



SPEC[®] CFP2006 Result

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Fujitsu Siemens Computers

SPECfp[®]2006 = 17.4

CELSIUS V840, Opteron 2222, 64-bit Linux

SPECfp_base2006 = 16.0

CPU2006 license: 22

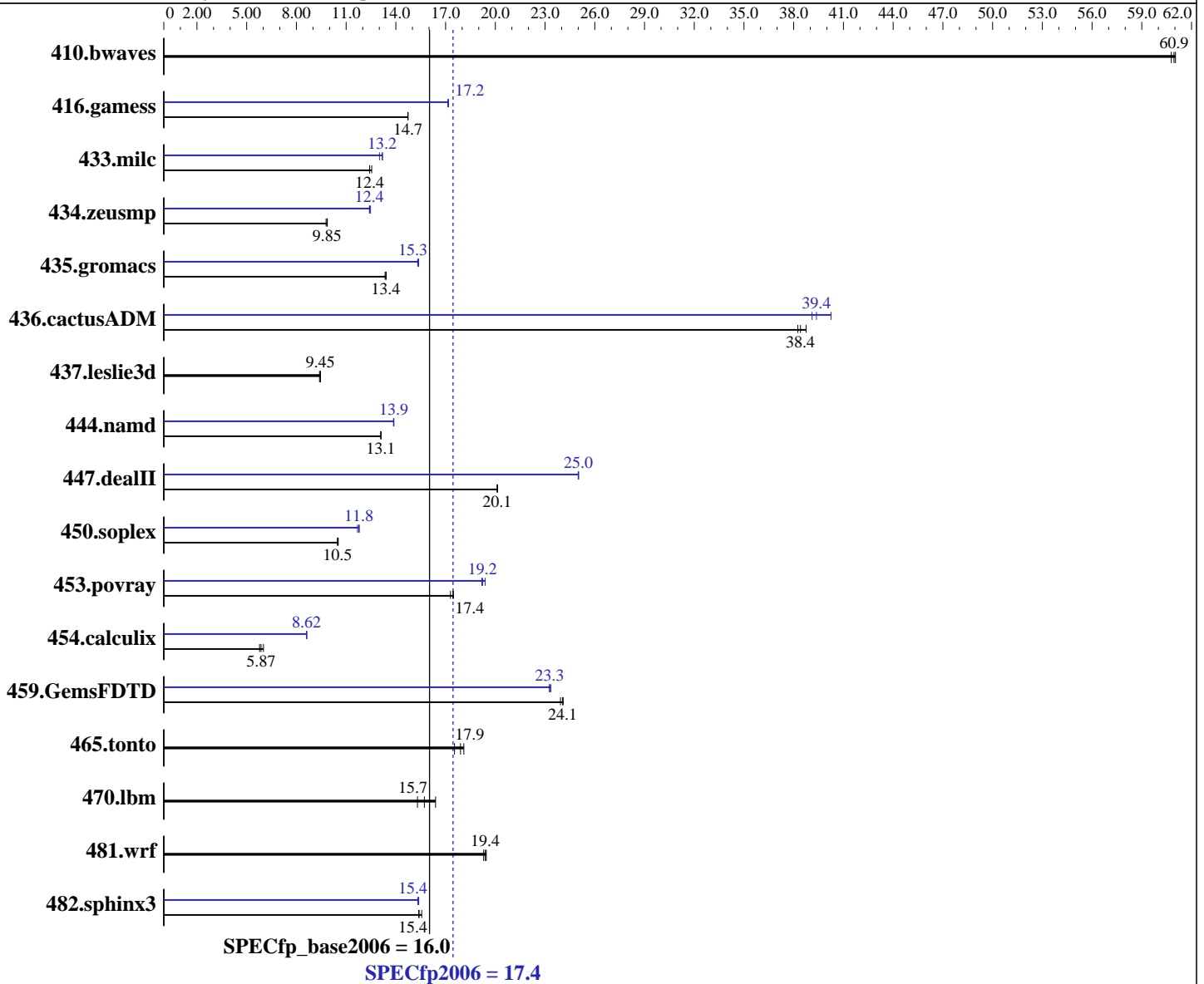
Test date: Jul-2007

Test sponsor: Fujitsu Siemens Computers

Hardware Availability: Jul-2007

Tested by: Fujitsu Siemens Computers

Software Availability: Mar-2007



Hardware

CPU Name: AMD Opteron 2222
 CPU Characteristics: Dual Core, 3.0 GHz, 2 MB L2-cache
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core

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Software

Operating System: SLES 10 for AMD64/EM64T
 Compiler: QLogic PathScale Compiler Suite, - Release 3.0
 Auto Parallel: Yes
 File System: ext3
 System State: Multi-User SuSE Run Level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

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Hardware (Continued)

L3 Cache: None
 Other Cache: None
 Memory: 16 GB (8x2GB DDR2-667 CL5 dual rank ECC DIMMs registered)
 Disk Subsystem: SATA II, 80 GB
 Other Hardware: None

Software (Continued)

Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 223 | 61.0 | <u>223</u> | <u>60.9</u> | 224 | 60.8 | 223 | 61.0 | <u>223</u> | <u>60.9</u> | 224 | 60.8 |
| 416.gamess | 1330 | 14.7 | <u>1330</u> | <u>14.7</u> | 1328 | 14.7 | <u>1142</u> | <u>17.2</u> | 1140 | 17.2 | 1143 | 17.1 |
| 433.milc | <u>739</u> | <u>12.4</u> | 739 | 12.4 | 732 | 12.5 | 706 | 13.0 | <u>697</u> | <u>13.2</u> | 696 | 13.2 |
| 434.zeusmp | 922 | 9.87 | <u>924</u> | <u>9.85</u> | 930 | 9.79 | 730 | 12.5 | <u>733</u> | <u>12.4</u> | 734 | 12.4 |
| 435.gromacs | 535 | 13.3 | 532 | 13.4 | <u>533</u> | <u>13.4</u> | 466 | 15.3 | <u>465</u> | <u>15.3</u> | 464 | 15.4 |
| 436.cactusADM | 312 | 38.2 | 308 | 38.7 | <u>311</u> | <u>38.4</u> | 297 | 40.3 | <u>304</u> | <u>39.4</u> | 306 | 39.1 |
| 437.leslie3d | 1001 | 9.39 | 995 | 9.45 | <u>995</u> | <u>9.45</u> | 1001 | 9.39 | 995 | 9.45 | <u>995</u> | <u>9.45</u> |
| 444.namd | 612 | 13.1 | 613 | 13.1 | <u>612</u> | <u>13.1</u> | <u>578</u> | <u>13.9</u> | 579 | 13.9 | 578 | 13.9 |
| 447.dealII | <u>569</u> | <u>20.1</u> | 568 | 20.1 | 569 | 20.1 | 457 | 25.0 | <u>457</u> | <u>25.0</u> | 458 | 25.0 |
| 450.soplex | <u>795</u> | <u>10.5</u> | 792 | 10.5 | 796 | 10.5 | <u>709</u> | <u>11.8</u> | 714 | 11.7 | 707 | 11.8 |
| 453.povray | 304 | 17.5 | 308 | 17.3 | <u>305</u> | <u>17.4</u> | <u>277</u> | <u>19.2</u> | 277 | 19.2 | 274 | 19.4 |
| 454.calculix | 1428 | 5.78 | 1372 | 6.01 | <u>1406</u> | <u>5.87</u> | 957 | 8.62 | <u>957</u> | <u>8.62</u> | 957 | 8.62 |
| 459.GemsFDTD | 440 | 24.1 | <u>441</u> | <u>24.1</u> | 443 | 23.9 | 454 | 23.4 | 456 | 23.3 | <u>456</u> | <u>23.3</u> |
| 465.tonto | 544 | 18.1 | <u>550</u> | <u>17.9</u> | 561 | 17.5 | 544 | 18.1 | <u>550</u> | <u>17.9</u> | 561 | 17.5 |
| 470.lbm | 838 | 16.4 | <u>874</u> | <u>15.7</u> | 898 | 15.3 | 838 | 16.4 | <u>874</u> | <u>15.7</u> | 898 | 15.3 |
| 481.wrf | <u>576</u> | <u>19.4</u> | 579 | 19.3 | 574 | 19.5 | <u>576</u> | <u>19.4</u> | 579 | 19.3 | 574 | 19.5 |
| 482.sphinx3 | <u>1265</u> | <u>15.4</u> | 1253 | 15.6 | 1268 | 15.4 | 1267 | 15.4 | <u>1268</u> | <u>15.4</u> | 1272 | 15.3 |

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

Operating System Notes

powersave -f is applied to set CPU to maximum frequency prior to run
stacksize is set to unlimited prior to run

General Notes

BIOS default settings with
Node memory interleave disabled, SRAT enabled

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Base Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95

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 -apo -OPT:malloc_alg=1

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



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Base Other Flags

C benchmarks:
-IPA:max_jobs=4

C++ benchmarks:
-IPA:max_jobs=4

Fortran benchmarks:
-IPA:max_jobs=4

Benchmarks using both Fortran and C:
-IPA:max_jobs=4

Peak Compiler Invocation

Same as Base Compiler Invocation

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 -apo
-OPT:Ofast -WOPT:aggstr=0 -m32

```

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Peak Optimization Flags (Continued)

C++ benchmarks:

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

447.deallI: -Ofast -apo -static -INLINE:aggressive=on
-OPT:malloc_alg=1 -m32 -fno-exceptions

450.soplex: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-apo -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
-apo -fno-fast-math

Fortran benchmarks:

410.bwaves: basepeak = yes

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 -apo -LNO:fission=2 -LNO:prefetch=0

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

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

436.cactusADM: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3 -apo
-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

Same as Base Other Flags



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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.28.html

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.28.xml

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Tested with SPEC CPU2006 v1.0.
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