



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Dell Inc.

**SPECfp<sup>®</sup>2006 = 70.5**

PowerEdge R720 (Intel Xeon E5-2630, 2.30 GHz)

**SPECfp\_base2006 = 66.9**

CPU2006 license: 55

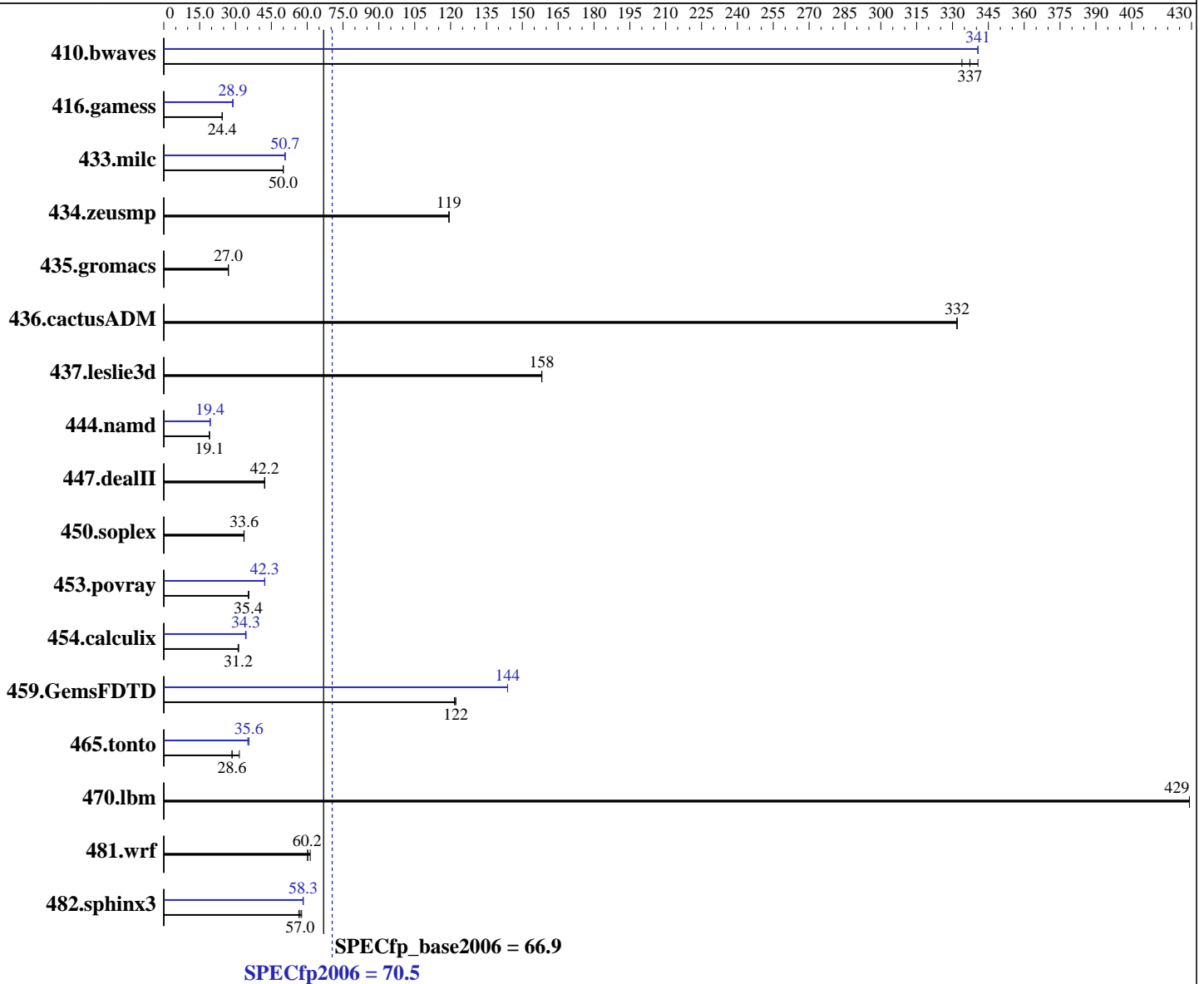
Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E5-2630  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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 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 = 70.5

PowerEdge R720 (Intel Xeon E5-2630, 2.30 GHz)

SPECfp\_base2006 = 66.9

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: 15 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)  
Disk Subsystem: 1 x 146 GB 10000 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    | 40.7        | 334         | 39.9        | 341         | <b>40.3</b> | <b>337</b>  | <b>39.9</b> | <b>341</b>  | 39.9        | 341         | 39.9        | 341         |
| 416.gamess    | 799         | 24.5        | 802         | 24.4        | <b>801</b>  | <b>24.4</b> | <b>679</b>  | <b>28.9</b> | 677         | 28.9        | 679         | 28.8        |
| 433.milc      | 184         | 50.0        | <b>184</b>  | <b>50.0</b> | 184         | 50.0        | 181         | 50.7        | 181         | 50.8        | <b>181</b>  | <b>50.7</b> |
| 434.zeusmp    | 76.3        | 119         | 76.3        | 119         | <b>76.3</b> | <b>119</b>  | 76.3        | 119         | 76.3        | 119         | <b>76.3</b> | <b>119</b>  |
| 435.gromacs   | 264         | 27.0        | <b>264</b>  | <b>27.0</b> | 265         | 27.0        | 264         | 27.0        | <b>264</b>  | <b>27.0</b> | 265         | 27.0        |
| 436.cactusADM | 36.0        | 332         | <b>36.0</b> | <b>332</b>  | 36.0        | 332         | 36.0        | 332         | <b>36.0</b> | <b>332</b>  | 36.0        | 332         |
| 437.leslie3d  | 59.4        | 158         | <b>59.4</b> | <b>158</b>  | 59.4        | 158         | <b>59.4</b> | 158         | <b>59.4</b> | <b>158</b>  | 59.4        | 158         |
| 444.namd      | 420         | 19.1        | <b>420</b>  | <b>19.1</b> | 420         | 19.1        | 413         | 19.4        | <b>413</b>  | <b>19.4</b> | 414         | 19.4        |
| 447.dealII    | 271         | 42.2        | <b>271</b>  | <b>42.2</b> | 271         | 42.3        | 271         | 42.2        | <b>271</b>  | <b>42.2</b> | 271         | 42.3        |
| 450.soplex    | <b>248</b>  | <b>33.6</b> | 248         | 33.6        | 249         | 33.5        | <b>248</b>  | <b>33.6</b> | 248         | 33.6        | 249         | 33.5        |
| 453.povray    | <b>150</b>  | <b>35.4</b> | 150         | 35.6        | 150         | 35.4        | 126         | 42.2        | 126         | 42.3        | <b>126</b>  | <b>42.3</b> |
| 454.calculix  | <b>265</b>  | <b>31.2</b> | 265         | 31.1        | 263         | 31.3        | 241         | 34.2        | 240         | 34.4        | <b>240</b>  | <b>34.3</b> |
| 459.GemsFDTD  | <b>86.9</b> | <b>122</b>  | 87.3        | 122         | 86.9        | 122         | 73.8        | 144         | 73.8        | 144         | <b>73.8</b> | <b>144</b>  |
| 465.tonto     | 311         | 31.6        | 345         | 28.6        | <b>345</b>  | <b>28.6</b> | 276         | 35.6        | <b>277</b>  | <b>35.6</b> | 280         | 35.2        |
| 470.lbm       | 32.0        | 429         | 32.0        | 429         | <b>32.0</b> | <b>429</b>  | 32.0        | 429         | 32.0        | 429         | <b>32.0</b> | <b>429</b>  |
| 481.wrf       | 186         | 60.2        | <b>185</b>  | <b>60.2</b> | 182         | 61.3        | 186         | 60.2        | <b>185</b>  | <b>60.2</b> | 182         | 61.3        |
| 482.sphinx3   | 338         | 57.7        | 345         | 56.5        | <b>342</b>  | <b>57.0</b> | 334         | 58.4        | <b>334</b>  | <b>58.3</b> | 335         | 58.2        |

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  
Turbo Boost set to Enabled  
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-twrn Sat Feb 18 23:04:11 2012

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 70.5

PowerEdge R720 (Intel Xeon E5-2630, 2.30 GHz)

SPECfp\_base2006 = 66.9

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)

This section contains SUT (System Under Test) info as seen by 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 E5-2630 0 @ 2.30GHz
 2 "physical id"s (chips)
 24 "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     : 12
  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:      132122688 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-twrn 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 16 13:50 last=S

```

SPEC is set to: /root/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  131G  7.9G  116G   7% /

```

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 = "12"

```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 70.5

PowerEdge R720 (Intel Xeon E5-2630, 2.30 GHz)

SPECfp\_base2006 = 66.9

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 Dell PowerEdge R720 and 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.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 = 70.5

PowerEdge R720 (Intel Xeon E5-2630, 2.30 GHz)

SPECfp\_base2006 = 66.9

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

C benchmarks:

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

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 = 70.5

PowerEdge R720 (Intel Xeon E5-2630, 2.30 GHz)

SPECfp\_base2006 = 66.9

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.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: -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 = 70.5

PowerEdge R720 (Intel Xeon E5-2630, 2.30 GHz)

SPECfp\_base2006 = 66.9

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 03:08:16 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 27 March 2012.