SPEC® CFP2006 Result

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Hewlett-Packard Company

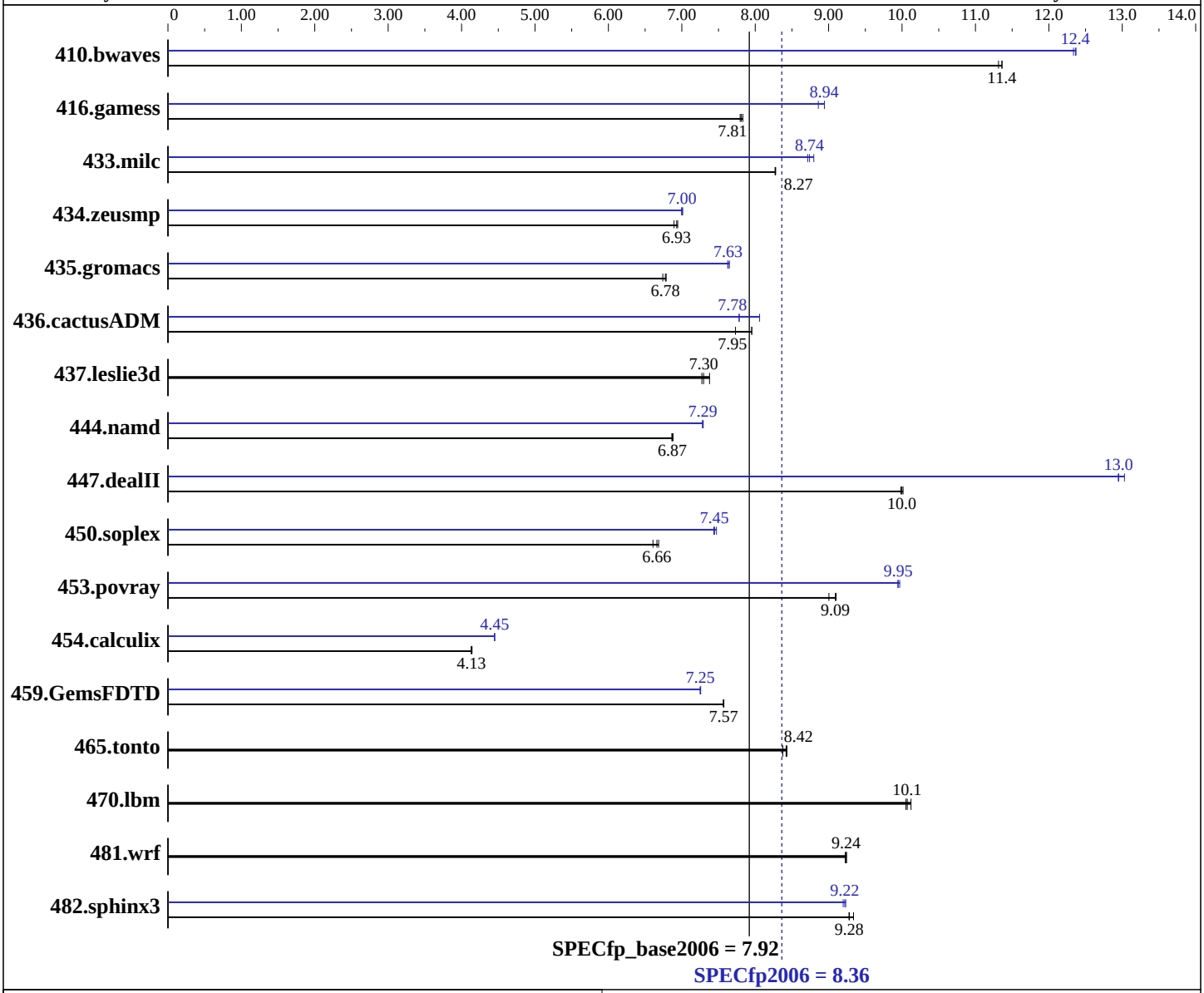
HP BladeSystem bc2500 Blade PC
(1.6GHz AMD Athlon 64 X2 3000+)

SPECfp®2006 = 8.36

SPECfp_base2006 = 7.92

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

Test date: Dec-2007
Hardware Availability: Jun-2007
Software Availability: Mar-2008



Hardware

CPU Name:	AMD Athlon 64 X2 3000+
CPU Characteristics:	
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core

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Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	QLogic PathScale Compiler Suite, Release 3.0
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 4 GB (2x2GB, DDR2-667 CL5 ECC Reg Dual Rank)
Disk Subsystem: 1x80 GB SATA, 5400 RPM
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	1196	11.4	**1196**	**11.4**	1201	11.3	**1099**	**12.4**	1099	12.4	1102	12.3
416.gamess	2512	7.79	**2507**	**7.81**	2500	7.83	**2190**	**8.94**	2210	8.86	2189	8.94
433.milc	1110	8.27	**1109**	**8.27**	1109	8.28	1043	8.80	**1050**	**8.74**	1053	8.71
434.zeusmp	1320	6.89	**1313**	**6.93**	1311	6.94	1298	7.01	1301	7.00	**1299**	**7.00**
435.gromacs	1059	6.74	**1054**	**6.78**	1052	6.79	**936**	**7.63**	934	7.65	936	7.63
436.cactusADM	1546	7.73	**1503**	**7.95**	1503	7.95	**1535**	**7.78**	1483	8.06	1536	7.78
437.leslie3d	1292	7.27	**1288**	**7.30**	1274	7.38	1292	7.27	**1288**	**7.30**	1274	7.38
444.namd	1166	6.88	**1167**	**6.87**	1168	6.86	1102	7.28	**1101**	**7.29**	1100	7.29
447.dealII	1146	9.98	**1144**	**10.0**	1142	10.0	878	13.0	**883**	**13.0**	884	12.9
450.soplex	1262	6.61	**1252**	**6.66**	1248	6.68	1116	7.47	**1120**	**7.45**	1122	7.44
453.povray	584	9.10	**585**	**9.09**	591	9.00	535	9.94	**535**	**9.95**	534	9.97
454.calculix	1997	4.13	**1995**	**4.13**	1992	4.14	**1854**	**4.45**	1854	4.45	1854	4.45
459.GemsFDTD	**1401**	**7.57**	1401	7.57	1403	7.56	1462	7.26	**1463**	**7.25**	1464	7.25
465.tonto	1175	8.38	1167	8.43	**1169**	**8.42**	1175	8.38	1167	8.43	**1169**	**8.42**
470.lbm	1367	10.1	**1364**	**10.1**	1357	10.1	1367	10.1	**1364**	**10.1**	1357	10.1
481.wrf	1208	9.24	**1209**	**9.24**	1211	9.23	1208	9.24	**1209**	**9.24**	1211	9.23
482.sphinx3	2101	9.28	2087	9.34	**2100**	**9.28**	**2114**	**9.22**	2119	9.20	2111	9.23

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

Base Compiler Invocation

C benchmarks:
`pathcc`

C++ benchmarks:
`pathCC`

Fortran benchmarks:
`pathf95`

Benchmarks using both Fortran and C:
`pathcc pathf95`

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
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
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
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-Ofast

C++ benchmarks:
-Ofast

Fortran benchmarks:
-Ofast -OPT:malloc_alg=1

Benchmarks using both Fortran and C:
-Ofast -OPT:malloc_alg=1

Peak Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95

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
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:

433.milc: -Ofast -CG:cflow=off -LNO:prefetch=1 -OPT:malloc_alg=1

470.lbm: basepeak = yes

482.sphinx3: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:Ofast -WOPT:aggstr=0 -m32

C++ benchmarks:

444.namd: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-fno-exceptions

447.dealII: -Ofast -INLINE:aggressive=on -OPT:malloc_alg=1 -m32
-fno-exceptions

450.soplex: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-OPT:IEEE_arith=3 -CG:load_exe=0 -CG:movnti=1
-LNO:minvariant=off -LNO:prefetch=1 -fno-exceptions

453.povray: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-fno-fast-math

Fortran benchmarks:

410.bwaves: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:Ofast -OPT:IEEE_arith=3 -LNO:blocking=off
-LNO:ignore_feedback=off

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Peak Optimization Flags (Continued)

416.gamess: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O2 -OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256`

434.zeusmp: `-Ofast -CG:local_fwd_sched=on -LNO:blocking=off -LNO:interchange=off -LNO:fu=10 -LNO:full_unroll_outer=on`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `-Ofast -LNO:fission=2 -LNO:prefetch=0`

465.tonto: `basepeak = yes`

Benchmarks using both Fortran and C:

435.gromacs: `-O3 -OPT:rsqrt=2 -OPT:ro=3`

436.cactusADM: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -LNO:prefetch=3 -LNO:prefetch_ahead=5 -LNO:ou_prod_max=10 -LNO:full_unroll=5 -ipa`

454.calculix: `-Ofast -LNO:simd=0 -WOPT:mem_opnds=on`

481.wrf: `basepeak = yes`

Peak Other Flags

C++ benchmarks:

447.dealII: `-static`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.xml`

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