# SPEC® CINT2006 Result

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## IBM Corporation

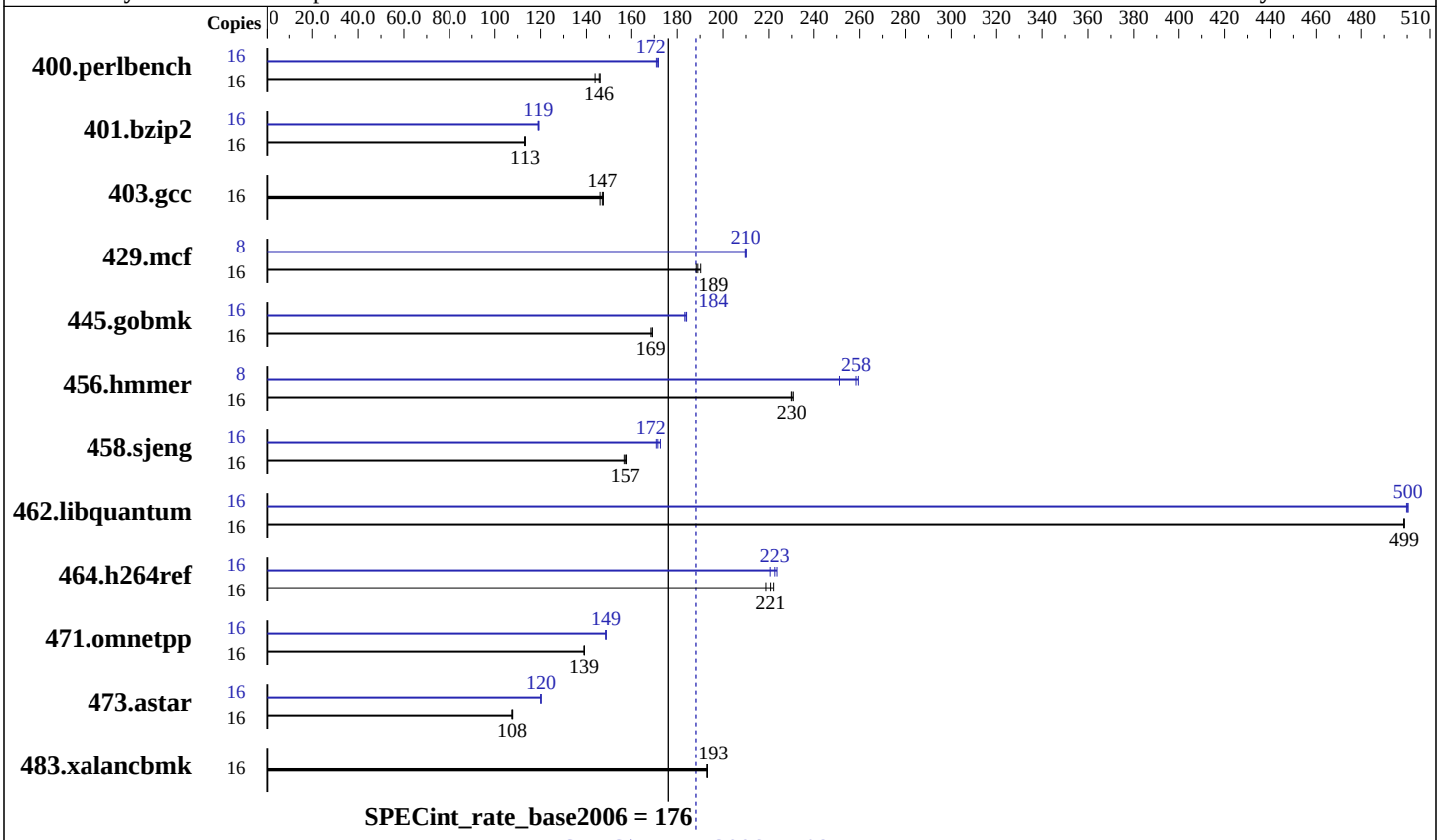
## IBM BladeCenter HS22 (Intel Xeon L5630)

SPECint®_rate2006 = 188

SPECint_rate_base2006 = 176

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

**Test date:** Mar-2010
**Hardware Availability:** Mar-2010
**Software Availability:** Jan-2010




### 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, 2 threads/core |
| 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: | 96 GB (12 x 8 GB PC3-10600R, 2 Rank, running at 1066 MHz) |
| Disk Subsystem: | 1 x 73 GB SAS, 15000 RPM |
| 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: | No |
| File System: | ext3 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 16 | 1087 | 144 | 1071 | 146 | **1074** | **146** | 16 | 915 | 171 | 910 | 172 | **911** | **172** |
| 401.bzip2 | 16 | 1366 | 113 | **1363** | **113** | 1362 | 113 | 16 | **1297** | **119** | 1294 | 119 | 1298 | 119 |
| 403.gcc | 16 | **877** | **147** | 882 | 146 | 874 | 147 | 16 | **877** | **147** | 882 | 146 | 874 | 147 |
| 429.mcf | 16 | 767 | 190 | 775 | 188 | **772** | **189** | 8 | **348** | **210** | 347 | 210 | 348 | 210 |
| 445.gobmk | 16 | 996 | 169 | **993** | **169** | 992 | 169 | 16 | 912 | 184 | **913** | **184** | 916 | 183 |
| 456.hmmer | 16 | 650 | 230 | **649** | **230** | 647 | 231 | 8 | 297 | 251 | **289** | **258** | 288 | 259 |
| 458.sjeng | 16 | **1232** | **157** | 1229 | 157 | 1237 | 157 | 16 | 1121 | 173 | **1129** | **172** | 1133 | 171 |
| 462.libquantum | 16 | **665** | **499** | 665 | 499 | 665 | 499 | 16 | 663 | 500 | 662 | 500 | **663** | **500** |
| 464.h264ref | 16 | 1619 | 219 | 1595 | 222 | **1604** | **221** | 16 | 1605 | 221 | **1591** | **223** | 1584 | 224 |
| 471.omnetpp | 16 | 719 | 139 | **719** | **139** | 720 | 139 | 16 | 674 | 148 | 673 | 149 | **673** | **149** |
| 473.astar | 16 | 1045 | 107 | **1043** | **108** | 1042 | 108 | 16 | 935 | 120 | **934** | **120** | 934 | 120 |
| 483.xalancbmk | 16 | 571 | 193 | 572 | 193 | **572** | **193** | 16 | 571 | 193 | 572 | 193 | **572** | **193** |

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

## Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

## Platform Notes

```
 Turbo Mode enabled
 Turbo Boost set to Traditional
 Power C-states enabled
 Demand Scrub disabled
```

## General Notes

```
 'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
```

# Base Compiler Invocation

C benchmarks:

```
icc  -m32
```

C++ benchmarks:

```
icpc -m32
```

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs`
`-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap`

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m32`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

462.libquantum: `icc -m64`

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

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`

Continued on next page

## Peak Portability Flags (Continued)

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: -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

401.bzip2: -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) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: basepeak = yes

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 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32 -opt-prefetch

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/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

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## Peak Optimization Flags (Continued)

473.astar (continued):
`-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.20100330.03.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.20100330.03.xml`


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