**SPEC® CFP2006 Result**

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL360 Gen10  
(1.80 GHz, Intel Xeon Silver 4108)  

**SPECfp®2006 =**  
Not Run

**SPECfp_base2006 =**  
104

<table>
<thead>
<tr>
<th>Test Sponsor: HPE</th>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU2006 license:</strong> 3</td>
<td><strong>CPU Name:</strong> Intel Xeon Silver 4108</td>
<td><strong>Operating System:</strong> Red Hat Enterprise Linux Server release 7.3 (Maipo), Kernel 3.10.0-514.el7.x86_64</td>
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<tr>
<td><strong>Test date:</strong> Nov-2017</td>
<td><strong>CPU Characteristics:</strong> Intel Turbo Boost Technology up to 3.00 GHz</td>
<td><strong>Compiler:</strong> 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</td>
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<tr>
<td><strong>Hardware Availability:</strong> Oct-2017</td>
<td><strong>CPU MHz:</strong> 1800</td>
<td><strong>Auto Parallel:</strong> Yes</td>
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<tr>
<td><strong>Software Availability:</strong> Apr-2017</td>
<td><strong>FPU:</strong> Integrated</td>
<td><strong>File System:</strong> xfs</td>
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<tr>
<td><strong>Tested by:</strong> HPE</td>
<td><strong>CPU(s) enabled:</strong> 16 cores, 2 chips, 8 cores/chip</td>
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<td><strong>Test sponsor:</strong> HPE</td>
<td><strong>CPU(s) orderable:</strong> 1, 2 chip(s)</td>
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<tr>
<td><strong>CPU(s) orderable:</strong> 1, 2 chip(s)</td>
<td><strong>Primary Cache:</strong> 32 KB I + 32 KB D on chip per core</td>
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<tr>
<td><strong>CPU(s) enabled:</strong> 16 cores, 2 chips, 8 cores/chip</td>
<td><strong>Secondary Cache:</strong> 1 MB I+D on chip per core</td>
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**SPECfp_base2006 = 104**

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<tr>
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<tr>
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<td>436.cactusADM</td>
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Continued on next page
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10
(1.80 GHz, Intel Xeon Silver 4108)

SPEC CFP2006 Result
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SPECfp2006 = Not Run
SPECfp_base2006 = 104

Test date: Nov-2017
Hardware Availability: Oct-2017
Software Availability: Apr-2017

LE Cache: 11 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R, running at 2400)
Disk Subsystem: 1 x 600 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

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

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 disabled with "systemctl stop irqbalance"
tuned profile set with "tuned-adm profile throughput-performance"

Platform Notes
BIOS Configuration:
Intel Hyperthreading set to Disabled
Thermal Configuration set to Maximum Cooling
Memory Patrol Scrubbing set to Disabled

Results Table

<table>
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<tr>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
Hewlett Packard Enterprise
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ProLiant DL360 Gen10
(1.80 GHz, Intel Xeon Silver 4108)

SPECfp2006 = Not Run
SPECfp_base2006 = 104

CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE
Test date: Nov-2017
Hardware Availability: Oct-2017
Software Availability: Apr-2017

Platform Notes (Continued)

LLC Prefetch set to Enabled
LLC Dead Line Allocation 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 DL360G10 Thu Nov 9 04:48:18 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) Silver 4108 CPU @ 1.80GHz
  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 : 8
  siblings : 8
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
  cache size : 11264 KB

From /proc/meminfo
MemTotal: 197752264 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)

uname -a:
  Linux DL360G10 3.10.0-514.e17.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
  x86_64 x86_64 x86_64 GNU/Linux

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</table>

Platform Notes (Continued)

run-level 3 Nov 9 01:51

SPEC is set to: /home/cpu2006

Filesystem       Type Size  Used Avail Use% Mounted on
/dev/mapper/rhel_dl360g10-home xfs  504G  37G  467G   8% /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 U32 09/29/2017
Memory:
24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 MHz, configured at 2400 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 = "16"

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

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### Base Portability Flags (Continued)

- 433.milc: -DSPEC_CPU_LP64
- 434.gromacs: -DSPEC_CPU_LP64 -nofor_main
- 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64 -nofor_main
- 447.dealII: -DSPEC_CPU_LP64
- 450.soplex: -DSPEC_CPU_LP64
- 453.povray: -DSPEC_CPU_LP64 -nofor_main
- 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/HPE-Platform-Flags-Intel-V1.2-SXX-revF.html](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SXX-revF.html)

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

- [http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SXX-revF.xml](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SXX-revF.xml)
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For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.  
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