



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 236

ProLiant BL460c G6
(2.67 GHz, Intel Xeon X5650)

SPECfp_rate_base2006 = 228

CPU2006 license: 3

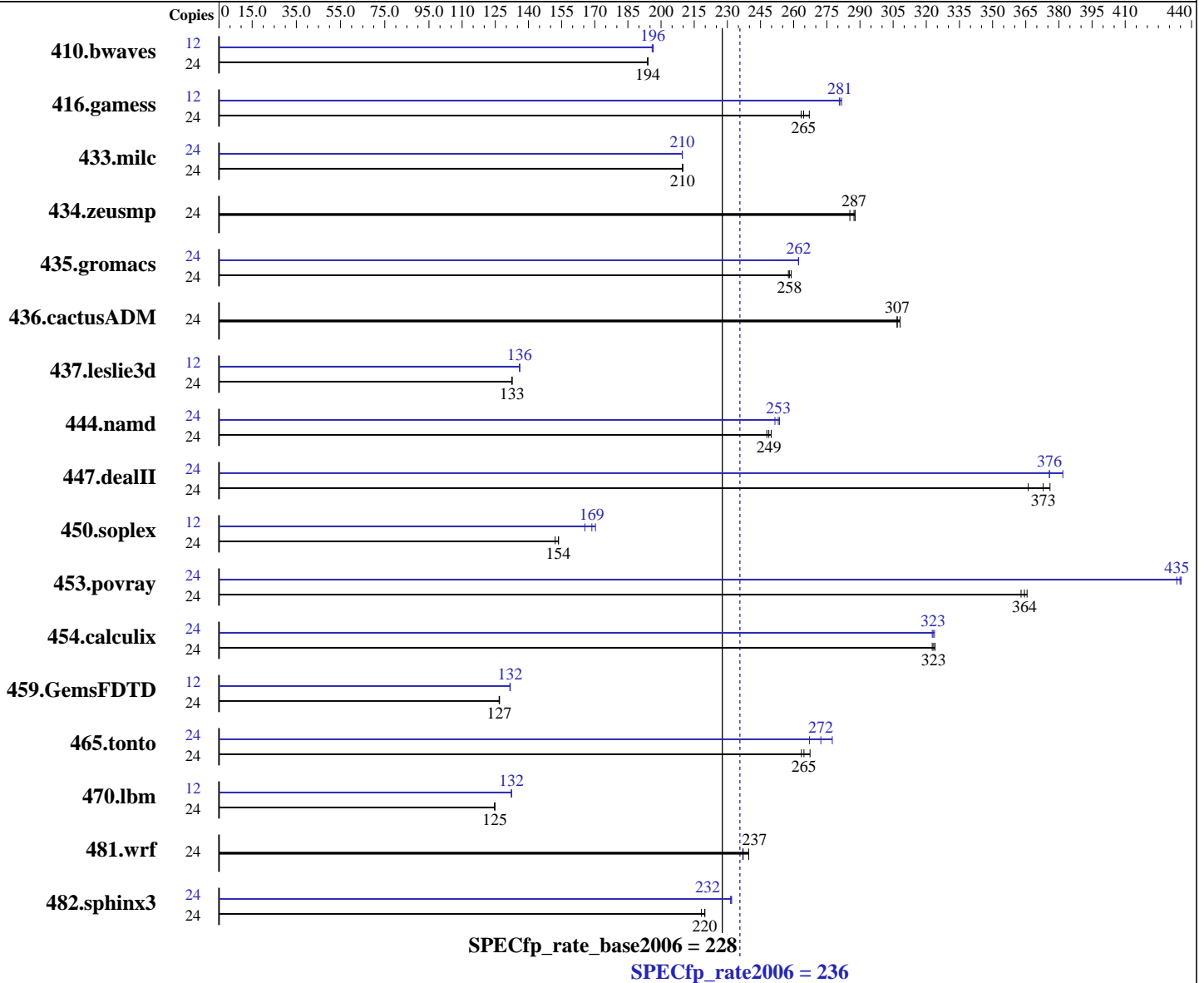
Test date: May-2010

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jun-2010

Tested by: Hewlett-Packard Company

Software Availability: Sep-2009



Hardware

CPU Name: Intel Xeon X5650
 CPU Characteristics: Intel Turbo Boost Technology up to 3.06 GHz
 CPU MHz: 2667
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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
 Kernel 2.6.18-164.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: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12x4 GB 2Rx4 PC3-10600R CL9)
Disk Subsystem: 2x146 GB 2.5" 10 k SAS
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	24	1681	194	<u>1681</u>	<u>194</u>	1682	194	12	832	196	830	196	<u>831</u>	<u>196</u>		
416.gamess	24	<u>1777</u>	<u>265</u>	1784	263	1760	267	12	837	281	<u>836</u>	<u>281</u>	834	282		
433.milc	24	1050	210	<u>1051</u>	<u>210</u>	1051	210	24	1051	210	<u>1051</u>	<u>210</u>	1051	210		
434.zeusmp	24	765	285	<u>760</u>	<u>287</u>	759	288	24	765	285	<u>760</u>	<u>287</u>	759	288		
435.gromacs	24	662	259	<u>664</u>	<u>258</u>	665	258	24	653	262	<u>653</u>	<u>262</u>	654	262		
436.cactusADM	24	<u>935</u>	<u>307</u>	931	308	935	307	24	<u>935</u>	<u>307</u>	931	308	935	307		
437.leslie3d	24	1701	133	1703	132	<u>1702</u>	<u>133</u>	12	830	136	829	136	<u>829</u>	<u>136</u>		
444.namd	24	<u>774</u>	<u>249</u>	770	250	777	248	24	765	252	<u>761</u>	<u>253</u>	759	254		
447.dealII	24	750	366	<u>736</u>	<u>373</u>	730	376	24	731	376	719	382	<u>731</u>	<u>376</u>		
450.soplex	24	1316	152	<u>1303</u>	<u>154</u>	1303	154	12	605	166	<u>593</u>	<u>169</u>	588	170		
453.povray	24	352	363	349	366	<u>350</u>	<u>364</u>	24	<u>294</u>	<u>435</u>	295	433	293	435		
454.calculix	24	611	324	614	323	<u>612</u>	<u>323</u>	24	612	324	<u>613</u>	<u>323</u>	614	323		
459.GemsFDTD	24	2007	127	<u>2007</u>	<u>127</u>	2009	127	12	<u>967</u>	<u>132</u>	966	132	968	132		
465.tonto	24	896	264	<u>892</u>	<u>265</u>	883	267	24	884	267	<u>867</u>	<u>272</u>	851	277		
470.lbm	24	2642	125	<u>2642</u>	<u>125</u>	2646	125	12	1246	132	<u>1246</u>	<u>132</u>	1246	132		
481.wrf	24	1118	240	<u>1131</u>	<u>237</u>	1131	237	24	1118	240	<u>1131</u>	<u>237</u>	1131	237		
482.sphinx3	24	2143	218	<u>2129</u>	<u>220</u>	2128	220	24	2017	232	2021	231	<u>2019</u>	<u>232</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.
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:
HP Power Profile set to Maximum Performance
Thermal Configuration set to Increased Cooling
Memory Speed with 2 DIMMs per Channel set to 1333 MHz Maximum

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Platform Notes (Continued)

Data Reuse set to Disabled

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

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

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Base Optimization Flags (Continued)

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

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

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

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.20100525.html>
<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revF.20100511.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.20100525.xml>
<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revF.20100511.xml>

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

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