



SPEC[®] CFP2006 Result

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HITACHI

SPECfp[®]2006 = 42.0

BladeSymphony BS2000 (Intel Xeon X5570)

SPECfp_base2006 = 39.3

CPU2006 license: 872

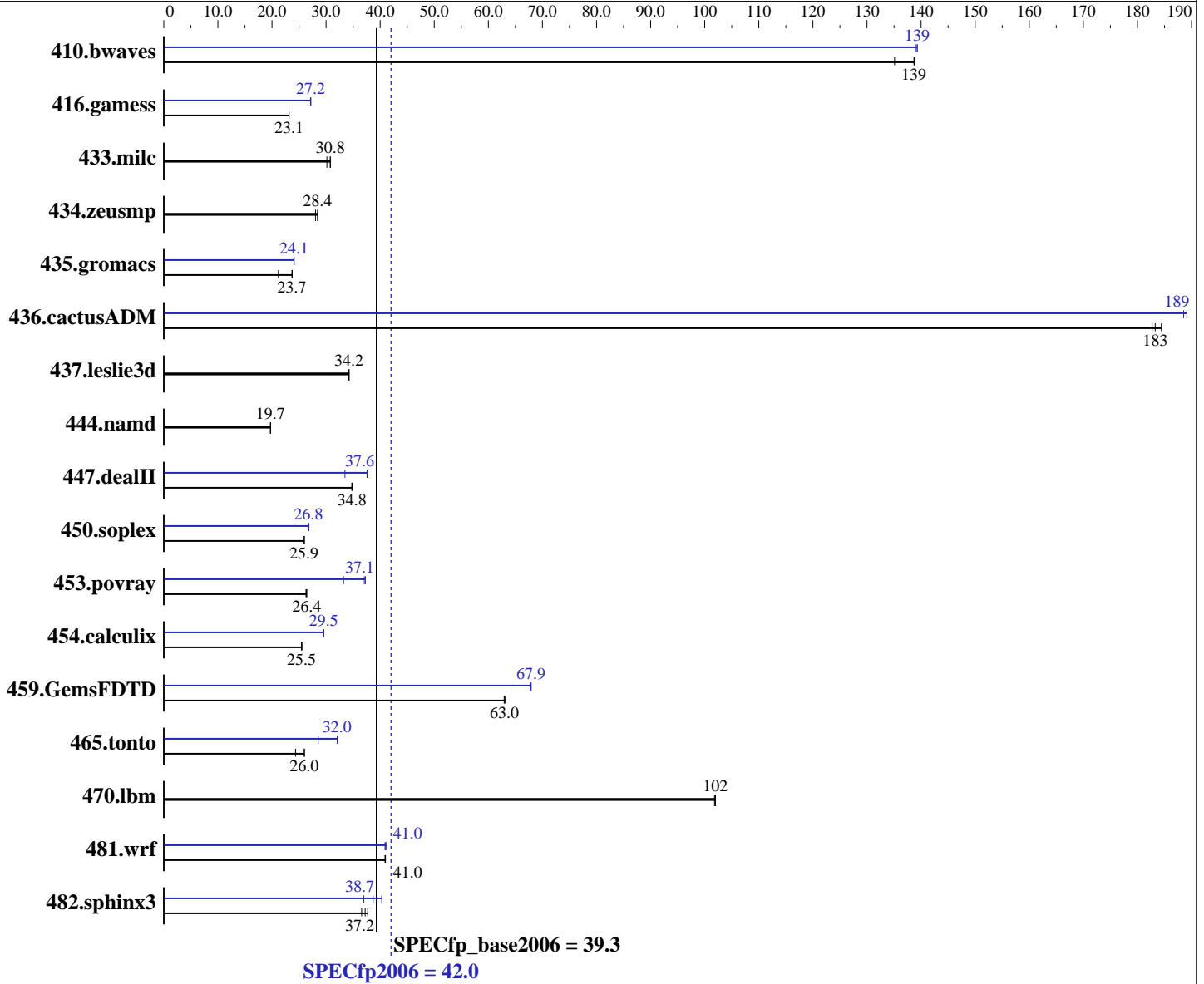
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Mar-2009

Hardware Availability: Mar-2009

Software Availability: Feb-2009



Hardware

CPU Name: Intel Xeon X5570
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
 CPU MHz: 2933
 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

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Software

Operating System: Red Hat Enterprise Linux Server release 5.3, Advanced Platform, Kernel 2.6.18-128.el5 on an x86_64
 Compiler: Intel C++ Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081
 Intel Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l_cprof_p_11.0.081
 Auto Parallel: Yes
 File System: ext3

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L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB(6 x 4 GB PC3-10600R, 2 rank, CL=9)
 Disk Subsystem: 1 x 147 GB 10000 rpm SAS
 Other Hardware: None

System State: Multi-user run level 3
 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	101	135	98.0	139	<u>98.0</u>	<u>139</u>	<u>97.6</u>	<u>139</u>	97.6	139	97.8	139
416.gamess	846	23.1	846	23.2	<u>846</u>	<u>23.1</u>	<u>721</u>	<u>27.2</u>	722	27.1	721	27.2
433.milc	<u>298</u>	<u>30.8</u>	304	30.1	298	30.8	<u>298</u>	<u>30.8</u>	304	30.1	298	30.8
434.zeusmp	319	28.5	324	28.0	<u>320</u>	<u>28.4</u>	319	28.5	324	28.0	<u>320</u>	<u>28.4</u>
435.gromacs	337	21.2	301	23.7	<u>301</u>	<u>23.7</u>	297	24.0	296	24.1	<u>297</u>	<u>24.1</u>
436.cactusADM	<u>65.2</u>	<u>183</u>	65.4	183	64.8	184	63.4	189	<u>63.2</u>	<u>189</u>	63.2	189
437.leslie3d	<u>275</u>	<u>34.2</u>	276	34.1	274	34.3	<u>275</u>	<u>34.2</u>	276	34.1	274	34.3
444.namd	406	19.7	<u>406</u>	<u>19.7</u>	407	19.7	406	19.7	<u>406</u>	<u>19.7</u>	407	19.7
447.dealII	329	34.8	329	34.8	<u>329</u>	<u>34.8</u>	304	37.6	342	33.5	<u>304</u>	<u>37.6</u>
450.soplex	321	26.0	<u>321</u>	<u>25.9</u>	324	25.8	313	26.7	<u>312</u>	<u>26.8</u>	311	26.8
453.povray	201	26.4	<u>201</u>	<u>26.4</u>	202	26.3	<u>144</u>	<u>37.1</u>	143	37.3	160	33.2
454.calculix	323	25.5	324	25.5	<u>324</u>	<u>25.5</u>	279	29.5	279	29.6	<u>279</u>	<u>29.5</u>
459.GemsFDTD	<u>168</u>	<u>63.0</u>	169	62.9	168	63.1	156	67.9	<u>156</u>	<u>67.9</u>	157	67.7
465.tonto	378	26.0	<u>379</u>	<u>26.0</u>	404	24.4	<u>307</u>	<u>32.0</u>	345	28.6	306	32.1
470.lbm	<u>135</u>	<u>102</u>	135	102	135	102	<u>135</u>	<u>102</u>	135	102	135	102
481.wrf	<u>273</u>	<u>41.0</u>	273	41.0	273	40.9	<u>272</u>	<u>41.0</u>	272	41.1	273	40.9
482.sphinx3	<u>524</u>	<u>37.2</u>	533	36.6	517	37.7	<u>504</u>	<u>38.7</u>	527	37.0	484	40.3

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
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to physical,0

Platform Notes

BIOS Settings:
 Intel HT Technology = Disabled
 NUMA = Disabled



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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: -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

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.20090710.01.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.20090710.01.xml>

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