



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp<sup>®</sup>2006 = 56.4

PowerEdge M610 (Intel Xeon X5560, 2.80 GHz)

SPECfp\_base2006 = 52.1

CPU2006 license: 55

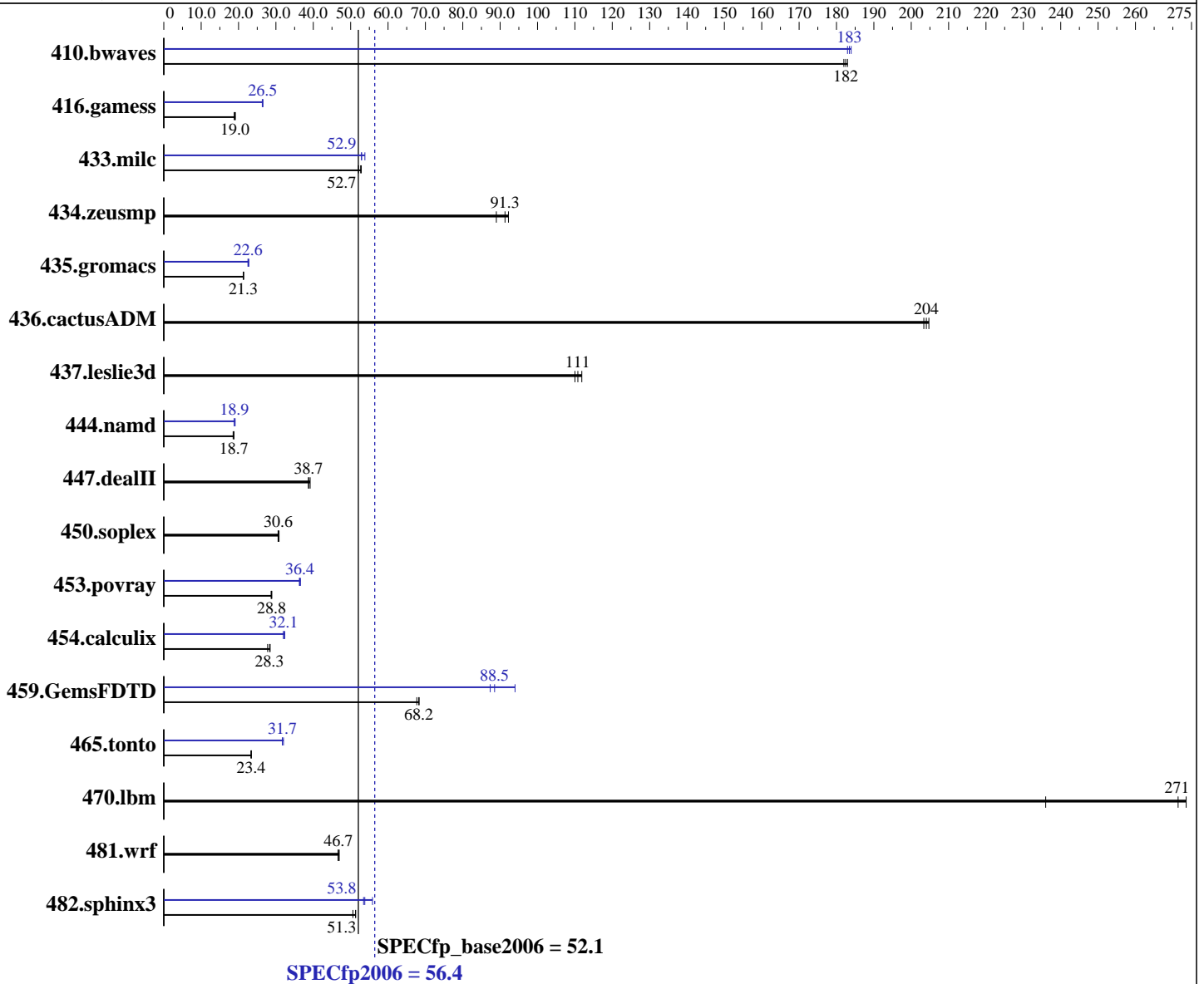
Test date: Jul-2011

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Dec-2009



### Hardware

CPU Name: Intel Xeon X5560  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2800  
 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: 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 = 56.4

PowerEdge M610 (Intel Xeon X5560, 2.80 GHz)

SPECfp\_base2006 = 52.1

CPU2006 license: 55

Test date: Jul-2011

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Dec-2009

L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)  
 Disk Subsystem: 1 x 146 GB 10000 RPM SAS  
 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	74.3	183	<b><u>74.5</u></b>	<b><u>182</u></b>	74.7	182	74.3	183	<b><u>74.1</u></b>	<b><u>183</u></b>	73.9	184
416.gamess	<b><u>1029</u></b>	<b><u>19.0</u></b>	1039	18.8	1022	19.1	<b><u>739</u></b>	<b><u>26.5</u></b>	743	26.3	739	26.5
433.milc	174	52.8	176	52.1	<b><u>174</u></b>	<b><u>52.7</u></b>	<b><u>173</u></b>	<b><u>52.9</u></b>	171	53.8	174	52.9
434.zeusmp	98.7	92.2	<b><u>99.7</u></b>	<b><u>91.3</u></b>	102	89.0	98.7	92.2	<b><u>99.7</u></b>	<b><u>91.3</u></b>	102	89.0
435.gromacs	336	21.3	334	21.4	<b><u>336</u></b>	<b><u>21.3</u></b>	317	22.5	314	22.8	<b><u>317</u></b>	<b><u>22.6</u></b>
436.cactusADM	58.4	205	<b><u>58.6</u></b>	<b><u>204</u></b>	58.8	203	58.4	205	<b><u>58.6</u></b>	<b><u>204</u></b>	58.8	203
437.leslie3d	<b><u>84.8</u></b>	<b><u>111</u></b>	85.4	110	84.0	112	<b><u>84.8</u></b>	<b><u>111</u></b>	85.4	110	84.0	112
444.namd	<b><u>428</u></b>	<b><u>18.7</u></b>	432	18.5	427	18.8	425	18.9	420	19.1	<b><u>425</u></b>	<b><u>18.9</u></b>
447.dealII	295	38.7	<b><u>295</u></b>	<b><u>38.7</u></b>	292	39.2	295	38.7	<b><u>295</u></b>	<b><u>38.7</u></b>	292	39.2
450.soplex	<b><u>272</u></b>	<b><u>30.6</u></b>	270	30.8	273	30.6	<b><u>272</u></b>	<b><u>30.6</u></b>	270	30.8	273	30.6
453.povray	184	28.9	185	28.7	<b><u>184</u></b>	<b><u>28.8</u></b>	<b><u>146</u></b>	<b><u>36.4</u></b>	147	36.3	145	36.6
454.calculix	297	27.8	290	28.5	<b><u>292</u></b>	<b><u>28.3</u></b>	255	32.4	257	32.0	<b><u>257</u></b>	<b><u>32.1</u></b>
459.GemsFDTD	157	67.7	<b><u>156</u></b>	<b><u>68.2</u></b>	155	68.3	113	94.0	<b><u>120</u></b>	<b><u>88.5</u></b>	121	87.3
465.tonto	422	23.3	<b><u>421</u></b>	<b><u>23.4</u></b>	420	23.4	307	32.0	<b><u>310</u></b>	<b><u>31.7</u></b>	310	31.7
470.lbm	50.2	274	<b><u>50.6</u></b>	<b><u>271</u></b>	58.2	236	50.2	274	<b><u>50.6</u></b>	<b><u>271</u></b>	58.2	236
481.wrf	240	46.6	<b><u>239</u></b>	<b><u>46.7</u></b>	238	46.9	240	46.6	<b><u>239</u></b>	<b><u>46.7</u></b>	238	46.9
482.sphinx3	380	51.3	<b><u>380</u></b>	<b><u>51.3</u></b>	385	50.6	349	55.8	<b><u>362</u></b>	<b><u>53.8</u></b>	365	53.5

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)  
 Logical Processor = Disabled (Default = Enabled)



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 56.4

PowerEdge M610 (Intel Xeon X5560, 2.80 GHz)

SPECfp\_base2006 = 52.1

CPU2006 license: 55

Test date: Jul-2011

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Dec-2009

## General Notes

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.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  
-ansi-alias

C++ benchmarks:

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 56.4

PowerEdge M610 (Intel Xeon X5560, 2.80 GHz)

SPECfp\_base2006 = 52.1

CPU2006 license: 55

Test date: Jul-2011

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Dec-2009

## Base Optimization Flags (Continued)

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: -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

470.lbm: basepeak = yes

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

C++ benchmarks:

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 56.4

PowerEdge M610 (Intel Xeon X5560, 2.80 GHz)

SPECfp\_base2006 = 52.1

CPU2006 license: 55

Test date: Jul-2011

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Dec-2009

## Peak Optimization Flags (Continued)

447.dealll: 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

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.20110524.00.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.20110524.00.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 56.4

PowerEdge M610 (Intel Xeon X5560, 2.80 GHz)

SPECfp\_base2006 = 52.1

CPU2006 license: 55

Test date: Jul-2011

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

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 22:58:00 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 16 August 2011.