



SPEC[®] CFP2006 Result

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Hewlett-Packard Company

SPECfp[®]_rate2006 = 76.3

ProLiant BL680c G5
(2.4 GHz, Intel Xeon E7458)

SPECfp_rate_base2006 = 69.2

CPU2006 license: 3

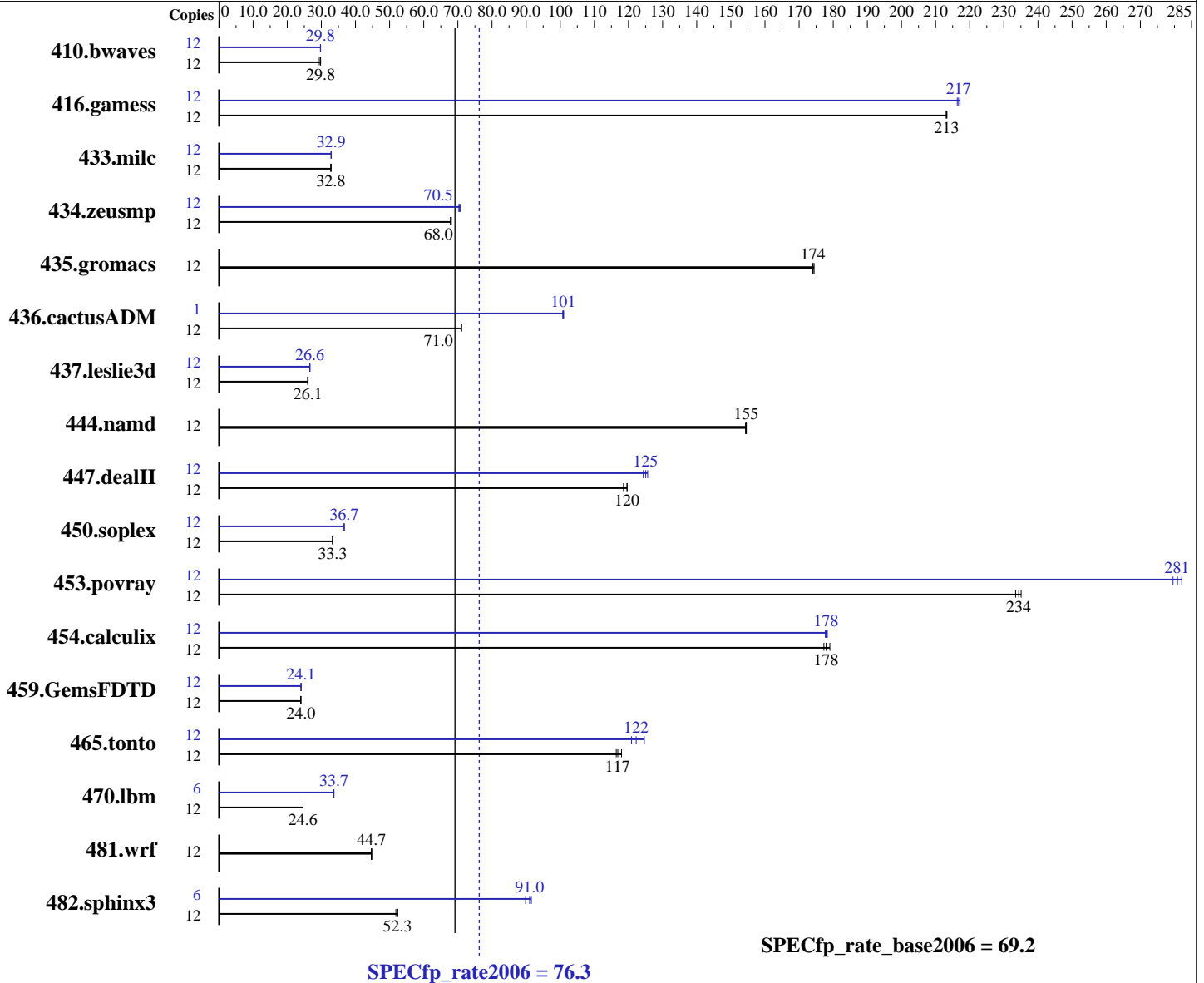
Test date: Apr-2009

Test sponsor: Hewlett-Packard Company

Hardware Availability: Apr-2009

Tested by: Hewlett-Packard Company

Software Availability: Apr-2009



Hardware

CPU Name: Intel Xeon E7458
 CPU Characteristics: 2.4 GHz, 16 MB L3 shared, 1066 MHz system bus
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
 CPU(s) orderable: 2,4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 9 MB I+D on chip per chip, 3 MB shared / 2 cores

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5 on an x86_64
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: L_cproc_b_11.0.074 L_cprof_b_11.0.074
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 16 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (16x4 GB PC2-5300F CL5)
Disk Subsystem: 1x146 GB 10 K SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Binutils-2.17.50

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	12	5546	29.4	5476	29.8	<u>5479</u>	<u>29.8</u>	12	5487	29.7	<u>5481</u>	<u>29.8</u>	5476	29.8		
416.gamess	12	<u>1102</u>	<u>213</u>	1104	213	1101	213	12	<u>1084</u>	<u>217</u>	1086	216	1082	217		
433.milc	12	3356	32.8	<u>3358</u>	<u>32.8</u>	3359	32.8	12	3353	32.9	<u>3351</u>	<u>32.9</u>	3350	32.9		
434.zeusmp	12	1611	67.8	<u>1606</u>	<u>68.0</u>	1603	68.1	12	1545	70.7	1554	70.3	<u>1549</u>	<u>70.5</u>		
435.gromacs	12	492	174	491	174	<u>492</u>	<u>174</u>	12	492	174	491	174	<u>492</u>	<u>174</u>		
436.cactusADM	12	<u>2019</u>	<u>71.0</u>	2018	71.1	2020	71.0	1	119	101	118	101	<u>118</u>	<u>101</u>		
437.leslie3d	12	4346	26.0	<u>4325</u>	<u>26.1</u>	4319	26.1	12	4234	26.6	4237	26.6	<u>4235</u>	<u>26.6</u>		
444.namd	12	<u>623</u>	<u>155</u>	623	155	624	154	12	<u>623</u>	<u>155</u>	623	155	624	154		
447.dealII	12	<u>1148</u>	<u>120</u>	1158	119	1148	120	12	<u>1098</u>	<u>125</u>	1093	126	1104	124		
450.soplex	12	3006	33.3	3004	33.3	<u>3006</u>	<u>33.3</u>	12	2726	36.7	2729	36.7	<u>2729</u>	<u>36.7</u>		
453.povray	12	273	233	272	235	<u>272</u>	<u>234</u>	12	226	282	<u>227</u>	<u>281</u>	228	280		
454.calculix	12	553	179	<u>556</u>	<u>178</u>	558	177	12	557	178	555	178	<u>557</u>	<u>178</u>		
459.GemsFDTD	12	5321	23.9	<u>5306</u>	<u>24.0</u>	5300	24.0	12	5294	24.1	5292	24.1	<u>5293</u>	<u>24.1</u>		
465.tonto	12	<u>1010</u>	<u>117</u>	1014	116	1001	118	12	<u>966</u>	<u>122</u>	977	121	947	125		
470.lbm	12	6692	24.6	<u>6692</u>	<u>24.6</u>	6690	24.6	6	2451	33.6	<u>2448</u>	<u>33.7</u>	2447	33.7		
481.wrf	12	3002	44.7	2996	44.7	<u>2998</u>	<u>44.7</u>	12	3002	44.7	2996	44.7	<u>2998</u>	<u>44.7</u>		
482.sphinx3	12	<u>4472</u>	<u>52.3</u>	4512	51.8	4467	52.4	6	1278	91.5	<u>1285</u>	<u>91.0</u>	1302	89.8		

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.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M



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Platform Notes

BIOS configuration:
Power Efficiency Mode set to Performance Mode
Adjacent Sector Prefetch Disabled
Hardware Prefetcher 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:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

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Base Optimization Flags (Continued)

Fortran benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/Compiler/11.0/074/bin/ia32/icc
-L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/074/ipp/ia32/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/Compiler/11.0/074/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/074/ipp/ia32/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/Compiler/11.0/074/bin/ia32/ifort
-L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/074/ipp/ia32/include

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

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Peak Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -scalar-rep- -opt-prefetch
-opt-malloc-options=3
482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: basepeak = yes
447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-
450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3
453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -ansi-alias
-scalar-rep-
434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static
437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch
459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch
465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -auto

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -opt-prefetch -parallel
-auto-ilp32

454.calculix: -xSSE4.1 -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.20090710.html>

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.13.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.20090710.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.13.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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