# SPEC CPU®2017 Floating Point Rate Result

## Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

$SPECrate®2017\_fp\_base = 713$

$SPECrate®2017\_fp\_peak = 743$

**CPU2017 License:** 006042
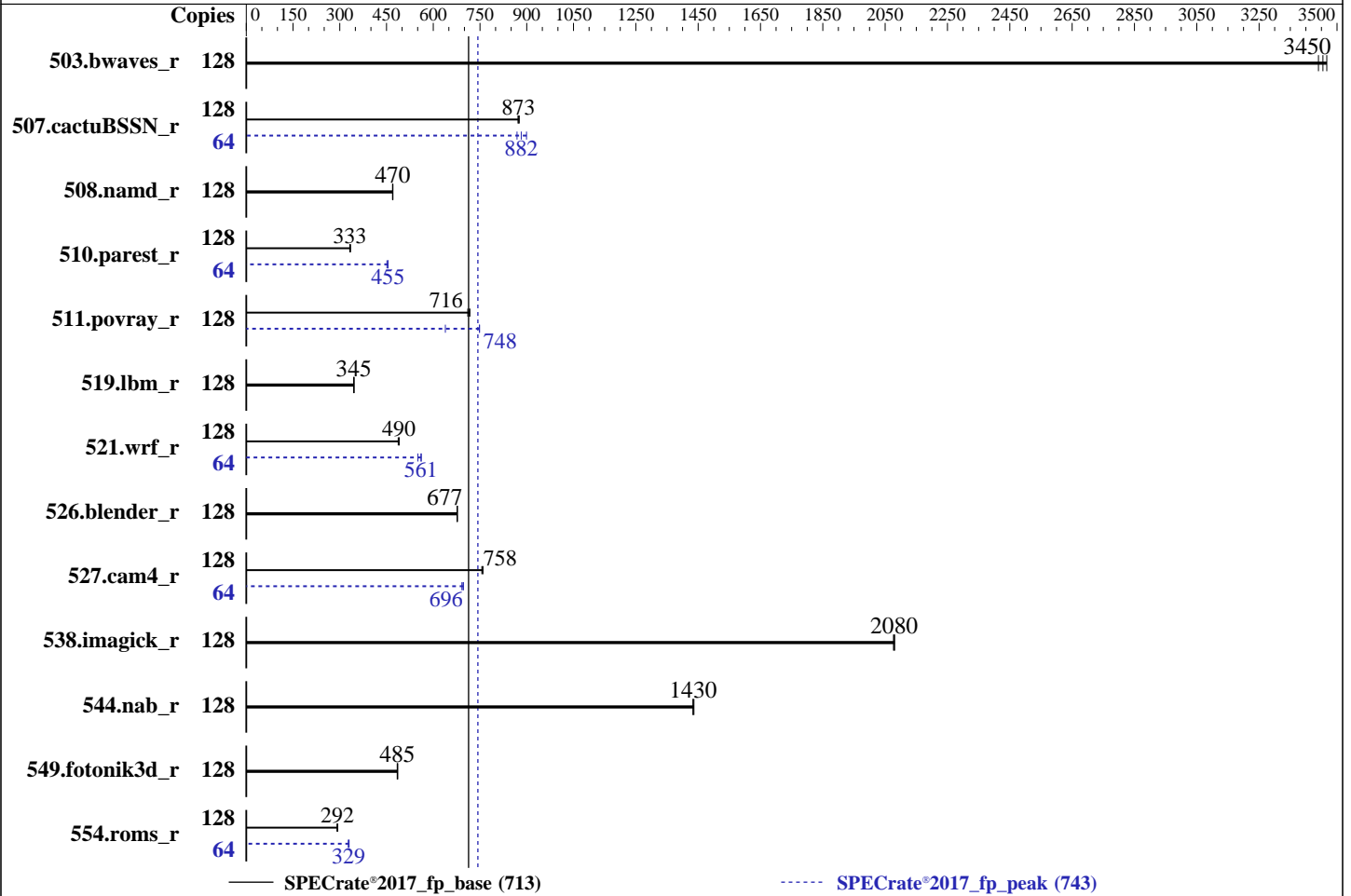
**Test Sponsor:** Netweb Pte Ltd

**Tested by:** Tyrone Systems

**Test Date:** Jul-2024

**Hardware Availability:** Jan-2023

**Software Availability:** Dec-2023

**Copies** — scale: 0 150 300 450 600 750 900 1050 1250 1450 1650 1850 2050 2250 2450 2650 2850 3050 3250 3500

- **503.bwaves_r** 128 — 3450
- **507.cactuBSSN_r** 128 — 873; 64 — 882
- **508.namd_r** 128 — 470
- **510.parest_r** 128 — 333; 64 — 455
- **511.povray_r** 128 — 716; 748
- **519.lbm_r** 128 — 345
- **521.wrf_r** 128 — 490; 64 — 561
- **526.blender_r** 128 — 677
- **527.cam4_r** 128 — 758; 64 — 696
- **538.imagick_r** 128 — 2080
- **544.nab_r** 128 — 1430
- **549.fotonik3d_r** 128 — 485
- **554.roms_r** 128 — 292; 64 — 329

——— SPECrate®2017_fp_base (713)    ------- SPECrate®2017_fp_peak (743)

## Hardware

CPU Name: Intel Xeon Gold 6548Y+
Max MHz: 4100
Nominal: 2500
Enabled: 64 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: 60 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
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: No
Firmware: Version 2.3 released May-2024
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.

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

# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

SPECrate®2017_fp_base = 713

SPECrate®2017_fp_peak = 743

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

## Results Table

| Benchmark | Copies | Base Seconds | Base Ratio | Base Seconds | Base Ratio | Base Seconds | Base Ratio | Copies | Peak Seconds | Peak Ratio | Peak Seconds | Peak Ratio | Peak Seconds | Peak Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 503.bwaves_r | 128 | 370 | 3470 | 373 | 3440 | **372** | **3450** | 128 | 370 | 3470 | 373 | 3440 | **372** | **3450** |
| 507.cactuBSSN_r | 128 | **186** | **873** | 185 | 876 | 186 | 872 | 64 | **91.8** | **882** | 93.3 | 869 | 90.1 | 899 |
| 508.namd_r | 128 | **259** | **470** | 259 | 470 | 259 | 469 | 128 | **259** | **470** | 259 | 470 | 259 | 469 |
| 510.parest_r | 128 | 1000 | 335 | **1007** | **333** | 1008 | 332 | 64 | 368 | 455 | **368** | **455** | 371 | 451 |
| 511.povray_r | 128 | **418** | **716** | 421 | 711 | 417 | 718 | 128 | 468 | 639 | **400** | **748** | 399 | 749 |
| 519.lbm_r | 128 | 391 | 345 | 390 | 346 | **391** | **345** | 128 | 391 | 345 | 390 | 346 | **391** | **345** |
| 521.wrf_r | 128 | **585** | **490** | 585 | 490 | 588 | 487 | 64 | 255 | 562 | **256** | **561** | 260 | 551 |
| 526.blender_r | 128 | 288 | 677 | 288 | 676 | **288** | **677** | 128 | 288 | 677 | 288 | 676 | **288** | **677** |
| 527.cam4_r | 128 | 296 | 756 | **295** | **758** | 295 | 759 | 64 | 162 | 692 | **161** | **696** | 161 | 697 |
| 538.imagick_r | 128 | 153 | 2080 | 153 | 2080 | **153** | **2080** | 128 | 153 | 2080 | 153 | 2080 | **153** | **2080** |
| 544.nab_r | 128 | 150 | 1440 | 150 | 1430 | **150** | **1430** | 128 | 150 | 1440 | 150 | 1430 | **150** | **1430** |
| 549.fotonik3d_r | 128 | 1030 | 484 | 1026 | 486 | **1029** | **485** | 128 | 1030 | 484 | 1026 | 486 | **1029** | **485** |
| 554.roms_r | 128 | 693 | 294 | **696** | **292** | 698 | 291 | 64 | 311 | 328 | **310** | **329** | 308 | 330 |

SPECrate®2017_fp_base = **713**

SPECrate®2017_fp_peak = **743**

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"
We are using specific Kernel Version

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"

## 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

**(Continued on next page)**

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

$SPECrate^{®}2017\_fp\_base = 713$

$SPECrate^{®}2017\_fp\_peak = 743$

**CPU2017 License:** 006042

**Test Sponsor:** Netweb Pte Ltd

**Tested by:** Tyrone Systems

**Test Date:** Jul-2024

**Hardware Availability:** Jan-2023

**Software Availability:** Dec-2023

## General Notes (Continued)

```
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

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Sat Jul 27 20:49:49 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
```

**(Continued on next page)**

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

$SPECrate^{®}2017\_fp\_base = 713$

$SPECrate^{®}2017\_fp\_peak = 743$

**CPU2017 License:** 006042

**Test Sponsor:** Netweb Pte Ltd

**Tested by:** Tyrone Systems

**Test Date:** Jul-2024

**Hardware Availability:** Jan-2023

**Software Availability:** Dec-2023

## Platform Notes (Continued)

```
   20:49:49 up  5:42,  1 user,  load average: 70.98, 112.75, 121.37
   USER     TTY         LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1        15:07    5:41m 1.03s  0.01s -bash


   ------------------------------------------------------------
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) 4126679
  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) 4126679
  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 --define numcopies=128 -c
   ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=64 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak -o all fprate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 --configfile
   ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=64 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
   --runmode rate --tune base:peak --size refrate fprate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.002/templogs/preenv.fprate.002.0.log --lognum 002.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2017


   ------------------------------------------------------------
6. /proc/cpuinfo
    model name      : INTEL(R) XEON(R) GOLD 6548Y+
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 207
    stepping        : 2
    microcode       : 0x21000240
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    cpu cores       : 32
    siblings        : 64
    2 physical ids (chips)
    128 processors (hardware threads)
    physical id 0: core ids 0-31
    physical id 1: core ids 0-31
```

**(Continued on next page)**

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

$SPECrate^{®}2017\_fp\_base = 713$

$SPECrate^{®}2017\_fp\_peak = 743$

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

## Platform Notes (Continued)

```
     physical id 0: apicids 0-63
     physical id 1: apicids 128-191
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
   virtualized systems.  Use the above data carefully.


   -----------------------------------------------------------
   7. lscpu

   From lscpu from util-linux 2.37.4:
     Architecture:                    x86_64
     CPU op-mode(s):                  32-bit, 64-bit
     Address sizes:                   46 bits physical, 57 bits virtual
     Byte Order:                      Little Endian
     CPU(s):                          128
     On-line CPU(s) list:             0-127
     Vendor ID:                       GenuineIntel
     BIOS Vendor ID:                  Intel(R) Corporation
     Model name:                      INTEL(R) XEON(R) GOLD 6548Y+
     BIOS Model name:                 INTEL(R) XEON(R) GOLD 6548Y+
     CPU family:                      6
     Model:                           207
     Thread(s) per core:              2
     Core(s) per socket:              32
     Socket(s):                       2
     Stepping:                        2
     Frequency boost:                 enabled
     CPU max MHz:                     2501.0000
     CPU min MHz:                     800.0000
     BogoMIPS:                        5000.00
     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:                       3 MiB (64 instances)
     L1i cache:                       2 MiB (64 instances)
     L2 cache:                        128 MiB (64 instances)
     L3 cache:                        120 MiB (2 instances)
     NUMA node(s):                    4
     NUMA node0 CPU(s):               0-15,64-79
     NUMA node1 CPU(s):               16-31,80-95
     NUMA node2 CPU(s):               32-47,96-111
     NUMA node3 CPU(s):               48-63,112-127
     Vulnerability Gather data sampling: Not affected
     Vulnerability Itlb multihit:     Not affected
     Vulnerability L1tf:              Not affected
```

**(Continued on next page)**

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

$SPECrate^{®}2017\_fp\_base = 713$

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

$SPECrate^{®}2017\_fp\_peak = 743$

**CPU2017 License:** 006042

**Test Sponsor:** Netweb Pte Ltd

**Tested by:** Tyrone Systems

**Test Date:** Jul-2024

**Hardware Availability:** Jan-2023

**Software Availability:** Dec-2023

## Platform Notes (Continued)

```
  Vulnerability Mds:                Not affected
  Vulnerability Meltdown:           Not affected
  Vulnerability Mmio stale data:    Not affected
  Vulnerability Retbleed:           Not affected
  Vulnerability Spec rstack overflow: Not affected
  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       3M  12 Data            1     64      1            64
     L1i      32K       2M   8 Instruction     1     64      1            64
     L2        2M     128M  16 Unified         2   2048      1            64
     L3       60M     120M  15 Unified         3  65536      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: 0-15,64-79
  node 0 size: 257675 MB
  node 0 free: 241134 MB
  node 1 cpus: 16-31,80-95
  node 1 size: 257986 MB
  node 1 free: 243798 MB
  node 2 cpus: 32-47,96-111
  node 2 size: 258039 MB
  node 2 free: 243880 MB
  node 3 cpus: 48-63,112-127
  node 3 size: 258034 MB
  node 3 free: 244077 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:       1056497244 kB

------------------------------------------------------------
10. who -r
  run-level 3 Jul 27 15:07

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

**(Continued on next page)**

# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

SPECrate®2017_fp_base = 713

SPECrate®2017_fp_peak = 743

**CPU2017 License:** 006042

**Test Sponsor:** Netweb Pte Ltd

**Tested by:** Tyrone Systems

**Test Date:** Jul-2024

**Hardware Availability:** Jan-2023

**Software Availability:** Dec-2023

## Platform Notes (Continued)

```
  -----------------------------------------------------------
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
                       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 2.50 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
```

**(Continued on next page)**

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

SPECrate®2017_fp_base = 713

SPECrate®2017_fp_peak = 743

**CPU2017 License:** 006042

**Test Sponsor:** Netweb Pte Ltd

**Tested by:** Tyrone Systems

**Test Date:** Jul-2024

**Hardware Availability:** Jan-2023

**Software Availability:** Dec-2023

## Platform Notes (Continued)

```
  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


  ----------------------------------------------------------
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  591G  265G  70% /home

  ----------------------------------------------------------
22. /sys/devices/virtual/dmi/id
    Vendor:         Tyrone Systems
    Product:        Tyrone Camarero SDI200A3N-212
    Product Family: Family
    Serial:         0123456789


  ----------------------------------------------------------
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:
```

*(Continued on next page)*

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

SPECrate®2017_fp_base = 713

SPECrate®2017_fp_peak = 743

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

## Platform Notes (Continued)

```
     16x Samsung M321R8GA0BB0-CQKZJ 64 GB 2 rank 4800


    ------------------------------------------------------------
    24. BIOS
    (This section combines info from /sys/devices and dmidecode.)
      BIOS Vendor:      American Megatrends International, LLC.
      BIOS Version:     2.3
      BIOS Date:        05/14/2024
      BIOS Revision:    5.32
```

## Compiler Version Notes

```
==============================================================================================
C             | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(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++           | 508.namd_r(base, peak) 510.parest_r(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        | 511.povray_r(base, peak) 526.blender_r(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.
----------------------------------------------------------------------------------------------


==============================================================================================
C++, C, Fortran | 507.cactuBSSN_r(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       | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(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    | 521.wrf_r(base, peak) 527.cam4_r(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.
```

**(Continued on next page)**

# SPEC CPU®2017 Floating Point Rate Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

$SPECrate^{®}2017\_fp\_base = 713$

$SPECrate^{®}2017\_fp\_peak = 743$

**CPU2017 License:** 006042

**Test Sponsor:** Netweb Pte Ltd

**Tested by:** Tyrone Systems

**Test Date:** Jul-2024

**Hardware Availability:** Jan-2023

**Software Availability:** Dec-2023

## Compiler Version Notes (Continued)

```
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`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Benchmarks using both Fortran and C:
`ifx icx`

Benchmarks using both C and C++:
`icpx icx`

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

# Base Portability Flags

503.bwaves_r: `-DSPEC_LP64`
507.cactuBSSN_r: `-DSPEC_LP64`
508.namd_r: `-DSPEC_LP64`
510.parest_r: `-DSPEC_LP64`
511.povray_r: `-DSPEC_LP64`
519.lbm_r: `-DSPEC_LP64`
521.wrf_r: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
526.blender_r: `-DSPEC_LP64 -DSPEC_LINUX -funsigned-char`
527.cam4_r: `-DSPEC_LP64 -DSPEC_CASE_FLAG`
538.imagick_r: `-DSPEC_LP64`
544.nab_r: `-DSPEC_LP64`
549.fotonik3d_r: `-DSPEC_LP64`
554.roms_r: `-DSPEC_LP64`

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

SPECrate®2017_fp_base = 713

SPECrate®2017_fp_peak = 743

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

# 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
-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

C++ benchmarks:
```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

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

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
-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both 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 -Wno-implicit-int -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

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

# Peak Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

**(Continued on next page)**

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

SPECrate®2017_fp_base = 713

SPECrate®2017_fp_peak = 743

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

# Peak Compiler Invocation (Continued)

Fortran benchmarks:
`ifx`

Benchmarks using both Fortran and C:
`ifx icx`

Benchmarks using both C and C++:
`icpx icx`

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

# Peak Portability Flags

```
Same as Base Portability Flags
```

# Peak Optimization Flags

C benchmarks:

519.lbm_r: `basepeak = yes`

538.imagick_r: `basepeak = yes`

544.nab_r: `basepeak = yes`

C++ benchmarks:

508.namd_r: `basepeak = yes`

510.parest_r: `-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib`

Fortran benchmarks:

503.bwaves_r: `basepeak = yes`

**(Continued on next page)**

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

SPECrate®2017_fp_base = 713

SPECrate®2017_fp_peak = 743

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

# Peak Optimization Flags (Continued)

549.fotonik3d_r: `basepeak = yes`

554.roms_r: `-w -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast`
`-ffast-math -flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -nostandard-realloc-lhs`
`-align array32byte -auto -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

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`
`-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs`
`-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib`

Benchmarks using both C and C++:

511.povray_r: `-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs`
`-fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4 -Wno-implicit-int`
`-mprefer-vector-width=512 -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

526.blender_r: `basepeak = yes`

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

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

# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.50 GHz,Intel Xeon Gold 6548Y+)

$SPECrate^{®}2017\_fp\_base = 713$

$SPECrate^{®}2017\_fp\_peak = 743$

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

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 2024-07-27 11:19:48-0400.
Report generated on 2024-09-03 12:25:17 by CPU2017 PDF formatter v6716.
Originally published on 2024-08-30.

Page 14            Standard Performance Evaluation Corporation (info@spec.org)            https://www.spec.org/