



SPEC® CFP2006 Result

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HITACHI

SPECfp®_rate2006 = 72.0

BladeSymphony BS320 (Intel Xeon E5502)

SPECfp_rate_base2006 = 69.8

CPU2006 license: 872

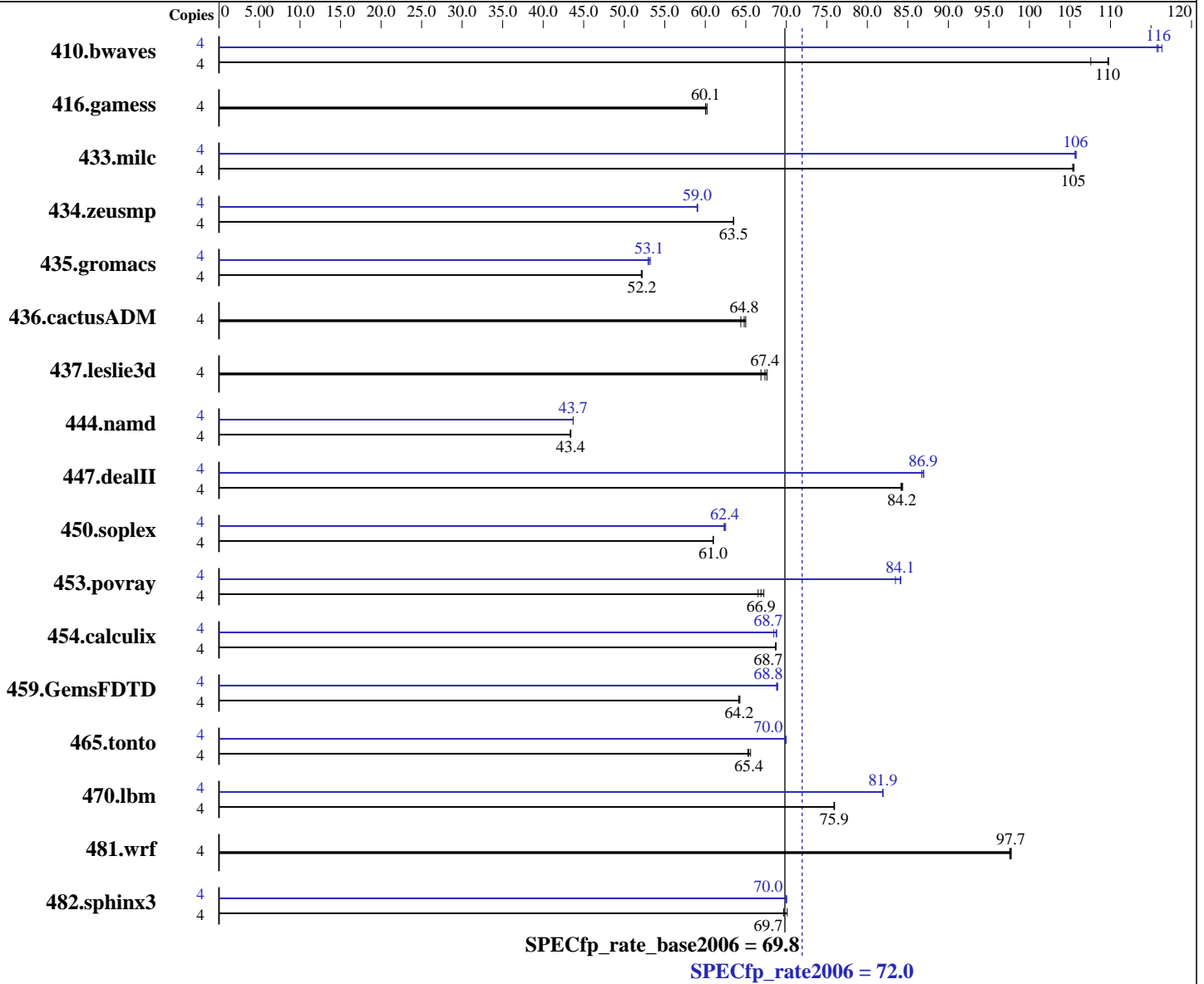
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jul-2009

Hardware Availability: Mar-2009

Software Availability: May-2009



Hardware

CPU Name: Intel Xeon E5502
 CPU Characteristics:
 CPU MHz: 1866
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 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 11.1 for Linux Build 20090511 Package ID: l_cproc_p_11.1.038 Intel Fortran Compiler 11.1 for Linux Build 20090511 Package ID: l_cprof_p_11.1.038
 Auto Parallel: No
 File System: ext3

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB(6 x 4 GB PC3-10600R running at 800 MHz, 2 rank)
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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	505	108	<u>496</u>	<u>110</u>	495	110	4	<u>469</u>	<u>116</u>	467	116	470	116		
416.gamess	4	1301	60.2	<u>1304</u>	<u>60.1</u>	1305	60.0	4	1301	60.2	<u>1304</u>	<u>60.1</u>	1305	60.0		
433.milc	4	348	106	<u>348</u>	<u>105</u>	349	105	4	348	106	<u>347</u>	<u>106</u>	347	106		
434.zeusmp	4	573	63.5	573	63.5	<u>573</u>	<u>63.5</u>	4	617	59.0	<u>617</u>	<u>59.0</u>	616	59.1		
435.gromacs	4	547	52.2	<u>547</u>	<u>52.2</u>	548	52.1	4	<u>538</u>	<u>53.1</u>	540	52.9	537	53.2		
436.cactusADM	4	735	65.0	<u>738</u>	<u>64.8</u>	742	64.4	4	735	65.0	<u>738</u>	<u>64.8</u>	742	64.4		
437.leslie3d	4	556	67.6	562	66.9	<u>558</u>	<u>67.4</u>	4	556	67.6	562	66.9	<u>558</u>	<u>67.4</u>		
444.namd	4	739	43.4	740	43.3	<u>739</u>	<u>43.4</u>	4	734	43.7	734	43.7	<u>734</u>	<u>43.7</u>		
447.dealII	4	<u>543</u>	<u>84.2</u>	542	84.4	544	84.2	4	526	87.0	<u>527</u>	<u>86.9</u>	528	86.7		
450.soplex	4	547	61.0	<u>547</u>	<u>61.0</u>	547	61.0	4	535	62.3	534	62.5	<u>535</u>	<u>62.4</u>		
453.povray	4	<u>318</u>	<u>66.9</u>	317	67.2	320	66.5	4	255	83.5	253	84.1	<u>253</u>	<u>84.1</u>		
454.calculix	4	481	68.7	<u>480</u>	<u>68.7</u>	480	68.7	4	<u>480</u>	<u>68.7</u>	480	68.8	482	68.5		
459.GemsFDTD	4	662	64.1	660	64.3	<u>661</u>	<u>64.2</u>	4	617	68.8	616	68.9	<u>617</u>	<u>68.8</u>		
465.tonto	4	600	65.6	603	65.2	<u>602</u>	<u>65.4</u>	4	563	69.9	562	70.0	<u>563</u>	<u>70.0</u>		
470.lbm	4	724	76.0	724	75.9	<u>724</u>	<u>75.9</u>	4	<u>671</u>	<u>81.9</u>	671	81.9	671	81.9		
481.wrf	4	<u>457</u>	<u>97.7</u>	458	97.6	457	97.7	4	<u>457</u>	<u>97.7</u>	458	97.6	457	97.7		
482.sphinx3	4	1119	69.7	1112	70.1	<u>1119</u>	<u>69.7</u>	4	1113	70.0	<u>1114</u>	<u>70.0</u>	1114	70.0		

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.
'/usr/bin/numactl' used to bind processes to CPUs

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Base Compiler Invocation

C benchmarks:
icc

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Base Compiler Invocation (Continued)

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

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static



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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: -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: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
 -auto-ilp32

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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-

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

416.gamess: basepeak = yes

434.zeusmp: -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)

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

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: basepeak = yes

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

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Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

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.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.xml>

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