**Hewlett Packard Enterprise**

Test Sponsor: HPE

ProLiant DL360 Gen10

(2.00 GHz, Intel Xeon Platinum 8153)

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**SPECint**

**SPECint_rate2006 = Not Run**

**SPECint_rate_base2006 = 1420**

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**CPU2006 license:** 3

**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Nov-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Sep-2017

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### Hardware

**CPU Name:** Intel Xeon Platinum 8153

**CPU Characteristics:** Intel Turbo Boost Technology up to 2.80 GHz

**CPU MHz:** 2000

**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:** 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)

**Disk Subsystem:** 1 x 400 GB SATA SSD, RAID 0

**Other Hardware:** None

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### 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>
<thead>
<tr>
<th>Benchmark</th>
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<th>Ratio</th>
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<td>254</td>
<td>1740</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>
irgbalance disabled with "service irgbalance 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:
The 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
Platform Notes (Continued)

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-rugf Fri Nov 17 04:19:40 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) Platinum 8153 CPU @ 2.00GHz
  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:       197742916 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-rugf 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 17 04:17

SPEC is set to: /home/cpu2006
  Filesystem  Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p4  xfs   331G  84G  248G  26% /home
  Additional information from dmidecode:
  Continued on next page
Platform Notes (Continued)

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 U32 09/29/2017
Memory:
24x 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
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**Base Optimization Flags**

C benchmarks:
- `-xCORE-AVX512 -ipo -03 -no-prec-div -qopt-prefetch`
- `-qopt-mem-layout-trans=3`

C++ benchmarks:
- `-xCORE-AVX512 -ipo -03 -no-prec-div -qopt-prefetch`
- `-qopt-mem-layout-trans=3 -Wl,-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/HPE-Platform-Flags-Intel-V1.2-SKX-revG.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/HPE-Platform-Flags-Intel-V1.2-SKX-revG.xml](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revG.xml)

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