SPEC® CFP2006 Result

Hewlett-Packard Company

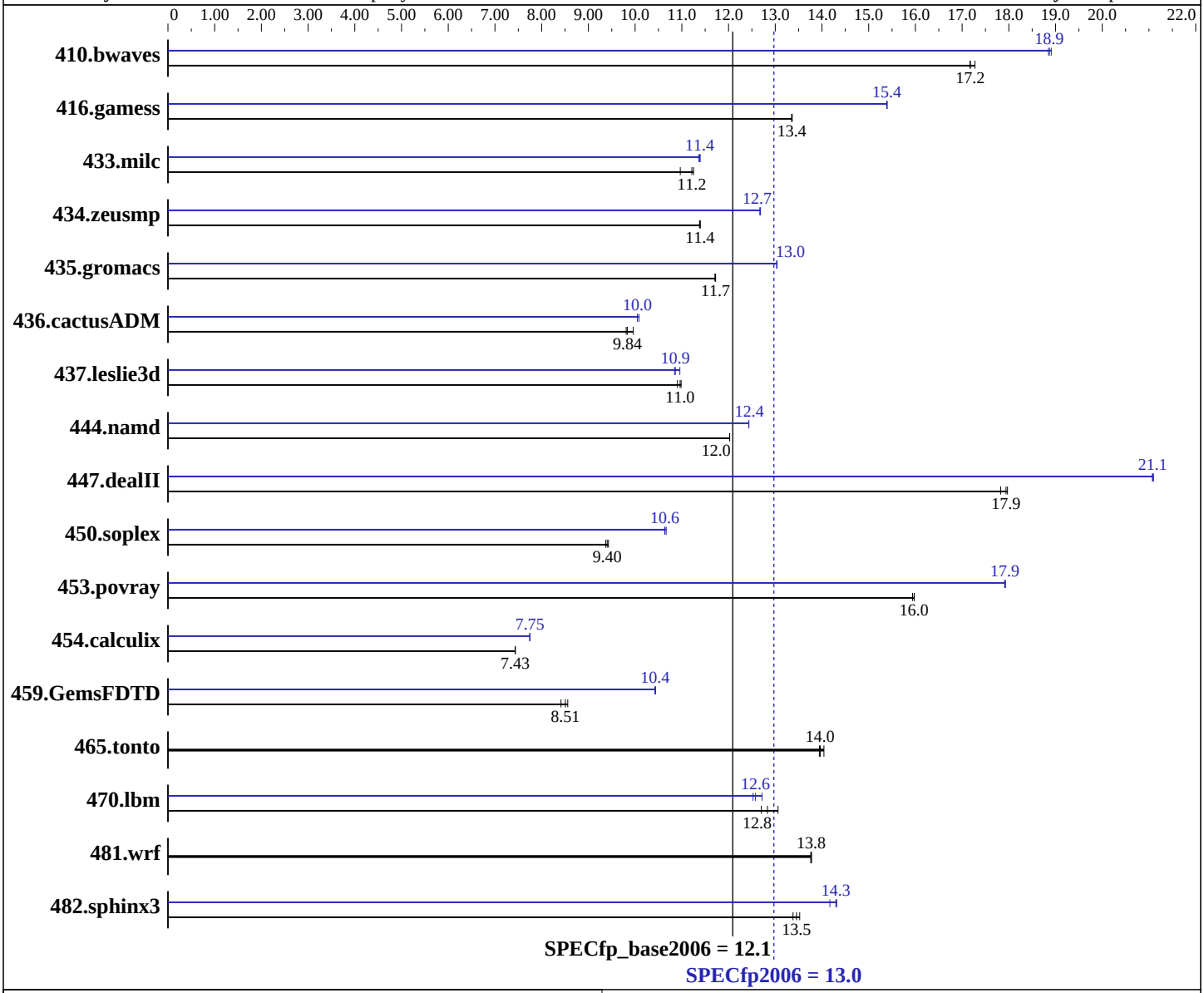
ProLiant DL385 (AMD Opteron 254)

SPECfp®2006 = 13.0

SPECfp_base2006 = 12.1

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

Test date: Apr-2006
Hardware Availability: Oct-2005
Software Availability: Apr-2006



Hardware

CPU Name:	AMD Opteron 254
CPU Characteristics:	2.8GHz, 1MB L2 cache
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 1 core/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per chip
Secondary Cache:	1 MB I+D on chip per chip

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Software

Operating System:	SuSE Linux Enterprise Server 9 (x86_64) SP 3 SuSE kernel 2.6.5-7.244-smp
Compiler:	PathScale EKO Compiler Suite, Release 2.4 PGI C Compiler 6.1-3 for Linux (64-bit) PGI Fortran Compiler 6.1-3 for Linux (64-bit)
Auto Parallel:	No
File System:	ext2
System State:	Multi-user run level 3
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2048 MB PC3200 CL3.0)
Disk Subsystem: 1x146GB 10K Ultra320 SCSI
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	787	17.3	**791**	**17.2**	792	17.2	**720**	**18.9**	719	18.9	721	18.8
416.gamess	1467	13.4	1465	13.4	**1466**	**13.4**	1273	15.4	**1272**	**15.4**	1272	15.4
433.milc	837	11.0	**819**	**11.2**	816	11.3	808	11.4	806	11.4	**806**	**11.4**
434.zeusmp	799	11.4	**799**	**11.4**	800	11.4	**718**	**12.7**	717	12.7	718	12.7
435.gromacs	610	11.7	609	11.7	**609**	**11.7**	548	13.0	**548**	**13.0**	548	13.0
436.cactusADM	1200	9.96	1218	9.81	**1215**	**9.84**	1189	10.0	**1189**	**10.0**	1185	10.1
437.leslie3d	**857**	**11.0**	856	11.0	862	10.9	858	11.0	**865**	**10.9**	867	10.8
444.namd	667	12.0	667	12.0	**667**	**12.0**	645	12.4	**645**	**12.4**	645	12.4
447.dealII	**638**	**17.9**	642	17.8	637	18.0	543	21.1	**543**	**21.1**	542	21.1
450.soplex	884	9.43	**887**	**9.40**	890	9.37	782	10.7	784	10.6	**784**	**10.6**
453.povray	**333**	**16.0**	333	16.0	334	15.9	297	17.9	297	17.9	**297**	**17.9**
454.calculix	1109	7.44	1110	7.43	**1110**	**7.43**	1065	7.75	1065	7.75	**1065**	**7.75**
459.GemsFDTD	1261	8.41	**1247**	**8.51**	1240	8.56	**1017**	**10.4**	1016	10.4	1018	10.4
465.tonto	701	14.0	**705**	**14.0**	706	13.9	701	14.0	**705**	**14.0**	706	13.9
470.lbm	1052	13.1	**1071**	**12.8**	1082	12.7	1080	12.7	**1093**	**12.6**	1097	12.5
481.wrf	811	13.8	812	13.8	**811**	**13.8**	811	13.8	812	13.8	**811**	**13.8**
482.sphinx3	1441	13.5	**1448**	**13.5**	1457	13.4	1361	14.3	**1363**	**14.3**	1376	14.2

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

General Notes

```
BIOS Configuration Notes
  Node Interleaving is Disabled
Other Configuration Notes
   Taskset utility used to bind process to CPU(s)
```

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 -DSPEC_CPU_TABLE_WORKAROUND
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

Benchmarks using both Fortran and C:
-Ofast

Peak Compiler Invocation

C benchmarks (except as noted below):
pgcc

Continued on next page

Peak Compiler Invocation (Continued)

470.lbm: pathcc

C++ benchmarks:
pathCC

Fortran benchmarks (except as noted below):
pathf95

434.zeusmp: pgf90

459.GemsFDTD: pgf90

Benchmarks using both Fortran and C (except as noted below):
pathcc pathf95

454.calculix: pgcc pgf90

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
447.dealII: -DSPEC_CPU_LP64 -DSPEC_CPU_TABLE_WORKAROUND
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -Mnomain
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: -c9x -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mipa=nolocalarg(pass 2) -Mipa=vestigial(pass 2)
-Mpfo(pass 2) -tp k8-64 -fastsse

Continued on next page

Peak Optimization Flags (Continued)

470.lbm: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-Ofast`

482.sphinx3: `-c9x -tp k8-64 -fastsse -Mfprelaxed -Mipa=fast -Mipa=inline -Msignextend`

C++ benchmarks:

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

447.dealII: `-Ofast -m32 -fno-exceptions`

450.soplex: `-m32 -O3 -OPT:IEEE_arith=3 -CG:load_exe=0 -CG:movnti=1 -LNO:minvariant=off -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`

434.zeusmp: `-Mpfi`(pass 1) `-Mipa=fast`(pass 2) `-Mipa=inline`(pass 2) `-Mpfo`(pass 2) `-tp k8-64 -fastsse -Mfprelaxed -Mvect=fuse`

437.leslie3d: `-O3 -OPT:Ofast`

459.GemsFDTD: `-tp k8-64 -fastsse -Munroll=n:4`

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_ahead=5 -LNO:ou_prod_max=10 -LNO:full_unroll=5 -ipa`

454.calculix: `-c9x -tp k8-64 -fastsse -Mnolre -Mipa=fast -Mipa=inline`

481.wrf: `basepeak = yes`

Peak Other Flags

C benchmarks (except as noted below):

`-w`

470.lbm: `No flags used`

Fortran benchmarks:

434.zeusmp: `-w`

459.GemsFDTD: `-w`

Benchmarks using both Fortran and C:

454.calculix: `-w`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.04.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.04.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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