SPEC® CFP2006 Result

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Fujitsu Siemens Computers

PRIMERGY RX100 S5, Intel Xeon L3110, 3.0 GHz

$SPECfp®\_rate2006 =$ 34.7

$SPECfp\_rate\_base2006 =$ 33.4

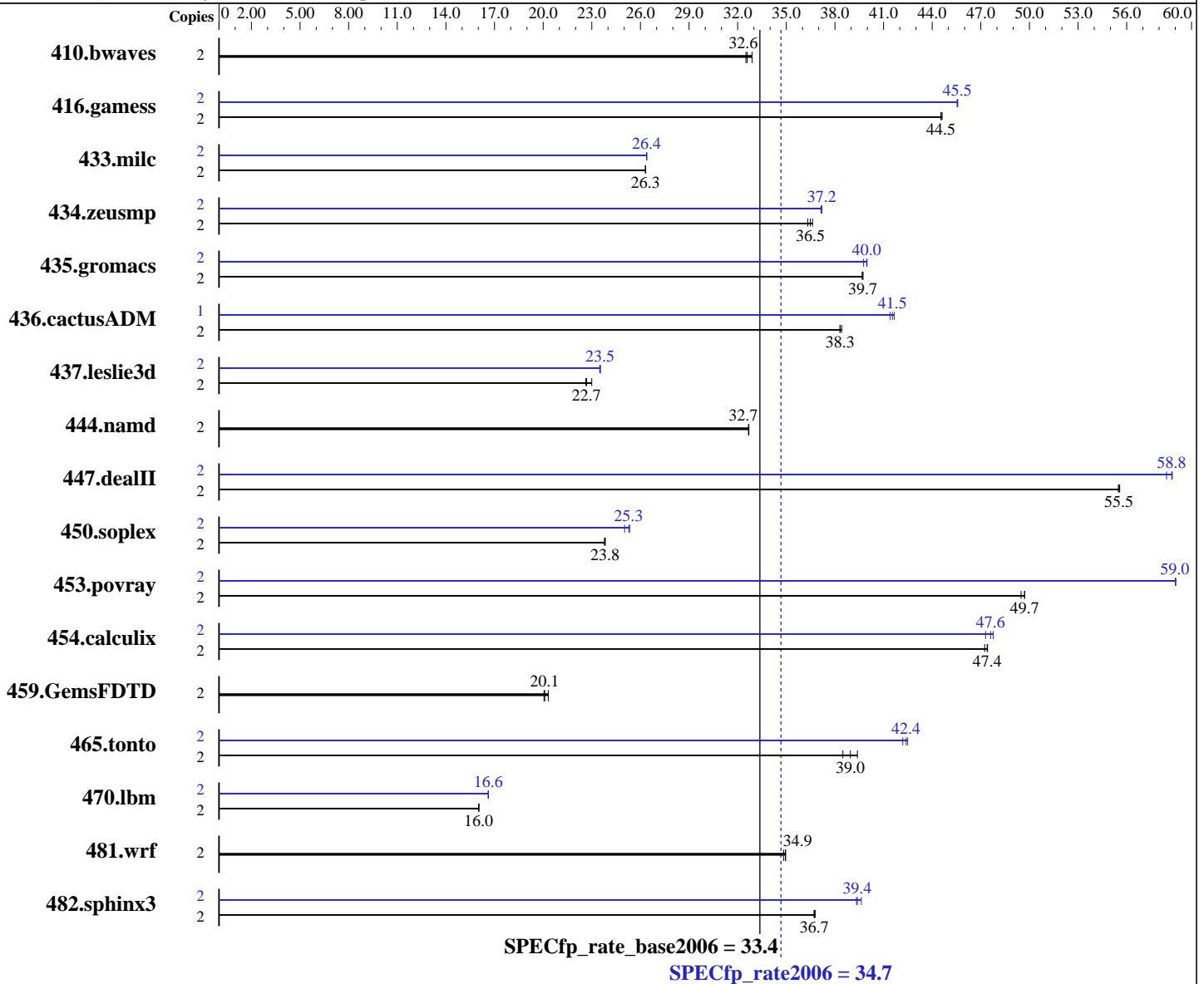**CPU2006 license:** 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers

Test date: Jan-2009
Hardware Availability: Feb-2009
Software Availability: Nov-2008

Copies		
410.bwaves	2	32.6
416.gamess	2	45.5
	2	44.5
433.milc	2	26.4
	2	26.3
434.zeusmp	2	37.2
	2	36.5
435.gromacs	2	40.0
	2	39.7
436.cactusADM	1	41.5
	2	38.3
437.leslie3d	2	23.5
	2	22.7
444.namd	2	32.7
447.dealII	2	58.8
	2	55.5
450.soplex	2	25.3
	2	23.8
453.povray	2	59.0
	2	49.7
454.calculix	2	47.6
	2	47.4
459.GemsFDTD	2	20.1
465.tonto	2	42.4
	2	39.0
470.lbm	2	16.6
	2	16.0
481.wrf	2	34.9
482.sphinx3	2	39.4
	2	36.7

SPECfp_rate_base2006 = 33.4

SPECfp_rate2006 = 34.7

Hardware

CPU Name: Intel Xeon L3110
CPU Characteristics: 1333 MHz system bus
CPU MHz: 3000
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
CPU(s) orderable: 1 chip
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 Package ID: l_cproc_b_11.0.066, l_fproc_b_11.0.066
Auto Parallel: Yes
File System: ext3
System State: Multi-User Run Level 3
Base Pointers: 64-bit

Continued on next page

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L3 Cache:	None
Other Cache:	None
Memory:	8 GB (4x2 GB PC2-6400E, 2 rank, CL6-6-6, ECC)
Disk Subsystem:	1x SATA, 160 GB, 7200 rpm
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	826	32.9	**834**	**32.6**	836	32.5	2	826	32.9	**834**	**32.6**	836	32.5
416.gamess	2	**879**	**44.5**	878	44.6	879	44.5	2	**860**	**45.5**	860	45.5	859	45.6
433.milc	2	697	26.3	698	26.3	**698**	**26.3**	2	**696**	**26.4**	696	26.4	696	26.4
434.zeusmp	2	501	36.3	497	36.6	**499**	**36.5**	2	**489**	**37.2**	489	37.2	490	37.1
435.gromacs	2	360	39.7	**360**	**39.7**	359	39.7	2	357	40.0	359	39.8	**357**	**40.0**
436.cactusADM	2	624	38.3	622	38.4	**624**	**38.3**	1	287	41.7	**288**	**41.5**	289	41.4
437.leslie3d	2	817	23.0	831	22.6	**829**	**22.7**	2	799	23.5	**800**	**23.5**	800	23.5
444.namd	2	491	32.7	491	32.7	**491**	**32.7**	2	491	32.7	491	32.7	**491**	**32.7**
447.dealII	2	412	55.6	**412**	**55.5**	412	55.5	2	391	58.5	389	58.8	**389**	**58.8**
450.soplex	2	**700**	**23.8**	700	23.8	702	23.8	2	**660**	**25.3**	666	25.0	658	25.3
453.povray	2	215	49.5	**214**	**49.7**	214	49.7	2	**180**	**59.0**	180	59.0	180	59.0
454.calculix	2	348	47.4	**348**	**47.4**	349	47.2	2	**347**	**47.6**	349	47.3	345	47.8
459.GemsFDTD	2	**1056**	**20.1**	1045	20.3	1058	20.1	2	**1056**	**20.1**	1045	20.3	1058	20.1
465.tonto	2	500	39.4	511	38.5	**505**	**39.0**	2	466	42.2	463	42.5	**464**	**42.4**
470.lbm	2	1713	16.0	**1715**	**16.0**	1715	16.0	2	1653	16.6	1655	16.6	**1654**	**16.6**
481.wrf	2	**639**	**34.9**	641	34.8	639	35.0	2	**639**	**34.9**	641	34.8	639	35.0
482.sphinx3	2	1060	36.8	1062	36.7	**1061**	**36.7**	2	**990**	**39.4**	991	39.3	984	39.6

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

Submit Notes

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

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
    KMP_AFFINITY set to "physical,0"
    KMP_STACKSIZE set to 64M

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Platform Notes

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

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
    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
```

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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: `icc -m32`

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

    450.soplex: `icpc -m32`

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

    437.leslie3d: `ifort -m32`

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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Test date: Jan-2009

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Software Availability: Nov-2008

Peak 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
```

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: basepeak = yes

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

   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
```

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Peak Optimization Flags (Continued)

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.20090710.05.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.html

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.20090710.05.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.xml

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

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