# SPEC CPU®2017 Integer Speed Result

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
Tyrone Camarero IDI100C2R-28  
(2.40 GHz, Intel Xeon Gold 6336Y)

<table>
<thead>
<tr>
<th>Test Date:</th>
<th>Aug-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Apr-2021</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Jun-2021</td>
</tr>
</tbody>
</table>

## SPECspeed®2017_int_base = 11.3

| SPECspeed®2017_int_peak = 11.6 |

## CPU2017 License: 006042

| Tested by: | Tyrone Systems |

## Software

**OS:** CentOS Linux release 8.4.2105  
Kernel 4.18.0-305.3.1.el8.x86_64

**Compiler:**  
C/C++: Version 2021.1 of Intel oneAPI DPC++/C++  
Compiler Build 20201113 for Linux;  
Fortran: Version 2021.1 of Intel Fortran Compiler  
Classic Build 20201112 for Linux;  
C/C++: Version 2021.1 of Intel C/C++ Compiler  
Classic Build 20201112 for Linux

**Parallel:** Yes

**Firmware:**  
Version SE5C620.86B.01.01.0003.2104260124  
released Apr-2021

**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.

## Hardware

**CPU Name:** Intel Xeon Gold 6336Y  
**Max MHz:** 3600  
**Nominal:** 2400  
**Enabled:** 48 cores, 2 chips, 2 threads/core  
**Orderable:** 1.2 Chips  
**Cache L1:** 32 KB I + 48 KB D on chip per core  
**L2:** 1.25 MB I+D on chip per core  
**L3:** 36 MB I+D on chip per chip  
**Other:** None  
**Memory:** 1 TB (32 x 32 GB 1Rx4 PC4-3200AA-R)  
**Storage:** 1 x 250 GB SATA SSD  
**Other:** None

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## Test Results

### Threads

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<tr>
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<td>96 threads</td>
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<tr>
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<td>602.gcc_s</td>
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<tr>
<td>605.mcf_s</td>
<td>96 threads</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>96 threads</td>
</tr>
<tr>
<td>626.soplex_s</td>
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<tr>
<td>627.tscs_s</td>
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<td>642.ycsb_s</td>
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<td>647.instagram_s</td>
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<td>655.shows_s</td>
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CPU2017 License: 006042  
Test Sponsor: Netweb Pte Ltd  
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Results Table  

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<th>Benchmark</th>
<th>Threads</th>
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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,scatter"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"

General Notes
Binaries compiled locally by Netweb
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.:
umactl --interleave=all runcpu <etc>

(Continued on next page)
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General Notes (Continued)

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 set to Custom
Power Performance Tuning set to BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode set to Performance
LLC Dead Line Alloc set to Disable

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aca64d4
running on localhost.localdomain Mon Aug 23 00:29:06 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 6336Y CPU @ 2.40GHz
  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 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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):           96
On-line CPU(s) list: 0-95
Thread(s) per core: 2
Core(s) per socket: 24

(Continued on next page)
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**Platform Notes (Continued)**

- **Socket(s):** 2
- **NUMA node(s):** 4
- **Vendor ID:** GenuineIntel
- **BIOS Vendor ID:** Intel(R) Corporation
- **CPU family:** 6
- **Model:** 106
- **Model name:** Intel(R) Xeon(R) Gold 6336Y CPU @ 2.40GHz
- **BIOS Model name:** Intel(R) Xeon(R) Gold 6336Y CPU @ 2.40GHz
- **Stepping:** 6
- **CPU MHz:** 1865.910
- **CPU max MHz:** 3600.0000
- **CPU min MHz:** 800.0000
- **BogoMIPS:** 4800.00
- **Virtualization:** VT-x
- **L1d cache:** 48K
- **L1i cache:** 32K
- **L2 cache:** 1280K
- **L3 cache:** 36864K
- **NUMA node0 CPU(s):** 0-11,48-59
- **NUMA node1 CPU(s):** 12-23,60-71
- **NUMA node2 CPU(s):** 24-35,72-83
- **NUMA node3 CPU(s):** 36-47,84-95

- 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 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtrkap pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_i3 invpcid_single ssbd mba ibrs ibpb stibp ibrs-enhanced fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invvpids cmqm rdt_a avx512ifma avx512dq rdseed adx smap avx512ifne clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsaves xsavec x saves cmqm_llc cmqm_mbm_total cmqm_mbm_local split_lock_detect wboinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vmbmi umip pku ospke avx512_vbmil2 gfnl vaes vpcmldqavx avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid fsrm md_clear pconfi flush_lld arch_capabilitis

/proc/cpuinfo cache data  
  cache size : 36864 KB

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 48 49 50 51 52 53 54 55 56 57 58 59  
node 0 size: 257671 MB  
node 0 free: 256868 MB  
node 1 cpus: 12 13 14 15 16 17 18 19 20 21 22 23 60 61 62 63 64 65 66 67 68 69 70 71  
node 1 size: 258005 MB

(Continued on next page)
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Test Date: Aug-2021
Hardware Availability: Apr-2021
Software Availability: Jun-2021

Platform Notes (Continued)

node 1 free: 257539 MB
node 2 cpus: 24 25 26 27 28 29 30 31 32 33 34 35 72 73 74 75 76 77 78 79 80 81 82 83
node 2 size: 258042 MB
node 2 free: 257529 MB
node 3 cpus: 36 37 38 39 40 41 42 43 44 45 46 47 84 85 86 87 88 89 90 91 92 93 94 95
node 3 size: 258040 MB
node 3 free: 257749 MB
node distances:
  node   0   1   2   3
  0:  10  11  20  20
  1:  11  10  20  20
  2:  20  20  10  11
  3:  20  20  11  10

From /proc/meminfo
  MemTotal:       1056521552 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 8.4.2105
  centos-release-upstream: Derived from Red Hat Enterprise Linux 8.4
  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 8.4.2105
  system-release: CentOS Linux release 8.4.2105
  system-release-cpe: cpe:/o:centos:centos:8

uname -a:
  Linux localhost.localdomain 4.18.0-305.3.1.el8.x86_64 #1 SMP Tue Jun 1 16:14:33 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

(Continued on next page)
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### Platform Notes (Continued)

- **CVE-2018-12207 (iTLB Multihit):** Not affected
- **CVE-2018-3620 (L1 Terminal Fault):** Not affected
- **Microarchitectural Data Sampling:** Not affected
- **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/swaps 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):** Not affected

**run-level 3 Aug 23 00:27**

**SPEC is set to:** /home/cpu2017  
**Filesystem**  
<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
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</thead>
<tbody>
<tr>
<td>xfs</td>
<td>163G</td>
<td>91G</td>
<td>73G</td>
<td>56%</td>
<td>/home</td>
</tr>
</tbody>
</table>

**From /sys/devices/virtual/dmi/id**  
**Vendor:** Intel Corporation  
**Product:** WHITLEY  
**Product Family:** Family  
**Serial:** UNKNOW

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

**Memory:**
32x Micron 18ASF4G72PZ-3G2E1 32 GB 1 rank 3200

**BIOS:**
- **Vendor:** Intel Corporation  
- **Version:** SE5C620.86B.01.01.0003.2104260124  
- **Date:** 04/26/2021

(End of data from sysinfo program)

### Compiler Version Notes

```
C       | 600.perlbench_s(peak)
```

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<td>Apr-2021</td>
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<tr>
<td>Tyrone Systems</td>
<td>Jun-2021</td>
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**SPECspeed®2017_int_base = 11.3**  
**SPECspeed®2017_int_peak = 11.6**

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### Compiler Version Notes (Continued)

Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

<table>
<thead>
<tr>
<th>C</th>
<th>600.perlbench_s(base) 602.gcc_s(base, peak) 605.mcf_s(base, peak)</th>
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<td>625.x264_s(base, peak) 657.xz_s(base, peak)</td>
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113  
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<table>
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<th>C++</th>
<th>620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak)</th>
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<th>Fortran</th>
<th>648.exchange2_s(base, peak)</th>
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Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000  
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SPEC CPU®2017 Integer Speed Result

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
Tyrone Camarero IDI100C2R-28
(2.40 GHz, Intel Xeon Gold 6336Y)

SPECspeed®2017_int_base = 11.3
SPECspeed®2017_int_peak = 11.6

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

Test Date: Aug-2021
Hardware Availability: Apr-2021
Software Availability: Jun-2021

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifort

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-DSPEC_OPENMP -std=c11 -m64 -fiopenmp -Wl,-z,muldefs -xCORE-AVX512
-O3 -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:
-DSPEC_OPENMP -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin/
-lqkmalloc

Fortran benchmarks:
-m64 -xCORE-AVX512 -O3 -ipo -no-prec-div -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-mbranches-within-32B-boundaries
Peak Compiler Invocation

C benchmarks (except as noted below):
icx
600.perlbench_s: icc

C++ benchmarks:
icpx

Fortran benchmarks:	ifort

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2)
-xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -fno-strict-overflow
-mbranches-within-32B-boundaries
-L/usr/local/je5.0.1-64/lib -ljemalloc

602.gcc_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -flto
-Ofast(pass 1) -O3 -ffast-math -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/usr/local/je5.0.1-64/lib -ljemalloc

605.mcf_s: basepeak = yes

625.x264_s: -DSPEC_OPENMP -fiopenmp -std=c11 -m64 -Wl,-z,muldefs
-xCORE-AVX512 -flto -O3 -ffast-math
-qopt-mem-layout-trans=4 -fno-alias
-mbranches-within-32B-boundaries
-L/usr/local/je5.0.1-64/lib -ljemalloc

657.xz_s: basepeak = yes

(Continued on next page)
### SPEC CPU®2017 Integer Speed Result

**Tyrone Systems**  
(Test Sponsor: Netweb Pte Ltd)  
**Tyrone Camarero IDI100C2R-28**  
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**CPU2017 License:** 006042  
**Test Date:** Aug-2021  
**Test Sponsor:** Netweb Pte Ltd  
**Hardware Availability:** Apr-2021  
**Tested by:** Tyrone Systems  
**Software Availability:** Jun-2021

### Peak Optimization Flags (Continued)

**C++ benchmarks:**

620.omnetpp_s: basepeak = yes  
623.xalancbmk_s: basepeak = yes  
631.deepsjeng_s: basepeak = yes  
641.leela_s: basepeak = yes

**Fortran benchmarks:**

648.exchange2_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-CLX-revI.xml](http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-CLX-revI.xml)

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

Tested with SPEC CPU®2017 v1.1.8 on 2021-08-23 00:29:05-0400.  
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