SPEC® CFP2006 Result

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Hewlett-Packard Company

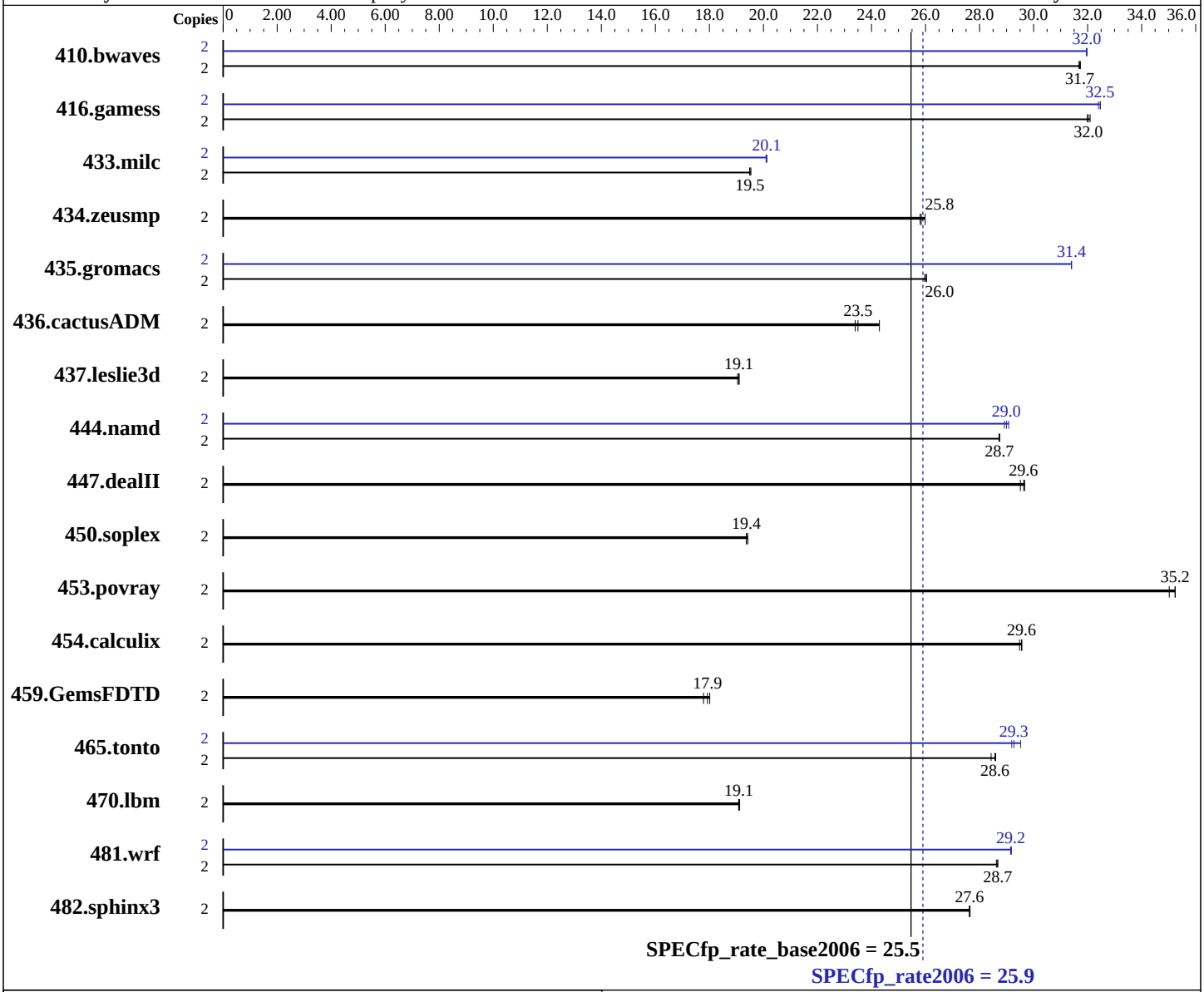
ProLiant DL385 G2
(3.0 GHz AMD Opteron 2222)

SPECfp®_rate2006 = 25.9

SPECfp_rate_base2006 = 25.5

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:	2 cores, 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-smp
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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	857	31.7	**857**	**31.7**	858	31.7	2	851	32.0	850	32.0	**850**	**32.0**
416.gamess	2	**1223**	**32.0**	1224	32.0	1220	32.1	2	1209	32.4	1206	32.5	**1206**	**32.5**
433.milc	2	942	19.5	**941**	**19.5**	940	19.5	2	**913**	**20.1**	914	20.1	912	20.1
434.zeusmp	2	**704**	**25.8**	705	25.8	700	26.0	2	**704**	**25.8**	705	25.8	700	26.0
435.gromacs	2	550	26.0	**549**	**26.0**	548	26.0	2	455	31.4	**455**	**31.4**	455	31.4
436.cactusADM	2	1021	23.4	984	24.3	**1017**	**23.5**	2	1021	23.4	984	24.3	**1017**	**23.5**
437.leslie3d	2	984	19.1	987	19.0	**985**	**19.1**	2	984	19.1	987	19.0	**985**	**19.1**
444.namd	2	559	28.7	558	28.7	**558**	**28.7**	2	**553**	**29.0**	552	29.1	555	28.9
447.dealII	2	**772**	**29.6**	775	29.5	771	29.7	2	**772**	**29.6**	775	29.5	771	29.7
450.soplex	2	**861**	**19.4**	859	19.4	861	19.4	2	**861**	**19.4**	859	19.4	861	19.4
453.povray	2	304	35.0	**302**	**35.2**	302	35.2	2	304	35.0	**302**	**35.2**	302	35.2
454.calculix	2	**558**	**29.6**	558	29.6	560	29.5	2	**558**	**29.6**	558	29.6	560	29.5
459.GemsFDTD	2	1178	18.0	**1184**	**17.9**	1193	17.8	2	1178	18.0	**1184**	**17.9**	1193	17.8
465.tonto	2	688	28.6	**689**	**28.6**	692	28.4	2	**672**	**29.3**	667	29.5	674	29.2
470.lbm	2	1437	19.1	1440	19.1	**1439**	**19.1**	2	1437	19.1	1440	19.1	**1439**	**19.1**
481.wrf	2	779	28.7	**779**	**28.7**	780	28.6	2	766	29.2	**766**	**29.2**	766	29.2
482.sphinx3	2	1411	27.6	1410	27.6	**1411**	**27.6**	2	1411	27.6	1410	27.6	**1411**	**27.6**

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
'numactl' was used to bind copies to the cores
Set vm/nr_hugepages=1024 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

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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