SPEC® CFP2006 Result

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Hewlett-Packard Company

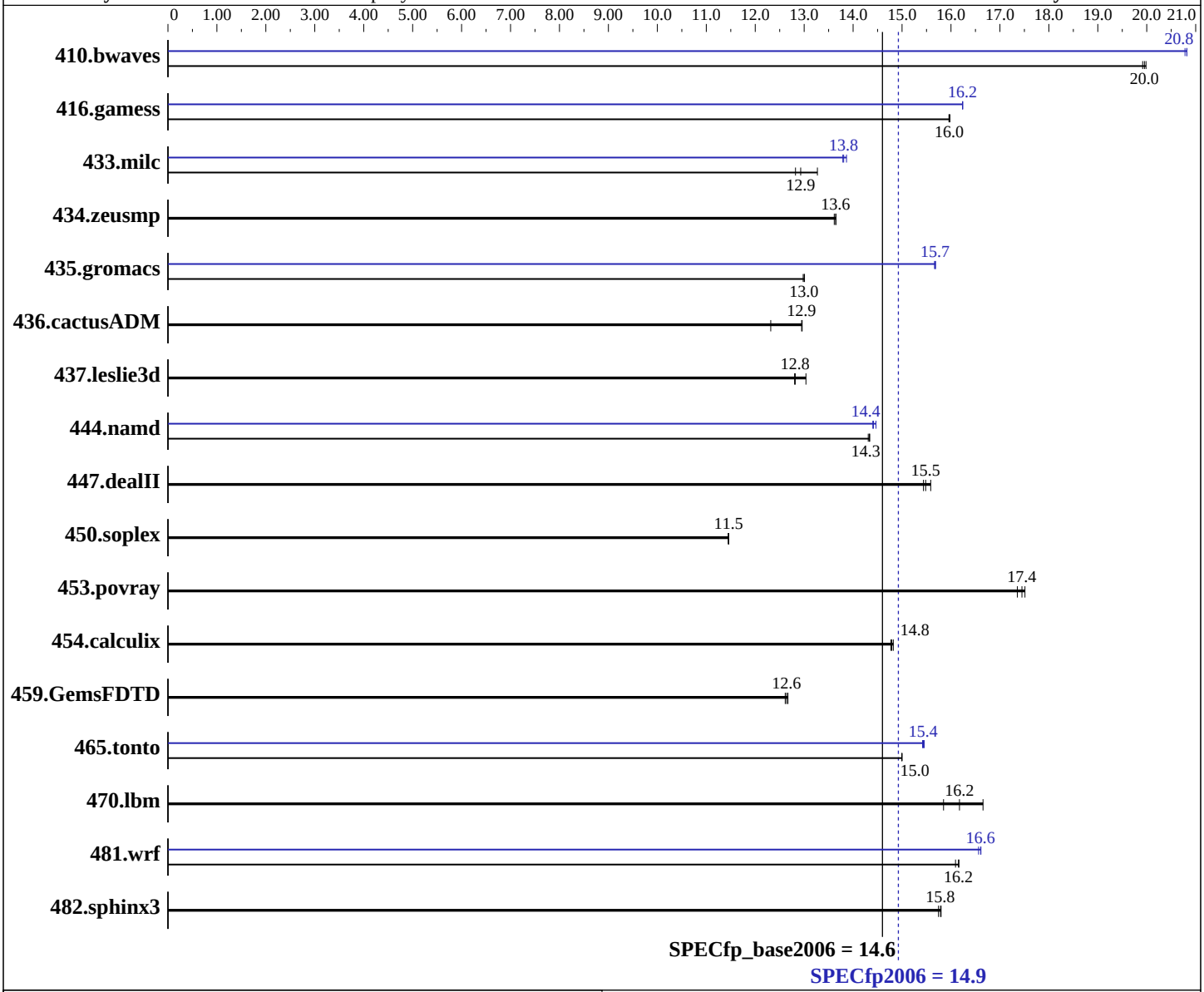
ProLiant DL385 G2
(3.0 GHz AMD Opteron 2222)

SPECfp®2006 = 14.9

SPECfp_base2006 = 14.6

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

Test date: Aug-2007
Hardware Availability: Sep-2007
Software Availability: Oct-2007



Hardware

CPU Name:	AMD Opteron 2222
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB 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-default
Compiler:	The Portland Group (PGI) PGI pgf90 7.1-0 Fortran Compiler PGI pgcc 7.1-0 C Compiler PGI pgCC 7.1-0 C++ Compiler
Auto Parallel:	No
File System:	ext2
System State:	Multi-user, run level 3

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB, PC2-5300P CL5)
Disk Subsystem: 1x72 GB 10 K SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: none

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	680	20.0	**681**	**20.0**	682	19.9	**653**	**20.8**	653	20.8	654	20.8
416.gamess	1227	16.0	**1226**	**16.0**	1225	16.0	1206	16.2	1206	16.2	**1206**	**16.2**
433.milc	716	12.8	**710**	**12.9**	692	13.3	666	13.8	**665**	**13.8**	662	13.9
434.zeusmp	668	13.6	667	13.6	**667**	**13.6**	668	13.6	667	13.6	**667**	**13.6**
435.gromacs	550	13.0	**549**	**13.0**	549	13.0	**455**	**15.7**	455	15.7	456	15.7
436.cactusADM	922	13.0	**923**	**12.9**	970	12.3	922	13.0	**923**	**12.9**	970	12.3
437.leslie3d	721	13.0	734	12.8	**733**	**12.8**	721	13.0	734	12.8	**733**	**12.8**
444.namd	**560**	**14.3**	559	14.3	560	14.3	557	14.4	**556**	**14.4**	554	14.5
447.dealII	**739**	**15.5**	741	15.4	734	15.6	**739**	**15.5**	741	15.4	734	15.6
450.soplex	**728**	**11.5**	728	11.5	729	11.4	**728**	**11.5**	728	11.5	729	11.4
453.povray	**305**	**17.4**	307	17.4	304	17.5	**305**	**17.4**	307	17.4	304	17.5
454.calculix	**558**	**14.8**	557	14.8	558	14.8	**558**	**14.8**	557	14.8	558	14.8
459.GemsFDTD	837	12.7	**839**	**12.6**	841	12.6	837	12.7	**839**	**12.6**	841	12.6
465.tonto	656	15.0	656	15.0	**656**	**15.0**	638	15.4	**638**	**15.4**	637	15.5
470.lbm	825	16.7	**850**	**16.2**	867	15.8	825	16.7	**850**	**16.2**	867	15.8
481.wrf	694	16.1	691	16.2	**692**	**16.2**	672	16.6	**673**	**16.6**	674	16.6
482.sphinx3	1238	15.7	1234	15.8	**1235**	**15.8**	1238	15.7	1234	15.8	**1235**	**15.8**

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

Operating System Notes

```
Environment stack size set to 'unlimited'
ulimit -l set to 1048576
Set vm/nr_hugepages=1024 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Single-processor kernel used
```

Base Compiler Invocation

C benchmarks:
pgcc

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Base Compiler Invocation (Continued)

C++ benchmarks:
pgcpp

Fortran benchmarks:
pgf95

Benchmarks using both Fortran and C:
pgcc pgf95

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 -Mnomain
436.cactusADM: -DSPEC_CPU_LP64 -Mnomain
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 -Mnomain
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 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi

C++ benchmarks:
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
--zc_eh -tp k8-64 -Bstatic_pgi

Fortran benchmarks:
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi

Benchmarks using both Fortran and C:
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi

Base Other Flags

C benchmarks:
`-w`

C++ benchmarks:
`-w`

Fortran benchmarks:
`-w`

Benchmarks using both Fortran and C:
`-w`

Peak Compiler Invocation

C benchmarks:
`pgcc`

C++ benchmarks:
`pgcpp`

Fortran benchmarks:
`pgf95`

Benchmarks using both Fortran and C:
`pgcc pgf95`

Peak Portability Flags

`Same as Base Portability Flags`

Peak Optimization Flags

C benchmarks:

433.milc: `-Mpfi`(pass 1) `-Mipa=fast`(pass 2) `-Mipa=inline`(pass 2) `-Mipa=noarg`(pass 2) `-Mpfo`(pass 2) `-fast -O4 -Mdse -Mfprelaxed -Msmartalloc=huge:8 -tp k8-64 -Bstatic_pgi`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

444.namd: `-Mpfi`(pass 1) `-Mpfo`(pass 2) `-Mipa=fast`(pass 2) `-Mipa=inline`(pass 2) `-fast -O4 -Mfprelaxed -Msmartalloc=huge:32 --zc_eh -tp k8-64 -Bstatic_pgi`

447.dealII: `basepeak = yes`

450.soplex: `basepeak = yes`

453.povray: `basepeak = yes`

Fortran benchmarks:

410.bwaves: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc -tp k8-64 -Bstatic_pgi`

416.gamess: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Mvect=noaltcode -Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi`

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `basepeak = yes`

465.tonto: `-fast -Mfprelaxed -Msmartalloc=huge:128 -Mipa=fast -Mipa=inline -Mvect=noaltcode -tp k8-64 -Bstatic_pgi`

Benchmarks using both Fortran and C:

435.gromacs: `-fast -O4 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:16 -tp k8-64 -Mfpapprox=rsqrt -Bstatic_pgi`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

481.wrf: `-fast -Mfprelaxed -Msmartalloc=huge:32 -Mvect=noaltcode -tp k8-64 -Bstatic_pgi`

Peak Other Flags

C benchmarks:
`-w`

C++ benchmarks:
`-w`

Continued on next page

Peak Other Flags (Continued)

Fortran benchmarks:
`-W`

Benchmarks using both Fortran and C:
`-W`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/hp-pgi710_flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/hp-pgi710_flags.xml`

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