



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp[®]_rate2006 = 256

PowerEdge T610 (Intel Xeon X5680, 3.33 GHz)

SPECfp_rate_base2006 = 247

CPU2006 license: 55

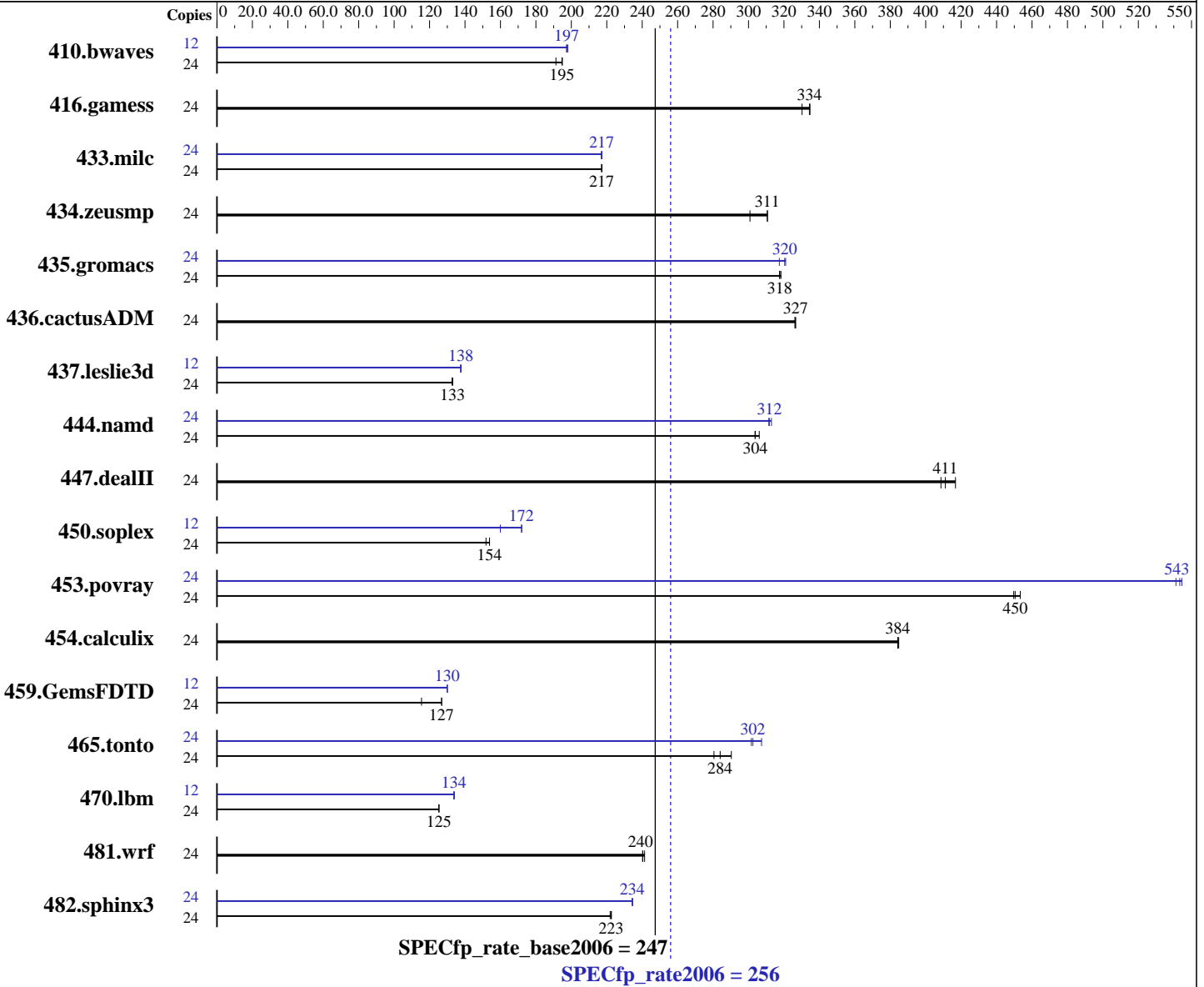
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Mar-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon X5680
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 3333
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB DDR3-1333 DR RDIMM)
Disk Subsystem: 1 x 146 GB 15000 RPM SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: 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 | 24 | 1705 | 191 | 1673 | 195 | 1675 | 195 | 12 | 826 | 197 | 823 | 198 | 826 | 197 |
| 416.gamess | 24 | 1405 | 334 | 1404 | 335 | 1423 | 330 | 24 | 1405 | 334 | 1404 | 335 | 1423 | 330 |
| 433.milc | 24 | 1014 | 217 | 1015 | 217 | 1014 | 217 | 24 | 1014 | 217 | 1016 | 217 | 1015 | 217 |
| 434.zeusmp | 24 | 703 | 311 | 726 | 301 | 703 | 311 | 24 | 703 | 311 | 726 | 301 | 703 | 311 |
| 435.gromacs | 24 | 538 | 318 | 539 | 318 | 540 | 317 | 24 | 535 | 320 | 540 | 317 | 534 | 321 |
| 436.cactusADM | 24 | 878 | 327 | 879 | 326 | 878 | 327 | 24 | 878 | 327 | 879 | 326 | 878 | 327 |
| 437.leslie3d | 24 | 1697 | 133 | 1696 | 133 | 1700 | 133 | 12 | 820 | 138 | 819 | 138 | 819 | 138 |
| 444.namd | 24 | 629 | 306 | 633 | 304 | 634 | 304 | 24 | 618 | 311 | 617 | 312 | 615 | 313 |
| 447.dealII | 24 | 672 | 409 | 659 | 417 | 668 | 411 | 24 | 672 | 409 | 659 | 417 | 668 | 411 |
| 450.soplex | 24 | 1318 | 152 | 1301 | 154 | 1301 | 154 | 12 | 626 | 160 | 582 | 172 | 582 | 172 |
| 453.povray | 24 | 283 | 450 | 284 | 450 | 282 | 453 | 24 | 234 | 545 | 236 | 541 | 235 | 543 |
| 454.calculix | 24 | 515 | 384 | 515 | 385 | 515 | 384 | 24 | 515 | 384 | 515 | 385 | 515 | 384 |
| 459.GemsFDTD | 24 | 2206 | 115 | 2009 | 127 | 2008 | 127 | 12 | 979 | 130 | 980 | 130 | 979 | 130 |
| 465.tonto | 24 | 842 | 280 | 832 | 284 | 813 | 290 | 24 | 783 | 302 | 781 | 302 | 768 | 307 |
| 470.lbm | 24 | 2632 | 125 | 2631 | 125 | 2635 | 125 | 12 | 1231 | 134 | 1233 | 134 | 1233 | 134 |
| 481.wrf | 24 | 1111 | 241 | 1115 | 240 | 1116 | 240 | 24 | 1111 | 241 | 1115 | 240 | 1116 | 240 |
| 482.sphinx3 | 24 | 2108 | 222 | 2102 | 223 | 2102 | 223 | 24 | 1996 | 234 | 1995 | 234 | 1994 | 235 |

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.
numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
Data Reuse = Disabled (Default = Enabled)



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General Notes

The Dell PowerEdge T610 and the Bull NovaScale T840 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge T610 model.

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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:

-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

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Base Optimization Flags (Continued)

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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
 437.leslie3d: -DSPEC_CPU_LP64
 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
 470.lbm: -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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-fno-alias -opt-prefetch

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml>

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For other inquiries, please contact webmaster@spec.org.

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