



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 38.8

PRIMERGY TX150 S7, Intel Xeon X3460, 2.80 GHz

SPECfp_base2006 = 36.3

CPU2006 license: 19

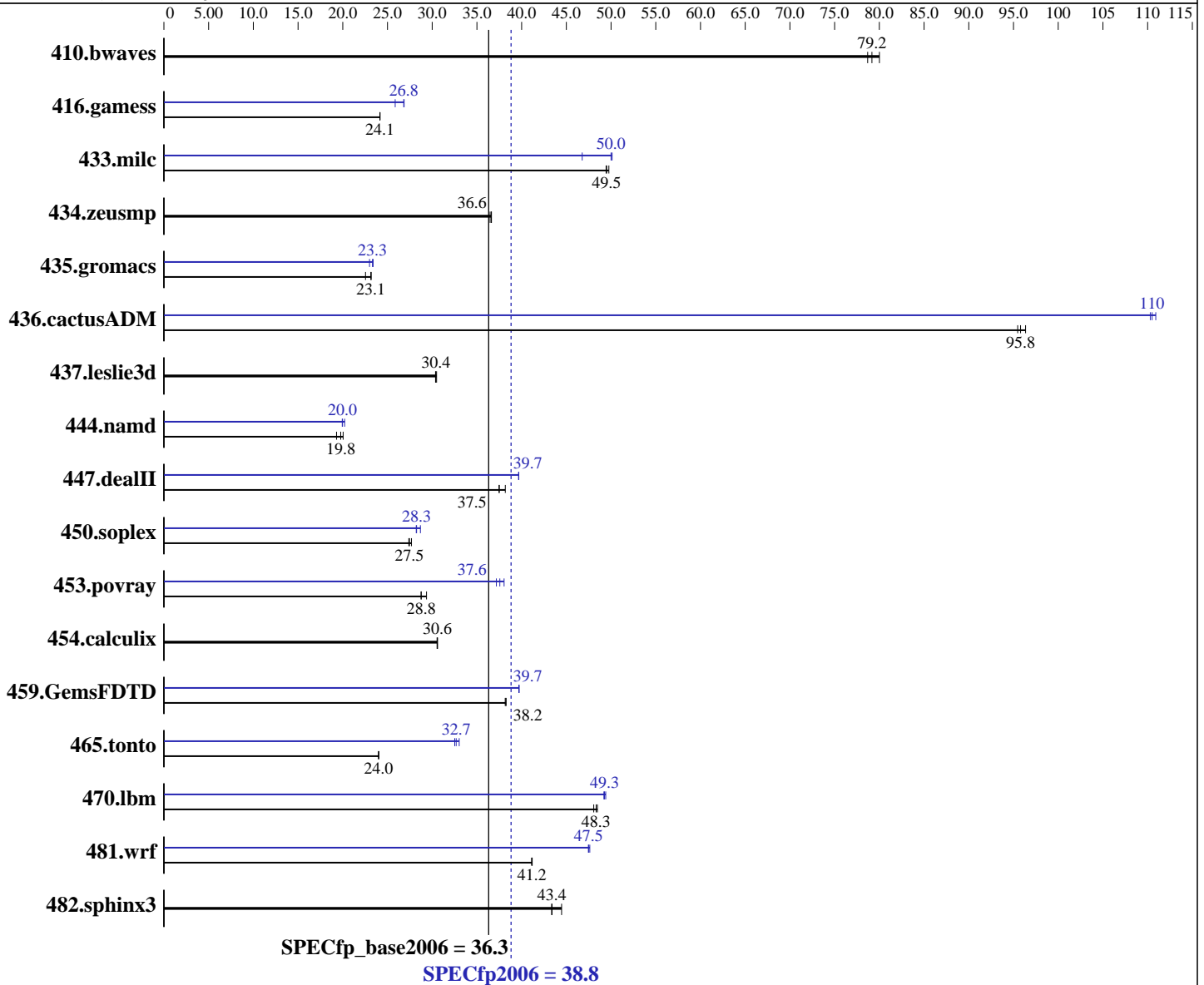
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Dec-2009

Hardware Availability: Jan-2010

Software Availability: Nov-2009



Hardware

CPU Name: Intel Xeon X3460
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 2800
 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

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Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp
 Compiler: Intel C++ and Fortran Professional 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: 16 GB (4x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)
Disk Subsystem: 1 x SATA, 250 GB, 7200 RPM
Other Hardware: None

Base Pointers: 64-bit
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	<u>172</u>	<u>79.2</u>	170	80.0	173	78.7	<u>172</u>	<u>79.2</u>	170	80.0	173	78.7
416.gamess	810	24.2	<u>811</u>	<u>24.1</u>	811	24.1	729	26.9	757	25.9	<u>730</u>	<u>26.8</u>
433.milc	186	49.4	184	49.8	<u>185</u>	<u>49.5</u>	<u>184</u>	<u>50.0</u>	196	46.8	183	50.1
434.zeusmp	249	36.6	<u>249</u>	<u>36.6</u>	249	36.5	249	36.6	<u>249</u>	<u>36.6</u>	249	36.5
435.gromacs	317	22.5	<u>309</u>	<u>23.1</u>	308	23.2	305	23.4	<u>306</u>	<u>23.3</u>	311	23.0
436.cactusADM	124	96.4	125	95.5	<u>125</u>	<u>95.8</u>	108	110	<u>108</u>	<u>110</u>	108	111
437.leslie3d	308	30.5	<u>309</u>	<u>30.4</u>	309	30.4	308	30.5	<u>309</u>	<u>30.4</u>	309	30.4
444.namd	416	19.3	400	20.0	<u>406</u>	<u>19.8</u>	397	20.2	402	19.9	<u>402</u>	<u>20.0</u>
447.dealII	<u>305</u>	<u>37.5</u>	305	37.5	300	38.2	<u>288</u>	<u>39.7</u>	288	39.7	288	39.7
450.soplex	301	27.7	305	27.4	<u>304</u>	<u>27.5</u>	296	28.2	291	28.7	<u>295</u>	<u>28.3</u>
453.povray	185	28.8	<u>185</u>	<u>28.8</u>	181	29.4	143	37.2	140	38.0	<u>142</u>	<u>37.6</u>
454.calculix	270	30.5	<u>270</u>	<u>30.6</u>	270	30.6	270	30.5	<u>270</u>	<u>30.6</u>	270	30.6
459.GemsFDTD	278	38.2	277	38.2	<u>277</u>	<u>38.2</u>	267	39.7	267	39.7	<u>267</u>	<u>39.7</u>
465.tonto	<u>410</u>	<u>24.0</u>	410	24.0	410	24.0	<u>301</u>	<u>32.7</u>	298	33.0	303	32.5
470.lbm	283	48.5	286	48.1	<u>284</u>	<u>48.3</u>	278	49.4	279	49.2	<u>279</u>	<u>49.3</u>
481.wrf	271	41.2	272	41.1	<u>271</u>	<u>41.2</u>	235	47.6	235	47.5	<u>235</u>	<u>47.5</u>
482.sphinx3	438	44.5	<u>449</u>	<u>43.4</u>	450	43.4	438	44.5	<u>449</u>	<u>43.4</u>	450	43.4

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
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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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Peak Compiler Invocation

C benchmarks:

icc -m64

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
 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)
 -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

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Peak Optimization Flags (Continued)

482.sphinx3: basepeak = yes

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: 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)
-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: basepeak = yes

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revE.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revE.xml>

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