Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.10 GHz, Intel Xeon Gold 6130)

**SPECfp®2006** = **Not Run**

**SPECfp_base2006** = 137

---

**Hardware**

- **CPU Name:** Intel Xeon Gold 6130
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz
- **CPU MHz:** 2100
- **FPU:** Integrated
- **CPU(s) enabled:** 32 cores, 2 chips, 16 cores/chip
- **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
  Kernel 4.4.21-69-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:** Yes
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.10 GHz, Intel Xeon Gold 6130)

SPEC CFP2006 = Not Run
SPECfp_base2006 = 137

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

L3 Cache: 22 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 960 GB SATA SSD, RAID 0
Other Hardware: None

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>12.6</td>
<td>1080</td>
<td>12.6</td>
<td>1080</td>
<td>12.7</td>
<td>1070</td>
<td></td>
<td></td>
</tr>
<tr>
<td>416.gamess</td>
<td>402</td>
<td>48.7</td>
<td>403</td>
<td>48.6</td>
<td>403</td>
<td>48.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>433.milc</td>
<td>117</td>
<td>78.2</td>
<td>117</td>
<td>78.7</td>
<td>116</td>
<td>79.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>34.1</td>
<td>267</td>
<td>34.1</td>
<td>267</td>
<td>34.1</td>
<td>267</td>
<td></td>
<td></td>
</tr>
<tr>
<td>435.gromacs</td>
<td>151</td>
<td>47.2</td>
<td>151</td>
<td>47.3</td>
<td>151</td>
<td>47.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>11.0</td>
<td>1080</td>
<td>11.0</td>
<td>1080</td>
<td>11.0</td>
<td>1090</td>
<td></td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>20.9</td>
<td>450</td>
<td>21.1</td>
<td>446</td>
<td>21.3</td>
<td>442</td>
<td></td>
<td></td>
</tr>
<tr>
<td>444.namd</td>
<td>226</td>
<td>35.5</td>
<td>226</td>
<td>35.4</td>
<td>226</td>
<td>35.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>158</td>
<td>72.3</td>
<td>156</td>
<td>73.1</td>
<td>158</td>
<td>72.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>450.soplex</td>
<td>168</td>
<td>49.6</td>
<td>166</td>
<td>50.3</td>
<td>164</td>
<td>50.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>453.povray</td>
<td>76.5</td>
<td>69.5</td>
<td>76.7</td>
<td>69.3</td>
<td>76.9</td>
<td>69.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>454.calculix</td>
<td>116</td>
<td>70.9</td>
<td>117</td>
<td>70.8</td>
<td>117</td>
<td>70.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>39.9</td>
<td>266</td>
<td>40.1</td>
<td>265</td>
<td>38.5</td>
<td>275</td>
<td></td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td>209</td>
<td>47.1</td>
<td>211</td>
<td>46.7</td>
<td>208</td>
<td>47.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>470.lbm</td>
<td>11.1</td>
<td>1240</td>
<td>10.6</td>
<td>1300</td>
<td>10.5</td>
<td>1300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td>86.2</td>
<td>130</td>
<td>86.0</td>
<td>130</td>
<td>91.9</td>
<td>122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>294</td>
<td>66.2</td>
<td>293</td>
<td>66.6</td>
<td>292</td>
<td>66.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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

Platform Notes

BIOS Configuration:
Intel Hyperthreading set to Disabled
Thermal Configuration set to Maximum Cooling
Memory Patrol Scrubbing set to Disabled
LLC Prefetcher set to Enabled
LLC Dead Line Allocation set to Disabled
Stale A to S set to Disabled

Continued on next page
Platform Notes (Continued)

Workload Profile set to General Peak Frequency Compute
Energy/Performance Bias set to Maximum Performance
Uncore Frequency Scaling set to Auto
Workload Profile set to Custom
NUMA Group Size Optimization set to Flat

Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
routing on linux-vjuj Mon Oct 16 18:44:51 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 6130 CPU @ 2.10GHz
  2 "physical id"s (chips)
  32 "processors"
core, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 16
siblings : 16
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 22528 KB

From /proc/meminfo
MemTotal:       395929796 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"
    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"

Continued on next page
SPEC CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.10 GHz, Intel Xeon Gold 6130)

SPECfp2006 = Not Run
SPECfp_base2006 = 137

Platform Notes (Continued)

uname -a:
    (9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 16 16:27

SPEC is set to: /home/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 852G 7.3G 845G 1% /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 I42 09/27/2017
Memory:
    24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz

(Base 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 = "32"

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
SPEC CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.10 GHz, Intel Xeon Gold 6130)

SPECfp2006 = Not Run
SPECfp_base2006 = 137

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

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

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 -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/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
**SPEC CFP2006 Result**

Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
Synergy 480 Gen10  
(2.10 GHz, Intel Xeon Gold 6130)  

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>137</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2006 license:</td>
<td>3</td>
</tr>
<tr>
<td>Test sponsor:</td>
<td>HPE</td>
</tr>
<tr>
<td>Tested by:</td>
<td>HPE</td>
</tr>
<tr>
<td>Test date:</td>
<td>Oct-2017</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Oct-2017</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Apr-2017</td>
</tr>
</tbody>
</table>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.  