# SPEC® CINT2006 Result

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## IBM Corporation

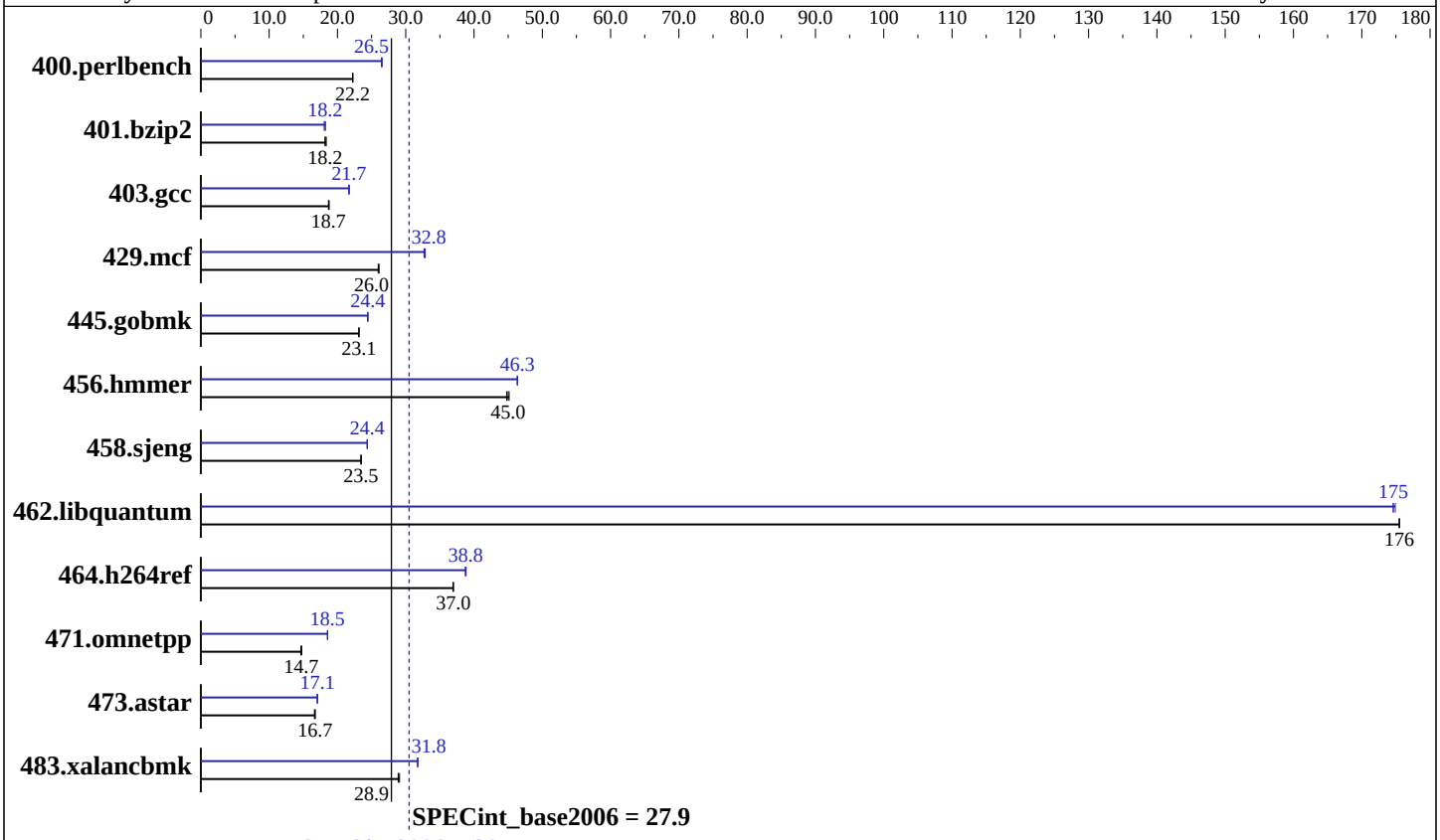
## IBM System x3200 M3 (Intel Core i3-550)

SPECint®2006 = 30.5

SPECint_base2006 = 27.9

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

**Test date:** Dec-2010
**Hardware Availability:** Nov-2010
**Software Availability:** Jan-2010




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core i3-550 |
| CPU Characteristics: | |
| CPU MHz: | 3200 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 4 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 16 GB (4 x 4 GB 2Rx8 PC3-10600E-9, ECC) |
| Disk Subsystem: | 1 x 250 GB SATA, 7200 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SuSe Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7-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: | 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 | 439 | 22.3 | 440 | 22.2 | **439** | **22.2** | 370 | 26.4 | **369** | **26.5** | 368 | 26.5 |
| 401.bzip2 | 526 | 18.4 | 531 | 18.2 | **530** | **18.2** | 534 | 18.1 | **530** | **18.2** | 529 | 18.2 |
| 403.gcc | 428 | 18.8 | **430** | **18.7** | 431 | 18.7 | 372 | 21.7 | **371** | **21.7** | 371 | 21.7 |
| 429.mcf | 350 | 26.1 | **351** | **26.0** | 351 | 26.0 | 279 | 32.7 | 278 | 32.9 | **278** | **32.8** |
| 445.gobmk | **453** | **23.1** | 453 | 23.1 | 453 | 23.1 | **429** | **24.4** | 429 | 24.5 | 429 | 24.4 |
| 456.hmmer | 208 | 44.8 | **207** | **45.0** | 207 | 45.1 | **201** | **46.3** | 201 | 46.3 | 201 | 46.4 |
| 458.sjeng | 516 | 23.5 | **516** | **23.5** | 516 | 23.5 | 497 | 24.4 | 497 | 24.4 | **497** | **24.4** |
| 462.libquantum | 118 | 176 | **118** | **176** | 118 | 176 | **119** | **175** | 118 | 175 | 119 | 175 |
| 464.h264ref | 600 | 36.9 | 598 | 37.0 | **599** | **37.0** | 572 | 38.7 | 570 | 38.8 | **570** | **38.8** |
| 471.omnetpp | 423 | 14.8 | 427 | 14.6 | **425** | **14.7** | **337** | **18.5** | 337 | 18.6 | 337 | 18.5 |
| 473.astar | 419 | 16.7 | 422 | 16.6 | **420** | **16.7** | **411** | **17.1** | 411 | 17.1 | 412 | 17.0 |
| 483.xalancbmk | 239 | 28.9 | 237 | 29.1 | **238** | **28.9** | **217** | **31.8** | 217 | 31.8 | 217 | 31.7 |

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

## Platform Notes

```
BIOS Settings:
CPU C State Enable
```

## General Notes

```
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
```

## 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/cmplr/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 -m32

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
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_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.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: -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) -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

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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/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64`

483.xalancbmk: `-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`

## 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.20100929.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.20100929.xml`


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