



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Dell Inc.

**SPECfp<sup>®</sup>2006 = 108**

PowerEdge FC430 (Intel Xeon E5-2670 v3, 2.30 GHz)

**SPECfp\_base2006 = 104**

CPU2006 license: 55

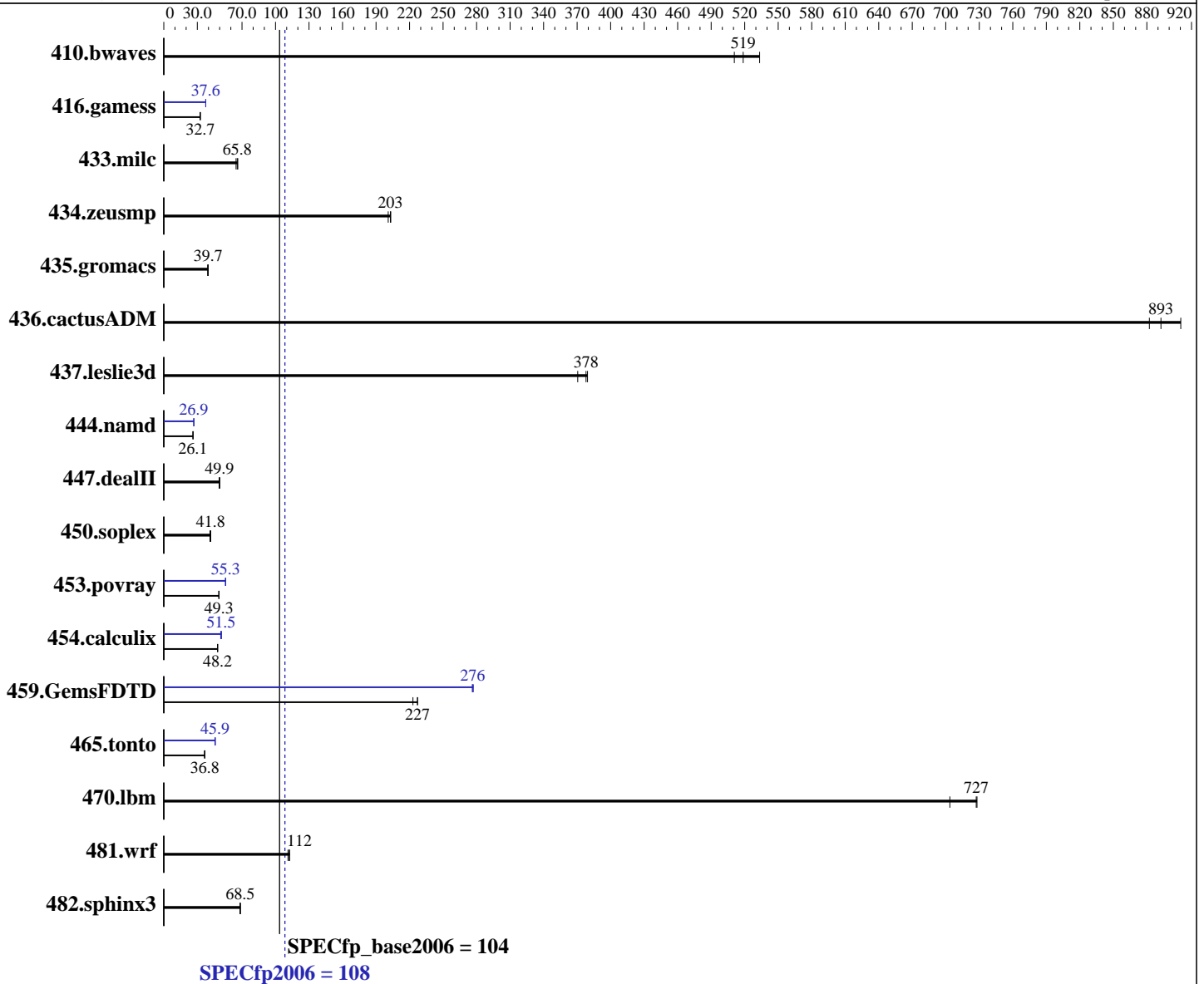
Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Apr-2015

Tested by: Dell Inc.

Software Availability: Apr-2015



### Hardware

CPU Name: Intel Xeon E5-2670 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 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: SUSE Linux Enterprise Server 12  
 3.12.28-4-default  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;  
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 108

PowerEdge FC430 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECfp\_base2006 = 104

CPU2006 license: 55

Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Apr-2015

Tested by: Dell Inc.

Software Availability: Apr-2015

L3 Cache: 30 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 200 GB SSD SATA  
 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	25.5	533	<u>26.2</u>	<u>519</u>	26.6	511	25.5	533	<u>26.2</u>	<u>519</u>	26.6	511
416.gamess	<u>599</u>	<u>32.7</u>	599	32.7	604	32.4	522	37.5	521	37.6	<u>521</u>	<u>37.6</u>
433.milc	139	66.2	<u>140</u>	<u>65.8</u>	142	64.7	139	66.2	<u>140</u>	<u>65.8</u>	142	64.7
434.zeusmp	44.8	203	<u>44.9</u>	<u>203</u>	45.3	201	44.8	203	<u>44.9</u>	<u>203</u>	45.3	201
435.gromacs	<u>180</u>	<u>39.7</u>	182	39.2	180	39.7	<u>180</u>	<u>39.7</u>	182	39.2	180	39.7
436.cactusADM	13.5	882	13.1	910	<u>13.4</u>	<u>893</u>	13.5	882	13.1	910	<u>13.4</u>	<u>893</u>
437.leslie3d	24.8	379	<u>24.9</u>	<u>378</u>	25.4	371	24.8	379	<u>24.9</u>	<u>378</u>	25.4	371
444.namd	<u>307</u>	<u>26.1</u>	307	26.1	306	26.2	297	27.0	299	26.8	<u>298</u>	<u>26.9</u>
447.dealII	228	50.1	231	49.5	<u>229</u>	<u>49.9</u>	228	50.1	231	49.5	<u>229</u>	<u>49.9</u>
450.soplex	199	42.0	<u>199</u>	<u>41.8</u>	202	41.3	199	42.0	<u>199</u>	<u>41.8</u>	202	41.3
453.povray	<u>108</u>	<u>49.3</u>	108	49.2	107	49.5	96.3	55.2	96.2	55.3	<u>96.2</u>	<u>55.3</u>
454.calculix	171	48.1	<u>171</u>	<u>48.2</u>	171	48.2	<u>160</u>	<u>51.5</u>	162	50.9	160	51.6
459.GemsFDTD	46.7	227	<u>46.7</u>	<u>227</u>	47.6	223	38.4	276	38.3	277	<u>38.4</u>	<u>276</u>
465.tonto	267	36.8	<u>268</u>	<u>36.8</u>	271	36.4	213	46.1	214	45.9	<u>214</u>	<u>45.9</u>
470.lbm	<u>18.9</u>	<u>727</u>	18.9	728	19.5	704	<u>18.9</u>	<u>727</u>	18.9	728	19.5	704
481.wrf	99.2	113	<u>99.5</u>	<u>112</u>	100	111	99.2	113	<u>99.5</u>	<u>112</u>	100	111
482.sphinx3	<u>285</u>	<u>68.5</u>	286	68.2	284	68.6	<u>285</u>	<u>68.5</u>	286	68.2	284	68.6

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS settings:  
 Snoop Mode set to Home Snoop  
 Virtualization Technology disabled  
 System Profile set to Custom  
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914  
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
 running on linux-kygk Sat Jan 17 19:41:11 2015

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 108

PowerEdge FC430 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECfp\_base2006 = 104

CPU2006 license: 55

Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Apr-2015

Tested by: Dell Inc.

Software Availability: Apr-2015

## Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

```

model name : Intel(R) Xeon(R) CPU E5-2670 v3 @ 2.30GHz
 2 "physical id"s (chips)
 48 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
  cpu cores : 12
  siblings  : 24
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
 cache size : 30720 KB

```

From /proc/meminfo

```

MemTotal:      132186916 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

/usr/bin/lsb\_release -d

SUSE Linux Enterprise Server 12

From /etc/\*release\* /etc/\*version\*

```

SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 0
  # This file is deprecated and will be removed in a future service pack or
  # release.
  # Please check /etc/os-release for details about this release.
os-release:
  NAME="SLES"
  VERSION="12"
  VERSION_ID="12"
  PRETTY_NAME="SUSE Linux Enterprise Server 12"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12"

```

uname -a:

```

Linux linux-kygk 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Jan 17 13:54

SPEC is set to: /root/cpu2006-1.2

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4 176G  11G 165G   6% /

```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 108

PowerEdge FC430 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECfp\_base2006 = 104

CPU2006 license: 55

Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Apr-2015

Tested by: Dell Inc.

Software Availability: Apr-2015

## Platform Notes (Continued)

reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 0.4.0 01/08/2015

Memory:

4x 002C00B3002C 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz

4x 00CE00B300CE M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,compact,1,0"

LD\_LIBRARY\_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"

OMP\_NUM\_THREADS = "24"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent\_hugepage/enabled

## 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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 108

PowerEdge FC430 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECfp\_base2006 = 104

CPU2006 license: 55

Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Apr-2015

Tested by: Dell Inc.

Software Availability: Apr-2015

## Base Portability Flags (Continued)

```

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:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

```

C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

```

Fortran benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

```

Benchmarks using both Fortran and C:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -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

```



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 108

PowerEdge FC430 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECfp\_base2006 = 104

CPU2006 license: 55

Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Apr-2015

Tested by: Dell Inc.

Software Availability: Apr-2015

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(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.deallI: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4  
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(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

465.tonto: -xCORE-AVX2(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

Benchmarks using both Fortran and C:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 108

PowerEdge FC430 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECfp\_base2006 = 104

CPU2006 license: 55

Test date: Jan-2015

Test sponsor: Dell Inc.

Hardware Availability: Apr-2015

Tested by: Dell Inc.

Software Availability: Apr-2015

## Peak Optimization Flags (Continued)

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.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 v1.2.  
Report generated on Thu Apr 16 15:39:12 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 16 April 2015.