SPEC® CFP2006 Result

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Hewlett-Packard Company

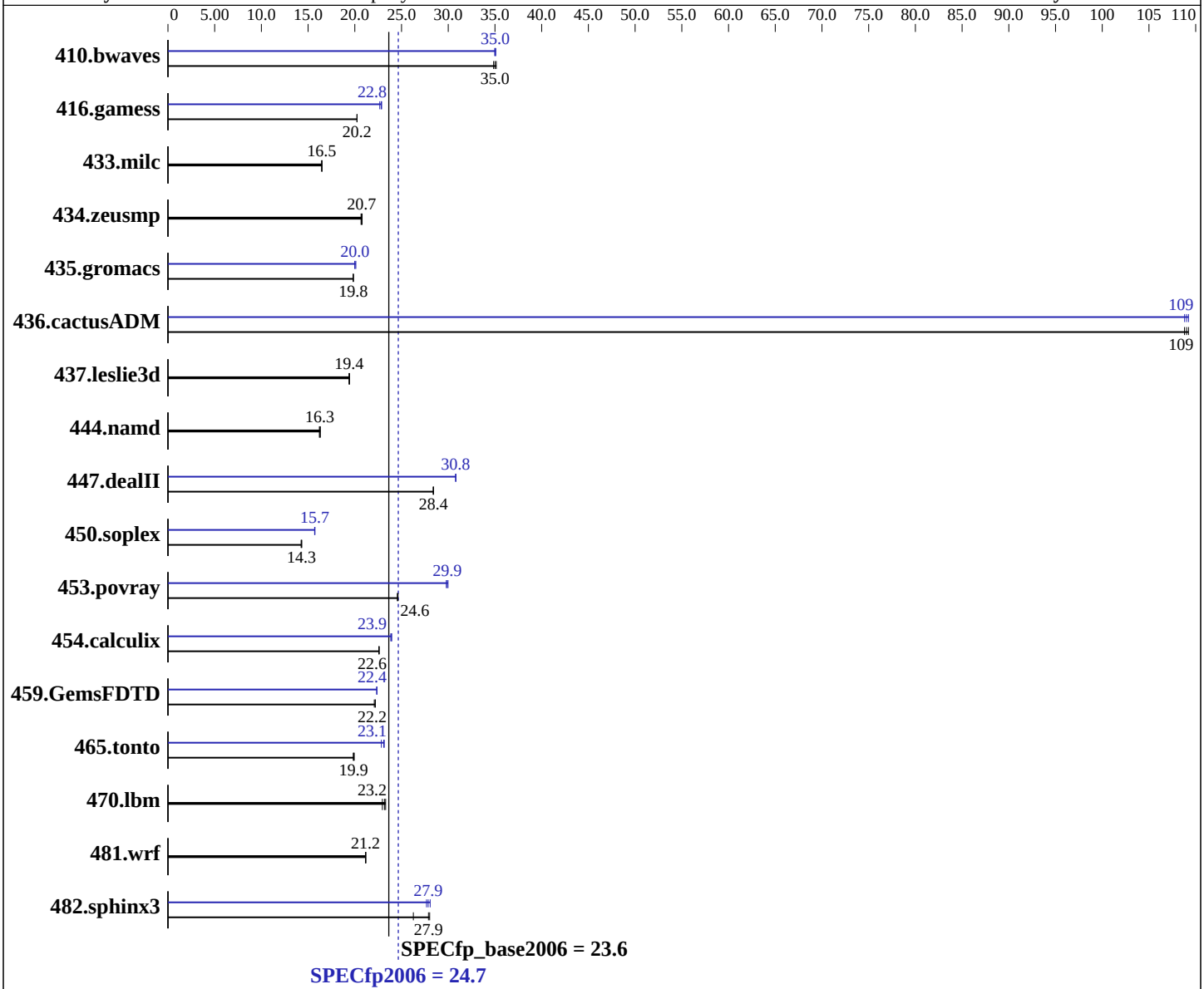
ProLiant BL460c G5
(3.0 GHz, Intel Xeon E5450)

SPECfp®2006 = 24.7

SPECfp_base2006 = 23.6

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

Test date: Dec-2008
Hardware Availability: Nov-2008
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon E5450
CPU Characteristics:	3.0 GHz, 2x6 MB L2 shared, 1333 MHz system bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

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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++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l_cproc_b_11.0.069 l_cprof_b_11.0.069
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB PC2-5300F CL5)
Disk Subsystem: 1x72 GB 15 K SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**388**	**35.0**	390	34.9	387	35.1	**388**	**35.0**	387	35.1	389	35.0
416.gamess	**967**	**20.2**	968	20.2	967	20.2	**858**	**22.8**	856	22.9	864	22.7
433.milc	**558**	**16.5**	558	16.5	557	16.5	**558**	**16.5**	558	16.5	557	16.5
434.zeusmp	**439**	**20.7**	440	20.7	438	20.8	**439**	**20.7**	440	20.7	438	20.8
435.gromacs	**360**	**19.8**	360	19.8	360	19.8	355	20.1	357	20.0	**357**	**20.0**
436.cactusADM	110	109	**110**	**109**	109	109	109	109	110	109	**110**	**109**
437.leslie3d	485	19.4	**484**	**19.4**	484	19.4	485	19.4	**484**	**19.4**	484	19.4
444.namd	495	16.2	492	16.3	**493**	**16.3**	495	16.2	492	16.3	**493**	**16.3**
447.dealII	**403**	**28.4**	403	28.4	402	28.4	371	30.8	**371**	**30.8**	372	30.8
450.soplex	**583**	**14.3**	585	14.3	583	14.3	531	15.7	**530**	**15.7**	530	15.7
453.povray	**216**	**24.6**	216	24.6	217	24.6	179	29.8	**178**	**29.9**	177	30.0
454.calculix	**365**	**22.6**	365	22.6	365	22.6	345	23.9	346	23.8	**345**	**23.9**
459.GemsFDTD	480	22.1	**478**	**22.2**	478	22.2	475	22.3	474	22.4	**475**	**22.4**
465.tonto	494	19.9	**495**	**19.9**	496	19.8	425	23.2	431	22.8	**426**	**23.1**
470.lbm	599	22.9	**593**	**23.2**	590	23.3	599	22.9	**593**	**23.2**	590	23.3
481.wrf	**528**	**21.2**	528	21.2	528	21.2	**528**	**21.2**	528	21.2	528	21.2
482.sphinx3	742	26.3	696	28.0	**699**	**27.9**	**700**	**27.9**	704	27.7	694	28.1

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
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to physical,0
 KMP_STACKSIZE set to 200M
```

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:
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

482.sphinx3:
```
/opt/intel/Compiler/11.0/069/bin/ia32/icc
-L/opt/intel/Compiler/11.0/069/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/069/ipp/ia32/include
```

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

450.soplex:
```
/opt/intel/Compiler/11.0/069/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/069/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/069/ipp/ia32/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
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

Continued on next page

Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: basepeak = yes

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -scalar-rep- -opt-prefetch

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revD.20090713.html
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revD.20090713.xml
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.xml

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

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