



# SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 = Not Run

PowerEdge R540 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp\_base2006 = 120

CPU2006 license: 55

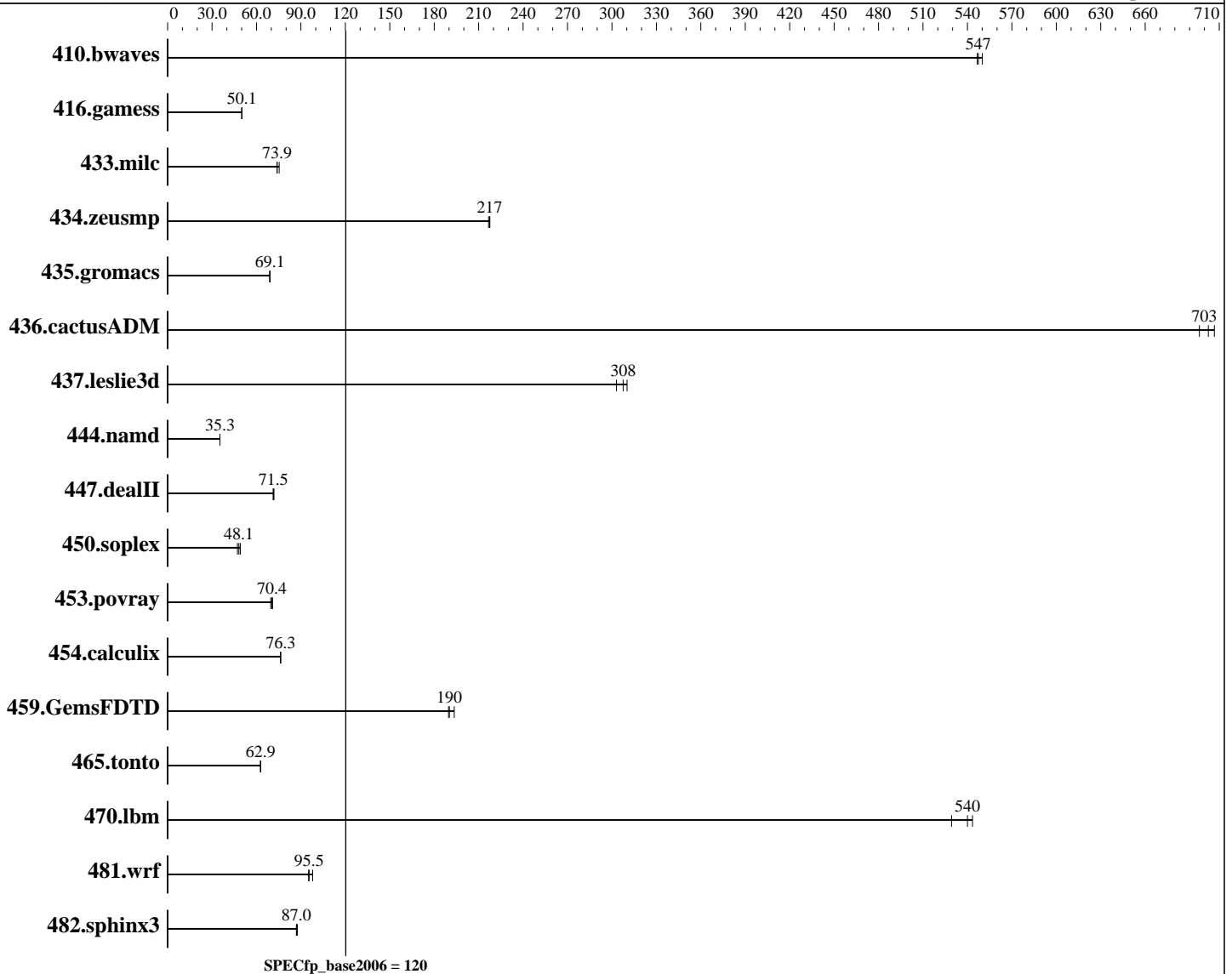
Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon Gold 5122  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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: 1 MB I+D on chip per core

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 12 SP2  
 4.4.21-69-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++  
 Compiler for Linux;  
 Fortran: Version 17.0.3.191 of Intel Fortran  
 Compiler for Linux  
 Auto Parallel: Yes  
 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.

SPECfp2006 = Not Run

PowerEdge R540 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp\_base2006 = 120

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

L3 Cache: 16.5 MB I+D on chip per chip  
Other Cache: None  
Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)  
Disk Subsystem: 1 x 1 TB SATA 7200 RPM  
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    | 24.7              | 550                | <b><u>24.8</u></b> | <b><u>547</u></b>  | 24.9               | 547                |         |       |         |       |         |       |
| 416.gamess    | 391               | 50.1               | 390                | 50.1               | <b><u>391</u></b>  | <b><u>50.1</u></b> |         |       |         |       |         |       |
| 433.milc      | 124               | 73.9               | <b><u>124</u></b>  | <b><u>73.9</u></b> | 122                | 75.3               |         |       |         |       |         |       |
| 434.zeusmp    | 41.8              | 218                | 42.0               | 217                | <b><u>41.9</u></b> | <b><u>217</u></b>  |         |       |         |       |         |       |
| 435.gromacs   | 104               | 68.9               | <b><u>103</u></b>  | <b><u>69.1</u></b> | 103                | 69.2               |         |       |         |       |         |       |
| 436.cactusADM | 17.2              | 697                | 16.9               | 707                | <b><u>17.0</u></b> | <b><u>703</u></b>  |         |       |         |       |         |       |
| 437.leslie3d  | 30.3              | 310                | <b><u>30.6</u></b> | <b><u>308</u></b>  | 31.0               | 303                |         |       |         |       |         |       |
| 444.namd      | <b><u>227</u></b> | <b><u>35.3</u></b> | 227                | 35.3               | 227                | 35.3               |         |       |         |       |         |       |
| 447.dealII    | <b><u>160</u></b> | <b><u>71.5</u></b> | 159                | 71.8               | 161                | 71.3               |         |       |         |       |         |       |
| 450.soplex    | <b><u>173</u></b> | <b><u>48.1</u></b> | 170                | 49.1               | 177                | 47.1               |         |       |         |       |         |       |
| 453.povray    | 76.4              | 69.6               | <b><u>75.5</u></b> | <b><u>70.4</u></b> | 75.1               | 70.9               |         |       |         |       |         |       |
| 454.calculix  | <b><u>108</u></b> | <b><u>76.3</u></b> | 108                | 76.1               | 108                | 76.4               |         |       |         |       |         |       |
| 459.GemsFDTD  | 55.9              | 190                | 54.8               | 194                | <b><u>55.8</u></b> | <b><u>190</u></b>  |         |       |         |       |         |       |
| 465.tonto     | 156               | 62.9               | 157                | 62.6               | <b><u>156</u></b>  | <b><u>62.9</u></b> |         |       |         |       |         |       |
| 470.lbm       | 25.3              | 543                | <b><u>25.4</u></b> | <b><u>540</u></b>  | 26.0               | 529                |         |       |         |       |         |       |
| 481.wrf       | 114               | 97.9               | <b><u>117</u></b>  | <b><u>95.5</u></b> | 117                | 95.2               |         |       |         |       |         |       |
| 482.sphinx3   | 224               | 87.0               | <b><u>224</u></b>  | <b><u>87.0</u></b> | 223                | 87.6               |         |       |         |       |         |       |

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:  
Sub NUMA Cluster disabled  
Virtualization Technology disabled  
System Profile set to Custom  
CPU Performance set to Maximum Performance  
C States set to Autonomous  
C1E disabled  
Energy Efficient Turbo disabled  
Uncore Frequency set to Dynamic  
Energy Efficiency Policy set to Performance

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = Not Run

PowerEdge R540 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp\_base2006 = 120

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

## Platform Notes (Continued)

Memory Patrol Scrub disabled  
 Logical Processor enabled  
 CPU Interconnect Bus Link Power Management disabled  
 PCI ASPM L1 Link Power Management disabled  
 Sysinfo program /root/cpu2006-1.2\_ic17u3/config/sysinfo.rev6993  
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
 running on linux-28u4 Wed Aug 30 21:05:49 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) Gold 5122 CPU @ 3.60GHz
 2 "physical id"s (chips)
 16 "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  : 8
  physical 0: cores 2 3 4 10
  physical 1: cores 1 5 9 13
cache size : 16896 KB
```

```
From /proc/meminfo
MemTotal:      196687620 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP2
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# 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-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"
```

```
uname -a:
Linux linux-28u4 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = Not Run

PowerEdge R540 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp\_base2006 = 120

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

## Platform Notes (Continued)

(9464f67) x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Aug 30 18:50

SPEC is set to: /root/cpu2006-1.2\_ic17u3

| Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
|------------|------|------|------|-------|------|------------|
| /dev/sda2  | xfs  | 927G | 9.9G | 917G  | 2%   | /          |

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. 1.0.0 08/10/2017

Memory:

|    |               |                    |       |        |          |
|----|---------------|--------------------|-------|--------|----------|
| 8x | 002C00B3002C  | 18ASF2G72PDZ-2G6D1 | 16 GB | 2 rank | 2666 MHz |
| 4x | 002C0632002C  | 18ASF2G72PDZ-2G6D1 | 16 GB | 2 rank | 2666 MHz |
| 4x | Not Specified | Not Specified      |       |        |          |

(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\_ic17u3/lib/ia32:/root/cpu2006-1.2\_ic17u3/lib/intel64:/root/cpu2006-1.2\_ic17u3/sh10.2"

OMP\_NUM\_THREADS = "8"

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:

shell invocation of 'sync; echo 3 > /proc/sys/vm/drop\_caches' prior to run

## 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



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = Not Run

PowerEdge R540 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp\_base2006 = 120

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

## 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 -parallel -qopt-prefetch

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

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-revF.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revC.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-revF.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revC.xml>



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = Not Run

PowerEdge R540 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp\_base2006 = 120

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

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 Sep 20 11:02:11 2017 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 19 September 2017.