**SPEC CPU®2017 Integer Speed Result**

Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL380 Gen11  
(2.20 GHz, Intel Xeon Gold 6454S)

<table>
<thead>
<tr>
<th>Thread</th>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>12.9</td>
<td>13.1</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>12.9</td>
<td>13.1</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>12.9</td>
<td>13.1</td>
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<tr>
<td>620.omnetpp_s</td>
<td>12.9</td>
<td>13.1</td>
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<td>623.xalancbmk_s</td>
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<td>625.x264_s</td>
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<td>631.deepsjeng_s</td>
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<td>641.leela_s</td>
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<tr>
<td>648.exchange2_s</td>
<td>12.9</td>
<td>13.1</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>12.9</td>
<td>13.1</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name**: Intel Xeon Gold 6454S  
- **Max MHz**: 3400  
- **Nominal**: 2200  
- **Enabled**: 64 cores, 2 chips  
- **Orderable**: 1, 2 chip(s)  
- **Cache L1**: 32 KB I + 48 KB D on chip per core  
- **L2**: 2 MB I+D on chip per core  
- **L3**: 60 MB I+D on chip per chip  
- **Other**: None  
- **Memory**: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)  
- **Storage**: 1 x 900 GB SATA SSD  
- **Other**: None

**Software**

- **OS**: Red Hat Enterprise Linux release 9.0 (Plow)  
  Kernel 5.14.0-70.13.1.el9_0_x86_64  
- **Compiler**: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2022.1 of Intel Fortran Compiler for Linux  
- **Parallel**: Yes  
- **Firmware**: HPE BIOS Version v1.22 01/18/2023 released Jan-2023  
- **File System**: xfs  
- **System State**: Run level 3 (multi-user)  
- **Base Pointers**: 64-bit  
- **Peak Pointers**: 64-bit  
- **Other**: jemalloc memory allocator V5.0.1  
- **Power Management**: BIOS and OS set to prefer performance at the cost of additional power usage
### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
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<th>Base</th>
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<th>Base</th>
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<td></td>
</tr>
</tbody>
</table>

### Compiler Notes

SPEC has ruled that the compiler used for this result was performing a compilation that specifically improves the performance of the 523.xalanchmk_r / 623.xalanchmk_s benchmarks using a priori knowledge of the SPEC code and dataset to perform a transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4 https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer publish results using this optimization.

This result is left in the SPEC results database for historical reference.

### 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`
  - Runcpu command invoked through numactl i.e.:
  - `numactl --interleave=all runcpu <etc>`
- IRQ balance service was stopped using "systemctl stop irqbalance.service"
- tuned-adm profile was set to Throughput-Performance using "tuned-adm profile throughpt-performance"

### Environment Variables Notes

- Environment variables set by runcpu before the start of the run:
  - `KMP_AFFINITY = "granularity=fine,scatter"`
  - `LD_LIBRARY_PATH = "/home/cpu2017_19/lib/intel64:/home/cpu2017_19/je5.0.1-64"`
  - `MALLOC_CONF = "retain:true"`
  - `OMP_STACKSIZE = "192M"`
SPEC CPU®2017 Integer Speed Result

Hewlett Packard Enterprise
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ProLiant DL380 Gen11
(2.20 GHz, Intel Xeon Gold 6454S)

SPECspeed®2017_int_base = 12.9
SPECspeed®2017_int_peak = 13.1

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
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

The system ROM used for this result contains Intel microcode version 0x2b000161 for the Intel Xeon Gold 6454S processor.
The reported date by sysinfo is incorrect due to computer clock being not set correctly.
The correct test date is: Feb-2023.
BIOS Configuration:
Workload Profile set to General Peak Frequency Compute
Thermal Configuration set to Maximum Cooling
Intel Hyper-Threading set to Disabled
Memory Patrol Scrubbing set to Disabled
Last Level Cache (LLC) Prefetch set to Enabled
Last Level Cache (LLC) Dead Line Allocation set to Disabled
Enhanced Processor Performance Profile set to Aggressive
Dead Block Predictor set to Enabled
Sub-NUMA Clustering set to Enabled SNC2(2-clusters)
Workload Profile set to Custom
Adjacent Sector Prefetch set to Disabled
Minimum Processor Idle Power Package C-State set to No Package State

Sysinfo program /home/cpu2017_19/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c35ae2c92cc097bec197
running on localhost.localdomain Thu Apr  7 05:30:47 2022

SUT (System Under Test) info as seen by some common utilities.

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18. /sys/kernel/mm/transparent_hugepage/khugepaged

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19. OS release
20. Disk information
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22. dmidecode
23. BIOS

--------------------------------------------------------------------------------
1. uname -a
   Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
   x86_64 x86_64 GNU/Linux

--------------------------------------------------------------------------------
2. w
   05:30:47 up 0 min, 0 users, load average: 0.53, 0.17, 0.06
   USER    TTY     LOGIN@    IDLE   JCPU  PCPU WHAT
--------------------------------------------------------------------------------
3. Username
   From environment variable $USER: root

--------------------------------------------------------------------------------
4. ulimit -a
   real-time non-blocking time (microseconds, -R) unlimited
   core file size (blocks, -c) 0
   data seg size (kbytes, -d) unlimited
   scheduling priority (-e) 0
   file size (blocks, -f) unlimited
   pending signals (-i) 4127214
   max locked memory (kbytes, -l) 64
   max memory size (kbytes, -m) unlimited
   open files (-n) 1024
   pipe size (512 bytes, -p) 8
   POSIX message queues (bytes, -q) 819200
   real-time priority (-r) 0
   stack size (kbytes, -s) unlimited
   cpu time (seconds, -t) unlimited
   max user processes (-u) 4127214
   virtual memory (kbytes, -v) unlimited
   file locks (-x) unlimited

--------------------------------------------------------------------------------
5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize 28
   sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
   sshd: root [priv]
   sshd: root@notty
   bash -c cd $SPEC/ && $SPEC/intspeed.sh
   runcpu --nobuild --action validate --define default-platform-flags -c
   ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=64 --tune base,peak -o all --define
   intspeedaffinity --define drop_caches intspeed
   runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=64 --tune base,peak --output_format all
   --define intspeedaffinity --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed
   intspeed --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.001/templogs/preenv.intspeed.001.0.log
   --lognum 001.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
   $SPEC = /home/cpu2017_19

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Hewlett Packard Enterprise

ProLiant DL380 Gen11
(2.20 GHz, Intel Xeon Gold 6454S)

SPECspeed®2017_int_base = 12.9
SPECspeed®2017_int_peak = 13.1

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

SPEC CPU®2017 Integer Speed Result
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Platform Notes (Continued)

6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) Gold 6454S
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 143
   stepping        : 8
   microcode       : 0x2b000161
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
   cpu cores       : 32
   siblings        : 32
   2 physical ids (chips)
   64 processors (hardware threads)
   physical id 0: core ids 0-31
   physical id 1: core ids 0-31
   physical id 0: apicids
   0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62
   physical id 1: apicids
   80,182,184,186,188,190
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.4:
   Architecture:                    x86_64
   CPU op-mode(s):                  32-bit, 64-bit
   Address sizes:                   46 bits physical, 57 bits virtual
   Byte Order:                      Little Endian
   CPU(s):                          64
   On-line CPU(s) list:             0-63
   Vendor ID:                       GenuineIntel
   BIOS Vendor ID:                  Intel(R) Corporation
   Model name:                      Intel(R) Xeon(R) Gold 6454S
   BIOS Model name:                 Intel(R) Xeon(R) Gold 6454S
   CPU family:                      6
   Model:                           143
   Thread(s) per core:              1
   Core(s) per socket:              32
   Socket(s):                       2
   Stepping:                        8
   BogoMIPS:                        4400.00
   Flags:                           fpu vme de pse tsc msr pae mca cmov pat pse36 clflush dts epx mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl apic cpuid ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_12 cat_13 cat_14 cat_15 cat_16 cat_25 cat_26 cat_29 cat_30 cat_31 arch_perfmon
   from /logging:
   invpcid_single cdp_d2 ssbd mba ibrs ibpb ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2  erms invvpicid cpqm rdt_a avx512f avx512dq rdseed rdad adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl vsxve qftest qfxas xsave core_cm3 qcc debug arch_capabilities

(Continued on next page)
Platform Notes (Continued)

Virtualization: VT-x

L1d cache: 3 MiB (64 instances)
L1i cache: 2 MiB (64 instances)
L2 cache: 128 MiB (64 instances)
L3 cache: 120 MiB (2 instances)

NUMA node(s): 4
NUMA node0 CPU(s): 0-7,32-39
NUMA node1 CPU(s): 8-15,40-47
NUMA node2 CPU(s): 16-23,48-55
NUMA node3 CPU(s): 24-31,56-63

Vulnerability Itlb multihit: Not affected

Vulnerability L1tf: Not affected

Vulnerability Mds: Not affected

Vulnerability Meltdown: Not affected

Vulnerability Spectre v1: Mitigation; Speculative Store Bypass disabled via prctl

Vulnerability Spectre v2: Mitigation; usercopy/swapgs barriers and __user pointer sanitization

Vulnerability Spectre v3: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling

Vulnerability Srbds: Not affected

Vulnerability Tsx async abort: Not affected

From lscpu --cache:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
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<tbody>
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<td>48K</td>
<td>3M</td>
<td>12</td>
<td>Data</td>
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<td>64</td>
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<tr>
<td>L1i</td>
<td>32K</td>
<td>2M</td>
<td>8</td>
<td>Instruction</td>
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<td>L2</td>
<td>2M</td>
<td>128M</td>
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<td>Unified</td>
<td>2</td>
<td>2048</td>
<td>1</td>
<td>64</td>
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<tr>
<td>L3</td>
<td>60M</td>
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<td>65536</td>
<td>1</td>
<td>64</td>
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</tbody>
</table>

8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.

<table>
<thead>
<tr>
<th>AVAILABLE</th>
<th>NODE 0</th>
<th>NODE 1</th>
<th>NODE 2</th>
<th>NODE 3</th>
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<tbody>
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<td>cpus</td>
<td>size</td>
<td>free</td>
<td>size</td>
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<td>0-3</td>
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<td>257128 MB</td>
<td>258044 MB</td>
</tr>
<tr>
<td></td>
<td>cpus</td>
<td>size</td>
<td>free</td>
<td>size</td>
</tr>
<tr>
<td>8</td>
<td>0-7,32-39</td>
<td>257720 MB</td>
<td>257128 MB</td>
<td>258044 MB</td>
</tr>
<tr>
<td></td>
<td>cpus</td>
<td>size</td>
<td>free</td>
<td>size</td>
</tr>
<tr>
<td>16</td>
<td>8-15,40-47</td>
<td>257720 MB</td>
<td>257128 MB</td>
<td>258044 MB</td>
</tr>
<tr>
<td></td>
<td>cpus</td>
<td>size</td>
<td>free</td>
<td>size</td>
</tr>
<tr>
<td>12</td>
<td>16-23,48-55</td>
<td>257720 MB</td>
<td>257128 MB</td>
<td>258044 MB</td>
</tr>
<tr>
<td></td>
<td>cpus</td>
<td>size</td>
<td>free</td>
<td>size</td>
</tr>
<tr>
<td>30</td>
<td>24-31,56-63</td>
<td>257720 MB</td>
<td>257128 MB</td>
<td>258044 MB</td>
</tr>
</tbody>
</table>

9. /proc/meminfo
MemTotal: 1056607452 kB

10. who -r
run-level 3 Apr 7 05:30

11. Systemd service manager version: systemd 250 (250-6.210_0)

(Continued on next page)
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SPECspeed®2017_int_base = 12.9
SPECspeed®2017_int_peak = 13.1

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

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: May-2022

Platform Notes (Continued)

Default Target Status
multi-user running

12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chrony crond
dbus-broker firewalld getty@ irqbalance kdump lvm2-monitor mdmonitor microcode
nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sshd sssd
systemd-network-generator tuned udisks2 upower
enabled-runtime systemd-remount-fs
disabled blk-availability canberra-system-bootup canberra-system-shutdown
canberra-system-shutdown-reboot chrony-wait console-getty debug-shell
hwloc-dump-hwdata ipsec kvm_stat man-db-restart-cache-update nftables powertop rdisc rhsm
rhom-facts rpmdb-rebuild serial-getty@ sshd-keygen@ systemd-boot-check-no-failures
systemd-pstore systemd-sysx
indirect sssd-autofs sssd-kcm sssd-nss ssd-pac sssd-pam sssd-ssh sssd-sudo

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
root=/dev/mapper/rhel00-root
ro
resume=/dev/mapper/rhel00-swap
rd.lvm.lv=rhel00/root
rd.lvm.lv=rhel00/swap

14. cpupower frequency-info
analyzing CPU 0:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes

15. tuned-adm active
Current active profile: throughput-performance

16. sysctl
kernel.numa_balancing 1
kernel.randomize_va_space 2
vm.compaction_proactiveness 20
vm.dirty_background_bytes 0
vm.dirty_background_ratio 10
vm.dirty_bytes 0
vm.dirty_expire_centisecs 3000
vm.dirty_ratio 40
vm.dirty_writeback_centisecs 500
vm.dirtytime_expire_seconds 43200
vm.exfattr_threshold 500
vm.min_unmapped_ratio 1
vm.nr_hugepages 0
vm.nr_hugepages_mempolicy 0
vm.nr_overcommit_hugepages 0
vm.swappiness 10
vm.watermark_boost_factor 15000
vm.watermark_scale_factor 10
vm.zone_reclaim_mode 0

(Continued on next page)
Platform Notes (Continued)

17. /sys/kernel/mm/transparent_hugepage
   defrag always defer defer+madvise [madvise] never
   enabled [always] madvise never
   hpage_pmd_size 2097152
   shmem_enabled always within_size advise [never] deny force

18. /sys/kernel/mm/transparent_hugepage/khugepaged
   alloc_sleep_millisecs 60000
   defrag 1
   max_ptes_none 511
   max_ptes_shared 256
   max_ptes_swap 64
   pages_to_scan 4096
   scan_sleep_millisecs 10000

19. OS release
   From /etc/*-release /etc/*-version
   os-release Red Hat Enterprise Linux 9.0 (Plow)
   redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
   system-release Red Hat Enterprise Linux release 9.0 (Plow)

20. Disk information
   SPEC is set to: /home/cpu2017_19
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/mapper/rhel00-home xfs 819G 134G 686G 17% /home

21. /sys/devices/virtual/dmi/id
   Vendor: HPE
   Product: ProLiant DL380 Gen11
   Product Family: ProLiant
   Serial: CNX21000G7

22. dmidecode
   Additional information from dmidecode 3.3 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.
   Memory:
   16x Samsung M321R8GA0BB0-CQKDG 64 GB 2 rank 4800

23. BIOS
   (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor: HPE
   BIOS Version: 1.22
   BIOS Date: 01/18/2023
   BIOS Revision: 1.22
   Firmware Revision: 1.30
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen11
(2.20 GHz, Intel Xeon Gold 6454S)

SPECspeed®2017_int_base = 12.9
SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE
Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: May-2022

Compiler Version Notes

============================================================================================================
C | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
  657.xz_s(base, peak)
============================================================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
============================================================================================================
C++ | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
     641.leela_s(base, peak)
============================================================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
============================================================================================================
Fortran | 648.exchange2_s(base, peak)
============================================================================================================
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

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
## SPEC CPU®2017 Integer Speed Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
**ProLiant DL380 Gen11**  
(2.20 GHz, Intel Xeon Gold 6454S)

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### Base Optimization Flags

C benchmarks:
- m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
- mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
- DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

C++ benchmarks:
- m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
- mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
- L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:
- m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
- mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
- nostandard-realloc-lhs -align array32byte
- L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

### Peak Compiler Invocation

C benchmarks:
- icx

C++ benchmarks:
- icpx

Fortran benchmarks:
- ifx

### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

C benchmarks:
- 600.perlbench_s: m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
- fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -O3
- ffast-math -flto -mfpmath=sse -funroll-loops
- qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
- fno-strict-overflow -L/usr/local/jemalloc64-5.0.1/lib

(Continued on next page)
## Peak Optimization Flags (Continued)

600.perlbench_s (continued):
-`-ljemalloc`

602.gcc_s: `-m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1) -fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -fopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

605.mcf_s: basepeak = yes

625.x264_s: `-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -fopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

657.xz_s: basepeak = yes

### C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

### Fortran benchmarks:

648.exchange2_s: basepeak = yes

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

- [http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-SPR-rev1.1.html](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-SPR-rev1.1.html)

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

- [http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-SPR-rev1.1.xml](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-SPR-rev1.1.xml)
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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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