



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp<sup>®</sup>\_rate2006 = 81.4

PowerEdge T310 (Intel Xeon X3440, 2.53 GHz)

SPECfp\_rate\_base2006 = 77.9

CPU2006 license: 55

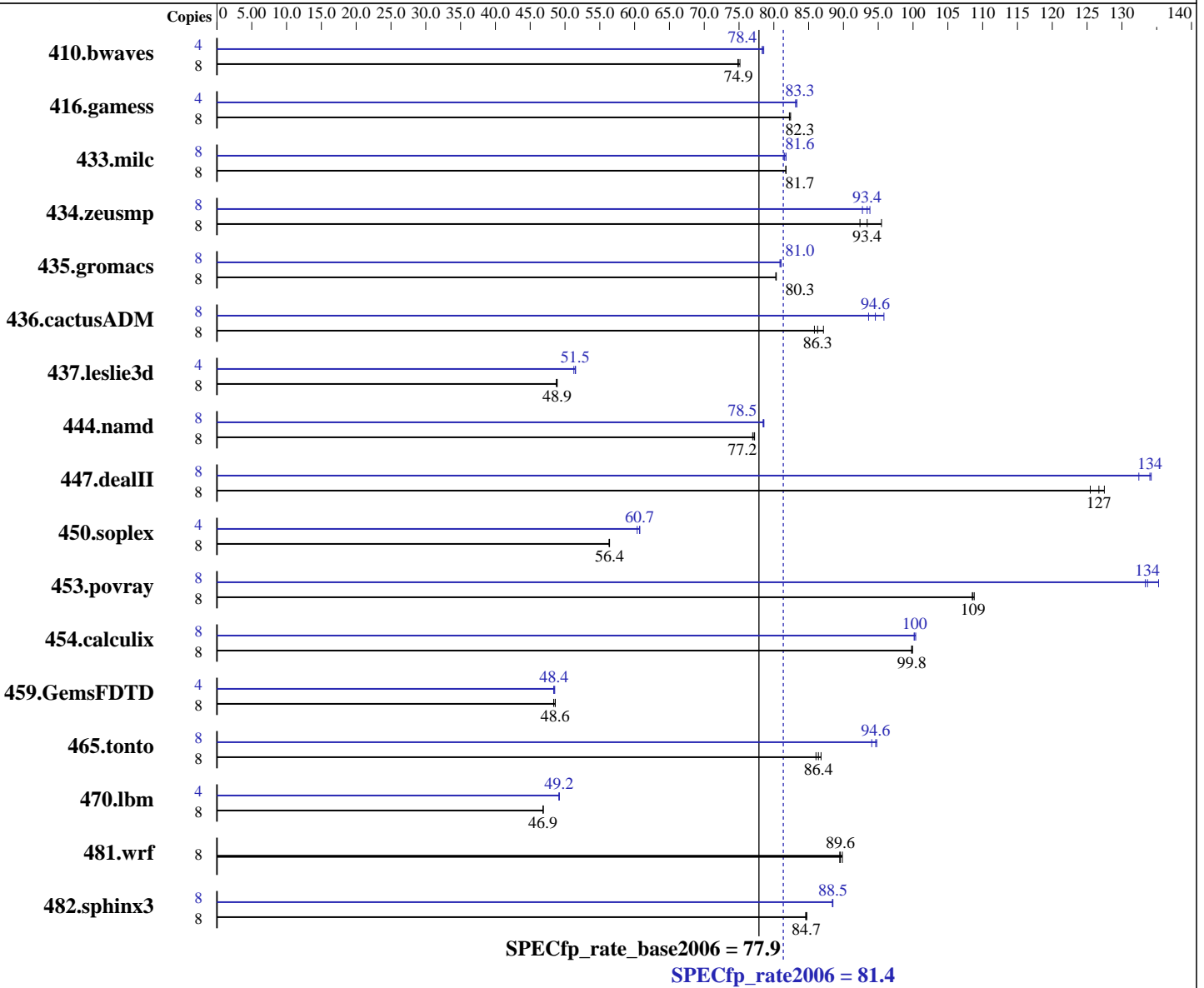
Test date: Nov-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009



### Hardware

CPU Name: Intel Xeon X3440  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2533  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 chip  
 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: Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5  
 Compiler: Intel Fortran Compiler and Intel C++ Compiler Professional Edition 11.1 For Linux Build 20090511 Package ID: l\_cproc\_p\_11.1.040, l\_cprof\_p\_11.1.040  
 Auto Parallel: No  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 81.4

PowerEdge T310 (Intel Xeon X3440, 2.53 GHz)

SPECfp\_rate\_base2006 = 77.9

CPU2006 license: 55

Test date: Nov-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009

L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 8 GB (4 x 2 GB DDR3-1333 DR RDIMM)  
Disk Subsystem: 1 x 160 GB 7200 RPM SATA  
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	8	1453	74.8	<b><u>1451</u></b>	<b><u>74.9</u></b>	1447	75.1	4	694	78.3	<b><u>694</u></b>	<b><u>78.4</u></b>	692	78.6
416.gamess	8	1905	82.2	1901	82.4	<b><u>1904</u></b>	<b><u>82.3</u></b>	4	940	83.3	942	83.1	<b><u>940</u></b>	<b><u>83.3</u></b>
433.milc	8	898	81.8	<b><u>899</u></b>	<b><u>81.7</u></b>	899	81.7	8	898	81.8	<b><u>900</u></b>	<b><u>81.6</u></b>	901	81.5
434.zeusmp	8	788	92.4	763	95.5	<b><u>779</u></b>	<b><u>93.4</u></b>	8	785	92.7	<b><u>779</u></b>	<b><u>93.4</u></b>	776	93.8
435.gromacs	8	<b><u>711</u></b>	<b><u>80.3</u></b>	711	80.3	711	80.4	8	705	81.0	706	80.9	<b><u>705</u></b>	<b><u>81.0</u></b>
436.cactusADM	8	1097	87.1	<b><u>1108</u></b>	<b><u>86.3</u></b>	1114	85.8	8	<b><u>1011</u></b>	<b><u>94.6</u></b>	1021	93.6	998	95.8
437.leslie3d	8	1539	48.9	<b><u>1539</u></b>	<b><u>48.9</u></b>	1543	48.7	4	730	51.5	<b><u>730</u></b>	<b><u>51.5</u></b>	733	51.3
444.namd	8	831	77.2	834	77.0	<b><u>831</u></b>	<b><u>77.2</u></b>	8	818	78.5	<b><u>817</u></b>	<b><u>78.5</u></b>	817	78.6
447.dealII	8	718	127	<b><u>722</u></b>	<b><u>127</u></b>	729	125	8	<b><u>683</u></b>	<b><u>134</u></b>	682	134	691	132
450.soplex	8	<b><u>1183</u></b>	<b><u>56.4</u></b>	1183	56.4	1185	56.3	4	553	60.4	<b><u>549</u></b>	<b><u>60.7</u></b>	549	60.7
453.povray	8	<b><u>392</u></b>	<b><u>109</u></b>	391	109	392	109	8	319	133	<b><u>318</u></b>	<b><u>134</u></b>	315	135
454.calculix	8	<b><u>661</u></b>	<b><u>99.8</u></b>	660	99.9	661	99.8	8	<b><u>659</u></b>	<b><u>100</u></b>	657	100	659	100
459.GemsFDTD	8	1746	48.6	<b><u>1747</u></b>	<b><u>48.6</u></b>	1755	48.4	4	877	48.4	875	48.5	<b><u>876</u></b>	<b><u>48.4</u></b>
465.tonto	8	<b><u>911</u></b>	<b><u>86.4</u></b>	915	86.1	907	86.8	8	837	94.1	<b><u>832</u></b>	<b><u>94.6</u></b>	831	94.8
470.lbm	8	2346	46.9	2346	46.9	<b><u>2346</u></b>	<b><u>46.9</u></b>	4	<b><u>1118</u></b>	<b><u>49.2</u></b>	1117	49.2	1118	49.1
481.wrf	8	999	89.5	995	89.8	<b><u>998</u></b>	<b><u>89.6</u></b>	8	999	89.5	995	89.8	<b><u>998</u></b>	<b><u>89.6</u></b>
482.sphinx3	8	<b><u>1842</u></b>	<b><u>84.7</u></b>	1844	84.6	1840	84.7	8	1764	88.4	<b><u>1762</u></b>	<b><u>88.5</u></b>	1762	88.5

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)



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 81.4

PowerEdge T310 (Intel Xeon X3440, 2.53 GHz)

SPECfp\_rate\_base2006 = 77.9

CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Nov-2009

Hardware Availability: Sep-2009

Software Availability: Jul-2009

## General Notes

The Dell PowerEdge T310 and the Bull NovaScale T820 F2 models are electronically equivalent. This result was measured on a Dell PowerEdge T310.

## 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 -opt-prefetch

C++ benchmarks:

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 81.4

PowerEdge T310 (Intel Xeon X3440, 2.53 GHz)

SPECfp\_rate\_base2006 = 77.9

CPU2006 license: 55

Test date: Nov-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009

## Base Optimization Flags (Continued)

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

## 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 (except as noted below):

ifort -m64

437.leslie3d: ifort -m32

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  
 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 81.4

PowerEdge T310 (Intel Xeon X3440, 2.53 GHz)

SPECfp\_rate\_base2006 = 77.9

CPU2006 license: 55

Test date: Nov-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009

## 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

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-prefetch -opt-malloc-options=3 -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: -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 -ansi-alias -scalar-rep-

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: -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 -ansi-alias -scalar-rep-

434.zeusmp: -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)

437.leslie3d: -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 -opt-prefetch

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 -opt-prefetch

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 81.4

PowerEdge T310 (Intel Xeon X3440, 2.53 GHz)

SPECfp\_rate\_base2006 = 77.9

CPU2006 license: 55

Test date: Nov-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009

## Peak Optimization Flags (Continued)

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

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

436.cactusADM: -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 -opt-prefetch -auto-ilp32

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

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-fp-linux64-revA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revA.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.

Report generated on Wed Jul 23 03:48:52 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 22 December 2009.