### SPEC CINT2006 Result

#### Hewlett Packard Enterprise

(Test Sponsor: HPE)

**ProLiant DL560 Gen10**

(3.20 GHz, Intel Xeon Gold 6134)

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<td>Tested by:</td>
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**SPECint®_rate2006 = Not Run**

**SPECint_rate_base2006 = 2080**

**Test date: Dec-2017**

**Hardware Availability: Oct-2017**

**Software Availability: Sep-2017**

#### SPECint Rate

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**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;
- Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux

**File System:** xfs

**System State:** Run level 3 (multi-user)

**Base Pointers:** 32/64-bit

**Peak Pointers:** Not Applicable

**Other Software:** Microquill SmartHeap V10.2

### Hardware

- **CPU Name:** Intel Xeon Gold 6134
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz
- **CPU MHz:** 3200
- **FPU:** Integrated
- **CPU(s) enabled:** 32 cores, 4 chips, 8 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:** 24.75 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 768 GB (48 x 16 GB 2Rx8 PC4-2666V-R)
- **Disk Subsystem:** 1 x 800 GB SATA SSD, RAID 0
- **Other Hardware:** None
SPEC CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL560 Gen10
(3.20 GHz, Intel Xeon Gold 6134)

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 2080

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

Results Table

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</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
runcscc command invoked through numactl i.e.:
uactl --interleave=all runcscc <etc>
irqbalance disabled with "systemctl stop irqbalance"
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
Memory Patrol Scrubbing set to Disabled
LLC Prefetch set to Enabled
LLC Dead Line Allocation set to Disabled
Workload Profile set to General Throughput Compute
Minimum Processor Idle Power Core C-State set to C1E State
Sysinfo program /home/cpu2006/config/sysinfo.rev6993

Continued on next page
SPEC CINT2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL560 Gen10
(3.20 GHz, Intel Xeon Gold 6134)

<table>
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CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE
Test date: Dec-2017
Hardware Availability: Oct-2017
Software Availability: Sep-2017

Platform Notes (Continued)

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-kkgg Wed Dec 13 10:37:07 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 6134 CPU @ 3.20GHz
4 "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
cautions.)
cpu cores : 8
siblings : 16
physical 0: cores 0 4 5 16 17 20 21
physical 1: cores 0 4 5 16 19 20 22
physical 2: cores 0 4 5 16 19 20 22
physical 3: cores 1 3 4 6 7 18 20 22
cache size : 25344 KB

From /proc/meminfo
MemTotal: 792283560 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"

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

run-level 3 Dec 12 17:23

Continued on next page
SPEC CINT2006 Result

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SPECint_rate_base2006 = 2080

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

Platform Notes (Continued)

SPEC is set to: /home/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs  703G   37G  667G   6% /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 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

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.
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CPU2006 license: 3  
Test sponsor: HPE  
Tested by: HPE  

**Base Compiler Invocation**

C benchmarks:

```bash
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

C++ benchmarks:

```bash
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
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- 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

**Base Optimization Flags**

C benchmarks:

```bash
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3
```

C++ benchmarks:

```bash
-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:

```bash
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-revH.html
- http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.xml

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-revH.xml
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(Test Sponsor: HPE)
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Hardware Availability: Oct-2017
Software Availability: Sep-2017

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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.
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