SPEC® CFP2006 Result

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Hewlett-Packard Company

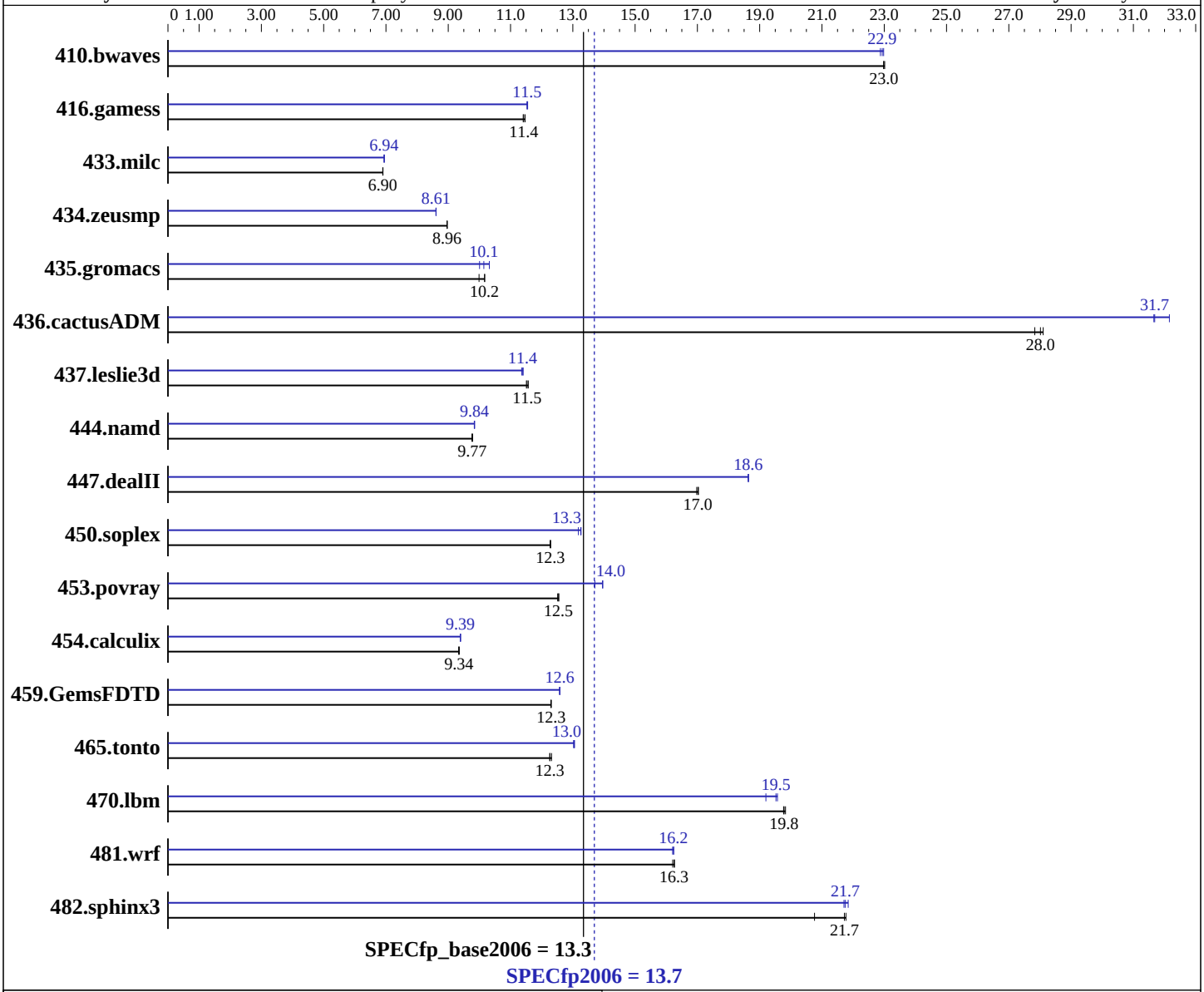
ProLiant DL580 G4
(3.4 GHz, Intel Xeon processor 7140M)

SPECfp®2006 = 13.7

SPECfp_base2006 = 13.3

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

Test date: Aug-2007
Hardware Availability: Aug-2006
Software Availability: May-2007



Hardware

CPU Name:	Intel Xeon 7140M
CPU Characteristics:	3.4 GHz, 800 MHz system bus
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1,2,4 chips
Primary Cache:	12 K micro-ops I + 16 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core

Continued on next page

Software

Operating System:	SuSE LinuxEnterprise Server 10 (x86_64) kernel 2.6.16.21-0.8-smp
Compiler:	Intel C++ Compiler for IA32/EM64T applications, Version 10.0 Build 20070426 Package ID: l_cc_p_10.0.023 Intel Fortran Compiler for applications running on Intel 64, Version 10.0 Build 20070426 Package ID: l_fc_p_10.0.023
Auto Parallel:	Yes

Continued on next page

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L3 Cache:	16 MB I+D on chip per chip	File System:	ext2
Other Cache:	None	System State:	Multi-user run level 3
Memory:	32 GB (16x2 GB PC2-3200R)	Base Pointers:	64-bit
Disk Subsystem:	1x72 GB 15 K SAS	Peak Pointers:	32/64-bit
Other Hardware:	None	Other Software:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	590	23.0	**591**	**23.0**	591	23.0	591	23.0	594	22.9	**593**	**22.9**
416.gamess	1707	11.5	**1714**	**11.4**	1717	11.4	1698	11.5	**1698**	**11.5**	1695	11.5
433.milc	1330	6.90	**1330**	**6.90**	1331	6.90	**1322**	**6.94**	1322	6.95	1323	6.94
434.zeusmp	1015	8.96	1015	8.97	**1015**	**8.96**	1057	8.61	1057	8.61	**1057**	**8.61**
435.gromacs	**702**	**10.2**	702	10.2	715	9.99	714	10.0	692	10.3	**704**	**10.1**
436.cactusADM	429	27.8	**427**	**28.0**	425	28.1	377	31.7	372	32.2	**377**	**31.7**
437.leslie3d	817	11.5	812	11.6	**815**	**11.5**	824	11.4	**825**	**11.4**	828	11.4
444.namd	820	9.78	**821**	**9.77**	822	9.76	**815**	**9.84**	814	9.85	815	9.84
447.dealII	674	17.0	**672**	**17.0**	672	17.0	614	18.6	614	18.6	**614**	**18.6**
450.soplex	679	12.3	**679**	**12.3**	679	12.3	**629**	**13.3**	629	13.3	633	13.2
453.povray	425	12.5	**424**	**12.5**	424	12.6	**381**	**14.0**	388	13.7	381	14.0
454.calculix	882	9.35	884	9.34	**883**	**9.34**	**879**	**9.39**	878	9.40	879	9.39
459.GemsFDTD	863	12.3	**862**	**12.3**	862	12.3	843	12.6	**843**	**12.6**	844	12.6
465.tonto	799	12.3	**802**	**12.3**	803	12.3	754	13.1	**754**	**13.0**	756	13.0
470.lbm	693	19.8	**694**	**19.8**	695	19.8	702	19.6	**704**	**19.5**	716	19.2
481.wrf	**687**	**16.3**	687	16.3	689	16.2	**688**	**16.2**	688	16.2	689	16.2
482.sphinx3	939	20.8	**897**	**21.7**	895	21.8	898	21.7	**896**	**21.7**	892	21.8

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
```

Platform Notes

```
BIOS configuration:
 Power Regulator Disabled
 Adjacent Sector Prefetch Enabled
 Hardware Prefetcher Enabled
 Hyper-Threading Technology 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:
-xP -ipo -O3 -static -no-prec-div

C++ benchmarks:
-xP -ipo -O3 -static -no-prec-div

Fortran benchmarks:
-xP -ipo -O3 -static -no-prec-div -parallel

Benchmarks using both Fortran and C:
-xP -ipo -O3 -static -no-prec-div -parallel

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.0.023/bin/icc -L/opt/intel/cc/10.0.023/lib -I/opt/intel/cc/10.0.023/include`

433.milc: `icc`

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

450.soplex: `/opt/intel/cc/10.0.023/bin/icpc -L/opt/intel/cc/10.0.023/lib -I/opt/intel/cc/10.0.023/include`

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

437.leslie3d: `/opt/intel/fc/10.0.023/bin/ifort -L/opt/intel/fc/10.0.023/lib -I/opt/intel/fc/10.0.023/include`

Benchmarks using both Fortran and C:
`icc ifort`

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xP -ipo -O3 -static -no-prec-div -fno-alias`

470.lbm: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xP -ipo -O3 -static -no-prec-div -unroll2 -no-scalar-rep -prefetch`

482.sphinx3: `-xP -ipo -O3 -static -no-prec-div -unroll2`

C++ benchmarks:

444.namd: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xP -ipo -O3 -static -no-prec-div -fno-alias -auto-ilp32`

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

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Peak Optimization Flags (Continued)

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static -no-prec-div

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

Fortran benchmarks:

410.bwaves: -xP -ipo -O3 -static -no-prec-div -parallel

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

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static -no-prec-div

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static -no-prec-div -parallel

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

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

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -static -no-prec-div -fno-alias

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

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

481.wrf: -xP -ipo -O3 -static -no-prec-div -auto-ilp32 -parallel

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/hp-ic10-flags.20090714.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/hp-ic10-flags.20090714.00.xml

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