SPEC® CFP2006 Result

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Hewlett-Packard Company

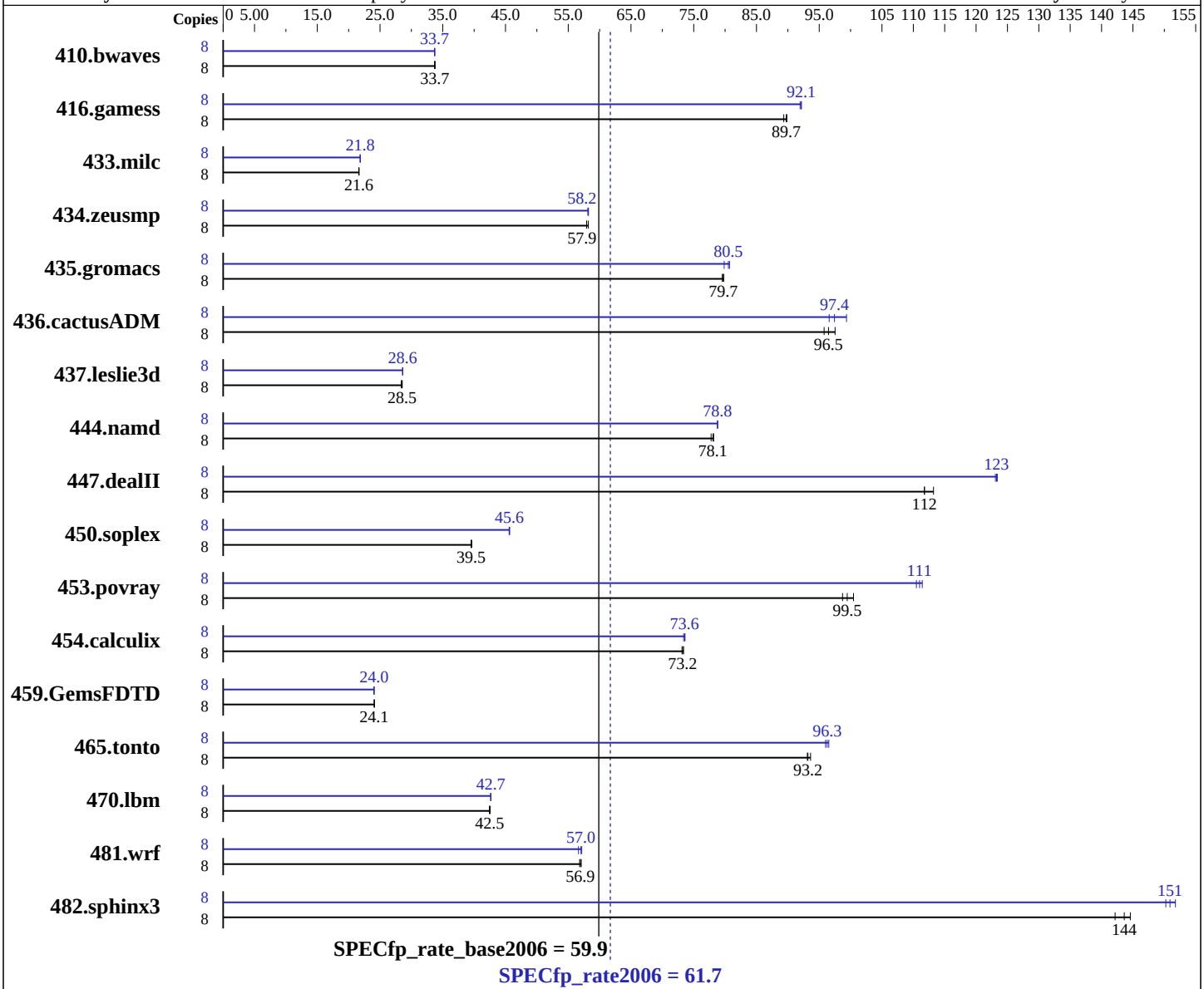
ProLiant DL580 G4
(3.4 GHz, Intel Xeon processor 7140M)

SPECfp®_rate2006 = 61.7

SPECfp_rate_base2006 = 59.9

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 7140M
CPU Characteristics:	3.4 GHz, 800 MHz system bus
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 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 IA32/Intel 64, Version 10.0 Build 20070426 Package ID: l_fc_p_10.0.023
Auto Parallel:	No

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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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3226	33.7	3220	33.8	**3222**	**33.7**	8	**3224**	**33.7**	3226	33.7	3224	33.7
416.gamess	8	1753	89.4	**1745**	**89.7**	1744	89.8	8	**1700**	**92.1**	1700	92.2	1703	92.0
433.milc	8	3392	21.7	**3394**	**21.6**	3396	21.6	8	**3362**	**21.8**	3361	21.9	3363	21.8
434.zeusmp	8	**1256**	**57.9**	1251	58.2	1257	57.9	8	1250	58.2	**1251**	**58.2**	1252	58.1
435.gromacs	8	716	79.8	**717**	**79.7**	718	79.5	8	708	80.7	**709**	**80.5**	715	79.9
436.cactusADM	8	998	95.8	980	97.5	**991**	**96.5**	8	**981**	**97.4**	990	96.6	962	99.4
437.leslie3d	8	2650	28.4	2636	28.5	**2636**	**28.5**	8	2628	28.6	2629	28.6	**2629**	**28.6**
444.namd	8	**822**	**78.1**	825	77.8	821	78.2	8	814	78.8	**814**	**78.8**	814	78.8
447.dealII	8	**819**	**112**	808	113	819	112	8	**742**	**123**	744	123	742	123
450.soplex	8	**1689**	**39.5**	1683	39.6	1689	39.5	8	1464	45.6	1461	45.7	**1462**	**45.6**
453.povray	8	431	98.7	424	100	**428**	**99.5**	8	382	111	**383**	**111**	385	110
454.calculix	8	**901**	**73.2**	902	73.1	899	73.4	8	**897**	**73.6**	899	73.4	897	73.6
459.GemsFDTD	8	3525	24.1	**3524**	**24.1**	3521	24.1	8	3531	24.0	3528	24.1	**3529**	**24.0**
465.tonto	8	841	93.6	**845**	**93.2**	845	93.1	8	816	96.5	**818**	**96.3**	820	96.0
470.lbm	8	2584	42.5	**2588**	**42.5**	2589	42.5	8	2576	42.7	**2577**	**42.7**	2578	42.6
481.wrf	8	**1569**	**56.9**	1573	56.8	1566	57.1	8	1578	56.6	1564	57.2	**1567**	**57.0**
482.sphinx3	8	1097	142	1078	145	**1086**	**144**	8	1027	152	1038	150	**1033**	**151**

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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