SPEC® CFP2006 Result

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Hewlett-Packard Company

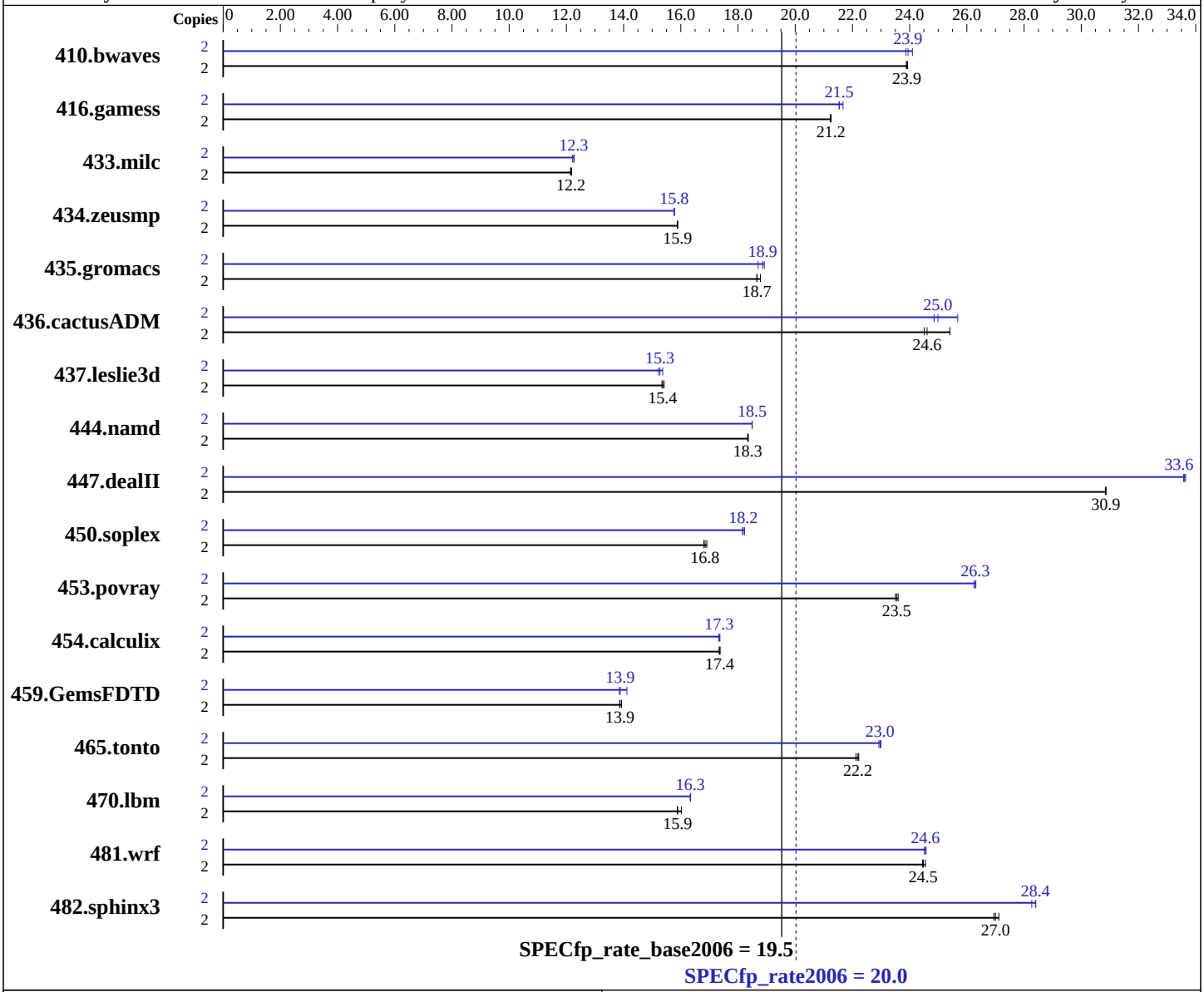
ProLiant DL580 G4
(3.2 GHz, Intel Xeon processor 7130M)

SPECfp®_rate2006 = 20.0

SPECfp_rate_base2006 = 19.5

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 7130M
CPU Characteristics:	3.2 GHz, 800 MHz system bus
CPU MHz:	3200
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:	8 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	1138	23.9	**1137**	**23.9**	1136	23.9	2	**1135**	**23.9**	1139	23.9	1128	24.1
416.gamess	2	1845	21.2	1842	21.3	**1843**	**21.2**	2	1807	21.7	1818	21.5	**1818**	**21.5**
433.milc	2	1512	12.1	**1510**	**12.2**	1507	12.2	2	1503	12.2	1496	12.3	**1498**	**12.3**
434.zeusmp	2	**1146**	**15.9**	1145	15.9	1146	15.9	2	1153	15.8	1154	15.8	**1154**	**15.8**
435.gromacs	2	**765**	**18.7**	760	18.8	765	18.7	2	763	18.7	755	18.9	**757**	**18.9**
436.cactusADM	2	975	24.5	**971**	**24.6**	941	25.4	2	**956**	**25.0**	962	24.9	931	25.7
437.leslie3d	2	1220	15.4	**1223**	**15.4**	1225	15.3	2	**1231**	**15.3**	1235	15.2	1223	15.4
444.namd	2	874	18.4	**875**	**18.3**	875	18.3	2	**867**	**18.5**	867	18.5	867	18.5
447.dealII	2	**741**	**30.9**	741	30.9	742	30.8	2	680	33.6	**681**	**33.6**	681	33.6
450.soplex	2	**990**	**16.8**	993	16.8	986	16.9	2	919	18.2	**917**	**18.2**	915	18.2
453.povray	2	451	23.6	453	23.5	**452**	**23.5**	2	**405**	**26.3**	404	26.3	405	26.3
454.calculix	2	950	17.4	**950**	**17.4**	952	17.3	2	**951**	**17.3**	950	17.4	952	17.3
459.GemsFDTD	2	1531	13.9	1524	13.9	**1529**	**13.9**	2	1503	14.1	1532	13.9	**1529**	**13.9**
465.tonto	2	886	22.2	**887**	**22.2**	889	22.1	2	856	23.0	**857**	**23.0**	859	22.9
470.lbm	2	1715	16.0	1731	15.9	**1729**	**15.9**	2	**1682**	**16.3**	1681	16.3	1683	16.3
481.wrf	2	**913**	**24.5**	910	24.6	914	24.5	2	909	24.6	911	24.5	**910**	**24.6**
482.sphinx3	2	1447	26.9	1437	27.1	**1444**	**27.0**	2	1379	28.3	1372	28.4	**1373**	**28.4**

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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