



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero TDI100C3R-212
(2.80 GHz, Intel Xeon Gold 6342)

SPECrate®2017_int_base = 361

SPECrate®2017_int_peak = 372

CPU2017 License: 006042

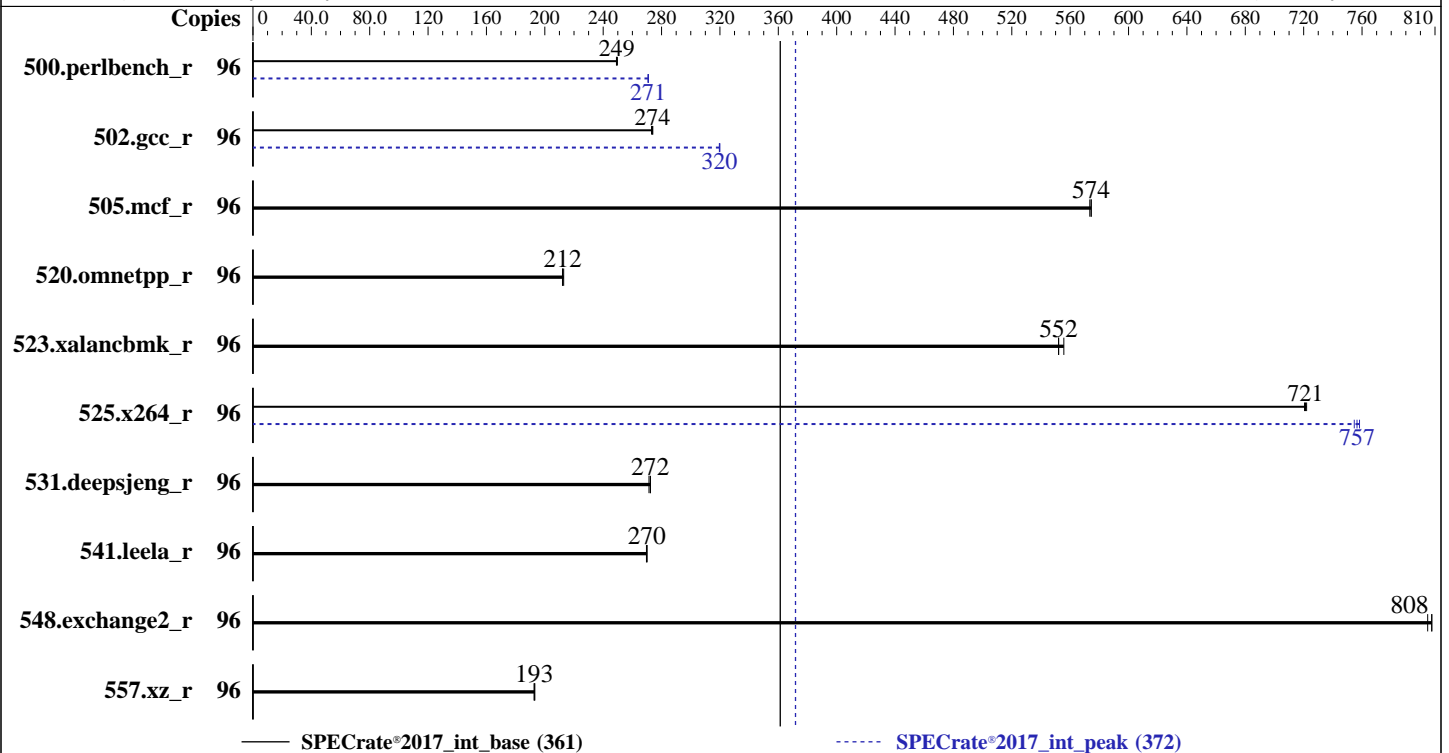
Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022



Hardware

CPU Name: Intel Xeon Gold 6342
 Max MHz: 3500
 Nominal: 2800
 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 (16 x 64 GB 2Rx4 PC4-3200AA-R)
 Storage: 1 x 512 GB NVMe SSD
 Other: None

Software

OS: Red Hat Enterprise Linux release 8.5 (Ootpa)
 4.18.0-348.el8.x86_64
 Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++
 Compiler for Linux;
 Fortran: Version 2022.1 of Intel Fortran Compiler
 for Linux;
 Parallel: No
 Firmware: Version PEGC0042 released Jan-2023
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other: jemalloc memory allocator V5.0.1
 Power Management: BIOS and OS set to prefer performance at the
 cost of additional power usage.



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	96	614	249	<u>613</u>	<u>249</u>	612	250	96	564	271	<u>564</u>	<u>271</u>	564	271
502.gcc_r	96	496	274	<u>496</u>	<u>274</u>	498	273	96	<u>425</u>	<u>320</u>	425	320	425	320
505.mcf_r	96	271	573	270	574	<u>270</u>	<u>574</u>	96	271	573	270	574	<u>270</u>	<u>574</u>
520.omnetpp_r	96	592	213	<u>593</u>	<u>212</u>	594	212	96	592	213	<u>593</u>	<u>212</u>	594	212
523.xalancbmk_r	96	<u>184</u>	<u>552</u>	184	552	182	556	96	<u>184</u>	<u>552</u>	184	552	182	556
525.x264_r	96	<u>233</u>	<u>721</u>	233	722	233	721	96	223	755	222	758	<u>222</u>	<u>757</u>
531.deepsjeng_r	96	<u>404</u>	<u>272</u>	405	271	404	272	96	<u>404</u>	<u>272</u>	405	271	404	272
541.leela_r	96	590	270	589	270	<u>589</u>	<u>270</u>	96	590	270	589	270	<u>589</u>	<u>270</u>
548.exchange2_r	96	311	808	<u>311</u>	<u>808</u>	312	805	96	311	808	<u>311</u>	<u>808</u>	312	805
557.xz_r	96	538	193	<u>538</u>	<u>193</u>	537	193	96	538	193	<u>538</u>	<u>193</u>	537	193

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

Compiler Notes

SPEC has ruled that the compiler used for this result was performing a compilation that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_s benchmarks using a priori knowledge of the SPEC code and dataset to perform a transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4 https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer publish results using this optimization.

This result is left in the SPEC results database for historical reference.

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/lib/ia32:/home/cpu2017/je5.0.1-32"
MALLOC_CONF = "retain:true"



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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 1 > /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 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 Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Extreme Performance
SNC (Sub NUMA) = Enable
KTI Prefetch = Enable
LLC Dead Line Alloc = Disable

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on Tyronespec Mon Mar 13 08:03:07 2023

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

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11. Systemd service manager version: systemd 239 (239-51.el8)
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Platform Notes (Continued)

24. BIOS

1. `uname -a`

```
Linux Tyronespec 4.18.0-348.el8.x86_64 #1 SMP Mon Oct 4 12:17:22 EDT 2021 x86_64 x86_64 x86_64 GNU/Linux
```

2. `w`

```
08:03:07 up 2 min, 1 user, load average: 0.12, 0.07, 0.02
USER      TTY      FROM          LOGIN@      IDLE        JCPU        PCPU        WHAT
root      tty1     -             08:02       3.00s       1.16s       0.01s      -bash
```

3. Username

```
From environment variable $USER: root
```

4. `ulimit -a`

```
core file size          (blocks, -c) 0
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 4126654
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) 4126654
virtual memory           (kbytes, -v) unlimited
file locks              (-x) unlimited
```

5. `sysinfo process ancestry`

```
/usr/lib/systemd/systemd --switched-root --system --deserialize 18
login -- root
-bash
-runcpu --nobuild --action validate --define default-platform-flags --define numcopies=96 -c
ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=48 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=96 --configfile
ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=48 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
--runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

6. `/proc/cpuinfo`

```
model name      : Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz
vendor_id      : GenuineIntel
cpu family      : 6
model          : 106
stepping       : 6
```

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Platform Notes (Continued)

```

microcode      : 0xd0002e0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores     : 24
siblings      : 48
2 physical ids (chips)
96 processors (hardware threads)
physical id 0: core ids 0-23
physical id 1: core ids 0-23
physical id 0: apicids 0-47
physical id 1: apicids 64-111

```

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 2.32.1:

```

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
Socket(s):         2
NUMA node(s):     2
Vendor ID:         GenuineIntel
BIOS Vendor ID:   Intel(R) Corporation
CPU family:        6
Model:            106
Model name:        Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz
BIOS Model name:   Intel(R) Xeon(R) Gold 6342 CPU @ 2.80GHz
Stepping:          6
CPU MHz:           2800.000
CPU max MHz:       3500.0000
CPU min MHz:       800.0000
BogoMIPS:          5600.00
Virtualization:    VT-x
L1d cache:         48K
L1i cache:         32K
L2 cache:          1280K
L3 cache:          36864K
NUMA node0 CPU(s): 0-23,48-71
NUMA node1 CPU(s): 24-47,72-95
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 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 invpcid_single intel_ppin ssbd mba ibrs ibpb
                  stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust
                  sgx bmi1 hle 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
                  wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi
                  umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
                  avx512_vpopcntdq la57 rdpid sgx_lc fsrm md_clear pconfig flush_l1d arch_capabilities

```

8. numactl --hardware

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Platform Notes (Continued)

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

```

available: 2 nodes (0-1)
node 0 cpus: 0-23,48-71
node 0 size: 515676 MB
node 0 free: 514490 MB
node 1 cpus: 24-47,72-95
node 1 size: 516045 MB
node 1 free: 515351 MB
node distances:
node  0  1
  0:  10  20
  1:  20  10

```

```

-----
9. /proc/meminfo
   MemTotal:      1056483632 kB

```

```

-----
10. who -r
    run-level 3 Mar 13 08:01

```

```

-----
11. Systemd service manager version: systemd 239 (239-51.el8)
    Default Target   Status
    multi-user       running

```

```

-----
12. Services, from systemctl list-unit-files
STATE      UNIT FILES
enabled    ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon
           atd auditd autovt@ avahi-daemon bluetooth chronyd crond cups display-manager firewalld gdm
           getty@ import-state insights-client-boot irqbalance iscsi iscsi-onboot kdump ksm ksmtuned
           libstoragemgmt libvirt loadmodules lvm2-monitor mcelog mdmonitor microcode multipathd
           nis-domainname nvidia-hibernate nvidia-resume nvidia-suspend nvme-fc-boot-connections
           ostree-remount qemu-guest-agent rhsmcertd rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark
           sep5 smartd sshd sssd syslog timedatex tuned udisks2 vdo vgaauthd vmtoolsd
disabled    arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
           canberra-system-shutdown-reboot chrony-wait console-getty cpupower cups-browsed debug-shell
           dnsmasq ebttables gssproxy httpd httpd@ initial-setup initial-setup-reconfiguration iprump
           iprinit iprupdate iscsid iscsiui kpatch kvm_stat ledmon man-db-restart-cache-update
           ndctl-monitor netcf-transaction nfs-blkmap nfs-convert nfs-server nftables numad nvidia-powerd
           nvme-autoconnect oddjobd podman podman-auto-update podman-restart psacct radvd ras-mc-ctl
           rasdaemon rdisc rhcd rhsm rhsm-facts saslauthd serial-getty@ snmpd snmptrapd speech-dispatcher
           sshd-keygen@ switcheroo-control systemd-nsppawn@ systemd-resolved tcsd tog-pegasus upower
           virtinterfaced virtnetworkd virtnodedevid virtnwfilterd virtproxyd virtqemud virtsecretd
           virtstoraged wpa_supplicant
generated   SystemTap compile-server gcc-toolset-10-stap-server gcc-toolset-10-systemtap
           gcc-toolset-11-stap-server gcc-toolset-11-systemtap gcc-toolset-9-stap-server
           gcc-toolset-9-systemtap scripts startup
indirect    spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo virtlockd
           virtlogd
masked      systemd-timedated

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd1,gpt2)/vmlinuz-4.18.0-348.el8.x86_64
root=/dev/mapper/rhel-root
ro
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root

```

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Platform Notes (Continued)

```
rd.lvm.lv=rhel/swap
rhgb
quiet
```

14. cpupower frequency-info

```
analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 3.50 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.
  boost state support:
    Supported: yes
    Active: yes
```

15. tuned-adm active

```
Current active profile: throughput-performance
```

16. sysctl

```
kernel.numa_balancing          1
kernel.randomize_va_space      2
vm.compaction_proactiveness     0
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
vm.zone_reclaim_mode           0
```

17. /sys/kernel/mm/transparent_hugepage

```
defrag          always defer+madvice [madvice] never
enabled         [always] madvice never
hpage_pmd_size  2097152
shmem_enabled   always within_size advise [never] deny force
```

18. /sys/kernel/mm/transparent_hugepage/khugepaged

```
alloc_sleep_millisecs  60000
defrag                  1
max_ptes_none           511
max_ptes_swap           64
pages_to_scan           4096
scan_sleep_millisecs   10000
```

19. OS release

```
From /etc/*-release /etc/*-version
os-release   Red Hat Enterprise Linux 8.5 (Ootpa)
```

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Platform Notes (Continued)

redhat-release Red Hat Enterprise Linux release 8.5 (Ootpa)
system-release Red Hat Enterprise Linux release 8.5 (Ootpa)

```

-----
20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
itlb_multihit      Not affected
lltf               Not affected
mds                Not affected
meltdown          Not affected
spec_store_bypass Mitigation: Speculative Store Bypass disabled via prctl and seccomp
spectre_v1         Mitigation: usercopy/swapgs barriers and __user pointer sanitization
spectre_v2         Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
srbsds            Not affected
tsx_async_abort   Not affected

```

For more information, see the Linux documentation on hardware vulnerabilities, for example <https://www.kernel.org/doc/html/latest/admin-guide/hw-vuln/index.html>

21. Disk information

SPEC is set to: /home/cpu2017

```

Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs      402G  210G  192G  53% /home

```

22. /sys/devices/virtual/dmi/id

```

Vendor:          TyroneSystems
Product:         TDI100C3R-212
Product Family: Family
Serial:          2X20382301

```

23. dmidecode

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:
16x Samsung M393A8G40AB2-CWE 64 GB 2 rank 3200

24. BIOS

(This section combines info from /sys/devices and dmidecode.)

```

BIOS Vendor:      American Megatrends International, LLC.
BIOS Version:     PEGC0042
BIOS Date:        01/16/2023
BIOS Revision:    5.22

```

Compiler Version Notes

C | 502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)

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Compiler Version Notes (Continued)

| 557.xz_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
C | 502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
| 557.xz_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
C++ | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
| 541.leela_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
Fortran | 548.exchange2_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

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Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

Tyrone Camarero TDI100C3R-212
(2.80 GHz, Intel Xeon Gold 6342)

SPECrate®2017_int_base = 361

SPECrate®2017_int_peak = 372

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Tyrone Systems

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022

Base Portability Flags (Continued)

```
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
```

Base Optimization Flags

C benchmarks:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

C++ benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx



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Peak Portability Flags

```

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

```

Peak Optimization Flags

C benchmarks:

```

500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-strict-overflow
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc

```

```

502.gcc_r: -m32
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc32-5.0.1/lib
-ljemalloc

```

505.mcf_r: basepeak = yes

```

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc

```

557.xz_r: basepeak = yes

C++ benchmarks:

(Continued on next page)



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Test Date: Mar-2023
Hardware Availability: Apr-2021
Software Availability: May-2022

Peak Optimization Flags (Continued)

520.omnetpp_r: basepeak = yes
523.xalancbmk_r: basepeak = yes
531.deepsjeng_r: basepeak = yes
541.leela_r: basepeak = yes

Fortran benchmarks:
548.exchange2_r: basepeak = yes

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

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-ICX_revA.html

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

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/Tyrone-Platform-Settings-V1.2-ICX_revA.xml

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