



# SPEC® CINT2006 Result

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## Fujitsu

**SPECint®2006 = 25.1**

PRIMERGY RX200 S6, Intel Xeon E5507, 2.27 GHz

**SPECint\_base2006 = 23.0**

CPU2006 license: 19

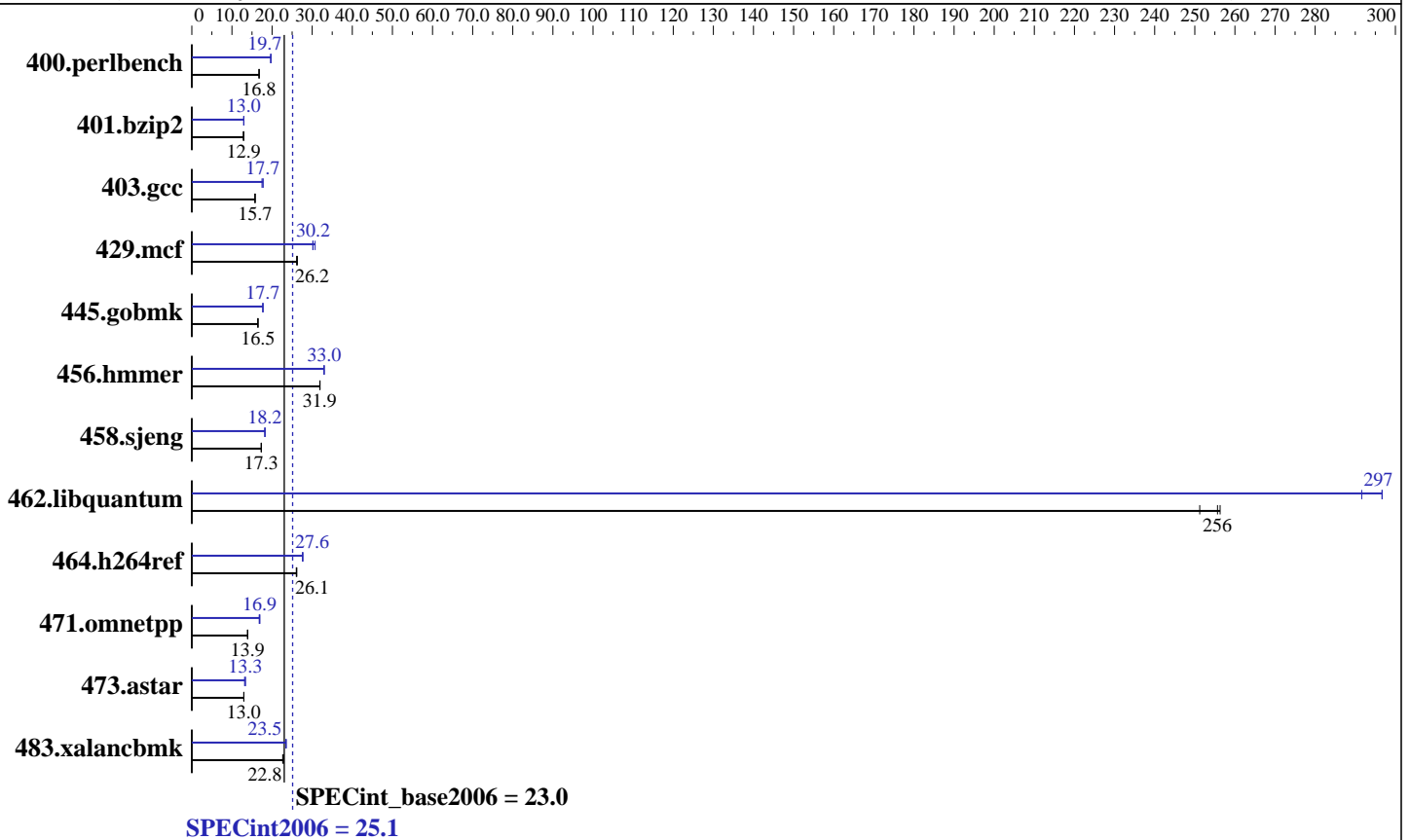
Test date: May-2010

Test sponsor: Fujitsu

Hardware Availability: May-2010

Tested by: Fujitsu

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E5507  
 CPU Characteristics:  
 CPU MHz: 2267  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 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: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)  
 Disk Subsystem: 1 x SATA, 160 GB, 5400 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: 1\_cproc\_p\_11.1.064  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Multi-User Run Level 3  
 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  | 583               | 16.7               | <b><u>582</u></b>  | <b><u>16.8</u></b> | 582               | 16.8               | <b><u>496</u></b> | <b><u>19.7</u></b> | 497               | 19.7               | 496                | 19.7               |
| 401.bzip2      | 752               | 12.8               | <b><u>747</u></b>  | <b><u>12.9</u></b> | 745               | 13.0               | <b><u>745</u></b> | <b><u>13.0</u></b> | 746               | 12.9               | 744                | 13.0               |
| 403.gcc        | 509               | 15.8               | <b><u>511</u></b>  | <b><u>15.7</u></b> | 512               | 15.7               | 460               | 17.5               | <b><u>454</u></b> | <b><u>17.7</u></b> | 454                | 17.7               |
| 429.mcf        | 349               | 26.1               | <b><u>348</u></b>  | <b><u>26.2</u></b> | 347               | 26.3               | 297               | 30.7               | 302               | 30.2               | <b><u>302</u></b>  | <b><u>30.2</u></b> |
| 445.gobmk      | 638               | 16.4               | 635                | 16.5               | <b><u>637</u></b> | <b><u>16.5</u></b> | <b><u>592</u></b> | <b><u>17.7</u></b> | 592               | 17.7               | 592                | 17.7               |
| 456.hammer     | 292               | 32.0               | <b><u>292</u></b>  | <b><u>31.9</u></b> | 292               | 31.9               | 283               | 33.0               | 283               | 33.0               | <b><u>283</u></b>  | <b><u>33.0</u></b> |
| 458.sjeng      | <b><u>699</u></b> | <b><u>17.3</u></b> | 699                | 17.3               | 699               | 17.3               | 664               | 18.2               | 664               | 18.2               | <b><u>664</u></b>  | <b><u>18.2</u></b> |
| 462.libquantum | 82.5              | 251                | <b><u>81.0</u></b> | <b><u>256</u></b>  | 80.8              | 256                | 71.1              | 292                | 69.8              | 297                | <b><u>69.8</u></b> | <b><u>297</u></b>  |
| 464.h264ref    | <b><u>848</u></b> | <b><u>26.1</u></b> | 845                | 26.2               | 850               | 26.0               | <b><u>801</u></b> | <b><u>27.6</u></b> | 800               | 27.7               | 802                | 27.6               |
| 471.omnetpp    | <b><u>449</u></b> | <b><u>13.9</u></b> | 449                | 13.9               | 449               | 13.9               | 372               | 16.8               | 369               | 16.9               | <b><u>369</u></b>  | <b><u>16.9</u></b> |
| 473.astar      | 542               | 12.9               | <b><u>541</u></b>  | <b><u>13.0</u></b> | 541               | 13.0               | 526               | 13.4               | 534               | 13.2               | <b><u>527</u></b>  | <b><u>13.3</u></b> |
| 483.xalancbmk  | 302               | 22.8               | 305                | 22.7               | <b><u>303</u></b> | <b><u>22.8</u></b> | 294               | 23.5               | 294               | 23.5               | <b><u>294</u></b>  | <b><u>23.5</u></b> |

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

## Operating System Notes

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

## Platform Notes

The system automatically configures the memory to run at 800 MHz.  
BIOS configuration:  
Data Reuse Optimization = Disable

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
For information about Fujitsu please visit: <http://www.fujitsu.com>  
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64



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## Base Portability Flags

```

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
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
```

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## Peak Compiler Invocation (Continued)

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

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## Peak Optimization Flags (Continued)

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

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.20100330.01.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.20100330.01.xml>

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