# SPEC® CFP2006 Result

**Test Sponsor:** Hewlett Packard Enterprise

**Test Case:** ProLiant DL360 Gen10 (3.20 GHz, Intel Xeon Gold 6134)

**CPU2006 license:** 3  
**Test date:** Oct-2017  
**Hardware Availability:** Oct-2017

**CPU Name:** Intel Xeon Gold 6134  
**CPU Characteristics:**  
- Intel Turbo Boost Technology up to 3.70 GHz  
- CPU MHz: 3200  
- FPU: Integrated  
- CPU(s) enabled: 16 cores, 2 chips, 8 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

## Software

**Operating System:** SUSE Linux Enterprise Server 12 (x86_64) SP2  
**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)

## SPECfp®_rate2006 = Not Run

**SPECfp_rate_base2006 = 951**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECfp_rate_base2006</th>
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</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>32</td>
<td></td>
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<tr>
<td>416.gamess</td>
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<td>832</td>
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**SPEC CFP2006 Result**

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL360 Gen10  
(3.20 GHz, Intel Xeon Gold 6134)  

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</tr>
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<tbody>
<tr>
<td>L3 Cache: 24.75 MB I+D on chip per chip</td>
<td>Base Pointers: 32/64-bit</td>
<td>Other Cache: None</td>
<td>Peak Pointers: Not Applicable</td>
<td>Memory: 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)</td>
<td>Other Software: None</td>
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<tr>
<td>Other Memory: 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)</td>
<td>Disk Subsystem: 1 x 480 GB SATA SSD, RAID 0</td>
<td></td>
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<td>Other Hardware: None</td>
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</table>

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### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<td>874</td>
<td><strong>714</strong></td>
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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.

### 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 wth "tuned-adm profile throughput-performance"
Hewlett Packard Enterprise
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CPU2006 license: 3
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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
Workload Profile set to General Throughput Compute
Minimum Processor Idle Power Core C-State set to C1E

Sysinfo program /home/specuser/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-1vuc Thu Oct 26 21:04:40 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 6134 CPU @ 3.20GHz
  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 2 3 9 16 19 26 27
  physical 1: cores 4 8 9 11 16 18 19 25
  cache size : 25344 KB

From /proc/meminfo
MemTotal: 197554684 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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"

Continued on next page
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Platform Notes (Continued)

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 Oct 26 20:58

SPEC is set to: /home/specuser/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 405G 151G 255G 38% /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

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/specuser/cpu2006/lib/ia32:/home/specuser/cpu2006/lib/intel64:/home/specuser/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

Benchmarks using both Fortran and C:
  icc -m64 ifort -m64
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**Base Portability Flags**

410.bwaves: -DSPEC_CPU_LP64
416.games: -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

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
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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.