



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®2006 = 6.56

HP BladeSystem bc2000 Blade PC
(1.2GHz AMD Athlon 64 2100+)

SPECfp_base2006 = 6.22

CPU2006 license: 3

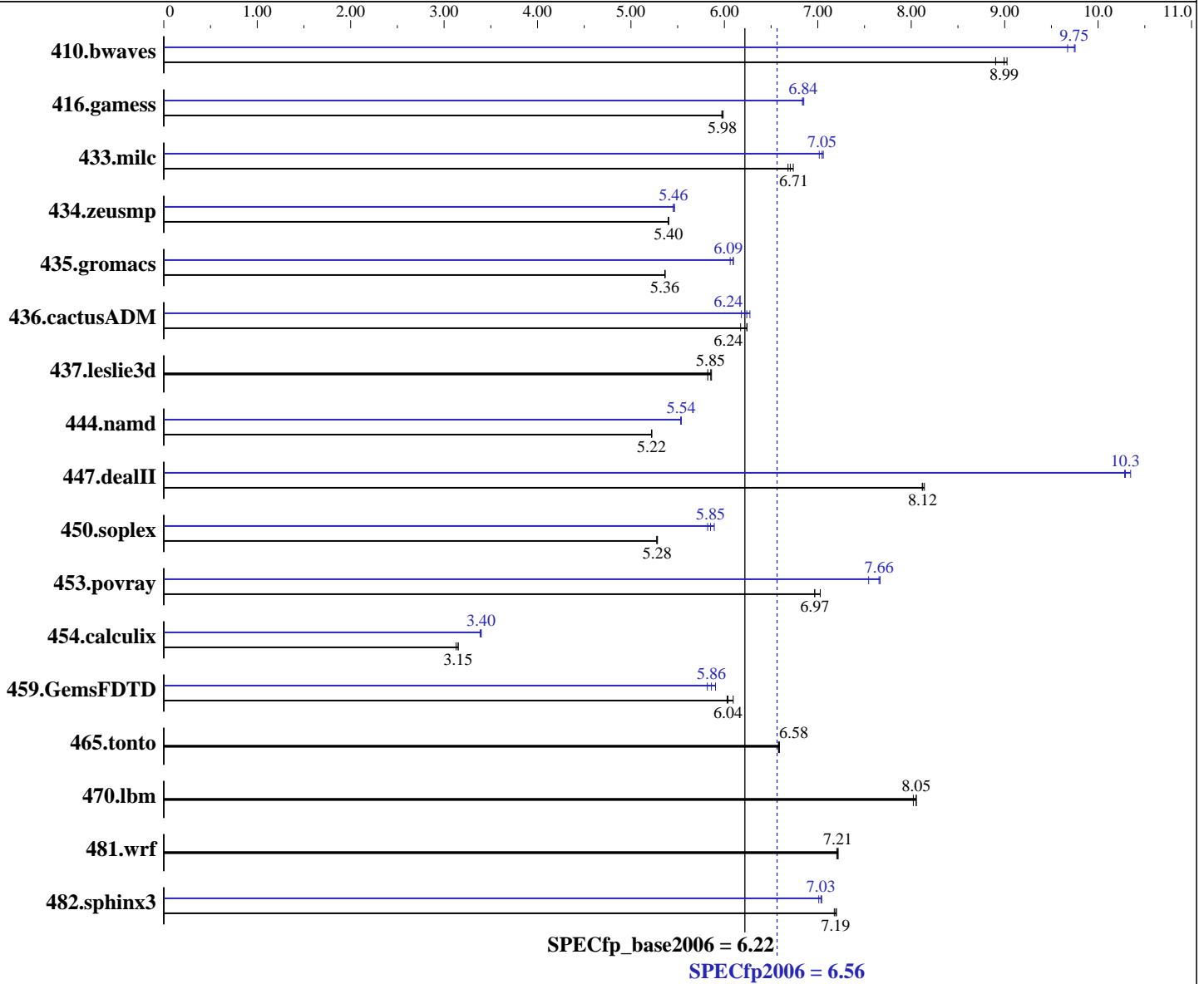
Test date: Dec-2007

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jun-2007

Tested by: AMD Performance Labs

Software Availability: Mar-2008



Hardware

CPU Name: AMD Athlon 64 2100+
 CPU Characteristics:
 CPU MHz: 1200
 FPU: Integrated
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 64 KB I + 64 KB D on chip per chip
 Secondary Cache: 512 KB 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-default
 Compiler: QLogic PathScale Compiler Suite, Release 3.0
 Auto Parallel: No
 File System: ext3
 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: 2 GB (1x2GB, DDR2-667 CL5 ECC Reg Dual Rank)
Disk Subsystem: 1x80 GB SATA, 5400 RPM
Other Hardware: None

Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 1526 | 8.90 | <u>1511</u> | <u>8.99</u> | 1506 | 9.03 | 1393 | 9.75 | <u>1394</u> | <u>9.75</u> | 1405 | 9.67 |
| 416.gamess | 3278 | 5.97 | <u>3275</u> | <u>5.98</u> | 3270 | 5.99 | 2858 | 6.85 | 2865 | 6.84 | <u>2862</u> | <u>6.84</u> |
| 433.milc | 1374 | 6.68 | <u>1369</u> | <u>6.71</u> | 1363 | 6.74 | <u>1303</u> | <u>7.05</u> | 1309 | 7.02 | 1301 | 7.06 |
| 434.zeusmp | <u>1685</u> | <u>5.40</u> | 1685 | 5.40 | 1684 | 5.40 | 1668 | 5.46 | 1665 | 5.47 | <u>1668</u> | <u>5.46</u> |
| 435.gromacs | 1331 | 5.36 | 1331 | 5.37 | <u>1331</u> | <u>5.36</u> | <u>1172</u> | <u>6.09</u> | 1178 | 6.06 | 1171 | 6.10 |
| 436.cactusADM | <u>1915</u> | <u>6.24</u> | 1936 | 6.17 | 1914 | 6.24 | 1933 | 6.18 | <u>1915</u> | <u>6.24</u> | 1905 | 6.27 |
| 437.leslie3d | 1615 | 5.82 | <u>1606</u> | <u>5.85</u> | 1603 | 5.86 | 1615 | 5.82 | <u>1606</u> | <u>5.85</u> | 1603 | 5.86 |
| 444.namd | 1536 | 5.22 | <u>1536</u> | <u>5.22</u> | 1536 | 5.22 | 1448 | 5.54 | 1450 | 5.53 | <u>1448</u> | <u>5.54</u> |
| 447.dealII | <u>1408</u> | <u>8.12</u> | 1409 | 8.12 | 1405 | 8.14 | 1105 | 10.3 | <u>1112</u> | <u>10.3</u> | 1112 | 10.3 |
| 450.soplex | 1578 | 5.28 | 1581 | 5.28 | <u>1580</u> | <u>5.28</u> | 1415 | 5.89 | <u>1425</u> | <u>5.85</u> | 1433 | 5.82 |
| 453.povray | <u>764</u> | <u>6.97</u> | 764 | 6.97 | 757 | 7.03 | <u>695</u> | <u>7.66</u> | 694 | 7.67 | 705 | 7.54 |
| 454.calculix | <u>2618</u> | <u>3.15</u> | 2618 | 3.15 | 2637 | 3.13 | 2428 | 3.40 | <u>2429</u> | <u>3.40</u> | 2437 | 3.39 |
| 459.GemsFDTD | 1741 | 6.09 | 1760 | 6.03 | <u>1757</u> | <u>6.04</u> | <u>1810</u> | <u>5.86</u> | 1797 | 5.90 | 1824 | 5.82 |
| 465.tonto | 1493 | 6.59 | <u>1495</u> | <u>6.58</u> | 1496 | 6.58 | 1493 | 6.59 | <u>1495</u> | <u>6.58</u> | 1496 | 6.58 |
| 470.lbm | 1713 | 8.02 | <u>1706</u> | <u>8.05</u> | 1706 | 8.05 | 1713 | 8.02 | <u>1706</u> | <u>8.05</u> | 1706 | 8.05 |
| 481.wrf | 1551 | 7.20 | <u>1548</u> | <u>7.21</u> | 1548 | 7.22 | 1551 | 7.20 | <u>1548</u> | <u>7.21</u> | 1548 | 7.22 |
| 482.sphinx3 | 2707 | 7.20 | 2716 | 7.18 | <u>2710</u> | <u>7.19</u> | 2768 | 7.04 | 2780 | 7.01 | <u>2771</u> | <u>7.03</u> |

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

Base Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95



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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
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
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
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

```

Base Optimization Flags

```

C benchmarks:
  -Ofast

C++ benchmarks:
  -Ofast

Fortran benchmarks:
  -Ofast -OPT:malloc_alg=1

Benchmarks using both Fortran and C:
  -Ofast -OPT:malloc_alg=1

```

Peak Compiler Invocation

```

C benchmarks:
  pathcc

C++ benchmarks:
  pathCC

Fortran benchmarks:
  pathf95

Benchmarks using both Fortran and C:
  pathcc pathf95

```



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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
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

```

Peak Optimization Flags

C benchmarks:

433.milc: -Ofast -CG:cflow=off -LNO:prefetch=1 -OPT:malloc_alg=1

470.lbm: basepeak = yes

482.sphinx3: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:Ofast -WOPT:aggstr=0 -m32

C++ benchmarks:

444.namd: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-fno-exceptions

447.dealII: -Ofast -INLINE:aggressive=on -OPT:malloc_alg=1 -m32
-fno-exceptions

450.soplex: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-OPT:IEEE_arith=3 -CG:load_exe=0 -CG:movnti=1
-LNO:minvariant=off -LNO:prefetch=1 -fno-exceptions

453.povray: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-fno-fast-math

Fortran benchmarks:

410.bwaves: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:Ofast -OPT:IEEE_arith=3 -LNO:blocking=off
-LNO:ignore_feedback=off

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Peak Optimization Flags (Continued)

416.gamess: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O2
-OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256

434.zeusmp: -Ofast -CG:local_fwd_sched=on -LNO:blocking=off
-LNO:interchange=off -LNO:fu=10 -LNO:full_unroll_outer=on

437.leslie3d: basepeak = yes

459.GemsFDTD: -Ofast -LNO:fission=2 -LNO:prefetch=0

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

435.gromacs: -O3 -OPT:rsqrt=2 -OPT:ro=3

436.cactusADM: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-LNO:prefetch=3 -LNO:prefetch_ahead=5 -LNO:ou_prod_max=10
-LNO:full_unroll=5 -ipa

454.calculix: -Ofast -LNO:simd=0 -WOPT:mem_opnds=on

481.wrf: basepeak = yes

Peak Other Flags

C++ benchmarks:

447.dealIII: -static

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.html

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.xml

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