SPEC® CFP2006 Result
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Fujitsu

CELSIUS W380, Intel Xeon X3480

SPECfp®2006 = 41.0
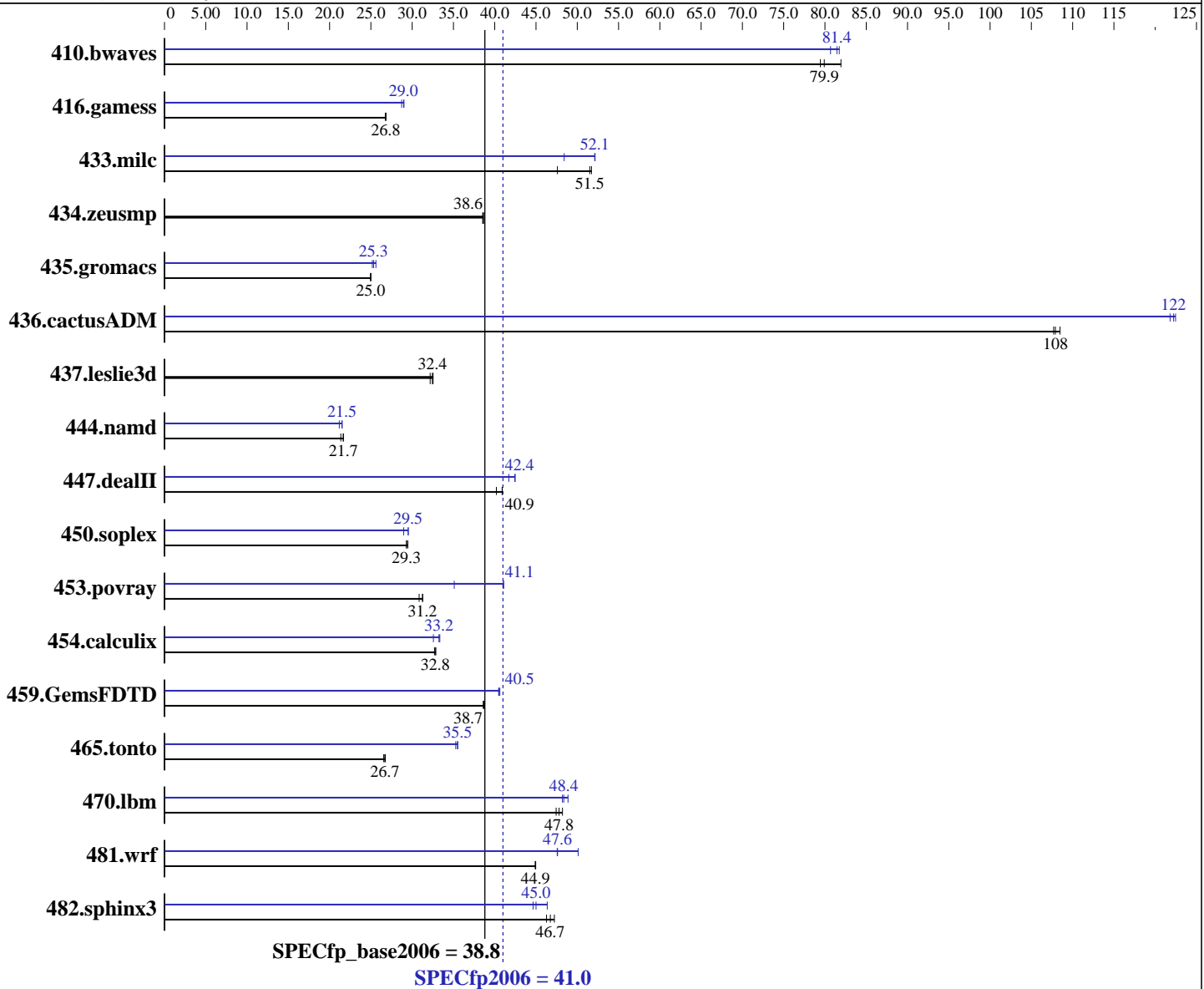
SPECfp_base2006 = 38.8

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Jun-2010
Hardware Availability: Jun-2010
Software Availability: Oct-2009

SPECfp_base2006 = 38.8

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Benchmark	base	peak
410.bwaves	79.9	81.4
416.gamess	26.8	29.0
433.milc	51.5	52.1
434.zeusmp	38.6	
435.gromacs	25.0	25.3
436.cactusADM	108	122
437.leslie3d	32.4	
444.namd	21.7	21.5
447.dealII	40.9	42.4
450.soplex	29.3	29.5
453.povray	31.2	41.1
454.calculix	32.8	33.2
459.GemsFDTD	38.7	40.5
465.tonto	26.7	35.5
470.lbm	47.8	48.4
481.wrf	44.9	47.6
482.sphinx3	46.7	45.0

Hardware

CPU Name:	Intel Xeon X3480
CPU Characteristics:	Intel Turbo Boost Technology up to 3.73 GHz
CPU MHz:	3067
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
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 11 (x86_64), kernel 2.6.27.19-5-default
Compiler:	Intel C++ and Fortran Compiler for IA32 and Intel 64, Version 11.1 Build 20091012 Package ID: l_cproc_p_11.1.059, l_cprof_p_11.1.059
Auto Parallel:	Yes
File System:	ext3
System State:	Multi-User Run Level 3

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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (2x4 GB PC3-10600E, 2 rank, CL9, ECC)
Disk Subsystem:	1 x SATA II, 400 GB, 7200 rpm
Other Hardware:	None

Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**170**	**79.9**	171	79.4	166	81.9	166	81.7	168	80.7	**167**	**81.4**
416.gamess	730	26.8	**731**	**26.8**	732	26.7	682	28.7	**676**	**29.0**	675	29.0
433.milc	**178**	**51.5**	177	51.7	193	47.6	176	52.2	190	48.4	**176**	**52.1**
434.zeusmp	236	38.5	**236**	**38.6**	235	38.6	236	38.5	**236**	**38.6**	235	38.6
435.gromacs	**286**	**25.0**	286	25.0	286	25.0	279	25.6	284	25.2	**282**	**25.3**
436.cactusADM	**111**	**108**	111	108	110	108	97.6	122	98.1	122	**97.8**	**122**
437.leslie3d	289	32.5	**290**	**32.4**	292	32.2	289	32.5	**290**	**32.4**	292	32.2
444.namd	**370**	**21.7**	370	21.7	375	21.4	379	21.2	**373**	**21.5**	373	21.5
447.dealII	285	40.2	280	40.9	**280**	**40.9**	274	41.7	**270**	**42.4**	269	42.5
450.soplex	285	29.3	283	29.5	**285**	**29.3**	288	29.0	282	29.5	**283**	**29.5**
453.povray	172	30.8	170	31.3	**170**	**31.2**	130	41.1	**130**	**41.1**	152	35.1
454.calculix	**252**	**32.8**	252	32.7	251	32.9	**248**	**33.2**	253	32.6	247	33.4
459.GemsFDTD	274	38.7	**274**	**38.7**	275	38.6	261	40.6	262	40.5	**262**	**40.5**
465.tonto	368	26.7	**369**	**26.7**	371	26.6	279	35.3	277	35.5	**277**	**35.5**
470.lbm	285	48.2	**287**	**47.8**	290	47.4	281	48.9	**284**	**48.4**	285	48.2
481.wrf	248	45.0	**249**	**44.9**	249	44.9	**235**	**47.6**	223	50.1	235	47.6
482.sphinx3	413	47.2	**417**	**46.7**	421	46.3	420	46.4	**433**	**45.0**	437	44.6

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

    BIOS configuration:
    Hyper-Threading Technology = Disabled

General Notes

    OMP_NUM_THREADS set to number of cores
    KMP_AFFINITY set to granularity=fine,scatter
    KMP_STACKSIZE set to 200M
    Binaries were compiled on SLES10 with Binutils 2.18.50.0.7.20080502

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Base Compiler Invocation

C benchmarks:
    `icc   -m64`

C++ benchmarks:
    `icpc  -m64`

Fortran benchmarks:
    `ifort -m64`

Benchmarks using both Fortran and C:
    `icc   -m64 ifort -m64`

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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Hardware Availability: Jun-2010
Software Availability: Oct-2009

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc    -m64
```

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):
```
icpc   -m64
```

450.soplex: `icpc -m32`

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

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: `-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)
`-ansi-alias`

470.lbm: `-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)
`-parallel -ansi-alias -auto-ilp32`

Fujitsu

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CPU2006 license: 19		**Test date:**	Jun-2010
Test sponsor:	Fujitsu	**Hardware Availability:**	Jun-2010
Tested by:	Fujitsu	**Software Availability:**	Oct-2009

Peak Optimization Flags (Continued)

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

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- -auto-ilp32

      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
                -parallel

     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)
                -inline-calloc -opt-malloc-options=3 -auto -unroll4
```

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
```

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Peak Optimization Flags (Continued)

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

481.wrf: `Same as 454.calculix`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revD.20100511.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revD.20100511.xml`

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 08:14:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 June 2010.