



SPEC[®] CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp[®]_rate2006 = Not Run

PowerEdge R740 (Intel Xeon Gold 6146, 3.20 GHz)

SPECfp_rate_base2006 = 1240

CPU2006 license: 55

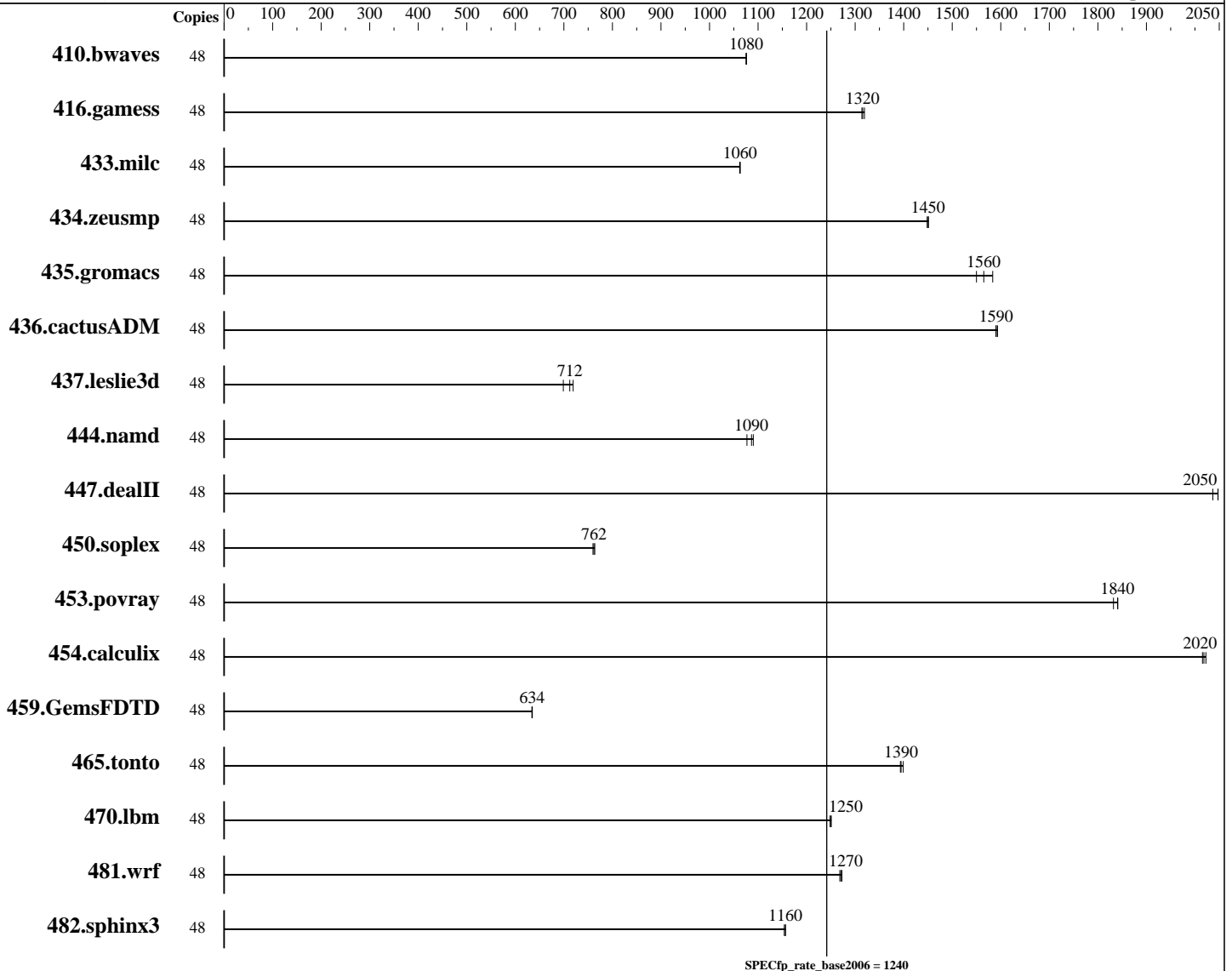
Test date: Jul-2017

Test sponsor: Dell Inc.

Hardware Availability: Aug-2017

Tested by: Dell Inc.

Software Availability: Apr-2017



Hardware

CPU Name: Intel Xeon Gold 6146
 CPU Characteristics: Intel Turbo Boost Technology up to 4.20 GHz
 CPU MHz: 3200
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 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: 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 R740 (Intel Xeon Gold 6146, 3.20 GHz)

SPECfp_rate_base2006 = 1240

CPU2006 license: 55

Test date: Jul-2017

Test sponsor: Dell Inc.

Hardware Availability: Aug-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

L3 Cache: 24.75 MB I+D on chip per chip
 Other Cache: None
 Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
 Disk Subsystem: 1 x 960 GB SATA SSD
 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	48	606	1080	607	1080	606	1080							
416.gamess	48	712	1320	715	1310	714	1320							
433.milc	48	415	1060	415	1060	414	1060							
434.zeusmp	48	302	1450	301	1450	301	1450							
435.gromacs	48	221	1550	216	1580	219	1560							
436.cactusADM	48	361	1590	361	1590	360	1590							
437.leslie3d	48	634	712	627	719	646	699							
444.namd	48	353	1090	354	1090	357	1080							
447.dealII	48	270	2040	268	2050	268	2050							
450.soplex	48	525	762	524	764	527	760							
453.povray	48	139	1840	139	1840	139	1830							
454.calculix	48	196	2020	196	2020	196	2020							
459.GemsFDTD	48	803	634	803	634	802	635							
465.tonto	48	338	1400	339	1390	339	1390							
470.lbm	48	527	1250	528	1250	528	1250							
481.wrf	48	423	1270	421	1270	422	1270							
482.sphinx3	48	809	1160	809	1160	811	1150							

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:
Sub NUMA Cluster enabled
Virtualization Technology disabled

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = Not Run

PowerEdge R740 (Intel Xeon Gold 6146, 3.20 GHz)

SPECfp_rate_base2006 = 1240

CPU2006 license: 55

Test date: Jul-2017

Test sponsor: Dell Inc.

Hardware Availability: Aug-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

Platform Notes (Continued)

System Profile set to Custom
 CPU Performance set to Maximum Performance
 C States set to Autonomous
 C1E disabled
 Uncore Frequency set to Dynamic
 Energy Efficiency Policy set to Performance
 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_icl17u3/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on linux-wwko Mon Jul 24 19:41:06 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 6146 CPU @ 3.20GHz
 2 "physical id"s (chips)
 48 "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 : 12
  siblings  : 24
  physical 0: cores 0 1 2 3 9 10 16 18 19 24 26 27
  physical 1: cores 0 3 4 5 6 7 16 18 19 20 21 22
cache size : 25344 KB
```

```
From /proc/meminfo
MemTotal:      394867840 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"
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = Not Run

PowerEdge R740 (Intel Xeon Gold 6146, 3.20 GHz)

SPECfp_rate_base2006 = 1240

CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Jul-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017

Platform Notes (Continued)

```
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"
```

```
uname -a:
Linux linux-wwko 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jul 24 15:17
```

```
SPEC is set to: /root/cpu2006-1.2_ic17u3
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        xfs   892G  9.5G  883G   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. 1.0.8 07/11/2017

Memory:

```
18x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz
6x 00CE063200CE M393A2K43BB1-CTD 16 GB 2 rank 2666 MHz
```

(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_ic17u3/lib/ia32:/root/cpu2006-1.2_ic17u3/lib/intel64:/root/cpu2006-1.2_ic17u3/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:

```
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
```

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 R740 (Intel Xeon Gold 6146, 3.20 GHz)

SPECfp_rate_base2006 = 1240

CPU2006 license: 55

Test date: Jul-2017

Test sponsor: Dell Inc.

Hardware Availability: Aug-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

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 R740 (Intel Xeon Gold 6146, 3.20 GHz)

SPECfp_rate_base2006 = 1240

CPU2006 license: 55

Test date: Jul-2017

Test sponsor: Dell Inc.

Hardware Availability: Aug-2017

Tested by: Dell Inc.

Software Availability: Apr-2017

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 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.

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Sep 6 11:47:35 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 September 2017.