### Hardware

<table>
<thead>
<tr>
<th>Software</th>
<th>SPECfp_rate2006 = Not Run</th>
<th>SPECfp_rate_base2006 = 980</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 5118</td>
<td></td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
<td></td>
</tr>
<tr>
<td>CPU MHZ</td>
<td>2300</td>
<td></td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
<td></td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>24 cores, 2 chips, 12 cores/chip, 2 threads/core</td>
<td></td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1, 2 chip(s)</td>
<td></td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
<td></td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>1 MB I+D on chip per core</td>
<td></td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Software</th>
<th>SPECfp_rate2006 = Not Run</th>
<th>SPECfp_rate_base2006 = 980</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 (x86_64) SP2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kernel 4.4.21-69-default</td>
<td></td>
</tr>
<tr>
<td>Compiler</td>
<td>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>
<td></td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>File System</td>
<td>xfs</td>
<td></td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
<td></td>
</tr>
</tbody>
</table>
**SPEC CFP2006 Result**

**Hewlett Packard Enterprise**
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(2.30 GHz, Intel Xeon Gold 5118)

**SPECfp_rate2006 = Not Run**

**SPECfp_rate_base2006 = 980**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base Pointers</th>
<th>Peak Pointers</th>
<th>Other Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>48</td>
<td>768</td>
<td>849</td>
<td>768</td>
<td>849</td>
<td>768</td>
</tr>
<tr>
<td>416.gamess</td>
<td>48</td>
<td>993</td>
<td>947</td>
<td>992</td>
<td>947</td>
<td>991</td>
</tr>
<tr>
<td>433.milc</td>
<td>48</td>
<td>525</td>
<td>840</td>
<td>524</td>
<td>841</td>
<td>524</td>
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<tr>
<td>434.zeusmp</td>
<td>48</td>
<td>358</td>
<td>1220</td>
<td>356</td>
<td>1230</td>
<td>351</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>48</td>
<td>308</td>
<td>1110</td>
<td>309</td>
<td>1110</td>
<td>308</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>48</td>
<td>433</td>
<td>1320</td>
<td>433</td>
<td>1330</td>
<td>432</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>48</td>
<td>721</td>
<td>626</td>
<td>722</td>
<td>625</td>
<td>721</td>
</tr>
<tr>
<td>444.namd</td>
<td>48</td>
<td>497</td>
<td>775</td>
<td>498</td>
<td>772</td>
<td>498</td>
</tr>
<tr>
<td>447.dealII</td>
<td>48</td>
<td>352</td>
<td>1560</td>
<td>353</td>
<td>1550</td>
<td>352</td>
</tr>
<tr>
<td>450.soplex</td>
<td>48</td>
<td>643</td>
<td>622</td>
<td>641</td>
<td>624</td>
<td>643</td>
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<tr>
<td>453.povray</td>
<td>48</td>
<td>189</td>
<td>1350</td>
<td>185</td>
<td>1380</td>
<td>188</td>
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<tr>
<td>454.calculix</td>
<td>48</td>
<td>274</td>
<td>1440</td>
<td>276</td>
<td>1430</td>
<td>276</td>
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<tr>
<td>459.GemsFDTD</td>
<td>48</td>
<td>873</td>
<td>583</td>
<td>874</td>
<td>583</td>
<td>874</td>
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<tr>
<td>465.tonto</td>
<td>48</td>
<td>471</td>
<td>1000</td>
<td>473</td>
<td>998</td>
<td>472</td>
</tr>
<tr>
<td>470.lbm</td>
<td>48</td>
<td>570</td>
<td>1160</td>
<td>571</td>
<td>1160</td>
<td>570</td>
</tr>
<tr>
<td>481.wrf</td>
<td>48</td>
<td>520</td>
<td>1030</td>
<td>519</td>
<td>1030</td>
<td>519</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>48</td>
<td>1024</td>
<td>914</td>
<td>1022</td>
<td>916</td>
<td>1024</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
runspec command invoked through `numactl` i.e.:
`numactl --interleave=all runspec <etc>`
`irqbalance` disabled with "service irqbalance stop"

Continued on next page
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
(2.30 GHz, Intel Xeon Gold 5118)  

SPECfp_rate2006 = Not Run  
SPECfp_rate_base2006 = 980

**Operating System Notes (Continued)**

- Tuned profile set with "tuned-adm profile throughput-performance"
- 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
- LLC Prefetch set to Enabled
- LLC Dead Line Allocation set to Disabled
- Memory Patrol Scrubbing set to Disabled
- Workload Profile set to General Throughput Compute
- Minimum Processor Idle Power Core C-State set to C1E
- Sysinfo program /home/cpu2006/config/sysinfo.rev6993
  Revision 6993 of 2015-11-06 (b5e8d4d4b51ed28d7f98696cbe290c1)
  Running on dl380gen10-2 Tue Nov 14 00:14:52 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 5118 CPU @ 2.30GHz
- 2 "physical id"s (chips)
- 48 "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: 12
  - siblings: 24
  - physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  - physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
- cache size: 16896 KB

From /proc/meminfo
- MemTotal: 197552564 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:

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spec

SPEC CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(2.30 GHz, Intel Xeon Gold 5118)

SPECfp_rate2006 =  Not Run
SPECfp_rate_base2006 = 980

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

Platform Notes (Continued)

NAME="SLES"
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 Nov 14 00:14
SPEC is set to: /home/cpu2006
    Filesystem    Type  Size  Used Avail Use% Mounted on
    /dev/sda4      xfs  517G  95G  423G  19% /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, configured at 2400 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

Base Compiler Invocation

C benchmarks:
    icc -m64

C++ benchmarks:
    icpc -m64

Fortran benchmarks:
    ifort -m64

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Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
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CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

SPEC CFP2006 Result
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SPECfp_rate2006 =  Not Run
SPECfp_rate_base2006 = 980

Base Compiler Invocation (Continued)

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

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-revG.html
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(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
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CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

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

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-revG.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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