



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 30.5

ProLiant DL380 G5
(1.86 GHz, Intel Xeon processor 5120)

SPECfp_rate_base2006 = 27.5

CPU2006 license: 3

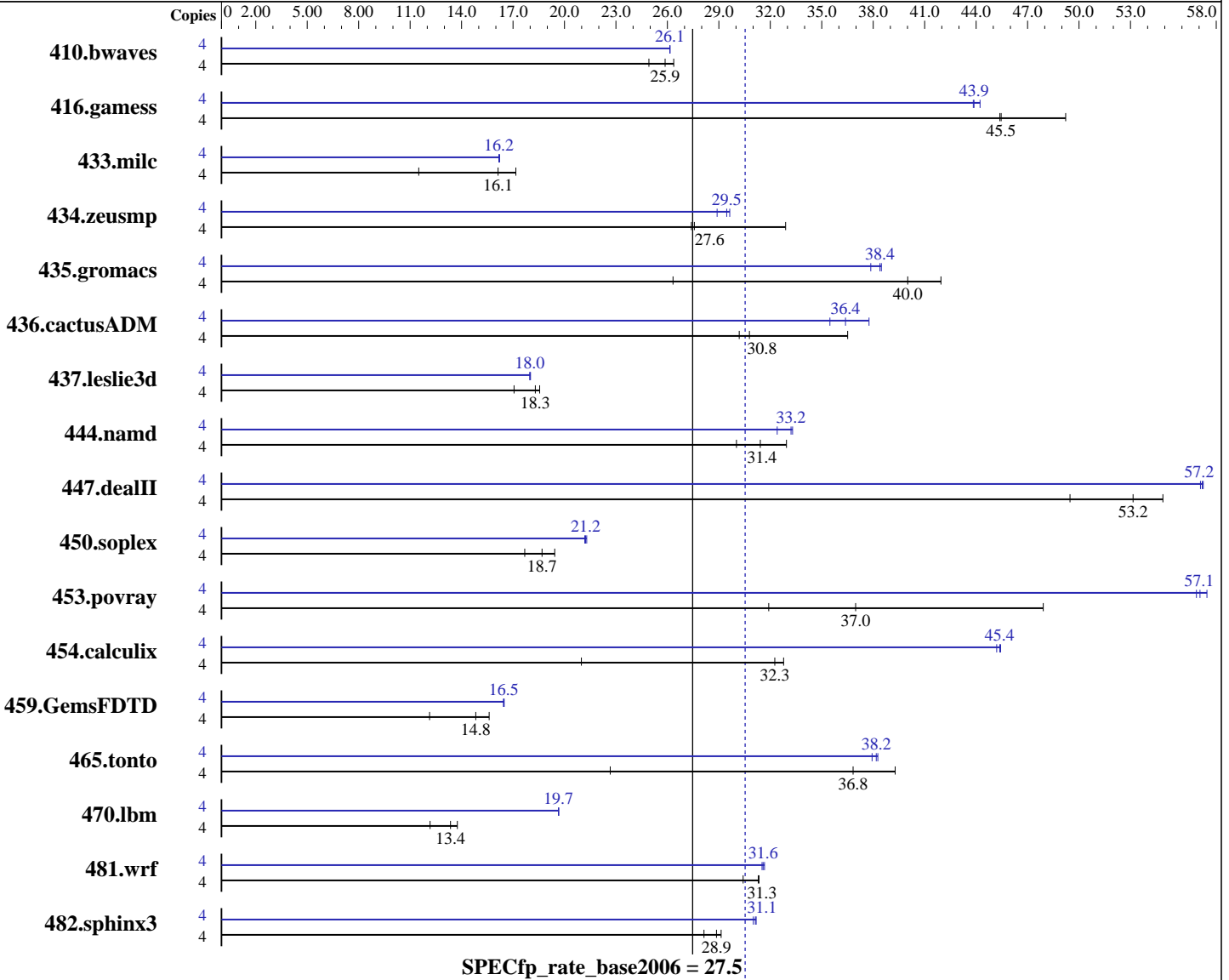
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Sep-2007

Hardware Availability: Jun-2006

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon 5120
 CPU Characteristics: 1.86 GHz, 4 MB L2 shared, 1066 MHz system bus
 CPU MHz: 1866
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1 or 2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per chip

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Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64) SP1
 kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler for Linux32
 and Linux64 version 10.1, Build 20070725
 Auto Parallel: No
 File System: ext2
 System State: Multi-user run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (8x1 GB PC2-5300F CL5)
Disk Subsystem: 1x72 GB 10 K SAS
Other Hardware: None

Other Software: binutils-2.17.50

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 2061 | 26.4 | 2181 | 24.9 | <u>2102</u> | <u>25.9</u> | 4 | 2078 | 26.2 | 2080 | 26.1 | <u>2079</u> | <u>26.1</u> |
| 416.gamess | 4 | <u>1723</u> | <u>45.5</u> | 1726 | 45.4 | 1591 | 49.2 | 4 | <u>1785</u> | <u>43.9</u> | 1771 | 44.2 | 1787 | 43.8 |
| 433.milc | 4 | 3192 | 11.5 | <u>2277</u> | <u>16.1</u> | 2139 | 17.2 | 4 | <u>2269</u> | <u>16.2</u> | 2270 | 16.2 | 2264 | 16.2 |
| 434.zeusmp | 4 | <u>1320</u> | <u>27.6</u> | 1329 | 27.4 | 1107 | 32.9 | 4 | 1260 | 28.9 | <u>1236</u> | <u>29.5</u> | 1228 | 29.6 |
| 435.gromacs | 4 | <u>714</u> | <u>40.0</u> | 1085 | 26.3 | 681 | 41.9 | 4 | 742 | 38.5 | 754 | 37.9 | <u>744</u> | <u>38.4</u> |
| 436.cactusADM | 4 | <u>1553</u> | <u>30.8</u> | 1583 | 30.2 | 1309 | 36.5 | 4 | 1266 | 37.8 | 1347 | 35.5 | <u>1314</u> | <u>36.4</u> |
| 437.leslie3d | 4 | <u>2055</u> | <u>18.3</u> | 2204 | 17.1 | 2027 | 18.6 | 4 | 2091 | 18.0 | <u>2091</u> | <u>18.0</u> | 2087 | 18.0 |
| 444.namd | 4 | <u>1021</u> | <u>31.4</u> | 1068 | 30.0 | 974 | 32.9 | 4 | 963 | 33.3 | <u>966</u> | <u>33.2</u> | 990 | 32.4 |
| 447.dealII | 4 | 834 | 54.9 | 925 | 49.5 | <u>861</u> | <u>53.2</u> | 4 | 802 | 57.1 | <u>800</u> | <u>57.2</u> | 799 | 57.2 |
| 450.soplex | 4 | <u>1785</u> | <u>18.7</u> | 1887 | 17.7 | 1717 | 19.4 | 4 | 1575 | 21.2 | 1566 | 21.3 | <u>1571</u> | <u>21.2</u> |
| 453.povray | 4 | 667 | 31.9 | <u>576</u> | <u>37.0</u> | 444 | 47.9 | 4 | 374 | 56.8 | <u>373</u> | <u>57.1</u> | 370 | 57.5 |
| 454.calculix | 4 | 1007 | 32.8 | 1573 | 21.0 | <u>1023</u> | <u>32.3</u> | 4 | <u>727</u> | <u>45.4</u> | 726 | 45.4 | 730 | 45.2 |
| 459.GemsFDTD | 4 | <u>2862</u> | <u>14.8</u> | 3497 | 12.1 | 2719 | 15.6 | 4 | 2582 | 16.4 | <u>2577</u> | <u>16.5</u> | 2575 | 16.5 |
| 465.tonto | 4 | 1002 | 39.3 | 1736 | 22.7 | <u>1069</u> | <u>36.8</u> | 4 | <u>1031</u> | <u>38.2</u> | 1038 | 37.9 | 1029 | 38.3 |
| 470.lbm | 4 | <u>4115</u> | <u>13.4</u> | 4518 | 12.2 | 3996 | 13.8 | 4 | 2796 | 19.7 | <u>2796</u> | <u>19.7</u> | 2796 | 19.7 |
| 481.wrf | 4 | <u>1427</u> | <u>31.3</u> | 1469 | 30.4 | 1426 | 31.3 | 4 | 1418 | 31.5 | 1411 | 31.7 | <u>1415</u> | <u>31.6</u> |
| 482.sphinx3 | 4 | <u>2701</u> | <u>28.9</u> | 2771 | 28.1 | 2676 | 29.1 | 4 | 2514 | 31.0 | <u>2504</u> | <u>31.1</u> | 2501 | 31.2 |

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
'/usr/bin/taskset' used to bind processes to CPUs
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M

Platform Notes

BIOS configuration:
Power Regulator set to Static High Performance Mode



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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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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Peak Compiler Invocation

C benchmarks (except as noted below):

```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Benchmarks using both Fortran and C:

icc ifort

Peak 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
444.namd: -DSPEC_CPU_LP64
447.deallI: -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
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32
```

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Peak Optimization Flags (Continued)

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32



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The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-flags.20090714.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-flags.20090714.xml>

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