



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®_rate2006 = 75.8

PowerEdge 2900 III (Intel Xeon E5450, 3.00 GHz)

SPECfp_rate_base2006 = 68.2

CPU2006 license: 55

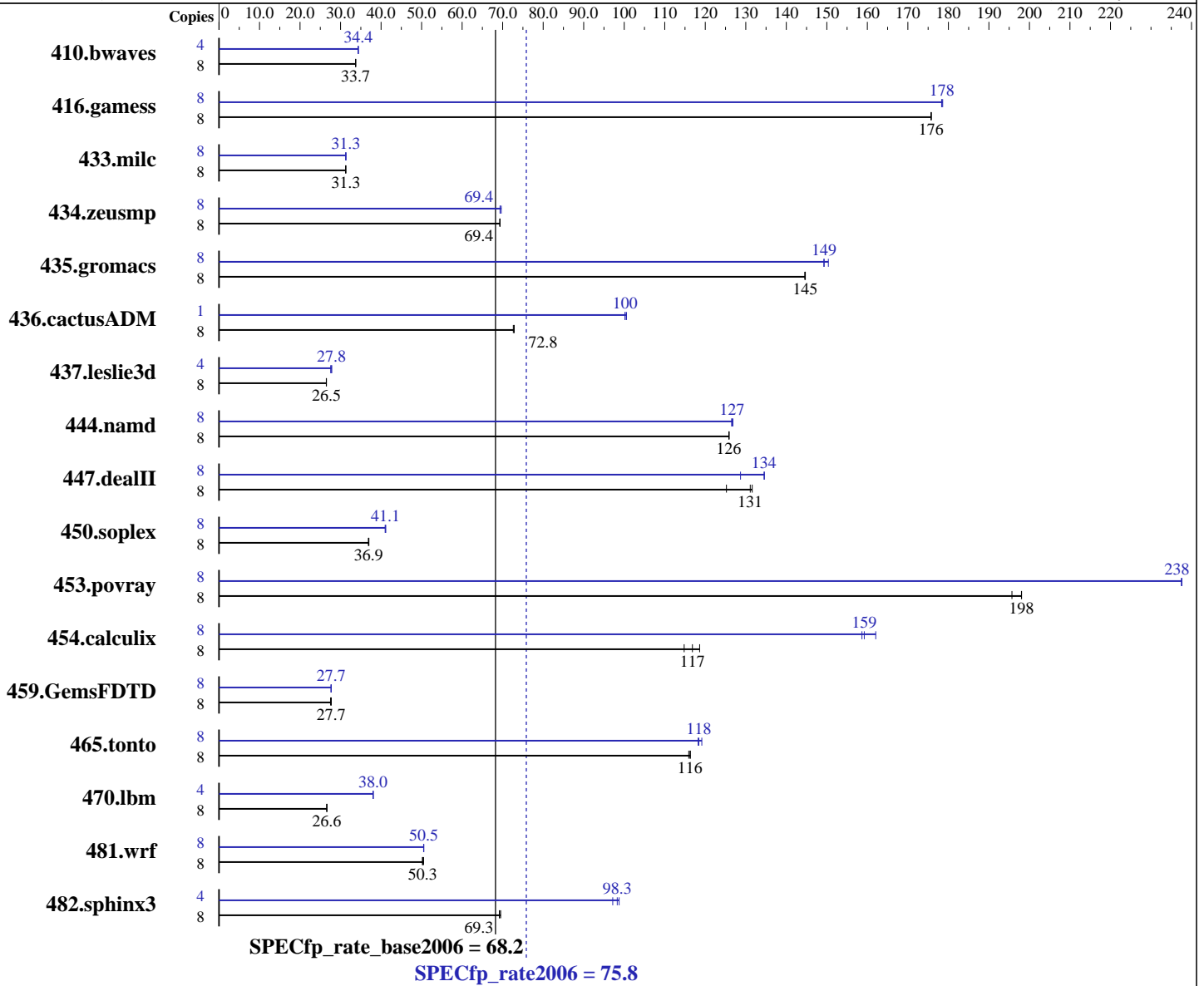
Test date: Aug-2008

Test sponsor: Dell Inc.

Hardware Availability: Nov-2007

Tested by: Dell Inc.

Software Availability: May-2008



Hardware

CPU Name: Intel Xeon E5450
 CPU Characteristics:
 CPU MHz: 3000
 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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2
 Kernel 2.6.16-60.0.21-smp
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux
 Build 20080312 Package ID: l_cc_p_10.1.015,
 l_fc_p_10.1.015
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2 GB, DDR2-667 MHz, CL5, Reg, Dual Rank)
Disk Subsystem: 2 x 73 GB GB SAS, 15000 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1
Binutils 2.18.50.0.7.20080502

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 8 | 3223 | 33.7 | 3223 | 33.7 | 3225 | 33.7 | 4 | 1583 | 34.3 | 1582 | 34.4 | 1581 | 34.4 |
| 416.gamess | 8 | 891 | 176 | 891 | 176 | 891 | 176 | 8 | 878 | 178 | 878 | 178 | 877 | 179 |
| 433.milc | 8 | 2347 | 31.3 | 2347 | 31.3 | 2349 | 31.3 | 8 | 2349 | 31.3 | 2346 | 31.3 | 2343 | 31.3 |
| 434.zeusmp | 8 | 1051 | 69.3 | 1050 | 69.4 | 1050 | 69.4 | 8 | 1045 | 69.7 | 1050 | 69.4 | 1049 | 69.4 |
| 435.gromacs | 8 | 395 | 145 | 395 | 145 | 395 | 145 | 8 | 380 | 150 | 382 | 149 | 383 | 149 |
| 436.cactusADM | 8 | 1316 | 72.6 | 1313 | 72.8 | 1313 | 72.8 | 1 | 119 | 100 | 119 | 101 | 119 | 100 |
| 437.leslie3d | 8 | 2838 | 26.5 | 2840 | 26.5 | 2836 | 26.5 | 4 | 1365 | 27.6 | 1354 | 27.8 | 1352 | 27.8 |
| 444.namd | 8 | 510 | 126 | 510 | 126 | 510 | 126 | 8 | 506 | 127 | 507 | 127 | 507 | 127 |
| 447.dealII | 8 | 698 | 131 | 696 | 132 | 731 | 125 | 8 | 680 | 134 | 711 | 129 | 680 | 135 |
| 450.soplex | 8 | 1810 | 36.9 | 1803 | 37.0 | 1807 | 36.9 | 8 | 1623 | 41.1 | 1627 | 41.0 | 1622 | 41.1 |
| 453.povray | 8 | 217 | 196 | 215 | 198 | 215 | 198 | 8 | 179 | 238 | 179 | 238 | 179 | 238 |
| 454.calculix | 8 | 556 | 119 | 565 | 117 | 575 | 115 | 8 | 414 | 159 | 407 | 162 | 416 | 159 |
| 459.GemsFDTD | 8 | 3063 | 27.7 | 3068 | 27.7 | 3083 | 27.5 | 8 | 3065 | 27.7 | 3063 | 27.7 | 3073 | 27.6 |
| 465.tonto | 8 | 677 | 116 | 677 | 116 | 679 | 116 | 8 | 666 | 118 | 665 | 118 | 661 | 119 |
| 470.lbm | 8 | 4132 | 26.6 | 4130 | 26.6 | 4129 | 26.6 | 4 | 1443 | 38.1 | 1445 | 38.0 | 1445 | 38.0 |
| 481.wrf | 8 | 1780 | 50.2 | 1777 | 50.3 | 1770 | 50.5 | 8 | 1768 | 50.5 | 1770 | 50.5 | 1769 | 50.5 |
| 482.sphinx3 | 8 | 2251 | 69.3 | 2243 | 69.5 | 2254 | 69.2 | 4 | 802 | 97.2 | 793 | 98.3 | 790 | 98.7 |

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

Submit Notes

The config file option 'submit' was used.

Platform Notes

BIOS Settings:
Adjacent Cache Line Prefetch = Disabled (Default = Enabled)
Hardware Prefetcher = Disabled (Default = Enabled)

General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
taskset was used to bind processes to cores except
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General Notes (Continued)

for 436.cactusADM peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M

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

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Base Optimization Flags (Continued)

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/cc/10.1.015/bin/icc -L/opt/intel/cc/10.1.015/lib
-I/opt/intel/cc/10.1.015/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/10.1.015/bin/icpc -L/opt/intel/cc/10.1.015/lib
-I/opt/intel/cc/10.1.015/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/fc/10.1.015/bin/ifort -L/opt/intel/fc/10.1.015/lib
-I/opt/intel/fc/10.1.015/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.dealII: -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



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Peak Optimization Flags

C benchmarks:

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

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 -parallel -auto-ilp32

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Peak Optimization Flags (Continued)

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

481.wrf: -fast -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revD.20090713.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revD.20090713.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.xml>

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

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