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

SPEClnt®_rate2006 =  Not Run
SPEClnt_rate_base2006 = 1490

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

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, 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
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 SSD SATA, RAID 0
Other Hardware:  None

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
Auto Parallel:  No
File System:  xfs
System State:  Run level 3 (multi-user)
Base Pointers:  32-bit
Peak Pointers:  32/64-bit
Other Software:  Microquill SmartHeap V10.2
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
<th>Seconds Peak</th>
<th>Ratio Peak</th>
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</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>64</td>
<td>567</td>
<td>1100</td>
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<td>bzip2</td>
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<td>934</td>
<td>661</td>
<td>940</td>
<td>657</td>
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<td>gcc</td>
<td>64</td>
<td>466</td>
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<td>1110</td>
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<tr>
<td>mcf</td>
<td>64</td>
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<td>2050</td>
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<td>2050</td>
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<td>2060</td>
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<td>919</td>
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<tr>
<td>xalancbmk</td>
<td>64</td>
<td>251</td>
<td>1760</td>
<td>251</td>
<td>1760</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>

## 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
  - Stale A to S 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 (b5e8d4b4eb51ed28d7f98696cbe290c1)
- running on linux-vjuj Fri Oct 13 14:39:35 2017
Platform Notes (Continued)

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)
- 64 "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: 16
  - siblings: 32
  - 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: 395924524 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From `/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"

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

run-level 3 Oct 13 14:39

SPEC is set to: /home/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 952G 40G 813G 5% /home

Continued on next page
SPEC CINT2006 Result

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Platform Notes (Continued)

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

(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 -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks:
  icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
SPEC CINT2006 Result

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

Base Optimization Flags

C benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

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

Tested with SPEC CPU2006 v1.2.