# SPEC® CFP2006 Result



## Hewlett-Packard Company

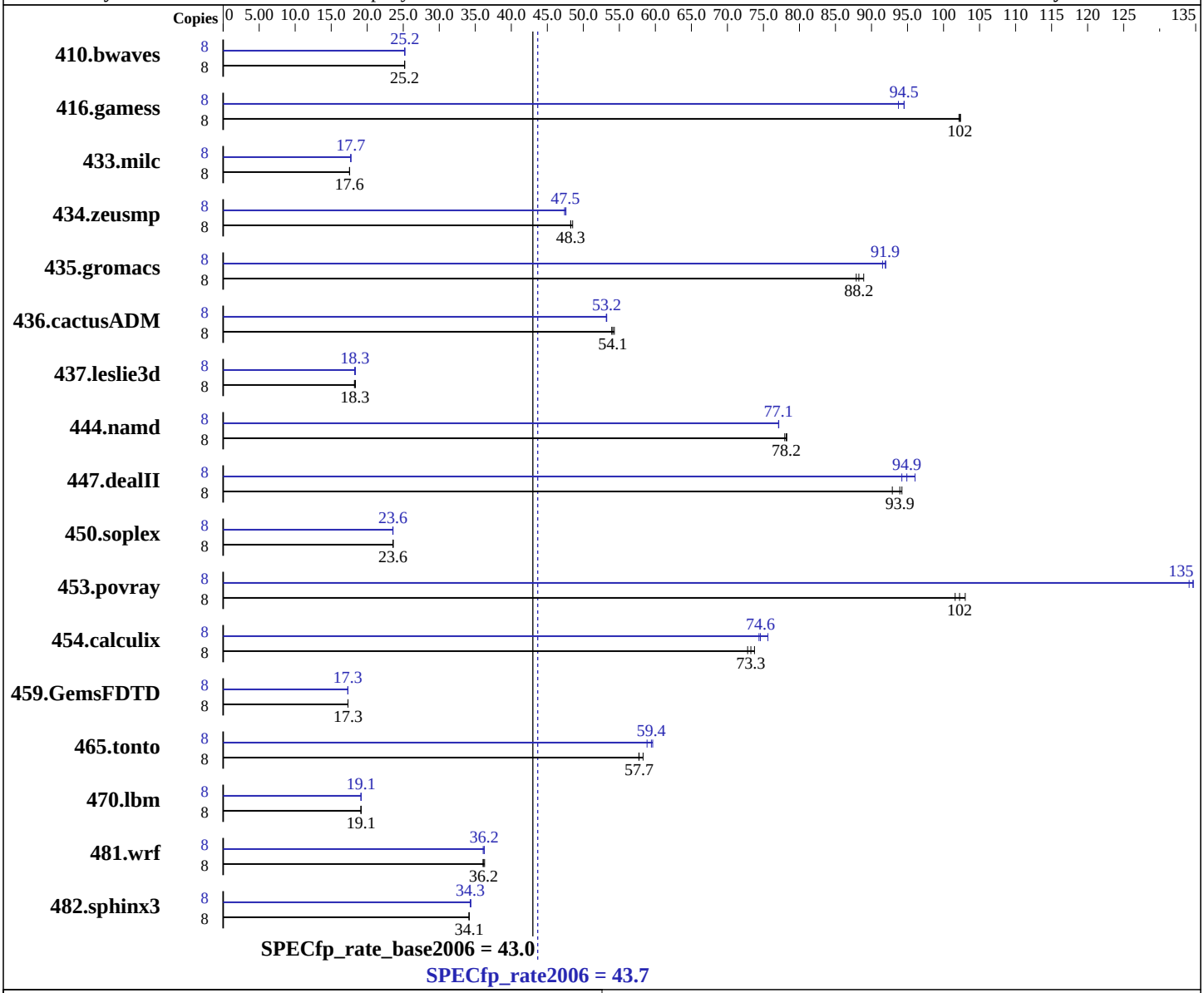
ProLiant ML370 G5
(1.86 GHz, Intel Xeon processor E5320)

SPECfp®_rate2006 = 43.7

SPECfp_rate_base2006 = 43.0

**CPU2006 license:** 3
**Test sponsor:** Hewlett-Packard Company
**Tested by:** Hewlett-Packard Company

**Test date:** Feb-2007
**Hardware Availability:** Nov-2006
**Software Availability:** Nov-2006




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5320 |
| CPU Characteristics: | 1.86 GHz, 2x4 MB L2 shared, 1066 MHz system bus |
| CPU MHz: | 1860 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 8 MB I+D on chip per chip, 4 MB shared / 2 cores |

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### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 10 (x86_64) kernel 2.6.16.21-0.8-smp |
| Compiler: | Intel C++ Compiler for Intel EM64T-based applications, Version 9.1 Build 20061101, Package ID: l_cc_c_9.1.045 Intel Fortran Compiler for Intel EM64T-based applications, Version 9.1 Build 20061101, Package ID: l_fc_c_9.1.040 |
| Auto Parallel: | No |

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| | | | |
|---|---|---|---|
| L3 Cache: | None | File System: | ext2 |
| Other Cache: | None | System State: | Multi-user run level 3 |
| Memory: | 16 GB (8x2 GB PC2-5300F CL5) | Base Pointers: | 64-bit |
| Disk Subsystem: | 2x72 GB 10 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 | 4315 | 25.2 | 4316 | 25.2 | **4316** | **25.2** | 8 | 4310 | 25.2 | 4316 | 25.2 | **4312** | **25.2** |
| 416.gamess | 8 | **1532** | **102** | 1530 | 102 | 1534 | 102 | 8 | **1657** | **94.5** | 1671 | 93.7 | 1657 | 94.5 |
| 433.milc | 8 | 4182 | 17.6 | 4188 | 17.5 | **4184** | **17.6** | 8 | **4144** | **17.7** | 4144 | 17.7 | 4144 | 17.7 |
| 434.zeusmp | 8 | 1509 | 48.2 | 1501 | 48.5 | **1509** | **48.3** | 8 | 1536 | 47.4 | 1530 | 47.6 | **1532** | **47.5** |
| 435.gromacs | 8 | 650 | 87.9 | **647** | **88.2** | 642 | 88.9 | 8 | **621** | **91.9** | 621 | 92.0 | 624 | 91.5 |
| 436.cactusADM | 8 | 1772 | 53.9 | **1767** | **54.1** | 1760 | 54.3 | 8 | **1796** | **53.2** | 1796 | 53.2 | 1798 | 53.2 |
| 437.leslie3d | 8 | 4095 | 18.4 | 4126 | 18.2 | **4110** | **18.3** | 8 | 4118 | 18.3 | **4107** | **18.3** | 4097 | 18.4 |
| 444.namd | 8 | 820 | 78.2 | 823 | 78.0 | **821** | **78.2** | 8 | 832 | 77.1 | **832** | **77.1** | 832 | 77.1 |
| 447.dealII | 8 | **974** | **93.9** | 985 | 92.9 | 971 | 94.2 | 8 | **964** | **94.9** | 953 | 96.0 | 971 | 94.2 |
| 450.soplex | 8 | 2827 | 23.6 | **2828** | **23.6** | 2831 | 23.6 | 8 | **2831** | **23.6** | 2834 | 23.5 | 2830 | 23.6 |
| 453.povray | 8 | **416** | **102** | 419 | 102 | 413 | 103 | 8 | 316 | 135 | **316** | **135** | 317 | 134 |
| 454.calculix | 8 | **901** | **73.3** | 907 | 72.8 | 895 | 73.8 | 8 | 887 | 74.4 | 873 | 75.6 | **885** | **74.6** |
| 459.GemsFDTD | 8 | 4900 | 17.3 | **4899** | **17.3** | 4898 | 17.3 | 8 | 4904 | 17.3 | **4902** | **17.3** | 4901 | 17.3 |
| 465.tonto | 8 | 1350 | 58.3 | **1363** | **57.7** | 1364 | 57.7 | 8 | 1320 | 59.6 | **1324** | **59.4** | 1338 | 58.8 |
| 470.lbm | 8 | 5744 | 19.1 | **5743** | **19.1** | 5743 | 19.1 | 8 | 5743 | 19.1 | 5741 | 19.1 | **5741** | **19.1** |
| 481.wrf | 8 | **2471** | **36.2** | 2462 | 36.3 | 2477 | 36.1 | 8 | 2465 | 36.3 | 2476 | 36.1 | **2467** | **36.2** |
| 482.sphinx3 | 8 | 4569 | 34.1 | 4564 | 34.2 | **4566** | **34.1** | 8 | 4545 | 34.3 | **4542** | **34.3** | 4534 | 34.4 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Platform Notes

```
Power Regulator set to Static High Performance Mode in BIOS.
Adjacent Sector Prefetch Disabled in BIOS.
"/usr/bin/taskset" used to bind processes to CPUs.
Environment stack size set to 'unlimited'
```

## Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Continued on next page

## Base Compiler Invocation (Continued)

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:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

## Peak Compiler Invocation

C benchmarks:
icc

Continued on next page

## Peak Compiler Invocation (Continued)

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:
-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32

C++ benchmarks:
-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32

Fortran benchmarks:
-prof_gen(pass 1) -prof_use(pass 2) -fast

Benchmarks using both Fortran and C:
-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/hp-ic91-flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/hp-ic91-flags.xml



For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
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