



SPEC[®] CFP2006 Result

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Hewlett-Packard Company

SPECfp[®]_rate2006 = 48.4

ProLiant BL480c
(3.33 GHz, Intel Xeon X5470)

SPECfp_rate_base2006 = 45.0

CPU2006 license: 3

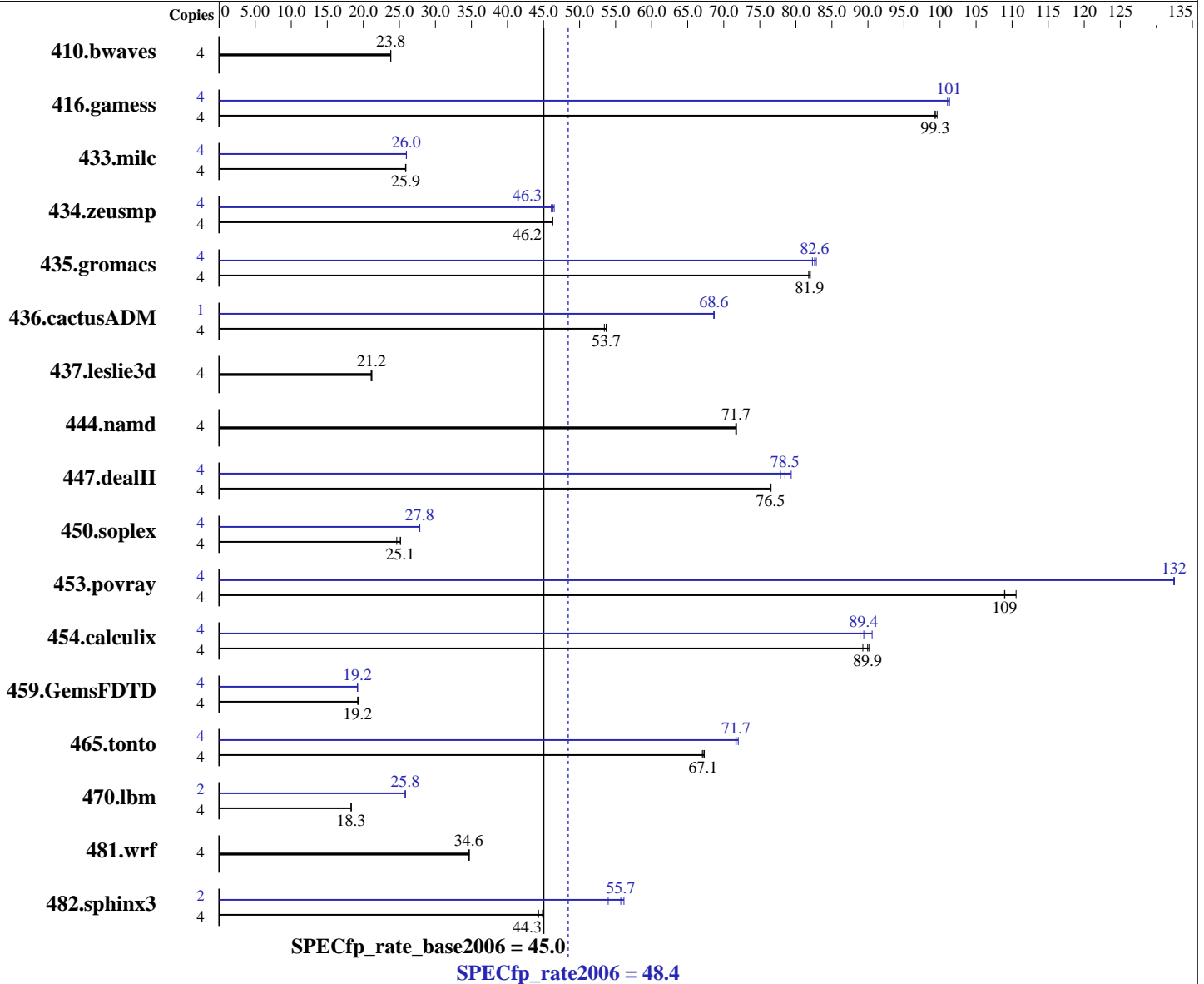
Test date: Aug-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon X5470
 CPU Characteristics: 3.33 GHz, 2x6 MB L2 shared, 1333 MHz system bus
 CPU MHz: 3333
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smpp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042, l_fproc_b_11.0.042
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F CL5)
Disk Subsystem: 1x146 GB 10 K SAS
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	<u>2283</u>	<u>23.8</u>	2283	23.8	2285	23.8	4	<u>2283</u>	<u>23.8</u>	2283	23.8	2285	23.8
416.gamess	4	789	99.3	786	99.6	<u>788</u>	<u>99.3</u>	4	<u>774</u>	<u>101</u>	775	101	773	101
433.milc	4	1420	25.9	1418	25.9	<u>1418</u>	<u>25.9</u>	4	1414	26.0	<u>1414</u>	<u>26.0</u>	1413	26.0
434.zeusmp	4	787	46.3	<u>787</u>	<u>46.2</u>	800	45.5	4	783	46.5	<u>786</u>	<u>46.3</u>	790	46.1
435.gromacs	4	348	82.0	349	81.8	<u>349</u>	<u>81.9</u>	4	347	82.3	<u>346</u>	<u>82.6</u>	345	82.8
436.cactusADM	4	895	53.4	<u>890</u>	<u>53.7</u>	890	53.7	1	174	68.7	174	68.6	<u>174</u>	<u>68.6</u>
437.leslie3d	4	<u>1776</u>	<u>21.2</u>	1776	21.2	1784	21.1	4	<u>1776</u>	<u>21.2</u>	1776	21.2	1784	21.1
444.namd	4	<u>447</u>	<u>71.7</u>	447	71.7	448	71.7	4	<u>447</u>	<u>71.7</u>	447	71.7	448	71.7
447.dealII	4	598	76.6	<u>598</u>	<u>76.5</u>	598	76.5	4	<u>583</u>	<u>78.5</u>	588	77.9	577	79.4
450.soplex	4	1354	24.6	1326	25.2	<u>1327</u>	<u>25.1</u>	4	1201	27.8	<u>1200</u>	<u>27.8</u>	1198	27.8
453.povray	4	192	111	195	109	<u>195</u>	<u>109</u>	4	<u>161</u>	<u>132</u>	161	132	161	133
454.calculix	4	370	89.3	<u>367</u>	<u>89.9</u>	366	90.1	4	364	90.6	371	88.9	<u>369</u>	<u>89.4</u>
459.GemsFDTD	4	<u>2205</u>	<u>19.2</u>	2206	19.2	2203	19.3	4	<u>2211</u>	<u>19.2</u>	2214	19.2	2208	19.2
465.tonto	4	<u>586</u>	<u>67.1</u>	587	67.0	585	67.3	4	547	72.0	549	71.7	<u>549</u>	<u>71.7</u>
470.lbm	4	3002	18.3	<u>3001</u>	<u>18.3</u>	3000	18.3	2	1064	25.8	<u>1064</u>	<u>25.8</u>	1065	25.8
481.wrf	4	<u>1290</u>	<u>34.6</u>	1287	34.7	1293	34.6	4	<u>1290</u>	<u>34.6</u>	1287	34.7	1293	34.6
482.sphinx3	4	<u>1761</u>	<u>44.3</u>	1738	44.9	1761	44.3	2	722	54.0	694	56.2	<u>700</u>	<u>55.7</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.
taskset was used to bind processes to cores except
for 436.cactusADM peak

Platform Notes

BIOS configuration:
Power Regulator set to Static High Performance Mode
Adjacent Sector Prefetch Disabled
Hardware Prefetcher Disabled



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General Notes

All benchmarks compiled in 64-bit mode except 450.soplex, and 482.sphinx3, at peak, are compiled in 32-bit mode
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M

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.deall: -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

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Base Optimization Flags (Continued)

C++ benchmarks:

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

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):

icc

482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Fortran benchmarks:

ifort

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
437.leslie3d: -DSPEC_CPU_LP64
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
470.lbm: -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: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-ilp32

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: basepeak = yes

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: basepeak = yes

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

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/Intel-ic11.0-fp-linux64-revD.20090713.html>
<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revD.20090713.xml>
<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.xml>

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Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 20:52:25 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 October 2008.