### SPEC® CPU2017 Integer Speed Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
Synergy 480 Gen10  
(2.60 GHz, Intel Xeon Gold 6240Y)

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed2017_int_base =</th>
<th>SPECspeed2017_int_peak =</th>
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</thead>
<tbody>
<tr>
<td>0.600.perlbench_s 36</td>
<td>9.26</td>
<td>Not Run</td>
</tr>
<tr>
<td>0.602.gcc_s 36</td>
<td>12.4</td>
<td></td>
</tr>
<tr>
<td>0.605.mcf_s 36</td>
<td>7.72</td>
<td></td>
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<tr>
<td>0.620.omnetpp_s 36</td>
<td>12.3</td>
<td></td>
</tr>
<tr>
<td>0.623.xalancbmk_s 36</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>0.625.x264_s 36</td>
<td>5.44</td>
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</tr>
<tr>
<td>0.631.deepsjeng_s 36</td>
<td>4.75</td>
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<tr>
<td>0.641.leela_s 36</td>
<td>14.1</td>
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</tr>
<tr>
<td>0.648.exchange2_s 36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.657.xz_s 36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Software**

- OS: SUSE Linux Enterprise Server 15 (x86_64)  
  Kernel 4.12.14-23-default  
- Compiler:  
  C/C++: Version 19.0.2.187 of Intel C/C++  
  Compiler Build 20190117 for Linux;  
  Fortran: Version 19.0.2.187 of Intel Fortran  
  Compiler Build 20190117 for Linux  
- Parallel: Yes  
- Firmware: HPE BIOS Version I42 02/02/2019 released Apr-2019  
- File System: btrfs  
- System State: Run level 3 (multi-user)  
- Base Pointers: 64-bit  
- Peak Pointers: Not Applicable  
- Other: jemalloc memory allocator V5.0.1

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**Hardware**

- CPU Name: Intel Xeon Gold 6240Y  
- Max MHz.: 3900  
- Nominal: 2600  
- Enabled: 36 cores, 2 chips  
- Orderable: 1, 2 chip(s)  
- Cache L1: 32 KB I+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: 384 GB (24 x 16 GB 2Rx8 PC4-2933Y-R)  
- Storage: 1 x 400 GB SAS SSD, RAID 0  
- Other: None
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Synergy 480 Gen10
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SPECspeed2017_int_base = 9.82
SPECspeed2017_int_peak = Not Run

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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</tbody>
</table>

SPECspeed2017_int_base = 9.82
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

General Notes

Environment variables set by runcpu before the start of the run:
  KMP_AFFINITY = "granularity=fine,compact"
  LD_LIBRARY_PATH = "/home/cpu2017_u2/lib/ia32:/home/cpu2017_u2/lib/intel64:
/home/cpu2017_u2/je5.0.1-32:/home/cpu2017_u2/je5.0.1-64"
  OMP_STACKSIZE = "192M"
  Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB RAM
  memory using Redhat Enterprise Linux 7.5
  NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
  Yes: 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.
  Yes: 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.
Platform Notes

BIOS Configuration:
- Hyper-Threading set to Disabled
- Thermal Configuration set to Maximum Cooling
- Memory Patrol Scrubbing set to Disabled
- LLC Prefetch set to Enabled
- LLC Dead Line Allocation set to Disabled
- Enhanced Processor Performance set to Enabled
- Workload Profile set to General Peak Frequency Compute
- Minimum Processor Idle Power Core C-State set to C1E State
- Energy/Performance Bias set to Balanced Power
- Workload Profile set to Custom
- Numa Group Size Optimization set to Flat

Sysinfo program /home/cpu2017_u2/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on sy480g10-2 Mon Apr 29 12:54:20 2019

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 6240C CPU @ 2.60GHz
- 2 "physical id"s (chips)
- 36 "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 : 18
  - siblings : 18
  - physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
  - physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

From lscpu:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- CPU(s): 36
- On-line CPU(s) list: 0-35
- Thread(s) per core: 1
- Core(s) per socket: 18
- Socket(s): 2
- NUMA node(s): 2
- Vendor ID: GenuineIntel
- CPU family: 6
- Model: 85
- Model name: Intel(R) Xeon(R) Gold 6240C CPU @ 2.60GHz
- Stepping: 6
- CPU MHz: 2600.000

(Continued on next page)
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Hewlett Packard Enterprise
(Test Sponsor: HPE)
Synergy 480 Gen10
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECspeed2017_int_base = 9.82
SPECspeed2017_int_peak = Not Run

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

Platform Notes (Continued)

BogoMIPS: 5200.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 25344K
NUMA node0 CPU(s): 0-17
NUMA node1 CPU(s): 18-35
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
aperfmpref tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3
sdmb fma cx16 xtrunc pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt
vtsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault
epb cat_13 cdp_13 invpcid_single intel_pni mba tpr_shadow vnmi fpxpriority ept
vpidフケグベース tsc_adjust bmi1 hle avx2 smep bmi2 ertm cqm mpx rdt_a
avx512if avx512dq rdseed avx512cd avx512bw avx512vl
xsaveopt xsavec xgetbv1 xsave cx8 vmmvx cqm_l1c cqm_occup_l1c cqm_mbms_total cqm_mbms_local
ibpb ibrs stibp dtherm ida arat pin pts pkup ospe avx512_vnni arch_capabilities ssbd

/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 8 9 10 11 12 13 14 15 16 17
  node 0 size: 193017 MB
  node 0 free: 192695 MB
  node 1 cpus: 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35
  node 1 size: 193334 MB
  node 1 free: 192850 MB
  node distances:
    node 0 1
    0: 10 21
    1: 21 10

From /proc/meminfo
  MemTotal: 395624792 KB
  HugePages_Total: 0
  Hugepagesize: 4096 KB

From /etc/*release* /etc/*version*
o-release:
  NAME="SLES"
  VERSION="15"
  VERSION_ID="15"

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

PRETTY_NAME="SUSE Linux Enterprise Server 15"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"

```
uname -a:  
  Linux sy480g10-2 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b)  
  x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:
CVE-2017-5754 (Meltdown): Not affected
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Indirect Branch Restricted Speculation,  
IBPB, IBRS_FW

run-level 3 Apr 29 12:51:

SPEC is set to: /home/cpu2017_u2
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sdb2 btrfs 371G  89G  282G  24%  /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 I42 02/02/2019  
  Memory:  
    24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2933

(End of data from sysinfo program)

The marketing name for the processor in this result, which appears in the CPU name and hardware  
model areas, is different from sysinfo because a pre-production processor was used. The  
pre-production processor differs from the production processor in name only.

## Compiler Version Notes

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

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.2.187 Build 20190117  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

(Continued on next page)
### Base Compiler Invocation

C benchmarks:
- `icc -m64 -std=c11`

C++ benchmarks:
- `icpc -m64`

Fortran benchmarks:
- `ifort -m64`

### 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`
- `641.leela_s: -DSPEC_LP64`
- `648.exchange2_s: -DSPEC_LP64`
- `657.xz_s: -DSPEC_LP64`
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Copyright 2017-2019 Standard Performance Evaluation Corporation

SPECspeed2017_int_base = 9.82
SPECspeed2017_int_peak = Not Run

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

Test Date: Apr-2019
Hardware Availability: Apr-2019
Software Availability: Feb-2019

Base Optimization Flags

C benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-L/home/cpu2017_u2/je5.0.1-64/ -ljemalloc

C++ benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
-lqkmalloc

Fortran benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-mem-layout-trans=4
-nostandard-realloc-lhs

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-CLX-revA.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-CLX-revA.xml
http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-03.xml

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

Tested with SPEC CPU2017 v1.0.5 on 2019-04-29 13:54:19-0400.