Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL560 Gen10
(3.60 GHz, Intel Xeon Gold 5122)

SPECint®_rate2006 = Not Run
SPECint_rate_base2006 = 1140

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

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

400.perlbench 32
401.bzip2 32
403.gcc 32
429.mcf 32
445.gobmk 32
456.hammer 32
458.sjeng 32
462.libquantum 32
464.h264ref 32
471.omnetpp 32
473.astar 32
483.xalancbmk 32

Hardware
CPU Name: Intel Xeon Gold 5122
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3600
FPU: Integrated
CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable: 1, 2, 4 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: 16.5 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (48 x 8 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 960 GB SATA SSD, RAID 0
Other Hardware: None

Software
Operating System: SUSE Linux Enterprise Server 12 (x86_64) SP2
Compiler: C/C++: Version 18.0.0.128 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: Not Applicable
Other Software: Microquill SmartHeap V10.2
SPEC CINT2006 Result

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Results Table

<table>
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<tr>
<th>Benchmark</th>
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<th>Seconds</th>
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</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"
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
Continued on next page
Platform Notes (Continued)

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-mcua Mon Nov 20 11:28:49 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 5122 CPU @ 3.60GHz
  4 "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 : 4
    siblings : 8
    physical 0: cores 1 5 9 13
    physical 1: cores 0 5 9 13
    physical 2: cores 1 5 9 13
    physical 3: cores 1 2 5 11
    cache size : 16896 KB

From /proc/meminfo
  MemTotal:       395927580 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"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12:sp2"

  uname -a:
    Linux linux-mcua 4.4.21-68-default #1 SMP Tue Oct 18 18:19:37 UTC 2016
    (63cf368) x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Nov 20 11:24

  SPEC is set to: /home/cpu2006
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Platform Notes (Continued)
/dev/sdb4 xfs 852G  73G  780G  9% /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 U34 09/29/2017
Memory:
  48x 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/cpu2006/libs/32:/home/cpu2006/libs/64:/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_2018.0.082/linux/lib/ia32
C++ benchmarks:
  icpc -m32 -L/opt/intel/compilers_and_libraries_2018.0.082/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
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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 -Wall,-z,muldefs
-L/home/cpu2006/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-revG.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-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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