SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

$SPECspeed®2017\_fp\_base = 256$

$SPECspeed®2017\_fp\_peak = 256$

CPU2017 License: 006042　　　　　　　　　　　**Test Date:** Aug-2024
Test Sponsor: Netweb Pte Ltd　　　　　　　　**Hardware Availability:** Jan-2023
Tested by: Tyrone Systems　　　　　　　　　　**Software Availability:** Dec-2023

Threads	0 40.0 80.0 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 800 840 920
603.bwaves_s 48	904 / 908
607.cactuBSSN_s 48	240
619.lbm_s 48	207
621.wrf_s 48	177
627.cam4_s 48	159 / 159
628.pop2_s 48	84.2
638.imagick_s 48	557
644.nab_s 48	438
649.fotonik3d_s 48	155
654.roms_s 48	301

SPECspeed®2017_fp_base (256)　　　　　　SPECspeed®2017_fp_peak (256)

Hardware
CPU Name: Intel Xeon Silver 4516Y+
　Max MHz: 3700
　Nominal: 2200
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: 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: 1 x 960 GB NVMe
Other: CPU Cooling: Air

Software
OS: Red Hat Enterprise Linux 9.3 (Plow)
　5.14.0-362.13.1.el9_3.x86_64
Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux;
　Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;
Parallel: Yes
Firmware: Version 2.1 released Dec-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 cost of additional power.

Page 1　　　　　Standard Performance Evaluation Corporation (info@spec.org)　　　　　https://www.spec.org/

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_base = 256

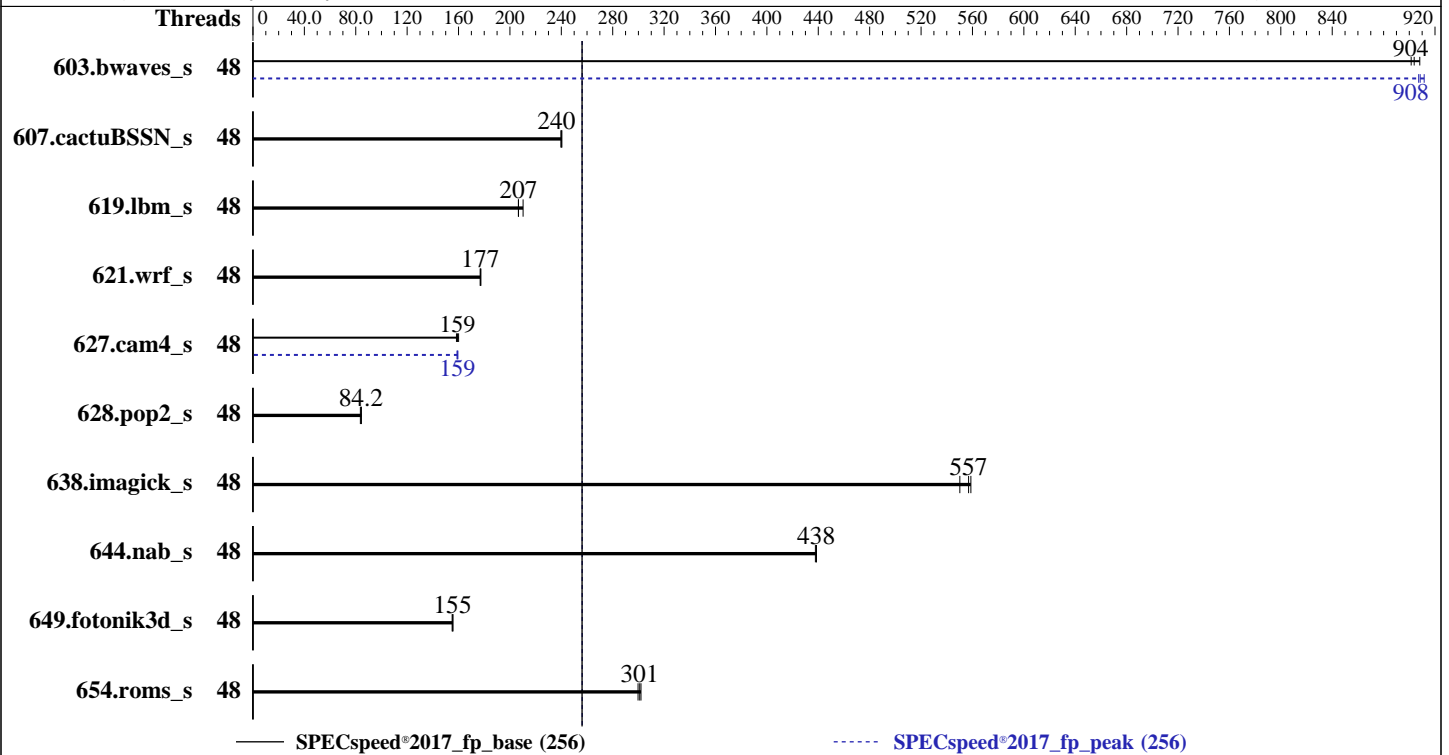SPECspeed®2017_fp_peak = 256

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Aug-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	48	65.4	901	**65.3**	**904**	65.0	908	48	**64.9**	**908**	64.7	912	65.0	907
607.cactuBSSN_s	48	69.4	240	**69.4**	**240**	69.6	240	48	69.4	240	**69.4**	**240**	69.6	240
619.lbm_s	48	25.4	207	24.9	210	**25.3**	**207**	48	25.4	207	24.9	210	**25.3**	**207**
621.wrf_s	48	74.5	177	**74.7**	**177**	74.8	177	48	74.5	177	**74.7**	**177**	74.8	177
627.cam4_s	48	**55.7**	**159**	56.0	158	55.4	160	48	55.8	159	55.6	160	**55.7**	**159**
628.pop2_s	48	142	83.6	141	84.4	**141**	**84.2**	48	142	83.6	141	84.4	**141**	**84.2**
638.imagick_s	48	**25.9**	**557**	25.8	559	26.2	550	48	**25.9**	**557**	25.8	559	26.2	550
644.nab_s	48	**39.9**	**438**	39.9	438	39.8	439	48	**39.9**	**438**	39.9	438	39.8	439
649.fotonik3d_s	48	**58.6**	**155**	58.8	155	58.6	156	48	**58.6**	**155**	58.8	155	58.6	156
654.roms_s	48	**52.3**	**301**	52.1	302	52.5	300	48	**52.3**	**301**	52.1	302	52.5	300
SPECspeed®2017_fp_base =		**256**												
SPECspeed®2017_fp_peak =		**256**												

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 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

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

$SPECspeed®2017\_fp\_base = 256$

$SPECspeed®2017\_fp\_peak = 256$

CPU2017 License: 006042		**Test Date:**	Aug-2024
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Jan-2023
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2023

General Notes (Continued)

```
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

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Sat Aug 17 10:33:01 2024

 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 252 (252-18.el9)
 12. Failed units, from systemctl list-units --state=failed
 13. Services, from systemctl list-unit-files
 14. Linux kernel boot-time arguments, from /proc/cmdline
 15. cpupower frequency-info
 16. tuned-adm active
 17. sysctl
 18. /sys/kernel/mm/transparent_hugepage
 19. /sys/kernel/mm/transparent_hugepage/khugepaged
 20. OS release
 21. Disk information
 22. /sys/devices/virtual/dmi/id
 23. dmidecode
 24. BIOS
 ------------------------------------------------------------

 ------------------------------------------------------------
 1. uname -a
   Linux localhost.localdomain 5.14.0-362.13.1.el9_3.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Nov 24 01:57:57 EST
   2023 x86_64 x86_64 x86_64 GNU/Linux

 ------------------------------------------------------------
 2. w
    10:33:01 up 21:09,  2 users,  load average: 5.86, 6.78, 4.07
   USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1       Fri13    3:26m  0.90s  0.00s -bash
   root     tty2       07:07    3:24m  0.02s  0.02s -bash
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_base = 256

SPECspeed®2017_fp_peak = 256

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

Test Date: Aug-2024
Hardware Availability: Jan-2023
Software Availability: Dec-2023

Platform Notes (Continued)

```
------------------------------------------------------------
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) 4126594
  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) 4126594
  virtual memory              (kbytes, -v) unlimited
  file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
 login -- root
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags -c
   ic2023.2.3-lin-sapphirerapids-speed-20231121.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
   ic2023.2.3-lin-sapphirerapids-speed-20231121.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) SILVER 4516Y+
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 207
    stepping        : 2
    microcode       : 0x21000200
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    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 128-175
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
```

(Continued on next page)

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_base = 256

SPECspeed®2017_fp_peak = 256

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Aug-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

Platform Notes (Continued)

```
    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):                          96
      On-line CPU(s) list:             0-95
      Vendor ID:                       GenuineIntel
      BIOS Vendor ID:                  Intel(R) Corporation
      Model name:                      INTEL(R) XEON(R) SILVER 4516Y+
      BIOS Model name:                 INTEL(R) XEON(R) SILVER 4516Y+
      CPU family:                      6
      Model:                           207
      Thread(s) per core:              2
      Core(s) per socket:              24
      Socket(s):                       2
      Stepping:                        2
      Frequency boost:                 enabled
      CPU max MHz:                     2201.0000
      CPU min MHz:                     800.0000
      BogoMIPS:                        4400.00
      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 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 intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp
                                       ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad fsgsbase
                                       tsc_adjust bmi1 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 hfi vnmi 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 ibt amx_bf16
                                       avx512_fp16 amx_tile amx_int8 flush_l1d arch_capabilities
      Virtualization:                  VT-x
      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):                    2
      NUMA node0 CPU(s):               0-23,48-71
      NUMA node1 CPU(s):               24-47,72-95
      Vulnerability Gather data sampling: Not affected
      Vulnerability Itlb multihit:        Not affected
      Vulnerability L1tf:                 Not affected
      Vulnerability Mds:                  Not affected
      Vulnerability Meltdown:             Not affected
      Vulnerability Mmio stale data:      Not affected
      Vulnerability Retbleed:             Not affected
      Vulnerability Spec rstack overflow: Not affected
```

(Continued on next page)

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

SPECspeed®2017_fp_base = 256

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_peak = 256

CPU2017 License: 006042	**Test Date:** Aug-2024
Test Sponsor: Netweb Pte Ltd	**Hardware Availability:** Jan-2023
Tested by: Tyrone Systems	**Software Availability:** Dec-2023

Platform Notes (Continued)

```
  Vulnerability Spec store bypass:    Mitigation; Speculative Store Bypass disabled via prctl
  Vulnerability Spectre v1:           Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:           Mitigation; Enhanced / Automatic IBRS, IBPB conditional, RSB filling,
                                      PBRSB-eIBRS SW sequence
  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: 2 nodes (0-1)
    node 0 cpus: 0-23,48-71
    node 0 size: 515636 MB
    node 0 free: 478751 MB
    node 1 cpus: 24-47,72-95
    node 1 size: 516078 MB
    node 1 free: 485019 MB
    node distances:
    node   0   1
      0:  10  21
      1:  21  10


  ------------------------------------------------------------
  9. /proc/meminfo
    MemTotal:       1056475524 kB


  ------------------------------------------------------------
  10. who -r
    run-level 3 Aug 16 13:23


  ------------------------------------------------------------
  11. Systemd service manager version: systemd 252 (252-18.el9)
    Default Target  Status
    multi-user      degraded


  ------------------------------------------------------------
  12. Failed units, from systemctl list-units --state=failed
      UNIT                LOAD   ACTIVE SUB    DESCRIPTION
    * dnf-makecache.service loaded failed failed dnf makecache


  ------------------------------------------------------------
  13. Services, from systemctl list-unit-files
    STATE           UNIT FILES
    enabled         ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
                    accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker firewalld
                    gdm getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt
                    lm_sensors low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd
                    nis-domainname nvmefc-boot-connections ostree-remount pmcd pmie pmlogger
                    power-profiles-daemon qemu-guest-agent rhsmcertd rpcbind rsyslog rtkit-daemon
                    selinux-autorelabel-mark smartd sshd sssd switcheroo-control sysstat systemd-boot-update
                    systemd-network-generator tuned udisks2 upower vgauthd virtqemud vmtoolsd
    enabled-runtime systemd-remount-fs
    disabled        arp-ethers autofs blk-availability brltty canberra-system-bootup canberra-system-shutdown
```

(Continued on next page)

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

$SPECspeed®2017\_fp\_base = 256$

$SPECspeed®2017\_fp\_peak = 256$

CPU2017 License: 006042		**Test Date:**	Aug-2024
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Jan-2023
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2023

Platform Notes (Continued)

```
                canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed
                dbus-daemon debug-shell dnf-system-upgrade dnsmasq dovecot fancontrol fcoe grafana-server
                gssproxy httpd httpd@ ibacm iprdump iprinit iprupdate ipsec iscsid iscsiuio kpatch
                kvm_stat ledmon libvirt-guests libvirtd lldpad man-db-restart-cache-update named
                named-chroot netavark-dhcp-proxy nfs-blkmap nfs-server nftables nmb numad nvmf-autoconnect
                ostree-readonly-sysroot-migration pesign pmfind pmie_farm pmlogger_farm pmproxy podman
                podman-auto-update podman-clean-transient podman-kube@ podman-restart postfix powertop
                psacct ras-mc-ctl rasdaemon rdisc rhcd rhsm rhsm-facts rpmdb-rebuild rrdcached saslauthd
                selinux-check-proper-disable serial-getty@ smb snmpd snmptrapd spamassassin
                speech-dispatcherd srp_daemon srp_daemon_port@ sshd-keygen@ systemd-boot-check-no-failures
                systemd-nspawn@ systemd-pstore systemd-sysext target targetclid tog-pegasus trace-cmd
                virtinterfaced virtnetworkd virtnodedevd virtnwfilterd virtproxyd virtsecretd virtstoraged
                vsftpd wpa_supplicant
  indirect      pcscd spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
                systemd-sysupdate systemd-sysupdate-reboot virtlockd virtlogd vsftpd@

   ----------------------------------------------------------
14. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-362.13.1.el9_3.x86_64
  root=/dev/mapper/rhel-root
  ro
  resume=/dev/mapper/rhel-swap
  rd.lvm.lv=rhel/root
  rd.lvm.lv=rhel/swap
  rhgb
  quiet


   ----------------------------------------------------------
15. cpupower frequency-info
  analyzing CPU 0:
     current policy: frequency should be within 800 MHz and 2.20 GHz.
                     The governor "performance" may decide which speed to use
                     within this range.
     boost state support:
       Supported: yes
       Active: yes


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


   ----------------------------------------------------------
17. 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.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
```

(Continued on next page)

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

$SPECspeed®2017\_fp\_base = 256$

$SPECspeed®2017\_fp\_peak = 256$

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Aug-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

Platform Notes (Continued)

```
  vm.watermark_scale_factor        10
  vm.zone_reclaim_mode              0


  ------------------------------------------------------------
18. /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


  ------------------------------------------------------------
19. /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


  ------------------------------------------------------------
20. OS release
  From /etc/*-release /etc/*-version
  os-release     Red Hat Enterprise Linux 9.3 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.3 (Plow)
  system-release Red Hat Enterprise Linux release 9.3 (Plow)


  ------------------------------------------------------------
21. Disk information
SPEC is set to: /home/cpu2017
  Filesystem            Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   856G  676G  180G  79% /home


  ------------------------------------------------------------
22. /sys/devices/virtual/dmi/id
    Vendor:         Tyrone Systems
    Product:        Tyrone Camarero SDI200A3N-212
    Product Family: Family
    Serial:         2X26452301


  ------------------------------------------------------------
23. dmidecode
  Additional information from dmidecode 3.5 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-CQKZJ 64 GB 2 rank 4800, configured at 4400



  ------------------------------------------------------------
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
  BIOS Vendor:      Tyrone Systems
  BIOS Version:     2.1
  BIOS Date:        12/07/2023
  BIOS Revision:    5.32
```

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_base = 256

SPECspeed®2017_fp_peak = 256

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Aug-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

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 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
```

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
```

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

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_base = 256

SPECspeed®2017_fp_peak = 256

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

Test Date: Aug-2024
Hardware Availability: Jan-2023
Software Availability: Dec-2023

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`

Base Optimization Flags

C benchmarks:
```
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xsapphirerapids -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:
```
-w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte
-auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_base = 256

SPECspeed®2017_fp_peak = 256

CPU2017 License: 006042		**Test Date:**	Aug-2024
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Jan-2023
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2023

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
```

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: `-w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xsapphirerapids -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

(Continued on next page)

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

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

SPECspeed®2017_fp_base = 256

Tyrone Camarero SDI200A3N-212
(2.20 GHz,Intel Xeon Silver 4516Y+)

SPECspeed®2017_fp_peak = 256

CPU2017 License: 006042		**Test Date:**	Aug-2024
Test Sponsor:	Netweb Pte Ltd	**Hardware Availability:**	Jan-2023
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2023

Peak Optimization Flags (Continued)

627.cam4_s: `-w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512 -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-ic2023p2-official-linux64.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-ic2023p2-official-linux64.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.

Tested with SPEC CPU®2017 v1.1.9 on 2024-08-17 01:03:01-0400.
Report generated on 2024-09-11 09:31:59 by CPU2017 PDF formatter v6716.
Originally published on 2024-09-10.