# SPEC® CINT2006 Result

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## Fujitsu Siemens Computers

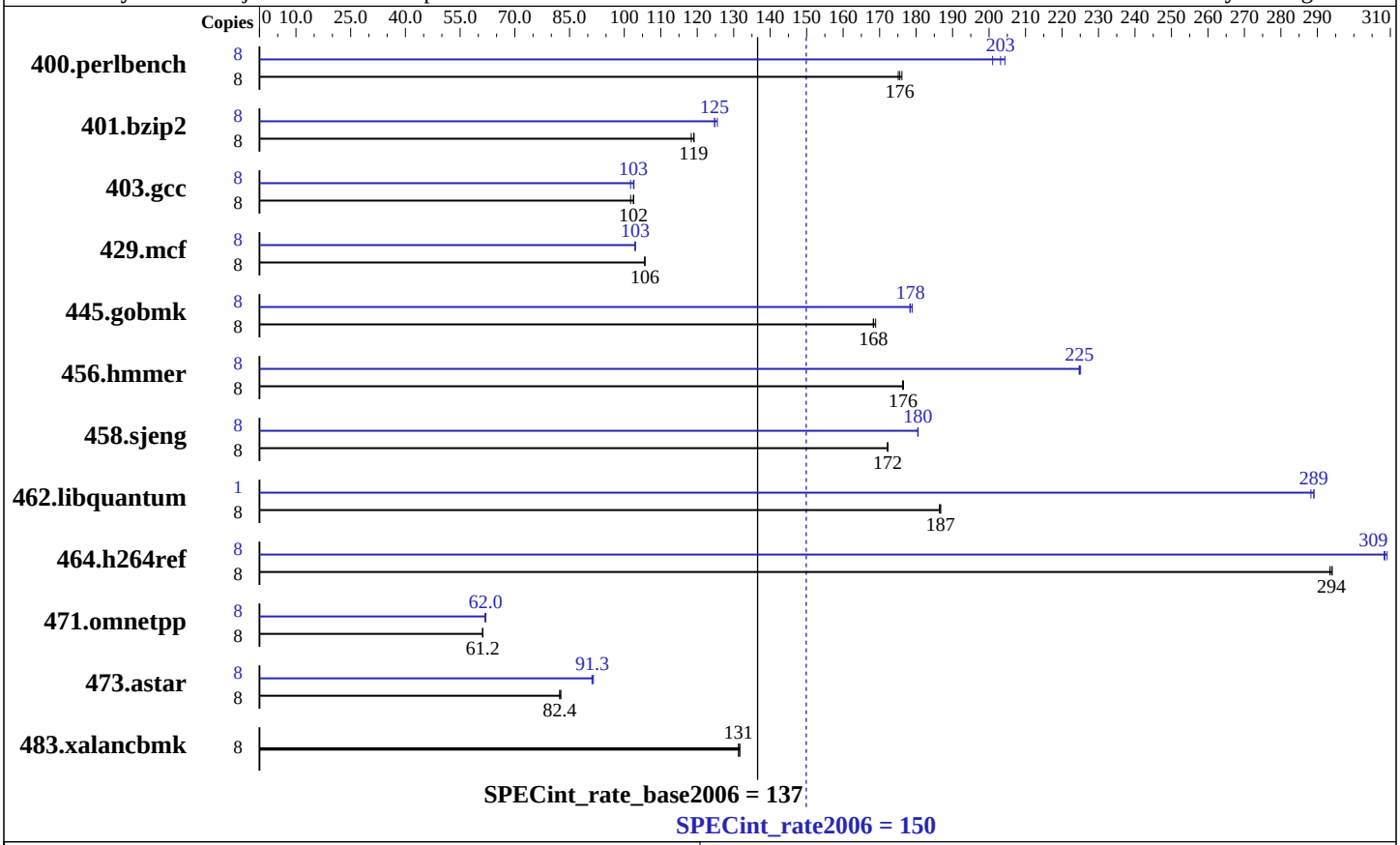
PRIMERGY RX200 S4, Intel Xeon X5470, 3.33 GHz

SPECint®_rate2006 = 150

SPECint_rate_base2006 = 137

**CPU2006 license:** 22
**Test sponsor:** Fujitsu Siemens Computers
**Tested by:** Fujitsu Siemens Computers

**Test date:** Nov-2008
**Hardware Availability:** Oct-2008
**Software Availability:** Aug-2008




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5470 |
| CPU Characteristics: | 1333 MHz system bus |
| CPU MHz: | 3333 |
| 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: | 12 MB I+D on chip per chip, 6 MB shared / 2 cores |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC) |
| Disk Subsystem: | 1x SATA, 80 GB, 7200 rpm |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp |
| Compiler: | Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| System State: | Multi-User Run Level 3 |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap Library, Version 8.1 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 | 8 | **445** | **176** | 446 | 175 | 444 | 176 | 8 | 389 | 201 | 383 | 204 | **385** | **203** |
| 401.bzip2 | 8 | **648** | **119** | 652 | 118 | 648 | 119 | 8 | 619 | 125 | **619** | **125** | 615 | 126 |
| 403.gcc | 8 | **628** | **102** | 628 | 103 | 633 | 102 | 8 | **628** | **103** | 627 | 103 | 633 | 102 |
| 429.mcf | 8 | 691 | 106 | **691** | **106** | 690 | 106 | 8 | 709 | 103 | 708 | 103 | **708** | **103** |
| 445.gobmk | 8 | **498** | **168** | 497 | 169 | 499 | 168 | 8 | **470** | **178** | 471 | 178 | 469 | 179 |
| 456.hmmer | 8 | 423 | 176 | **423** | **176** | 423 | 177 | 8 | 332 | 225 | **332** | **225** | 332 | 225 |
| 458.sjeng | 8 | 562 | 172 | 562 | 172 | **562** | **172** | 8 | 536 | 181 | 536 | 180 | **536** | **180** |
| 462.libquantum | 8 | 889 | 186 | 888 | 187 | **888** | **187** | 1 | **71.7** | **289** | 71.7 | 289 | 71.9 | 288 |
| 464.h264ref | 8 | **602** | **294** | 602 | 294 | 603 | 293 | 8 | 574 | 308 | **574** | **309** | 573 | 309 |
| 471.omnetpp | 8 | **817** | **61.2** | 817 | 61.2 | 817 | 61.2 | 8 | **806** | **62.0** | 806 | 62.0 | 809 | 61.8 |
| 473.astar | 8 | 682 | 82.3 | 680 | 82.6 | **682** | **82.4** | 8 | **615** | **91.3** | 613 | 91.5 | 616 | 91.2 |
| 483.xalancbmk | 8 | 419 | 132 | **420** | **131** | 420 | 131 | 8 | 419 | 132 | **420** | **131** | 420 | 131 |

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

## Compiler Invocation Notes

```
All binaries were built with 32-bit moder except:
401.bzip2 and 456.hmmer in peak were built with 64-bit mode.
```

## Submit Notes

```
The config file option 'submit' was used.
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores (default)
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
```

## Platform Notes

```
BIOS configuration:
Adjacent Sector Prefetch = Disable
Memory Throttling = Enable
```

## General Notes

```
taskset has been used to bind processes to cores except
for 462.libquantum peak

For information about Fujitsu Siemens Computers please see:
```

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## General Notes (Continued)

http://www.fujitsu-siemens.com

## 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:
-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.1 -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/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

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## Peak Compiler Invocation (Continued)

456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

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) -xSSE4.1 -ipo -O3
-no-prec-div -static -ansi-alias -opt-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -ansi-alias

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo
-no-prec-div -ansi-alias

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
-ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4

462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static
-opt-malloc-options=3 -parallel -par-runtime-control
-opt-prefetch

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias

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## Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSE4.1 -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) `-xSSE4.1 -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-ic10.1-int-linux64-revD.20090714.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-int-linux64-revD.20090714.xml`


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