



SPEC® CFP2006 Result

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Fujitsu

SPECfp®2006 = 42.2

CELSIUS R670, Intel Xeon W5580

SPECfp_base2006 = 39.5

CPU2006 license: 19

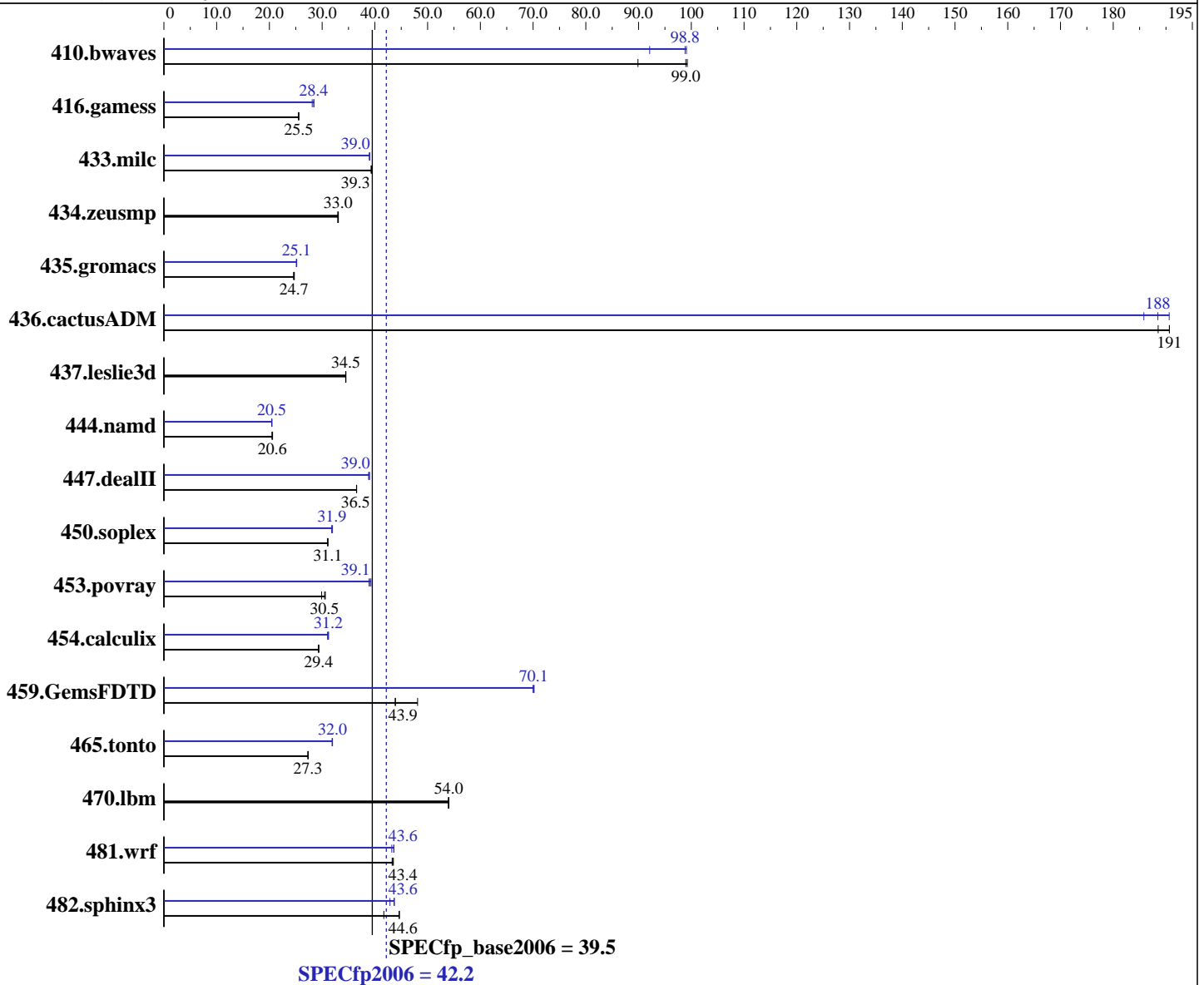
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2009

Hardware Availability: Apr-2009

Software Availability: Feb-2009



Hardware

CPU Name: Intel Xeon W5580
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 3200
 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: I_cproc_p_11.0.080, I_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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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12x4 GB PC3 10600R, 2 rank, CL9-9-9, ECC)
Disk Subsystem: 1 x SATA II, 400 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	151	89.9	137	99.2	<u>137</u>	<u>99.0</u>	148	92.1	<u>138</u>	<u>98.8</u>	137	99.1
416.gamess	765	25.6	<u>766</u>	<u>25.5</u>	767	25.5	688	28.5	<u>690</u>	<u>28.4</u>	696	28.1
433.milc	233	39.4	234	39.3	<u>233</u>	<u>39.3</u>	235	39.0	<u>235</u>	<u>39.0</u>	236	39.0
434.zeusmp	275	33.1	276	33.0	<u>275</u>	<u>33.0</u>	275	33.1	276	33.0	<u>275</u>	<u>33.0</u>
435.gromacs	<u>289</u>	<u>24.7</u>	291	24.6	289	24.7	284	25.1	283	25.2	<u>284</u>	<u>25.1</u>
436.cactusADM	63.4	189	62.7	191	<u>62.7</u>	<u>191</u>	64.3	186	<u>63.4</u>	<u>188</u>	62.7	191
437.leslie3d	<u>273</u>	<u>34.5</u>	273	34.5	272	34.5	<u>273</u>	<u>34.5</u>	273	34.5	272	34.5
444.namd	389	20.6	391	20.5	<u>390</u>	<u>20.6</u>	392	20.4	<u>392</u>	<u>20.5</u>	392	20.5
447.dealII	313	36.5	313	36.5	<u>313</u>	<u>36.5</u>	<u>294</u>	<u>39.0</u>	294	39.0	295	38.8
450.soplex	269	31.0	<u>268</u>	<u>31.1</u>	268	31.1	262	31.8	<u>262</u>	<u>31.9</u>	261	32.0
453.povray	174	30.6	178	29.9	<u>175</u>	<u>30.5</u>	137	38.9	<u>136</u>	<u>39.1</u>	135	39.3
454.calculix	281	29.4	<u>281</u>	<u>29.4</u>	282	29.3	266	31.0	264	31.2	<u>264</u>	<u>31.2</u>
459.GemsFDTD	242	43.8	221	48.1	<u>242</u>	<u>43.9</u>	152	70.0	<u>151</u>	<u>70.1</u>	151	70.2
465.tonto	359	27.4	<u>360</u>	<u>27.3</u>	361	27.3	309	31.9	308	32.0	<u>308</u>	<u>32.0</u>
470.lbm	254	54.0	255	53.9	<u>254</u>	<u>54.0</u>	254	54.0	255	53.9	<u>254</u>	<u>54.0</u>
481.wrf	<u>257</u>	<u>43.4</u>	258	43.3	257	43.5	259	43.2	<u>256</u>	<u>43.6</u>	256	43.6
482.sphinx3	467	41.7	436	44.7	<u>437</u>	<u>44.6</u>	455	42.9	<u>447</u>	<u>43.6</u>	446	43.7

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
Memory speed set to "Max Performance" (Switch in "Advanced Memory Options")

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

Continued on next page



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General Notes (Continued)

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

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

Continued on next page



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Base Optimization Flags (Continued)

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

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



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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: -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- -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: -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)
-unroll4 -auto

Continued on next page



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Peak Optimization Flags (Continued)

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

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.20090710.07.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.20090710.07.xml>

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For other inquiries, please contact webmaster@spec.org.

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