



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200C2G-48
(2.00 GHz, Intel Xeon Platinum 8470)

SPECspeed®2017_fp_base = 316

SPECspeed®2017_fp_peak = 316

CPU2017 License: 006042

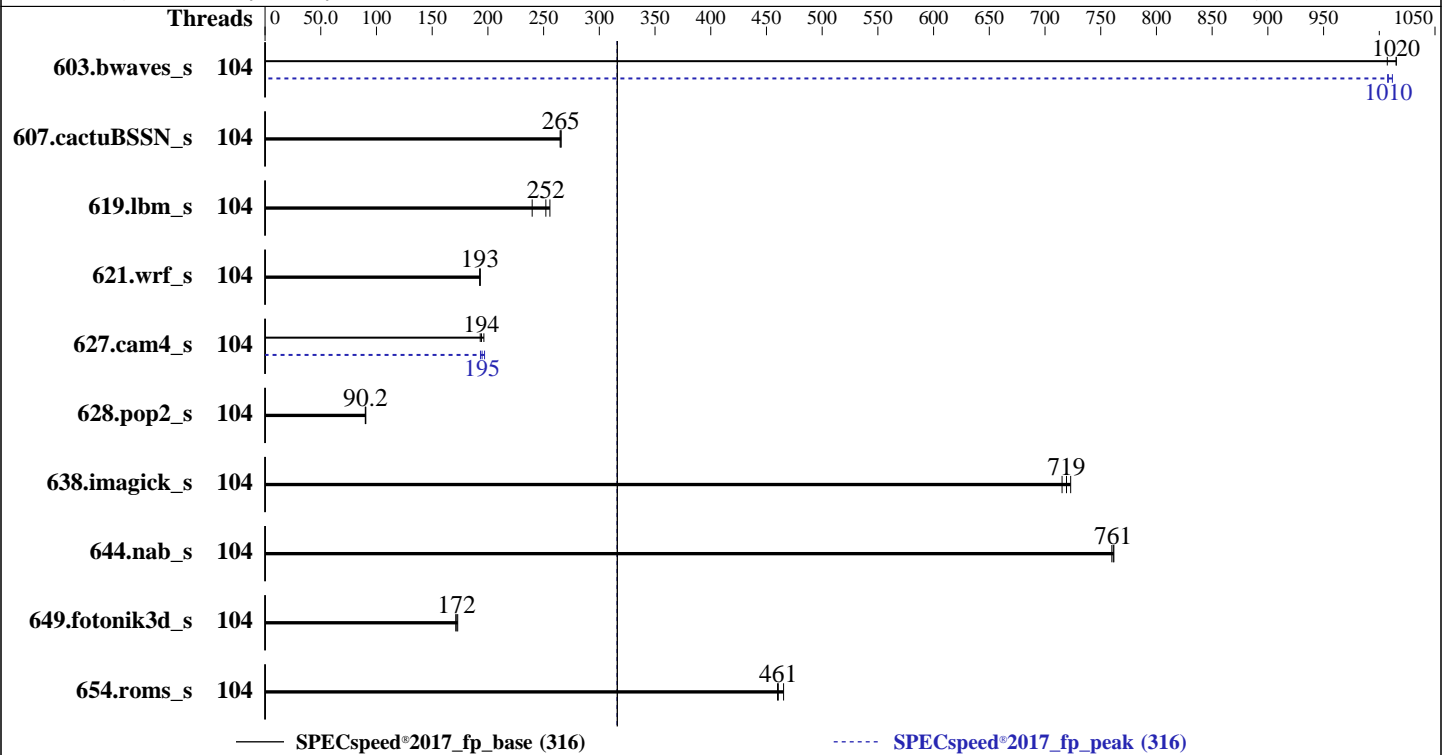
Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Feb-2024

Hardware Availability: Jan-2023

Software Availability: Nov-2023



Hardware

CPU Name: Intel Xeon Platinum 8470
 Max MHz: 3800
 Nominal: 2000
 Enabled: 104 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: 105 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800AA-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 2.1 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 the cost of additional power usage.



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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	104	58.1	1020	<u>58.1</u>	<u>1020</u>	58.6	1010	104	58.3	1010	<u>58.5</u>	<u>1010</u>	58.6	1010
607.cactuBSSN_s	104	62.7	266	<u>62.8</u>	<u>265</u>	62.9	265	104	62.7	266	<u>62.8</u>	<u>265</u>	62.9	265
619.lbm_s	104	20.5	256	21.8	240	<u>20.8</u>	<u>252</u>	104	20.5	256	21.8	240	<u>20.8</u>	<u>252</u>
621.wrf_s	104	68.5	193	68.6	193	<u>68.6</u>	<u>193</u>	104	68.5	193	68.6	193	<u>68.6</u>	<u>193</u>
627.cam4_s	104	45.9	193	45.1	196	<u>45.6</u>	<u>194</u>	104	45.0	197	45.8	193	<u>45.5</u>	<u>195</u>
628.pop2_s	104	131	90.4	132	89.9	<u>132</u>	<u>90.2</u>	104	131	90.4	132	89.9	<u>132</u>	<u>90.2</u>
638.imagick_s	104	20.0	723	<u>20.1</u>	<u>719</u>	20.2	715	104	20.0	723	<u>20.1</u>	<u>719</u>	20.2	715
644.nab_s	104	22.9	762	<u>23.0</u>	<u>761</u>	23.0	760	104	22.9	762	<u>23.0</u>	<u>761</u>	23.0	760
649.fotonik3d_s	104	53.3	171	<u>53.0</u>	<u>172</u>	52.7	173	104	53.3	171	<u>53.0</u>	<u>172</u>	52.7	173
654.roms_s	104	34.2	460	<u>34.2</u>	<u>461</u>	33.8	465	104	34.2	460	<u>34.2</u>	<u>461</u>	33.8	465

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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"

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.

jemalloc, a general purpose malloc implementation

(Continued on next page)



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General Notes (Continued)

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

Platform Notes

BIOS Settings:

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

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Thu Feb 15 13:37:08 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. 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
13:37:08 up 1 day, 1:49, 1 user, load average: 5.81, 5.50, 3.31
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
root tty1 Wed12 3:23m 0.87s 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) 4126574
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) 4126574
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=104 --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=104 --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) Platinum 8470
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2b000571
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
cpu cores      : 52
siblings       : 104
2 physical ids (chips)
208 processors (hardware threads)
physical id 0: core ids 0-51
physical id 1: core ids 0-51
physical id 0: apicids 0-103
physical id 1: apicids 128-231
Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
virtualized systems. Use the above data carefully.

```

(Continued on next page)



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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):                      208
On-line CPU(s) list:        0-207
Vendor ID:                   GenuineIntel
BIOS Vendor ID:              Intel(R) Corporation
Model name:                  Intel(R) Xeon(R) Platinum 8470
BIOS Model name:            Intel(R) Xeon(R) Platinum 8470
CPU family:                  6
Model:                      143
Thread(s) per core:         2
Core(s) per socket:         52
Socket(s):                   2
Stepping:                   8
CPU max MHz:                 3800.0000
CPU min MHz:                 800.0000
BogoMIPS:                   4000.00
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 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_lld arch_capabilities

Virtualization:              VT-x
L1d cache:                   4.9 MiB (104 instances)
L1i cache:                   3.3 MiB (104 instances)
L2 cache:                    208 MiB (104 instances)
L3 cache:                    210 MiB (2 instances)
NUMA node(s):               2
NUMA node0 CPU(s):          0-51,104-155
NUMA node1 CPU(s):          52-103,156-207
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
Vulnerability Spectre v2:   Mitigation; Enhanced / Automatic IBRS, IBPB conditional, RSB filling,

```

(Continued on next page)



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Platform Notes (Continued)

PBR SB-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	4.9M	12	Data	1	64	1	64
L1i	32K	3.3M	8	Instruction	1	64	1	64
L2	2M	208M	16	Unified	2	2048	1	64
L3	105M	210M	15	Unified	3	114688	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: 0-51,104-155
node 0 size: 515707 MB
node 0 free: 450769 MB
node 1 cpus: 52-103,156-207
node 1 size: 516001 MB
node 1 free: 460025 MB
node distances:
node 0 1
0: 10 21
1: 21 10

```

9. `/proc/meminfo`

MemTotal: 1056470424 kB

10. `who -r`

run-level 3 Feb 14 11:48

11. Systemd service manager version: `systemd 252 (252-18.e19)`

```

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 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 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 iprprint iprupdate ipsec iscsid iscsiui kpatch

```

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Platform Notes (Continued)

```

kvm_stat ledmon libvirt-guests libvirtd llqpad man-db-restart-cache-update named
named-chroot netavark-dhcp-proxy nfs-blkmap nfs-server nftables nmb numad nvmmf-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-sysextr target targetclid tog-pegasus trace-cmd
virtinterfaced virtnetworkd virtnodevdev virtwfilterd virtproxyd virtsecret d virtstoraged
vsftpd wpa_supplicant
indirect pcsd 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=(hd1,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 3.80 GHz and 3.80 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
vm.watermark_scale_factor        10
vm.zone_reclaim_mode            0

```

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Platform Notes (Continued)

```

18. /sys/kernel/mm/transparent_hugepage
defrag          always defer+madvice [madvice] never
enabled         [always] madvice 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      396G  461G  47% /home

```

```

22. /sys/devices/virtual/dmi/id
Vendor:          Tyrone Systems
Product:         Tyrone Camarero SDI200C2G-48
Product Family: Family
Serial:          2X21292023D

```

```

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

```

```

24. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      American Megatrends International, LLC.
BIOS Version:     2.1
BIOS Date:        12/07/2023
BIOS Revision:    5.32

```

Compiler Version Notes

```

=====
C | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base, peak)

```

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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.

=====
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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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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Intel(R) Fortran 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)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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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

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

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Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200C2G-48

(2.00 GHz, Intel Xeon Platinum 8470)

SPECspeed®2017_fp_base = 316

SPECspeed®2017_fp_peak = 316

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Feb-2024

Hardware Availability: Jan-2023

Software Availability: Nov-2023

Base Portability Flags (Continued)

```

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

```



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Tyrone Camarero SDI200C2G-48
(2.00 GHz, Intel Xeon Platinum 8470)

SPECspeed®2017_fp_base = 316

SPECspeed®2017_fp_peak = 316

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

Test Date: Feb-2024
Hardware Availability: Jan-2023
Software Availability: Nov-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

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Tyrone Camarero SDI200C2G-48

(2.00 GHz, Intel Xeon Platinum 8470)

SPECspeed®2017_fp_base = 316

SPECspeed®2017_fp_peak = 316

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Feb-2024

Hardware Availability: Jan-2023

Software Availability: Nov-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>

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