



# SPEC CPU®2017 Floating Point Speed Result

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## Tyrone Systems

(Test Sponsor: Netweb Technologies India Ltd)  
Tyrone Camarero SDI200A2N-18  
(2.20 GHz, Intel Xeon Gold 6538Y+)

SPECspeed®2017\_fp\_base = 308

SPECspeed®2017\_fp\_peak = 307

CPU2017 License: 006802

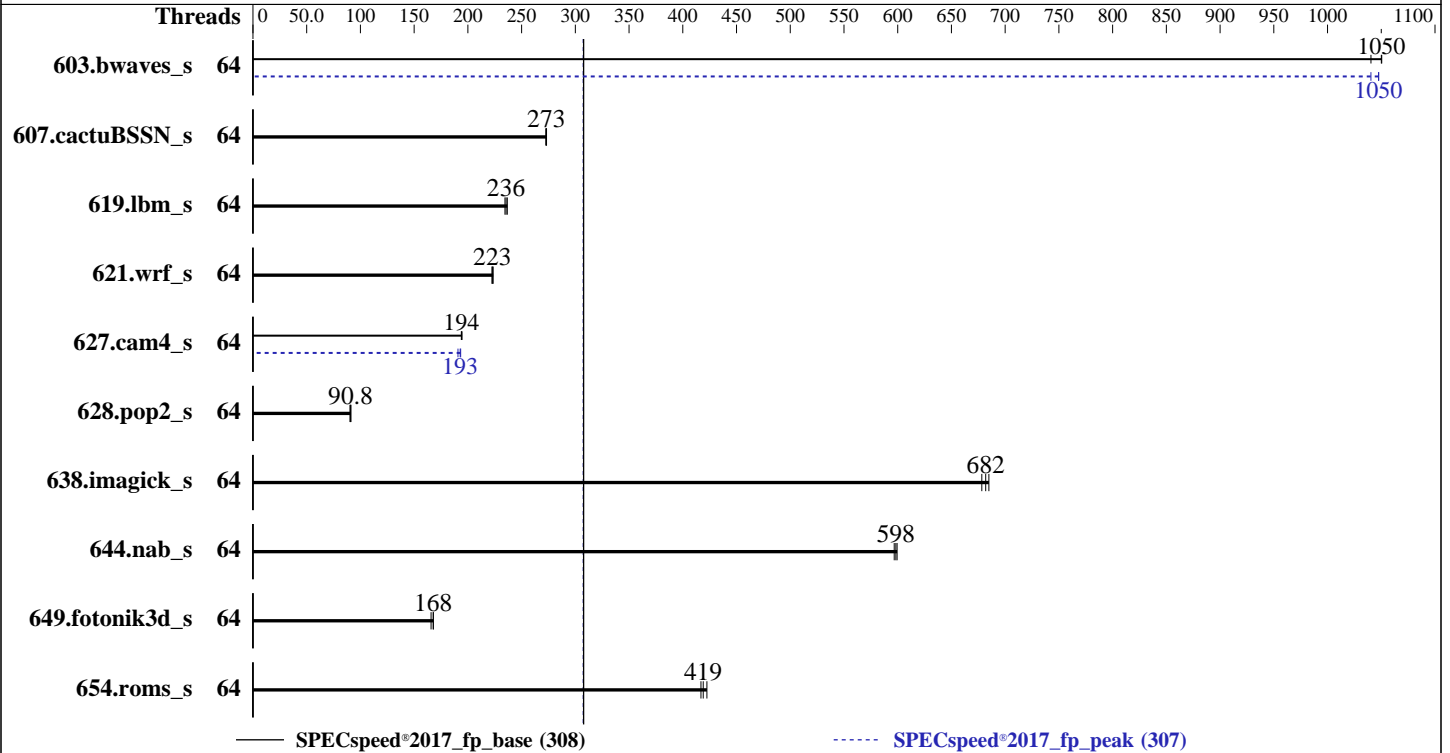
Test Sponsor: Netweb Technologies India Ltd

Tested by: Tyrone Systems

Test Date: Sep-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023



### Hardware

CPU Name: Intel Xeon Gold 6538Y+  
 Max MHz: 4000  
 Nominal: 2200  
 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: Yes  
 Firmware: Version 2.1a released Mar-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.



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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	64	<u>56.2</u>	<u>1050</u>	56.7	1040	56.2	1050	64	<u>56.3</u>	<u>1050</u>	56.7	1040	56.3	1050
607.cactuBSSN_s	64	61.2	272	<u>61.0</u>	<u>273</u>	61.0	273	64	61.2	272	<u>61.0</u>	<u>273</u>	61.0	273
619.lbm_s	64	22.1	237	<u>22.2</u>	<u>236</u>	22.3	235	64	22.1	237	<u>22.2</u>	<u>236</u>	22.3	235
621.wrf_s	64	59.5	222	59.2	224	<u>59.4</u>	<u>223</u>	64	59.5	222	59.2	224	<u>59.4</u>	<u>223</u>
627.cam4_s	64	<u>45.7</u>	<u>194</u>	45.7	194	45.6	195	64	<u>46.0</u>	<u>193</u>	46.5	191	45.9	193
628.pop2_s	64	132	90.3	130	91.2	<u>131</u>	<u>90.8</u>	64	132	90.3	130	91.2	<u>131</u>	<u>90.8</u>
638.imagick_s	64	<u>21.2</u>	<u>682</u>	21.3	678	21.1	685	64	<u>21.2</u>	<u>682</u>	21.3	678	21.1	685
644.nab_s	64	<u>29.3</u>	597	29.1	599	<u>29.2</u>	<u>598</u>	64	<u>29.3</u>	597	29.1	599	<u>29.2</u>	<u>598</u>
649.fotonik3d_s	64	54.3	168	<u>54.3</u>	<u>168</u>	55.0	166	64	54.3	168	<u>54.3</u>	<u>168</u>	55.0	166
654.roms_s	64	<u>37.6</u>	<u>419</u>	37.8	417	37.3	422	64	<u>37.6</u>	<u>419</u>	37.8	417	37.3	422

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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:  
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 system as tested and documented.

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## General Notes (Continued)

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 Sep 7 09:10:19 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.e19)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent\_hugepage
18. /sys/kernel/mm/transparent\_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. 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
09:10:19 up 18:56, 2 users, load average: 6.33, 6.85, 4.04
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
root     tty1      Fri14   3:11m  0.83s  0.00s -bash
root     tty2      Fri14  18:52m  0.00s  0.00s -bash
```

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## 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) 4126692
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) 4126692
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=64 --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=64 --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 6538Y+
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      : 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
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.

```

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## Platform Notes (Continued)

### 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 6538Y+
BIOS Model name:            INTEL(R) XEON(R) GOLD 6538Y+
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:                 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
                             xtology 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 vnni 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_lld 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):                2
NUMA node0 CPU(s):          0-31,64-95
NUMA node1 CPU(s):          32-63,96-127
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
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1:   Mitigation; usercopy/swaps barriers and __user pointer sanitization

```

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## Platform Notes (Continued)

Vulnerability Spectre v2: Mitigation: Enhanced / Automatic IBRS, IBPB conditional, RSB filling, PBRSE-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: 2 nodes (0-1)
node 0 cpus: 0-31,64-95
node 0 size: 515718 MB
node 0 free: 470098 MB
node 1 cpus: 32-63,96-127
node 1 size: 516020 MB
node 1 free: 477709 MB
node distances:
node 0 1
0: 10 21
1: 21 10
```

9. /proc/meminfo

MemTotal: 1056500756 kB

10. who -r

run-level 3 Sep 6 14:13

11. Systemd service manager version: systemd 252 (252-18.el9)

```
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 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 nvme-fc-boot-connections ostree-remount pmcd pmie pmlogger power-profiles-daemon qemu-guest-agent rshmcertd 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 brlty 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 iprint ipupdate ipsec iscsid iscsiui kpatch kvm_stat ledmon libvirt-guests libvirt lldpad man-db-restart-cache-update named named-chroot netavark-dhcp-proxy nfs-blkmap nfs-server nftables nmb numad nvme-fc-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

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## Platform Notes (Continued)

```

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-sysex target targetclid tog-pegasus trace-cmd
virtinterfaced virtnetworkd virtnodevd virtnwfilterd virtproxyd virtsecret d virtstoraged
vsftpd wpa_supplicant
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@
indirect

```

```

-----
13. 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

```

```

-----
14. 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

```

```

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

```

```

-----
16. 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
vm.watermark_scale_factor      10
vm.zone_reclaim_mode           0

```

```

-----
17. /sys/kernel/mm/transparent_hugepage
defrag          always defer defer+madvice [madvice] never
enabled        [always] madvice never

```

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## Platform Notes (Continued)

hpage\_pmd\_size 2097152  
shmem\_enabled always within\_size advise [never] deny force

-----  
18. /sys/kernel/mm/transparent\_hugepage/khugepaged  
alloc\_sleep\_millisecs 60000  
defrag 1  
max\_ptes\_none 511  
max\_ptes\_shared 256  
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 9.3 (Plow)  
redhat-release Red Hat Enterprise Linux release 9.3 (Plow)  
system-release Red Hat Enterprise Linux release 9.3 (Plow)  
-----

-----  
20. Disk information  
SPEC is set to: /home/cpu2017  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/mapper/rhel-home xfs 856G 729G 127G 86% /home  
-----

-----  
21. /sys/devices/virtual/dmi/id  
Vendor: Tyrone Systems  
Product: Tyrone Camarero SDI200A2N-18  
Product Family: Family  
Serial: A495115X4412722  
-----

-----  
22. 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  
-----

-----  
23. BIOS  
(This section combines info from /sys/devices and dmidecode.)  
BIOS Vendor: American Megatrends International, LLC.  
BIOS Version: 2.1a  
BIOS Date: 03/20/2024  
BIOS Revision: 5.32  
-----

## 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.  
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**SPECspeed®2017\_fp\_peak = 307**

**CPU2017 License:** 006802  
**Test Sponsor:** Netweb Technologies India Ltd  
**Tested by:** Tyrone Systems

**Test Date:** Sep-2024  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2023

## Compiler Version Notes (Continued)

=====  
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  
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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 2023.2.3 Build x  
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=====

=====  
Fortran, C | 621.wrf\_s(base, peak) 627.cam4\_s(base, peak) 628.pop2\_s(base, peak)  
=====

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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

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# SPEC CPU®2017 Floating Point Speed Result

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## Tyrone Systems

(Test Sponsor: Netweb Technologies India Ltd)

Tyrone Camarero SDI200A2N-18

(2.20 GHz, Intel Xeon Gold 6538Y+)

SPECSpeed®2017\_fp\_base = 308

SPECSpeed®2017\_fp\_peak = 307

CPU2017 License: 006802

Test Sponsor: Netweb Technologies India Ltd

Tested by: Tyrone Systems

Test Date: Sep-2024

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## Base Portability Flags (Continued)

```
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
```

## Peak Compiler Invocation

### C benchmarks:

icx

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## Tyrone Systems

(Test Sponsor: Netweb Technologies India Ltd)

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SPECspeed®2017\_fp\_base = 308

SPECspeed®2017\_fp\_peak = 307

CPU2017 License: 006802

Test Sponsor: Netweb Technologies India Ltd

Tested by: Tyrone Systems

Test Date: Sep-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

## Peak Compiler Invocation (Continued)

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

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

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# SPEC CPU®2017 Floating Point Speed Result

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**Tyrone Systems**

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**Tyrone Camarero SDI200A2N-18**

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## Peak Optimization Flags (Continued)

627.cam4\_s (continued):

```
-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>

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