SPEC® CFP2006 Result

Hewlett-Packard Company

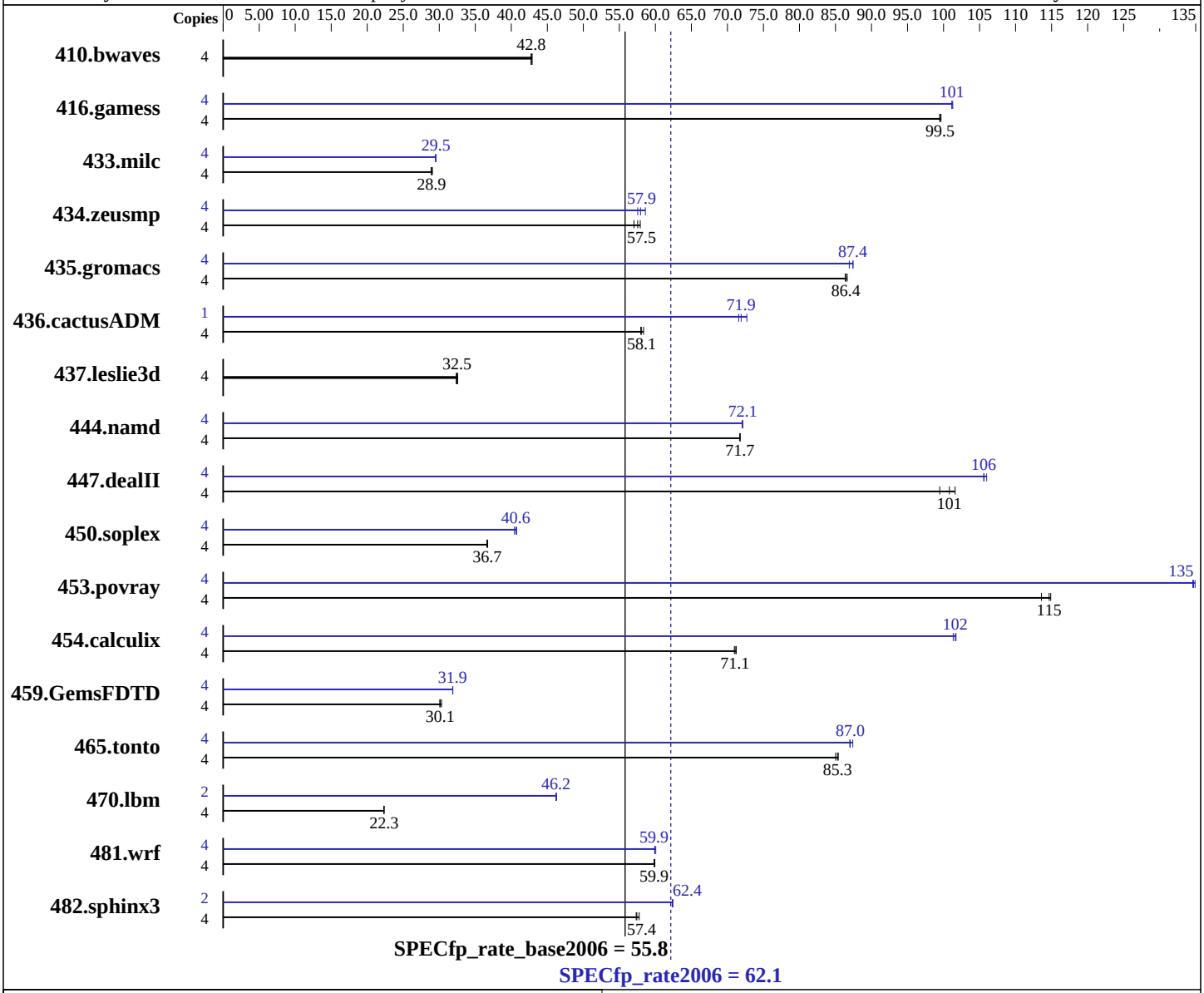
ProLiant DL160 G5
(3.4 GHz, Intel Xeon X5272)

SPECfp®_rate2006 = 62.1

SPECfp_rate_base2006 = 55.8

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

Test date: Jul-2008
Hardware Availability: May-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X5272
CPU Characteristics:	3.4 GHz, 6 MB L2 shared, 1600 MHz system bus
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 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 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008 Intel Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)

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L3 Cache: None
Other Cache: None
Memory: 32 GB (8x4 GB PC2-6400F CL6)
Disk Subsystem: 1x250 GB 7.2 K SATA
Other Hardware: None

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	4	1272	42.7	**1270**	**42.8**	1267	42.9	4	1272	42.7	**1270**	**42.8**	1267	42.9
416.gamess	4	**787**	**99.5**	786	99.7	787	99.5	4	774	101	**774**	**101**	773	101
433.milc	4	1264	29.0	**1269**	**28.9**	1272	28.9	4	1246	29.5	**1243**	**29.5**	1243	29.6
434.zeusmp	4	**633**	**57.5**	629	57.9	638	57.0	4	632	57.5	**628**	**57.9**	621	58.6
435.gromacs	4	**330**	**86.4**	330	86.6	331	86.4	4	327	87.4	329	86.9	**327**	**87.4**
436.cactusADM	4	824	58.0	**823**	**58.1**	819	58.4	1	164	72.7	**166**	**71.9**	167	71.6
437.leslie3d	4	1155	32.5	**1158**	**32.5**	1162	32.4	4	1155	32.5	**1158**	**32.5**	1162	32.4
444.namd	4	**447**	**71.7**	447	71.7	447	71.8	4	445	72.1	445	72.0	**445**	**72.1**
447.dealII	4	450	102	**454**	**101**	460	99.5	4	432	106	433	106	**433**	**106**
450.soplex	4	908	36.7	911	36.6	**910**	**36.7**	4	825	40.4	819	40.7	**821**	**40.6**
453.povray	4	187	114	**186**	**115**	185	115	4	**158**	**135**	158	135	158	135
454.calculix	4	**464**	**71.1**	463	71.2	465	71.0	4	326	101	**325**	**102**	324	102
459.GemsFDTD	4	1411	30.1	1400	30.3	**1410**	**30.1**	4	**1332**	**31.9**	1331	31.9	1332	31.9
465.tonto	4	463	85.0	461	85.4	**462**	**85.3**	4	450	87.4	**452**	**87.0**	452	87.0
470.lbm	4	2464	22.3	2460	22.3	**2461**	**22.3**	2	594	46.3	**595**	**46.2**	595	46.2
481.wrf	4	**746**	**59.9**	747	59.8	746	59.9	4	746	59.9	**746**	**59.9**	744	60.1
482.sphinx3	4	1350	57.8	1360	57.3	**1358**	**57.4**	2	624	62.4	625	62.3	**625**	**62.4**

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

Submit Notes

```
The config file option 'submit' was used.
```

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
  Adjacent Sector Prefetch Disabled
  Hardware Prefetcher Disabled
```

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

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Base Optimization Flags (Continued)

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:
`ifort`

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`
437.leslie3d: `-DSPEC_CPU_LP64`
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`

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: `basepeak = yes`

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: `basepeak = yes`

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`

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Peak Optimization Flags (Continued)

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.20090713.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.20090713.xml`

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

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