SPEC® CFP2006 Result

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Hewlett-Packard Company

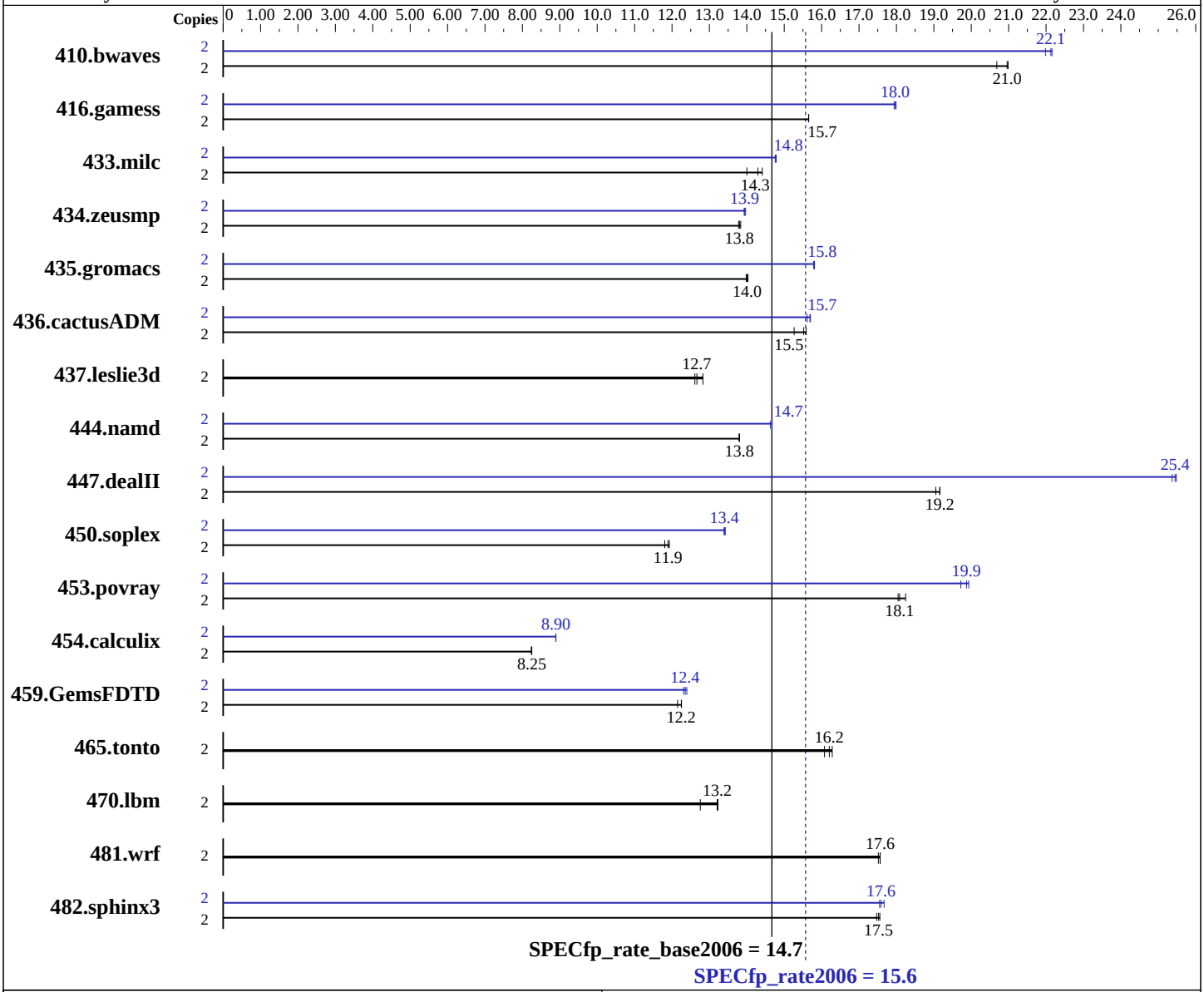
HP BladeSystem bc2500 Blade PC
(1.6GHz AMD Athlon 64 X2 3000+)

SPECfp®_rate2006 = 15.6

SPECfp_rate_base2006 = 14.7

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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	1314	20.7	1295	21.0	**1297**	**21.0**	2	1227	22.2	**1228**	**22.1**	1236	22.0
416.gamess	2	2502	15.7	**2502**	**15.7**	2501	15.7	2	2183	17.9	2177	18.0	**2179**	**18.0**
433.milc	2	1311	14.0	**1284**	**14.3**	1274	14.4	2	1244	14.8	1242	14.8	**1243**	**14.8**
434.zeusmp	2	1321	13.8	**1319**	**13.8**	1315	13.8	2	1303	14.0	1307	13.9	**1305**	**13.9**
435.gromacs	2	1018	14.0	**1019**	**14.0**	1021	14.0	2	905	15.8	903	15.8	**903**	**15.8**
436.cactusADM	2	1566	15.3	**1540**	**15.5**	1533	15.6	2	1522	15.7	1531	15.6	**1524**	**15.7**
437.leslie3d	2	1491	12.6	**1484**	**12.7**	1466	12.8	2	1491	12.6	**1484**	**12.7**	1466	12.8
444.namd	2	**1162**	**13.8**	1163	13.8	1162	13.8	2	1096	14.6	1093	14.7	**1093**	**14.7**
447.dealII	2	1201	19.1	**1194**	**19.2**	1194	19.2	2	898	25.5	**899**	**25.4**	902	25.4
450.soplex	2	1413	11.8	**1403**	**11.9**	1398	11.9	2	1242	13.4	**1244**	**13.4**	1246	13.4
453.povray	2	**588**	**18.1**	583	18.2	590	18.0	2	540	19.7	534	19.9	**535**	**19.9**
454.calculix	2	2000	8.25	**2000**	**8.25**	2003	8.24	2	1855	8.90	**1855**	**8.90**	1856	8.89
459.GemsFDTD	2	**1732**	**12.2**	1732	12.3	1747	12.1	2	1724	12.3	1712	12.4	**1718**	**12.4**
465.tonto	2	1224	16.1	1209	16.3	**1214**	**16.2**	2	1224	16.1	1209	16.3	**1214**	**16.2**
470.lbm	2	2154	12.8	**2081**	**13.2**	2077	13.2	2	2154	12.8	**2081**	**13.2**	2077	13.2
481.wrf	2	1275	17.5	1272	17.6	**1272**	**17.6**	2	1275	17.5	1272	17.6	**1272**	**17.6**
482.sphinx3	2	**2225**	**17.5**	2220	17.6	2231	17.5	2	2221	17.5	2206	17.7	**2216**	**17.6**

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

General Notes

```
taskset utility used to bind cores to processes
```

Base Compiler Invocation

C benchmarks:
`pathcc`

C++ benchmarks:
`pathCC`

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Base Compiler Invocation (Continued)

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

Continued on next page

Peak Compiler Invocation (Continued)

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

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Peak Optimization Flags (Continued)

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`

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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