SPEC® CFP2006 Result

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Hewlett-Packard Company

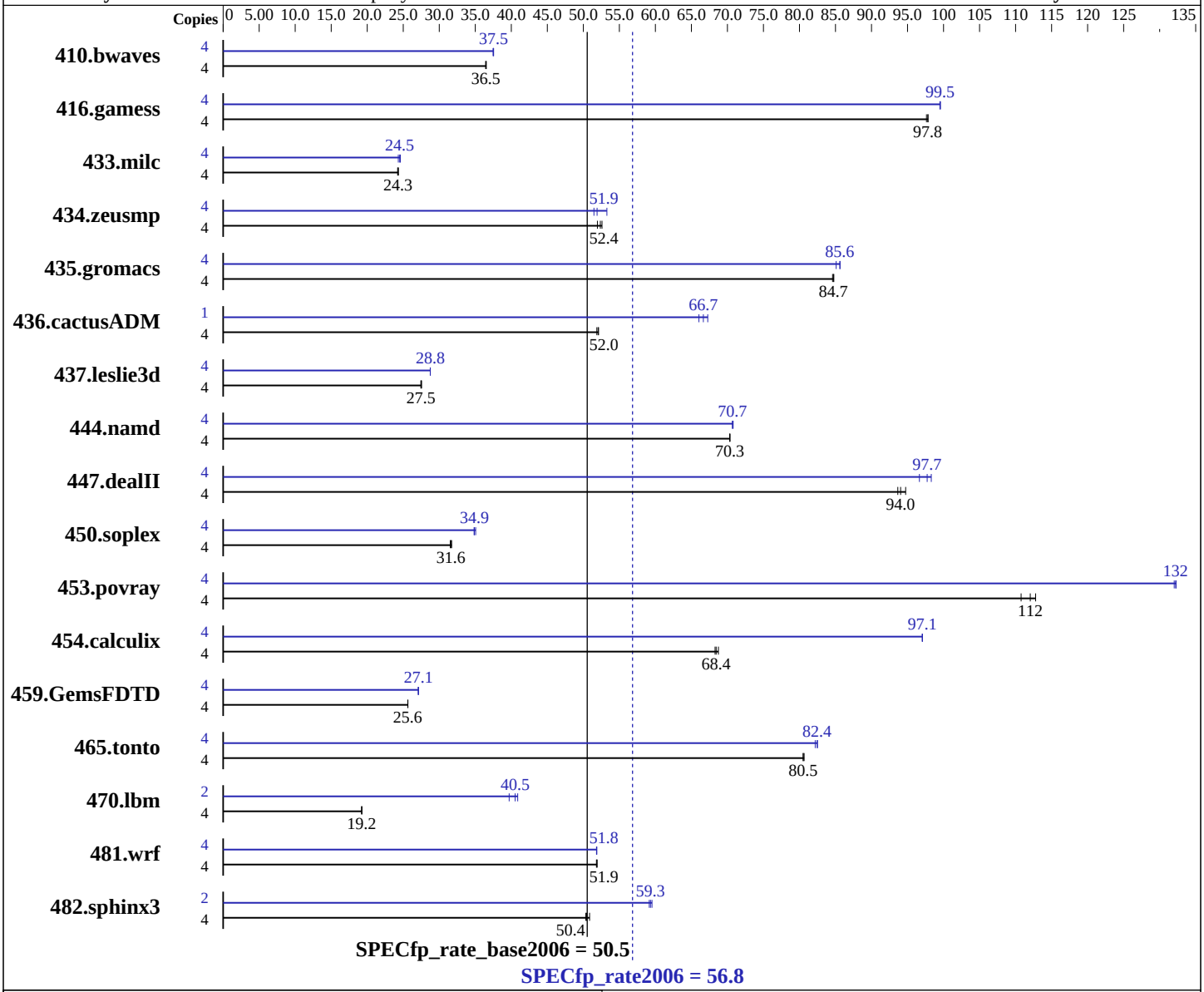
ProLiant BL460c
(3.33 GHz, Intel Xeon processor X5260)

SPECfp®_rate2006 = 56.8

SPECfp_rate_base2006 = 50.5

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

Test date: Dec-2007
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:	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 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	4	1488	36.5	**1491**	**36.5**	1491	36.5	4	1451	37.5	**1448**	**37.5**	1448	37.5
416.gamess	4	802	97.6	800	97.9	**801**	**97.8**	4	787	99.5	787	99.6	**787**	**99.5**
433.milc	4	1509	24.3	1516	24.2	**1513**	**24.3**	4	1493	24.6	1510	24.3	**1498**	**24.5**
434.zeusmp	4	692	52.6	**695**	**52.4**	701	51.9	4	683	53.3	**701**	**51.9**	707	51.5
435.gromacs	4	**337**	**84.7**	338	84.6	337	84.8	4	336	85.1	**334**	**85.6**	334	85.6
436.cactusADM	4	922	51.9	917	52.1	**918**	**52.0**	1	178	67.3	181	66.0	**179**	**66.7**
437.leslie3d	4	1369	27.5	**1369**	**27.5**	1365	27.5	4	1308	28.7	**1308**	**28.8**	1308	28.8
444.namd	4	456	70.3	**456**	**70.3**	456	70.4	4	453	70.8	454	70.7	**454**	**70.7**
447.dealII	4	**487**	**94.0**	489	93.7	483	94.7	4	466	98.3	473	96.7	**468**	**97.7**
450.soplex	4	1058	31.5	1052	31.7	**1055**	**31.6**	4	958	34.8	**956**	**34.9**	952	35.1
453.povray	4	189	113	**190**	**112**	192	111	4	161	132	**161**	**132**	161	132
454.calculix	4	**482**	**68.4**	483	68.3	480	68.7	4	340	97.0	**340**	**97.1**	340	97.1
459.GemsFDTD	4	**1655**	**25.6**	1655	25.6	1656	25.6	4	1565	27.1	**1566**	**27.1**	1567	27.1
465.tonto	4	488	80.6	**489**	**80.5**	489	80.5	4	477	82.5	**477**	**82.4**	479	82.2
470.lbm	4	**2857**	**19.2**	2857	19.2	2857	19.2	2	692	39.7	672	40.9	**678**	**40.5**
481.wrf	4	862	51.8	**861**	**51.9**	861	51.9	4	**862**	**51.8**	861	51.9	862	51.8
482.sphinx3	4	1549	50.3	**1545**	**50.4**	1533	50.9	2	**657**	**59.3**	659	59.2	655	59.5

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
  Adjacent Sector Prefetch 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

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

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Software Availability: Nov-2007

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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