



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 = 44.1

PowerEdge M610 (Intel Xeon X5660, 2.80 GHz)

SPECfp\_base2006 = 41.2

CPU2006 license: 55

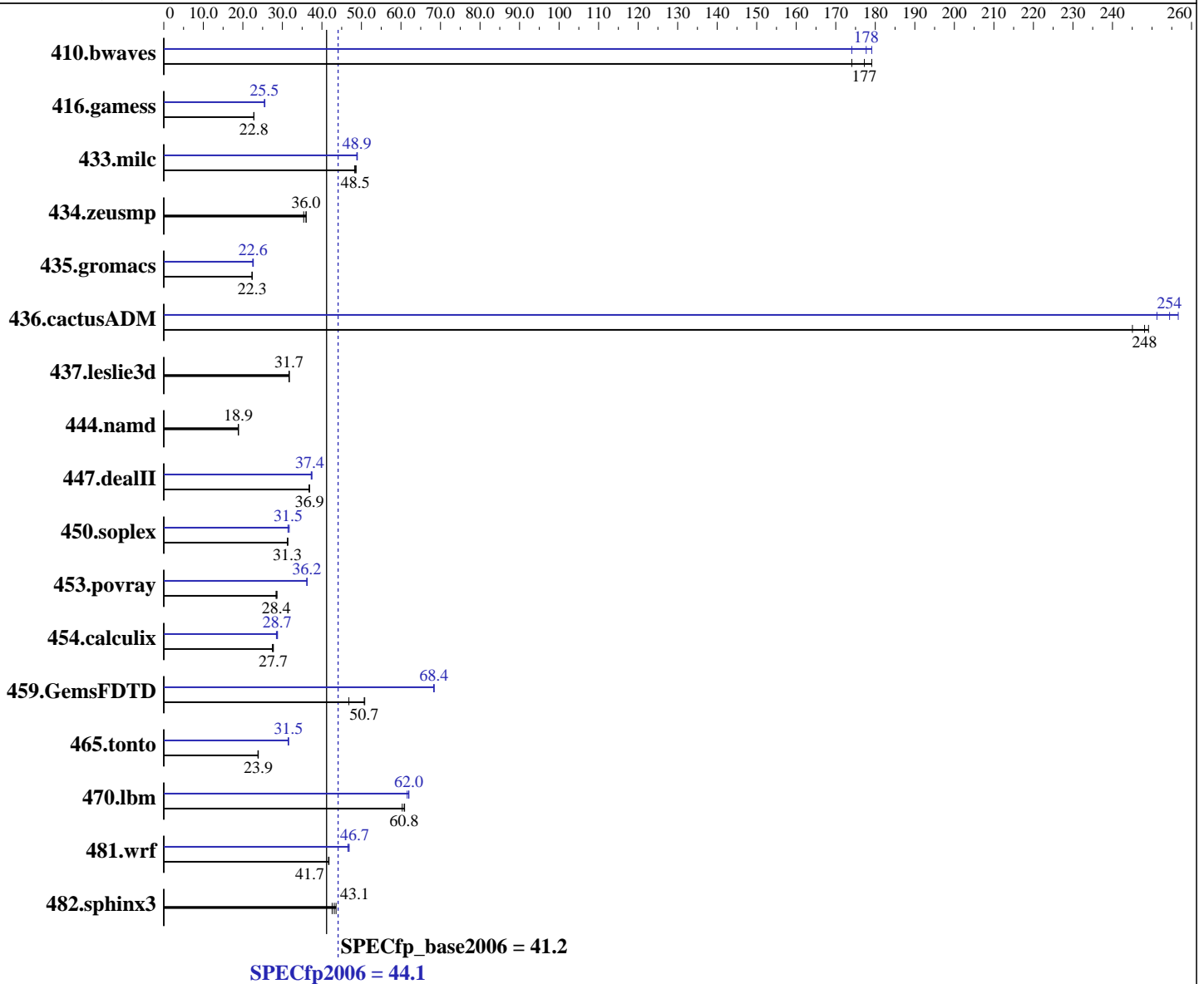
Test date: Jul-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009



### Hardware

CPU Name: Intel Xeon X5660  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2800  
 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

Continued on next page

### 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: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 44.1

PowerEdge M610 (Intel Xeon X5660, 2.80 GHz)

SPECfp\_base2006 = 41.2

CPU2006 license: 55

Test date: Jul-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009

L3 Cache: 12 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12 x 4 GB DDR3-1333 DR RDIMM, CL9, ECC)  
Disk Subsystem: 1 x 146 GB 15000 RPM SAS  
Other Hardware: None

Base Pointers: 64-bit  
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	78.1	174	<b><u>76.7</u></b>	<b><u>177</u></b>	75.9	179	75.9	179	78.1	174	<b><u>76.5</u></b>	<b><u>178</u></b>
416.gamess	858	22.8	<b><u>859</u></b>	<b><u>22.8</u></b>	860	22.8	769	25.5	766	25.6	<b><u>768</u></b>	<b><u>25.5</u></b>
433.milc	<b><u>189</u></b>	<b><u>48.5</u></b>	189	48.7	190	48.3	187	49.0	188	48.8	<b><u>188</u></b>	<b><u>48.9</u></b>
434.zeusmp	253	36.0	<b><u>253</u></b>	<b><u>36.0</u></b>	257	35.4	253	36.0	<b><u>253</u></b>	<b><u>36.0</u></b>	257	35.4
435.gromacs	<b><u>320</u></b>	<b><u>22.3</u></b>	319	22.4	320	22.3	315	22.7	<b><u>316</u></b>	<b><u>22.6</u></b>	317	22.5
436.cactusADM	48.8	245	<b><u>48.2</u></b>	<b><u>248</u></b>	48.0	249	47.6	251	46.6	257	<b><u>47.0</u></b>	<b><u>254</u></b>
437.leslie3d	<b><u>296</u></b>	<b><u>31.7</u></b>	297	31.7	296	31.7	<b><u>296</u></b>	<b><u>31.7</u></b>	297	31.7	296	31.7
444.namd	<b><u>425</u></b>	<b><u>18.9</u></b>	425	18.9	426	18.8	<b><u>425</u></b>	<b><u>18.9</u></b>	425	18.9	426	18.8
447.dealII	311	36.7	<b><u>310</u></b>	<b><u>36.9</u></b>	310	36.9	305	37.5	<b><u>306</u></b>	<b><u>37.4</u></b>	307	37.3
450.soplex	266	31.4	<b><u>267</u></b>	<b><u>31.3</u></b>	267	31.3	<b><u>265</u></b>	<b><u>31.5</u></b>	263	31.7	265	31.4
453.povray	186	28.7	<b><u>187</u></b>	<b><u>28.4</u></b>	187	28.4	147	36.3	<b><u>147</u></b>	<b><u>36.2</u></b>	147	36.2
454.calculix	300	27.5	298	27.7	<b><u>298</u></b>	<b><u>27.7</u></b>	287	28.8	290	28.5	<b><u>288</u></b>	<b><u>28.7</u></b>
459.GemsFDTD	<b><u>209</u></b>	<b><u>50.7</u></b>	227	46.8	209	50.8	<b><u>155</u></b>	<b><u>68.4</u></b>	155	68.4	155	68.3
465.tonto	<b><u>412</u></b>	<b><u>23.9</u></b>	413	23.8	412	23.9	<b><u>312</u></b>	<b><u>31.5</u></b>	313	31.5	312	31.6
470.lbm	<b><u>226</u></b>	<b><u>60.8</u></b>	228	60.3	226	60.9	223	61.6	<b><u>222</u></b>	<b><u>62.0</u></b>	222	62.0
481.wrf	<b><u>268</u></b>	<b><u>41.7</u></b>	268	41.7	267	41.8	<b><u>239</u></b>	<b><u>46.7</u></b>	240	46.6	238	46.9
482.sphinx3	447	43.6	458	42.6	<b><u>452</u></b>	<b><u>43.1</u></b>	447	43.6	458	42.6	<b><u>452</u></b>	<b><u>43.1</u></b>

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

## Platform Notes

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

## General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 44.1

PowerEdge M610 (Intel Xeon X5660, 2.80 GHz)

SPECfp\_base2006 = 41.2

CPU2006 license: 55

Test date: Jul-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009

## General Notes (Continued)

KMP\_STACKSIZE set to 200M

## 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 -parallel -opt-prefetch

C++ benchmarks:

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

Fortran benchmarks:

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 44.1

PowerEdge M610 (Intel Xeon X5660, 2.80 GHz)

SPECfp\_base2006 = 41.2

CPU2006 license: 55

Test date: Jul-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009

## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

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

## 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: `-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)  
-ansi-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)  
-parallel -ansi-alias -auto-ilp32`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

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- -auto-ilp32`

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 44.1

PowerEdge M610 (Intel Xeon X5660, 2.80 GHz)

SPECfp\_base2006 = 41.2

CPU2006 license: 55

Test date: Jul-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009

## Peak Optimization Flags (Continued)

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 -auto-ilp32

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  
-parallel

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: 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) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -opt-prefetch -parallel

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)  
-inline-calloc -opt-malloc-options=3 -auto -unroll4

### 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 -parallel -auto-ilp32

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

481.wrf: Same as 454.calculix

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>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 44.1

PowerEdge M610 (Intel Xeon X5660, 2.80 GHz)

SPECfp\_base2006 = 41.2

CPU2006 license: 55

Test date: Jul-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009

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 10:42:22 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 3 August 2010.