# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

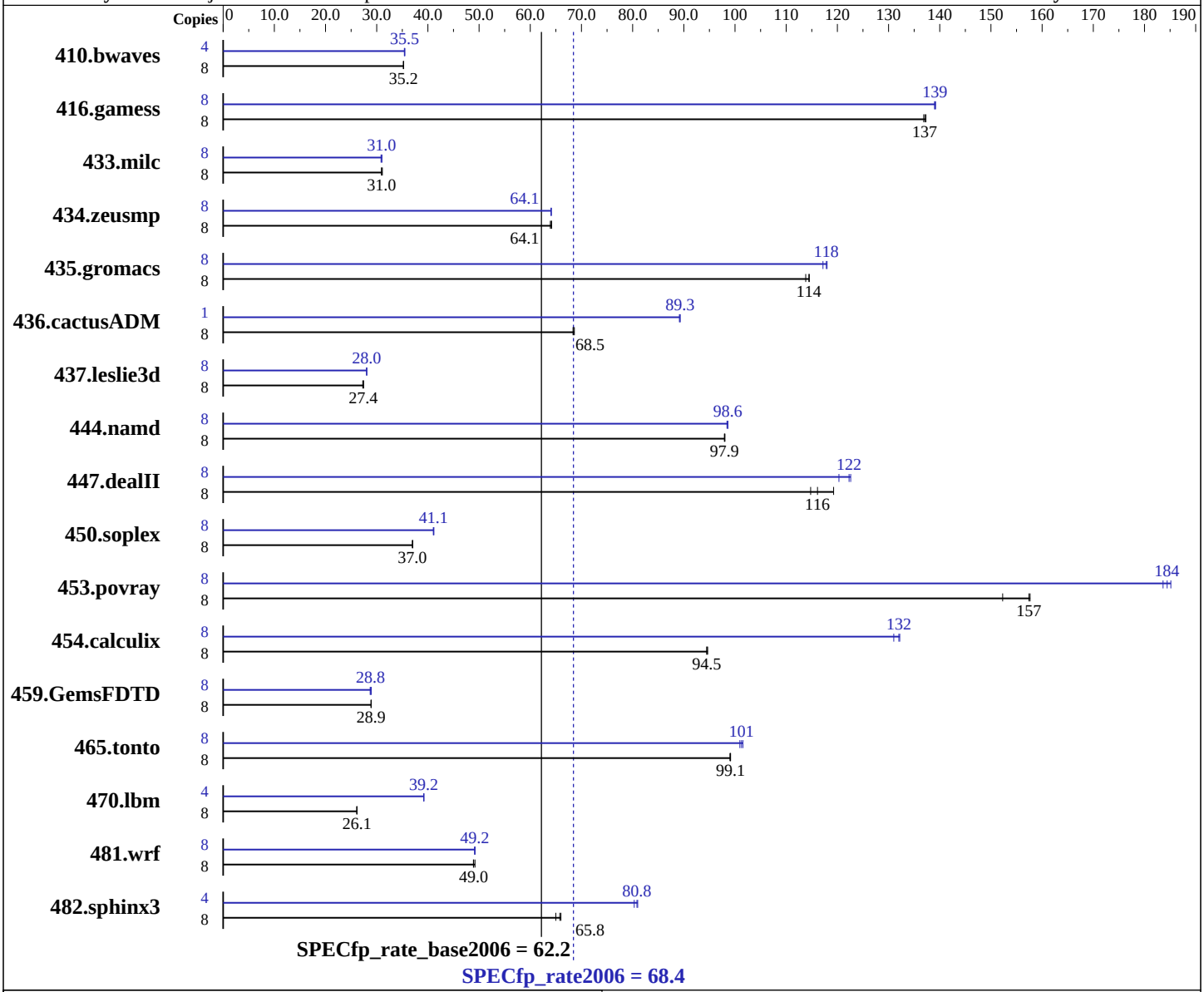
PRIMERGY RX300 S4, Intel Xeon L5410, 2.33 GHz

SPECfp®_rate2006 = 68.4

SPECfp_rate_base2006 = 62.2

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

**Test date:** Feb-2008
**Hardware Availability:** Mar-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon L5410 |
| CPU Characteristics: | 1333 MHz system bus |
| CPU MHz: | 2333 |
| 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 |

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### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ and Fortran Compiler for Linux32 and Linux64 Version 10.1 - Build 20070725 |
| Auto Parallel: | Yes |
| File System: | ext2 |
| System State: | Multi-User Run Level 3 |
| Base Pointers: | 64-bit |

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F, 2 rank, CL 5-5-5, ECC)
Disk Subsystem: 1x SAS, 73 GB, 15000 rpm
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50.0.5-0.1.x86_64

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 8 | **3085** | **35.2** | 3085 | 35.2 | 3086 | 35.2 | 4 | 1536 | 35.4 | **1533** | **35.5** | 1531 | 35.5 |
| 416.gamess | 8 | 1141 | 137 | **1143** | **137** | 1144 | 137 | 8 | **1127** | **139** | 1127 | 139 | 1125 | 139 |
| 433.milc | 8 | 2361 | 31.1 | **2372** | **31.0** | 2374 | 30.9 | 8 | 2381 | 30.8 | 2369 | 31.0 | **2371** | **31.0** |
| 434.zeusmp | 8 | 1134 | 64.2 | **1136** | **64.1** | 1139 | 63.9 | 8 | **1136** | **64.1** | 1136 | 64.1 | 1136 | 64.1 |
| 435.gromacs | 8 | 499 | 115 | 502 | 114 | **499** | **114** | 8 | 484 | 118 | 487 | 117 | **485** | **118** |
| 436.cactusADM | 8 | **1396** | **68.5** | 1399 | 68.4 | 1393 | 68.6 | 1 | **134** | **89.3** | 134 | 89.1 | 134 | 89.3 |
| 437.leslie3d | 8 | 2757 | 27.3 | 2743 | 27.4 | **2744** | **27.4** | 8 | 2680 | 28.1 | **2682** | **28.0** | 2683 | 28.0 |
| 444.namd | 8 | 654 | 98.0 | **655** | **97.9** | 655 | 97.9 | 8 | 651 | 98.6 | 652 | 98.4 | **651** | **98.6** |
| 447.dealII | 8 | 767 | 119 | **788** | **116** | 797 | 115 | 8 | 746 | 123 | **748** | **122** | 761 | 120 |
| 450.soplex | 8 | 1802 | 37.0 | 1804 | 37.0 | **1804** | **37.0** | 8 | 1624 | 41.1 | 1620 | 41.2 | **1624** | **41.1** |
| 453.povray | 8 | 270 | 158 | **270** | **157** | 279 | 152 | 8 | 232 | 184 | 230 | 185 | **231** | **184** |
| 454.calculix | 8 | 699 | 94.5 | **698** | **94.5** | 697 | 94.7 | 8 | 499 | 132 | **500** | **132** | 504 | 131 |
| 459.GemsFDTD | 8 | **2936** | **28.9** | 2936 | 28.9 | 2936 | 28.9 | 8 | 2955 | 28.7 | 2934 | 28.9 | **2945** | **28.8** |
| 465.tonto | 8 | 795 | 99.0 | **794** | **99.1** | 794 | 99.1 | 8 | 775 | 102 | **777** | **101** | 780 | 101 |
| 470.lbm | 8 | 4208 | 26.1 | **4207** | **26.1** | 4206 | 26.1 | 4 | **1402** | **39.2** | 1403 | 39.2 | 1401 | 39.2 |
| 481.wrf | 8 | **1826** | **49.0** | 1816 | 49.2 | 1828 | 48.9 | 8 | 1816 | 49.2 | 1819 | 49.1 | **1817** | **49.2** |
| 482.sphinx3 | 8 | **2371** | **65.8** | 2363 | 66.0 | 2399 | 65.0 | 4 | 971 | 80.3 | **964** | **80.8** | 963 | 81.0 |

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
OMP_NUM_THREADS set to number of cores (default)
```

## Platform Notes

```
BIOS configuration:
Hardware Prefetch = Disable, Adjacent Sector Prefetch = Disable
```

## General Notes

```
All binaries were built with 64-bit Intel compiler except:
437.leslie3d, 450.soplex, 470.lbm, and 482.sphinx3 in peak
were built with 32-bit Intel compiler by changing
```

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## General Notes (Continued)

```
the path for include and library files.

For information about Fujitsu Siemens Computers please see:
http://www.fujitsu-siemens.com
```

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

## Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

## Base Optimization Flags

C benchmarks:
-fast

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## Base Optimization Flags (Continued)

C++ benchmarks:
`-fast`

Fortran benchmarks:
`-fast`

Benchmarks using both Fortran and C:
`-fast`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

433.milc: `icc`

C++ benchmarks (except as noted below):
`icpc`

450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

Fortran benchmarks (except as noted below):
`ifort`

437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib -I/opt/intel/fc/10.1.008/include`

Benchmarks using both Fortran and C:
`icc ifort`

## Peak Portability Flags

410.bwaves: `-DSPEC_CPU_LP64`
416.gamess: `-DSPEC_CPU_LP64`
433.milc: `-DSPEC_CPU_LP64`
434.zeusmp: `-DSPEC_CPU_LP64`
435.gromacs: `-DSPEC_CPU_LP64 -nofor_main`
436.cactusADM: `-DSPEC_CPU_LP64 -nofor_main`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-DSPEC_CPU_LP64`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`

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## Peak Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

Continued on next page

# Peak Optimization Flags (Continued)

435.gromacs: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20090713.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20090713.xml`


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