SPEC® CFP2006 Result

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Hewlett-Packard Company

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

$SPECfp^{®}\_rate2006 =$ 22.5

$SPECfp\_rate\_base2006 =$ 22.0

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

	410.bwaves	24.6 / 24.6
	416.gamess	23.0 / 22.5
	433.milc	12.4 / 12.3
	434.zeusmp	16.8 / 16.9
	435.gromacs	20.0 / 20.0
	436.cactusADM	30.5 / 29.4
	437.leslie3d	16.6 / 16.9
	444.namd	19.7 / 19.5
	447.dealII	35.6 / 32.6
	450.soplex	21.2 / 19.4
	453.povray	27.9 / 25.0
	454.calculix	18.6 / 18.6
	459.GemsFDTD	14.8 / 14.7
	465.tonto	25.5 / 24.5
	470.lbm	27.3 / 27.2
	481.wrf	26.8 / 26.8
	482.sphinx3	39.6 / 39.1

SPECfp_rate_base2006 = 22.0

SPECfp_rate2006 = 22.5

Hardware

CPU Name: Intel Xeon 7140M
CPU Characteristics: 3.4 GHz, 800 MHz system bus
CPU MHz: 3400
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

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 Intel 64, Version 10.0
Build 20070426 Package ID: l_fc_p_10.0.023
Auto Parallel: No

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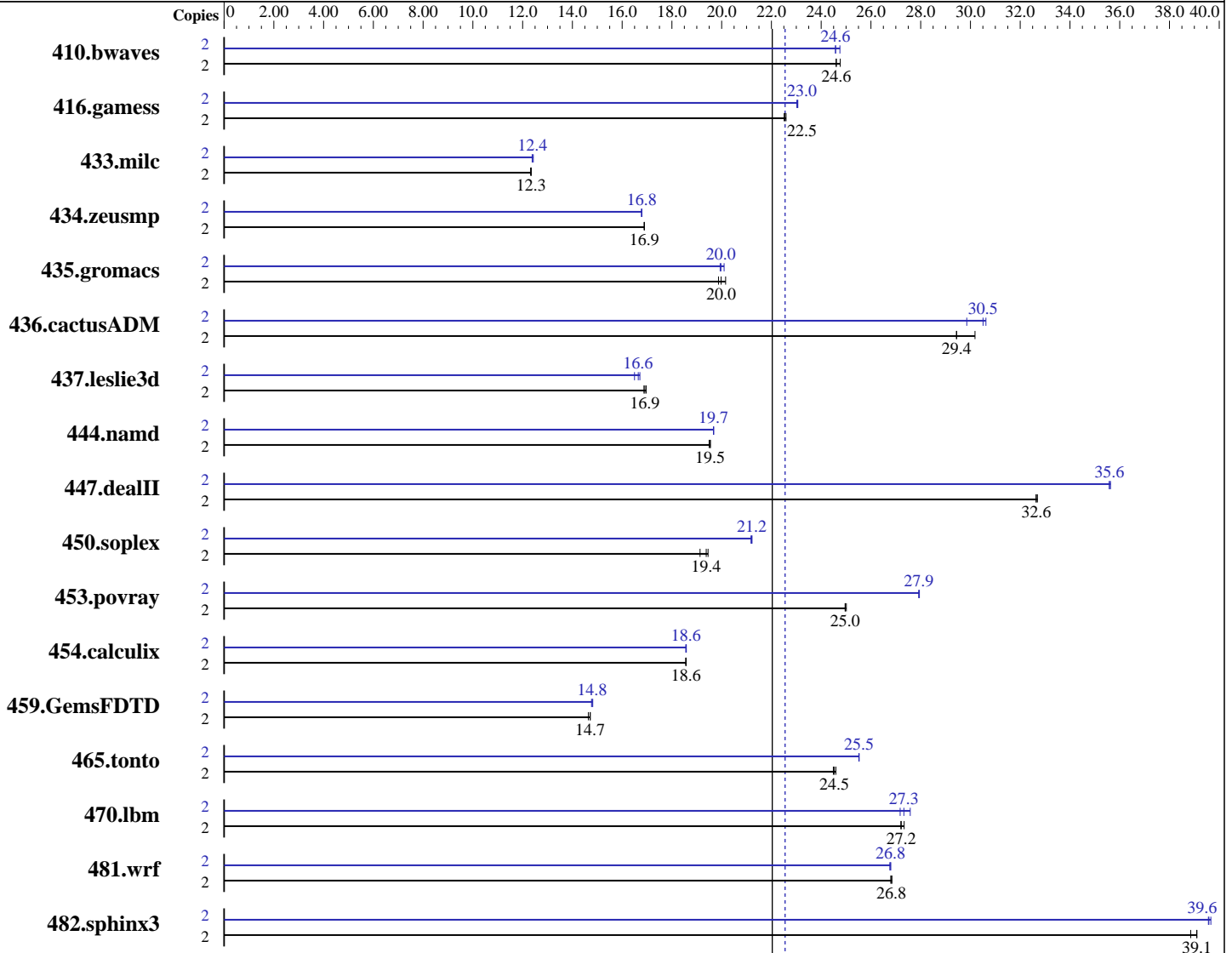|	
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L3 Cache:	16 MB I+D on chip per chip	File System:	ext2
Other Cache:	None	System State:	Multi-user run level 3
Memory:	32 GB (16x2 GB PC2-3200R)	Base Pointers:	64-bit
Disk Subsystem:	1x72 GB 15 K SAS	Peak Pointers:	32/64-bit
Other Hardware:	None	Other Software:	None

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	1098	24.8	**1104**	**24.6**	1105	24.6	2	1098	24.8	**1106**	**24.6**	1106	24.6
416.gamess	2	1734	22.6	1740	22.5	**1737**	**22.5**	2	1698	23.1	1701	23.0	**1699**	**23.0**
433.milc	2	**1487**	**12.3**	1490	12.3	1487	12.3	2	1483	12.4	**1481**	**12.4**	1477	12.4
434.zeusmp	2	1078	16.9	**1077**	**16.9**	1077	16.9	2	1085	16.8	1084	16.8	**1084**	**16.8**
435.gromacs	2	719	19.9	**715**	**20.0**	708	20.2	2	716	19.9	**715**	**20.0**	711	20.1
436.cactusADM	2	**812**	**29.4**	812	29.4	792	30.2	2	780	30.6	801	29.9	**783**	**30.5**
437.leslie3d	2	1108	17.0	1114	16.9	**1112**	**16.9**	2	1140	16.5	**1129**	**16.6**	1125	16.7
444.namd	2	821	19.5	**821**	**19.5**	823	19.5	2	815	19.7	815	19.7	**815**	**19.7**
447.dealII	2	701	32.6	700	32.7	**701**	**32.6**	2	**643**	**35.6**	642	35.6	643	35.6
450.soplex	2	872	19.1	**861**	**19.4**	857	19.5	2	786	21.2	788	21.2	**786**	**21.2**
453.povray	2	**426**	**25.0**	426	25.0	425	25.0	2	**381**	**27.9**	381	27.9	381	27.9
454.calculix	2	**889**	**18.6**	888	18.6	889	18.6	2	888	18.6	889	18.6	**889**	**18.6**
459.GemsFDTD	2	1449	14.6	1442	14.7	**1442**	**14.7**	2	**1434**	**14.8**	1432	14.8	1437	14.8
465.tonto	2	804	24.5	800	24.6	**802**	**24.5**	2	**771**	**25.5**	771	25.5	771	25.5
470.lbm	2	1010	27.2	1005	27.3	**1010**	**27.2**	2	996	27.6	1011	27.2	**1006**	**27.3**
481.wrf	2	832	26.8	**833**	**26.8**	834	26.8	2	**834**	**26.8**	834	26.8	835	26.8
482.sphinx3	2	**997**	**39.1**	1003	38.9	997	39.1	2	**985**	**39.6**	983	39.7	985	39.6

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

Platform Notes

    BIOS configuration:
     Power Regulator Disabled
     Adjacent Sector Prefetch Enabled
     Hardware Prefetcher Enabled
     Hyper-Threading Technology Disabled

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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

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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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