SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX200 S5, Intel Xeon E5504, 2.0 GHz

$SPECfp^®2006 =$ 25.1

$SPECfp\_base2006 =$ 23.4

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

410.bwaves — 61.0

416.gamess — 16.5 / 15.4

433.milc — 24.3

434.zeusmp — 20.7

435.gromacs — 14.5 / 14.3

436.cactusADM — 117 / 116

437.leslie3d — 21.3

444.namd — 12.0

447.dealII — 22.7 / 21.4

450.soplex — 18.5 / 18.0

453.povray — 22.7 / 17.8

454.calculix — 18.1 / 17.5

459.GemsFDTD — 44.1 / 28.3

465.tonto — 18.3 / 16.2

470.lbm — 35.6

481.wrf — 26.5 / 26.5

482.sphinx3 — 22.0 / 18.3

SPECfp_base2006 = 23.4

SPECfp2006 = 25.1

Hardware

CPU Name:	Intel Xeon E5504
CPU Characteristics:	
CPU MHz:	2000
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:	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:	Yes
File System:	ext3
System State:	Multi-User Run Level 3
Base Pointers:	64-bit

Continued on next page

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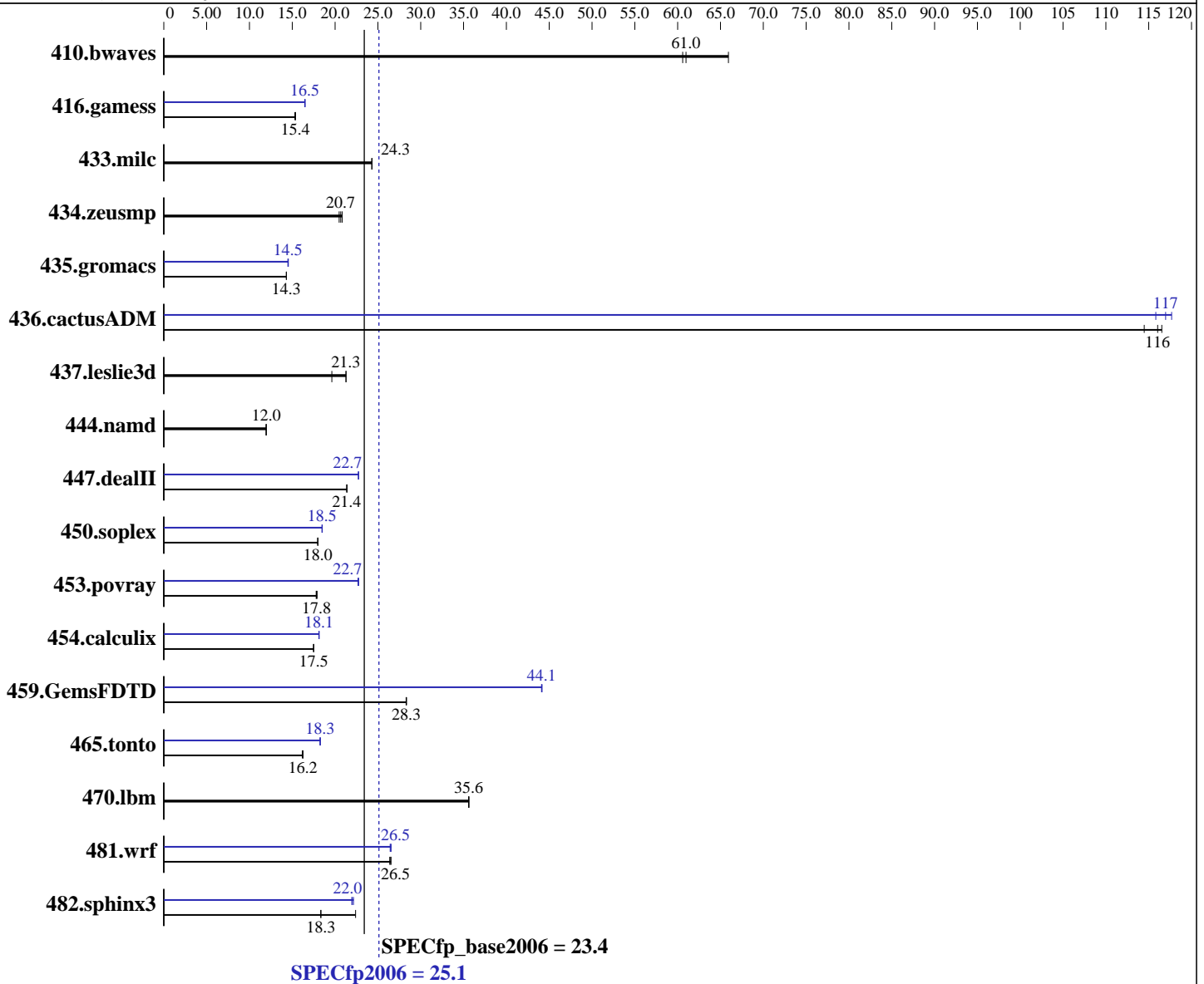|	
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L3 Cache:	4 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12x4 GB PC3-8500R, 2 rank, CL7-7-7, ECC, see add'l detail in notes)
Disk Subsystem:	1 x SATA, 250 GB, 7200 RPM
Other Hardware:	None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	224	60.6	**223**	**61.0**	206	65.9	224	60.6	**223**	**61.0**	206	65.9
416.gamess	**1275**	**15.4**	1273	15.4	1279	15.3	1189	16.5	**1188**	**16.5**	1187	16.5
433.milc	378	24.3	378	24.3	**378**	**24.3**	378	24.3	378	24.3	**378**	**24.3**
434.zeusmp	444	20.5	**440**	**20.7**	437	20.8	444	20.5	**440**	**20.7**	437	20.8
435.gromacs	499	14.3	**499**	**14.3**	499	14.3	**492**	**14.5**	493	14.5	491	14.5
436.cactusADM	104	114	103	117	**103**	**116**	**102**	**117**	103	116	102	118
437.leslie3d	479	19.6	**442**	**21.3**	442	21.3	479	19.6	**442**	**21.3**	442	21.3
444.namd	671	11.9	**670**	**12.0**	670	12.0	671	11.9	**670**	**12.0**	670	12.0
447.dealII	535	21.4	535	21.4	**535**	**21.4**	503	22.7	**503**	**22.7**	503	22.7
450.soplex	463	18.0	464	18.0	**464**	**18.0**	**451**	**18.5**	451	18.5	452	18.5
453.povray	**298**	**17.8**	297	17.9	299	17.8	**234**	**22.7**	234	22.7	235	22.7
454.calculix	472	17.5	**471**	**17.5**	471	17.5	455	18.1	455	18.1	**455**	**18.1**
459.GemsFDTD	375	28.3	375	28.3	**375**	**28.3**	**241**	**44.1**	240	44.2	241	44.1
465.tonto	**606**	**16.2**	608	16.2	605	16.3	538	18.3	**539**	**18.3**	539	18.2
470.lbm	**386**	**35.6**	386	35.6	386	35.6	**386**	**35.6**	386	35.6	386	35.6
481.wrf	423	26.4	**422**	**26.5**	421	26.5	423	26.4	**422**	**26.5**	421	26.5
482.sphinx3	870	22.4	**1062**	**18.3**	1064	18.3	880	22.2	**886**	**22.0**	888	22.0

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

Platform Notes

The system automatically configures the memory to run at 800 MHz.

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
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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 -parallel -opt-prefetch

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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

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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: `basepeak = yes`

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

C++ benchmarks:

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Peak Optimization Flags (Continued)

```
       444.namd: basepeak = yes

      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- -opt-prefetch

      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: basepeak = yes

     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: basepeak = yes

     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 -parallel

       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: -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 -opt-prefetch -parallel -auto-ilp32

    454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

       481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
                -parallel -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-ic11.0-fp-linux64-revA.20091013.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.20091013.xml

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

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