Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.60 GHz, Intel Xeon Gold 5122)

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

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

SPECspeed2017_int_base = 8.17
SPECspeed2017_int_peak = Not Run

Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>8</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>8</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>8</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>8</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>8</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>8</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>8</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>8</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>8</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>8</td>
</tr>
</tbody>
</table>

SPECspeed2017_int_base (8.17)

Hardware

CPU Name: Intel Xeon Gold 5122
Max MHz.: 3700
Nominal: 3600
Enabled: 8 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: 16.5 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 available from jemalloc.net or releases
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
(3.60 GHz, Intel Xeon Gold 5122)  

SPEC CPU2017 Integer Speed Result  

Copyright 2017-2018 Standard Performance Evaluation Corporation  

SPECspeed2017_int_base = 8.17  
SPECspeed2017_int_peak = Not Run  

Results Table  

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Base Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>8</td>
<td>291</td>
<td>6.10</td>
<td>292</td>
<td>6.08</td>
<td>290</td>
<td>6.12</td>
</tr>
<tr>
<td>602gcc_s</td>
<td>8</td>
<td>460</td>
<td>8.66</td>
<td>461</td>
<td>8.64</td>
<td>460</td>
<td>8.65</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>8</td>
<td>428</td>
<td>11.0</td>
<td>429</td>
<td>11.0</td>
<td>428</td>
<td>11.0</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>8</td>
<td>307</td>
<td>5.31</td>
<td>308</td>
<td>5.29</td>
<td>306</td>
<td>5.33</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>8</td>
<td>154</td>
<td>9.18</td>
<td>154</td>
<td>9.21</td>
<td>154</td>
<td>9.23</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>8</td>
<td>152</td>
<td>11.6</td>
<td>152</td>
<td>11.6</td>
<td>152</td>
<td>11.6</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>8</td>
<td>284</td>
<td>5.05</td>
<td>283</td>
<td>5.06</td>
<td>283</td>
<td>5.06</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>8</td>
<td>394</td>
<td>4.33</td>
<td>395</td>
<td>4.32</td>
<td>394</td>
<td>4.33</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>8</td>
<td>222</td>
<td>13.2</td>
<td>220</td>
<td>13.3</td>
<td>220</td>
<td>13.4</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>8</td>
<td>450</td>
<td>13.7</td>
<td>450</td>
<td>13.7</td>
<td>450</td>
<td>13.7</td>
</tr>
</tbody>
</table>

SPECspeed2017_int_base = 8.17  
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_AFFINITIY = "granularity=fine,compact"  
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32"  
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/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 Prefetch set to Enabled  
LLC Dead Line Allocation 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
(3.60 GHz, Intel Xeon Gold 5122)

SPECspeed2017_int_base = 8.17
SPECspeed2017_int_peak = Not Run

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

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 96c45e4568ad54c135fd618bccc091c0f
running on DL380Gen10-2 Sat Nov 11 01:54:36 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 5122 CPU @ 3.60GHz
  2 "physical id"s (chips)
  8 "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 : 4
physical 0: cores 1 5 9 13
physical 1: cores 1 5 9 13

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 8
On-line CPU(s) list: 0-7
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 5122 CPU @ 3.60GHz
Stepping: 4
CPU MHz: 3600.000
BogoMIPS: 7206.92
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 16896K
NUMA node0 CPU(s): 0-3
NUMA node1 CPU(s): 4-7

(Continued on next page)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.60 GHz, Intel Xeon Gold 5122)

SPECspeed2017_int_base = 8.17
SPECspeed2017_int_peak = Not Run

Platform Notes (Continued)

/proc/cpuinfo cache data
   cache size : 16896 KB

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

From /proc/meminfo
   MemTotal:       197575884 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 DL380Gen10-2 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 11 01:51

SPEC is set to: /home/cpu2017

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 504G 30G 474G 6% /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
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.60 GHz, Intel Xeon Gold 5122)

SPECspeed2017_int_base = 8.17
SPECspeed2017_int_peak = Not Run

Compiler Version Notes

==============================================================================
<p>| 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 |</p>
<table>
<thead>
<tr>
<th>Copyright (C) 1985-2017 Intel Corporation. All rights reserved.</th>
</tr>
</thead>
</table>

==============================================================================
<p>| CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base) |
| 641.leela_s(base) |
| icpc (ICC) 18.0.0 20170811 |</p>
<table>
<thead>
<tr>
<th>Copyright (C) 1985-2017 Intel Corporation. All rights reserved.</th>
</tr>
</thead>
</table>

==============================================================================
<p>| FC  648.exchange2_s(base) |
| ifort (IFORT) 18.0.0 20170811 |</p>
<table>
<thead>
<tr>
<th>Copyright (C) 1985-2017 Intel Corporation. All rights reserved.</th>
</tr>
</thead>
</table>

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)
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.60 GHz, Intel Xeon Gold 5122)

SPECspeed2017_int_base = 8.17
SPECspeed2017_int_peak = Not Run

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

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

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

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
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.60 GHz, Intel Xeon Gold 5122)

SPECspeed2017_int_base = 8.17
SPECspeed2017_int_peak = Not Run

<table>
<thead>
<tr>
<th>CPU2017 License: 3</th>
<th>Test Date: Nov-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: HPE</td>
<td>Hardware Availability: Oct-2017</td>
</tr>
<tr>
<td>Tested by: HPE</td>
<td>Software Availability: Sep-2017</td>
</tr>
</tbody>
</table>

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2017 v1.0.2 on 2017-11-11 01:54:36-0500.
Originally published on 2017-11-29.