



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp<sup>®</sup>2006 = 47.2

PowerEdge R720 (Intel Xeon E5-2603, 1.80 GHz)

SPECfp\_base2006 = 45.3

CPU2006 license: 55

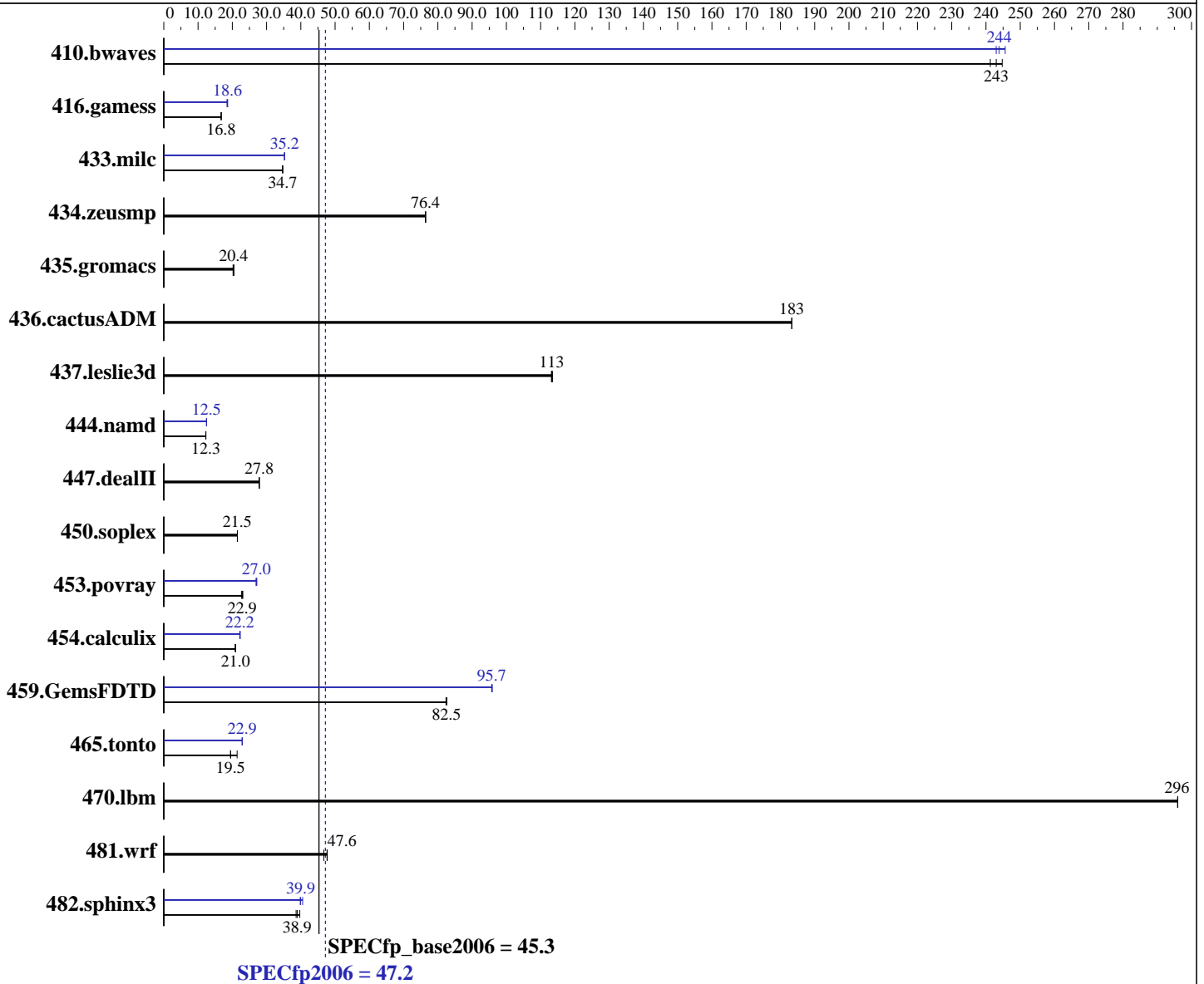
Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



SPECfp2006 = 47.2

## Hardware

CPU Name: Intel Xeon E5-2603  
 CPU Characteristics:  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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 SP2 (x86\_64) 3.0.13-0.9-default  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (add definition here)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 47.2

PowerEdge R720 (Intel Xeon E5-2603, 1.80 GHz)

SPECfp\_base2006 = 45.3

CPU2006 license: 55

Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz)  
 Disk Subsystem: 1 x 1 TB 7200 RPM 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	56.3	241	<b>55.9</b>	<b>243</b>	55.5	245	55.3	246	55.9	243	<b>55.7</b>	<b>244</b>
416.gamess	1169	16.7	<b>1169</b>	<b>16.8</b>	1169	16.8	1052	18.6	1062	18.4	<b>1052</b>	<b>18.6</b>
433.milc	265	34.7	265	34.7	<b>265</b>	<b>34.7</b>	261	35.2	260	35.3	<b>260</b>	<b>35.2</b>
434.zeusmp	119	76.4	<b>119</b>	<b>76.4</b>	119	76.4	119	76.4	<b>119</b>	<b>76.4</b>	119	76.4
435.gromacs	349	20.5	<b>351</b>	<b>20.4</b>	353	20.2	349	20.5	<b>351</b>	<b>20.4</b>	353	20.2
436.cactusADM	65.2	183	65.2	183	<b>65.2</b>	<b>183</b>	65.2	183	65.2	183	<b>65.2</b>	<b>183</b>
437.leslie3d	<b>83.0</b>	<b>113</b>	83.0	113	82.8	113	<b>83.0</b>	<b>113</b>	83.0	113	82.8	113
444.namd	<b>653</b>	<b>12.3</b>	654	12.3	653	12.3	643	12.5	643	12.5	<b>643</b>	<b>12.5</b>
447.dealII	410	27.9	<b>411</b>	<b>27.8</b>	411	27.8	410	27.9	<b>411</b>	<b>27.8</b>	411	27.8
450.soplex	388	21.5	<b>388</b>	<b>21.5</b>	389	21.5	388	21.5	<b>388</b>	<b>21.5</b>	389	21.5
453.povray	<b>232</b>	<b>22.9</b>	231	23.1	235	22.7	<b>197</b>	<b>27.0</b>	198	26.9	196	27.2
454.calculix	394	21.0	396	20.8	<b>394</b>	<b>21.0</b>	<b>372</b>	<b>22.2</b>	372	22.2	370	22.3
459.GemsFDTD	129	82.4	128	82.6	<b>129</b>	<b>82.5</b>	111	95.7	111	95.9	<b>111</b>	<b>95.7</b>
465.tonto	460	21.4	<b>504</b>	<b>19.5</b>	505	19.5	<b>430</b>	<b>22.9</b>	430	22.9	429	22.9
470.lbm	<b>46.4</b>	<b>296</b>	46.4	296	46.4	296	<b>46.4</b>	<b>296</b>	46.4	296	46.4	296
481.wrf	234	47.7	239	46.7	<b>234</b>	<b>47.6</b>	234	47.7	239	46.7	<b>234</b>	<b>47.6</b>
482.sphinx3	<b>501</b>	<b>38.9</b>	491	39.7	505	38.6	489	39.8	<b>488</b>	<b>39.9</b>	481	40.5

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

System Profile set to Custom  
 CPU Power Management set to Maximum Performance  
 Memory Frequency set to Maximum Performance  
 C States/C1E set to Enabled  
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on linux-gwzc Tue Feb 28 21:59:02 2012

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 = 47.2

PowerEdge R720 (Intel Xeon E5-2603, 1.80 GHz)

SPECfp\_base2006 = 45.3

CPU2006 license: 55

Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## 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 E5-2603 0 @ 1.80GHz
  2 "physical id"s (chips)
  8 "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 : 4
    siblings  : 4
    physical 0: cores 0 1 2 3
    physical 1: cores 0 1 2 3
  cache size : 10240 KB

```

```

From /proc/meminfo
MemTotal:      132122696 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 = 2

```

```

uname -a:
Linux linux-gwzc 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012
(54ddfaf) x86_64 x86_64 x86_64 GNU/Linux

```

```
run-level 3 Feb 28 11:10 last=S
```

```

SPEC is set to: /root/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  913G  7.9G  859G   1% /

```

Additional information from dmidecode:

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:  
 KMP\_AFFINITY = "granularity=fine,scatter"  
 LD\_LIBRARY\_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64"  
 OMP\_NUM\_THREADS = "8"  
 The Dell PowerEdge R720 and

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 47.2

PowerEdge R720 (Intel Xeon E5-2603, 1.80 GHz)

SPECfp\_base2006 = 45.3

CPU2006 license: 55

Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## General Notes (Continued)

the Bull NovaScale R460 F3 models are electronically equivalent.

The results have been measured on a Dell PowerEdge R720 model

Transparent Huge Pages disabled with:

```
echo never > /sys/kernel/mm/transparent_hugepage/enabled
```

Filesystem page cache cleared with:

```
echo 1> /proc/sys/vm/drop_caches
```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using 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.lelie3d: -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:

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 47.2

PowerEdge R720 (Intel Xeon E5-2603, 1.80 GHz)

SPECfp\_base2006 = 45.3

CPU2006 license: 55

Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -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: -xAVX(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: -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 = 47.2

PowerEdge R720 (Intel Xeon E5-2603, 1.80 GHz)

SPECfp\_base2006 = 45.3

CPU2006 license: 55

Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## 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.dealII: 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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel  
-static

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- -static

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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120328.html>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 47.2

PowerEdge R720 (Intel Xeon E5-2603, 1.80 GHz)

SPECfp\_base2006 = 45.3

CPU2006 license: 55

Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120328.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 Jul 24 02:47:02 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 27 March 2012.