



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Dell Inc.

### SPECfp<sup>®</sup>\_rate2006 = Not Run

### PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)

### SPECfp\_rate\_base2006 = 864

CPU2006 license: 55

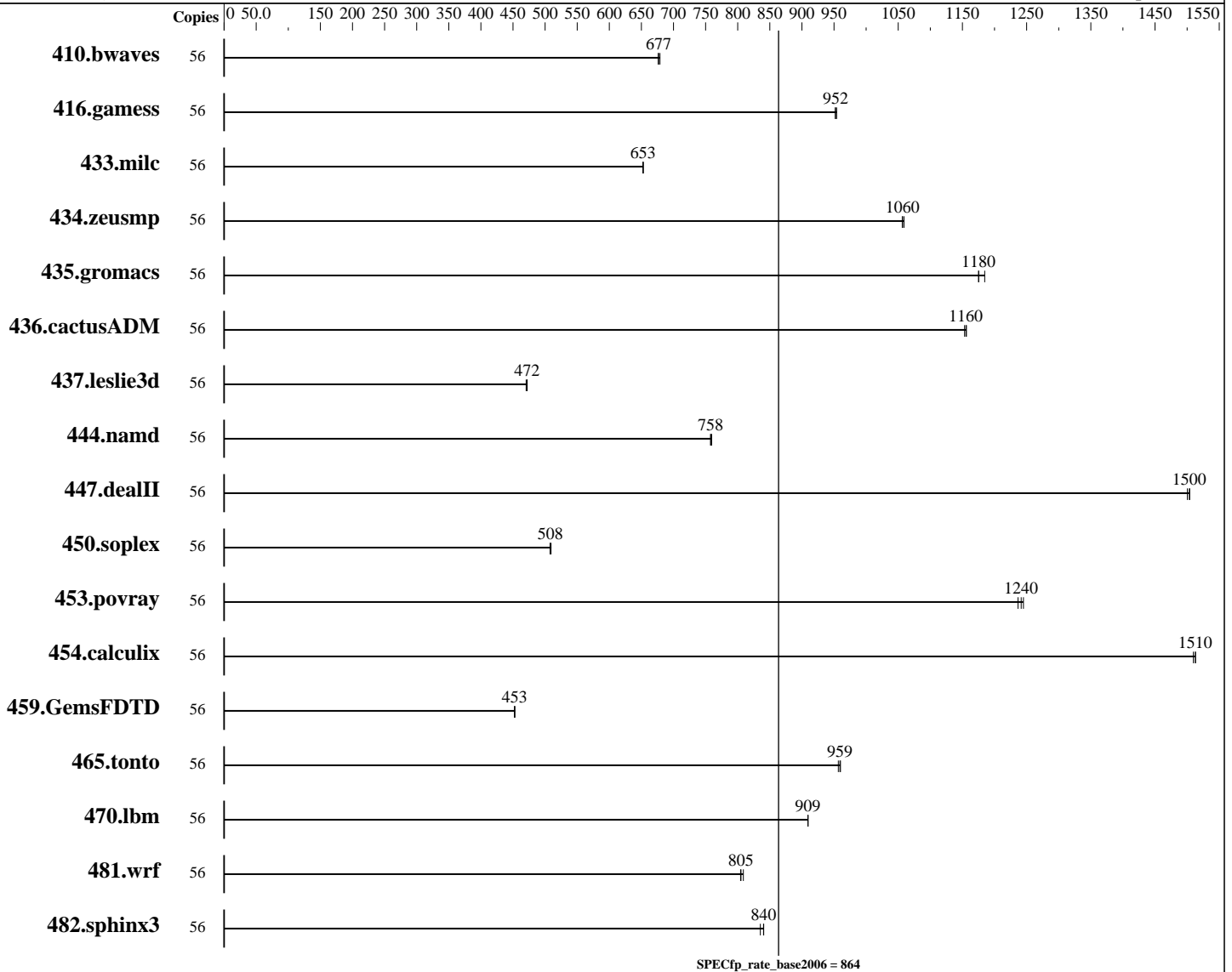
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Jan-2017

Hardware Availability: Jun-2016

Software Availability: Sep-2016



### Hardware

CPU Name: Intel Xeon E5-2660 v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 28 cores, 2 chips, 14 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 SP1  
 3.12.48-1-default  
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++  
 Compiler for Linux;  
 Fortran: Version 17.0.0.098 of Intel Fortran  
 Compiler for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = Not Run

PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)

SPECfp\_rate\_base2006 = 864

CPU2006 license: 55

Test date: Jan-2017

Test sponsor: Dell Inc.

Hardware Availability: Jun-2016

Tested by: Dell Inc.

Software Availability: Sep-2016

L3 Cache: 35 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx8 PC4-2400T-R)  
 Disk Subsystem: 300 GB 10000 RPM SAS  
 Other Hardware: None

Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	56	<b><u>1124</u></b>	<b><u>677</u></b>	1121	679	1126	676							
416.gamess	56	<b><u>1151</u></b>	<b><u>952</u></b>	1149	954	1152	952							
433.milc	56	787	653	788	652	<b><u>788</u></b>	<b><u>653</u></b>							
434.zeusmp	56	481	1060	482	1060	<b><u>482</u></b>	<b><u>1060</u></b>							
435.gromacs	56	<b><u>340</u></b>	<b><u>1180</u></b>	338	1180	340	1180							
436.cactusADM	56	<b><u>579</u></b>	<b><u>1160</u></b>	579	1160	580	1150							
437.leslie3d	56	<b><u>1116</u></b>	<b><u>472</u></b>	1119	470	1115	472							
444.namd	56	<b><u>593</u></b>	<b><u>758</u></b>	591	759	593	758							
447.dealII	56	427	1500	<b><u>426</u></b>	<b><u>1500</u></b>	426	1500							
450.soplex	56	920	508	917	509	<b><u>919</u></b>	<b><u>508</u></b>							
453.povray	56	<b><u>240</u></b>	<b><u>1240</u></b>	241	1240	239	1250							
454.calculix	56	<b><u>305</u></b>	<b><u>1510</u></b>	306	1510	305	1510							
459.GemsFDTD	56	<b><u>1313</u></b>	<b><u>453</u></b>	1312	453	1314	452							
465.tonto	56	<b><u>574</u></b>	<b><u>959</u></b>	574	960	576	957							
470.lbm	56	<b><u>846</u></b>	<b><u>909</u></b>	846	909	846	910							
481.wrf	56	778	804	<b><u>777</u></b>	<b><u>805</u></b>	773	809							
482.sphinx3	56	1307	835	1299	841	<b><u>1299</u></b>	<b><u>840</u></b>							

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

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

## Platform Notes

BIOS settings:  
Snoop Mode set to Cluster on Die  
Virtualization Technology disabled

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = Not Run

PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)

SPECfp\_rate\_base2006 = 864

CPU2006 license: 55

Test date: Jan-2017

Test sponsor: Dell Inc.

Hardware Availability: Jun-2016

Tested by: Dell Inc.

Software Availability: Sep-2016

## Platform Notes (Continued)

System Profile set to Custom  
 CPU Performance set to Maximum Performance  
 C States set to Autonomous  
 C1E disabled  
 Energy Efficient Turbo enabled  
 Uncore Frequency set to Dynamic  
 Energy Efficiency Policy set to Balanced Performance  
 Memory Patrol Scrub disabled  
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6993  
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
 running on linux Fri Jan 20 16:23:19 2017

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 E5-2660 v4@ 2.00GHz
 2 "physical id"s (chips)
 56 "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    : 14
  siblings    : 28
  physical 0  : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1  : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size     : 17920 KB
```

```
From /proc/meminfo
MemTotal:      264436488 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP1
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# 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-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = Not Run

PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)

SPECfp\_rate\_base2006 = 864

CPU2006 license: 55

Test date: Jan-2017

Test sponsor: Dell Inc.

Hardware Availability: Jun-2016

Tested by: Dell Inc.

Software Availability: Sep-2016

## Platform Notes (Continued)

CPE\_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:

```
Linux linux 3.12.48-1-default #1 SMP Fri Sep 18 13:49:47 UTC 2015 (a83966d)
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jan 20 09:29

SPEC is set to: /root/cpu2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        xfs   271G  11G  260G   5% /
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program 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. 2.3.4 11/09/2016

Memory:

```
1x 00AD00B300AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz
9x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz
6x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz
8x Not Specified Not Specified
```

(End of data from sysinfo program)

## 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/sh10.2"
```

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM

memory using Redhat Enterprise Linux 7.2

Transparent Huge Pages enabled by default

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
```

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = Not Run

PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)

SPECfp\_rate\_base2006 = 864

CPU2006 license: 55

Test date: Jan-2017

Test sponsor: Dell Inc.

Hardware Availability: Jun-2016

Tested by: Dell Inc.

Software Availability: Sep-2016

## Base Compiler Invocation (Continued)

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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
-qopt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
-qopt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
-qopt-mem-layout-trans=3



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = Not Run

PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)

SPECfp\_rate\_base2006 = 864

CPU2006 license: 55

Test date: Jan-2017

Test sponsor: Dell Inc.

Hardware Availability: Jun-2016

Tested by: Dell Inc.

Software Availability: Sep-2016

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge13G-revE.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge13G-revE.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 Wed Mar 22 10:49:20 2017 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 21 March 2017.