# SPEC® CINT2006 Result

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## Fujitsu

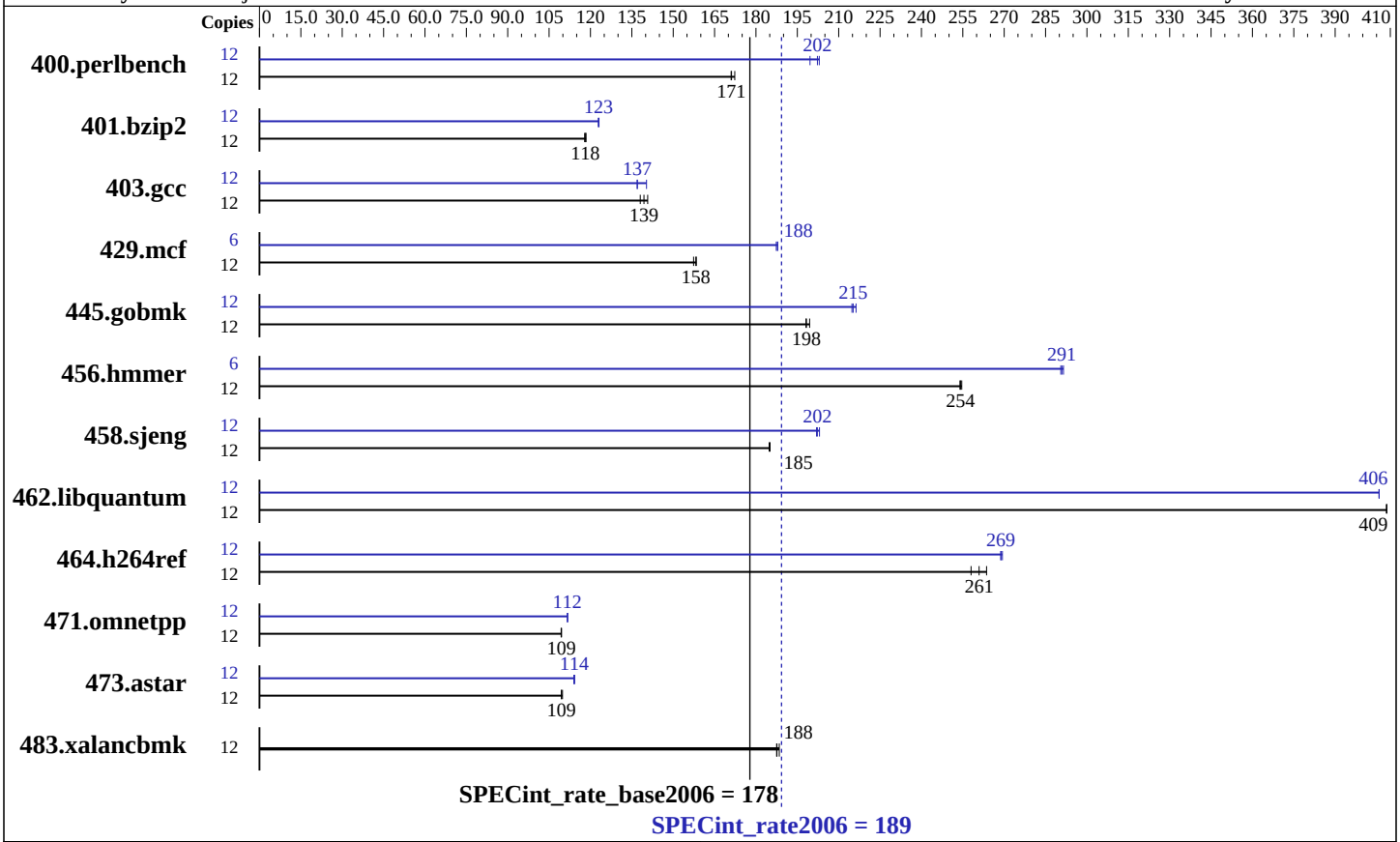
## CELSIUS M470, Intel Xeon W3680

**SPECint®_rate2006 = 189**

**SPECint_rate_base2006 = 178**

**CPU2006 license:** 19
**Test sponsor:** Fujitsu
**Tested by:** Fujitsu

**Test date:** Mar-2010
**Hardware Availability:** Mar-2010
**Software Availability:** Dec-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon W3680 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.6 GHz |
| CPU MHz: | 3333 |
| FPU: | Integrated |
| CPU(s) enabled: | 6 cores, 1 chip, 6 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: | 12 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 12 GB (6x2 GB PC3-10600E, 2 rank, CL9, ECC) |
| Disk Subsystem: | 1 x SATA II, 400 GB, 7200 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: | Multi-User Run Level 3 |
| 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 | 12 | **685** | **171** | 686 | 171 | 680 | 172 | 12 | 578 | 203 | **580** | **202** | 587 | 200 |
| 401.bzip2 | 12 | **980** | **118** | 978 | 118 | 982 | 118 | 12 | **942** | **123** | 942 | 123 | 941 | 123 |
| 403.gcc | 12 | **693** | **139** | 686 | 141 | 700 | 138 | 12 | 688 | 140 | **705** | **137** | 706 | 137 |
| 429.mcf | 12 | 695 | 157 | 691 | 158 | **692** | **158** | 6 | **291** | **188** | 291 | 188 | 292 | 187 |
| 445.gobmk | 12 | **635** | **198** | 635 | 198 | 631 | 199 | 12 | 582 | 216 | **585** | **215** | 586 | 215 |
| 456.hmmer | 12 | **440** | **254** | 440 | 255 | 441 | 254 | 6 | 193 | 291 | 192 | 291 | **192** | **291** |
| 458.sjeng | 12 | **785** | **185** | 786 | 185 | 784 | 185 | 12 | 715 | 203 | 719 | 202 | **718** | **202** |
| 462.libquantum | 12 | **608** | **409** | 608 | 409 | 609 | 409 | 12 | **612** | **406** | 612 | 406 | 613 | 406 |
| 464.h264ref | 12 | 1029 | 258 | **1018** | **261** | 1007 | 264 | 12 | 986 | 269 | 988 | 269 | **988** | **269** |
| 471.omnetpp | 12 | 685 | 109 | 686 | 109 | **685** | **109** | 12 | 672 | 112 | **672** | **112** | 671 | 112 |
| 473.astar | 12 | **769** | **109** | 770 | 109 | 767 | 110 | 12 | 739 | 114 | **738** | **114** | 737 | 114 |
| 483.xalancbmk | 12 | 439 | 188 | 442 | 188 | **441** | **188** | 12 | 439 | 188 | 442 | 188 | **441** | **188** |

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 --localalloc --physcpubind was used to bind processes to cores and it's local memory.
  Details on the parameters used may be found in the config file.
```

## Operating System Notes

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

## Platform Notes

```
BIOS configuration:
Data Reuse Optimization = Disabled
```

# 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: -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: -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.20100316.01.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.20100316.01.xml`


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