SPEC® CFP2006 Result

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Hewlett-Packard Company

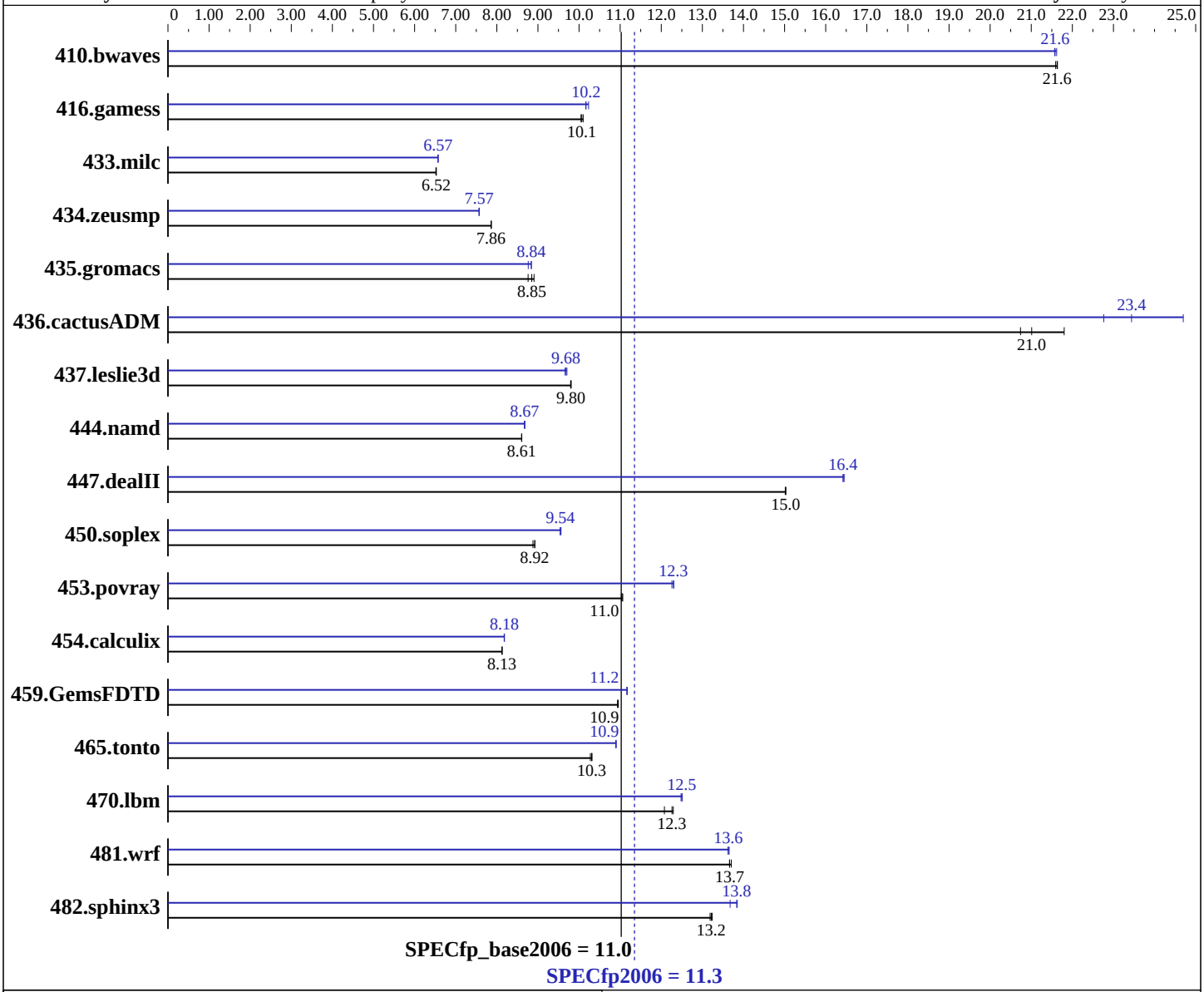
ProLiant DL580 G4
(3.0 GHz, Intel Xeon processor 7120M)

SPECfp®2006 = 11.3

SPECfp_base2006 = 11.0

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 7120M
CPU Characteristics:	3.0 GHz, 800 MHz system bus
CPU MHz:	3000
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

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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

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L3 Cache:	4 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	**628**	**21.6**	628	21.6	629	21.6	629	21.6	**630**	**21.6**	630	21.6
416.gamess	1939	10.1	**1945**	**10.1**	1949	10.0	**1925**	**10.2**	1927	10.2	1914	10.2
433.milc	**1407**	**6.52**	1406	6.53	1409	6.52	1398	6.57	**1397**	**6.57**	1397	6.57
434.zeusmp	1158	7.86	**1157**	**7.86**	1157	7.86	1202	7.57	1202	7.57	**1202**	**7.57**
435.gromacs	802	8.91	815	8.76	**807**	**8.85**	815	8.76	**808**	**8.84**	808	8.84
436.cactusADM	548	21.8	576	20.7	**569**	**21.0**	525	22.8	**510**	**23.4**	484	24.7
437.leslie3d	**959**	**9.80**	960	9.79	958	9.81	969	9.71	**971**	**9.68**	973	9.66
444.namd	**932**	**8.61**	932	8.60	932	8.61	924	8.68	925	8.67	**925**	**8.67**
447.dealII	**761**	**15.0**	761	15.0	762	15.0	695	16.4	697	16.4	**696**	**16.4**
450.soplex	**935**	**8.92**	935	8.92	939	8.88	872	9.56	**874**	**9.54**	874	9.54
453.povray	**482**	**11.0**	482	11.0	481	11.1	**433**	**12.3**	434	12.3	432	12.3
454.calculix	1015	8.13	**1015**	**8.13**	1015	8.13	1008	8.18	**1008**	**8.18**	1009	8.18
459.GemsFDTD	970	10.9	968	11.0	**970**	**10.9**	**950**	**11.2**	950	11.2	950	11.2
465.tonto	**955**	**10.3**	958	10.3	954	10.3	902	10.9	**903**	**10.9**	903	10.9
470.lbm	1138	12.1	**1121**	**12.3**	1118	12.3	1101	12.5	**1099**	**12.5**	1098	12.5
481.wrf	**818**	**13.7**	815	13.7	818	13.7	**820**	**13.6**	820	13.6	818	13.7
482.sphinx3	1472	13.2	**1475**	**13.2**	1478	13.2	**1409**	**13.8**	1407	13.8	1425	13.7

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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