SPEC CPU®2017 Floating Point Speed Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero TDI100C3R-212
(2.80 GHz,Intel Xeon Gold 6342)

$SPECspeed®2017\_fp\_base = 221$
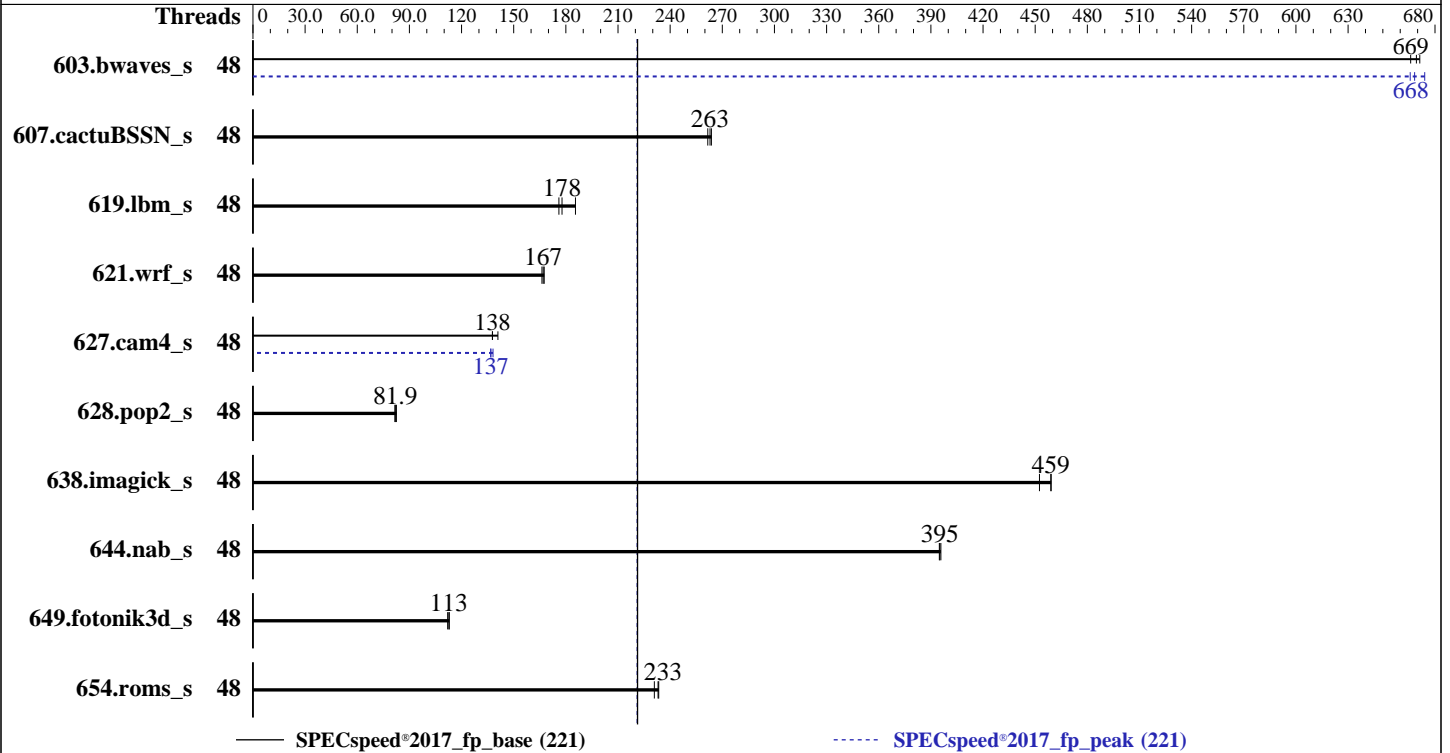
$SPECspeed®2017\_fp\_peak = 221$

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022

Threads		Result
603.bwaves_s	48	669 / 668
607.cactuBSSN_s	48	263
619.lbm_s	48	178
621.wrf_s	48	167
627.cam4_s	48	138 / 137
628.pop2_s	48	81.9
638.imagick_s	48	459
644.nab_s	48	395
649.fotonik3d_s	48	113
654.roms_s	48	233

Scale: 0 30.0 60.0 90.0 120 150 180 210 240 270 300 330 360 390 420 450 480 510 540 570 600 630 680

— **SPECspeed®2017_fp_base (221)**   ----- **SPECspeed®2017_fp_peak (221)**

Hardware

CPU Name: Intel Xeon Gold 6342
Max MHz: 3500
Nominal: 2800
Enabled: 48 cores, 2 chips, 2 threads/core
Orderable: 1,2 Chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 1.25 MB I+D on chip per core
L3: 36 MB I+D on chip per chip
Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R)
Storage: 1 x 512 GB NVMe SSD
Other: None

Software

OS: Red Hat Enterprise Linux release 8.5 (Ootpa) 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 PEGC0042 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.

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Results Table

Benchmark	Base						Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	48	87.9	671	88.6	666	**88.1**	**669**	48	87.5	674	88.6	666	**88.3**	**668**
607.cactuBSSN_s	48	**63.4**	**263**	63.7	262	63.2	264	48	**63.4**	**263**	63.7	262	63.2	264
619.lbm_s	48	**29.5**	**178**	29.8	176	28.2	186	48	**29.5**	**178**	29.8	176	28.2	186
621.wrf_s	48	79.6	166	78.9	168	**79.2**	**167**	48	79.6	166	78.9	168	**79.2**	**167**
627.cam4_s	48	**64.3**	**138**	64.3	138	62.9	141	48	**64.8**	**137**	64.8	137	64.2	138
628.pop2_s	48	145	81.6	144	82.5	**145**	**81.9**	48	145	81.6	144	82.5	**145**	**81.9**
638.imagick_s	48	31.4	459	31.9	452	**31.4**	**459**	48	31.4	459	31.9	452	**31.4**	**459**
644.nab_s	48	44.2	395	44.2	396	**44.2**	**395**	48	44.2	395	44.2	396	**44.2**	**395**
649.fotonik3d_s	48	80.7	113	**80.9**	**113**	81.4	112	48	80.7	113	**80.9**	**113**	81.4	112
654.roms_s	48	67.5	233	68.2	231	**67.6**	**233**	48	67.5	233	68.2	231	**67.6**	**233**
SPECspeed®2017_fp_base =	**221**												
SPECspeed®2017_fp_peak =	**221**												

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

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,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/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 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 1>      /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
```

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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General Notes (Continued)

```
 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 Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Extreme Performance
SNC (Sub NUMA) = Enable
KTI Prefetch = Enable
LLC Dead Line Alloc = Disable


 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on Tyronespec Tue Mar 14 08:30:40 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
```

(Continued on next page)

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$SPECspeed^{®}2017\_fp\_base = 221$

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CPU2017 License: 006042   **Test Date:**   Mar-2023
Test Sponsor: Netweb Pte Ltd   **Hardware Availability:** Apr-2021
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Platform Notes (Continued)

```
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
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
   08:30:40 up 1 day, 29 min,  2 users,  load average: 5.55, 6.10, 3.66
  USER      TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root      tty1     -                Mon08    3:47m  1.12s  0.00s -bash
  root      tty2     -                Mon08    24:27m 0.01s  0.01s -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) 4126654
  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) 4126654
  virtual memory          (kbytes, -v) unlimited
  file locks                      (-x) unlimited


------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 18
 login -- root
```

(Continued on next page)

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Platform Notes (Continued)

```
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags -c
  ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=48 --tune base,peak -o all --define smt-on
   --define drop_caches fpspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=48 --tune base,peak --output_format all
   --define smt-on --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed
   --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.004/templogs/preenv.fpspeed.004.0.log --lognum 004.0
   --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2017


 ----------------------------------------------------------
 6. /proc/cpuinfo
    model name       : Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz
    vendor_id        : GenuineIntel
    cpu family       : 6
    model            : 106
    stepping         : 6
    microcode        : 0xd0002e0
    bugs             : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores        : 24
    siblings         : 48
    2 physical ids (chips)
    96 processors (hardware threads)
    physical id 0: core ids 0-23
    physical id 1: core ids 0-23
    physical id 0: apicids 0-47
    physical id 1: apicids 64-111
  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):             96
   On-line CPU(s) list: 0-95
   Thread(s) per core: 2
   Core(s) per socket: 24
   Socket(s):          2
   NUMA node(s):       2
   Vendor ID:          GenuineIntel
```

(Continued on next page)

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Platform Notes (Continued)

```
  BIOS Vendor ID:       Intel(R) Corporation
  CPU family:           6
  Model:                106
  Model name:           Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz
  BIOS Model name:      Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz
  Stepping:             6
  CPU MHz:              2800.000
  CPU max MHz:          3500.0000
  CPU min MHz:          800.0000
  BogoMIPS:             5600.00
  Virtualization:       VT-x
  L1d cache:            48K
  L1i cache:            32K
  L2 cache:             1280K
  L3 cache:             36864K
  NUMA node0 CPU(s):    0-23,48-71
  NUMA node1 CPU(s):    24-47,72-95
  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 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 invpcid_single intel_ppin 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
                        wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi
                         umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
                        avx512_vpopcntdq la57 rdpid sgx_lc fsrm md_clear pconfig flush_l1d arch_capabilities

  ----------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0-23,48-71
  node 0 size: 515676 MB
  node 0 free: 484811 MB
  node 1 cpus: 24-47,72-95
  node 1 size: 516045 MB
  node 1 free: 482322 MB
  node distances:
  node   0   1
    0:  10  20
    1:  20  10


  ----------------------------------------------------------
```

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Platform Notes (Continued)

```
  9. /proc/meminfo
     MemTotal:       1056483632 kB


   ------------------------------------------------------------
 10. who -r
    run-level 3 Mar 13 08:01


   ------------------------------------------------------------
 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=(hd1,gpt2)/vmlinuz-4.18.0-348.el8.x86_64
    root=/dev/mapper/rhel-root
    ro
    resume=/dev/mapper/rhel-swap
    rd.lvm.lv=rhel/root
    rd.lvm.lv=rhel/swap
```

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Platform Notes (Continued)

```
  rhgb
  quiet


  -------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 3.50 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


  -------------------------------------------------------------
```

(Continued on next page)

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Platform Notes (Continued)

```
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
   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  210G  192G  53% /home


   ---------------------------------------------------------------
22. /sys/devices/virtual/dmi/id
     Vendor:        TyroneSystems
     Product:       TDI100C3R-212
     Product Family: Family
     Serial:        2X20382301


   ---------------------------------------------------------------
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
```

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Platform Notes (Continued)

```
    "DMTF SMBIOS" standard.
  Memory:
    16x Samsung M393A8G40AB2-CWE 64 GB 2 rank 3200



  -------------------------------------------------------------
 24. BIOS
 (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      PEGC0042
   BIOS Date:         01/16/2023
   BIOS Revision:     5.22
```

Compiler Version Notes

```
==============================================================================
C                  | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
                   | 644.nab_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++, C, Fortran | 607.cactuBSSN_s(base, peak)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
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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.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
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------------------------------------------------------------------------------


==============================================================================
Fortran            | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
                   | 654.roms_s(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
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------------------------------------------------------------------------------
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

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Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero TDI100C3R-212
(2.80 GHz,Intel Xeon Gold 6342)

$SPECspeed®2017\_fp\_base = 221$

$SPECspeed®2017\_fp\_peak = 221$

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022

Compiler Version Notes (Continued)

```
==============================================================================
Fortran, C      | 621.wrf_s(base, peak) 627.cam4_s(base, peak)
                | 628.pop2_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.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
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------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

Fortran benchmarks:
`ifx`

Benchmarks using both Fortran and C:
`ifx icx`

Benchmarks using Fortran, C, and C++:
`icpx icx ifx`

Base Portability Flags

603.bwaves_s: `-DSPEC_LP64`
607.cactuBSSN_s: `-DSPEC_LP64`
619.lbm_s: `-DSPEC_LP64`
621.wrf_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
627.cam4_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG`
628.pop2_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
`-assume byterecl`
638.imagick_s: `-DSPEC_LP64`
644.nab_s: `-DSPEC_LP64`
649.fotonik3d_s: `-DSPEC_LP64`
654.roms_s: `-DSPEC_LP64`

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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SPECspeed®2017_fp_base = 221

SPECspeed®2017_fp_peak = 221

CPU2017 License: 006042		**Test Date:**	Mar-2023
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Apr-2021
Tested by:	Tyrone Systems	**Software Availability:**	May-2022

Base Optimization Flags

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

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

Benchmarks using both Fortran and C:
```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

Fortran benchmarks:
```
ifx
```

Benchmarks using both Fortran and C:
```
ifx icx
```

Benchmarks using Fortran, C, and C++:
```
icpx icx ifx
```

Peak Portability Flags

```
Same as Base Portability Flags
```

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SPECspeed®2017_fp_peak = 221

CPU2017 License: 006042		**Test Date:**	Mar-2023
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Apr-2021
Tested by:	Tyrone Systems	**Software Availability:**	May-2022

Peak Optimization Flags

C benchmarks:

 619.lbm_s: basepeak = yes

 638.imagick_s: basepeak = yes

 644.nab_s: basepeak = yes

Fortran benchmarks:

 603.bwaves_s: -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc

 649.fotonik3d_s: basepeak = yes

 654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

 621.wrf_s: basepeak = yes

 627.cam4_s: -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

 628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

 607.cactuBSSN_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-ICX-revA.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-ICX-revA.xml

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CPU2017 License:	006042	**Test Date:**	Mar-2023
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Apr-2021
Tested by:	Tyrone Systems	**Software Availability:**	May-2022

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

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