



SPEC® CFP2006 Result

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Hewlett-Packard Company

ProLiant ML350 G6
(2.93 GHz, Intel Xeon X5670)

SPECfp®_rate2006 = 245

SPECfp_rate_base2006 = 236

CPU2006 license: 3

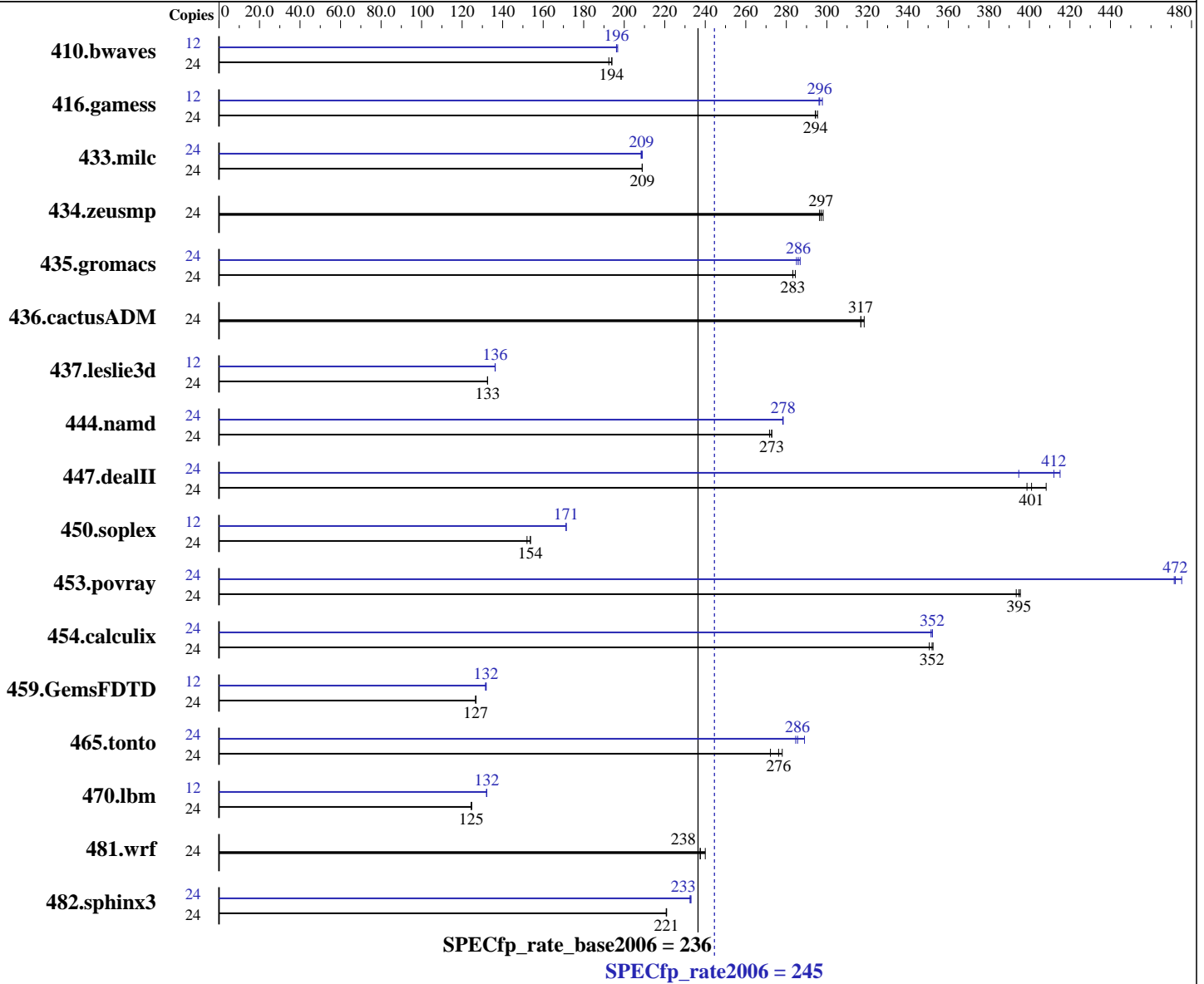
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Apr-2010

Hardware Availability: Jun-2010

Software Availability: Sep-2009



Hardware

CPU Name: Intel Xeon X5670
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
 CPU MHz: 2933
 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 5.4
 Kernel 2.6.18-164.el5
 Compiler: Intel C++ and Fortran Compiler 11.1 for Linux
 Build 20090827 Package ID: l_cproc_p_11.1.056,
 l_cprof_p_11.1.056
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12x4 GB 2Rx8 PC3-10600R CL9)
Disk Subsystem: 1x146 GB 7.2 K SATA
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.18

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1695	192	1683	194	1682	194	12	831	196	829	197	831	196
416.gamess	24	1596	294	1597	294	1590	295	12	789	298	792	296	793	296
433.milc	24	1054	209	1055	209	1055	209	24	1054	209	1058	208	1057	209
434.zeusmp	24	737	296	735	297	732	298	24	737	296	735	297	732	298
435.gromacs	24	602	284	605	283	605	283	24	599	286	601	285	597	287
436.cactusADM	24	901	318	905	317	905	317	24	901	318	905	317	905	317
437.leslie3d	24	1702	133	1702	133	1702	133	12	827	136	827	136	828	136
444.namd	24	708	272	705	273	706	273	24	692	278	691	278	691	278
447.dealII	24	685	401	673	408	688	399	24	661	415	696	395	666	412
450.soplex	24	1303	154	1317	152	1302	154	12	584	171	584	171	584	171
453.povray	24	323	396	323	395	324	393	24	269	475	271	472	271	471
454.calculix	24	563	352	565	351	562	352	24	562	352	563	351	562	352
459.GemsFDTD	24	2009	127	2007	127	2011	127	12	968	132	965	132	966	132
465.tonto	24	855	276	850	278	868	272	24	827	286	817	289	830	285
470.lbm	24	2649	124	2644	125	2647	125	12	1249	132	1248	132	1248	132
481.wrf	24	1129	237	1128	238	1117	240	24	1129	237	1128	238	1117	240
482.sphinx3	24	2119	221	2117	221	2118	221	24	2008	233	2012	232	2010	233

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
Memory Speed with 2 DIMMs per Channel set to 1333 MHz Maximum

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Platform Notes (Continued)

Data Reuse set to 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:
-xSSE4.2 -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`

`482.sphinx3: icc -m32`

C++ benchmarks (except as noted below):

`icpc`

`450.soplex: /opt/intel/Compiler/11.1/056/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:

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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

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-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.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(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 -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 -opt-prefetch

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

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Peak Optimization Flags (Continued)

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: basepeak = yes

454.calculix: -xSSE4.2 -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.20100525.html>

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revF.20100511.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.20100511.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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