SPEC® CFP2006 Result

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Hewlett-Packard Company

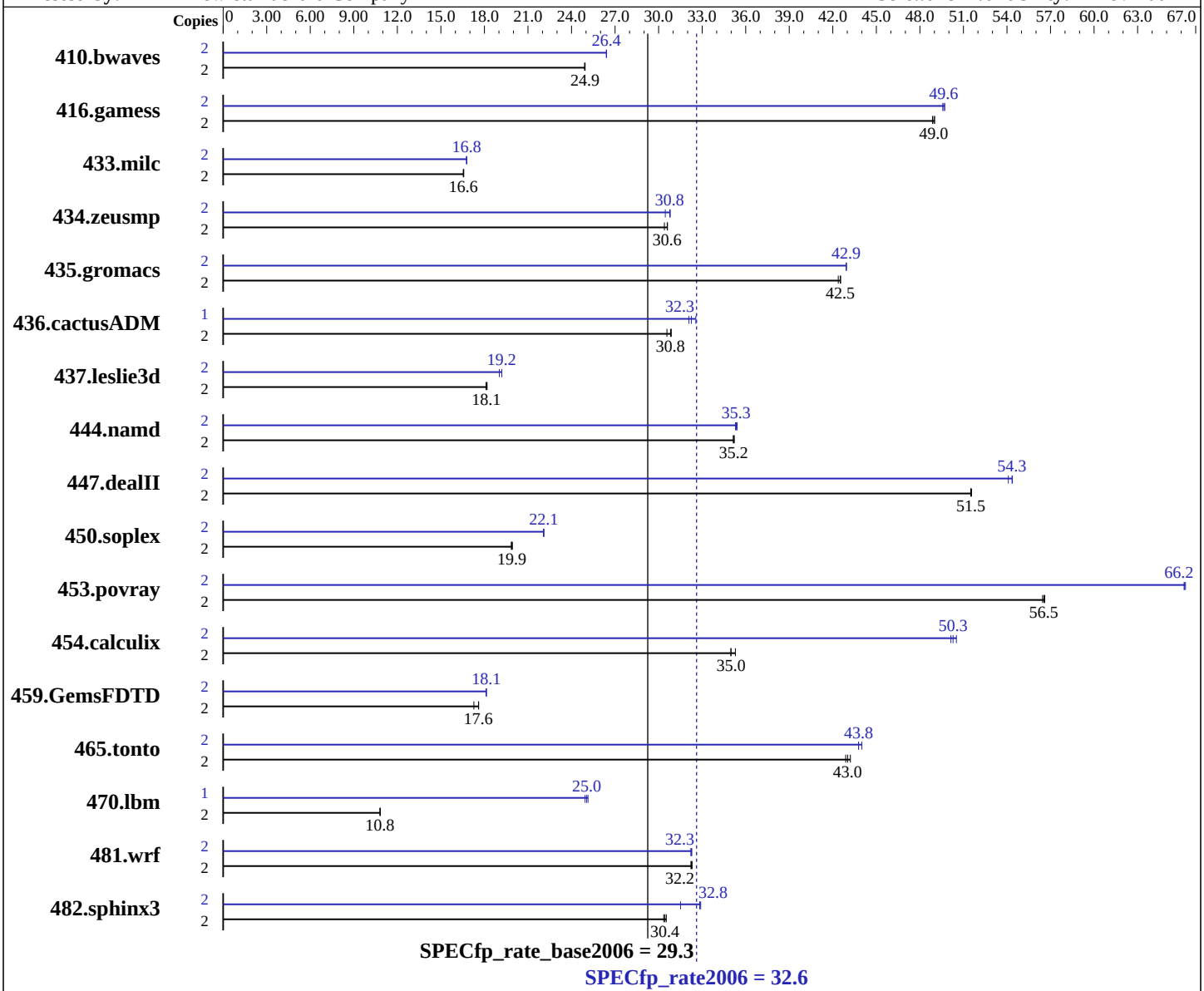
ProLiant ML370 G5
(3.33 GHz, Intel Xeon processor X5260)

SPECfp®_rate2006 = 32.6

SPECfp_rate_base2006 = 29.3

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

Test date: Jan-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X5260
CPU Characteristics:	3.33 GHz, 6 MB L2 shared, 1333 MHz system bus
CPU MHz:	3333
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip

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Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1 Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ Compiler for applications running on IA-32 and Intel 64, Version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008 Intel Fortran Compiler for applications running on IA-32 and Intel 64, Version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F CL5)
Disk Subsystem: 1x72 GB 15 K SAS
Other Hardware: None

System State: Multi-user run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	1090	24.9	1092	24.9	**1090**	**24.9**	2	1030	26.4	**1029**	**26.4**	1029	26.4
416.gamess	2	799	49.0	801	48.9	**800**	**49.0**	2	**789**	**49.6**	788	49.7	790	49.6
433.milc	2	1110	16.5	1107	16.6	**1109**	**16.6**	2	1094	16.8	**1095**	**16.8**	1095	16.8
434.zeusmp	2	595	30.6	**595**	**30.6**	599	30.4	2	**592**	**30.8**	597	30.5	591	30.8
435.gromacs	2	336	42.5	**336**	**42.5**	337	42.4	2	333	42.9	**333**	**42.9**	332	42.9
436.cactusADM	2	**775**	**30.8**	774	30.9	782	30.6	1	372	32.1	**370**	**32.3**	367	32.6
437.leslie3d	2	1038	18.1	**1037**	**18.1**	1034	18.2	2	988	19.0	979	19.2	**979**	**19.2**
444.namd	2	455	35.2	**456**	**35.2**	456	35.1	2	453	35.4	**454**	**35.3**	454	35.3
447.dealII	2	444	51.5	**444**	**51.5**	444	51.6	2	423	54.1	421	54.4	**421**	**54.3**
450.soplex	2	840	19.8	**839**	**19.9**	837	19.9	2	756	22.1	**755**	**22.1**	755	22.1
453.povray	2	188	56.5	188	56.6	**188**	**56.5**	2	**161**	**66.2**	160	66.3	161	66.2
454.calculix	2	468	35.3	472	35.0	**472**	**35.0**	2	**328**	**50.3**	327	50.5	329	50.1
459.GemsFDTD	2	1228	17.3	1205	17.6	**1206**	**17.6**	2	1170	18.1	**1170**	**18.1**	1172	18.1
465.tonto	2	455	43.2	**457**	**43.0**	459	42.9	2	**450**	**43.8**	447	44.0	450	43.8
470.lbm	2	2540	10.8	**2542**	**10.8**	2542	10.8	1	**549**	**25.0**	547	25.1	551	24.9
481.wrf	2	**693**	**32.2**	693	32.2	691	32.3	2	693	32.2	692	32.3	**693**	**32.3**
482.sphinx3	2	**1281**	**30.4**	1277	30.5	1284	30.4	2	**1187**	**32.8**	1185	32.9	1237	31.5

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
```

Platform Notes

```
BIOS configuration:
  Power Regulator set to Static High Performance Mode
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
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 -nofor_main
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

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

433.milc: `icc`

C++ benchmarks (except as noted below):
`icpc`

450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

Fortran benchmarks (except as noted below):
`ifort`

437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib -I/opt/intel/fc/10.1.008/include`

Benchmarks using both Fortran and C:
`icc ifort`

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 -nofor_main`
436.cactusADM: `-DSPEC_CPU_LP64 -nofor_main`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-DSPEC_CPU_LP64`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`
465.tonto: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

433.milc: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -fno-alias -auto-ilp32`

470.lbm: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3`

Continued on next page

Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.html

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.xml`

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For other inquiries, please contact webmaster@spec.org.

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