## SPEC CPU®2017 Floating Point Rate Result

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero QS400TU-224R4  
(2.40 GHz, Intel Xeon Gold 6148)

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECrate®2017 fp_base</th>
<th>SPECrate®2017 fp_peak</th>
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<tbody>
<tr>
<td>503.bwaves_r</td>
<td>160</td>
<td>530</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>160</td>
<td>339</td>
</tr>
<tr>
<td>508.namd_r</td>
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<td>199</td>
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<tr>
<td>510.parest_r</td>
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<td>199</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>160</td>
<td>176</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>160</td>
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<tr>
<td>521.wrf_r</td>
<td>160</td>
<td>339</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>160</td>
<td>430</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>160</td>
<td>443</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>160</td>
<td>1170</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>160</td>
<td>757</td>
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<tr>
<td>549.fotonik3d_r</td>
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<td>233</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>160</td>
<td>148</td>
</tr>
</tbody>
</table>

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### Hardware

- **CPU Name:** Intel Xeon Gold 6148  
- **Max MHz:** 3700  
- **Nominal:** 2400  
- **Enabled:** 80 cores, 4 chips, 2 threads/core  
- **Orderable:** 1,2,4 (chip)s  
- **Cache L1:** 32 KB I + 32 KB D on chip per core  
- **L2:** 1 MB I+D on chip per core  
- **L3:** 27.5 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 384 GB (24 x 16 GB 1Rx4 PC4-2933Y-R, running at 2666)  
- **Storage:** 1 x 480 GB SATA SSD  
- **Other:** None

### Software

- **OS:** CentOS Linux release 8.3.2011  
- **Kernel:** 4.18.0-240.el8.x86_64  
- **Compiler:** C/C++; Version 19.1.2.254 of Intel C/C++ Compiler Build 20200623 for Linux; Fortran: Version 19.1.2.254 of Intel Fortran Compiler Build 20200623 for Linux  
- **Parallel:** No  
- **Firmware:** Version 3.4 released Nov-2020  
- **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 set to prefer performance at the cost of additional power usage.
## Results Table

<table>
<thead>
<tr>
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<th>Ratio</th>
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<tr>
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<td></td>
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</tr>
</tbody>
</table>

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

### Compiler Notes

The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler.
The correct version of C/C++ compiler is: Version 19.1.2.254 Build 20200623 Compiler for Linux
The correct version of Fortran compiler is: Version 19.1.2.254 Build 20200623 Compiler for Linux

### 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:
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
<table>
<thead>
<tr>
<th>Specification</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEC CPU®2017 Floating Point Rate Result</td>
<td></td>
</tr>
<tr>
<td><strong>SPEC CPU®2017 Floating Point Rate Result</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Tyrone Systems</strong></td>
<td><strong>SPECrate®2017_fp_base = 390</strong></td>
</tr>
<tr>
<td>(Test Sponsor: Netweb Pte Ltd)</td>
<td><strong>SPECrate®2017_fp_peak = 394</strong></td>
</tr>
<tr>
<td><strong>Tyrone Camarero QS400TU-224R4</strong></td>
<td></td>
</tr>
<tr>
<td>(2.40 GHz, Intel Xeon Gold 6148)</td>
<td></td>
</tr>
<tr>
<td>CPU2017 License: 006042</td>
<td>Test Date: Feb-2021</td>
</tr>
<tr>
<td>Test Sponsor: Netweb Pte Ltd</td>
<td>Hardware Availability: Aug-2020</td>
</tr>
<tr>
<td>Tested by: Tyrone Systems</td>
<td>Software Availability: Dec-2020</td>
</tr>
<tr>
<td>General Notes</td>
<td></td>
</tr>
<tr>
<td>Binaries compiled on a system with 2x Intel Cascade Lake CPU 4214R + 384 GB RAM memory using CentOS 8.2 x86_64</td>
<td></td>
</tr>
<tr>
<td>Transparent Huge Pages enabled by default</td>
<td></td>
</tr>
<tr>
<td>Prior to runcpu invocation</td>
<td></td>
</tr>
<tr>
<td>Fisysystem page cache synced and cleared with:</td>
<td></td>
</tr>
<tr>
<td>sync; echo 3 &gt; /proc/sys/vm/drop_caches</td>
<td></td>
</tr>
<tr>
<td>runcpu command invoked through numactl i.e.:</td>
<td></td>
</tr>
<tr>
<td>numactl --interleave=all runcpu &lt;etc&gt;</td>
<td></td>
</tr>
<tr>
<td>Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Platform Notes</td>
<td></td>
</tr>
<tr>
<td>BIOS Settings:</td>
<td></td>
</tr>
<tr>
<td>Power Technology = Custom</td>
<td></td>
</tr>
<tr>
<td>Power Performance Tuning = BIOS Controls EPB</td>
<td></td>
</tr>
<tr>
<td>ENERGY_PERF_BIAS_CFG mode = Extreme Performance</td>
<td></td>
</tr>
<tr>
<td>SNC = Enable</td>
<td></td>
</tr>
<tr>
<td>Stale AtoS = Disable</td>
<td></td>
</tr>
<tr>
<td>IMC Interleaving = 1-way Interleave</td>
<td></td>
</tr>
<tr>
<td>Patrol Scrub = Disable</td>
<td></td>
</tr>
<tr>
<td>Sysinfo program /home/cpu2017/bin/sysinfo</td>
<td></td>
</tr>
<tr>
<td>Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c running on localhost.localdomain Fri Feb 19 20:49:45 2021</td>
<td></td>
</tr>
<tr>
<td>SUT (System Under Test) info as seen by some common utilities. For more information on this section, see</td>
<td></td>
</tr>
<tr>
<td><a href="https://www.spec.org/cpu2017/Docs/config.html#sysinfo">https://www.spec.org/cpu2017/Docs/config.html#sysinfo</a></td>
<td></td>
</tr>
<tr>
<td>From /proc/cpuinfo</td>
<td></td>
</tr>
<tr>
<td>model name : Intel(R) Xeon(R) Gold 6148 CPU @ 2.40GHz</td>
<td></td>
</tr>
<tr>
<td>4 &quot;physical id&quot;s (chips)</td>
<td></td>
</tr>
<tr>
<td>160 &quot;processors&quot;</td>
<td></td>
</tr>
<tr>
<td>cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)</td>
<td></td>
</tr>
<tr>
<td>cpu cores : 20</td>
<td></td>
</tr>
<tr>
<td>siblings : 40</td>
<td></td>
</tr>
<tr>
<td>physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28</td>
<td></td>
</tr>
</tbody>
</table>

(Continued on next page)
Standard Performance Evaluation Corporation

SPEC CPU®2017 Floating Point Rate Result

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Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero QS400TU-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECrater®2017_fp_base = 390
SPECrater®2017_fp_peak = 394

<table>
<thead>
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<th>CPU2017 License</th>
<th>Test Date</th>
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<th>Hardware Availability</th>
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<td>Netweb Pte Ltd</td>
<td>Aug-2020</td>
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<th>Software Availability</th>
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</thead>
<tbody>
<tr>
<td>Tyrone Systems</td>
<td>Dec-2020</td>
</tr>
</tbody>
</table>

Platform Notes (Continued)

physical 1: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 2: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 3: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 160
On-line CPU(s) list: 0-159
Thread(s) per core: 2
Core(s) per socket: 20
Socket(s): 4
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6148 CPU @ 2.40GHz
Stepping: 4
CPU MHz: 1455.817
CPU max MHz: 3700.0000
CPU min MHz: 1000.0000
BogoMIPS: 4800.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 28160K
NUMA node0 CPU(s): 0-19, 80-99
NUMA node1 CPU(s): 20-39, 100-119
NUMA node2 CPU(s): 40-59, 120-139
NUMA node3 CPU(s): 60-79, 140-159
Flags: fpul 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
xtr_PrPdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
avx f16c rdrand lahf_lm abm 3nowprefetch cpuid_fault epb cat_l3 cdp_l3
invpcid_single pti intel_pmm ssbd mba ibrs ibpb stibp tpr_shadow vnmi flexpriority
ept vpid dpl搅拌 tis_adjust bsl hle avx2 smep bmi2 ets invpcid rtm cqm mpx
rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw
avx512vl xsaveopt xsavec xgetbv1 xsaveas cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbb_local dtherm ida arat pln pts pkup ospke md_clear flush_l1d

/proc/cpuinfo cache data
cache size : 28160 KB

(Continued on next page)
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CPU2017 License: 006042
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Hardware Availability: Aug-2020
Software Availability: Dec-2020

Platform Notes (Continued)

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 80 81 82 83 84 85 86 87
  88 89 90 91 92 93 94 95 96 97 98 99
  node 0 size: 90855 MB
  node 0 free: 70606 MB
  node 1 cpus: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 100 101 102
  103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119
  node 1 size: 92768 MB
  node 1 free: 78941 MB
  node 2 cpus: 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 120 121 122
  123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139
  node 2 size: 93101 MB
  node 2 free: 80195 MB
  node 3 cpus: 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 140 141 142
  143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159
  node 3 size: 92128 MB
  node 3 free: 81162 MB
  node distances:
    node 0 1 2 3
    0:  10 21 21 21
    1:  21 10 21 21
    2:  21 21 10 21
    3:  21 21 21 10

From /proc/meminfo
  MemTotal:       394580636 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

/sbin/tuned-adm active
  Current active profile: throughput-performance

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

From /etc/*release* /etc/*version*
  centos-release: CentOS Linux release 8.3.2011
  centos-release-upstream: Derived from Red Hat Enterprise Linux 8.3
  os-release:
    NAME="CentOS Linux"
    VERSION="8"
    ID="centos"
    ID_LIKE="rhel fedora"
    VERSION_ID="8"
    PLATFORM_ID="platform:el8"

(Continued on next page)
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Test Date: Feb-2021
Hardware Availability: Aug-2020
Software Availability: Dec-2020

Platform Notes (Continued)

PRETTY_NAME="CentOS Linux 8"
ANSI_COLOR="0;31"
redhat-release: CentOS Linux release 8.3.2011
system-release: CentOS Linux release 8.3.2011
system-release-cpe: cpe:/o:centos:centos:8

uname -a:
    Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Fri Sep 25 19:48:47 UTC 2020
    x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):
    KVM: Mitigation: Split huge pages
    Mitigation: PTE Inversion; VMX: conditional cache flushes, SMT vulnerable

CVE-2018-3620 (L1 Terminal Fault):
    Mitigation: Clear CPU buffers; SMT vulnerable
    Mitigation: PTI

Microarchitectural Data Sampling:

CVE-2017-5754 (Meltdown):
    Mitigation: Speculative Store Bypass disabled via prctl and seccomp

CVE-2018-3639 (Speculative Store Bypass):
    Mitigation: Full generic retpoline, IBPB: conditional, IBRS_FW, STIBP: conditional, RSB filling

CVE-2017-5753 (Spectre variant 1):
    Mitigation: usercopy/swapgs barriers and __user pointer sanitization

CVE-2017-5715 (Spectre variant 2):
    Mitigation: Clear CPU buffers; SMT vulnerable

run-level 3 Mar 19 16:16

SPEC is set to: /home/cpu2017
    Filesystem Type Size Used Avail Use% Mounted on
    /dev/mapper/cl-home xfs 372G 69G 304G 19% /home

From /sys/devices/virtual/dmi/id
    Vendor: Tyrone Systems
    Product: Tyrone Camarero DS400TU-224R4
    Product Family: SMC X11
    Serial: 123456789

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow

(Continued on next page)
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Platform Notes (Continued)

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:
24x NO DIMM NO DIMM
24x Samsung M393A2K40DB2-CVF 16 GB 1 rank 2933, configured at 2666

BIOS:
BIOS Vendor: American Megatrends Inc.
BIOS Version: 3.4
BIOS Date: 11/04/2020
BIOS Revision: 5.14

(End of data from sysinfo program)
Sysinfo incorrectly parsed dmidecode output. Configured memory speed is 2933.

Compiler Version Notes

==============================================================================
<table>
<thead>
<tr>
<th>C</th>
<th>519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)</th>
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<tr>
<td>Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1</td>
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<tr>
<td>NextGen Build 20200304</td>
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<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
<tr>
<td>icc (NextGen): command line warning #10006: ignoring unknown option</td>
<td></td>
</tr>
<tr>
<td>'-i_version=19.1.2.254' [-Woption-ignored]</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td></td>
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<tr>
<td>C++</td>
<td>508.namd_r(base, peak) 510.parest_r(base, peak)</td>
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<td>--------------------------------------------------------------------------</td>
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<tr>
<td>Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1</td>
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<td>icpc (NextGen): command line warning #10006: ignoring unknown option</td>
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<td>'-i_version=19.1.2.254' [-Woption-ignored]</td>
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<tr>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>C++, C</td>
<td>511.povray_r(base) 526.blender_r(base, peak)</td>
</tr>
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<td>'-i_version=19.1.2.254' [-Woption-ignored]</td>
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(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2021 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero QS400TU-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECrater®2017_fp_base = 390
SPECrater®2017_fp_peak = 394

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

Test Date: Feb-2021
Hardware Availability: Aug-2020
Software Availability: Dec-2020

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10006: ignoring unknown option
'--i_version=19.1.2.254' [-Woption-ignored]

Compiler Version Notes (Continued)

C++, C | 511.povray_r(peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C | 511.povray_r(base) 526.blender_r(base, peak)

Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icpc (NextGen): command line warning #10006: ignoring unknown option
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icc (NextGen): command line warning #10006: ignoring unknown option
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C++, C | 511.povray_r(peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C, Fortran | 507.cactuBSSN_r(base, peak)

(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

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

Tyrone Camarero QS400TU-224R4
(2.40 GHz, Intel Xeon Gold 6148)

**Compiler Version Notes (Continued)**

Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icpc (NextGen): command line warning #10006: ignoring unknown option
'-i_version=19.1.2.254' [-Woption-ignored]

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
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Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10006: ignoring unknown option
'-i_version=19.1.2.254' [-Woption-ignored]

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

==============================================================================
Fortran         | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak)
                  | 554.roms_r(base, peak)
==============================================================================

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

---

Fortran, C       | 521.wrf_r(base) 527.cam4_r(base, peak)
---

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10006: ignoring unknown option
'-i_version=19.1.2.254' [-Woption-ignored]

---

Fortran, C       | 521.wrf_r(peak)
---

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.1.2.254 Build 20200623
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(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

**Tyrone Systems**
(Test Sponsor: Netweb Pte Ltd)
**Tyrone Camarero QS400TU-224R4**
(2.40 GHz, Intel Xeon Gold 6148)

<table>
<thead>
<tr>
<th>CPU2017 License: 006042</th>
<th>Test Date: Feb-2021</th>
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<tr>
<td>Test Sponsor: Netweb Pte Ltd</td>
<td>Hardware Availability: Aug-2020</td>
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<tr>
<td>Tested by: Tyrone Systems</td>
<td>Software Availability: Dec-2020</td>
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---

**Compiler Version Notes (Continued)**

---

```
Fortran, C   | 521.wrf_r(base) 527.cam4_r(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
   NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10006: ignoring unknown option
   '-i_version=19.1.2.254' [-Woption-ignored]
------------------------------------------------------------------------------
```

---

```
Fortran, C   | 521.wrf_r(peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
   Version 19.1.2.254 Build 20200623
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
```

---

### Base Compiler Invocation

- **C benchmarks:**
  - icc

- **C++ benchmarks:**
  - icpc

- **Fortran benchmarks:**
  - ifort

- **Benchmarks using both Fortran and C:**
  - ifort icc

- **Benchmarks using both C and C++:**
  - icpc icc

- **Benchmarks using Fortran, C, and C++:**
  - icpc icc ifort
SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero QS400TU-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECraten®2017_fp_base = 390
SPECraten®2017_fp_peak = 394

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

Base Portability Flags

<table>
<thead>
<tr>
<th>Base Portability Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>507.cactuBSSN_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>508.namd_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>510.parest_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>511.povray_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>519.lbm_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian</td>
</tr>
<tr>
<td>526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char</td>
</tr>
<tr>
<td>527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG</td>
</tr>
<tr>
<td>538.imagick_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>544.nab_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>549.fotonik3d_r: -DSPEC_LP64</td>
</tr>
<tr>
<td>554.roms_r: -DSPEC_LP64</td>
</tr>
</tbody>
</table>

Base Optimization Flags

C benchmarks:
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:
-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4 -L/usr/local/je5.0.1-64/lib
-ljemalloc

Fortran benchmarks:
-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -O3 -ipo -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-auto -mbranches-within-32B-boundaries -L/usr/local/je5.0.1-64/lib
-ljemalloc

Benchmarks using both Fortran and C:
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -O3 -ipo -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries -L/usr/local/je5.0.1-64/lib -ljemalloc

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

Test Sponsor: Netweb Pte Ltd
Tyrone Systems
Tyrone Camarero QS400TU-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECr rate®2017_fp_base = 390
SPECr late®2017_fp_peak = 394

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

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Base Optimization Flags (Continued)

Benchmarks using both C and C++:
-m64 -qnextgen -std=c11
-W1, -plugin-opt=-x86-branches-within-32B-boundaries -Wl, -z, muldefs
-xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/je5.0.1-64/lib -ljemalloc

Benchmarks using Fortran, C, and C++:
-m64 -qnextgen -std=c11
-W1, -plugin-opt=-x86-branches-within-32B-boundaries -Wl, -z, muldefs
-xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -O3 -ipo -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries -L/usr/local/je5.0.1-64/lib -ljemalloc

Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icc

Benchmarks using both C and C++:
icpc icc

Benchmarks using Fortran, C, and C++:
icpc icc ifort

Peak Portability Flags

Same as Base Portability Flags
## Peak Optimization Flags

### C benchmarks:

519.lbm_r: basepeak = yes

538.imagick_r: basepeak = yes

544.nab_r: basepeak = yes

### C++ benchmarks:

508.namd_r: basepeak = yes


### Fortran benchmarks:


549.fotonik3d_r: basepeak = yes

554.roms_r: Same as 503.bwaves_r

### Benchmarks using both Fortran and C:


527.cam4_r: basepeak = yes

### Benchmarks using both C and C++:

---

(Continued on next page)
### Peak Optimization Flags (Continued)

```
511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3 -ipo -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles -qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries -L/usr/local/je5.0.1-64/lib -ljemalloc

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactusBSSN_r: basepeak = yes
```

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

- [http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-CLX-revB.html](http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-CLX-revB.html)

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

- [http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-CLX-revB.xml](http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-CLX-revB.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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