SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX200 S5, Intel Xeon E5540, 2.53 GHz

$SPECfp^®\_rate2006 =$ 86.4

$SPECfp\_rate\_base2006 =$ 83.2

CPU2006 license: 19	**Test date:** Sep-2009
Test sponsor: Fujitsu	**Hardware Availability:** Jun-2009
Tested by: Fujitsu	**Software Availability:** Feb-2009

Copies 0 5.00 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0 55.0 60.0 65.0 70.0 75.0 80.0 85.0 90.0 95.0 100 105 110 115 120 125 130 140

Benchmark	Copies	Value
410.bwaves	4	86.7
	8	84.6
416.gamess	4	87.2
	8	84.9
433.milc	8	78.4
434.zeusmp	8	97.5
	8	90.7
435.gromacs	8	85.4
	8	83.1
436.cactusADM	8	101
437.leslie3d	8	60.1
444.namd	8	77.7
	8	77.6
447.dealII	8	133
	8	123
450.soplex	4	68.1
	8	65.4
453.povray	8	136
	8	112
454.calculix	8	98.8
459.GemsFDTD	4	54.9
	8	53.6
465.tonto	8	95.6
	8	89.3
470.lbm	4	55.9
	8	53.7
481.wrf	8	103
482.sphinx3	8	96.8
	8	92.8

SPECfp_rate_base2006 = 83.2

SPECfp_rate2006 = 86.4

Hardware

CPU Name:	Intel Xeon E5540
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2533
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080
Auto Parallel:	No
File System:	ext3
System State:	Multi-User Run Level 3
Base Pointers:	64-bit

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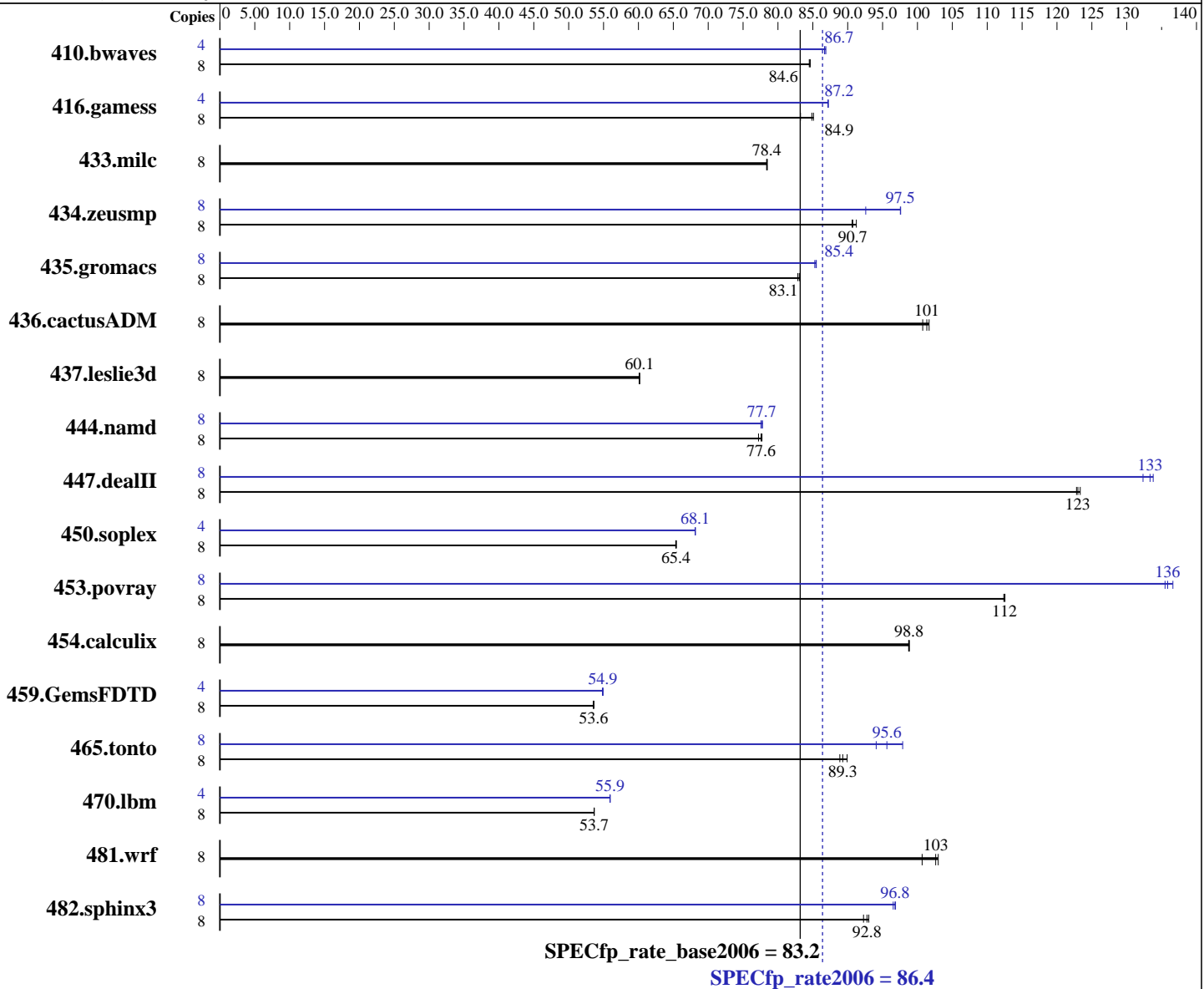|	
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L3 Cache:	8 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.18.50.0.7.20080502
Memory:	24 GB (6x4 GB PC3-8500R, 2 rank, CL7-7-7, ECC)		
Disk Subsystem:	1 x SATA, 250 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1285	84.6	**1285**	**84.6**	1287	84.5	4	627	86.7	626	86.9	**627**	**86.7**
416.gamess	8	1841	85.1	1882	83.2	**1846**	**84.9**	4	898	87.2	**898**	**87.2**	898	87.2
433.milc	8	936	78.5	**937**	**78.4**	937	78.4	8	936	78.5	**937**	**78.4**	937	78.4
434.zeusmp	8	803	90.6	**802**	**90.7**	798	91.2	8	**746**	**97.5**	786	92.6	746	97.6
435.gromacs	8	689	82.9	687	83.2	**688**	**83.1**	8	**668**	**85.4**	668	85.5	670	85.3
436.cactusADM	8	**943**	**101**	940	102	949	101	8	**943**	**101**	940	102	949	101
437.leslie3d	8	1251	60.1	**1250**	**60.1**	1249	60.2	8	1251	60.1	**1250**	**60.1**	1249	60.2
444.namd	8	826	77.7	831	77.2	**827**	**77.6**	8	827	77.6	825	77.8	**826**	**77.7**
447.dealII	8	745	123	742	123	**744**	**123**	8	684	134	692	132	**686**	**133**
450.soplex	8	1019	65.4	1021	65.3	**1021**	**65.4**	4	**490**	**68.1**	489	68.2	490	68.1
453.povray	8	379	112	**378**	**112**	378	113	8	**313**	**136**	312	137	314	135
454.calculix	8	**668**	**98.8**	668	98.7	668	98.8	8	**668**	**98.8**	668	98.7	668	98.8
459.GemsFDTD	8	1586	53.5	1583	53.6	**1585**	**53.6**	4	773	54.9	**773**	**54.9**	774	54.8
465.tonto	8	886	88.9	875	89.9	**882**	**89.3**	8	804	97.9	**823**	**95.6**	837	94.1
470.lbm	8	2049	53.6	**2049**	**53.7**	2048	53.7	4	983	55.9	**983**	**55.9**	982	55.9
481.wrf	8	868	103	**871**	**103**	888	101	8	868	103	**871**	**103**	888	101
482.sphinx3	8	1676	93.0	**1681**	**92.8**	1690	92.3	8	1610	96.9	1615	96.5	**1611**	**96.8**

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.
      numactl was used to bind processes to cores and its local memory.
      Details may be found in the config file.
```

Operating System Notes

```
    'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

General Notes

```
    For information about Fujitsu please visit: http://www.fujitsu.com
```

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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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

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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:
    ifort

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
       437.leslie3d: -DSPEC_CPU_LP64
          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: basepeak = yes

        470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
                 -auto-ilp32

      482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

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Peak Optimization Flags (Continued)

C++ benchmarks:

    444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
         -fno-alias -auto-ilp32

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

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

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

Fortran benchmarks:

    410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

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

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

    437.leslie3d: basepeak = yes

    459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
         -unroll2 -Ob0 -opt-prefetch

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

Benchmarks using both Fortran and C:

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

    436.cactusADM: basepeak = yes

    454.calculix: basepeak = yes

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Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

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

http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.html

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

http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.xml

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

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