**SPEC® CPU2017 Integer Speed Result**

**Hewlett Packard Enterprise**
 *(Test Sponsor: HPE)*

**ProLiant DL380 Gen10**
 *(3.90 GHz, Intel Xeon Gold 6137)*

**Copyright 2017-2018 Standard Performance Evaluation Corporation**

**SPECspeed2017_int_base = 9.52**

**SPECspeed2017_int_peak = Not Run**

---

### Hardware

- **CPU Name:** Intel Xeon Gold 6137  
- **Max MHz.:** 4100  
- **Nominal:** 3900  
- **Enabled:** 16 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:** 24.75 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 SSD SATA, 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  
- **Firmware:** HPE BIOS Version U30 released Oct-2017 (tested with U30 9/29/2017)  
- **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
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.90 GHz, Intel Xeon Gold 6137)

SPECspeed2017_int_base = 9.52
SPECspeed2017_int_peak = Not Run

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

Test Date: Dec-2017
Hardware Availability: Dec-2017
Software Availability: Sep-2017

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>16</td>
<td>262</td>
<td>6.77</td>
<td>261</td>
<td>6.79</td>
<td>259</td>
<td>6.86</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>16</td>
<td>408</td>
<td>9.77</td>
<td>407</td>
<td>9.78</td>
<td>408</td>
<td>9.77</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>16</td>
<td>393</td>
<td>12.0</td>
<td>392</td>
<td>12.0</td>
<td>388</td>
<td>12.2</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>16</td>
<td>237</td>
<td>6.87</td>
<td>238</td>
<td>6.86</td>
<td>239</td>
<td>6.82</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>16</td>
<td>137</td>
<td>10.3</td>
<td>138</td>
<td>10.3</td>
<td>137</td>
<td>10.3</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>16</td>
<td>137</td>
<td>12.9</td>
<td>137</td>
<td>12.9</td>
<td>137</td>
<td>12.9</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>16</td>
<td>260</td>
<td>5.52</td>
<td>260</td>
<td>5.52</td>
<td>260</td>
<td>5.52</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>16</td>
<td>356</td>
<td>4.79</td>
<td>356</td>
<td>4.79</td>
<td>356</td>
<td>4.79</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>16</td>
<td>199</td>
<td>14.8</td>
<td>199</td>
<td>14.8</td>
<td>198</td>
<td>14.8</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>16</td>
<td>287</td>
<td>21.6</td>
<td>284</td>
<td>21.8</td>
<td>287</td>
<td>21.6</td>
</tr>
</tbody>
</table>

SPECspeed2017_int_base = 9.52
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

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.
SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.90 GHz, Intel Xeon Gold 6137)

SPECspeed2017_int_base = 9.52
SPECspeed2017_int_peak = Not Run

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>HPE</td>
</tr>
<tr>
<td>Tested by:</td>
<td>HPE</td>
</tr>
</tbody>
</table>

Test Date: Dec-2017
Hardware Availability: Dec-2017
Software Availability: Sep-2017

Platform Notes

BIOS was run with default values
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
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 DL380Gen10-2 Fri Dec 1 17:57:53 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 6137 CPU @ 3.90GHz
2 "physical id"s (chips)
16 "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 : 8
siblings : 8
physical 0: cores 0 5 6 16 18 19 20 21
physical 1: cores 0 2 3 9 16 19 26 27

From lscpu:

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 16
On-line CPU(s) list: 0-15
Thread(s) per core: 1
Core(s) per socket: 8
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6137 CPU @ 3.90GHz
Stepping: 4
CPU MHz: 3900.000
BogoMIPS: 7807.40
Virtualization: VT-x

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.90 GHz, Intel Xeon Gold 6137)

SPECspeed2017_int_base = 9.52
SPECspeed2017_int_peak = Not Run

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

**Platform Notes (Continued)**

```
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 25344K
NUMA node0 CPU(s): 0-7
NUMA node1 CPU(s): 8-15

/proc/cpuinfo cache data
  cache size : 25344 KB

From numactl --hardware
  WARNING: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0 1 2 3 4 5 6 7
  node 0 size: 97963 MB
  node 0 free: 94899 MB
  node 1 cpus: 8 9 10 11 12 13 14 15
  node 1 size: 98303 MB
  node 1 free: 95830 MB
  node distances:
    node 0 1
    0: 10 21
    1: 21 10

From /proc/meminfo
  MemTotal: 197574316 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
```

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
(3.90 GHz, Intel Xeon Gold 6137)  

SPECspeed2017_int_base = 9.52  
SPECspeed2017_int_peak = Not Run

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

Platform Notes (Continued)

run-level 3 Dec 1 17:54

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)

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.
==============================================================================

Base Compiler Invocation

C benchmarks:
icc

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.90 GHz, Intel Xeon Gold 6137)

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

SPECspeed2017_int_base = 9.52
SPECspeed2017_int_peak = Not Run

**Base Compiler Invocation (Continued)**

C++ benchmarks:
- icpc

Fortran benchmarks:
- ifort

**Base Portability Flags**

- perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
- gcc_s: -DSPEC_LP64
- mcf_s: -DSPEC_LP64
- omnetpp_s: -DSPEC_LP64
- xalancbkms_s: -DSPEC_LP64 -DSPEC_LINUX
- x264_s: -DSPEC_LP64
- deepsjeng_s: -DSPEC_LP64
- leela_s: -DSPEC_LP64
- exchange2_s: -DSPEC_LP64
- xz_s: -DSPEC_LP64

**Base Optimization Flags**

C benchmarks:
- -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
- -qopt-mem-layout-trans=3 -gopenmp -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
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(3.90 GHz, Intel Xeon Gold 6137)

SPECspeed2017_int_base = 9.52
SPECspeed2017_int_peak = Not Run

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

Test Date: Dec-2017
Hardware Availability: Dec-2017
Software Availability: Sep-2017

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-revH.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-revH.xml

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 2017-12-01 17:57:53-0500.