



SPEC[®] CFP2006 Result

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HITACHI

SPECfp[®]_rate2006 = 176

BladeSymphony BS320 (Intel Xeon E5640)

SPECfp_rate_base2006 = 171

CPU2006 license: 872

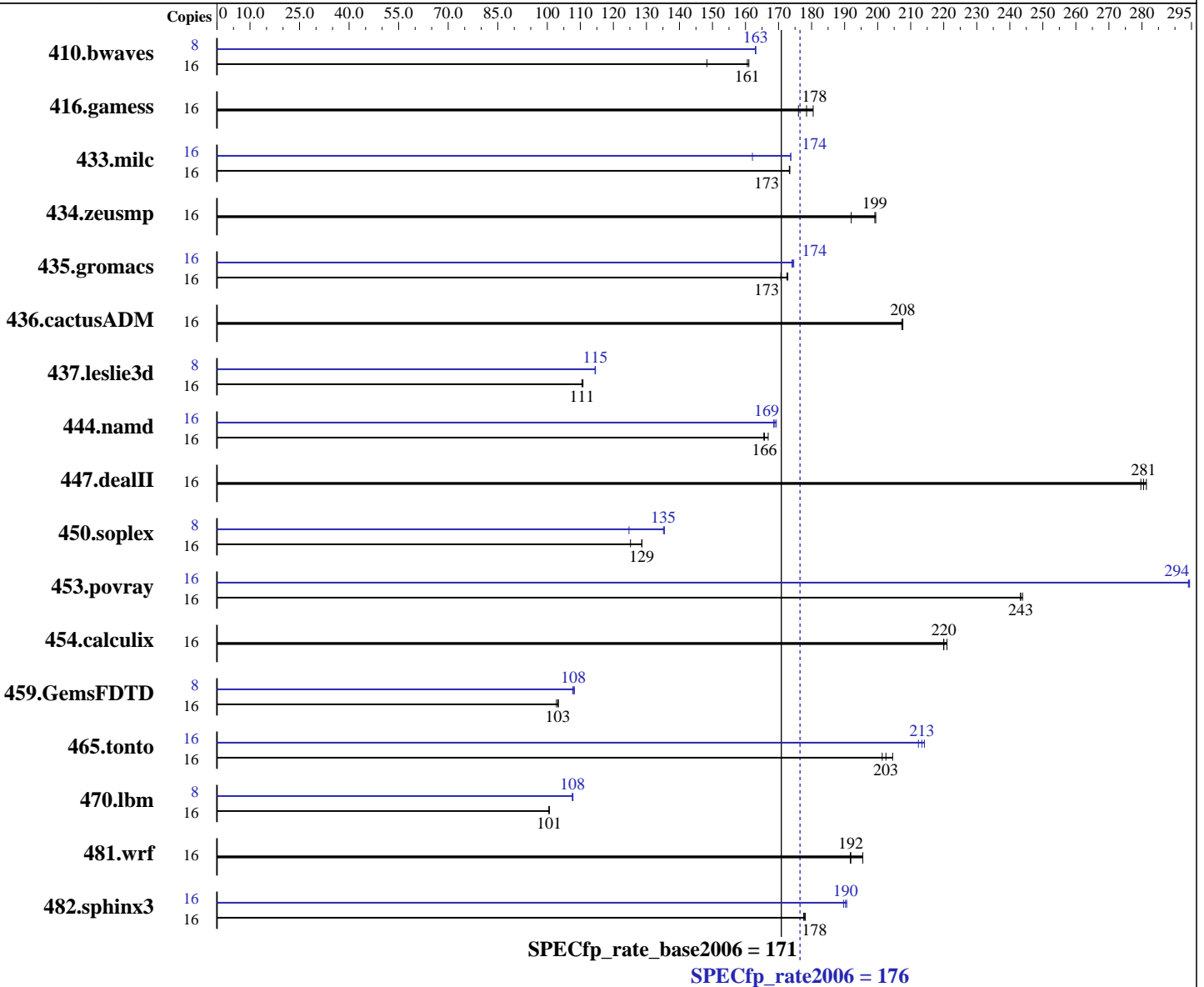
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jun-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon E5640
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
 CPU MHz: 2667
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
 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 5.4.3, Advanced Platform, Kernel 2.6.18-164.9.1.el5 on an x86_64
 Compiler: Intel C++ Compiler 11.1 for Linux Build 20091012 Package ID: l_cproc_p_11.1.059
 Intel Fortran Compiler 11.1 for Linux Build 20091012 Package ID: l_cprof_p_11.1.059
 Auto Parallel: No
 File System: ext3

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L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB(6 x 4 GB PC3-10600R,
 2 rank, CL9-9-9)
 Disk Subsystem: 1 x 73 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	16	1466	148	<u>1354</u>	<u>161</u>	1350	161	8	<u>667</u>	<u>163</u>	667	163	667	163		
416.gamess	16	1780	176	1736	180	<u>1755</u>	<u>178</u>	16	1780	176	1736	180	<u>1755</u>	<u>178</u>		
433.milc	16	848	173	847	173	<u>847</u>	<u>173</u>	16	<u>846</u>	<u>174</u>	906	162	846	174		
434.zeusmp	16	730	199	758	192	<u>731</u>	<u>199</u>	16	730	199	758	192	<u>731</u>	<u>199</u>		
435.gromacs	16	661	173	669	171	<u>662</u>	<u>173</u>	16	654	175	656	174	<u>655</u>	<u>174</u>		
436.cactusADM	16	<u>921</u>	<u>208</u>	921	208	922	207	16	<u>921</u>	<u>208</u>	921	208	922	207		
437.leslie3d	16	1361	110	1357	111	<u>1361</u>	<u>111</u>	8	657	114	656	115	<u>657</u>	<u>115</u>		
444.namd	16	<u>774</u>	<u>166</u>	775	166	769	167	16	761	169	<u>760</u>	<u>169</u>	758	169		
447.dealII	16	651	281	654	280	<u>653</u>	<u>281</u>	16	651	281	654	280	<u>653</u>	<u>281</u>		
450.soplex	16	1066	125	<u>1038</u>	<u>129</u>	1037	129	8	535	125	<u>494</u>	<u>135</u>	493	135		
453.povray	16	<u>350</u>	<u>243</u>	350	243	349	244	16	289	294	<u>289</u>	<u>294</u>	289	294		
454.calculix	16	597	221	<u>600</u>	<u>220</u>	600	220	16	597	221	<u>600</u>	<u>220</u>	600	220		
459.GemsFDTD	16	1652	103	<u>1645</u>	<u>103</u>	1642	103	8	<u>787</u>	<u>108</u>	784	108	788	108		
465.tonto	16	<u>777</u>	<u>203</u>	782	201	770	205	16	741	212	<u>738</u>	<u>213</u>	735	214		
470.lbm	16	2187	101	2185	101	<u>2186</u>	<u>101</u>	8	1020	108	1022	108	<u>1021</u>	<u>108</u>		
481.wrf	16	914	196	<u>931</u>	<u>192</u>	932	192	16	914	196	<u>931</u>	<u>192</u>	932	192		
482.sphinx3	16	1756	178	1751	178	<u>1753</u>	<u>178</u>	16	1644	190	1636	191	<u>1639</u>	<u>190</u>		

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 -m64

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Base Compiler Invocation (Continued)

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

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 -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)
 -fno-alias -opt-prefetch

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)
 -opt-malloc-options=3 -ansi-alias -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.deallI: basepeak = yes

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: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

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

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 -inline-calloc -opt-malloc-options=3

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: basepeak = yes

481.wrf: basepeak = yes



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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-ic11.1-linux64-revE.20100929.03.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.03.xml>

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