## SPEC CPU®2017 Floating Point Rate Result

| Software | OS: CentOS Linux release 8.3.2011 4.18.0-240.el8.x86_64  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel:</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firmware:</td>
<td>Version 3.4 released Oct-2020</td>
<td>xfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>64-bit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>jemalloc memory allocator V5.0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Management:</td>
<td>BIOS set to prefer performance at the cost of additional power usage</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Hardware | CPU Name: Intel Xeon Gold 6248R  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Max MHz:</td>
<td>4000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal:</td>
<td>3000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enabled:</td>
<td>48 cores, 2 chips, 2 threads/core</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orderable:</td>
<td>1,2 (chip)s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cache L1:</td>
<td>32 KB I + 32 KB D on chip per core</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L2:</td>
<td>1 MB I+D on chip per core</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L3:</td>
<td>35.75 MB I+D on chip per chip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory:</td>
<td>384 GB (12 x 32 GB 2Rx4 PC4-2933Y-R)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage:</td>
<td>1 x 480 GB SATA SSD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Sponsor:</th>
<th>Netweb Pte Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by:</td>
<td>Tyrone Systems</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Date:</th>
<th>Jan-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Aug-2020</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Dec-2020</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPEC®CPU2017_fp_base</th>
<th>281</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEC®CPU2017_fp_peak</td>
<td>284</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Program</th>
<th>Copies</th>
<th>SPEC®2017_fp_base</th>
<th>SPEC®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>96</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>96</td>
<td>390</td>
<td>390</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>96</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>96</td>
<td>138</td>
<td>138</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>96</td>
<td>382</td>
<td>42</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>96</td>
<td>122</td>
<td>122</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>96</td>
<td>229</td>
<td>229</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>96</td>
<td>325</td>
<td>325</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>96</td>
<td>334</td>
<td>334</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>96</td>
<td>904</td>
<td>904</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>96</td>
<td>565</td>
<td>565</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>96</td>
<td>159</td>
<td>159</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>96</td>
<td>102</td>
<td>102</td>
</tr>
</tbody>
</table>

---

Tyrone Systems  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero DS400TR-212R4  
(3.00 GHz, Intel Xeon Gold 6248R)  

**CPU2017 License:** 006042  
**Test Date:** Jan-2021  
**Test Sponsor:** Netweb Pte Ltd  
**Hardware Availability:** Aug-2020  
**Tested by:** Tyrone Systems  
**Software Availability:** Dec-2020  

---

**SPEC CPU®2017 Floating Point Rate Result**  
Copyright 2017-2021 Standard Performance Evaluation Corporation
**SPEC CPU®2017 Floating Point Rate Result**

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero DS400TR-212R4  
(3.00 GHz, Intel Xeon Gold 6248R)  

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>96</td>
<td>1883</td>
<td>511</td>
<td>1882</td>
<td>512</td>
<td>1883</td>
<td>511</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>96</td>
<td>313</td>
<td>388</td>
<td>310</td>
<td>392</td>
<td>312</td>
<td>390</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>96</td>
<td>364</td>
<td>251</td>
<td>365</td>
<td>250</td>
<td>365</td>
<td>250</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>96</td>
<td>1822</td>
<td>138</td>
<td>1821</td>
<td>138</td>
<td>1820</td>
<td>138</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>96</td>
<td>587</td>
<td>382</td>
<td>587</td>
<td>382</td>
<td>587</td>
<td>382</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>96</td>
<td>827</td>
<td>122</td>
<td>827</td>
<td>122</td>
<td>827</td>
<td>122</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>96</td>
<td>938</td>
<td>229</td>
<td>943</td>
<td>228</td>
<td>938</td>
<td>229</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>96</td>
<td>449</td>
<td>325</td>
<td>449</td>
<td>325</td>
<td>450</td>
<td>325</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>96</td>
<td>502</td>
<td>334</td>
<td>504</td>
<td>333</td>
<td>503</td>
<td>334</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>96</td>
<td>264</td>
<td>904</td>
<td>265</td>
<td>902</td>
<td>264</td>
<td>906</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>96</td>
<td>286</td>
<td>565</td>
<td>286</td>
<td>565</td>
<td>286</td>
<td>565</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>96</td>
<td>2345</td>
<td>160</td>
<td>2351</td>
<td>159</td>
<td>2346</td>
<td>159</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>96</td>
<td>1488</td>
<td>103</td>
<td>1489</td>
<td>102</td>
<td>1490</td>
<td>102</td>
</tr>
</tbody>
</table>

**Results 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 19.1.1.217 Build 20200306 Compiler for Linux  
The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 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"
SPEC CPU®2017 Floating Point Rate Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400TR-212R4
(3.00 GHz, Intel Xeon Gold 6248R)

SPECrate®2017_fp_base = 281
SPECrate®2017_fp_peak = 284

General Notes

Binaries compiled on a system with 2x Intel Cascade Lake CPU + 384 GB RAM
memory using Centos 8.2 x86_64
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesyste 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>
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) 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.
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.
jemalloc, a general purpose malloc implementation
built with the Centos 8.2 x86_64, and the system compiler gcc 8.3.1

Platform Notes

BIOS Settings:
Power Technology = Custom
Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Extreme Performance
SNC = Enable
Stale AtoS = Disable
IMC Interleaving = 1-way Interleave
Patrol Scrub = Disable

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b3e2f1c
running on spec Mon Jan 25 21:42:07 2021

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see
  https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) Gold 6248R CPU @ 3.00GHz
  2 "physical id"s (chips)
  96 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores : 24
  siblings : 48
  physical 0: cores 0 1 2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400TR-212R4
(3.00 GHz, Intel Xeon Gold 6248R)

| SPECrate®2017_fp_base = 281 |
| SPECrate®2017_fp_peak = 284 |

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

---

**Platform Notes (Continued)**

```plaintext
physical 1: cores 0 1 2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
```

From lscpu:
- **Architecture**: x86_64
- **CPU op-mode(s)**: 32-bit, 64-bit
- **Byte Order**: Little Endian
- **CPU(s)**: 96
- **On-line CPU(s) list**: 0-95
- **Thread(s) per core**: 2
- **Core(s) per socket**: 24
- **Socket(s)**: 2
- **NUMA node(s)**: 4
- **Vendor ID**: GenuineIntel
- **CPU family**: 6
- **Model**: 85
- **Model name**: Intel(R) Xeon(R) Gold 6248R CPU @ 3.00GHz
- **Stepping**: 7
- **CPU MHz**: 3600.002
- **CPU max MHz**: 4000.0000
- **CPU min MHz**: 1200.0000
- **BogoMIPS**: 6000.00
- **Virtualization**: VT-x
- **L1d cache**: 32K
- **L1i cache**: 32K
- **L2 cache**: 1024K
- **L3 cache**: 36608K

**NUMA node0 CPU(s)**: 0-3, 7, 8, 12-14, 18-20, 48-51, 55, 56, 60-62, 66-68
**NUMA node1 CPU(s)**: 4-6, 9-11, 15-17, 21-23, 52-54, 57-59, 63-65, 69-71
**NUMA node2 CPU(s)**: 24-27, 31, 32, 36-38, 42-44, 72-75, 79, 80, 84-86, 90-92
**NUMA node3 CPU(s)**: 28-30, 33-35, 39-41, 45-47, 76-78, 81-83, 87-89, 93-95

**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 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcpid 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 cd p13 invpcid_single intel_pinn ssbd mba ibrs ibpb stibp ibrs enhancements fsgsbase tsc_adjcal bmi1 hle avx2 smep bmi2 ets invpcid cmx mxpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsaves xsaveopt xsave xsaveopt xsaveas cmx11c cgcm_occu11c cgcm_mbb_total cgcm_mbb_local dtherm ida arat pln pts pku ospke avx512_vnni md_clear flush_l1d arch_capabilities

/proc/cpuinfo cache data
cache size: 36608 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.

(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 DS400TR-212R4
(3.00 GHz, Intel Xeon Gold 6248R)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>281</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>284</td>
</tr>
</tbody>
</table>

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

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

Platform Notes (Continued)

<table>
<thead>
<tr>
<th>available: 4 nodes (0-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>node 0 cpus: 0 1 2 3 7 8 12 13 14 18 19 20 48 49 50 51 55 56 60 61 62 66 67 68</td>
</tr>
<tr>
<td>node 0 size: 90049 MB</td>
</tr>
<tr>
<td>node 0 free: 83316 MB</td>
</tr>
<tr>
<td>node 1 cpus: 4 5 6 9 10 11 15 16 17 21 22 23 52 53 54 57 58 59 63 64 65 69 70 71</td>
</tr>
<tr>
<td>node 1 size: 91864 MB</td>
</tr>
<tr>
<td>node 1 free: 86360 MB</td>
</tr>
<tr>
<td>node 2 cpus: 24 25 26 27 31 32 36 37 38 42 43 44 76 77 78 81 82 83 87 88 89 93 94 95</td>
</tr>
<tr>
<td>node 2 size: 92318 MB</td>
</tr>
<tr>
<td>node 2 free: 86428 MB</td>
</tr>
<tr>
<td>node 3 cpus: 28 29 30 33 34 35 39 40 41 45 46 47 76 77 78 81 82 83 87 88 89 93 94 95</td>
</tr>
<tr>
<td>node 3 size: 92051 MB</td>
</tr>
<tr>
<td>node 3 free: 86558 MB</td>
</tr>
<tr>
<td>node distances:</td>
</tr>
<tr>
<td>node 0 1 2 3</td>
</tr>
<tr>
<td>0: 10 11 21 21</td>
</tr>
<tr>
<td>1: 11 10 21 21</td>
</tr>
<tr>
<td>2: 21 21 10 11</td>
</tr>
<tr>
<td>3: 21 21 11 10</td>
</tr>
</tbody>
</table>

From /proc/meminfo
MemTotal: 394855232 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"
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

(Continued on next page)
Platform Notes (Continued)

uname -a:
    Linux spec 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 Multithit):
    KVM: Mitigation: Split huge pages
CVE-2018-3620 (L1 Terminal Fault):
    Not affected
Microarchitectural Data Sampling:
CVE-2017-5754 (Meltdown):
    Not affected
CVE-2018-3639 (Speculative Store Bypass):
    Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):
    Mitigation: usercopy/swapgs barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2):
    Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling):
    Not affected
CVE-2019-11135 (TSX Asynchronous Abort):
    Mitigation: TSX disabled

run-level 3 Jan 25 14:25

SPEC is set to: /home/cpu2017
    Filesytem          Type  Size  Used Avail Use% Mounted on
    /dev/mapper/cl-home xfs  372G  155G  218G  42% /home

From /sys/devices/virtual/dmi/id
    Vendor:         Tyrone Systems
    Product:        Tyrone Camarero DS400E1
    Serial:         S263875X9527668

Additional information from dmidecode 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:
    12x NO DIMM NO DIMM
    12x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2934

    BIOS:
    BIOS Vendor:     American Megatrends Inc.
    BIOS Version:    3.4
    BIOS Date:       10/30/2020
    BIOS Revision:   5.14

(End of data from sysinfo program)

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

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400TR-212R4
(3.00 GHz, Intel Xeon Gold 6248R)

SPECrater®2017_fp_base = 281
SPECrater®2017_fp_peak = 284

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

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

Platform Notes (Continued)
Sysinfo incorrectly parsed dmidecode output. Configured memory speed is 2933.

Compiler Version Notes

C
519.lbm_r(base, peak) 538.imagick_r(base, peak)
544.nab_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.

C++
508.namd_r(base, peak) 510.parest_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.

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.

C++, C
511.povray_r(peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

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

(Continued on next page)
Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400TR-212R4
(3.00 GHz, Intel Xeon Gold 6248R)

**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.

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.

-----------------------------------------------------------------------------

C++, C  | 511.povray_r(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.

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.

-----------------------------------------------------------------------------

C++, C, Fortran  | 507.cactuBSSN_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.

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.

Intel(R) Fortran Compiler running on Intel(R) 64, Version 19.1.1.217 Build 20200306
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 Compiler running on Intel(R) 64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

-----------------------------------------------------------------------------

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

-----------------------------------------------------------------------------

Intel(R) Fortran Compiler running on Intel(R) 64, Version 19.1.1.217 Build 20200306

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

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
**Tyrone Camarero DS400TR-212R4**  
(3.00 GHz,Intel Xeon Gold 6248R)  

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base = 281</th>
<th>SPECrate®2017_fp_peak = 284</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2017 License: 006042</td>
<td>Test Date: Jan-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>
</tbody>
</table>

## Compiler Version Notes (Continued)

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

### Fortran, C

<table>
<thead>
<tr>
<th>521.wrf_r(peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2019.1.1.217 Build 20200306</td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>521.wrf_r(base) 527.cam4_r(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2019.1.1.217 Build 20200306</td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>521.wrf_r(peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2019.1.1.217 Build 20200306</td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>521.wrf_r(base) 527.cam4_r(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2019.1.1.217 Build 20200306</td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

## Base Compiler Invocation

**C benchmarks:**

```
icc
```

**C++ benchmarks:**

```
icpc
```
SPEC CPU®2017 Floating Point Rate Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400TR-212R4
(3.00 GHz, Intel Xeon Gold 6248R)

SPECRate®2017_fp_base = 281
SPECRate®2017_fp_peak = 284

CPU2017 License: 006042
Test Sponsor: Netweb Pte Ltd
Tested by: Tyrone Systems
Test Date: Jan-2021
Hardware Availability: Aug-2020
Software Availability: Dec-2020

Base Compiler Invocation (Continued)

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

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.llvm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=x86-branches-within-32B-boundaries -Wl,-z,muldefs
-fuse-ld=gold -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 -fuse-ld=gold -xCORE-AVX512 -Ofast -ffast-math -flto

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

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400TR-212R4
(3.00 GHz, Intel Xeon Gold 6248R)

SPECrate®2017_fp_base = 281
SPECrate®2017_fp_peak = 284

C++ benchmarks (continued):
- 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
- fuse-ld=gold -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
- fuse-ld=gold -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

Benchmarks using both C and C++:
- m64 -qnextgen -std=c11
- Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
- fuse-ld=gold -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
- Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
- fuse-ld=gold -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

(Continued on next page)
**Peak Compiler Invocation (Continued)**

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:
1. 519.lbm_r: basepeak = yes
2. 538.imagick_r: basepeak = yes
3. 544.nab_r: basepeak = yes

C++ benchmarks:
1. 508.namd_r: basepeak = yes

Fortran benchmarks:

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

503.bwaves_r: -m64 -Wl,-plugin-opt=-x86-branchnes-within-32B-boundaries
-Wl,-z,muldefs -fuse-ld=gold -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
-alignment array32byte -auto -mbranches-within-32B-boundaries
-L/usr/local/je5.0.1-64/lib -ljemalloc

549.fotonik3d_r: basepeak = yes

554.roms_r: Same as 503.bwaves_r

#### Benchmarks using both Fortran and C:

521.wrf_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3
-ipopt -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/je5.0.1-64/lib -ljemalloc

527.cam4_r: basepeak = yes

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

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3
-ipopt -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.cactuBSSN_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)
<table>
<thead>
<tr>
<th>SPEC CPU®2017 Floating Point Rate Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPECrate®2017_fp_base = 281</strong></td>
</tr>
<tr>
<td><strong>SPECrate®2017_fp_peak = 284</strong></td>
</tr>
<tr>
<td><strong>Tyrone Systems</strong></td>
</tr>
<tr>
<td>(Test Sponsor: Netweb Pte Ltd)</td>
</tr>
<tr>
<td>Tyrone Camarero DS400TR-212R4</td>
</tr>
<tr>
<td>(3.00 GHz, Intel Xeon Gold 6248R)</td>
</tr>
<tr>
<td><strong>CPU2017 License:</strong> 006042</td>
</tr>
<tr>
<td><strong>Test Sponsor:</strong> Netweb Pte Ltd</td>
</tr>
<tr>
<td><strong>Tested by:</strong> Tyrone Systems</td>
</tr>
<tr>
<td><strong>Test Date:</strong> Jan-2021</td>
</tr>
<tr>
<td><strong>Hardware Availability:</strong> Aug-2020</td>
</tr>
<tr>
<td><strong>Software Availability:</strong> Dec-2020</td>
</tr>
</tbody>
</table>

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.