SPEC® CFP2006 Result
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Fujitsu Siemens Computers

PRIMERGY RX300 S4, Intel Xeon X5270, 3.50 GHz

$SPECfp®\_rate2006 = \quad 61.5$

$SPECfp\_rate\_base2006 = \quad 57.4$

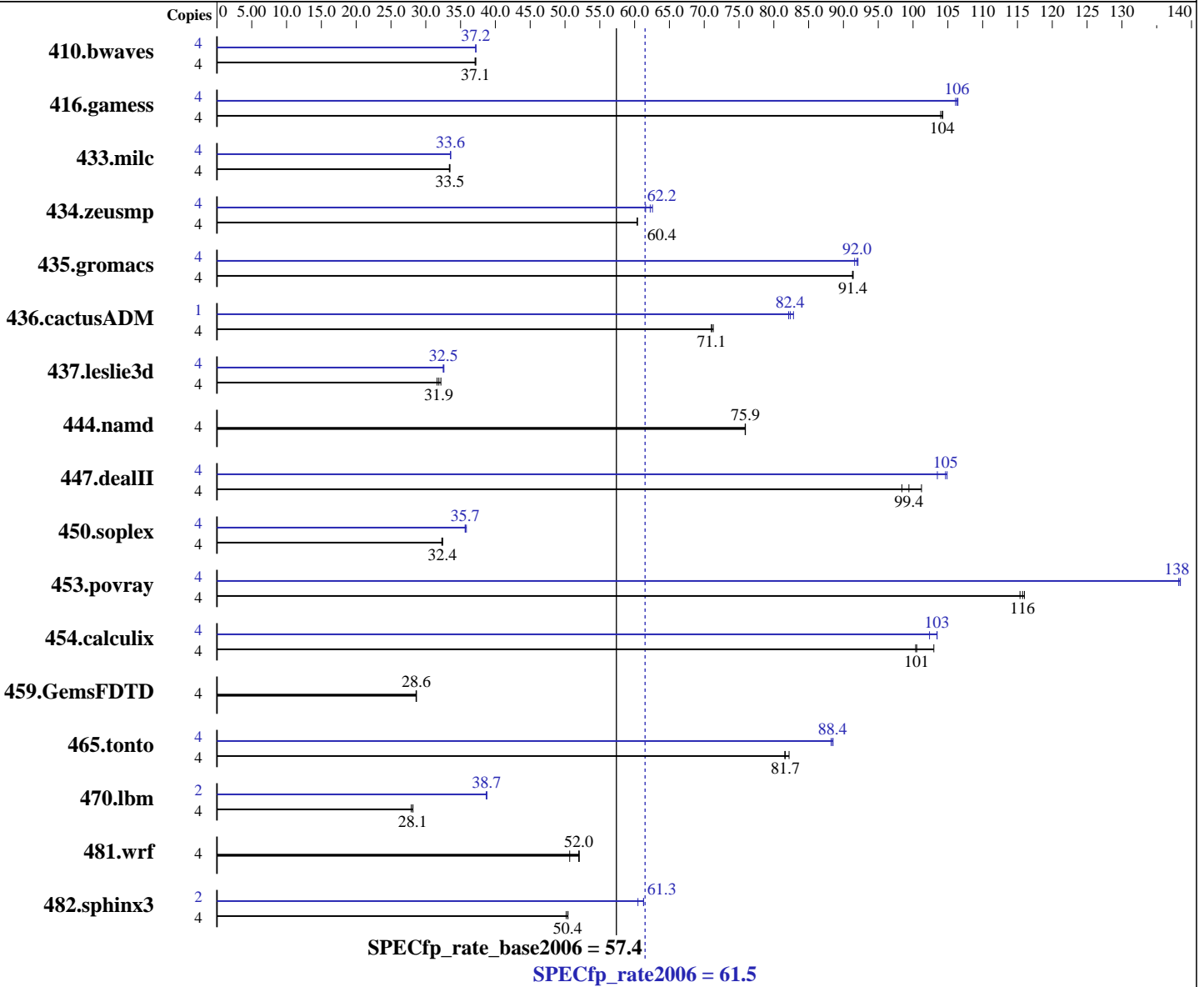**CPU2006 license:** 22

Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Sep-2008

Hardware Availability: Oct-2008

Software Availability: Nov-2008

	Copies	Result
410.bwaves	4 / 4	37.2 / 37.1
416.gamess	4 / 4	106 / 104
433.milc	4 / 4	33.6 / 33.5
434.zeusmp	4 / 4	62.2 / 60.4
435.gromacs	4 / 4	92.0 / 91.4
436.cactusADM	1 / 4	82.4 / 71.1
437.leslie3d	4 / 4	32.5 / 31.9
444.namd	4	75.9
447.dealII	4 / 4	105 / 99.4
450.soplex	4 / 4	35.7 / 32.4
453.povray	4 / 4	138 / 116
454.calculix	4 / 4	103 / 101
459.GemsFDTD	4	28.6
465.tonto	4 / 4	88.4 / 81.7
470.lbm	2 / 4	38.7 / 28.1
481.wrf	4	52.0
482.sphinx3	2 / 4	61.3 / 50.4

SPECfp_rate_base2006 = 57.4

SPECfp_rate2006 = 61.5

Hardware

CPU Name: Intel Xeon X5270

CPU Characteristics: 1333 MHz system bus

CPU MHz: 3500

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) SP2, Kernel 2.6.16.60-0.21-smp

Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730

Auto Parallel: Yes

File System: ext3

System State: Multi-User Run Level 3

Base Pointers: 64-bit

Peak Pointers: 32/64-bit

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L3 Cache: None Other Cache: None Memory: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC) Disk Subsystem: 1x SATA, 160 GB, 7200 rpm Other Hardware: None	Other Software: Binutils 2.18.50.0.7.20080502

Results Table

	Base						Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1466	37.1	**1463**	**37.1**	1462	37.2	4	1461	37.2	1462	37.2	**1462**	**37.2**
416.gamess	4	751	104	753	104	**752**	**104**	4	**737**	**106**	738	106	736	106
433.milc	4	1100	33.4	1098	33.5	**1098**	**33.5**	4	1095	33.5	1094	33.6	**1094**	**33.6**
434.zeusmp	4	**603**	**60.4**	603	60.4	603	60.4	4	582	62.6	591	61.6	**585**	**62.2**
435.gromacs	4	**313**	**91.4**	313	91.3	313	91.4	4	**311**	**92.0**	312	91.6	310	92.1
436.cactusADM	4	**673**	**71.1**	670	71.3	673	71.0	1	**145**	**82.4**	144	82.8	146	82.1
437.leslie3d	4	**1179**	**31.9**	1189	31.6	1169	32.2	4	1156	32.5	**1156**	**32.5**	1153	32.6
444.namd	4	**423**	**75.9**	423	75.9	423	75.9	4	**423**	**75.9**	423	75.9	423	75.9
447.dealII	4	465	98.4	452	101	**460**	**99.4**	4	442	103	436	105	**437**	**105**
450.soplex	4	1033	32.3	1029	32.4	**1030**	**32.4**	4	935	35.7	**935**	**35.7**	931	35.8
453.povray	4	184	115	183	116	**184**	**116**	4	154	138	154	138	**154**	**138**
454.calculix	4	**328**	**101**	320	103	329	100	4	**319**	**103**	319	103	322	102
459.GemsFDTD	4	**1482**	**28.6**	1481	28.7	1484	28.6	4	**1482**	**28.6**	1481	28.7	1484	28.6
465.tonto	4	483	81.6	479	82.2	**482**	**81.7**	4	**445**	**88.4**	446	88.2	445	88.5
470.lbm	4	1969	27.9	**1954**	**28.1**	1952	28.2	2	710	38.7	**710**	**38.7**	709	38.8
481.wrf	4	882	50.7	**860**	**52.0**	858	52.1	4	882	50.7	**860**	**52.0**	858	52.1
482.sphinx3	4	1546	50.4	1554	50.2	**1547**	**50.4**	2	645	60.5	636	61.3	**636**	**61.3**

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 64-bit mode except:
    437.leslie3d, 450.soplex and 482.sphinx3 in peak
    were built with 32-bit mode.
```

Submit Notes

```
    The config file option 'submit' was used.
    taskset has been used to bind processes to cores except
    for 436.cactusADM peak
```

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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:
Memory Throttling = Enable
```

General Notes

```
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
```

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Base Portability Flags (Continued)

```
    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:
```
    -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

C++ benchmarks:
```
    -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Fortran benchmarks:
```
    -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
    -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc

    482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
            -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

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

     450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
            -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

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

    437.leslie3d: /opt/intel/Compiler/11.0/042/bin/ia32/ifort
            -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

Benchmarks using both Fortran and C:
```
    icc ifort
```

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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
      470.lbm: -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) -xSSE4.1 -ipo -O3
               -no-prec-div -static -fno-alias

      470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
               -auto-ilp32

   482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
```

C++ benchmarks:

```
     444.namd: basepeak = yes

    447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

    450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -opt-malloc-options=3

    453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -unroll4 -ansi-alias
```

Fortran benchmarks:

```
   410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

   416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -unroll2 -Ob0 -ansi-alias
               -scalar-rep-
```

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Peak Optimization Flags (Continued)

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
        -no-prec-div -static

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
        -no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
        -no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
        -no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
        -no-prec-div -static -unroll2 -opt-prefetch -parallel
        -auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.11.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.08.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.11.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.08.xml

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

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