# SPEC® CINT2006 Result

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## IBM Corporation

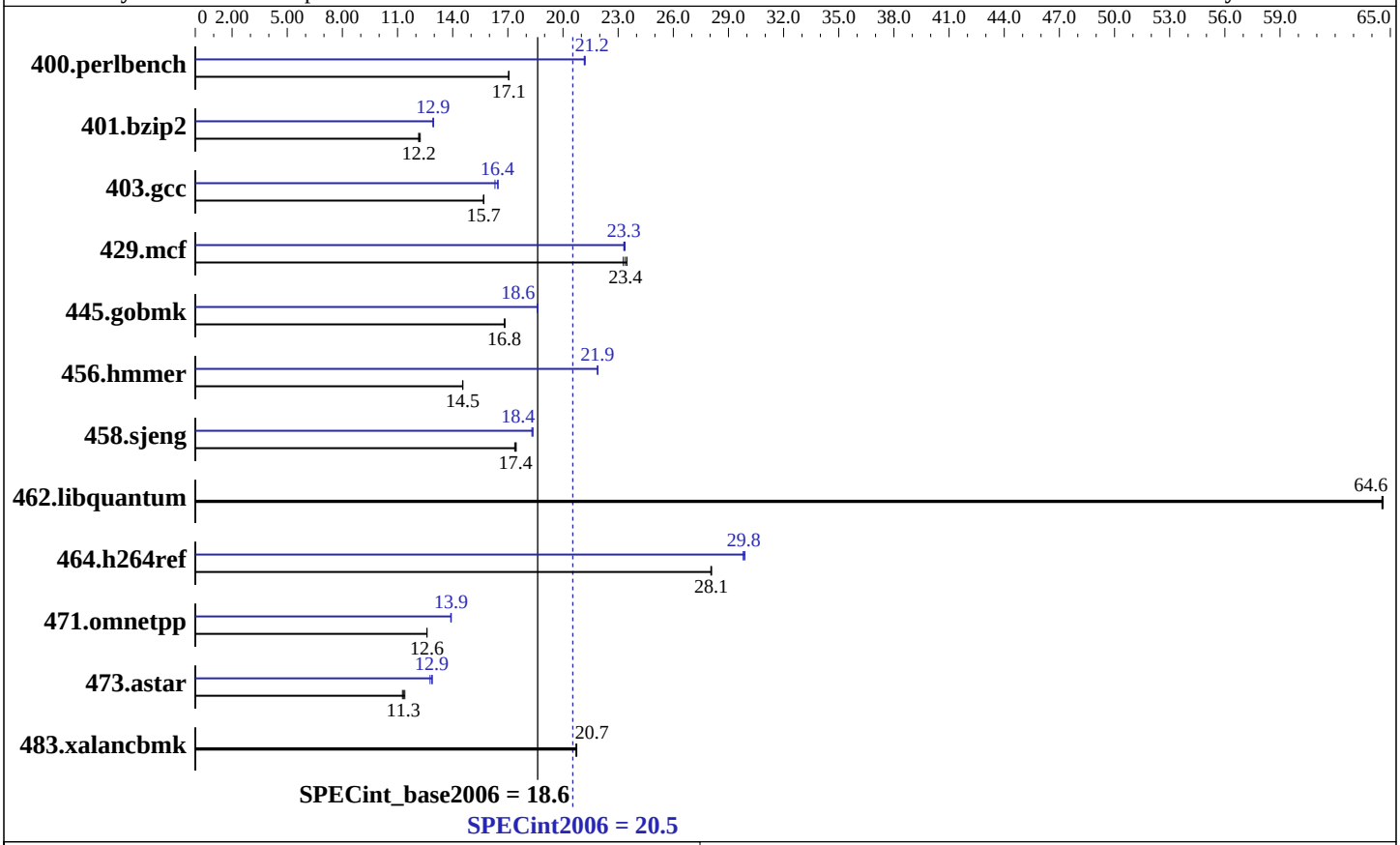
## IBM System x3200 M2 (Intel Pentium E5300)

SPECint®2006 = 20.5

SPECint_base2006 = 18.6

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

**Test date:** Jun-2009
**Hardware Availability:** Apr-2009
**Software Availability:** Nov-2008




### Hardware

| | |
|---|---|
| CPU Name: | Intel Pentium E5300 |
| CPU Characteristics: | 800 MHz system bus |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 2 MB I+D on chip per chip |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 8 GB(4 x 2 GB DDR2-6400E ECC) |
| Disk Subsystem: | 1 x 250 GB SATA, 7200RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 10(x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ Compiler 11.0 for Linux Build 20080930 Package ID: l_cproc_p_11.0.066 |
| Auto Parallel: | Yes |
| File System: | ReiserFS |
| 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 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 573 | 17.1 | 573 | 17.0 | **573** | **17.1** | 462 | 21.2 | **462** | **21.2** | 461 | 21.2 |
| 401.bzip2 | **793** | **12.2** | 794 | 12.2 | 789 | 12.2 | 747 | 12.9 | 745 | 13.0 | **745** | **12.9** |
| 403.gcc | 514 | 15.7 | 513 | 15.7 | **513** | **15.7** | 494 | 16.3 | **489** | **16.4** | 489 | 16.5 |
| 429.mcf | **390** | **23.4** | 392 | 23.3 | 388 | 23.5 | 390 | 23.4 | **391** | **23.3** | 391 | 23.3 |
| 445.gobmk | 623 | 16.8 | 624 | 16.8 | **624** | **16.8** | 563 | 18.6 | **563** | **18.6** | 563 | 18.6 |
| 456.hmmer | **641** | **14.5** | 641 | 14.6 | 642 | 14.5 | 426 | 21.9 | 426 | 21.9 | **426** | **21.9** |
| 458.sjeng | 693 | 17.5 | **694** | **17.4** | 696 | 17.4 | **659** | **18.4** | 659 | 18.4 | 661 | 18.3 |
| 462.libquantum | **321** | **64.6** | 321 | 64.6 | 321 | 64.5 | **321** | **64.6** | 321 | 64.6 | 321 | 64.5 |
| 464.h264ref | 788 | 28.1 | **789** | **28.1** | 789 | 28.0 | **742** | **29.8** | 743 | 29.8 | 740 | 29.9 |
| 471.omnetpp | 496 | 12.6 | **496** | **12.6** | 496 | 12.6 | 449 | 13.9 | **449** | **13.9** | 450 | 13.9 |
| 473.astar | 623 | 11.3 | **620** | **11.3** | 616 | 11.4 | 550 | 12.8 | **546** | **12.9** | 545 | 12.9 |
| 483.xalancbmk | 333 | 20.7 | 333 | 20.8 | **333** | **20.7** | 333 | 20.7 | 333 | 20.8 | **333** | **20.7** |

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

## General Notes

```
Hardware Sector Prefetch Enable and Adjacent Sector Prefetch Enable
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:
`-xSSSE3 -ipo -O3 -no-prec-div -static -parallel`
`-par-runtime-control -opt-prefetch`

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## Base Optimization Flags (Continued)

C++ benchmarks:
`-xSSSE3 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs -L/spec/cpu2006.1.1/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/Compiler/11.0/066/bin/intel64/icc`

456.hmmer: `/opt/intel/Compiler/11.0/066/bin/intel64/icc`

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) `-xSSSE3 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch`

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -ipo -O3 -no-prec-div -static -auto-ilp32 -opt-prefetch -ansi-alias`

Continued on next page

## Peak Optimization Flags (Continued)

403.gcc: `-xSSSE3 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3`

429.mcf: `-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch`

445.gobmk: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -O2 -ipo -no-prec-div -ansi-alias`

456.hmmer: `-xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -auto-ilp32`

458.sjeng: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -ipo -O3 -no-prec-div -static -unroll4`

462.libquantum: `basepeak = yes`

464.h264ref: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap`

473.astar: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/spec/cpu2006.1.1/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-ic11.0-int-linux64-revA.20090902.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090902.xml`

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