SPEC CPU®2017 Integer Speed Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200C3R-28
(2.00 GHz,Intel Xeon Gold 5420+)

$SPECspeed®2017\_int\_base = 15.4$
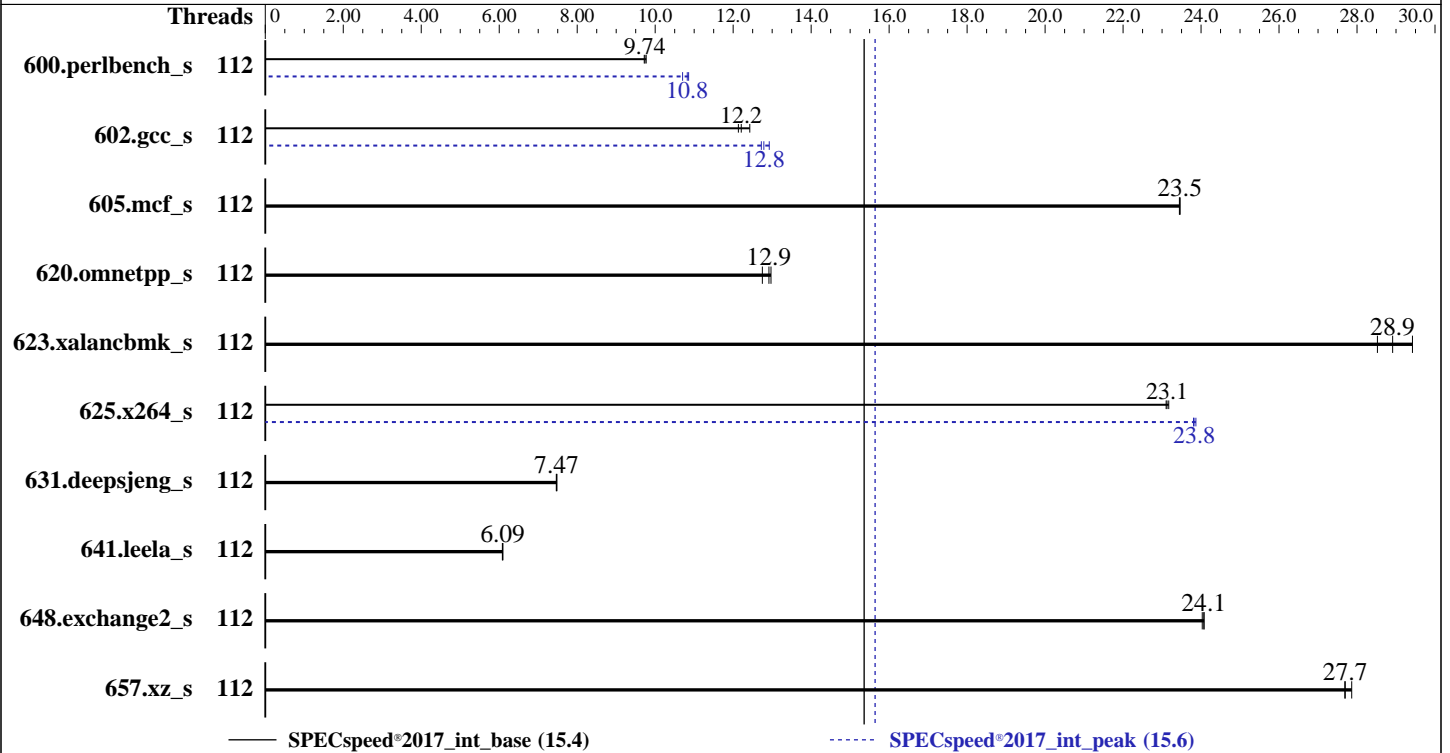
$SPECspeed®2017\_int\_peak = 15.6$

CPU2017 License: 006042
Test Sponsor: Netweb Pte Ltd
Tested by: Tyrone Systems

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

Threads	Value
600.perlbench_s 112	9.74 / 10.8
602.gcc_s 112	12.2 / 12.8
605.mcf_s 112	23.5
620.omnetpp_s 112	12.9
623.xalancbmk_s 112	28.9
625.x264_s 112	23.1 / 23.8
631.deepsjeng_s 112	7.47
641.leela_s 112	6.09
648.exchange2_s 112	24.1
657.xz_s 112	27.7

SPECspeed®2017_int_base (15.4)   SPECspeed®2017_int_peak (15.6)

Hardware
CPU Name: Intel Xeon Gold 5420+
 Max MHz: 4100
 Nominal: 2000
Enabled: 56 cores, 2 chips, 2 threads/core
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: 52.5 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC4-4800AA-R, running at 4400)
Storage: 1 x 512 GB NVMe SSD
Other: None

Software
OS: Red Hat Enterprise Linux release 8.5 (Ootpa) Kernel 4.18.0-348.el8.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: Version 1.3 released Jun-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 set to prefer performance at the cost of additional power usage.

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SPECspeed®2017_int_peak = 15.6

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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	112	**182**	**9.74**	182	9.77	183	9.72	112	166	10.7	**164**	**10.8**	163	10.9
602.gcc_s	112	328	12.1	320	12.4	**326**	**12.2**	112	308	12.9	313	12.7	**311**	**12.8**
605.mcf_s	112	201	23.4	**201**	**23.5**	201	23.5	112	201	23.4	**201**	**23.5**	201	23.5
620.omnetpp_s	112	**126**	**12.9**	126	13.0	128	12.7	112	**126**	**12.9**	126	13.0	128	12.7
623.xalancbmk_s	112	49.7	28.5	48.2	29.4	**49.0**	**28.9**	112	49.7	28.5	48.2	29.4	**49.0**	**28.9**
625.x264_s	112	76.3	23.1	**76.3**	**23.1**	76.1	23.2	112	74.1	23.8	73.9	23.9	**74.1**	**23.8**
631.deepsjeng_s	112	**192**	**7.47**	192	7.48	192	7.46	112	**192**	**7.47**	192	7.48	192	7.46
641.leela_s	112	**280**	**6.09**	281	6.08	280	6.09	112	**280**	**6.09**	281	6.08	280	6.09
648.exchange2_s	112	122	24.0	**122**	**24.1**	122	24.1	112	122	24.0	**122**	**24.1**	122	24.1
657.xz_s	112	**223**	**27.7**	222	27.9	223	27.7	112	**223**	**27.7**	222	27.9	223	27.7
SPECspeed®2017_int_base =		**15.4**												
SPECspeed®2017_int_peak =		**15.6**												

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.
```

Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

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 = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

Standard Performance Evaluation Corporation (info@spec.org)
https://www.spec.org/

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General Notes

```
 Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
 memory using Red Hat Enterprise Linux 8.4
 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>
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.
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.
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the
system as tested and documented.
 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
```

Platform Notes

```
BIOS Settings:
Power Technology = Custom
ENERGY_PERF_BIAS_CFG mode = Maximum Performance
KTI Prefetch = Enable
LLC Dead Line Alloc = Disable
Hyper-Threading = Enabled

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on Tyronespec Sat Sep 30 05:17:05 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 239 (239-51.el8)
 12. Services, from systemctl list-unit-files
 13. Linux kernel boot-time arguments, from /proc/cmdline
 14. cpupower frequency-info
 15. tuned-adm active
 16. sysctl
 17. /sys/kernel/mm/transparent_hugepage
 18. /sys/kernel/mm/transparent_hugepage/khugepaged
 19. OS release
 20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
 21. Disk information
 22. /sys/devices/virtual/dmi/id
 23. dmidecode
```

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$SPECspeed^{®}2017\_int\_base = 15.4$

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$SPECspeed^{®}2017\_int\_peak = 15.6$

CPU2017 License: 006042		**Test Date:**	Sep-2023
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Jan-2023
Tested by:	Tyrone Systems	**Software Availability:**	May-2022

Platform Notes (Continued)

```
   24. BIOS
   ------------------------------------------------------------

   ------------------------------------------------------------
   1. uname -a
     Linux Tyronespec 4.18.0-348.el8.x86_64 #1 SMP Mon Oct 4 12:17:22 EDT 2021 x86_64 x86_64 x86_64 GNU/Linux

   ------------------------------------------------------------
   2. w
      05:17:05 up 16:17,  1 user,  load average: 0.00, 0.86, 21.70
      USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
      root     tty1     -                Fri13    9.00s  0.89s  0.00s -bash

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

   ------------------------------------------------------------
   4. ulimit -a
     core file size          (blocks, -c) 0
     data seg size           (kbytes, -d) unlimited
     scheduling priority             (-e) 0
     file size               (blocks, -f) unlimited
     pending signals                 (-i) 4126831
     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) 4126831
     virtual memory          (kbytes, -v) unlimited
     file locks                      (-x) unlimited

   ------------------------------------------------------------
   5. sysinfo process ancestry
    /usr/lib/systemd/systemd --switched-root --system --deserialize 18
    login -- root
    -bash
    -bash
    runcpu --nobuild --action validate --define default-platform-flags -c
      ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=56 --tune base,peak -o all --define
      intspeedaffinity --define smt-on --define drop_caches intspeed
    runcpu --nobuild --action validate --define default-platform-flags --configfile
      ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=56 --tune base,peak --output_format all
      --define intspeedaffinity --define smt-on --define drop_caches --nopower --runmode speed --tune base:peak
      --size refspeed intspeed --nopreenv --note-preenv --logfile
      $SPEC/tmp/CPU2017.003/templogs/preenv.intspeed.003.0.log --lognum 003.0 --from_runcpu 2
    specperl $SPEC/bin/sysinfo
    $SPEC = /home/cpu2017

   ------------------------------------------------------------
   6. /proc/cpuinfo
       model name     : Intel(R) Xeon(R) Gold 5420+
       vendor_id      : GenuineIntel
       cpu family     : 6
       model          : 143
       stepping       : 8
```

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Platform Notes (Continued)

```
    microcode       : 0x2b000461
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 28
    siblings        : 56
    2 physical ids (chips)
    112 processors (hardware threads)
    physical id 0: core ids 0-27
    physical id 1: core ids 0-27
    physical id 0: apicids 0-55
    physical id 1: apicids 128-183
  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 2.32.1:
  Architecture:        x86_64
  CPU op-mode(s):      32-bit, 64-bit
  Byte Order:          Little Endian
  CPU(s):              112
  On-line CPU(s) list: 0-111
  Thread(s) per core:  2
  Core(s) per socket:  28
  Socket(s):           2
  NUMA node(s):        2
  Vendor ID:           GenuineIntel
  BIOS Vendor ID:      Intel(R) Corporation
  CPU family:          6
  Model:               143
  Model name:          Intel(R) Xeon(R) Gold 5420+
  BIOS Model name:     Intel(R) Xeon(R) Gold 5420+
  Stepping:            8
  CPU MHz:             2001.000
  CPU max MHz:         2001.0000
  CPU min MHz:         800.0000
  BogoMIPS:            4000.00
  Virtualization:      VT-x
  L1d cache:           48K
  L1i cache:           32K
  L2 cache:            2048K
  L3 cache:            53760K
  NUMA node0 CPU(s):   0-27,56-83
  NUMA node1 CPU(s):   28-55,84-111
  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 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_l3 cat_l2 cdp_l3
                       invpcid_single cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi
                       flexpriority ept vpid ept_ad fsgsbase tsc_adjust sgx bmi1 hle avx2 smep bmi2 erms
                       invpcid cqm rdt_a avx512f avx512dq rdseed adx smap 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 sgx_lc fsrm md_clear serialize tsxldtrk pconfig arch_lbr
                       avx512_fp16 flush_l1d arch_capabilities
```

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Platform Notes (Continued)

```
      ----------------------------------------------------------
      8. numactl --hardware
      NOTE: a numactl 'node' might or might not correspond to a physical chip.
        available: 2 nodes (0-1)
        node 0 cpus: 0-27,56-83
        node 0 size: 515722 MB
        node 0 free: 481720 MB
        node 1 cpus: 28-55,84-111
        node 1 size: 516043 MB
        node 1 free: 483708 MB
        node distances:
        node   0   1
          0:  10  21
          1:  21  10


      ----------------------------------------------------------
      9. /proc/meminfo
        MemTotal:       1056529060 kB


      ----------------------------------------------------------
      10. who -r
        run-level 3 Sep 29 12:59


      ----------------------------------------------------------
      11. Systemd service manager version: systemd 239 (239-51.el8)
        Default Target  Status
        multi-user      running


      ----------------------------------------------------------
      12. Services, from systemctl list-unit-files
        STATE       UNIT FILES
        enabled     ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon
                    atd auditd autovt@ avahi-daemon bluetooth chronyd crond cups display-manager firewalld gdm
                    getty@ import-state insights-client-boot irqbalance iscsi iscsi-onboot kdump ksm ksmtuned
                    libstoragemgmt libvirtd loadmodules lvm2-monitor mcelog mdmonitor microcode multipathd
                    nis-domainname nvidia-hibernate nvidia-resume nvidia-suspend nvmefc-boot-connections
                    ostree-remount qemu-guest-agent rhsmcertd rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark
                    sep5 smartd sshd sssd syslog timedatex tuned udisks2 vdo vgauthd vmtoolsd
        disabled    arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
                    canberra-system-shutdown-reboot chrony-wait console-getty cpupower cups-browsed debug-shell
                    dnsmasq ebtables gssproxy httpd httpd@ initial-setup initial-setup-reconfiguration iprdump
                    iprinit iprupdate iscsid iscsiuio kpatch kvm_stat ledmon man-db-restart-cache-update
                    ndctl-monitor netcf-transaction nfs-blkmap nfs-convert nfs-server nftables numad nvidia-powerd
                    nvmf-autoconnect oddjobd podman podman-auto-update podman-restart psacct radvd ras-mc-ctl
                    rasdaemon rdisc rhcd rhsm rhsm-facts saslauthd serial-getty@ snmpd snmptrapd speech-dispatcherd
                    sshd-keygen@ switcheroo-control systemd-nspawn@ systemd-resolved tcsd tog-pegasus upower
                    virtinterfaced virtnetworkd virtnodedevd virtnwfilterd virtproxyd virtqemud virtsecretd
                    virtstoraged wpa_supplicant
        generated   SystemTap compile-server gcc-toolset-10-stap-server gcc-toolset-10-systemtap
                    gcc-toolset-11-stap-server gcc-toolset-11-systemtap gcc-toolset-9-stap-server
                    gcc-toolset-9-systemtap scripts startup
        indirect    spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo virtlockd
                    virtlogd
        masked      systemd-timedated


      ----------------------------------------------------------
      13. Linux kernel boot-time arguments, from /proc/cmdline
        BOOT_IMAGE=(hd0,gpt2)/vmlinuz-4.18.0-348.el8.x86_64
        root=/dev/mapper/rhel-root
        ro
```

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Platform Notes (Continued)

```
    resume=/dev/mapper/rhel-swap
    rd.lvm.lv=rhel/root
    rd.lvm.lv=rhel/swap
    rhgb
    quiet


    ----------------------------------------------------------
 14. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 800 MHz and 2.00 GHz.
                      The governor "performance" may decide which speed to use
                      within this range.
      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     0
    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.extfrag_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


    ----------------------------------------------------------
 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_swap           64
    pages_to_scan           4096
    scan_sleep_millisecs    10000


    ----------------------------------------------------------
 19. OS release
```

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Platform Notes (Continued)

```
   From /etc/*-release /etc/*-version
   os-release     Red Hat Enterprise Linux 8.5 (Ootpa)
   redhat-release Red Hat Enterprise Linux release 8.5 (Ootpa)
   system-release Red Hat Enterprise Linux release 8.5 (Ootpa)


  ----------------------------------------------------------------
20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
   itlb_multihit         Not affected
   l1tf                  Not affected
   mds                   Not affected
   meltdown              Not affected
   spec_store_bypass     Mitigation: Speculative Store Bypass disabled via prctl and seccomp
   spectre_v1            Mitigation: usercopy/swapgs barriers and __user pointer sanitization
   spectre_v2            Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
   srbds                 Not affected
   tsx_async_abort       Not affected
For more information, see the Linux documentation on hardware vulnerabilities, for example
     https://www.kernel.org/doc/html/latest/admin-guide/hw-vuln/index.html


  ----------------------------------------------------------------
21. Disk information
SPEC is set to: /home/cpu2017
   Filesystem              Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   402G  376G   26G  94% /home


  ----------------------------------------------------------------
22. /sys/devices/virtual/dmi/id
   Vendor:         Tyrone Systems
   Product:        Tyrone Camarero SDI200C3R-28
   Product Family: Family
   Serial:         A497867X3106771


  ----------------------------------------------------------------
23. 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:
    16x Samsung M321R8GA0BB0-CQKZH 64 GB 2 rank 4800, configured at 4400



  ----------------------------------------------------------------
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:      American Megatrends International, LLC.
   BIOS Version:     1.3
   BIOS Date:        06/01/2023
   BIOS Revision:    5.31
```

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.
--------------------------------------------------------------------------------------------------
```

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Test Sponsor: Netweb Pte Ltd
Tested by: Tyrone Systems

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

Compiler Version Notes (Continued)

```
==================================================================================================
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
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--------------------------------------------------------------------------------------------------
```

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`

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`

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https://www.spec.org/

SPEC CPU®2017 Integer Speed Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200C3R-28
(2.00 GHz,Intel Xeon Gold 5420+)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 006042
Test Sponsor: Netweb Pte Ltd
Tested by: Tyrone Systems

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

Base Optimization Flags (Continued)

C benchmarks (continued):
```
-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
-ljemalloc
```

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Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

SPEC CPU®2017 Integer Speed Result

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Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200C3R-28
(2.00 GHz,Intel Xeon Gold 5420+)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 006042		**Test Date:**	Sep-2023
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Jan-2023
Tested by:	Tyrone Systems	**Software Availability:**	May-2022

Peak Optimization Flags (Continued)

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`
`-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 -xCORE-AVX512 -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`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.html`
`http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-SPR-revC.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml`
`http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-SPR-revC.xml`

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

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