SPEC® CFP2006 Result

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Hewlett-Packard Company

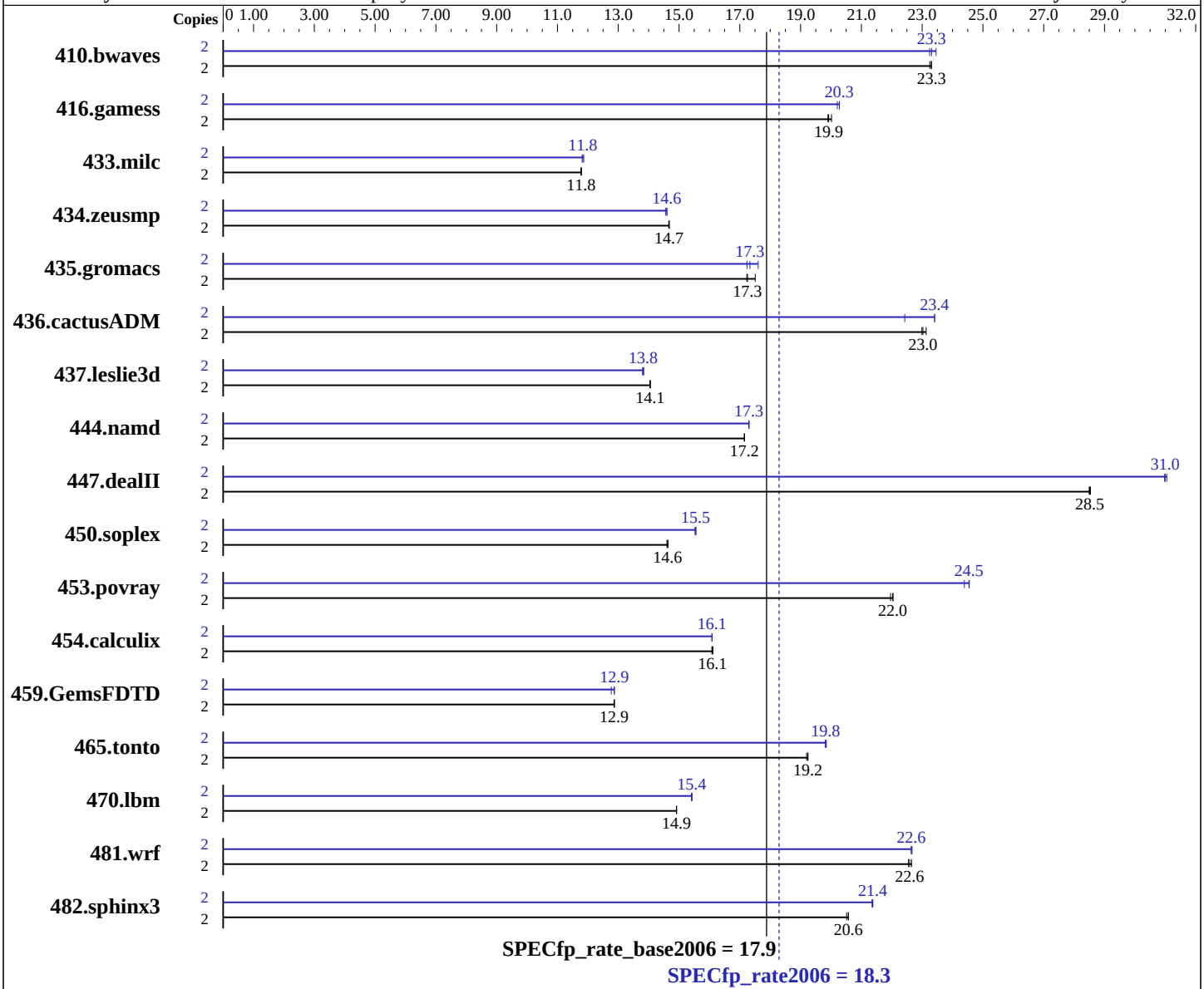
ProLiant DL580 G4
(3.0 GHz, Intel Xeon processor 7120M)

SPECfp®_rate2006 = 18.3

SPECfp_rate_base2006 = 17.9

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:	No

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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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	1166	23.3	**1166**	**23.3**	1169	23.3	2	1159	23.5	**1166**	**23.3**	1169	23.2
416.gamess	2	1956	20.0	1968	19.9	**1965**	**19.9**	2	1938	20.2	**1931**	**20.3**	1931	20.3
433.milc	2	1559	11.8	**1558**	**11.8**	1558	11.8	2	**1551**	**11.8**	1554	11.8	1548	11.9
434.zeusmp	2	1241	14.7	**1240**	**14.7**	1240	14.7	2	1250	14.6	1246	14.6	**1247**	**14.6**
435.gromacs	2	829	17.2	816	17.5	**828**	**17.3**	2	828	17.2	811	17.6	**824**	**17.3**
436.cactusADM	2	1040	23.0	1033	23.1	**1038**	**23.0**	2	1021	23.4	**1021**	**23.4**	1066	22.4
437.leslie3d	2	**1338**	**14.1**	1339	14.0	1338	14.1	2	**1360**	**13.8**	1363	13.8	1359	13.8
444.namd	2	935	17.2	935	17.1	**935**	**17.2**	2	**927**	**17.3**	927	17.3	927	17.3
447.dealII	2	**802**	**28.5**	802	28.5	803	28.5	2	737	31.1	**738**	**31.0**	739	31.0
450.soplex	2	1140	14.6	1142	14.6	**1140**	**14.6**	2	1072	15.6	1074	15.5	**1073**	**15.5**
453.povray	2	483	22.0	**483**	**22.0**	484	22.0	2	**434**	**24.5**	436	24.4	433	24.6
454.calculix	2	**1025**	**16.1**	1024	16.1	1026	16.1	2	1026	16.1	1025	16.1	**1026**	**16.1**
459.GemsFDTD	2	1650	12.9	1648	12.9	**1649**	**12.9**	2	1662	12.8	1648	12.9	**1649**	**12.9**
465.tonto	2	**1023**	**19.2**	1025	19.2	1023	19.2	2	992	19.8	**993**	**19.8**	994	19.8
470.lbm	2	1842	14.9	**1842**	**14.9**	1842	14.9	2	1783	15.4	**1782**	**15.4**	1781	15.4
481.wrf	2	986	22.7	**989**	**22.6**	991	22.5	2	986	22.7	**986**	**22.6**	987	22.6
482.sphinx3	2	**1895**	**20.6**	1900	20.5	1894	20.6	2	1826	21.3	**1824**	**21.4**	1823	21.4

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
```

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

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

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`

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: `Same as 434.zeusmp`

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

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`

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

481.wrf: `Same as 454.calculix`

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

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

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