## SPEC® CFP2006 Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
(3.90 GHz, Intel Xeon Gold 6137)

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon Gold 6137</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 4.00 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3900</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>16 cores, 2 chips, 8 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chip(s)</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
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<tr>
<td>Secondary Cache:</td>
<td>1 MB I+D on chip per core</td>
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</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>SUSE Linux Enterprise Server 12 SP2</th>
</tr>
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<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 17.0.3.191 of Intel C/C++</td>
</tr>
<tr>
<td></td>
<td>Compiler for Linux;</td>
</tr>
<tr>
<td></td>
<td>Fortran: Version 17.0.3.191 of Intel Fortran</td>
</tr>
<tr>
<td></td>
<td>Compiler for Linux;</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>File System:</td>
<td>xfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

### SPECfp®_rate2006 = Not Run

### SPECfp_rate_base2006 = 1030

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Dec-2017</th>
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<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Dec-2017</td>
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<tr>
<td>Software Availability:</td>
<td>Apr-2017</td>
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<th>HPE</th>
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<tr>
<td>Tested by:</td>
<td>HPE</td>
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### Test Details

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
<th>Copies</th>
<th>SPECfp_rate_base2006 = 1030</th>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
<td>Not Run</td>
</tr>
<tr>
<td>416.gamess</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
<td>Not Run</td>
</tr>
<tr>
<td>433.milc</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
<td>Not Run</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
<td>Not Run</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
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</tr>
<tr>
<td>436.cactusADM</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
<td>Not Run</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
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</tr>
<tr>
<td>444.namd</td>
<td>Intel Xeon Gold 6137</td>
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<td>Not Run</td>
</tr>
<tr>
<td>447.dealII</td>
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<td>450.soplex</td>
<td>Intel Xeon Gold 6137</td>
<td>32</td>
<td>Not Run</td>
</tr>
<tr>
<td>453.povray</td>
<td>Intel Xeon Gold 6137</td>
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<td>454.calculix</td>
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<td>459.GemsFDTD</td>
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<td>481.wrf</td>
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<tr>
<td>482.sphinx3</td>
<td>Intel Xeon Gold 6137</td>
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</tbody>
</table>

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SPEC CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.90 GHz, Intel Xeon Gold 6137)

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 1030

CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>465.tonto</td>
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<td>482.sphinx3</td>
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<td>927</td>
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<td>926</td>
<td>672</td>
<td>928</td>
</tr>
</tbody>
</table>

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
irqbalance service stopped using "systemctl stop irqbalance.service"
Used throughput-performance profile for tuned-adm: "tuned-adm profile throughput-performance profile"
Numa Balancing disabled using Â“echo 0 > /proc/sys/kernel/ numa_balancing"
runcspec command invoked through numactl i.e.:
Operating System Notes (Continued)

numactl --interleave=all runspec <etc>

Platform Notes

BIOS Configuration:
Memory Patrol Scrubbing set to Disabled
Thermal Configuration set to Maximum Cooling
LLC Prefetch set to Enabled
LLC Dead Line Allocation set to Disabled
Stale A to S set to Disabled
Workload Profile set to General Throughput Compute
Minimum Processor Idle Power Core C-State set to C1E State
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb5ed28d7f98696cbe290c1)
running on dl380gen10-2 Fri Dec 1 12:10:50 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 6137 CPU @ 3.90GHz
  2 "physical id"s (chips)
  32 "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 : 8
siblings : 16
physical 0: cores 0 5 16 19 20 21
physical 1: cores 0 2 3 9 16 19 26 27
cache size : 25344 KB

From /proc/meminfo
MemTotal: 197554680 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"

Continued on next page
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SPEC CFP2006 Result  

SPECfp_rate2006 =  Not Run  
SPECfp_rate_base2006 = 1030

CPU2006 license: 3  
Test sponsor: HPE  
Tested by: HPE

Test date: Dec-2017  
Hardware Availability: Dec-2017  
Software Availability: Apr-2017

Platform Notes (Continued)

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:  
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 1 12:10

SPEC is set to: /home/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 517G 86G 431G 17% /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

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.  
No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.  
No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Base Compiler Invocation

C benchmarks:  
   icc -m64

C++ benchmarks:  
   icpc -m64

Continued on next page
SPEC CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
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SPECfp_rate2006 = Not Run
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CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

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
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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
**Hewlett Packard Enterprise**  
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</table>

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

- [Intel-ic17.0-official-linux64-revF.html](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.html)
- [HPE-Platform-Flags-Intel-V1.2-SKX-revH.html](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.html)

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

- [Intel-ic17.0-official-linux64-revF.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml)
- [HPE-Platform-Flags-Intel-V1.2-SKX-revH.xml](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.xml)

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For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

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