SPEC® CFP2006 Result

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Fujitsu

PRIMERGY RX300 S5, Intel Xeon X5560, 2.80 GHz

$SPECfp^{®}2006 =$ 39.1

$SPECfp\_base2006 =$ 36.8

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

Benchmark results:

Benchmark	Peak	Base
410.bwaves		89.9
416.gamess	25.3	23.5
433.milc	36.6	35.6
434.zeusmp		31.1
435.gromacs	23.1	22.0
436.cactusADM	178	176
437.leslie3d		32.1
444.namd		18.9
447.dealII	34.7	33.7
450.soplex	29.4	29.2
453.povray	34.7	28.0
454.calculix	27.7	27.5
459.GemsFDTD	67.7	42.5
465.tonto	29.3	25.1
470.lbm		54.0
481.wrf	40.5	40.5
482.sphinx3		41.8

SPECfp_base2006 = 36.8

SPECfp2006 = 39.1

Hardware

CPU Name:	Intel Xeon X5560
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 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

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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

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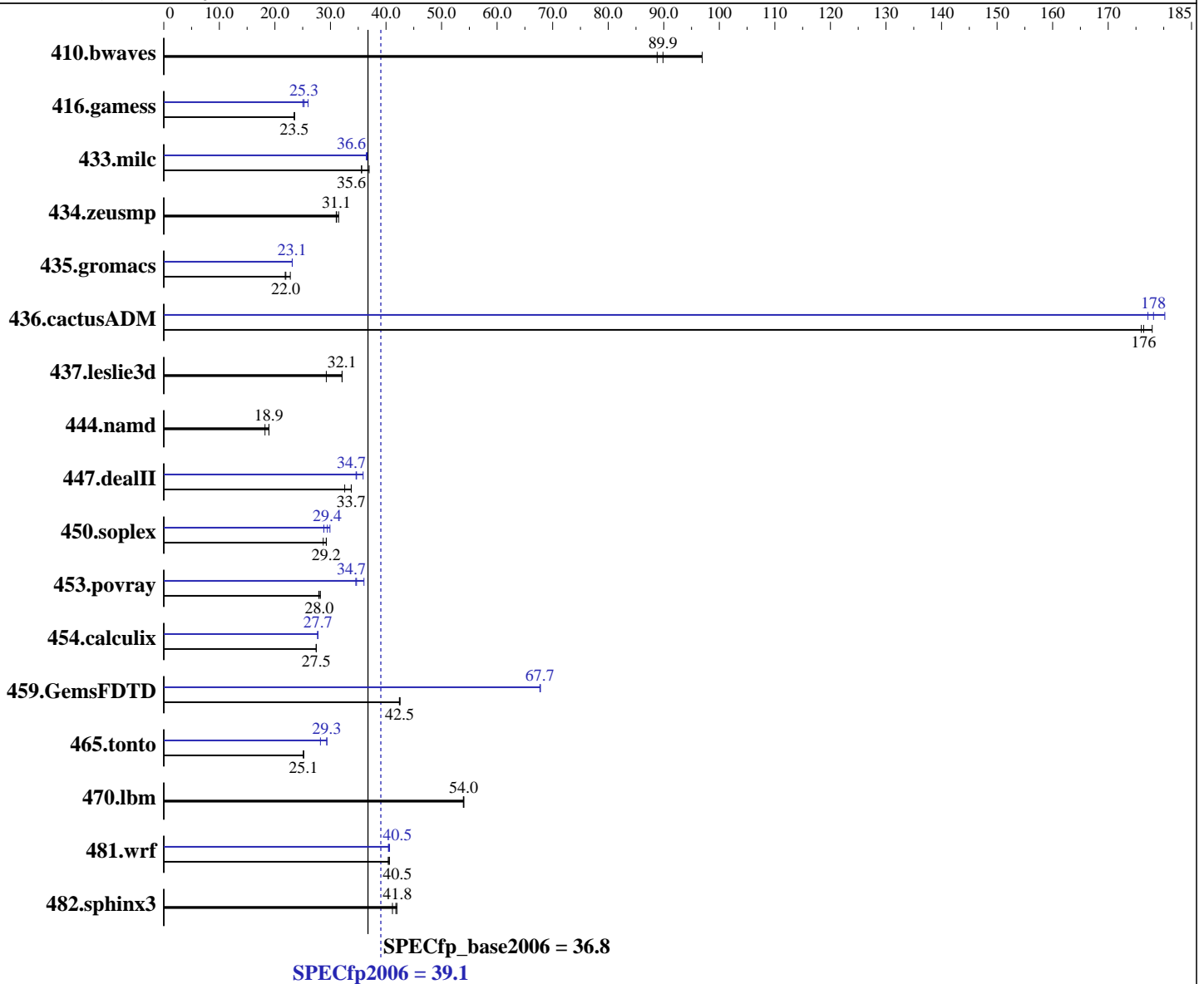|	
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L3 Cache:	8 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.18.50.0.7.20080502
Memory:	48 GB (6x8 GB PC3-10600R, 2 rank, CL9-9-9, ECC)		
Disk Subsystem:	1 x SATA, 250 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	153	88.8	140	96.9	**151**	**89.9**	153	88.8	140	96.9	**151**	**89.9**
416.gamess	**833**	**23.5**	835	23.5	831	23.6	**775**	**25.3**	782	25.0	754	26.0
433.milc	248	37.0	**258**	**35.6**	258	35.6	**251**	**36.6**	251	36.6	252	36.4
434.zeusmp	293	31.0	**293**	**31.1**	289	31.5	293	31.0	**293**	**31.1**	289	31.5
435.gromacs	**325**	**22.0**	314	22.8	327	21.9	**309**	**23.1**	309	23.1	309	23.1
436.cactusADM	**67.7**	**176**	67.2	178	67.9	176	66.3	180	67.5	177	**67.1**	**178**
437.leslie3d	293	32.1	**293**	**32.1**	321	29.3	293	32.1	**293**	**32.1**	321	29.3
444.namd	440	18.2	424	18.9	**424**	**18.9**	440	18.2	424	18.9	**424**	**18.9**
447.dealII	**339**	**33.7**	339	33.8	351	32.6	331	34.6	319	35.9	**330**	**34.7**
450.soplex	**285**	**29.2**	285	29.3	291	28.7	**283**	**29.4**	289	28.8	279	29.9
453.povray	191	27.9	**190**	**28.0**	189	28.2	**153**	**34.7**	154	34.6	148	36.0
454.calculix	**301**	**27.5**	300	27.5	301	27.4	297	27.7	**298**	**27.7**	298	27.7
459.GemsFDTD	250	42.4	249	42.5	**250**	**42.5**	157	67.7	156	67.8	**157**	**67.7**
465.tonto	391	25.2	**391**	**25.1**	392	25.1	349	28.2	335	29.4	**335**	**29.3**
470.lbm	254	54.0	**254**	**54.0**	255	53.9	254	54.0	**254**	**54.0**	255	53.9
481.wrf	**276**	**40.5**	275	40.6	277	40.4	276	40.4	**276**	**40.5**	275	40.6
482.sphinx3	474	41.2	464	42.0	**467**	**41.8**	474	41.2	464	42.0	**467**	**41.8**

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

    OMP_NUM_THREADS set to number of cores
    KMP_AFFINITY set to granularity=fine,scatter
    KMP_STACKSIZE set to 200M
    This result was measured on the PRIMERGY TX300 S5. The PRIMERGY TX300 S5
    and the PRIMERGY RX300 S5 are electronically equivalent.

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

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Test date: Jul-2009
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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:
        icc

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`
       482.sphinx3: `-DSPEC_CPU_LP64`

Peak Optimization Flags

C benchmarks:

        433.milc: `-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`

        470.lbm: `basepeak = yes`

      482.sphinx3: `basepeak = yes`

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Peak Optimization Flags (Continued)

C++ benchmarks:

        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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