



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp<sup>®</sup>2006 = 75.6

PowerEdge T420 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp\_base2006 = 72.7

CPU2006 license: 55

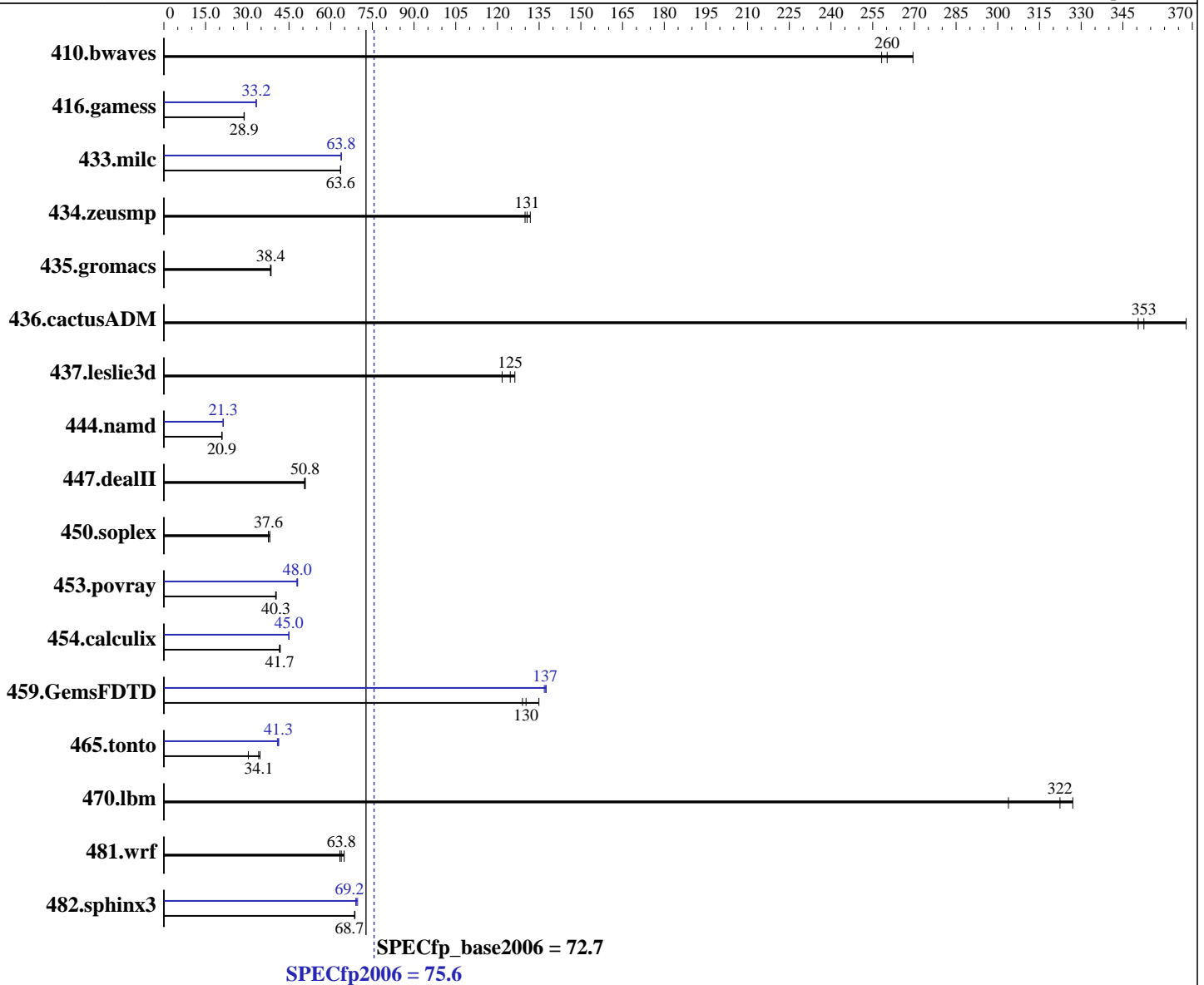
Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013



## Hardware

CPU Name: Intel Xeon E5-2430 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip  
 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 11 (x86\_64)  
 3.0.76-0.11-default  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 75.6

PowerEdge T420 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp\_base2006 = 72.7

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

L3 Cache: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 192 GB (12 x 16 GB 2Rx4 PC3L-12800R-11, ECC)  
 Disk Subsystem: 300 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	52.6	258	<u>52.2</u>	<u>260</u>	50.4	269	52.6	258	<u>52.2</u>	<u>260</u>	50.4	269
416.gamess	<b>678</b>	<b>28.9</b>	677	28.9	679	28.8	590	33.2	<b>589</b>	<b>33.2</b>	589	33.2
433.milc	144	63.6	144	63.5	<b>144</b>	<b>63.6</b>	144	63.8	<b>144</b>	<b>63.8</b>	144	63.8
434.zeusmp	<b>69.6</b>	<b>131</b>	69.0	132	70.0	130	<b>69.6</b>	<b>131</b>	69.0	132	70.0	130
435.gromacs	186	38.4	185	38.6	<b>186</b>	<b>38.4</b>	186	38.4	185	38.6	<b>186</b>	<b>38.4</b>
436.cactusADM	<b>33.9</b>	<b>353</b>	32.5	368	34.1	351	<b>33.9</b>	<b>353</b>	32.5	368	34.1	351
437.leslie3d	74.4	126	77.2	122	<b>75.4</b>	<b>125</b>	74.4	126	77.2	122	<b>75.4</b>	<b>125</b>
444.namd	<b>384</b>	<b>20.9</b>	385	20.8	384	20.9	376	21.3	376	21.3	<b>376</b>	<b>21.3</b>
447.dealII	226	50.5	225	50.8	<b>225</b>	<b>50.8</b>	226	50.5	225	50.8	<b>225</b>	<b>50.8</b>
450.soplex	<b>222</b>	<b>37.6</b>	219	38.1	222	37.6	<b>222</b>	<b>37.6</b>	219	38.1	222	37.6
453.povray	132	40.4	<b>132</b>	<b>40.3</b>	132	40.2	<b>111</b>	<b>48.0</b>	111	47.8	111	48.1
454.calculix	<b>198</b>	<b>41.7</b>	198	41.6	197	41.9	183	45.0	<b>183</b>	<b>45.0</b>	184	44.9
459.GemsFDTD	82.2	129	<b>81.4</b>	<b>130</b>	78.6	135	<b>77.3</b>	<b>137</b>	77.5	137	77.1	138
465.tonto	<b>289</b>	<b>34.1</b>	324	30.4	285	34.6	<b>239</b>	<b>41.3</b>	241	40.8	239	41.3
470.lbm	45.2	304	<b>42.6</b>	<b>322</b>	42.0	327	45.2	304	<b>42.6</b>	<b>322</b>	42.0	327
481.wrf	176	63.3	<b>175</b>	<b>63.8</b>	172	64.9	176	63.3	<b>175</b>	<b>63.8</b>	172	64.9
482.sphinx3	284	68.7	<b>284</b>	<b>68.7</b>	284	68.6	<b>281</b>	<b>69.2</b>	280	69.7	282	69.0

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:  
 Virtualization Technology disabled  
 Execute Disable disabled  
 Logical Processor disabled  
 System Profile set to Performance  
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818  
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
 running on linux Wed Nov 6 14:51:19 2013

This section contains SUT (System Under Test) info as seen by  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 75.6

PowerEdge T420 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp\_base2006 = 72.7

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## Platform Notes (Continued)

some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2430 v2 @ 2.50GHz
  2 "physical id"s (chips)
  12 "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 : 6
    siblings  : 6
    physical 0: cores 0 1 2 3 4 5
    physical 1: cores 0 1 2 3 4 5
  cache size : 15360 KB

```

```

From /proc/meminfo
MemTotal:      198443272 kB
HugePages_Total:    0
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3

```

```

uname -a:
Linux linux 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990)
x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Nov 6 08:16 last=S

```

SPEC is set to: /root/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext2  267G  9.4G  257G   4% /

```

```

Additional information from dmidecode:
BIOS Dell Inc. 2.0.21 09/23/2013
Memory:
 1x 00AD00B300AD HMT42GR7MFR4A-PB 16 GB 1600 MHz
11x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1600 MHz

```

(End of data from sysinfo program)



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 75.6

PowerEdge T420 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp\_base2006 = 72.7

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## General Notes

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

LD\_LIBRARY\_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"  
OMP\_NUM\_THREADS = "12"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

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

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop\_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

## 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 75.6

PowerEdge T420 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp\_base2006 = 72.7

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -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

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32  
-ansi-alias

470.lbm: basepeak = yes

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 75.6

PowerEdge T420 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp\_base2006 = 72.7

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(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.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX(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:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -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-ic14.0-official-linux64.20140128.html>  
<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>  
<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revB.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 75.6

PowerEdge T420 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp\_base2006 = 72.7

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

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 Jul 24 20:02:54 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 25 February 2014.