## SPEC® CPU2017 Integer Speed Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL360 Gen10  
(2.10 GHz, Intel Xeon Gold 6130)  

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>8.70</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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

### Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_s</td>
<td>32</td>
</tr>
<tr>
<td>gcc_s</td>
<td>32</td>
</tr>
<tr>
<td>mcf_s</td>
<td>32</td>
</tr>
<tr>
<td>omnetpp_s</td>
<td>32</td>
</tr>
<tr>
<td>xalancbmk_s</td>
<td>32</td>
</tr>
<tr>
<td>x264_s</td>
<td>32</td>
</tr>
<tr>
<td>deepsjeng_s</td>
<td>32</td>
</tr>
<tr>
<td>leela_s</td>
<td>32</td>
</tr>
<tr>
<td>exchange2_s</td>
<td>32</td>
</tr>
<tr>
<td>xz_s</td>
<td>32</td>
</tr>
</tbody>
</table>

### SPECspeed2017_int_base (8.70)

### Hardware

- **CPU Name:** Intel Xeon Gold 6130  
- **Max MHz.:** 3700  
- **Nominal:** 2100  
- **Enabled:** 32 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:** 22 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)  
- **Storage:** 1 x 480 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  
- **Firmware:** HPE BIOS Version U32 released Oct-2017 (tested with U32 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 DL360 Gen10
(2.10 GHz, Intel Xeon Gold 6130)

<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>

**SPECspeed2017_int_base = 8.70**

**SPECspeed2017_int_peak = Not Run**

---

### 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>32</td>
<td>293</td>
<td>6.06</td>
<td>290</td>
<td>6.11</td>
<td>287</td>
<td>6.18</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>32</td>
<td>442</td>
<td>9.00</td>
<td>450</td>
<td>8.85</td>
<td>446</td>
<td>8.92</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>32</td>
<td>424</td>
<td>11.1</td>
<td>424</td>
<td>11.1</td>
<td>424</td>
<td>11.1</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>32</td>
<td>265</td>
<td>6.15</td>
<td>266</td>
<td>6.13</td>
<td>266</td>
<td>6.14</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>32</td>
<td>152</td>
<td>9.32</td>
<td>152</td>
<td>9.33</td>
<td>152</td>
<td>9.32</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>32</td>
<td>150</td>
<td>11.8</td>
<td>150</td>
<td>11.7</td>
<td>150</td>
<td>11.7</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>32</td>
<td>283</td>
<td>5.07</td>
<td>283</td>
<td>5.06</td>
<td>283</td>
<td>5.06</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>32</td>
<td>394</td>
<td>4.33</td>
<td>395</td>
<td>4.32</td>
<td>395</td>
<td>4.32</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>32</td>
<td>220</td>
<td>13.4</td>
<td>221</td>
<td>13.3</td>
<td>220</td>
<td>13.4</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>32</td>
<td>298</td>
<td>20.8</td>
<td>295</td>
<td>20.9</td>
<td>295</td>
<td>20.9</td>
</tr>
</tbody>
</table>

**SPECspeed2017_int_base = 8.70**

**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
- Prior to runcpu invocation
- Filesystem page cache synced and cleared with: `sync; echo 3> /proc/sys/vm/drop_caches`
- IRQ balance service was stop using "service irqbalance stop"
- Tuned-adm profile was set to Throughtput-Performance

---

### General Notes

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

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10
(2.10 GHz, Intel Xeon Gold 6130)

SPECspeed2017_int_base = 8.70
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>

Platform Notes (Continued)

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/specuser/cpu2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bccc091c0f
running on dl360Gen10rhel73Unit2 Wed Nov 15 13:59:50 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 6130 CPU @ 2.10GHz
  "physical id"s (chips)
  32 "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: 16
  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

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 32
On-line CPU(s) list: 0-31
Thread(s) per core: 1
Core(s) per socket: 16
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz
Stepping: 4
CPU MHz: 2100.000
BogoMIPS: 4204.62
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 22528K
NUMA node0 CPU(s): 0-15
NUMA node1 CPU(s): 16-31

(Continued on next page)
**Platform Notes (Continued)**

```
/proc/cpuinfo cache data
  cache size : 22528 KB

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

From /proc/meminfo
  MemTotal: 197572720 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 dl360Gen10rhel73Unit2 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 15 08:22

SPEC is set to: /home/specuser/cpu2017
  Filesystem          Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   392G   36G  357G  10% /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 U32 09/29/2017
  Memory:
    24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666

(End of data from sysinfo program)
```
SPEC CPU2017 Integer Speed Result
Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10
(2.10 GHz, Intel Xeon Gold 6130)  
SPECspeed2017_int_base = 8.70
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

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)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10
(2.10 GHz, Intel Xeon Gold 6130)

| SPECspeed2017_int_base = | 8.70 |
| 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-revG.html](http://www.spec.org/cpu2017/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/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revG.xml](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revG.xml)
**SPEC CPU2017 Integer Speed Result**

Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL360 Gen10  
(2.10 GHz, Intel Xeon Gold 6130)

| SPECspeed2017_int_base = 8.70 |
| SPECspeed2017_int_peak = Not Run |

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

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 2017-11-15 14:59:49-0500.  
Report generated on 2018-10-31 15:02:38 by CPU2017 PDF formatter v6067.  
Originally published on 2017-12-12.