# SPEC® CINT2006 Result



## IBM Corporation

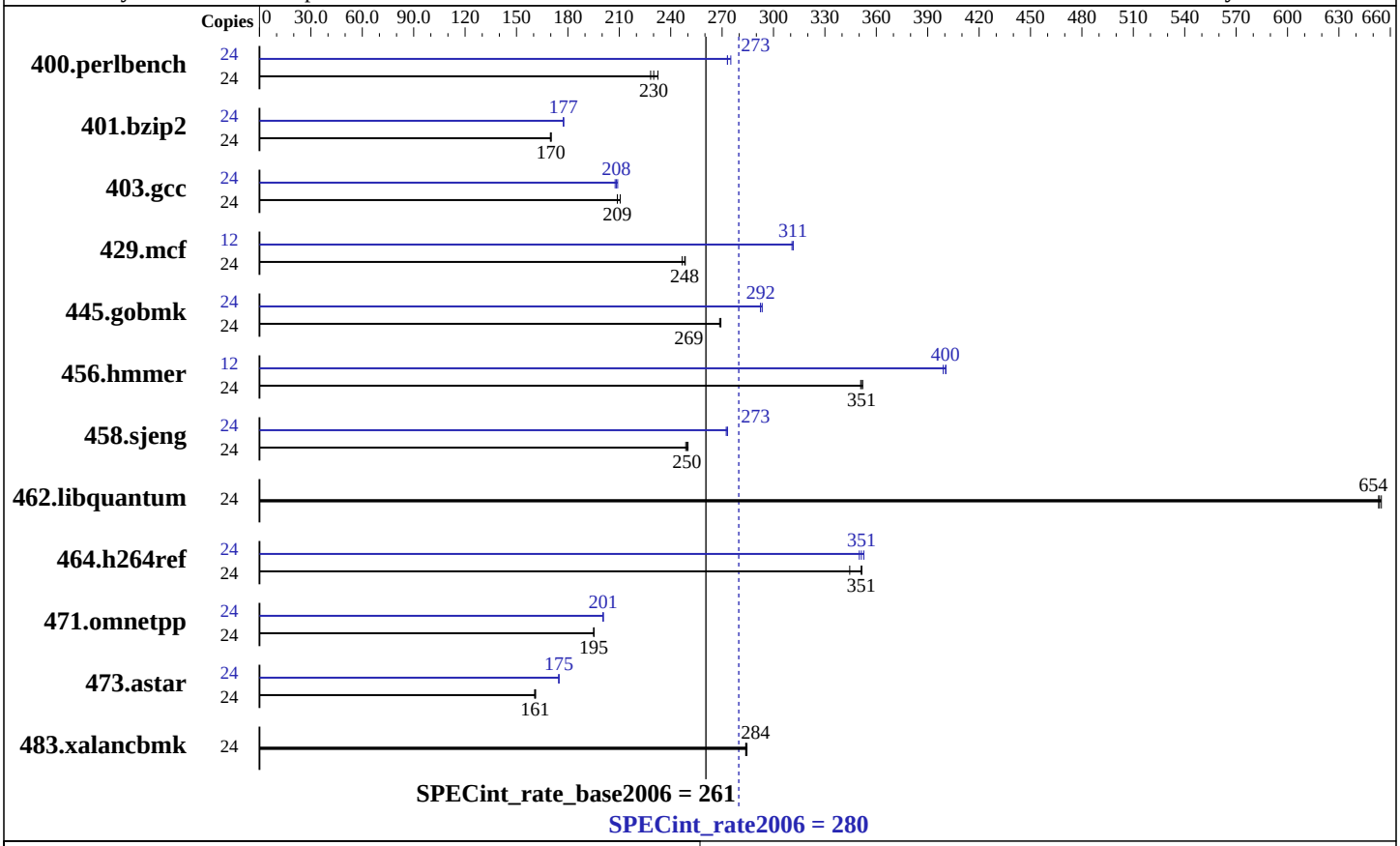
## IBM System x3550 M3 (Intel Xeon L5640)

SPECint®_rate2006 = 280

SPECint_rate_base2006 = 261

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

**Test date:** May-2010
**Hardware Availability:** Jun-2010
**Software Availability:** Jan-2010




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon L5640 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.80 GHz |
| CPU MHz: | 2267 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 6 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2 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: | 12 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 48 GB (12 x 4 GB PC3-10600R-ECC, CL9) |
| Disk Subsystem: | 1 x 73 GB SAS, 15000RPM |
| 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 |

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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 | 24 | **1019** | **230** | 1027 | 228 | 1008 | 233 | 24 | **858** | **273** | 852 | 275 | 858 | 273 |
| 401.bzip2 | 24 | **1361** | **170** | 1361 | 170 | 1364 | 170 | 24 | 1307 | 177 | 1304 | 178 | **1305** | **177** |
| 403.gcc | 24 | **925** | **209** | 925 | 209 | 918 | 211 | 24 | 924 | 209 | **928** | **208** | 931 | 208 |
| 429.mcf | 24 | 887 | 247 | 881 | 249 | **882** | **248** | 12 | 352 | 311 | 351 | 312 | **351** | **311** |
| 445.gobmk | 24 | 935 | 269 | 937 | 269 | **936** | **269** | 24 | **861** | **292** | 861 | 292 | 858 | 293 |
| 456.hmmer | 24 | 636 | 352 | **637** | **351** | 638 | 351 | 12 | 281 | 399 | **280** | **400** | 279 | 401 |
| 458.sjeng | 24 | **1164** | **250** | 1161 | 250 | 1167 | 249 | 24 | 1063 | 273 | 1066 | 272 | **1064** | **273** |
| 462.libquantum | 24 | 761 | 653 | **761** | **654** | 759 | 655 | 24 | 761 | 653 | **761** | **654** | 759 | 655 |
| 464.h264ref | 24 | **1512** | **351** | 1511 | 352 | 1542 | 344 | 24 | 1517 | 350 | 1506 | 353 | **1512** | **351** |
| 471.omnetpp | 24 | 768 | 195 | 769 | 195 | **769** | **195** | 24 | 747 | 201 | **748** | **201** | 748 | 201 |
| 473.astar | 24 | 1049 | 161 | **1047** | **161** | 1045 | 161 | 24 | **964** | **175** | 965 | 175 | 964 | 175 |
| 483.xalancbmk | 24 | 583 | 284 | **583** | **284** | 582 | 285 | 24 | 583 | 284 | **583** | **284** | 582 | 285 |

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 Enable
 Turbo Boost set to Traditional
 CPU C State Enable
 Data Reuse Disable
```

## 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
```

## 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`

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`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`

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## Peak Portability Flags (Continued)

462.libquantum: -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: -xSSE4.2 -ipo -O3 -no-prec-div -static

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: basepeak = yes

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

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## Peak Optimization Flags (Continued)

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.20100601.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.20100601.xml`



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

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