



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 239

ProLiant DL360 G7
(2.67 GHz, Intel Xeon X5650)

SPECfp_rate_base2006 = 231

CPU2006 license: 3

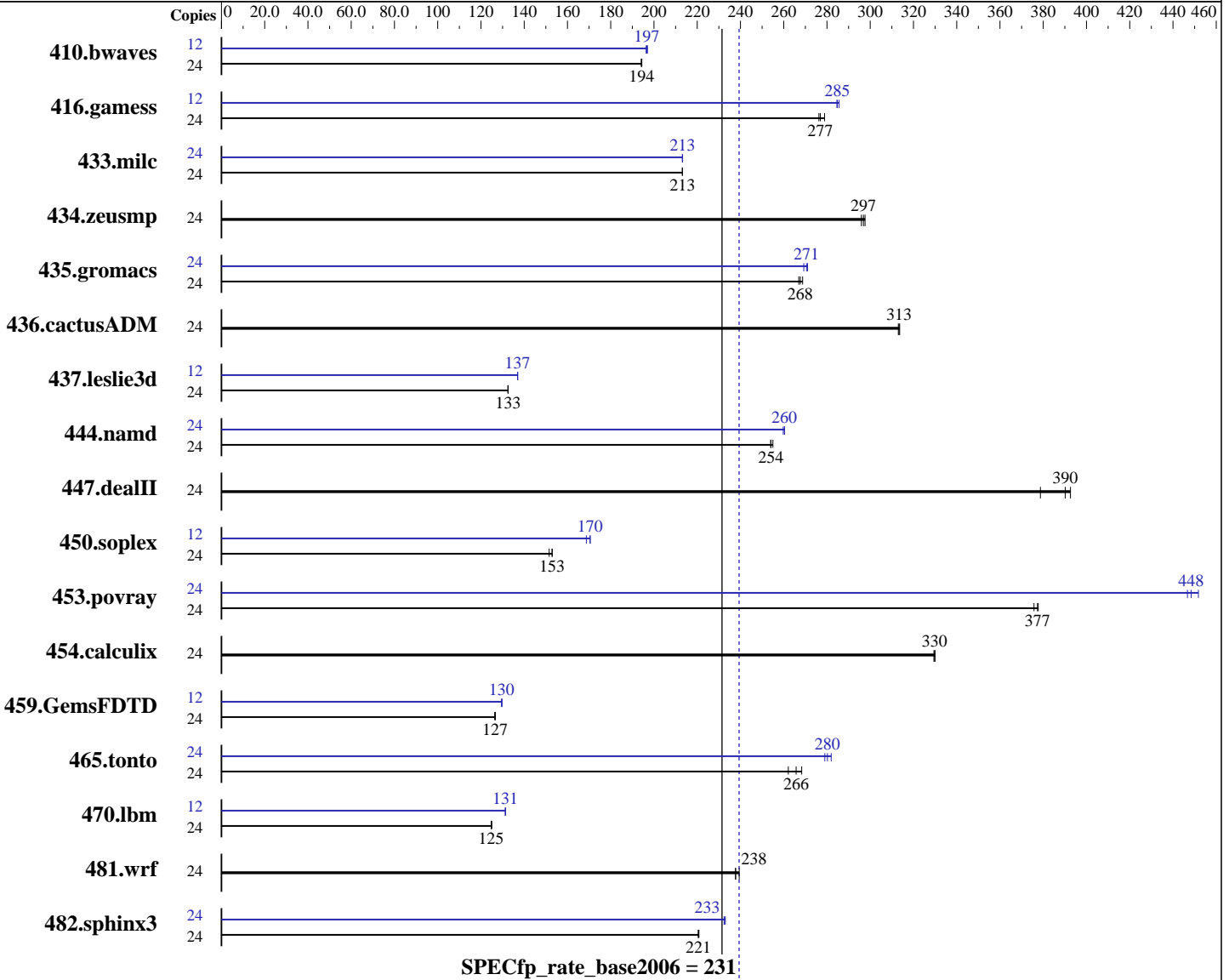
Test date: Oct-2010

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jun-2010

Tested by: Hewlett-Packard Company

Software Availability: Mar-2010



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 5.5, Advanced Platform, Kernel 2.6.18-194.el5
 Compiler: Intel C++ and Fortran Compiler 11.1 for Linux Build 20091130 Package ID: I_cproc_p_11.1.064, I_cprof_p_11.1.064
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1x146 GB 10 K SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1678	194	<u>1679</u>	<u>194</u>	1680	194	12	830	196	828	197	<u>829</u>	<u>197</u>
416.gamess	24	<u>1697</u>	<u>277</u>	1701	276	1685	279	12	<u>825</u>	<u>285</u>	826	285	823	286
433.milc	24	<u>1034</u>	<u>213</u>	1034	213	1034	213	24	<u>1033</u>	<u>213</u>	1033	213	1034	213
434.zeusmp	24	738	296	<u>736</u>	<u>297</u>	734	298	24	738	296	<u>736</u>	<u>297</u>	734	298
435.gromacs	24	638	269	642	267	<u>640</u>	<u>268</u>	24	<u>633</u>	<u>271</u>	636	269	632	271
436.cactusADM	24	916	313	<u>915</u>	<u>313</u>	914	314	24	916	313	<u>915</u>	<u>313</u>	914	314
437.leslie3d	24	1702	133	<u>1702</u>	<u>133</u>	1703	132	12	824	137	823	137	<u>824</u>	<u>137</u>
444.namd	24	755	255	<u>758</u>	<u>254</u>	758	254	24	741	260	739	260	<u>739</u>	<u>260</u>
447.dealII	24	699	393	<u>704</u>	<u>390</u>	725	379	24	699	393	<u>704</u>	<u>390</u>	725	379
450.soplex	24	1321	152	<u>1309</u>	<u>153</u>	1309	153	12	593	169	<u>587</u>	<u>170</u>	587	170
453.povray	24	340	376	<u>338</u>	<u>377</u>	338	378	24	286	447	283	452	<u>285</u>	<u>448</u>
454.calculix	24	601	329	<u>600</u>	<u>330</u>	600	330	24	601	329	<u>600</u>	<u>330</u>	600	330
459.GemsFDTD	24	2015	126	<u>2011</u>	<u>127</u>	2011	127	12	<u>982</u>	<u>130</u>	983	130	982	130
465.tonto	24	<u>889</u>	<u>266</u>	880	268	901	262	24	838	282	<u>843</u>	<u>280</u>	846	279
470.lbm	24	2638	125	<u>2643</u>	<u>125</u>	2644	125	12	1256	131	1255	131	<u>1256</u>	<u>131</u>
481.wrf	24	<u>1128</u>	<u>238</u>	1120	239	1128	238	24	<u>1128</u>	<u>238</u>	1120	239	1128	238
482.sphinx3	24	2119	221	<u>2121</u>	<u>221</u>	2121	220	24	2008	233	<u>2010</u>	<u>233</u>	2013	232

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
Data Reuse set to Disabled



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General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

Base Compiler Invocation

C benchmarks:
icc -m64

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

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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 -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.deallI: `-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 -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

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.dealIII: 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: -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 -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

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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.20101118.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.20101118.xml>

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

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