



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.10 GHz, Intel Xeon Gold 6430)

SPECspeed®2017_int_base = 12.3

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 006042

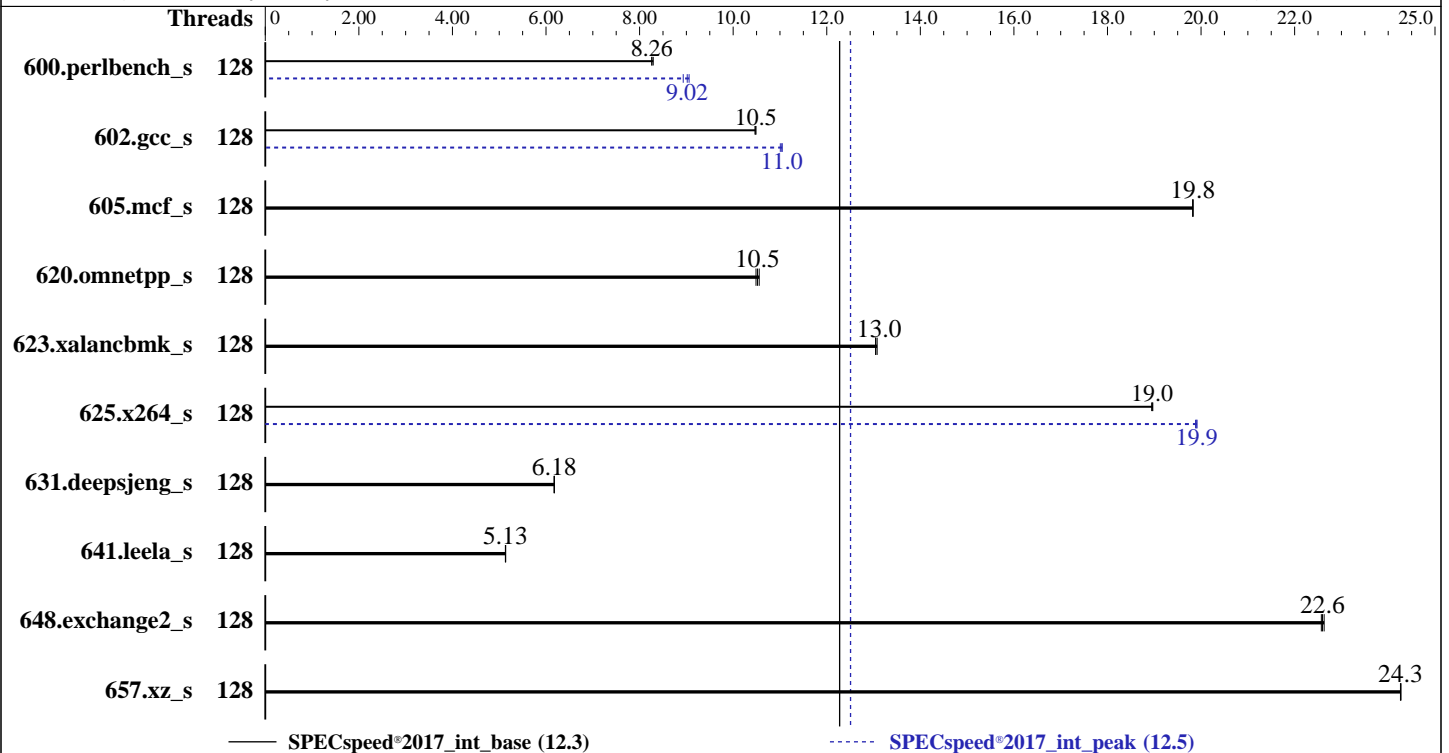
Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Aug-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023



Hardware

CPU Name: Intel Xeon Gold 6430
 Max MHz: 3400
 Nominal: 2100
 Enabled: 64 cores, 2 chips, 2 threads/core
 Orderable: 1,2 chips
 Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 60 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R, running at 4400)
 Storage: 1 x 960 GB NVMe
 Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 9.3 (Plow)
 5.14.0-362.13.1.el9_3.x86_64
 Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;
 Parallel: Yes
 Firmware: Version 2.1 released Dec-2023
 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 and OS set to prefer performance at cost of additional power.



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Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio		
600.perlbench_s	128	215	8.26	<u>215</u>	<u>8.26</u>	214	8.29	128	199	8.93	<u>197</u>	<u>9.02</u>	196	9.06
602.gcc_s	128	<u>380</u>	<u>10.5</u>	380	10.5	380	10.5	128	<u>361</u>	<u>11.0</u>	360	11.0	362	11.0
605.mcf_s	128	<u>238</u>	<u>19.8</u>	238	19.8	238	19.8	128	<u>238</u>	<u>19.8</u>	238	19.8	238	19.8
620.omnetpp_s	128	155	10.6	156	10.5	<u>155</u>	<u>10.5</u>	128	155	10.6	156	10.5	<u>155</u>	<u>10.5</u>
623.xalancbmk_s	128	<u>109</u>	<u>13.0</u>	108	13.1	109	13.0	128	<u>109</u>	<u>13.0</u>	108	13.1	109	13.0
625.x264_s	128	93.0	19.0	93.1	18.9	<u>93.0</u>	<u>19.0</u>	128	88.7	19.9	88.6	19.9	<u>88.6</u>	<u>19.9</u>
631.deepsjeng_s	128	<u>232</u>	<u>6.18</u>	232	6.18	232	6.18	128	<u>232</u>	<u>6.18</u>	232	6.18	232	6.18
641.leela_s	128	<u>332</u>	<u>5.13</u>	332	5.13	332	5.14	128	<u>332</u>	<u>5.13</u>	332	5.13	332	5.14
648.exchange2_s	128	<u>130</u>	<u>22.6</u>	130	22.6	130	22.6	128	<u>130</u>	<u>22.6</u>	130	22.6	130	22.6
657.xz_s	128	<u>255</u>	<u>24.3</u>	255	24.3	255	24.3	128	<u>255</u>	<u>24.3</u>	255	24.3	255	24.3

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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/lib/ia32:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3> /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the

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General Notes (Continued)

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

sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

Platform Notes

BIOS Settings:

Power Technology = Custom

ENERGY_PERF_BIAS_CFG mode = Maximum Performance

KTI Prefetch = Enable

LLC Dead Line Alloc = Disable

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost.localdomain Sun Aug 18 10:46:36 2024

SUT (System Under Test) info as seen by some common utilities.

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1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 252 (252-18.e19)
12. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. tuned-adm active
17. sysctl
18. /sys/kernel/mm/transparent_hugepage
19. /sys/kernel/mm/transparent_hugepage/khugepaged
20. OS release
21. Disk information
22. /sys/devices/virtual/dmi/id
23. dmidecode
24. BIOS

1. uname -a
Linux localhost.localdomain 5.14.0-362.13.1.el9_3.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Nov 24 01:57:57 EST 2023 x86_64 x86_64 x86_64 GNU/Linux

2. w
10:46:36 up 16:38, 1 user, load average: 0.37, 28.21, 71.88
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
xeon tty1 Sat18 12.00s 1.05s 0.03s login -- xeon

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Platform Notes (Continued)

3. Username

From environment variable \$USER: xeon

4. ulimit -a

```
real-time non-blocking time (microseconds, -R) unlimited
core file size (blocks, -c) 0
data seg size (kbytes, -d) unlimited
scheduling priority (-e) 0
file size (blocks, -f) unlimited
pending signals (-i) 4126562
max locked memory (kbytes, -l) 64
max memory size (kbytes, -m) unlimited
open files (-n) 1024
pipe size (512 bytes, -p) 8
POSIX message queues (bytes, -q) 819200
real-time priority (-r) 0
stack size (kbytes, -s) unlimited
cpu time (seconds, -t) unlimited
max user processes (-u) 4126562
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
login -- xeon
-bash
su
bash
bash
runcpu --nobuild --action validate --define default-platform-flags -c
ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=64 --tune base,peak -o all --define
intspeedaffinity --define smt-on --define drop_caches intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=64 --tune base,peak --output_format all
--define intspeedaffinity --define smt-on --define drop_caches --nopower --runmode speed --tune base:peak
--size refspped intspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.003/templots/preenv.intspeed.003.0.log --lognum 003.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) Gold 6430
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2b000571
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
cpu cores      : 32
siblings       : 64
2 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids 0-31
physical id 1: core ids 0-31
physical id 0: apicids 0-63
physical id 1: apicids 128-191
```

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Platform Notes (Continued)

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.4:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:         46 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                128
On-line CPU(s) list:  0-127
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Gold 6430
BIOS Model name:      Intel(R) Xeon(R) Gold 6430
CPU family:            6
Model:                 143
Thread(s) per core:   2
Core(s) per socket:   32
Socket(s):             2
Stepping:              8
CPU max MHz:          3400.0000
CPU min MHz:          800.0000
BogoMIPS:              4200.00
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 tsc_known_freq pni pclmulqdq
                    dtes64 monitor ds_cpl smx est tm2 ssse3 sdbg fma cx16 xtpr 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_l3 cat_l2
                    cdp_l3 invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp
                    ibrs_enhanced fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid cqm
                    rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb
                    intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1
                    xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
                    split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts
                    avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq
                    avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid
                    bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear
                    serialize tsxldtrk pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile
                    amx_int8 flush_l1d arch_capabilities
L1d cache:            3 MiB (64 instances)
L1i cache:            2 MiB (64 instances)
L2 cache:             128 MiB (64 instances)
L3 cache:             120 MiB (2 instances)
NUMA node(s):         2
NUMA node0 CPU(s):   0-31,64-95
NUMA node1 CPU(s):   32-63,96-127
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:      Not affected
Vulnerability L1tf:               Not affected
Vulnerability Mds:                 Not affected
Vulnerability Meltdown:           Not affected
Vulnerability Mmio stale data:     Not affected
Vulnerability Retbleed:           Not affected
Vulnerability Spec rstack overflow: Not affected
Vulnerability Spec store bypass:   Mitigation; Speculative Store Bypass disabled via prctl

```

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Platform Notes (Continued)

Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS, IBPB conditional, RSB filling, PBRBS-eIBRS SW sequence
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	3M	12	Data	1	64	1	64
L1i	32K	2M	8	Instruction	1	64	1	64
L2	2M	128M	16	Unified	2	2048	1	64
L3	60M	120M	15	Unified	3	65536	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```
available: 2 nodes (0-1)
node 0 cpus: 0-31,64-95
node 0 size: 515632 MB
node 0 free: 475343 MB
node 1 cpus: 32-63,96-127
node 1 size: 516074 MB
node 1 free: 480295 MB
node distances:
node  0  1
 0:  10  21
 1:  21  10
```

9. /proc/meminfo

```
MemTotal: 1056467332 kB
```

10. who -r

```
run-level 3 Aug 17 18:08
```

11. Systemd service manager version: systemd 252 (252-18.e19)

```
Default Target Status
multi-user degraded
```

12. Failed units, from systemctl list-units --state=failed

UNIT	LOAD	ACTIVE	SUB	DESCRIPTION
* dnf-makecache.service	loaded	failed	failed	dnf makecache

13. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker firewalld gdm getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt lm_sensors low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname nvme-fc-boot-connections ostree-remount pmcd pmie pmlogger power-profiles-daemon qemu-guest-agent rhsmcertd rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control sysstat systemd-boot-update systemd-network-generator tuned udisks2 upower vgauthd virtqemud vmtoolsd
enabled-runtime	systemd-remount-fs
disabled	arp-ethers autofs blk-availability brltyt canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed

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Platform Notes (Continued)

```

dbus-daemon debug-shell dnf-system-upgrade dnsmasq dovecot fancontrol fcoe grafana-server
gssproxy httpd httpd@ ibacm iprdump iprint iprupdate ipsec iscsid iscsiuiio kpatch
kvm_stat ledmon libvirt-guests libvirt llqpad man-db-restart-cache-update named
named-chroot netavark-dhcp-proxy nfs-blkmap nfs-server nftables nmb numad nvme-autoconnect
ostree-readonly-sysroot-migration pesign pmfind pmie_farm pmlogger_farm pmproxy podman
podman-auto-update podman-clean-transient podman-kube@ podman-restart postfix powertop
psacct ras-mc-ctl rasdaemon rdisc rhcd rhsm rhsm-facts rpmbd-rebuild rrdcached saslauthd
selinux-check-proper-disable serial-getty@ smb snmpd snmptrapd spamassassin
speech-dispatcherd srp_daemon srp_daemon_port@ sshd-keygen@ systemd-boot-check-no-failures
systemd-nspawn@ systemd-pstore systemd-sysex target targetclid tog-pegasus trace-cmd
virtinterfaced virtnetworkd virtnodedevd virtnwfilterd virtproxyd virtsecretd virtstorage
vsftpd wpa_supplicant
indirect
pcscd spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
systemd-sysupdate systemd-sysupdate-reboot virtlockd virtlogd vsftpd@

```

```

-----
14. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-362.13.1.el9_3.x86_64
root=/dev/mapper/rhel-root
ro
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
rhgb
quiet

```

```

-----
15. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 3.40 GHz and 3.40 GHz.
                   The governor "performance" may decide which speed to use
                   within this range.
boost state support:
  Supported: yes
  Active: yes

```

```

-----
16. tuned-adm active
  Current active profile: throughput-performance

```

```

-----
17. sysctl
kernel.numa_balancing          1
kernel.randomize_va_space     2
vm.compaction_proactiveness    20
vm.dirty_background_bytes      0
vm.dirty_background_ratio     10
vm.dirty_bytes                 0
vm.dirty_expire_centisecs     3000
vm.dirty_ratio                 40
vm.dirty_writeback_centisecs  500
vm.dirtytime_expire_seconds   43200
vm.extfrag_threshold          500
vm.min_unmapped_ratio         1
vm.nr_hugepages                0
vm.nr_hugepages_mempolicy     0
vm.nr_overcommit_hugepages    0
vm.swappiness                  10
vm.watermark_boost_factor     15000
vm.watermark_scale_factor     10

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Platform Notes (Continued)

vm.zone_reclaim_mode 0

```

-----
18. /sys/kernel/mm/transparent_hugepage
defrag          always defer defer+madvice [madvice] never
enabled         [always] madvice never
hpage_pmd_size 2097152
shmem_enabled  always within_size advise [never] deny force

```

```

-----
19. /sys/kernel/mm/transparent_hugepage/khugepaged
alloc_sleep_millisecs 60000
defrag                 1
max_ptes_none          511
max_ptes_shared        256
max_ptes_swap          64
pages_to_scan          4096
scan_sleep_millisecs  10000

```

```

-----
20. OS release
From /etc/*-release /etc/*-version
os-release      Red Hat Enterprise Linux 9.3 (Plow)
redhat-release Red Hat Enterprise Linux release 9.3 (Plow)
system-release Red Hat Enterprise Linux release 9.3 (Plow)

```

```

-----
21. Disk information
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   856G  674G  182G  79% /home

```

```

-----
22. /sys/devices/virtual/dmi/id
Vendor:          Tyrone Systems
Product:         Tyrone Camarero SDI200A3N-212
Product Family: Family
Serial:          2X26452301

```

```

-----
23. dmidecode
Additional information from dmidecode 3.5 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:
  16x Samsung M321R8GA0BB0-CQKZJ 64 GB 2 rank 4800, configured at 4400

```

```

-----
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Tyrone Systems
BIOS Version:     2.1
BIOS Date:        12/07/2023
BIOS Revision:    5.32

```




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Compiler Version Notes

C | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
657.xz_s(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C++ | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
641.leela_s(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

Fortran | 648.exchange2_s(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

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



SPEC CPU®2017 Integer Speed Result

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Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero SDI200A3N-212
(2.10 GHz, Intel Xeon Gold 6430)

SPECspeed®2017_int_base = 12.3

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Aug-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

Base Optimization Flags

C benchmarks:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

C++ benchmarks:

```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: -w -m64 -std=c11 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
```

(Continued on next page)



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SPECspeed®2017_int_base = 12.3

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

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Test Date: Aug-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

Peak Optimization Flags (Continued)

600.perlbench_s (continued):

```
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

602.gcc_s: -w -m64 -std=c11 -Wl,-z,muldefs

```
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc
```

605.mcf_s: basepeak = yes

625.x264_s: -w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -O3

```
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
-fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

657.xz_s: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-SPR-revC.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-SPR-revC.xml>



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CPU2017 License: 006042

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Tested with SPEC CPU®2017 v1.1.9 on 2024-08-18 01:16:35-0400.
Report generated on 2024-09-11 09:33:01 by CPU2017 PDF formatter v6716.
Originally published on 2024-09-10.