## SPEC CPU®2017 Floating Point Speed Result

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero TDI100C3R-212  
(2.00 GHz, Intel Xeon Gold 6338)

<table>
<thead>
<tr>
<th>Test Sponsor:</th>
<th>Netweb Pte Ltd</th>
<th>Hardware Availability:</th>
<th>Apr-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by:</td>
<td>Tyrone Systems</td>
<td>Software Availability:</td>
<td>May-2022</td>
</tr>
<tr>
<td>CPU2017 License:</td>
<td>006042</td>
<td>Test Date:</td>
<td>Mar-2023</td>
</tr>
</tbody>
</table>

**SPECspeed®2017_fp_base = 230**  
**SPECspeed®2017_fp_peak = 230**

### Threads

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base (230)</th>
<th>SPECspeed®2017_fp_peak (230)</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s 64</td>
<td>270</td>
</tr>
<tr>
<td>607.cactuBSSN_s 64</td>
<td>189</td>
</tr>
<tr>
<td>619.ibm_s 64</td>
<td>182</td>
</tr>
<tr>
<td>627.cam4_s 64</td>
<td>140</td>
</tr>
<tr>
<td>628.pop2_s 64</td>
<td>78.6</td>
</tr>
<tr>
<td>638.imagick_s 64</td>
<td>469</td>
</tr>
<tr>
<td>644.nab_s 64</td>
<td>143</td>
</tr>
<tr>
<td>649.fotonik3d_s 64</td>
<td>112</td>
</tr>
<tr>
<td>654.roms_s 64</td>
<td>267</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon Gold 6338</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max MHz:</td>
<td>3200</td>
</tr>
<tr>
<td>Nominal:</td>
<td>2000</td>
</tr>
<tr>
<td>Enabled:</td>
<td>64 cores, 2 chips, 2 threads/core</td>
</tr>
<tr>
<td>Orderable:</td>
<td>1.2 Chips</td>
</tr>
<tr>
<td>Cache L1:</td>
<td>32 KB I + 48 KB D on chip per core</td>
</tr>
<tr>
<td>L2:</td>
<td>1.25 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3:</td>
<td>48 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R)</td>
</tr>
<tr>
<td>Storage:</td>
<td>1 x 512 GB NVMe SSD</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

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

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**Note:** All performance results are based on SPEC® benchmarks as of the publication date. Results may vary based on hardware and software configurations. For more information, visit [https://www.spec.org/](https://www.spec.org/).
SPEC CPU®2017 Floating Point Speed Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyronne Camarero TDI100C3R-212
(2.00 GHz, Intel Xeon Gold 6338)

SPECspeed®2017_fp_base = 230
SPECspeed®2017_fp_peak = 230

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Base</td>
<td></td>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>603.bwaves_s</td>
<td>64</td>
<td>80.9</td>
<td>730</td>
<td>80.9</td>
<td>729</td>
<td>80.5</td>
<td>733</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>64</td>
<td>62.5</td>
<td>267</td>
<td>61.8</td>
<td>270</td>
<td>61.8</td>
<td>270</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>64</td>
<td>27.7</td>
<td>189</td>
<td>27.6</td>
<td>190</td>
<td>28.7</td>
<td>182</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>64</td>
<td>72.8</td>
<td>182</td>
<td>72.7</td>
<td>182</td>
<td>73.0</td>
<td>181</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>64</td>
<td>63.2</td>
<td>140</td>
<td>63.2</td>
<td>140</td>
<td>62.2</td>
<td>143</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>64</td>
<td>151</td>
<td>78.5</td>
<td>150</td>
<td>79.0</td>
<td>151</td>
<td>78.6</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>64</td>
<td>30.8</td>
<td>469</td>
<td>30.7</td>
<td>469</td>
<td>31.0</td>
<td>465</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>64</td>
<td>44.8</td>
<td>390</td>
<td>44.7</td>
<td>391</td>
<td>44.7</td>
<td>391</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>64</td>
<td>81.6</td>
<td>112</td>
<td>81.9</td>
<td>111</td>
<td>81.3</td>
<td>112</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>64</td>
<td>59.0</td>
<td>267</td>
<td>59.8</td>
<td>263</td>
<td>58.9</td>
<td>267</td>
</tr>
</tbody>
</table>

SPECspeed®2017_fp_base = 230
SPECspeed®2017_fp_peak = 230

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.: 

(Continued on next page)
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

Platform Notes

BIOS Settings:
Power Technology = Custom
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
Hyper-Threading = Enabled

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on Tyronespec Thu Mar 9 09:16:24 2023

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 239 (239-51.el8)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active

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16. `sysctl`
17. `/sys/kernel/mm/transparent_hugepage`
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`
   ```
   09:16:24 up 2 days, 19:58,  1 user,  load average: 5.43, 7.53, 4.52
   USER   TTY     FROM      LOGIN@   IDLE   JCPU   PCPU WHAT
   root   tty1    -         Mon13    4:04m  1.29s  0.00s -bash
   ```

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 18
   ```

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(Continued on next page)
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(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero TDI100C3R-212
(2.00 GHz, Intel Xeon Gold 6338)

SPECspeed®2017_fp_base = 230
SPECspeed®2017_fp_peak = 230

CPU2017 License: 006042
Test Sponsor: Netweb Pte Ltd
Tested by: Tyrone Systems
Test Date: Mar-2023
Hardware Availability: Apr-2021
Software Availability: May-2022

Platform Notes (Continued)

```
login -- root
-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 6338 CPU @ 2.00GHz
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
```

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SPEC CPU®2017 Floating Point Speed Result

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

SPECspeed®2017_fp_base = 230
SPECspeed®2017_fp_peak = 230

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

Test Date: Mar-2023
Hardware Availability: Apr-2021
Software Availability: May-2022

Vendor ID: GenuineIntel
BIOS Vendor ID: Intel(R) Corporation
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
BIOS Model name: Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
Stepping: 6
CPU MHz: 2000.000
CPU max MHz: 3200.0000
CPU min MHz: 800.0000
BogoMIPS: 4000.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 49152K
NUMA node0 CPU(s): 0-31, 64-95
NUMA node0 CPU(s): 32-63, 96-127

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: 474252 MB
node 1 cpus: 32-63, 96-127
node 1 size: 516042 MB
node 1 free: 477042 MB
node distances:
node   0   1
0:  10  20
1:  20  10

Platform Notes (Continued)
SPEC CPU®2017 Floating Point Speed Result

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Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero TD1I00C3R-212
(2.00 GHz, Intel Xeon Gold 6338)

SPECspeed®2017_fp_base = 230
SPECspeed®2017_fp_peak = 230

Platform Notes (Continued)

9. /proc/meminfo
   MemTotal: 1056476736 kB

10. who -r
   run-level 3 Mar 6 13:18

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-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
             libstoragegmgt libvirtd loadmodules lvm2-monitor mcelog mdmonitor microcode multipathd
             nis-domainname nvidia-hibernate nvidia-resume nvidia-suspend nvme-boot-connections
             ostree-remount qemu-guest-agent rsmcertd rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark
             sep5 smartd sshd sssd syslog timedatex tuned udisks2 vdo vgauthd vmtoolsd
    disabled  arp-ethers blk-availability britty canberra-system-bootup canberra-system-shutdown
canberra-system-shutdown-reboot chrony-wait console-getty cpupower cups-browsed debug-shell
dnsmaq ebtables gssproxy httpd httpd@ initial-setup initial-setup-reconfiguration iprupdate
iprinit iprupdate iscsid iscsiio kpatch kvm_stat ledmon man-db-restart-cache-update
ndctl-monitor netcf-transaction nfs-bklmap nfs-convert nfs-server nfstables numad nvidia-powerd
nvme-autoconnect odevjobd podman podman-auto-update podman-restart psacct radvd ras-mc-ctl
rasdaemon rdisc rshd rhm rhm-facts saslauthd serial-getty@ smmd snmpd snmptrapd speech-dispatcher
dsshd-keygen@ switcheroo-control systemd-nspawn@ systemd-resolved tcsc tog-pegasus upower
virtinterfaced virtnetworkd virtnovicedevd virtnwfilterd virtproxyd vrtqemud virtsecretdev
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

(Continued on next page)
Platform Notes (Continued)

```bash
rd.lvm.lv=rhel/swap
rhgb
quiet

14. cpupower frequency-info
    analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 3.20 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         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
```

(Continued on next page)
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
   l1tf                 Not affected
   mds                  Not affected
   meltdown            Not affected
   spec_store_bypass Mitigation: Speculative Store Bypass disabled via prctl and seccomp
   spectre_v1           Mitigation: usercopy/swapgs barriers and __user pointer sanitization
   spectre_v2           Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
   srbds                Not affected
   tsx_async_abort      Not affected

For more information, see the Linux documentation on hardware vulnerabilities, for example

21. Disk information
   SPEC is set to: /home/cpu2017
   Filesystem            Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   402G  209G  194G  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
**SPEC CPU®2017 Floating Point Speed Result**

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero TDI100C3R-212  
(2.00 GHz, Intel Xeon Gold 6338)

---

**SPECspeed®2017_fp_base = 230**  
**SPECspeed®2017_fp_peak = 230**

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**Platform Notes (Continued)**

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the  
"DMTF SMBIOS" standard.  
Memory:  
16x Micron 36ASF8G72PZ-3G2F1 64 GB 2 rank 3200
---

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  
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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  
2022.1.0 Build 20220316  
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Tyrone Systems  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero TDI100C3R-212  
(2.00 GHz, Intel Xeon Gold 6338)  

SPECspeed®2017_fp_base = 230  
SPECspeed®2017_fp_peak = 230

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  
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316  
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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  
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
SPEC CPU®2017 Floating Point Speed Result

Tyrone Systems
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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
Tyrone Systems
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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

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-ICX-revA.xml
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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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