SPEC CPU®2017 Integer Rate Result

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Tyrone Systems
(Test Sponsor: Netweb Technologies India Ltd)

Tyrone Camarero SDI200A2N-18
(2.0 GHz,Intel Xeon Platinum 8580)

$SPECrate®2017\_int\_base = 931$

$SPECrate®2017\_int\_peak = 966$

CPU2017 License: 006802	**Test Date:** Sep-2024
Test Sponsor: Netweb Technologies India Ltd	**Hardware Availability:** Jan-2023
Tested by: Tyrone Systems	**Software Availability:** Dec-2023

Copies

Benchmark	Copies	base	peak
500.perlbench_r	240	700	780
502.gcc_r	240	744	910
505.mcf_r	240	1360	
520.omnetpp_r	240	567	
523.xalancbmk_r	240	1280	
525.x264_r	240	1940	2040
531.deepsjeng_r	240	688	
541.leela_r	240	700	
548.exchange2_r	240	2100	
557.xz_r	240	484	

—— SPECrate®2017_int_base (931)   ----- SPECrate®2017_int_peak (966)

Hardware

CPU Name: Intel Xeon Platinum 8580
 Max MHz: 4000
 Nominal: 2000
Enabled: 120 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: 300 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
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: No
Firmware: Version 2.1a released Mar-2024
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 cost of additional power.

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

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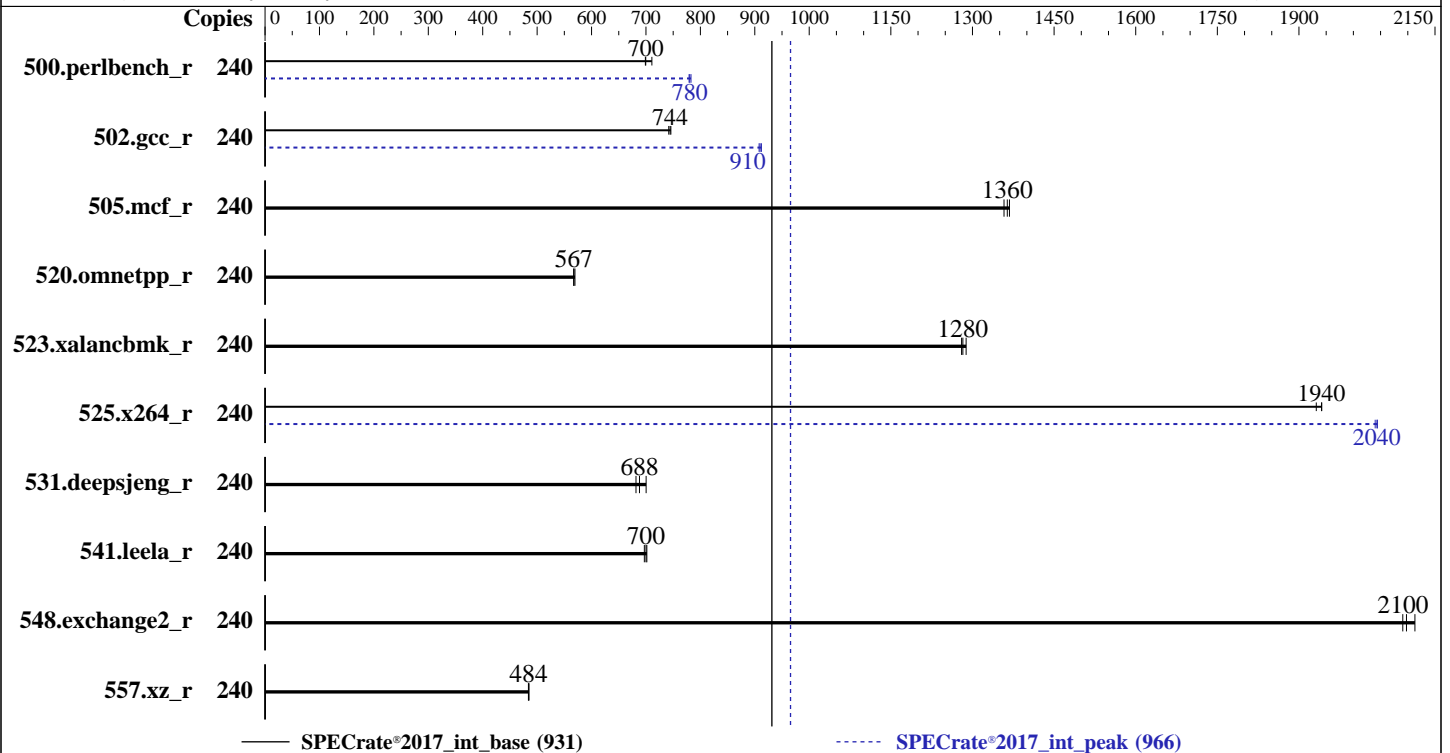|		
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	240	**546**	**700**	547	699	537	711	240	**490**	**780**	490	779	488	783
502.gcc_r	240	458	742	**457**	**744**	456	746	240	373	912	**374**	**910**	374	908
505.mcf_r	240	286	1360	**284**	**1360**	284	1370	240	286	1360	**284**	**1360**	284	1370
520.omnetpp_r	240	555	567	**555**	**567**	553	569	240	555	567	**555**	**567**	553	569
523.xalancbmk_r	240	198	1280	**198**	**1280**	197	1290	240	198	1280	**198**	**1280**	197	1290
525.x264_r	240	218	1930	**216**	**1940**	216	1940	240	206	2040	206	2040	**206**	**2040**
531.deepsjeng_r	240	393	700	**400**	**688**	403	682	240	393	700	**400**	**688**	403	682
541.leela_r	240	570	697	566	702	**568**	**700**	240	570	697	566	702	**568**	**700**
548.exchange2_r	240	298	2110	301	2090	**300**	**2100**	240	298	2110	301	2090	**300**	**2100**
557.xz_r	240	536	484	534	485	**535**	**484**	240	536	484	534	485	**535**	**484**

SPECrate®2017_int_base =   **931**

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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"
We are using specific Kernel Version
```

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"
```

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

(Continued on next page)

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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 Wed Mar 20 12:39:39 2024

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

 ------------------------------------------------------------
 Table of contents
 ------------------------------------------------------------
  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.el9)
 12. Services, from systemctl list-unit-files
 13. Linux kernel boot-time arguments, from /proc/cmdline
 14. cpupower frequency-info
 15. tuned-adm active
 16. sysctl
 17. /sys/kernel/mm/transparent_hugepage
 18. /sys/kernel/mm/transparent_hugepage/khugepaged
 19. OS release
 20. Disk information
 21. /sys/devices/virtual/dmi/id
 22. dmidecode
 23. 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
   12:39:39 up 2 min,  1 user,  load average: 0.12, 0.12, 0.05
   USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1       12:37   11.00s  0.91s  0.02s -bash

 ------------------------------------------------------------
```

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Platform Notes (Continued)

```
  3. Username
    From environment variable $USER:  root


  -----------------------------------------------------------
  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) 4126543
    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) 4126543
    virtual memory              (kbytes, -v) unlimited
    file locks                       (-x) unlimited

  -----------------------------------------------------------
  5. sysinfo process ancestry
   /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
   login -- root
   -bash
   -bash
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=240 -c
     ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=120 --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=240 --configfile
     ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=120 --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) PLATINUM 8580
    vendor_id        : GenuineIntel
    cpu family       : 6
    model            : 207
    stepping         : 2
    microcode        : 0x21000200
    bugs             : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    cpu cores        : 60
    siblings         : 120
    2 physical ids (chips)
    240 processors (hardware threads)
    physical id 0: core ids 0-59
    physical id 1: core ids 0-59
    physical id 0: apicids 0-119
    physical id 1: apicids 128-247
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
  virtualized systems.  Use the above data carefully.
```

(Continued on next page)

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Platform Notes (Continued)

```
 ----------------------------------------------------------------
 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):                       240
   On-line CPU(s) list:          0-239
   Vendor ID:                    GenuineIntel
   BIOS Vendor ID:               Intel(R) Corporation
   Model name:                   INTEL(R) XEON(R) PLATINUM 8580
   BIOS Model name:              INTEL(R) XEON(R) PLATINUM 8580
   CPU family:                   6
   Model:                        207
   Thread(s) per core:           2
   Core(s) per socket:           60
   Socket(s):                    2
   Stepping:                     2
   Frequency boost:              enabled
   CPU max MHz:                  2001.0000
   CPU min MHz:                  800.0000
   BogoMIPS:                     4000.00
   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 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 cat_l2
                                 cdp_l3 invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp
                                 ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad 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 vnmi 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
   Virtualization:               VT-x
   L1d cache:                    5.6 MiB (120 instances)
   L1i cache:                    3.8 MiB (120 instances)
   L2 cache:                     240 MiB (120 instances)
   L3 cache:                     600 MiB (2 instances)
   NUMA node(s):                 4
   NUMA node0 CPU(s):            0-29,120-149
   NUMA node1 CPU(s):            30-59,150-179
   NUMA node2 CPU(s):            60-89,180-209
   NUMA node3 CPU(s):            90-119,210-239
   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
```

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Platform Notes (Continued)

```
   Vulnerability Spec store bypass:     Mitigation; Speculative Store Bypass disabled via prctl
   Vulnerability Spectre v1:            Mitigation; usercopy/swapgs barriers and __user pointer sanitization
   Vulnerability Spectre v2:            Mitigation; Enhanced / Automatic IBRS, IBPB conditional, RSB filling,
                                        PBRSB-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     5.6M   12 Data            1     64        1             64
      L1i      32K     3.8M    8 Instruction     1     64        1             64
      L2        2M     240M   16 Unified         2   2048        1             64
      L3      300M     600M   20 Unified         3 245760        1             64


  ----------------------------------------------------------
  8. numactl --hardware
  NOTE: a numactl 'node' might or might not correspond to a physical chip.
    available: 4 nodes (0-3)
    node 0 cpus: 0-29,120-149
    node 0 size: 257671 MB
    node 0 free: 256525 MB
    node 1 cpus: 30-59,150-179
    node 1 size: 258033 MB
    node 1 free: 257209 MB
    node 2 cpus: 60-89,180-209
    node 2 size: 257979 MB
    node 2 free: 257194 MB
    node 3 cpus: 90-119,210-239
    node 3 size: 258017 MB
    node 3 free: 257182 MB
    node distances:
    node   0   1   2   3
      0:  10  12  21  21
      1:  12  10  21  21
      2:  21  21  10  12
      3:  21  21  12  10


  ----------------------------------------------------------
  9. /proc/meminfo
     MemTotal:       1056462540 kB


  ----------------------------------------------------------
  10. who -r
     run-level 3 Mar 20 12:37


  ----------------------------------------------------------
  11. Systemd service manager version: systemd 252 (252-18.el9)
     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 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 nvmefc-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
```

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Platform Notes (Continued)

```
                       systemd-network-generator tuned udisks2 upower vgauthd virtqemud vmtoolsd
   enabled-runtime     systemd-remount-fs
   disabled            arp-ethers autofs blk-availability brltty canberra-system-bootup canberra-system-shutdown
                       canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed
                       dbus-daemon debug-shell dnf-system-upgrade dnsmasq dovecot fancontrol fcoe grafana-server
                       gssproxy httpd httpd@ ibacm iprdump iprinit iprupdate ipsec iscsid iscsiuio kpatch
                       kvm_stat ledmon libvirt-guests libvirtd lldpad man-db-restart-cache-update named
                       named-chroot netavark-dhcp-proxy nfs-blkmap nfs-server nftables nmb numad nvmf-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 rpmdb-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-sysext target targetclid tog-pegasus trace-cmd
                       virtinterfaced virtnetworkd virtnodedevd virtnwfilterd virtproxyd virtsecretd virtstoraged
                       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@

  ----------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=(hd1,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


  ----------------------------------------------------------------
14. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 800 MHz and 2.00 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        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
```

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Platform Notes (Continued)

```
  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 defer+madvise [madvise] never
  enabled         [always] madvise 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_shared          256
  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 9.3 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.3 (Plow)
  system-release Red Hat Enterprise Linux release 9.3 (Plow)


  --------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017
  Filesystem            Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   856G  729G  127G  86% /home


  --------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
  Vendor:         Tyrone Systems
  Product:        Tyrone Camarero SDI200A2N-18
  Product Family: Family
  Serial:         A495115X4412722


  --------------------------------------------------------------
22. 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



  --------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
  BIOS Vendor:     American Megatrends International, LLC.
  BIOS Version:    2.1a
  BIOS Date:       03/20/2024
  BIOS Revision:   5.32
```

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Tyrone Camarero SDI200A2N-18
(2.0 GHz,Intel Xeon Platinum 8580)

SPECrate®2017_int_base = 931

SPECrate®2017_int_peak = 966

CPU2017 License: 006802

Test Sponsor: Netweb Technologies India Ltd

Tested by: Tyrone Systems

Test Date: Sep-2024

Hardware Availability: Jan-2023

Software Availability: Dec-2023

Compiler Version Notes

```
==============================================================================================
C        | 502.gcc_r(peak)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
C        | 502.gcc_r(peak)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran | 548.exchange2_r(base, peak)
----------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

Fortran benchmarks:
```
ifx
```

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SPEC CPU®2017 Integer Rate Result

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Tyrone Systems
(Test Sponsor: Netweb Technologies India Ltd)

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CPU2017 License: 006802		**Test Date:**	Sep-2024
Test Sponsor:	Netweb Technologies India Ltd	**Hardware Availability:**	Jan-2023
Tested by:	Tyrone Systems	**Software Availability:**	Dec-2023

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
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 -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc
```

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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc
```

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 -auto
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

Fortran benchmarks:
```
ifx
```

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(2.0 GHz,Intel Xeon Platinum 8580)

SPECrate®2017_int_base = 931

SPECrate®2017_int_peak = 966

CPU2017 License: 006802	**Test Date:** Sep-2024
Test Sponsor: Netweb Technologies India Ltd	**Hardware Availability:** Jan-2023
Tested by: Tyrone Systems	**Software Availability:** Dec-2023

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-AVX2`(pass 1)
`-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4`
`-fno-strict-overflow`
`-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin`
`-lqkmalloc`

 502.gcc_r: `-m32`
`-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/ia32_lin`
`-std=gnu89 -Wl,-z,muldefs -fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast -xCORE-AVX512 -ffast-math -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 -xsapphirerapids -Ofast`
`-ffast-math -flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -fno-alias`
`-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin`
`-lqkmalloc`

 557.xz_r: basepeak = yes

C++ benchmarks:

(Continued on next page)

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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-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`

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

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