# SPEC® CFP2006 Result

## Fujitsu Siemens Computers

PRIMERGY RX300 S4, Intel Xeon processor E5205, 1.86 GHz

$SPECfp^{®}\_rate2006 =$ 38.9

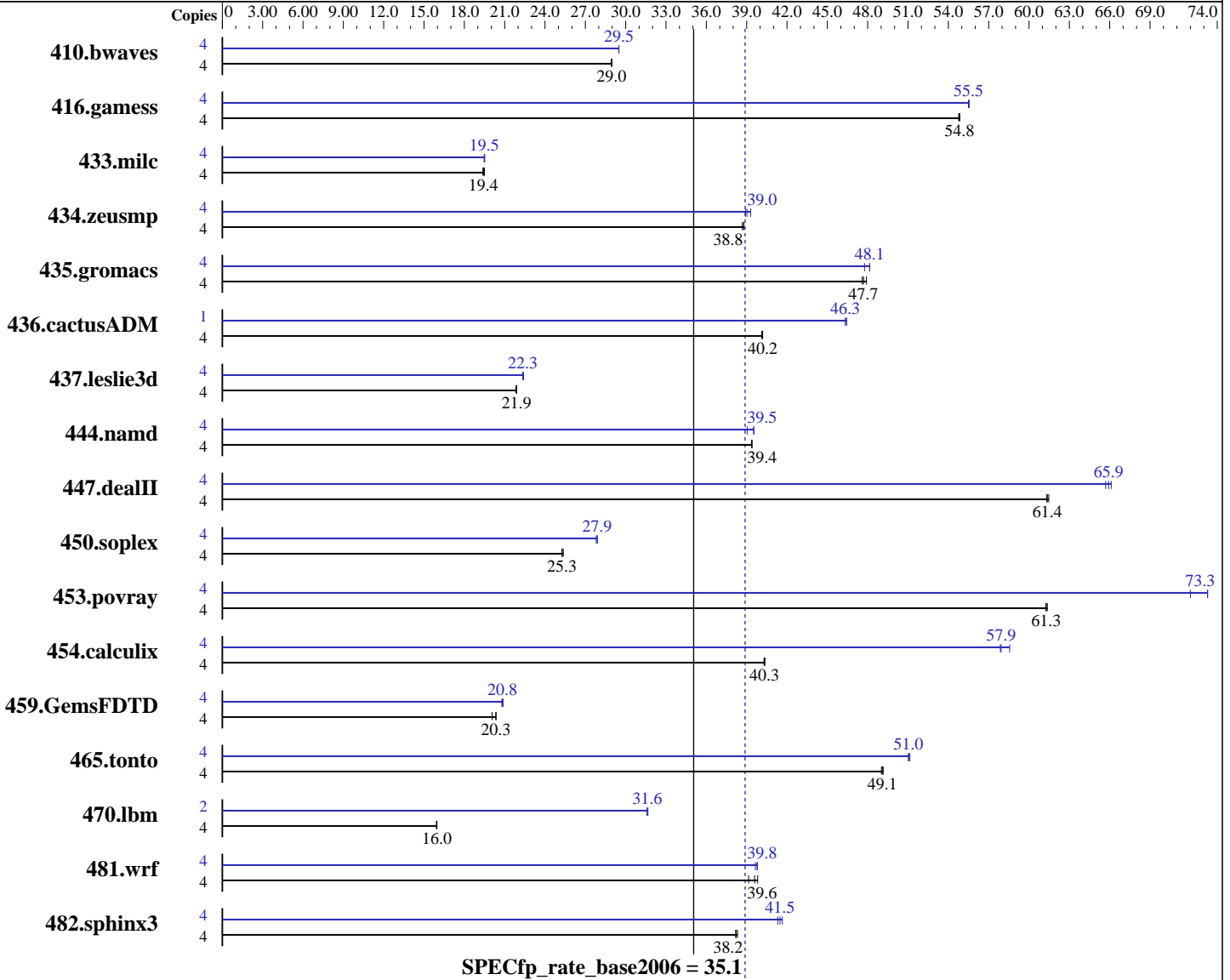SPECfp_rate_base2006 = 35.1

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

**Test date:** Nov-2007  
**Hardware Availability:** Dec-2007  
**Software Availability:** Nov-2007  



| Benchmark | Copies | Result |
|---|---|---|
| 410.bwaves | 4 | 29.5 |
| | 4 | 29.0 |
| 416.gamess | 4 | 55.5 |
| | 4 | 54.8 |
| 433.milc | 4 | 19.5 |
| | 4 | 19.4 |
| 434.zeusmp | 4 | 39.0 |
| | 4 | 38.8 |
| 435.gromacs | 4 | 48.1 |
| | 4 | 47.7 |
| 436.cactusADM | 1 | 46.3 |
| | 4 | 40.2 |
| 437.leslie3d | 4 | 22.3 |
| | 4 | 21.9 |
| 444.namd | 4 | 39.5 |
| | 4 | 39.4 |
| 447.dealII | 4 | 65.9 |
| | 4 | 61.4 |
| 450.soplex | 4 | 27.9 |
| | 4 | 25.3 |
| 453.povray | 4 | 73.3 |
| | 4 | 61.3 |
| 454.calculix | 4 | 57.9 |
| | 4 | 40.3 |
| 459.GemsFDTD | 4 | 20.8 |
| | 4 | 20.3 |
| 465.tonto | 4 | 51.0 |
| | 4 | 49.1 |
| 470.lbm | 2 | 31.6 |
| | 4 | 16.0 |
| 481.wrf | 4 | 39.8 |
| | 4 | 39.6 |
| 482.sphinx3 | 4 | 41.5 |
| | 4 | 38.2 |

SPECfp_rate_base2006 = 35.1

SPECfp_rate2006 = 38.9

## Hardware

CPU Name: Intel Xeon E5205  
CPU Characteristics: 1067 MHz system bus  
CPU MHz: 1867  
FPU: Integrated  
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
CPU(s) orderable: 1,2 chips  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 6 MB I+D on chip per chip  

*Continued on next page*

## 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: Multiuser, Runlevel 3  
Base Pointers: 64-bit  

*Continued on next page*

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| | |
|---|---|
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB PC2-5300F, 2 rank, CAS 5-5-5, with ECC) |
| Disk Subsystem: | Seagate ST973451SS (SAS, 73GB, 15000rpm) |
| Other Hardware: | None |

| | |
|---|---|
| Peak Pointers: | 32/64-bit |
| Other Software: | None |

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 1878 | 28.9 | **1877** | **29.0** | 1877 | 29.0 | 4 | **1843** | **29.5** | 1843 | 29.5 | 1843 | 29.5 |
| 416.gamess | 4 | **1429** | **54.8** | 1430 | 54.8 | 1428 | 54.9 | 4 | 1411 | 55.5 | 1410 | 55.5 | **1411** | **55.5** |
| 433.milc | 4 | 1894 | 19.4 | 1884 | 19.5 | **1890** | **19.4** | 4 | 1886 | 19.5 | **1884** | **19.5** | 1881 | 19.5 |
| 434.zeusmp | 4 | 941 | 38.7 | **939** | **38.8** | 938 | 38.8 | 4 | 926 | 39.3 | **933** | **39.0** | 935 | 38.9 |
| 435.gromacs | 4 | 596 | 47.9 | 600 | 47.6 | **599** | **47.7** | 4 | 593 | 48.2 | **593** | **48.1** | 598 | 47.8 |
| 436.cactusADM | 4 | **1189** | **40.2** | 1189 | 40.2 | 1192 | 40.1 | 1 | **258** | **46.3** | 258 | 46.3 | 257 | 46.4 |
| 437.leslie3d | 4 | 1718 | 21.9 | 1721 | 21.8 | **1718** | **21.9** | 4 | 1682 | 22.3 | 1679 | 22.4 | **1682** | **22.3** |
| 444.namd | 4 | **815** | **39.4** | 814 | 39.4 | 815 | 39.4 | 4 | 822 | 39.0 | **812** | **39.5** | 811 | 39.5 |
| 447.dealII | 4 | **746** | **61.4** | 744 | 61.5 | 746 | 61.3 | 4 | 692 | 66.1 | 696 | 65.7 | **694** | **65.9** |
| 450.soplex | 4 | 1321 | 25.3 | **1320** | **25.3** | 1315 | 25.4 | 4 | 1200 | 27.8 | 1196 | 27.9 | **1196** | **27.9** |
| 453.povray | 4 | 347 | 61.4 | **347** | **61.3** | 347 | 61.3 | 4 | **290** | **73.3** | 290 | 73.3 | 296 | 72.0 |
| 454.calculix | 4 | 818 | 40.4 | 819 | 40.3 | **818** | **40.3** | 4 | 563 | 58.6 | **570** | **57.9** | 570 | 57.9 |
| 459.GemsFDTD | 4 | **2086** | **20.3** | 2115 | 20.1 | 2085 | 20.4 | 4 | 2041 | 20.8 | 2032 | 20.9 | **2037** | **20.8** |
| 465.tonto | 4 | 803 | 49.0 | 801 | 49.2 | **802** | **49.1** | 4 | **771** | **51.0** | 771 | 51.0 | 770 | 51.1 |
| 470.lbm | 4 | 3452 | 15.9 | **3446** | **16.0** | 3443 | 16.0 | 2 | 868 | 31.7 | 870 | 31.6 | **869** | **31.6** |
| 481.wrf | 4 | 1141 | 39.1 | **1129** | **39.6** | 1122 | 39.8 | 4 | **1123** | **39.8** | 1123 | 39.8 | 1127 | 39.6 |
| 482.sphinx3 | 4 | **2041** | **38.2** | 2035 | 38.3 | 2041 | 38.2 | 4 | **1879** | **41.5** | 1887 | 41.3 | 1872 | 41.7 |

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

## General Notes

This result has been produced with binaries provided and compiled by Intel.

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 the path for include and library files.

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

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**Software Availability:** Nov-2007

# 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

C++ benchmarks:
    -fast

Fortran benchmarks:
    -fast

Benchmarks using both Fortran and C:
    -fast

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## Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

    433.milc: `icc`

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

    450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc`
            `-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
            `-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

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

    437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort`
            `-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
            `-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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
      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`

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# Peak Optimization Flags (Continued)

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:

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`

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The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.05.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.05.xml

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

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