SPEC CPU®2017 Integer Speed Result

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Dell Inc.

$SPECspeed^®2017\_int\_base = 14.1$

PowerEdge HS5610 (Intel Xeon Gold 5418Y)

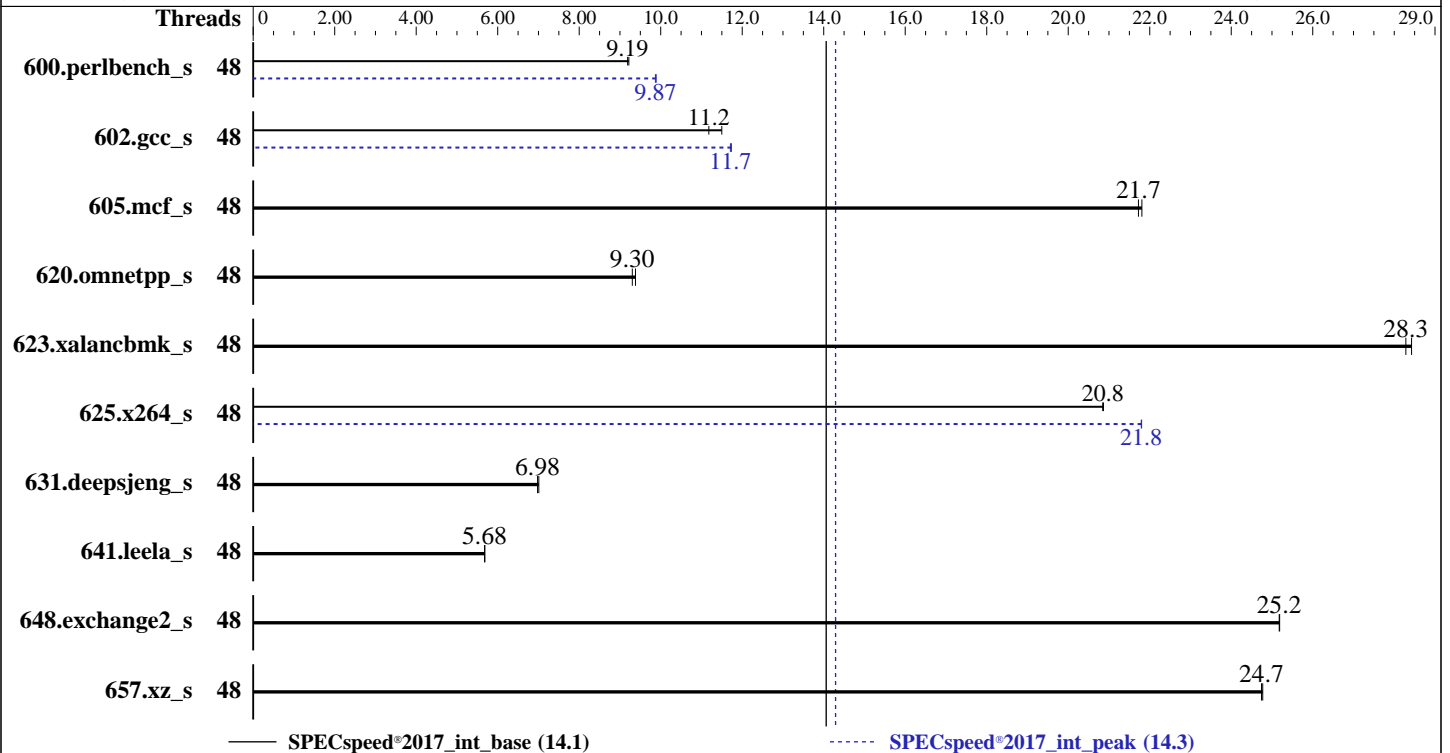$SPECspeed^®2017\_int\_peak = 14.3$

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Mar-2023
Hardware Availability: Mar-2023
Software Availability: Dec-2022

Threads		
600.perlbench_s	48	9.19 / 9.87
602.gcc_s	48	11.2 / 11.7
605.mcf_s	48	21.7
620.omnetpp_s	48	9.30
623.xalancbmk_s	48	28.3
625.x264_s	48	20.8 / 21.8
631.deepsjeng_s	48	6.98
641.leela_s	48	5.68
648.exchange2_s	48	25.2
657.xz_s	48	24.7

SPECspeed®2017_int_base (14.1) — SPECspeed®2017_int_peak (14.3)

Hardware

CPU Name: Intel Xeon Gold 5418Y
 Max MHz: 3800
 Nominal: 2000
Enabled: 48 cores, 2 chips
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 45 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R, running at 4400)
Storage: 125 GB on tmpfs
Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP4
 5.14.21-150400.22-default
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;
Parallel: Yes
Firmware: Version 1.0.1 released Feb-2023
File System: tmpfs
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.

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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SPECspeed®2017_int_peak = 14.3

CPU2017 License: 6573	**Test Date:** Mar-2023
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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	48	193	9.22	**193**	**9.19**			48	179	9.89	**180**	**9.87**		
602.gcc_s	48	346	11.5	**356**	**11.2**			48	339	11.7	**340**	**11.7**		
605.mcf_s	48	**217**	**21.7**	216	21.8			48	**217**	**21.7**	216	21.8		
620.omnetpp_s	48	174	9.38	**175**	**9.30**			48	174	9.38	**175**	**9.30**		
623.xalancbmk_s	48	**50.1**	**28.3**	49.9	28.4			48	**50.1**	**28.3**	49.9	28.4		
625.x264_s	48	**84.6**	**20.8**	84.5	20.9			48	80.9	21.8	**80.9**	**21.8**		
631.deepsjeng_s	48	**205**	**6.98**	204	7.01			48	**205**	**6.98**	204	7.01		
641.leela_s	48	300	5.69	**300**	**5.68**			48	300	5.69	**300**	**5.68**		
648.exchange2_s	48	**117**	**25.2**	117	25.2			48	**117**	**25.2**	117	25.2		
657.xz_s	48	**250**	**24.7**	250	24.8			48	**250**	**24.7**	250	24.8		
SPECspeed®2017_int_base =	**14.1**													
SPECspeed®2017_int_peak =	**14.3**													

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

```
SPEC has ruled that the compiler used for this result was performing a compilation
that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_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"
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH =
    "/mnt/ramdisk/cpu2017-1.1.9-ic2023.0/lib/intel64:/mnt/ramdisk/cpu2017-1.1.9-ic2023.0/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

General Notes

```
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Redhat Enterprise Linux 8.0
Transparent Huge Pages enabled by default
```

(Continued on next page)

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$SPECspeed®2017\_int\_base = 14.1$

$SPECspeed®2017\_int\_peak = 14.3$

General Notes (Continued)

```
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3>        /proc/sys/vm/drop_caches
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases

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.

Benchmark run from a 125 GB ramdisk created with the cmd: "mount -t tmpfs -o size=125G tmpfs /mnt/ramdisk"
```

Platform Notes

```
BIOS settings:
                    ADDDC Setting : Disabled
         DIMM Self Healing on
   Uncorrectable Memory Error : Disabled
            Logical Processor : Disabled
    Virtualization Technology : Disabled
             Sub NUMA Cluster : 2-way Clustering

               System Profile : Custom
        CPU Power Management : Maximum Performance
                          C1E : Disabled
                     C States : Autonomous
          Memory Patrol Scrub : Disabled
       Energy Efficiency Policy : Performance
            PCI ASPM L1 Link
                 Power Management : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2023.0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Thu Mar 16 15:18:23 2023

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

-----------------------------------------------------------
Table of contents
-----------------------------------------------------------
 1. uname -a
 2. w
 3. Username
 4. ulimit -a
 5. sysinfo process ancestry
 6. /proc/cpuinfo
 7. lscpu
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
```

(Continued on next page)

Dell Inc.

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Platform Notes (Continued)

```
 15. sysctl
 16. /sys/kernel/mm/transparent_hugepage
 17. /sys/kernel/mm/transparent_hugepage/khugepaged
 18. OS release
 19. Disk information
 20. /sys/devices/virtual/dmi/id
 21. dmidecode
 22. BIOS
   ------------------------------------------------------------


   ------------------------------------------------------------
 1. uname -a
   Linux localhost 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18 UTC 2022 (49db222/lp)
   x86_64 x86_64 x86_64 GNU/Linux


   ------------------------------------------------------------
 2. w
    15:18:23 up 16 min,  1 user,  load average: 15.95, 36.11, 26.69
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1     -                15:02   15:54   1.02s  0.00s /bin/bash ./dell-run-specspeed.sh
   --iterations 2 --output_format csv,html,pdf,txt -define Dell-BIOS-inc=Dell-BIOS_Xeon-4.inc --define
   Dell-BIOS-LogProcD=1


   ------------------------------------------------------------
 3. Username
   From environment variable $USER:  root


   ------------------------------------------------------------
 4. ulimit -a
   core file size          (blocks, -c) unlimited
   data seg size           (kbytes, -d) unlimited
   scheduling priority             (-e) 0
   file size               (blocks, -f) unlimited
   pending signals                 (-i) 4124642
   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) 4124642
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited


   ------------------------------------------------------------
 5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize 34
  login -- root
  -bash
  /bin/bash ./DELL_speed.sh
  /bin/bash ./dell-run-main.sh speed
  /bin/bash ./dell-run-main.sh speed
  /bin/bash ./dell-run-specspeed.sh --iterations 2 --output_format csv,html,pdf,txt -define
    Dell-BIOS-inc=Dell-BIOS_Xeon-4.inc --define Dell-BIOS-LogProcD=1
  /bin/bash ./dell-run-specspeed.sh --iterations 2 --output_format csv,html,pdf,txt -define
    Dell-BIOS-inc=Dell-BIOS_Xeon-4.inc --define Dell-BIOS-LogProcD=1
  runcpu --nobuild --action validate --define default-platform-flags -c
    ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=48 --tune base,peak -o all --define
```

(Continued on next page)

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge HS5610 (Intel Xeon Gold 5418Y)

SPECspeed®2017_int_peak = 14.3

CPU2017 License: 6573
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Platform Notes (Continued)

```
    intspeedaffinity --define drop_caches --iterations 2 --output_format csv,html,pdf,txt -define
    Dell-BIOS-inc=Dell-BIOS_Xeon-4.inc --define Dell-BIOS-LogProcD=1 intspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
    ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=48 --tune base,peak --output_format all
    --define intspeedaffinity --define drop_caches --iterations 2 --output_format csv,html,pdf,txt --define
    Dell-BIOS-inc=Dell-BIOS_Xeon-4.inc --define Dell-BIOS-LogProcD=1 --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 = /mnt/ramdisk/cpu2017-1.1.9-ic2023.0


    ------------------------------------------------------------
6. /proc/cpuinfo
    model name        : Intel(R) Xeon(R) Gold 5418Y
    vendor_id         : GenuineIntel
    cpu family        : 6
    model             : 143
    stepping          : 8
    microcode         : 0x2b000190
    bugs              : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores         : 24
    siblings          : 24
    2 physical ids (chips)
    48 processors (hardware threads)
    physical id 0: core ids 0-23
    physical id 1: core ids 0-23
    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
    physical id 1: apicids
    128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174
  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 2.37.2:
  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):                    48
  On-line CPU(s) list:       0-47
  Vendor ID:                 GenuineIntel
  Model name:                Intel(R) Xeon(R) Gold 5418Y
  CPU family:                6
  Model:                     143
  Thread(s) per core:        1
  Core(s) per socket:        24
  Socket(s):                 2
  Stepping:                  8
  BogoMIPS:                  4000.00
  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 art arch_perfmon pebs bts rep_good nopl xtopology
                             nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
                             ds_cpl 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_l3 cat_l2 cdp_l3 invpcid_single
                             cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase tsc_adjust bmi1 hle
                             avx2 smep bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap
```

(Continued on next page)

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Platform Notes (Continued)

```
                            avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
                            xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                            cqm_mbm_local split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida
                            arat pln pts avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes
                            vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid
                            bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear serialize
                            tsxldtrk pconfig arch_lbr avx512_fp16 amx_tile flush_l1d arch_capabilities
  L1d cache:                2.3 MiB (48 instances)
  L1i cache:                1.5 MiB (48 instances)
  L2 cache:                 96 MiB (48 instances)
  L3 cache:                 90 MiB (2 instances)
  NUMA node(s):             4
  NUMA node0 CPU(s):        0,4,8,12,16,20,24,28,32,36,40,44
  NUMA node1 CPU(s):        2,6,10,14,18,22,26,30,34,38,42,46
  NUMA node2 CPU(s):        1,5,9,13,17,21,25,29,33,37,41,45
  NUMA node3 CPU(s):        3,7,11,15,19,23,27,31,35,39,43,47
  Vulnerability Itlb multihit:    Not affected
  Vulnerability L1tf:             Not affected
  Vulnerability Mds:              Not affected
  Vulnerability Meltdown:         Not affected
  Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
  Vulnerability Spectre v1:       Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:       Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
  Vulnerability Srbds:            Not affected
  Vulnerability Tsx async abort:  Not affected

From lscpu --cache:
    NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
    L1d       48K     2.3M   12 Data           1    64        1             64
    L1i       32K     1.5M    8 Instruction    1    64        1             64
    L2         2M      96M   16 Unified        2  2048        1             64
    L3        45M      90M   15 Unified        3 49152        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0,4,8,12,16,20,24,28,32,36,40,44
  node 0 size: 257425 MB
  node 0 free: 247843 MB
  node 1 cpus: 2,6,10,14,18,22,26,30,34,38,42,46
  node 1 size: 258010 MB
  node 1 free: 257457 MB
  node 2 cpus: 1,5,9,13,17,21,25,29,33,37,41,45
  node 2 size: 258044 MB
  node 2 free: 257768 MB
  node 3 cpus: 3,7,11,15,19,23,27,31,35,39,43,47
  node 3 size: 257704 MB
  node 3 free: 257537 MB
  node distances:
  node   0   1   2   3
    0:  10  12  21  21
    1:  12  10  21  21
    2:  21  21  10  12
    3:  21  21  12  10

------------------------------------------------------------
9. /proc/meminfo
  MemTotal:       1055933556 kB
```

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Platform Notes (Continued)

```
----------------------------------------------------------
10. who -r
  run-level 3 Mar 16 15:02


----------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
  Default Target  Status
  multi-user      running


----------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          YaST2-Firstboot YaST2-Second-Stage apparmor auditd bluetooth cron display-manager
                   firewalld getty@ haveged irqbalance iscsi issue-generator kbdsettings kdump kdump-early
                   klog libvirtd lvm2-monitor nscd nvmefc-boot-connections oracle postfix purge-kernels
                   rollback rsyslog smartd sshd wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6
                   wickedd-nanny xencommons
  enabled-runtime  systemd-remount-fs
  disabled         accounts-daemon amavis apache2 apache2@ appstream-sync-cache autofs autoyast-initscripts
                   bgpd blk-availability bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd
                   clamav-milter clamd console-getty cups cups-browsed ddclient debug-shell dhcpd dhcpd6
                   dhcrelay dhcrelay6 dirsrv@ dnsmasq ebtables exchange-bmc-os-info fetchmail freshclam gpm
                   grub2-once haveged-switch-root hwloc-dump-hwdata instsvcdrv ipmi ipmievd iscsi-init iscsid
                   iscsiuio isisd issue-add-ssh-keys kexec-load ksm kvm_stat libvirt-guests lunmask
                   man-db-create mariadb mariadb@ multipathd named nfs nfs-blkmap nfs-server nfsserver nmb
                   nvmf-autoconnect ospf6d ospfd ostree-remount racoon racoon-setkey radvd rarpd@ rdisc ripd
                   ripngd rpcbind rpmconfigcheck rsyncd rtkit-daemon sapconf serial-getty@
                   smartd_generate_opts smb snmpd snmptrapd spamd spampd speech-dispatcherd squid srp_daemon
                   srp_daemon_port@ strongswan strongswan-starter svnserve sysstat
                   systemd-boot-check-no-failures systemd-network-generator systemd-nspawn@ systemd-sysext
                   systemd-time-wait-sync systemd-timesyncd tcsd udisks2 upower virtinterfaced virtnetworkd
                   virtnodedevd virtnwfilterd virtproxyd virtqemud virtsecretd virtstoraged virtxend vsftpd
                   winbind xen-dom0-modules xen-init-dom0 xen-qemu-dom0-disk-backend xen-watchdog xenconsoled
                   xendomains xenstored zebra
  indirect         pcscd uuidd virtlockd virtlogd wickedd

----------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
  root=UUID=35458c4c-5e83-48b0-808c-9f9263c843b9
  splash=silent
  mitigations=auto
  quiet
  security=apparmor
  crashkernel=320M,high
  crashkernel=72M,low


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


----------------------------------------------------------
15. sysctl
  kernel.numa_balancing            1
  kernel.randomize_va_space        2
  vm.compaction_proactiveness      20
```

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Platform Notes (Continued)

```
  vm.dirty_background_bytes           0
  vm.dirty_background_ratio          10
  vm.dirty_bytes                      0
  vm.dirty_expire_centisecs        3000
  vm.dirty_ratio                     20
  vm.dirty_writeback_centisecs      500
  vm.dirtytime_expire_seconds     43200
  vm.extfrag_threshold              500
  vm.min_unmapped_ratio               1
  vm.nr_hugepages                     0
  vm.nr_hugepages_mempolicy           0
  vm.nr_overcommit_hugepages          0
  vm.swappiness                      20
  vm.watermark_boost_factor       15000
  vm.watermark_scale_factor          10
  vm.zone_reclaim_mode                0


  ---------------------------------------------------------------
16. /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


  ---------------------------------------------------------------
17. /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


  ---------------------------------------------------------------
18. OS release
  From /etc/*-release /etc/*-version
  os-release SUSE Linux Enterprise Server 15 SP4


  ---------------------------------------------------------------
19. Disk information
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-ic2023.0
  Filesystem      Type   Size  Used Avail Use% Mounted on
  tmpfs           tmpfs  125G  4.3G  121G   4% /mnt/ramdisk


  ---------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         Dell Inc.
    Product:        PowerEdge HS5610
    Product Family: PowerEdge
    Serial:         DULAC01


  ---------------------------------------------------------------
21. dmidecode
  Additional information from dmidecode 3.2 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:
    13x 00AD00B300AD HMCG94MEBRA121N 64 GB 2 rank 4800, configured at 4400
```

(Continued on next page)

Dell Inc.

PowerEdge HS5610 (Intel Xeon Gold 5418Y)

$SPECspeed®2017\_int\_base = 14.1$

$SPECspeed®2017\_int\_peak = 14.3$

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Mar-2023
Hardware Availability: Mar-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
     3x 00AD069D00AD HMCG94MEBRA112N 64 GB 2 rank 4800, configured at 4400


    ------------------------------------------------------------
    22. BIOS
    (This section combines info from /sys/devices and dmidecode.)
       BIOS Vendor:        Dell Inc.
       BIOS Version:       1.0.1
       BIOS Date:          02/13/2023
       BIOS Revision:      1.0
```

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 2023.0.0 Build 20221201
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 2023.0.0 Build 20221201
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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge HS5610 (Intel Xeon Gold 5418Y)

SPECspeed®2017_int_base = 14.1

SPECspeed®2017_int_peak = 14.3

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Mar-2023
Hardware Availability: Mar-2023
Software Availability: Dec-2022

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

Base Optimization Flags

C benchmarks:
-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -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 -std=c++14 -Wl,-z,muldefs -xsapphirerapids -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 -xsapphirerapids -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

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge HS5610 (Intel Xeon Gold 5418Y)

$SPECspeed®2017\_int\_base = 14.1$

$SPECspeed®2017\_int\_peak = 14.3$

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Mar-2023
Hardware Availability: Mar-2023
Software Availability: Dec-2022

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-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

```
602.gcc_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-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 -xsapphirerapids -O3
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-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
```

SPEC CPU®2017 Integer Speed Result

Dell Inc.

PowerEdge HS5610 (Intel Xeon Gold 5418Y)

$SPECspeed®2017\_int\_base = 14.1$

$SPECspeed®2017\_int\_peak = 14.3$

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

```
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.3.html
```

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

```
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.3.xml
```

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

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