**SPEC® CFP2006 Result**

**Hewlett Packard Enterprise**
(Test Sponsor: HPE)
ProLiant BL460c Gen10
(3.20 GHz, Intel Xeon Gold 6134)

**SPECfp®_rate2006 = Not Run**

**SPECfp_rate_base2006 = 922**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Test date</td>
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<td>Nov-2017</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Apr-2017</td>
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</table>

**Hardware**

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECfp_rate_base2006</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>922</td>
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</tbody>
</table>

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 (x86_64) SP3
  Kernel 4.4.73-5-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)

**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 L1 + 32 KB D on chip per core
**Secondary Cache:** 1 MB L1+D on chip per core

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L3 Cache: 24.75 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 480 GB SATA SSD, RAID 0
Other Hardware: None

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

Results Table

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<thead>
<tr>
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</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
Filesyste 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 "systemctl stop irqbalance"
tuned profile set with "tuned-adm profile throughput-performance"
Continued on next page
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CPU2006 license: 3
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Test date: Dec-2017
Tested by: HPE
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 Prefetch 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 State
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on bl460c115 Sun Dec 17 01:45:39 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 4 5 7 18 19 21 22
physical 1: cores 0 4 5 16 19 20 22
cache size : 25344 KB

From /proc/meminfo
MemTotal: 197748592 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 3
  # 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-SP3"
  VERSION_ID="12.3"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
Continued on next page
### SPEC CFP2006 Result

**Hewlett Packard Enterprise**  
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**ProLiant BL460c Gen10**  
(3.20 GHz, Intel Xeon Gold 6134)  

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

**Platform Notes (Continued)**

```
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp3"
```

```
uname -a:
   Linux bl460c115 4.4.73-5-default #1 SMP Tue Jul 4 15:33:39 UTC 2017 (b7ce4e4)
      x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 17 01:44

SPEC is set to: /home/cpu2006
```

**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"
```

**General Notes**

Environment variables set by runspec before the start of the run:

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.

This benchmark result is intended to provide perspective on  
past performance using the historical hardware and/or  
software described on this result page.

The system as described on this result page was formerly  
generally available. At the time of this publication, it may  
not be shipping, and/or may not be supported, and/or may fail  
to meet other tests of General Availability described in the  
Continued on next page
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**General Notes (Continued)**


This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

**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  
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

Continued on next page
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### Base Optimization Flags (Continued)

- **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/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:
- [http://www.spec.org/cpu2006/flags/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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