



SPEC[®] CFP2006 Result

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Hewlett-Packard Company

SPECfp[®]_rate2006 = 61.7

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

SPECfp_rate_base2006 = 59.9

CPU2006 license: 3

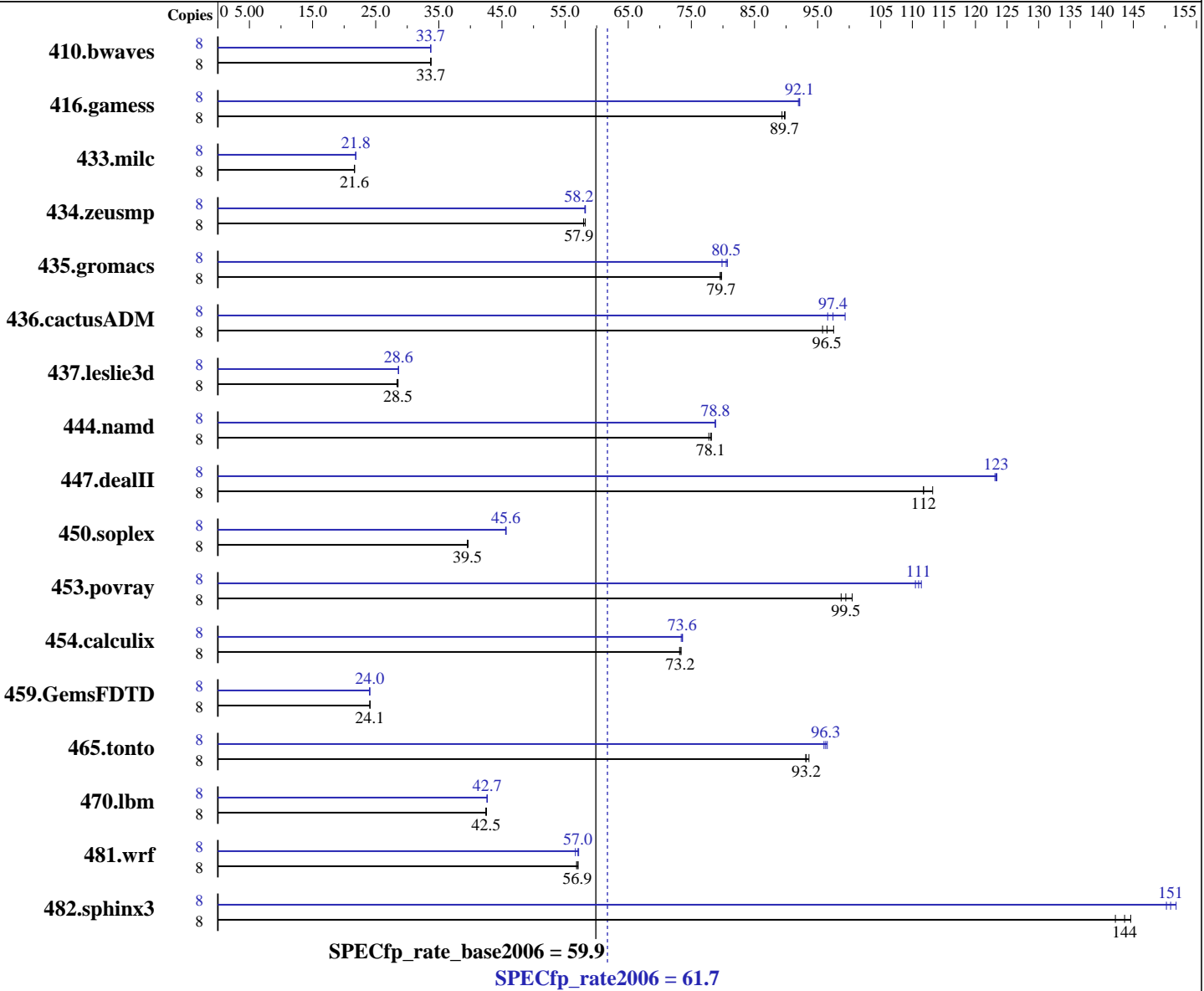
Test sponsor: Hewlett-Packard Company

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

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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 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
Other Cache: None
Memory: 32 GB (16x2 GB PC2-3200R)
Disk Subsystem: 1x72 GB 15 K SAS
Other Hardware: None

File System: ext2
System State: Multi-user run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
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	<u>3222</u>	<u>33.7</u>	8	<u>3224</u>	<u>33.7</u>	3226	33.7	3224	33.7
416.gamess	8	1753	89.4	<u>1745</u>	<u>89.7</u>	1744	89.8	8	<u>1700</u>	<u>92.1</u>	1700	92.2	1703	92.0
433.milc	8	3392	21.7	<u>3394</u>	<u>21.6</u>	3396	21.6	8	<u>3362</u>	<u>21.8</u>	3361	21.9	3363	21.8
434.zeusmp	8	<u>1256</u>	<u>57.9</u>	1251	58.2	1257	57.9	8	1250	58.2	<u>1251</u>	<u>58.2</u>	1252	58.1
435.gromacs	8	716	79.8	<u>717</u>	<u>79.7</u>	718	79.5	8	708	80.7	<u>709</u>	<u>80.5</u>	715	79.9
436.cactusADM	8	998	95.8	980	97.5	<u>991</u>	<u>96.5</u>	8	<u>981</u>	<u>97.4</u>	990	96.6	962	99.4
437.leslie3d	8	2650	28.4	2636	28.5	<u>2636</u>	<u>28.5</u>	8	2628	28.6	2629	28.6	<u>2629</u>	<u>28.6</u>
444.namd	8	<u>822</u>	<u>78.1</u>	825	77.8	821	78.2	8	814	78.8	<u>814</u>	<u>78.8</u>	814	78.8
447.dealII	8	<u>819</u>	<u>112</u>	808	113	819	112	8	<u>742</u>	<u>123</u>	744	123	742	123
450.soplex	8	<u>1689</u>	<u>39.5</u>	1683	39.6	1689	39.5	8	1464	45.6	1461	45.7	<u>1462</u>	<u>45.6</u>
453.povray	8	431	98.7	424	100	<u>428</u>	<u>99.5</u>	8	382	111	<u>383</u>	<u>111</u>	385	110
454.calculix	8	<u>901</u>	<u>73.2</u>	902	73.1	899	73.4	8	<u>897</u>	<u>73.6</u>	899	73.4	897	73.6
459.GemsFDTD	8	3525	24.1	<u>3524</u>	<u>24.1</u>	3521	24.1	8	3531	24.0	3528	24.1	<u>3529</u>	<u>24.0</u>
465.tonto	8	841	93.6	<u>845</u>	<u>93.2</u>	845	93.1	8	816	96.5	<u>818</u>	<u>96.3</u>	820	96.0
470.lbm	8	2584	42.5	<u>2588</u>	<u>42.5</u>	2589	42.5	8	2576	42.7	<u>2577</u>	<u>42.7</u>	2578	42.6
481.wrf	8	<u>1569</u>	<u>56.9</u>	1573	56.8	1566	57.1	8	1578	56.6	1564	57.2	<u>1567</u>	<u>57.0</u>
482.sphinx3	8	1097	142	1078	145	<u>1086</u>	<u>144</u>	8	1027	152	1038	150	<u>1033</u>	<u>151</u>

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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