## SPEC CPU®2017 Floating Point Rate Result

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

**Tyrone Camarero DS400E1U-224R4**
(2.40 GHz, Intel Xeon Gold 6148)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>224</td>
<td>227</td>
</tr>
</tbody>
</table>

### CPU2017 License:
006042

### Test Sponsor:
Netweb Pte Ltd

### Tested by:
Tyrone Systems

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 6148</td>
<td></td>
</tr>
<tr>
<td>Max MHz</td>
<td>3700</td>
<td></td>
</tr>
<tr>
<td>Nominal</td>
<td>2400</td>
<td></td>
</tr>
<tr>
<td>Enabled</td>
<td>40 cores, 2 chips, 2 threads/core</td>
<td></td>
</tr>
<tr>
<td>Orderable</td>
<td>1.2 (chips)</td>
<td></td>
</tr>
<tr>
<td>Cache L1</td>
<td>32 KB I + 32 KB D on chip per core</td>
<td></td>
</tr>
<tr>
<td>Cache L2</td>
<td>1 MB I+D on chip per core</td>
<td></td>
</tr>
<tr>
<td>Cache L3</td>
<td>27.5 MB I+D on chip per chip</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>384 GB (12 x 32 GB 2Rx4 PC4-2933Y-R, running at 2666)</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>1 x 480 GB SATA SSD</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>CentOS Linux release 8.3.2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.18.0-240.el8.x86_64</td>
<td></td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 19.1.1.217 of Intel C/C++</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compiler Build 20200306 for Linux;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fortran: Version 19.1.1.217 of Intel Fortran</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compiler Build 20200306 for Linux</td>
<td></td>
</tr>
<tr>
<td>Parallel</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Firmware</td>
<td>Version 3.4 released Oct-2020</td>
<td></td>
</tr>
<tr>
<td>File System</td>
<td>xfs</td>
<td></td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
<td></td>
</tr>
<tr>
<td>Base Pointers</td>
<td>64-bit</td>
<td></td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>64-bit</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>jemalloc memory allocator V5.0.1</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>
</tr>
</tbody>
</table>

**503.bwaves_r**
80

**507.cactuBSSN_r**
80

**508.namd_r**
80

**510.parest_r**
80

**511.povray_r**
80

**519.lbm_r**
80

**521.wrf_r**
80

**526.blender_r**
80

**527.cam4_r**
80

**538.imagick_r**
80

**544.nab_r**
80

**549.fotonik3d_r**
80

**554.roms_r**
80

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>80</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>80</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>80</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>80</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>80</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>80</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>80</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>80</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>80</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>80</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>80</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>80</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>80</td>
</tr>
</tbody>
</table>

**Test Date:** Feb-2021

**Hardware Availability:** Aug-2020

**Software Availability:** Dec-2020

---

**Notes:**

- **Test Sponsor:** Netweb Pte Ltd
- **Hardware:** Tyrone Camarero DS400E1U-224R4 (2.40 GHz, Intel Xeon Gold 6148)
- **Software:** CentOS Linux release 8.3.2011, 4.18.0-240.el8.x86_64
- **Compiler:** C/C++: Version 19.1.1.217 of Intel C/C++, Compiler Build 20200306 for Linux
- **Firmware:** Version 3.4 released Oct-2020
- **System State:** Run level 3 (multi-user)
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage
## Results Table

<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>
<th>Seconds</th>
<th>Ratio</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>80</td>
<td>1747</td>
<td>459</td>
<td>1747</td>
<td>459</td>
<td>1745</td>
<td>460</td>
<td>1746</td>
<td>459</td>
<td>1747</td>
<td>459</td>
<td>1747</td>
<td>459</td>
<td>1746</td>
<td>459</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>80</td>
<td>329</td>
<td>308</td>
<td>328</td>
<td>309</td>
<td>330</td>
<td>307</td>
<td>328</td>
<td>309</td>
<td>330</td>
<td>307</td>
<td>328</td>
<td>309</td>
<td>330</td>
<td>307</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>80</td>
<td>433</td>
<td>175</td>
<td>433</td>
<td>175</td>
<td>433</td>
<td>175</td>
<td>433</td>
<td>175</td>
<td>433</td>
<td>175</td>
<td>433</td>
<td>175</td>
<td>433</td>
<td>175</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>80</td>
<td>1778</td>
<td>118</td>
<td>1777</td>
<td>118</td>
<td>1771</td>
<td>118</td>
<td>1780</td>
<td>118</td>
<td>1772</td>
<td>118</td>
<td>1788</td>
<td>117</td>
<td>1772</td>
<td>118</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>80</td>
<td>680</td>
<td>275</td>
<td>674</td>
<td>277</td>
<td>672</td>
<td>278</td>
<td>584</td>
<td>320</td>
<td>581</td>
<td>321</td>
<td>585</td>
<td>319</td>
<td>581</td>
<td>320</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>80</td>
<td>773</td>
<td>109</td>
<td>772</td>
<td>109</td>
<td>772</td>
<td>109</td>
<td>773</td>
<td>109</td>
<td>772</td>
<td>109</td>
<td>772</td>
<td>109</td>
<td>772</td>
<td>109</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>80</td>
<td>892</td>
<td>201</td>
<td>873</td>
<td>205</td>
<td>873</td>
<td>205</td>
<td>872</td>
<td>206</td>
<td>878</td>
<td>204</td>
<td>872</td>
<td>206</td>
<td>872</td>
<td>206</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>80</td>
<td>511</td>
<td>239</td>
<td>511</td>
<td>239</td>
<td>510</td>
<td>239</td>
<td>511</td>
<td>239</td>
<td>510</td>
<td>239</td>
<td>510</td>
<td>239</td>
<td>510</td>
<td>239</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>80</td>
<td>564</td>
<td>248</td>
<td>554</td>
<td>253</td>
<td>556</td>
<td>251</td>
<td>554</td>
<td>248</td>
<td>554</td>
<td>253</td>
<td>556</td>
<td>251</td>
<td>556</td>
<td>251</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>80</td>
<td>298</td>
<td>667</td>
<td>299</td>
<td>666</td>
<td>298</td>
<td>668</td>
<td>298</td>
<td>667</td>
<td>299</td>
<td>666</td>
<td>299</td>
<td>666</td>
<td>298</td>
<td>668</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>80</td>
<td>339</td>
<td>397</td>
<td>339</td>
<td>397</td>
<td>339</td>
<td>398</td>
<td>339</td>
<td>397</td>
<td>339</td>
<td>397</td>
<td>339</td>
<td>398</td>
<td>339</td>
<td>397</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>80</td>
<td>2187</td>
<td>143</td>
<td>2181</td>
<td>143</td>
<td>2195</td>
<td>142</td>
<td>2187</td>
<td>143</td>
<td>2181</td>
<td>143</td>
<td>2195</td>
<td>142</td>
<td>2195</td>
<td>142</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>80</td>
<td>1427</td>
<td>89.1</td>
<td>1429</td>
<td>88.9</td>
<td>1428</td>
<td>89.0</td>
<td>1425</td>
<td>89.2</td>
<td>1430</td>
<td>88.9</td>
<td>1430</td>
<td>88.9</td>
<td>1430</td>
<td>88.9</td>
</tr>
</tbody>
</table>

### 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"
MALLOCONF = "retain:true"
## General Notes

Binaries compiled on a system with 2x Intel Cascade Lake CPU 4214R + 384 GB RAM memory using Centos 8.2 x86_64
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
```
sync; echo 3> /proc/sys/vm/drop_caches
```
runcpu command invoked through numactl i.e.:
```
numactl --interleave=all runcpu <etc>
```
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (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 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 = Enable
Stale AtoS = Disable
IMC Interleaving = 1-way Interleave
Patrol Scrub = Disable
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on spec Thu Feb 11 18:35:17 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 6148 CPU @ 2.40GHz
  2 "physical id"s (chips)
  80 "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 : 20
siblings : 40
physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
```

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

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

**Tyrone Camarero DS400E1U-224R4**  
(2.40 GHz, Intel Xeon Gold 6148)

<table>
<thead>
<tr>
<th><strong>SPECrate®2017_fp_base</strong></th>
<th>224</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPECrate®2017_fp_peak</strong></td>
<td>227</td>
</tr>
</tbody>
</table>

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

### Platform Notes (Continued)

From `lscpu`:
- **Architecture:** x86_64
- **CPU op-mode(s):** 32-bit, 64-bit
- **Byte Order:** Little Endian
- **CPU(s):** 80
- **On-line CPU(s) list:** 0-79
- **Thread(s) per core:** 2
- **Core(s) per socket:** 20
- **Socket(s):** 2
- **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:** 3100.072
- **CPU max MHz:** 3700.0000
- **CPU min MHz:** 1000.0000
- **BogoMIPS:** 4800.00
- **Virtualization:** VT-x
- **L1c cache:** 32K
- **L1l cache:** 32K
- **L2 cache:** 1024K
- **L3 cache:** 28160K
- **NUMA node0 CPU(s):** 0-2, 5, 6, 10-12, 15, 16, 40-42, 45, 46, 50-52, 55, 56
- **NUMA node1 CPU(s):** 3, 4, 7-9, 13, 14, 17-19, 43, 44, 47-49, 53, 54, 57-59
- **NUMA node2 CPU(s):** 20-22, 25, 26, 30-32, 35, 36, 60-62, 65, 66, 70-72, 75, 76
- **NUMA node3 CPU(s):** 23, 24, 27-29, 33, 34, 37-39, 63, 64, 67-69, 73, 74, 77-79

**Flags:**
- fpu
- vmx
- 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
- pdtsc
- rdtscp
-ortal_rate
- tsc_deadline_timer
- aes
- avx
- f16c
- rdrand
- lahf_lm
- abm
- 3nowprefetch
- cpuid_fault
- epb
- cat_l3
- cdp_l3
- invpcid_single
- pti
- intel_pippin
- mba
- ibrs
- ibpb
- stibp
- fsqbse
- tsc_adjust
- bmi1
- hle
- avx2
- smep
- bmi2
- erner
- invpcid
- rtm
- cqm
- mpx
- rdt_a
- avx512f
- avx512dq
- rdseed
- adx
- smap
- cfliushopt
- clwb
- intel_pt
- avx512cd
- avx512bw
- avx512vl
- xsaveopt
- xsavec
- xgetbv1
- xsaves
- cqm_llc
- cqm_occup_llc
- cqm_mmb_total
- cqm_mmb_local
- dtherm
- ida
- arat
- pln
- pts
- pkus
- ospke
- md_clear
- flush_lld

/proc/cpuinfo cache data  
- cache size: 28160 KB

From `numactl --hardware` **WARNING:** a numactl 'node' might or might not correspond to a physical chip.
- available: 4 nodes (0-3)

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

Tyrone Systems (Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400E1U-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECrater®2017_fp_base = 224
SPECrater®2017_fp_peak = 227

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

Platform Notes (Continued)

node 0 cpus: 0 1 2 5 6 10 11 12 15 16 40 41 42 45 46 50 51 52 55 56
node 0 size: 90458 MB
node 0 free: 84407 MB
node 1 cpus: 3 4 7 8 9 13 14 17 18 19 43 44 47 48 49 53 54 57 58 59
node 1 size: 91903 MB
node 1 free: 87484 MB
node 2 cpus: 20 21 22 25 26 30 31 32 35 36 60 61 62 65 66 70 71 72 75 76
node 2 size: 91831 MB
node 2 free: 87577 MB
node 3 cpus: 23 24 27 28 29 33 34 37 38 39 63 64 67 68 69 73 74 77 78 79
node 3 size: 92985 MB
node 3 free: 87519 MB
node distances:
  node 0 1 2 3
  0: 10 11 21 21
  1: 11 10 21 21
  2: 21 21 10 11
  3: 21 21 11 10

From /proc/meminfo
  MemTotal:       394858824 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

uname -a:

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

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400E1U-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECrater®2017_fp_base = 224
SPECrater®2017_fp_peak = 227

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

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

Platform Notes (Continued)

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 Multihit):
CVE-2018-3620 (L1 Terminal Fault):
Microarchitectural Data Sampling:
CVE-2017-5754 (Meltdown):
CVE-2018-3639 (Speculative Store Bypass):
CVE-2017-5753 (Spectre variant 1):
CVE-2017-5715 (Spectre variant 2):
CVE-2020-0543 (Special Register Buffer Data Sampling):
CVE-2019-11135 (TSX Asynchronous Abort):

run-level 3 Feb 11 10:31

SPEC is set to: /home/cpu2017

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 2666

BIOS:
BIOS Vendor: American Megatrends Inc.
Platform Notes (Continued)

BIOS Version:  3.4  
BIOS Date:     10/30/2020  
BIOS Revision: 5.14  

(End of data from sysinfo program)

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.

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.
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.

(Continued on next page)
Compiler Version Notes (Continued)

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.
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.
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, 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 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.
------------------------------------------------------------------------------

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 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
SPEC CPU®2017 Floating Point Rate Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400E1U-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECCrate®2017_fp_base = 224
SPECCrate®2017_fp_peak = 227

Copyright 2017-2021 Standard Performance Evaluation Corporation

Test Sponsor: Netweb Pte Ltd
Tested by: Tyrone Systems

CPU2017 License: 006042
Test Date: Feb-2021

Hardware Availability: Aug-2020
Software Availability: Dec-2020

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 19.1.1.217 Build 20200306
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.

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

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 19.1.1.217 Build 20200306
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.

Fortran, C      | 521.wrf_r(peak)
-----------------|--------------------------------------------------------
Intel(R) Fortran 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.
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.
SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero DS400E1U-224R4
(2.40 GHz, Intel Xeon Gold 6148)

SPECrate®2017_fp_base = 224
SPECrate®2017_fp_peak = 227

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

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

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

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.lbm_r: -DSPEC_LP64
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

(Continued on next page)
Base Optimization Flags (Continued)

C++ benchmarks:
-\texttt{-m64 -qnextgen -W1,-plugin-opt=-x86-branches-within-32B-boundaries -W1,-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}

Fortran benchmarks:

Benchmarks using both Fortran and C:

Benchmarks using both C and C++:

Benchmarks using Fortran, C, and C++:
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
  510.parest_r: -m64 -qnextgen
               -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

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

Fortran benchmarks:

503.bwaves_r: -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 -mbranches-within-32B-boundaries
-align array32byte -auto -nostandard-realloc-lhs
-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
-ipo -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
-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.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
**SPEC CPU®2017 Floating Point Rate Result**

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero DS400E1U-224R4  
(2.40 GHz, Intel Xeon Gold 6148)  

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>224</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>227</td>
</tr>
</tbody>
</table>

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

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

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.

Tested with SPEC CPU®2017 v1.1.5 on 2021-02-11 08:05:16-0500.  
Originally published on 2021-03-16.