



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL380 Gen10  
(2.70 GHz, Intel Xeon Gold 6150)

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

**SPECfp\_rate\_base2006 = 1430**

CPU2006 license: 3

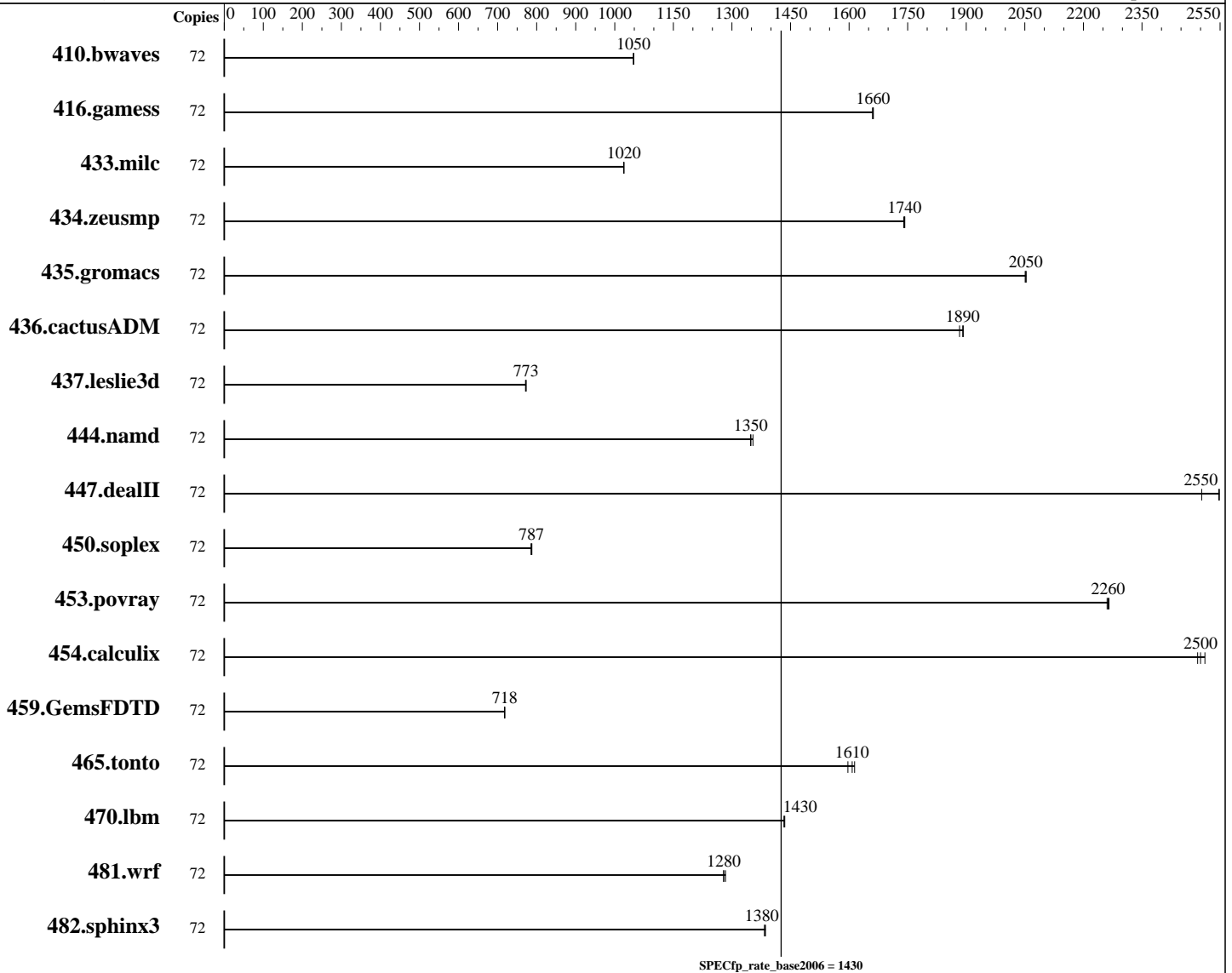
Test sponsor: HPE

Tested by: HPE

Test date: Oct-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon Gold 6150  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2700  
 FPU: Integrated  
 CPU(s) enabled: 36 cores, 2 chips, 18 cores/chip, 2 threads/core  
 CPU(s) orderable: 1, 2 chip(s)  
 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 (x86\_64) SP2  
 Kernel 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

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.70 GHz, Intel Xeon Gold 6150)

SPECfp\_rate2006 = Not Run

SPECfp\_rate\_base2006 = 1430

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Oct-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017

L3 Cache: 24.75 MB I+D on chip per chip  
Other Cache: None  
Memory: 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)  
Disk Subsystem: 1 x 960 GB SSD SATA, RAID 0  
Other Hardware: None

Base Pointers: 32/64-bit  
Peak Pointers: Not Applicable  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	72	<u>934</u>	<u>1050</u>	933	1050	934	1050							
416.gamess	72	<u>848</u>	<u>1660</u>	848	1660	849	1660							
433.milc	72	646	1020	646	1020	<u>646</u>	<u>1020</u>							
434.zeusmp	72	377	1740	<u>376</u>	<u>1740</u>	376	1740							
435.gromacs	72	250	2050	<u>250</u>	<u>2050</u>	251	2050							
436.cactusADM	72	457	1880	<u>455</u>	<u>1890</u>	455	1890							
437.leslie3d	72	876	773	<u>876</u>	<u>773</u>	877	771							
444.namd	72	<u>428</u>	<u>1350</u>	429	1350	426	1350							
447.dealII	72	323	2550	329	2500	<u>323</u>	<u>2550</u>							
450.soplex	72	<u>763</u>	<u>787</u>	764	786	762	788							
453.povray	72	169	2260	169	2270	<u>169</u>	<u>2260</u>							
454.calculix	72	237	2510	<u>238</u>	<u>2500</u>	238	2490							
459.GemsFDTD	72	1064	718	1064	718	<u>1064</u>	<u>718</u>							
465.tonto	72	444	1600	439	1610	<u>441</u>	<u>1610</u>							
470.lbm	72	<u>690</u>	<u>1430</u>	689	1440	690	1430							
481.wrf	72	627	1280	<u>629</u>	<u>1280</u>	629	1280							
482.sphinx3	72	<u>1014</u>	<u>1380</u>	1014	1380	1012	1390							

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"  
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>  
irqbalance disabled with "service irqbalance stop"  
tuned profile set with "tuned-adm profile throughput-performance"  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10  
(2.70 GHz, Intel Xeon Gold 6150)

SPECfp\_rate2006 = Not Run

SPECfp\_rate\_base2006 = 1430

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Oct-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017

## Operating System Notes (Continued)

VM Dirty ratio was set to 40 using "echo 40 > /proc/sys/vm/dirty\_ratio"  
Numa balancing was disabled using "echo 0 > /proc/sys/kernel/numa\_balancing"

## Platform Notes

BIOS Configuration:

Thermal Configuration set to Maximum Cooling  
Memory Patrol Scrubbing set to Disabled  
LLC Prefetcher set to Enabled  
LLC Dead Line Allocation set to Disabled  
Stale A to S set to Disabled  
Workload Pofile set to General Throughput Compute  
Minimum Processor Idle Power Core C-State set to C1E

Sysinfo program /home/cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on dl380gen10-2 Fri Oct 20 12:01:14 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 6150 CPU @ 2.70GHz
 2 "physical id"s (chips)
 72 "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 : 18
  siblings  : 36
  physical 0: cores 0 1 2 3 8 9 10 11 16 17 18 19 20 24 25 26 27
  physical 1: cores 0 1 2 3 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 25344 KB
```

From /proc/meminfo

```
MemTotal:      197548372 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.
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL380 Gen10  
(2.70 GHz, Intel Xeon Gold 6150)

**SPECfp\_rate2006 = Not Run**

**SPECfp\_rate\_base2006 = 1430**

**CPU2006 license:** 3

**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Oct-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Apr-2017

## Platform Notes (Continued)

```

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 dl380gen10-2 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 Oct 20 12:00

```

SPEC is set to: /home/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda4        xfs   517G  140G  378G  27% /home

```

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 HPE U30 09/29/2017

```

Memory:
  24x UNKNOWN NOT AVAILABLE 8 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 = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

Fortran benchmarks:  
ifort -m64

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10  
(2.70 GHz, Intel Xeon Gold 6150)

SPECfp\_rate2006 = Not Run

SPECfp\_rate\_base2006 = 1430

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Oct-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017

## Base Compiler Invocation (Continued)

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
```

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/HPE-Platform-Flags-Intel-V1.2-SKX-revD.html>



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL380 Gen10**

(2.70 GHz, Intel Xeon Gold 6150)

**SPECfp\_rate2006 = Not Run**

**SPECfp\_rate\_base2006 = 1430**

**CPU2006 license:** 3

**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Oct-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Apr-2017

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/HPE-Platform-Flags-Intel-V1.2-SKX-revD.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 Nov 15 10:59:12 2017 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 14 November 2017.