



# SPEC® CFP2006 Result

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**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL380 Gen10  
(2.60 GHz, Intel Xeon Gold 6132)

**SPECfp®2006 = Not Run**

**SPECfp\_base2006 = 142**

CPU2006 license: 3

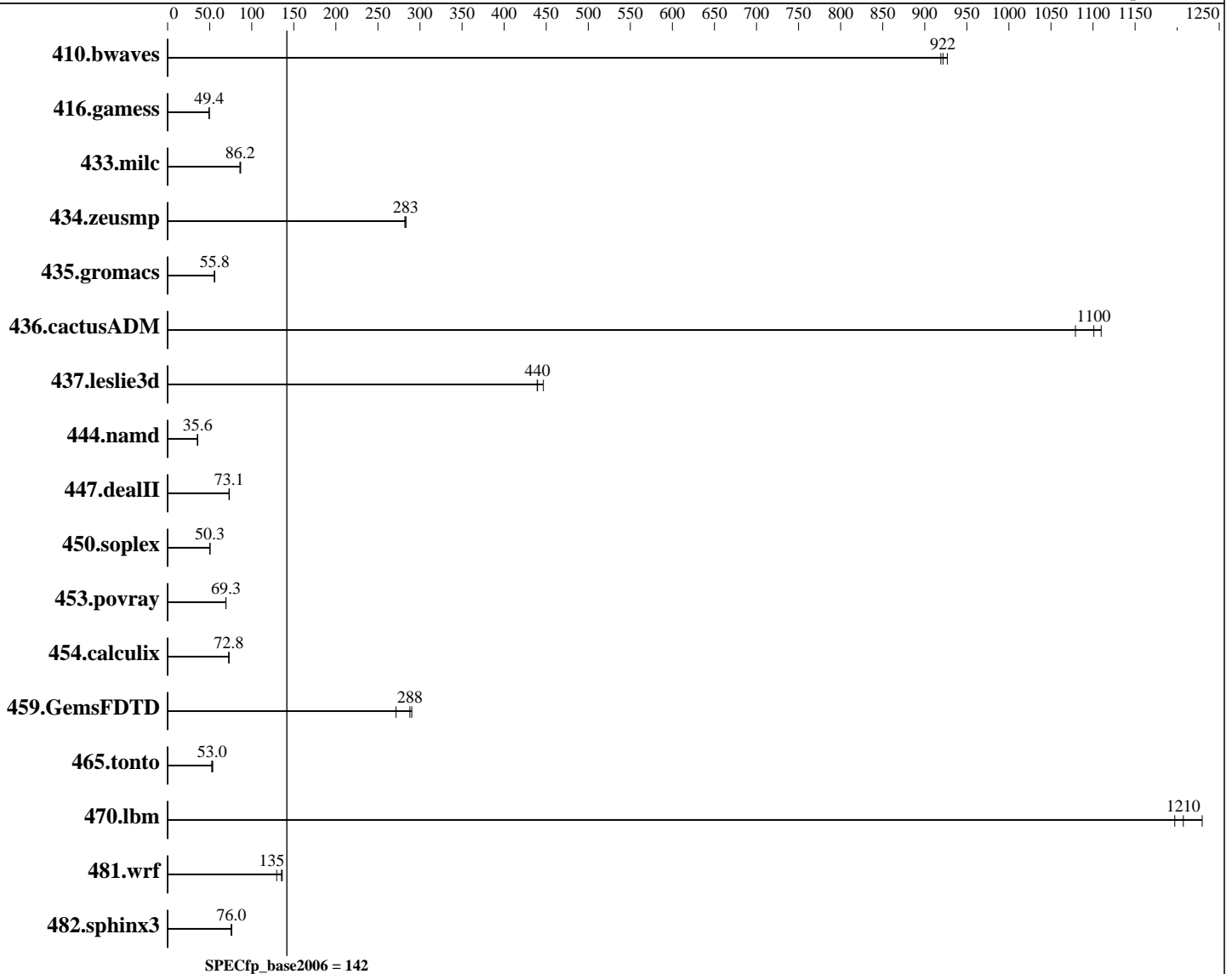
Test sponsor: HPE

Tested by: HPE

Test date: Nov-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017



SPECfp\_base2006 = 142

## Hardware

CPU Name: Intel Xeon Gold 6132  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 28 cores, 2 chips, 14 cores/chip  
 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

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## Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)  
 Kernel 3.10.0-514.el7.x86\_64  
 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

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L3 Cache: 19.25 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 SATA SSD, RAID 0  
Other Hardware: None

System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: Not Applicable  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b><u>14.7</u></b>	<b><u>922</u></b>	14.7	927	14.8	919						
416.gamess	396	49.4	396	49.4	<b><u>396</u></b>	<b><u>49.4</u></b>						
433.milc	107	86.1	<b><u>107</u></b>	<b><u>86.2</u></b>	106	86.9						
434.zeusmp	32.1	283	<b><u>32.1</u></b>	<b><u>283</u></b>	32.3	282						
435.gromacs	128	56.0	<b><u>128</u></b>	<b><u>55.8</u></b>	128	55.6						
436.cactusADM	<b><u>10.9</u></b>	<b><u>1100</u></b>	10.8	1110	11.1	1080						
437.leslie3d	<b><u>21.4</u></b>	<b><u>440</u></b>	21.4	439	21.0	447						
444.namd	<b><u>225</u></b>	<b><u>35.6</u></b>	225	35.6	226	35.6						
447.dealII	156	73.4	<b><u>156</u></b>	<b><u>73.1</u></b>	157	73.1						
450.soplex	<b><u>166</u></b>	<b><u>50.3</u></b>	166	50.1	165	50.5						
453.povray	76.8	69.3	76.7	69.4	<b><u>76.7</u></b>	<b><u>69.3</u></b>						
454.calculix	<b><u>113</u></b>	<b><u>72.8</u></b>	113	72.7	113	72.8						
459.GemsFDTD	<b><u>36.8</u></b>	<b><u>288</u></b>	39.1	271	36.6	290						
465.tonto	<b><u>186</u></b>	<b><u>53.0</u></b>	188	52.5	183	53.7						
470.lbm	11.2	1230	<b><u>11.4</u></b>	<b><u>1210</u></b>	11.5	1200						
481.wrf	81.9	136	<b><u>82.6</u></b>	<b><u>135</u></b>	86.2	130						
482.sphinx3	258	75.5	<b><u>256</u></b>	<b><u>76.0</u></b>	256	76.2						

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"  
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  
IRQ balance service was stop using "service irqbalance stop"  
Tuned-adm profile was set to Throughput-Performance

## Platform Notes

BIOS Configuration:  
Intel Hyperthreading set to Disabled  
Thermal Configuration set to Maximum Cooling  
LLC Prefetcher set to Enabled  
LLC Dead Line Allocation set to Disabled

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## Platform Notes (Continued)

Stale A to S set to Disabled  
 Memory Patrol Scrubbing set to disabled  
 Workload Profile set to General Peak Frequency Compute  
 Energy/Performance Bias set to Maximum Performance  
 Workload Profile set to Custom  
 NUMA Group Size Optimization set to Flat  
 Uncore Frequency scaling set to Auto  
 Sysinfo program /home/cpu2006/config/sysinfo.rev6993  
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
 running on DL380Gen10 Tue Nov 7 03:06:07 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 6132 CPU @ 2.60GHz
 2 "physical id"s (chips)
 28 "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     : 14
  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     : 19712 KB
```

```
From /proc/meminfo
MemTotal:      197573244 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.3"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server
```

```
uname -a:
Linux DL380Gen10 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Nov 7 03:04

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## Platform Notes (Continued)

SPEC is set to: /home/cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-home	xfs	839G	31G	808G	4%	/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:

KMP\_AFFINITY = "granularity=core,compact"

LD\_LIBRARY\_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"

OMP\_NUM\_THREADS = "28"

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

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

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## Base Portability Flags (Continued)

```

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.deallI: -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/HPE-Platform-Flags-Intel-V1.2-SKX-revF.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>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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