SPEC® CFP2006 Result

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Hewlett-Packard Company

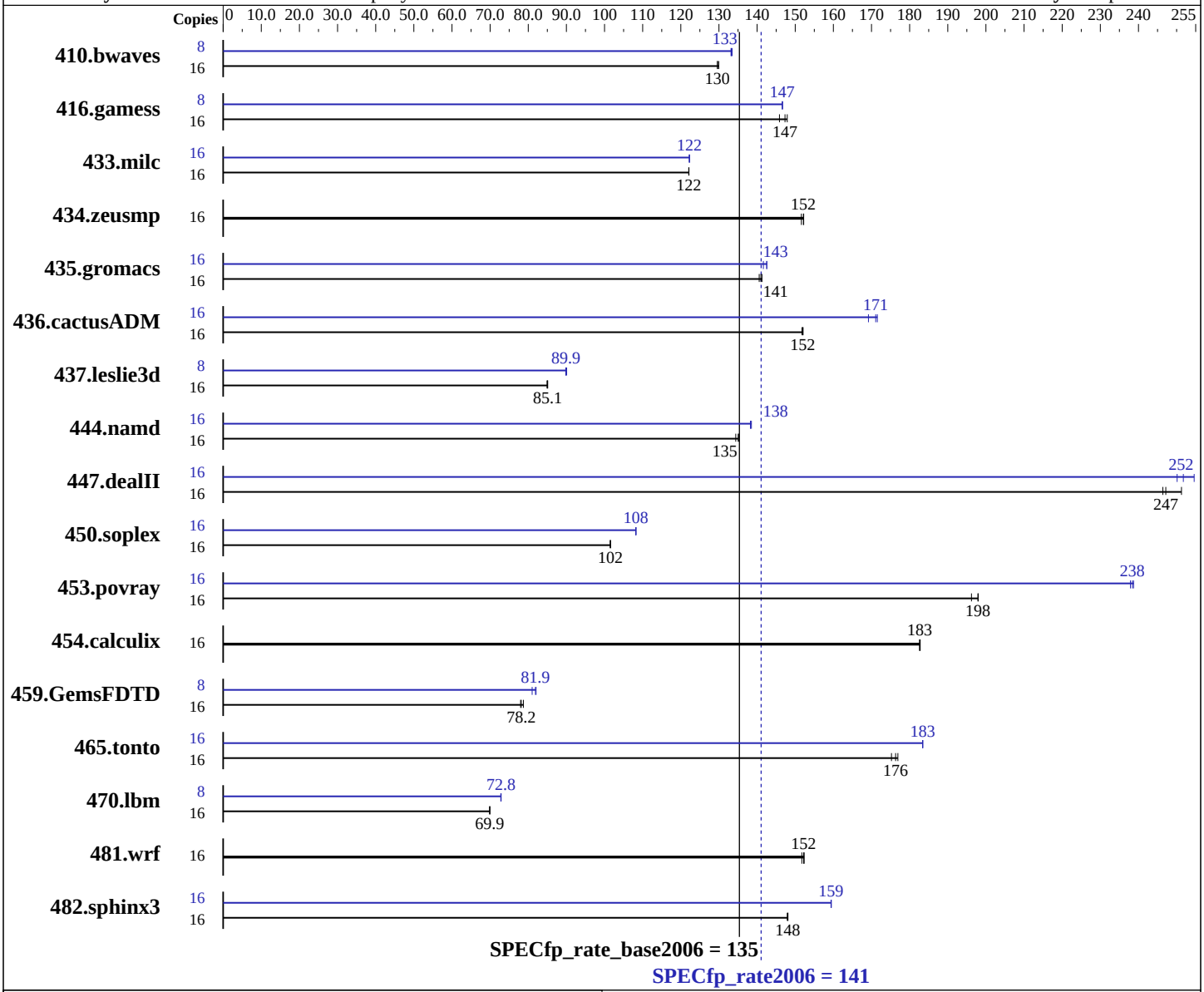
ProLiant BL620c G7
(2.27 GHz, Intel Xeon X7560)

SPECfp®_rate2006 = 141

SPECfp_rate_base2006 = 135

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Oct-2010
Hardware Availability: Nov-2010
Software Availability: Apr-2010



Hardware

CPU Name:	Intel Xeon X7560
CPU Characteristics:	Intel Turbo Boost Technology up to 2.67 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	8 cores, 1 chip, 8 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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 5.5 Kernel 2.6.18-194.el5
Compiler:	Intel C++ and Fortran Compiler 11.1 for Linux Build 20100414 Package ID: l_cproc_p_11.1.072, l_cprof_p_11.1.072
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: 24 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (32 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1x146 GB 10 K SAS
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.6-14.el5

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1673	130	1678	130	**1678**	**130**	8	816	133	**816**	**133**	815	133
416.gamess	16	2148	146	**2127**	**147**	2118	148	8	1068	147	1068	147	**1068**	**147**
433.milc	16	1203	122	**1203**	**122**	1203	122	16	1202	122	**1202**	**122**	1201	122
434.zeusmp	16	**957**	**152**	956	152	960	152	16	**957**	**152**	956	152	960	152
435.gromacs	16	**810**	**141**	809	141	813	141	16	807	142	801	143	**802**	**143**
436.cactusADM	16	1258	152	1260	152	**1258**	**152**	16	1115	172	**1117**	**171**	1130	169
437.leslie3d	16	**1768**	**85.1**	1771	84.9	1768	85.1	8	837	89.8	835	90.1	**837**	**89.9**
444.namd	16	955	134	949	135	**950**	**135**	16	**928**	**138**	928	138	926	139
447.dealII	16	743	246	**741**	**247**	728	251	16	719	255	**727**	**252**	732	250
450.soplex	16	1314	102	1315	102	**1314**	**102**	16	**1233**	**108**	1232	108	1234	108
453.povray	16	430	198	434	196	**430**	**198**	16	358	238	357	239	**357**	**238**
454.calculix	16	723	183	722	183	**723**	**183**	16	723	183	722	183	**723**	**183**
459.GemsFDTD	16	2177	78.0	2156	78.7	**2172**	**78.2**	8	1048	81.0	**1037**	**81.9**	1034	82.1
465.tonto	16	898	175	890	177	**893**	**176**	16	858	183	858	183	**858**	**183**
470.lbm	16	3144	69.9	**3145**	**69.9**	3145	69.9	8	**1509**	**72.8**	1510	72.8	1508	72.9
481.wrf	16	1178	152	**1174**	**152**	1173	152	16	1178	152	**1174**	**152**	1173	152
482.sphinx3	16	**2106**	**148**	2106	148	2108	148	16	1956	159	**1956**	**159**	1957	159

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

Operating System Notes

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

Platform Notes

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BIOS configuration:
 HP Power Profile set to Maximum Performance
 Thermal Configuration set to Increased Cooling
```

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

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/11.1/072/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:

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

Continued on next page

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: -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 -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

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: -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 -opt-prefetch -auto-ilp32

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Peak Optimization Flags (Continued)

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/Intel-ic11.1-linux64-revF.20100511.html`
`http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20100525.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revF.20100511.xml`
`http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20100525.xml`

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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 14:26:17 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 23 November 2010.