



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp[®]2006 = 49.1

PowerEdge R910 (Intel Xeon E7-4830, 2.13 GHz)

SPECfp_base2006 = 47.1

CPU2006 license: 55

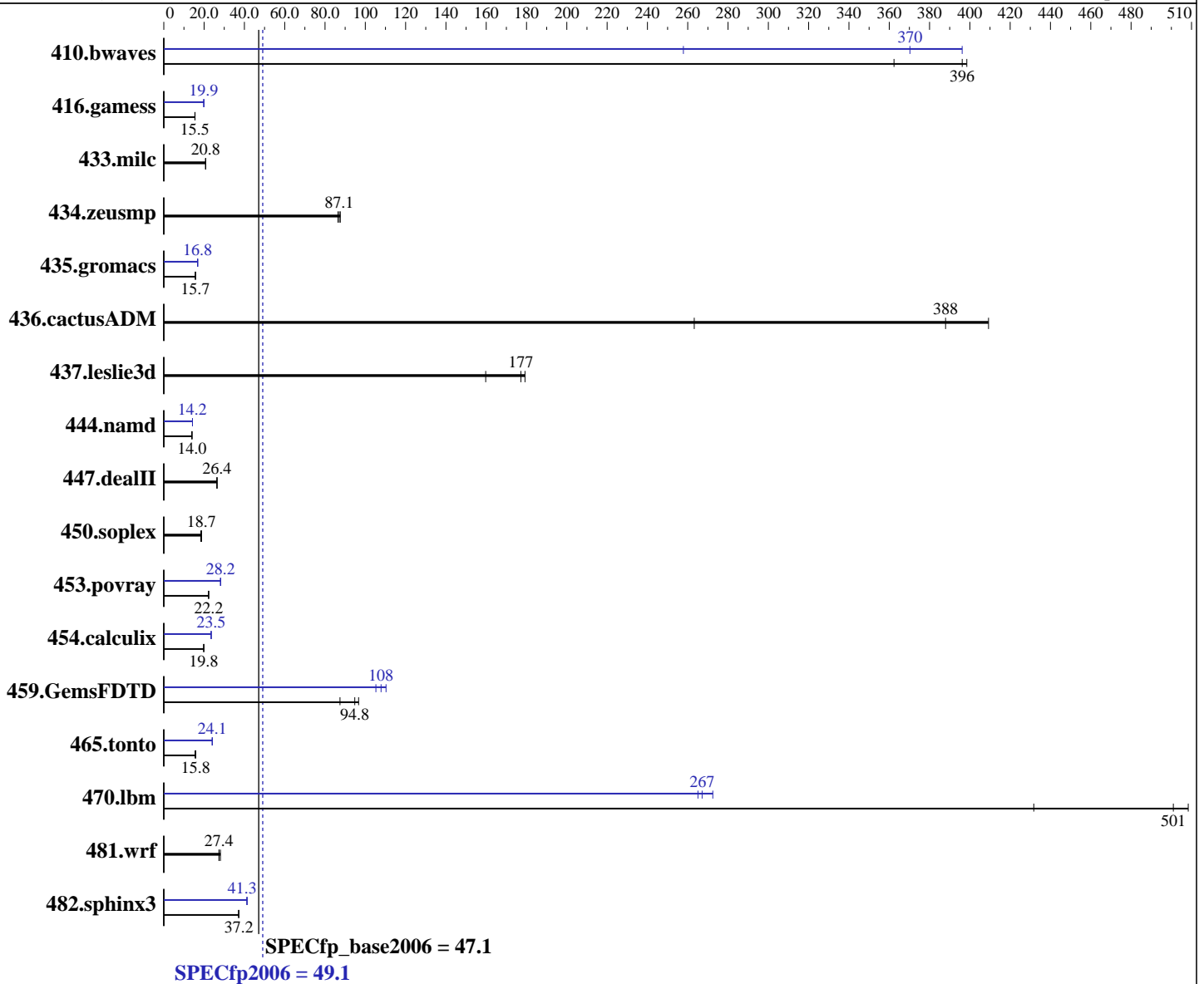
Test date: Mar-2011

Test sponsor: Dell Inc.

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011



Hardware

CPU Name: Intel Xeon E7-4830
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 2133
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip
 CPU(s) orderable: 2,4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0 Update 3
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 49.1

PowerEdge R910 (Intel Xeon E7-4830, 2.13 GHz)

SPECfp_base2006 = 47.1

CPU2006 license: 55

Test date: Mar-2011

Test sponsor: Dell Inc.

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011

L3 Cache: 24 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (64 x 8 GB 4Rx8 PC3-8500R-7, ECC)
Disk Subsystem: 1 x 500 GB 7200 RPM SAS 6Gb
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 37.5 | 362 | 34.3 | 396 | 34.1 | 398 | 36.7 | 370 | 34.3 | 396 | 52.7 | 258 |
| 416.gamess | 1262 | 15.5 | 1269 | 15.4 | 1267 | 15.5 | 986 | 19.9 | 984 | 19.9 | 987 | 19.8 |
| 433.milc | 441 | 20.8 | 443 | 20.7 | 442 | 20.8 | 441 | 20.8 | 443 | 20.7 | 442 | 20.8 |
| 434.zeusmp | 105 | 86.4 | 104 | 87.1 | 104 | 87.6 | 105 | 86.4 | 104 | 87.1 | 104 | 87.6 |
| 435.gromacs | 455 | 15.7 | 454 | 15.7 | 455 | 15.7 | 424 | 16.8 | 425 | 16.8 | 426 | 16.8 |
| 436.cactusADM | 30.8 | 388 | 45.4 | 263 | 29.2 | 409 | 30.8 | 388 | 45.4 | 263 | 29.2 | 409 |
| 437.leslie3d | 58.8 | 160 | 53.0 | 177 | 52.4 | 179 | 58.8 | 160 | 53.0 | 177 | 52.4 | 179 |
| 444.namd | 574 | 14.0 | 574 | 14.0 | 574 | 14.0 | 564 | 14.2 | 563 | 14.2 | 564 | 14.2 |
| 447.dealII | 433 | 26.4 | 434 | 26.4 | 433 | 26.4 | 433 | 26.4 | 434 | 26.4 | 433 | 26.4 |
| 450.soplex | 446 | 18.7 | 446 | 18.7 | 455 | 18.3 | 446 | 18.7 | 446 | 18.7 | 455 | 18.3 |
| 453.povray | 239 | 22.2 | 239 | 22.2 | 239 | 22.2 | 189 | 28.1 | 189 | 28.2 | 188 | 28.2 |
| 454.calculix | 416 | 19.8 | 417 | 19.8 | 415 | 19.9 | 350 | 23.5 | 351 | 23.5 | 351 | 23.5 |
| 459.GemsFDTD | 112 | 94.8 | 121 | 87.4 | 110 | 96.7 | 98.4 | 108 | 101 | 105 | 96.2 | 110 |
| 465.tonto | 625 | 15.8 | 619 | 15.9 | 634 | 15.5 | 410 | 24.0 | 409 | 24.1 | 409 | 24.1 |
| 470.lbm | 31.8 | 432 | 27.4 | 501 | 27.0 | 508 | 50.4 | 272 | 51.4 | 267 | 51.8 | 265 |
| 481.wrf | 408 | 27.4 | 407 | 27.4 | 397 | 28.1 | 408 | 27.4 | 407 | 27.4 | 397 | 28.1 |
| 482.sphinx3 | 525 | 37.1 | 524 | 37.2 | 524 | 37.2 | 473 | 41.2 | 472 | 41.3 | 471 | 41.3 |

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
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
Memory Interleaving = Enabled (Default = Disabled)



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 49.1

PowerEdge R910 (Intel Xeon E7-4830, 2.13 GHz)

SPECfp_base2006 = 47.1

CPU2006 license: 55

Test date: Mar-2011

Test sponsor: Dell Inc.

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011

General Notes

The Dell PowerEdge R910 and the Bull NovaScale R480 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R910 model. OMP_NUM_THREADS set to number of cores
Binaries were compiled on RHEL5.5

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.deallI: -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 -parallel -opt-prefetch
-ansi-alias

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 49.1

PowerEdge R910 (Intel Xeon E7-4830, 2.13 GHz)

SPECfp_base2006 = 47.1

CPU2006 license: 55

Test date: Mar-2011

Test sponsor: Dell Inc.

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011

Base Optimization Flags (Continued)

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

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

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 49.1

PowerEdge R910 (Intel Xeon E7-4830, 2.13 GHz)

SPECfp_base2006 = 47.1

CPU2006 license: 55

Test date: Mar-2011

Test sponsor: Dell Inc.

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011

Peak Optimization Flags (Continued)

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

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

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

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 49.1

PowerEdge R910 (Intel Xeon E7-4830, 2.13 GHz)

SPECfp_base2006 = 47.1

CPU2006 license: 55

Test date: Mar-2011

Test sponsor: Dell Inc.

Hardware Availability: Apr-2011

Tested by: Dell Inc.

Software Availability: Apr-2011

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 19:09:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 April 2011.