



SPEC CPU®2017 Floating Point Speed Result

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Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero TDI100C3R-212
(2.20 GHz, Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 217

SPECspeed®2017_fp_peak = 217

CPU2017 License: 006042

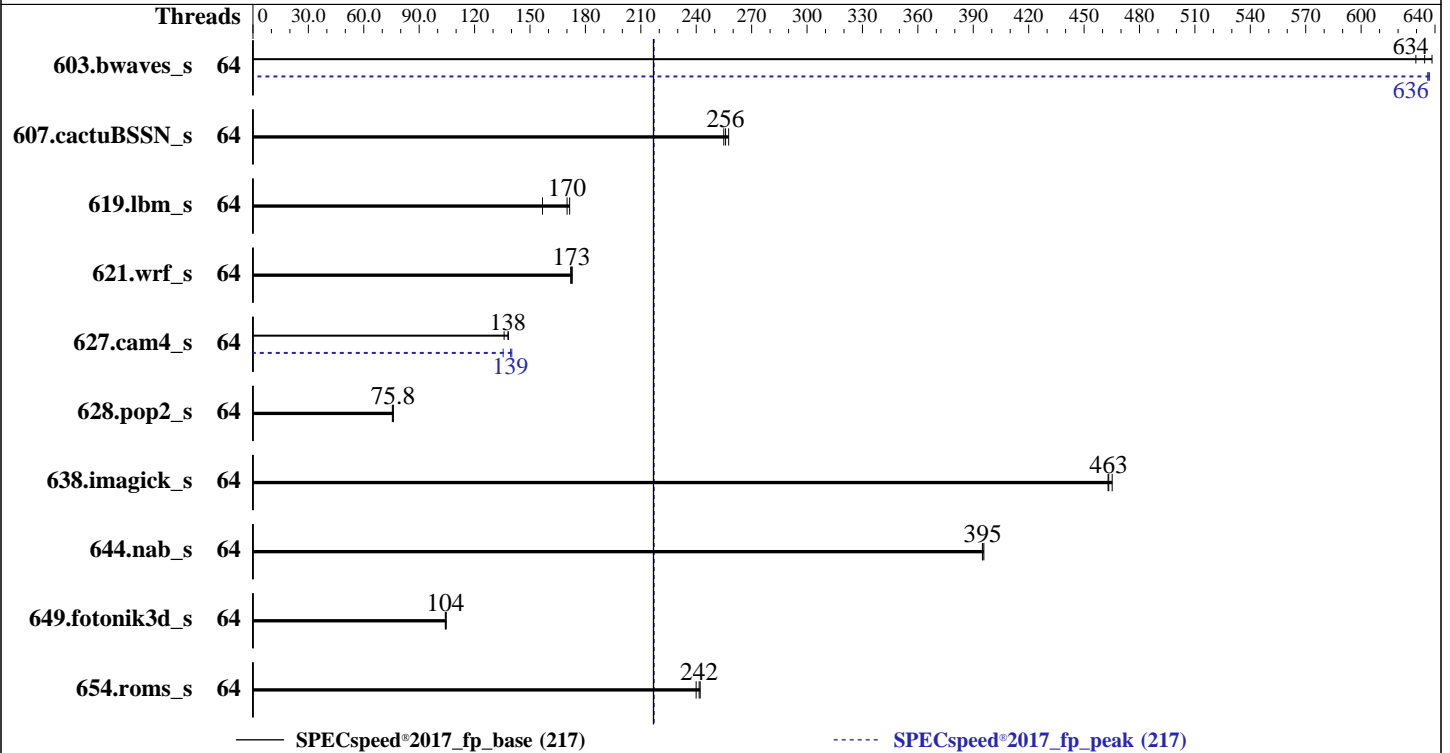
Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022



Hardware

CPU Name: Intel Xeon Gold 6338N
 Max MHz: 3500
 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: 1.25 MB I+D on chip per core
 L3: 48 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R, running at 2666)
 Storage: 1 x 512 GB NVMe SSD
 Other: None

Software

OS: Red Hat Enterprise Linux release 8.5 (Ootpa) 4.18.0-348.el8.x86_64
 Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;
 Parallel: Yes
 Firmware: Version PEGC0042 released Jan-2023
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc memory allocator V5.0.1
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.



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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	64	92.4	638	<u>93.0</u>	<u>634</u>	93.7	630	64	92.6	637	92.8	636	<u>92.7</u>	<u>636</u>
607.cactuBSSN_s	64	65.4	255	<u>65.1</u>	<u>256</u>	64.7	258	64	65.4	255	<u>65.1</u>	<u>256</u>	64.7	258
619.lbm_s	64	30.5	171	33.4	157	<u>30.8</u>	<u>170</u>	64	30.5	171	33.4	157	<u>30.8</u>	<u>170</u>
621.wrf_s	64	76.5	173	76.9	172	<u>76.7</u>	<u>173</u>	64	76.5	173	76.9	172	<u>76.7</u>	<u>173</u>
627.cam4_s	64	<u>64.2</u>	<u>138</u>	64.1	138	65.2	136	64	65.4	135	<u>63.5</u>	<u>139</u>	63.2	140
628.pop2_s	64	<u>157</u>	<u>75.8</u>	156	76.0	157	75.5	64	<u>157</u>	<u>75.8</u>	156	76.0	157	75.5
638.imagick_s	64	31.0	465	<u>31.1</u>	<u>463</u>	31.2	463	64	31.0	465	<u>31.1</u>	<u>463</u>	31.2	463
644.nab_s	64	44.2	395	44.1	396	<u>44.2</u>	<u>395</u>	64	44.2	395	44.1	396	<u>44.2</u>	<u>395</u>
649.fotonik3d_s	64	87.5	104	87.1	105	<u>87.4</u>	<u>104</u>	64	87.5	104	87.1	105	<u>87.4</u>	<u>104</u>
654.roms_s	64	65.0	242	<u>65.2</u>	<u>242</u>	65.6	240	64	65.0	242	<u>65.2</u>	<u>242</u>	65.6	240

SPECspeed®2017_fp_base = **217**

SPECspeed®2017_fp_peak = **217**

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 1> /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:

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General Notes (Continued)

`numactl --interleave=all runcpu <etc>`

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

`jemalloc`, a general purpose malloc implementation

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

Platform Notes

BIOS Settings:

Power Performance Tuning = BIOS Controls EPB

ENERGY_PERF_BIAS_CFG mode = Extreme Performance

SNC (Sub NUMA) = Enable

KTI Prefetch = Enable

LLC Dead Line Alloc = Disable

sysinfo program `/home/cpu2017/bin/sysinfo`

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on Tyronespec Tue Mar 14 10:48:58 2023

SUT (System Under Test) info as seen by some common utilities.

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1. `uname -a`
2. `w`
3. Username
4. `ulimit -a`
5. `sysinfo process ancestry`
6. `/proc/cpuinfo`
7. `lscpu`
8. `numactl --hardware`
9. `/proc/meminfo`
10. `who -r`
11. Systemd service manager version: `systemd 239 (239-51.e18)`
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`
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Platform Notes (Continued)

- 18. /sys/kernel/mm/transparent_hugepage/khugepaged
- 19. OS release
- 20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
- 21. Disk information
- 22. /sys/devices/virtual/dmi/id
- 23. dmidecode
- 24. BIOS

1. uname -a

```
Linux Tyronespec 4.18.0-348.el8.x86_64 #1 SMP Mon Oct 4 12:17:22 EDT 2021 x86_64 x86_64 x86_64 GNU/Linux
```

2. w

```
10:48:58 up 1 day, 4:55, 2 users, load average: 5.81, 7.69, 4.62
USER      TTY      FROM          LOGIN@      IDLE        JCPU      PCPU  WHAT
root      tty1     -             Mon05       3:47m      1.13s    0.00s -bash
root      tty2     -             Mon07       6:04m      2:45     2:45  top
```

3. Username

```
From environment variable $USER: root
```

4. ulimit -a

```
core file size          (blocks, -c) 0
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 4126627
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) 4126627
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize 17
login -- root
```

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Platform Notes (Continued)

```

-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=64 --tune base,peak -o all --define smt-on
  --define drop_caches fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=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 6338N CPU @ 2.20GHz
vendor_id       : GenuineIntel
cpu family      : 6
model           : 106
stepping        : 6
microcode       : 0xd0002e0
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
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.

7. lscpu

```

From lscpu from util-linux 2.32.1:
Architecture:    x86_64
CPU op-mode(s):  32-bit, 64-bit
Byte Order:      Little Endian
CPU(s):          128
On-line CPU(s) list: 0-127
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s):       2
NUMA node(s):    2
Vendor ID:       GenuineIntel

```

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Platform Notes (Continued)

```

BIOS Vendor ID: Intel(R) Corporation
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Gold 6338N CPU @ 2.20GHz
BIOS Model name: Intel(R) Xeon(R) Gold 6338N CPU @ 2.20GHz
Stepping: 6
CPU MHz: 2200.000
CPU max MHz: 3500.0000
CPU min MHz: 800.0000
BogoMIPS: 4400.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 49152K
NUMA node0 CPU(s): 0-31,64-95
NUMA node1 CPU(s): 32-63,96-127

```

```

Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts
acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art
arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf pni
pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca
sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm
abm 3dnowprefetch cpuid_fault epb cat_l3 invpcid_single intel_ppin ssbd mba ibrs ibpb
stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust
sgx bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec
xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect
wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi
umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
avx512_vpopcntdq la57 rdpid sgx_lc fsrm md_clear pconfig flush_l1d arch_capabilities

```

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```

available: 2 nodes (0-1)
node 0 cpus: 0-31,64-95
node 0 size: 515673 MB
node 0 free: 472268 MB
node 1 cpus: 32-63,96-127
node 1 size: 516042 MB
node 1 free: 478836 MB
node distances:
node  0  1
 0:  10  20
 1:  20  10

```

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Platform Notes (Continued)

9. `/proc/meminfo`

MemTotal: 1056476736 kB

10. `who -r`

run-level 3 Mar 13 05:54

11. Systemd service manager version: `systemd 239 (239-51.el8)`

Default Target Status
multi-user running

12. Services, from `systemctl list-unit-files`

STATE UNIT FILES

```

enabled  ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon
        atd auditd autovt@ avahi-daemon bluetooth chronyd crond cups display-manager firewalld gdm
        getty@ import-state insights-client-boot irqbalance iscsi iscsi-onboot kdump ksm ksmtuned
        libstoragemgmt libvirtfd loadmodules lvm2-monitor mcelog mdmonitor microcode multipathd
        nis-domainname nvidia-hibernate nvidia-resume nvidia-suspend nvme-fc-boot-connections
        ostree-remount qemu-guest-agent rhsmcertd rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark
        sep5 smartd sshd sssd syslog timedatex tuned udisks2 vdo vgauthd vmtoolsd
disabled  arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
        canberra-system-shutdown-reboot chrony-wait console-getty cpupower cups-browsed debug-shell
        dnsmasq ebttables gssproxy httpd httpd@ initial-setup initial-setup-reconfiguration iprump
        iprinit iprupdate iscsid iscsiui kpatch kvm_stat ledmon man-db-restart-cache-update
        ndctl-monitor netcf-transaction nfs-blkmap nfs-convert nfs-server nftables numad nvidia-powerd
        nvme-fc-autoconnect oddjobd podman podman-auto-update podman-restart psacct radvd ras-mc-ctl
        rasdaemon rdisc rhcd rhsm rhsm-facts saslauthd serial-getty@ snmpd snmptrapd speech-dispatcherd
        sshd-keygen@ switcheroo-control systemd-nspawn@ systemd-resolved tcsh tog-pegasus upower
        virtinterfaced virtnetworkd virtnodevd virtnwfilterd virtproxyd virtqemud virtsecret
        virtstoraged wpa_supplicant
generated SystemTap compile-server gcc-toolset-10-stap-server gcc-toolset-10-systemtap
        gcc-toolset-11-stap-server gcc-toolset-11-systemtap gcc-toolset-9-stap-server
        gcc-toolset-9-systemtap scripts startup
indirect  spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo virtlockd
        virtlogd
masked   systemd-timedated

```

13. Linux kernel boot-time arguments, from `/proc/cmdline`

```

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

```

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Platform Notes (Continued)

rhgb
quiet

14. cpupower frequency-info

analyzing CPU 0:

current policy: frequency should be within 800 MHz and 3.50 GHz.

The governor "performance" may decide which speed to use within this range.

boost state support:

Supported: yes

Active: yes

15. tuned-adm active

Current active profile: throughput-performance

16. sysctl

kernel.numa_balancing	1
kernel.randomize_va_space	2
vm.compaction_proactiveness	0
vm.dirty_background_bytes	0
vm.dirty_background_ratio	10
vm.dirty_bytes	0
vm.dirty_expire_centisecs	3000
vm.dirty_ratio	40
vm.dirty_writeback_centisecs	500
vm.dirtytime_expire_seconds	43200
vm.extfrag_threshold	500
vm.min_unmapped_ratio	1
vm.nr_hugepages	0
vm.nr_hugepages_mempolicy	0
vm.nr_overcommit_hugepages	0
vm.swappiness	10
vm.watermark_boost_factor	15000
vm.watermark_scale_factor	10
vm.zone_reclaim_mode	0

17. /sys/kernel/mm/transparent_hugepage

defrag always defer defer+madvise [madvise] never

enabled [always] madvise never

hpage_pmd_size 2097152

shmem_enabled always within_size advise [never] deny force

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Platform Notes (Continued)

18. /sys/kernel/mm/transparent_hugepage/khugepaged

alloc_sleep_millisecs	60000
defrag	1
max_ptes_none	511
max_ptes_swap	64
pages_to_scan	4096
scan_sleep_millisecs	10000

19. OS release

```
From /etc/*-release /etc/*-version
os-release      Red Hat Enterprise Linux 8.5 (Ootpa)
redhat-release  Red Hat Enterprise Linux release 8.5 (Ootpa)
system-release  Red Hat Enterprise Linux release 8.5 (Ootpa)
```

20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities

itlb_multihit	Not affected
lltf	Not affected
mds	Not affected
meltdown	Not affected
spec_store_bypass	Mitigation: Speculative Store Bypass disabled via prctl and seccomp
spectre_v1	Mitigation: usercopy/swaps barriers and __user pointer sanitization
spectre_v2	Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
srbs	Not affected
tsx_async_abort	Not affected

For more information, see the Linux documentation on hardware vulnerabilities, for example <https://www.kernel.org/doc/html/latest/admin-guide/hw-vuln/index.html>

21. Disk information

SPEC is set to: /home/cpu2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-home	xfs	402G	209G	193G	52%	/home

22. /sys/devices/virtual/dmi/id

Vendor:	TyroneSystems
Product:	TDI100C3R-212
Product Family:	Family
Serial:	2X20022302

23. dmidecode

Additional information from dmidecode 3.2 follows. **WARNING:** Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the

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Platform Notes (Continued)

"DMTF SMBIOS" standard.

Memory:

16x Micron 36ASF8G72PZ-3G2F1 64 GB 2 rank 3200, configured at 2666

24. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: American Megatrends International, LLC.
BIOS Version: PEGC0042
BIOS Date: 01/16/2023
BIOS Revision: 5.22

Compiler Version Notes

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
C++, C, Fortran | 607.cactuBSSN_s(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 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
2022.1.0 Build 20220316
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(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

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Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero TDI100C3R-212
(2.20 GHz, Intel Xeon Gold 6338N)

SPECspeed®2017_fp_base = 217

SPECspeed®2017_fp_peak = 217

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022

Compiler Version Notes (Continued)

```

=====
Fortran, C      | 621.wrf_s(base, peak) 627.cam4_s(base, peak)
                | 628.pop2_s(base, peak)
=====

```

```

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 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

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

```



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Base Optimization Flags

C benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

Benchmarks using Fortran, C, and C++:

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

Peak Compiler Invocation

C benchmarks:

```
icx
```

Fortran benchmarks:

```
ifx
```

Benchmarks using both Fortran and C:

```
ifx icx
```

Benchmarks using Fortran, C, and C++:

```
icpx icx ifx
```

Peak Portability Flags

Same as Base Portability Flags



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SPECspeed®2017_fp_peak = 217

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022

Peak Optimization Flags

C benchmarks:

619.lbm_s: basepeak = yes

638.imagick_s: basepeak = yes

644.nab_s: basepeak = yes

Fortran benchmarks:

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

649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

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

628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.html

<http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-ICX-revA.html>

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml

<http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-ICX-revA.xml>



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