 Package ID: l_cc_p_10.0.023 |
| Auto Parallel: | No |
| File System: | ReiserFS |
| System State: | Multi-user, run level 3 |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap 8.1 |

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 8 | 643 | 122 | 640 | 122 | **642** | **122** | 8 | **546** | **143** | 544 | 144 | 547 | 143 |
| 401.bzip2 | 8 | 1107 | 69.7 | **1109** | **69.6** | 1111 | 69.5 | 8 | **1054** | **73.3** | 1051 | 73.5 | 1057 | 73.0 |
| 403.gcc | 8 | 838 | 76.9 | **837** | **76.9** | 823 | 78.3 | 8 | 838 | 76.9 | **837** | **76.9** | 823 | 78.3 |
| 429.mcf | 8 | 1227 | 59.5 | 1228 | 59.4 | **1228** | **59.4** | 8 | 1226 | 59.5 | 1224 | 59.6 | **1225** | **59.6** |
| 445.gobmk | 8 | **714** | **118** | 712 | 118 | 717 | 117 | 8 | 659 | 127 | **658** | **128** | 657 | 128 |
| 456.hmmer | 8 | **771** | **96.8** | 770 | 96.9 | 771 | 96.8 | 8 | **618** | **121** | 615 | 121 | 620 | 120 |
| 458.sjeng | 8 | **897** | **108** | 897 | 108 | 893 | 108 | 8 | 799 | 121 | **799** | **121** | 799 | 121 |
| 462.libquantum | 8 | 3496 | 47.4 | **3496** | **47.4** | 3496 | 47.4 | 8 | **3357** | **49.4** | 3361 | 49.3 | 3357 | 49.4 |
| 464.h264ref | 8 | **946** | **187** | 946 | 187 | 945 | 187 | 8 | 902 | 196 | 899 | 197 | **900** | **197** |
| 471.omnetpp | 8 | 1041 | 48.0 | **1042** | **48.0** | 1042 | 48.0 | 8 | 1025 | 48.8 | **1025** | **48.8** | 1025 | 48.8 |
| 473.astar | 8 | 945 | 59.4 | 945 | 59.5 | **945** | **59.5** | 8 | 887 | 63.3 | 890 | 63.1 | **890** | **63.1** |
| 483.xalancbmk | 8 | **553** | **99.7** | 554 | 99.6 | 553 | 99.8 | 8 | **553** | **99.7** | 554 | 99.6 | 553 | 99.8 |

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

## General Notes

```
taskset utility used to bind CPU(s) to processes
```

## 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

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## Base Optimization Flags (Continued)

C++ benchmarks:
`-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs`
`-L/spec/cpu2006.1.0/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/10.0.023/bin/icc`
`-L/opt/intel/cce/10.0.023/lib`
`-I/opt/intel/cce/10.0.023/include`

456.hmmer: `/opt/intel/cce/10.0.023/bin/icc`
`-L/opt/intel/cce/10.0.023/lib`
`-I/opt/intel/cce/10.0.023/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`

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# Peak Optimization Flags (Continued)

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast`

403.gcc: `basepeak = yes`

429.mcf: `-fast -prefetch`

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

456.hmmer: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

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

462.libquantum: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always`

464.h264ref: `Same as 456.hmmer`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec_div -ansi-alias -Wl,-z,muldefs -L/spec/cpu2006.1.0/lib -lsmartheap`

473.astar: `Same as 471.omnetpp`

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-ia32-intel64-linux-flags.20090714.45.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.45.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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