CPU2017 License: 3  Test Date:  Nov-2017
Test Sponsor:  HPE                  Hardware Availability: Oct-2017
Tested by:  HPE                      Software Availability: Sep-2017

600.perlbench_s  28  SPECspeed2017_int_base =  8.64
602.gcc_s  28  SPECspeed2017_int_peak =  Not Run
605.mcf_s  28
620.omnetpp_s  28
623.xalanchmk_s  28
625.x264_s  28
631.deepsjeng_s  28
641.leela_s  28
648.exchange2_s  28
657.xz_s  28

Hardware
CPU Name:  Intel Xeon Gold 6132
Max MHz.:  3700
Nominal:  2600
Enabled:  28 cores, 2 chips
Orderable:  1, 2 chip(s)
Cache L1:  32 KB I + 32 KB D on chip per core
L2:  1 MB I+D on chip per core
L3:  19.25 MB I+D on chip per chip
Other:  None
Memory:  192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)
Storage:  1 x 960 GB SATA SSD, RAID 0
Other:  None

Software
OS:  Red Hat Enterprise Linux Server release 7.3
(Maipo)
Kernel 3.10.0-514.el7.x86_64
Compiler:  C/C++: Version 18.0.0.128 of Intel C/C++
Compiler for Linux:
Fortran:  Version 18.0.0.128 of Intel Fortran
Compiler for Linux
Parallel:  Yes
File System:  xfs
System State:  Run level 3 (multi-user)
Base Pointers:  64-bit
Peak Pointers:  Not Applicable
Other:  jemalloc: jemalloc memory allocator library V5.0.1;
jemalloc: configured and built at default for 32bit (i686) and 64bit (x86_64) targets;
jemalloc: built with the RedHat Enterprise 7.4,
and the system compiler gcc 4.8.5;
jemalloc: sources avilable from jemalloc.net or releases
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(2.60 GHz, Intel Xeon Gold 6132)

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

SPECspeed2017_int_base = 8.64
SPECspeed2017_int_peak = Not Run

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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<td>11.1</td>
<td>420</td>
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<td>152</td>
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<tr>
<td>625.x264_s</td>
<td>28</td>
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<td>11.7</td>
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<td>11.7</td>
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<td>631.deepsjeng_s</td>
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<td>641.leela_s</td>
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<td>4.33</td>
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<tr>
<td>648.exchange2_s</td>
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<td>657.xz_s</td>
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<td>21.0</td>
<td>297</td>
<td>20.8</td>
</tr>
</tbody>
</table>

SPECspeed2017_int_base = 8.64
SPECspeed2017_int_peak = Not Run

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
irqbalance disabled with "systemctl stop irqbalance"
tuned profile set with "tuned-adm profile throughput-performance"

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"
OMP_STACKSIZE = "192M"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.4

Platform Notes

BIOS Configuration:
Intel Hyperthreading set to Disabled
Thermal Configuration set to Maximum Cooling
LLC Prefetcher set to Enabled
LLC Dead Line Allocation set to Disabled
Stale A to S set to Disabled
Memory Patrol Scrubbing set to disabled
Workload Profile set to General Peak Frequency Compute

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(2.60 GHz, Intel Xeon Gold 6132)

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SPECspeed2017_int_base = 8.64
SPECspeed2017_int_peak = Not Run

Platform Notes (Continued)

Energy/Performance Bias set to Maximum Performance
Workload Profile set to Custom
NUMA Group Size Optimization set to Flat
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on DL380Gen10 Tue Nov 7 18:41:18 2017

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see
https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Gold 6132 CPU @ 2.60GHz
  2 "physical id"s (chips)
  28 "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 : 14
siblings : 14
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 28
On-line CPU(s) list: 0-27
Thread(s) per core: 1
Core(s) per socket: 14
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6132 CPU @ 2.60GHz
Stepping: 4
CPU MHz: 2600.000
BogoMIPS: 5205.37
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 19712K
NUMA node0 CPU(s): 0-13
NUMA node1 CPU(s): 14-27

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
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---

Platform Notes (Continued)

/proc/cpuinfo cache data
  cache size : 19712 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.

From /proc/meminfo
  MemTotal: 197573244 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux Server"
    VERSION="7.3 (Maipo)"
    ID="rhel"
    ID_LIKE="fedora"
    VERSION_ID="7.3"
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
    ANSI_COLOR="0;31"
    CPE_NAME=cpe:/o:redhat:enterprise_linux:7.3:GA:server"
  redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
  system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

uname -a:
  Linux DL380Gen10 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016 x86_64
  x86_64 x86_64 GNU/Linux

run-level 3 Nov 7 18:40

SPEC is set to: /home/cpu2017

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 839G 31G 808G 4% /home

Additional information from dmidecode follows. 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 U30 09/29/2017
Memory:
  24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666

(End of data from sysinfo program)
Hewlett Packard Enterprise  
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ProLiant DL380 Gen10  
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**SPEC CPU2017 Integer Speed Result**  
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**Software Availability:** Sep-2017

---

**Compiler Version Notes**

```
CC 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base)
   657.xz_s(base)

icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

```
CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
   641.leela_s(base)

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

```
FC 648.exchange2_s(base)

ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

(Continued on next page)

---

**Base Compiler Invocation**

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

---

**Base Portability Flags**

```
600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
```

(Continued on next page)
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**Software Availability:** Sep-2017

**CPU2017 License:** 3  
**Test Date:** Nov-2017

**Tested by:** HPE

### Base Portability Flags (Continued)

- 641.leela_s: -DSPEC_LP64  
- 648.exchange2_s: -DSPEC_LP64  
- 657.xz_s: -DSPEC_LP64

### Base Optimization Flags

**C benchmarks:**

- Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
- qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP  
- L/usr/local/je5.0.1-64/lib -ljemalloc

**C++ benchmarks:**

- Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
- qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

**Fortran benchmarks:**

- Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
- qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte  
- L/usr/local/je5.0.1-64/lib -ljemalloc

### Base Other Flags

**C benchmarks:**

- m64 -std=c11

**C++ benchmarks:**

- m64

**Fortran benchmarks:**

- m64

---

The flags files that were used to format this result can be browsed at

- [http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.html](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.html)

You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.xml](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revF.xml)
### SPEC CPU2017 Integer Speed Result

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ProLiant DL380 Gen10  
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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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