



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 198

ProLiant SL170z G6
(2.93 GHz, Intel Xeon X5570)

SPECfp_rate_base2006 = 190

CPU2006 license: 3

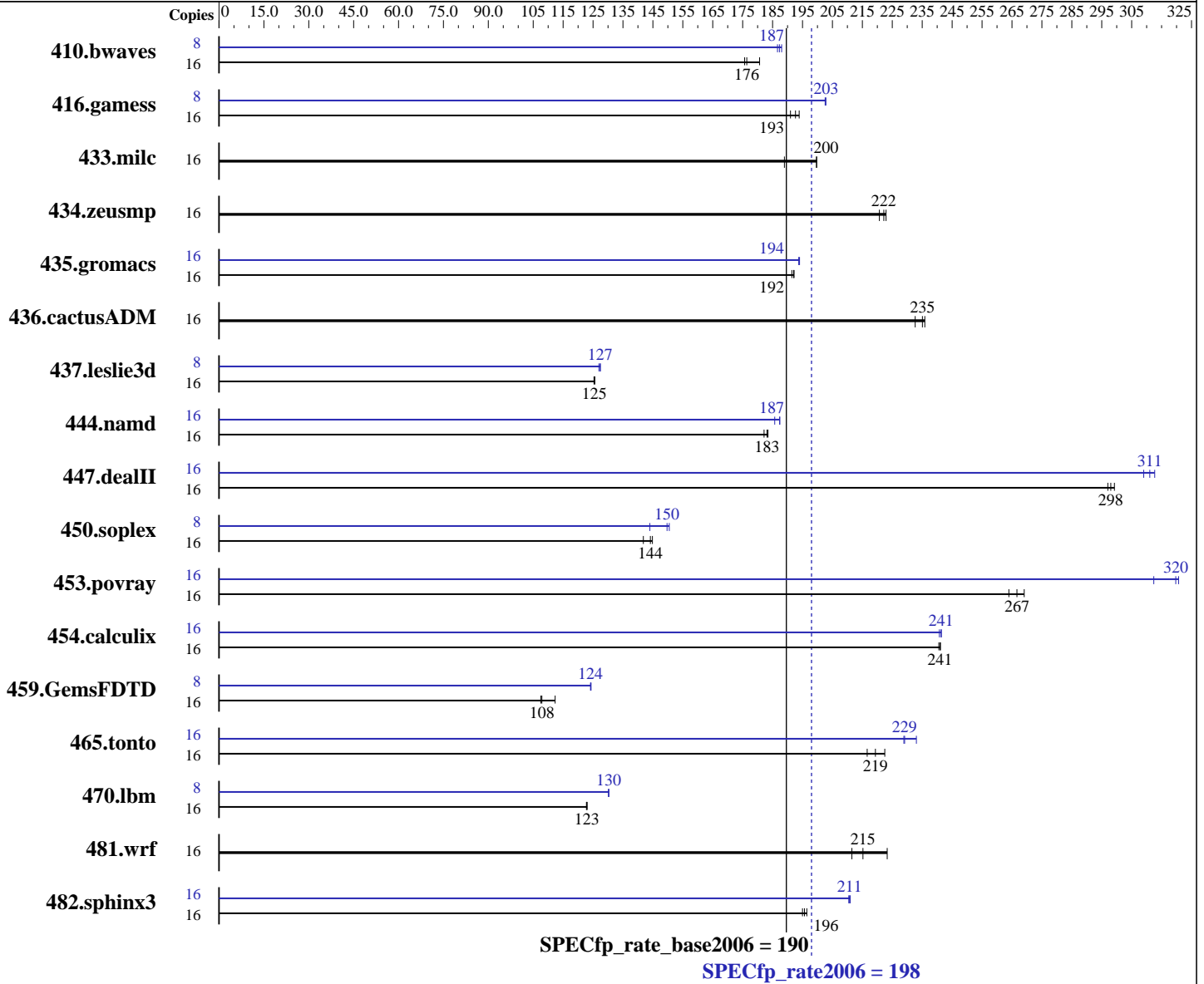
Test date: Oct-2009

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2009

Tested by: Hewlett-Packard Company

Software Availability: Sep-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, 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 5.3
 Kernel 2.6.18-128.el5
 Compiler: Intel C++ and Fortran Compiler 11.1 for Linux
 Build 20090827 Package ID: l_cproc_p_11.1.056,
 l_cprof_p_11.1.056
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6x4 GB DDR3-10600R CL9)
Disk Subsystem: 1x160 GB 7.2 K 3.5" SATA
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.18

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	<u>1233</u>	<u>176</u>	1238	176	1204	181	8	583	187	578	188	<u>581</u>	<u>187</u>
416.gamess	16	1640	191	<u>1626</u>	<u>193</u>	1616	194	8	<u>773</u>	<u>203</u>	772	203	773	203
433.milc	16	777	189	<u>736</u>	<u>200</u>	735	200	16	777	189	<u>736</u>	<u>200</u>	735	200
434.zeusmp	16	660	221	<u>655</u>	<u>222</u>	653	223	16	660	221	<u>655</u>	<u>222</u>	653	223
435.gromacs	16	594	192	597	191	<u>595</u>	<u>192</u>	16	590	194	589	194	<u>590</u>	<u>194</u>
436.cactusADM	16	811	236	<u>813</u>	<u>235</u>	822	233	16	811	236	<u>813</u>	<u>235</u>	822	233
437.leslie3d	16	<u>1199</u>	<u>125</u>	1198	126	1200	125	8	592	127	590	127	<u>590</u>	<u>127</u>
444.namd	16	699	183	704	182	<u>701</u>	<u>183</u>	16	691	186	<u>685</u>	<u>187</u>	685	187
447.dealII	16	616	297	<u>614</u>	<u>298</u>	612	299	16	592	309	<u>588</u>	<u>311</u>	585	313
450.soplex	16	921	145	941	142	<u>926</u>	<u>144</u>	8	463	144	<u>446</u>	<u>150</u>	443	150
453.povray	16	<u>319</u>	<u>267</u>	316	269	322	264	16	265	321	<u>266</u>	<u>320</u>	272	312
454.calculix	16	547	241	549	241	<u>548</u>	<u>241</u>	16	547	241	548	241	<u>547</u>	<u>241</u>
459.GemsFDTD	16	<u>1573</u>	<u>108</u>	1579	108	1511	112	8	683	124	<u>683</u>	<u>124</u>	683	124
465.tonto	16	727	217	<u>718</u>	<u>219</u>	708	222	16	688	229	676	233	<u>687</u>	<u>229</u>
470.lbm	16	1787	123	<u>1788</u>	<u>123</u>	1790	123	8	844	130	<u>844</u>	<u>130</u>	844	130
481.wrf	16	<u>831</u>	<u>215</u>	845	211	800	223	16	<u>831</u>	<u>215</u>	845	211	800	223
482.sphinx3	16	1587	196	1599	195	<u>1594</u>	<u>196</u>	16	1478	211	<u>1480</u>	<u>211</u>	1482	210

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.
numactl was used to bind copies to the cores

Operating System Notes

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

Platform Notes

BIOS configuration:
Power Efficiency Mode set to Performance



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General Notes

The ProLiant SL2x170z G6 and ProLiant SL170z G6 models are electronically equivalent. The results have been measured on the ProLiant SL2x170z G6 model.

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

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

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Base Optimization Flags (Continued)

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):
icpc

450.soplex: /opt/intel/Compiler/11.1/056/bin/intel64/icpc -m32

Fortran benchmarks (except as noted below):
ifort

437.leslie3d: ifort -m32

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
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: basepeak = yes

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

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: -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: -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 -opt-prefetch

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

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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: basepeak = yes

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

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20091110.html>
<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20091110.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20091110.xml>
<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20091110.xml>

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