SPEC® CFP2006 Result

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Hewlett-Packard Company

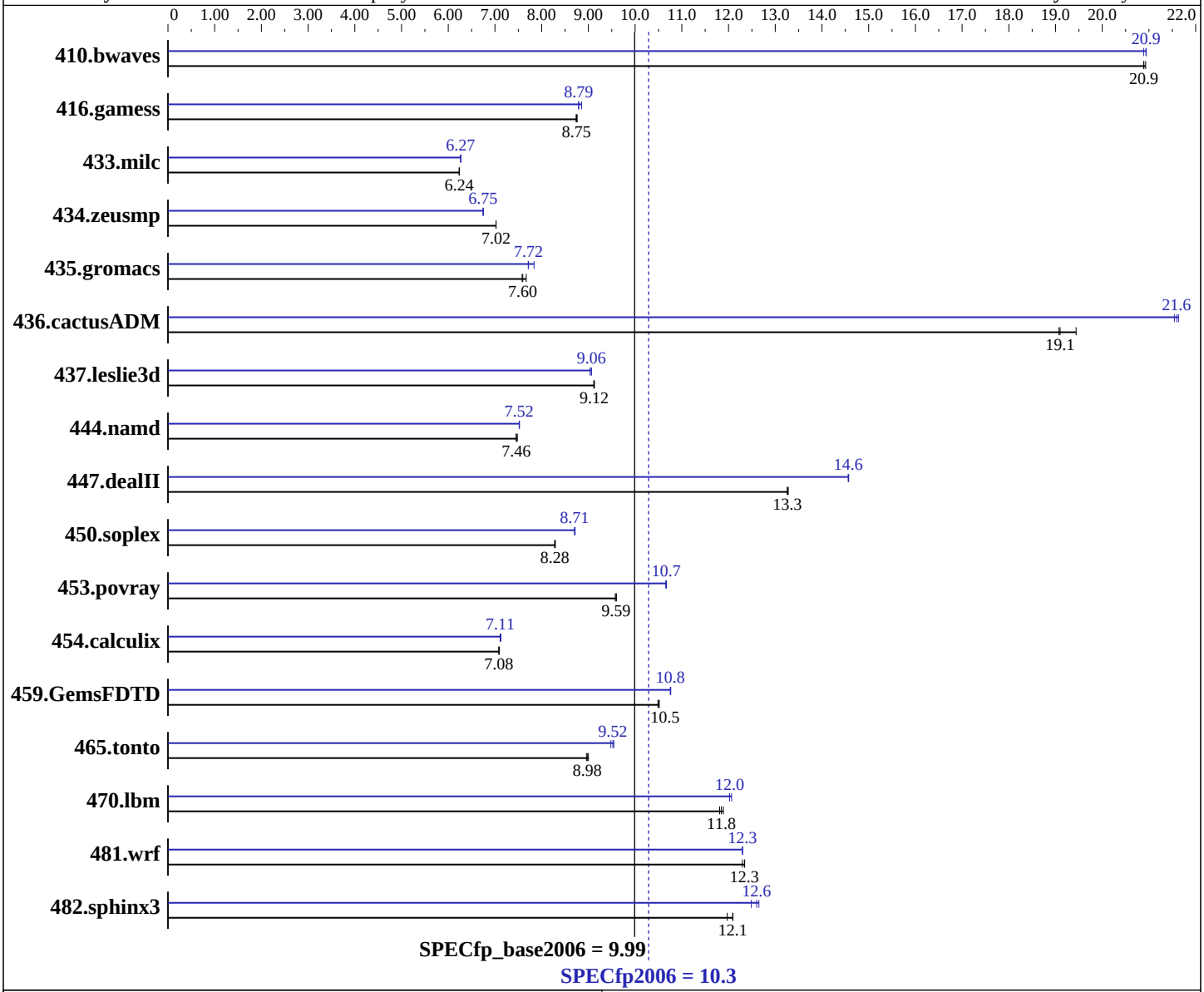
ProLiant DL580 G4
(2.6 GHz, Intel Xeon processor 7110M)

SPECfp®2006 = 10.3

SPECfp_base2006 = 9.99

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 7110M
CPU Characteristics:	2.6 GHz, 800 MHz system bus
CPU MHz:	2600
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	**650**	**20.9**	651	20.9	649	20.9	649	20.9	651	20.9	**649**	**20.9**
416.gamess	**2239**	**8.75**	2235	8.76	2241	8.74	2211	8.85	**2227**	**8.79**	2228	8.79
433.milc	**1472**	**6.24**	1473	6.23	1471	6.24	**1465**	**6.27**	1466	6.26	1464	6.27
434.zeusmp	**1296**	**7.02**	1295	7.02	1296	7.02	1348	6.75	1349	6.75	**1349**	**6.75**
435.gromacs	942	7.58	**940**	**7.60**	931	7.67	911	7.84	**925**	**7.72**	926	7.71
436.cactusADM	627	19.1	615	19.4	**626**	**19.1**	**553**	**21.6**	552	21.6	555	21.5
437.leslie3d	1031	9.11	1030	9.13	**1030**	**9.12**	1037	9.07	**1037**	**9.06**	1040	9.04
444.namd	**1075**	**7.46**	1076	7.46	1072	7.48	1067	7.52	**1066**	**7.52**	1066	7.53
447.dealII	863	13.3	862	13.3	**863**	**13.3**	785	14.6	**785**	**14.6**	786	14.6
450.soplex	**1007**	**8.28**	1006	8.29	1007	8.28	**958**	**8.71**	957	8.72	958	8.70
453.povray	556	9.58	554	9.60	**555**	**9.59**	499	10.7	499	10.7	**499**	**10.7**
454.calculix	1163	7.09	**1164**	**7.08**	1165	7.08	1157	7.13	**1160**	**7.11**	1160	7.11
459.GemsFDTD	1009	10.5	1012	10.5	**1010**	**10.5**	**986**	**10.8**	987	10.8	986	10.8
465.tonto	1093	9.00	**1096**	**8.98**	1098	8.96	1031	9.54	**1033**	**9.52**	1038	9.48
470.lbm	1163	11.8	**1160**	**11.8**	1156	11.9	1143	12.0	**1143**	**12.0**	1139	12.1
481.wrf	**905**	**12.3**	905	12.3	909	12.3	**908**	**12.3**	908	12.3	909	12.3
482.sphinx3	1612	12.1	**1612**	**12.1**	1628	12.0	1541	12.7	1561	12.5	**1547**	**12.6**

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 13:53:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 October 2007.