



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 44.6

ProLiant DL160 G5
(3.0 GHz, Intel Xeon E5472)

SPECfp_rate_base2006 = 39.7

CPU2006 license: 3

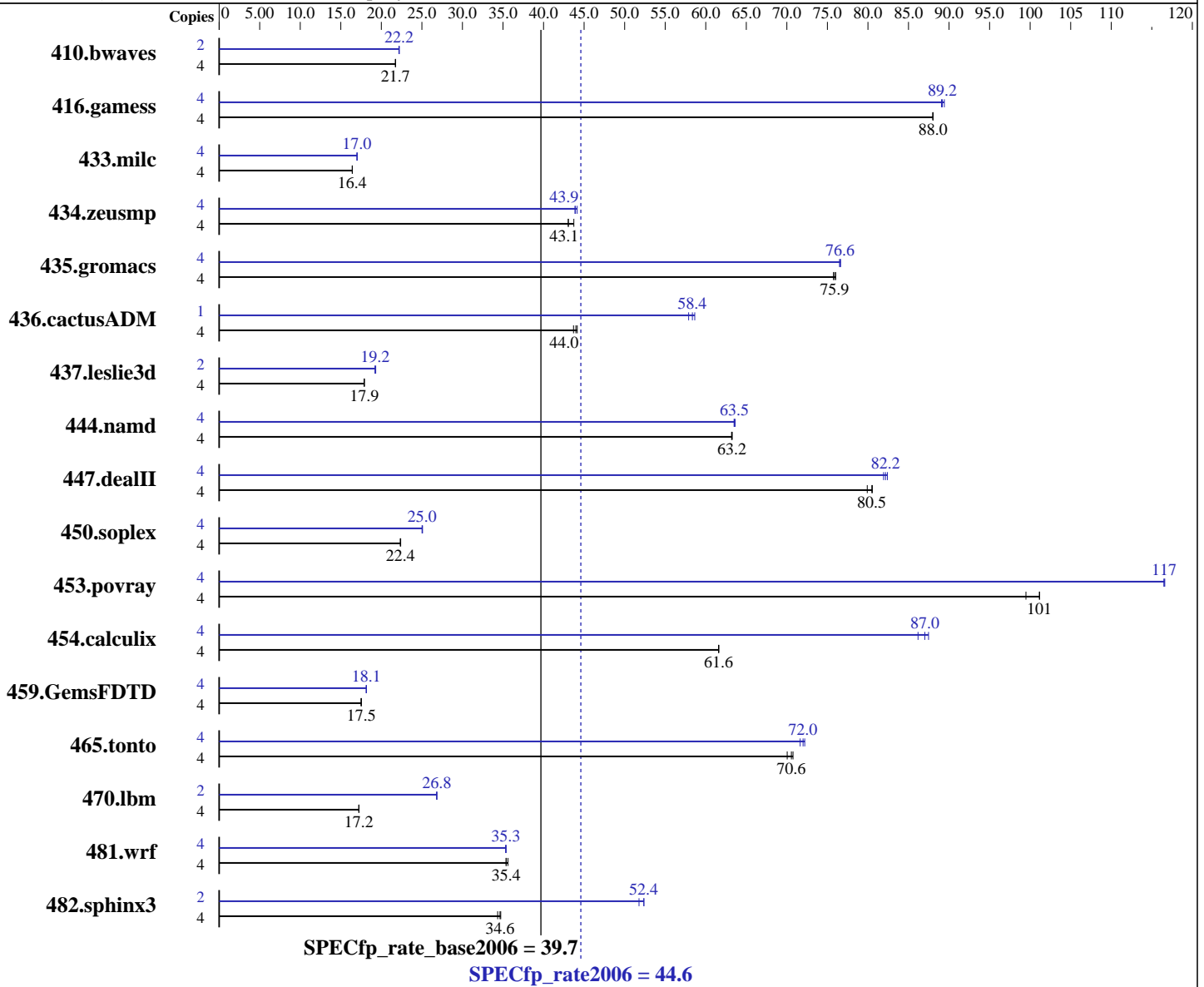
Test date: Jul-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: May-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5472
 CPU Characteristics: 3.0 GHz, 2x6 MB L2 shared, 1600 MHz system bus
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 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-smp
 Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
 Intel Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)

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L3 Cache: None
Other Cache: None
Memory: 32 GB (8x4 GB PC2-6400F CL6)
Disk Subsystem: 1x250 GB 7.2 K SATA
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	4	2500	21.7	<u>2500</u>	<u>21.7</u>	2500	21.7	2	<u>1225</u>	<u>22.2</u>	1226	22.2	1224	22.2
416.gamess	4	<u>890</u>	<u>88.0</u>	890	88.0	890	88.0	4	876	89.4	<u>878</u>	<u>89.2</u>	879	89.1
433.milc	4	2237	16.4	<u>2236</u>	<u>16.4</u>	2236	16.4	4	2158	17.0	<u>2160</u>	<u>17.0</u>	2160	17.0
434.zeusmp	4	832	43.7	846	43.0	<u>845</u>	<u>43.1</u>	4	830	43.9	<u>829</u>	<u>43.9</u>	825	44.1
435.gromacs	4	377	75.8	376	76.0	<u>376</u>	<u>75.9</u>	4	373	76.5	373	76.6	<u>373</u>	<u>76.6</u>
436.cactusADM	4	1094	43.7	1083	44.2	<u>1087</u>	<u>44.0</u>	1	206	57.9	<u>205</u>	<u>58.4</u>	204	58.6
437.leslie3d	4	2104	17.9	2100	17.9	<u>2101</u>	<u>17.9</u>	2	978	19.2	974	19.3	<u>977</u>	<u>19.2</u>
444.namd	4	<u>507</u>	<u>63.2</u>	508	63.2	507	63.3	4	<u>505</u>	<u>63.5</u>	504	63.6	505	63.5
447.dealII	4	<u>569</u>	<u>80.5</u>	573	79.9	568	80.5	4	555	82.4	<u>557</u>	<u>82.2</u>	559	81.9
450.soplex	4	1490	22.4	1494	22.3	<u>1492</u>	<u>22.4</u>	4	<u>1333</u>	<u>25.0</u>	1330	25.1	1333	25.0
453.povray	4	214	99.5	<u>210</u>	<u>101</u>	210	101	4	<u>183</u>	<u>117</u>	183	116	183	117
454.calculix	4	536	61.6	<u>536</u>	<u>61.6</u>	536	61.6	4	<u>379</u>	<u>87.0</u>	377	87.5	383	86.2
459.GemsFDTD	4	2424	17.5	<u>2422</u>	<u>17.5</u>	2421	17.5	4	2339	18.1	2338	18.2	<u>2339</u>	<u>18.1</u>
465.tonto	4	556	70.8	562	70.0	<u>558</u>	<u>70.6</u>	4	545	72.2	549	71.6	<u>547</u>	<u>72.0</u>
470.lbm	4	3190	17.2	3189	17.2	<u>3189</u>	<u>17.2</u>	2	1024	26.8	<u>1024</u>	<u>26.8</u>	1024	26.8
481.wrf	4	1255	35.6	1263	35.4	<u>1262</u>	<u>35.4</u>	4	1265	35.3	1263	35.4	<u>1264</u>	<u>35.3</u>
482.sphinx3	4	2270	34.3	2245	34.7	<u>2251</u>	<u>34.6</u>	2	753	51.8	<u>744</u>	<u>52.4</u>	744	52.4

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 Regulator set to Static High Performance Mode
Adjacent Sector Prefetch 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:

-fast

C++ benchmarks:

-fast

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Base Optimization Flags (Continued)

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/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
465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX



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Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

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Peak Optimization Flags (Continued)

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.20090713.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.20090713.xml>

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