SPEC CPU®2017 Integer Rate Result

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Dell Inc.

SPECrate®2017_int_base =   566

PowerEdge R760 (Intel Xeon Gold 6448Y)

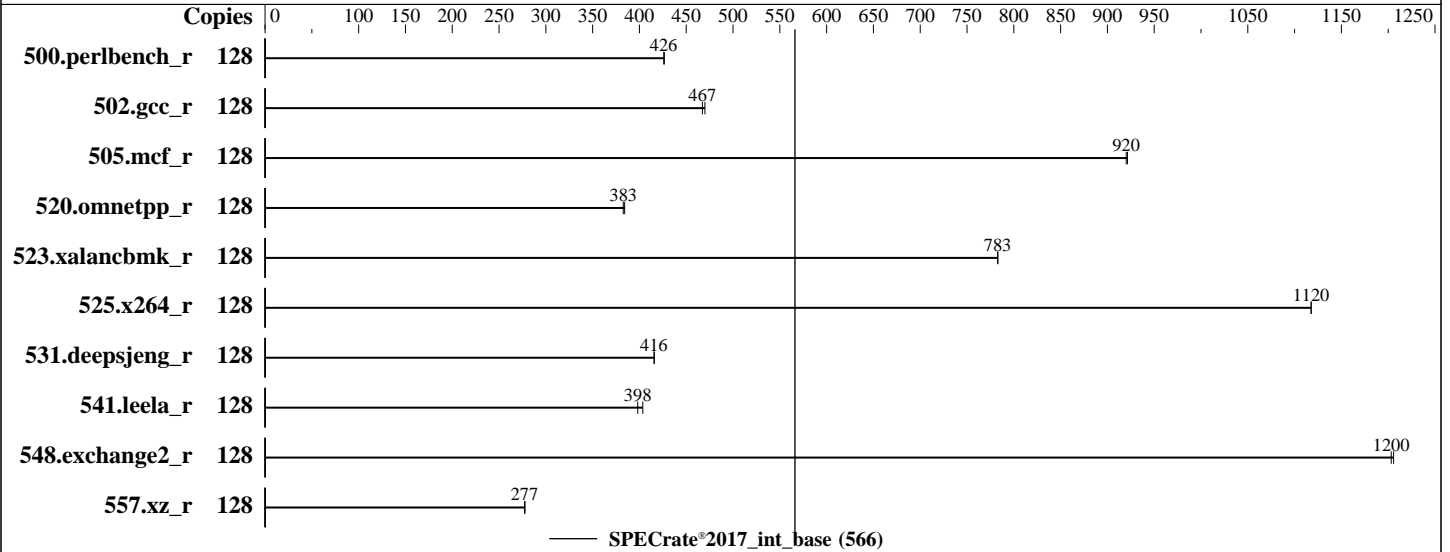SPECrate®2017_int_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Apr-2024
Hardware Availability: Apr-2023
Software Availability: Dec-2023

Benchmark	Copies	Result
500.perlbench_r	128	426
502.gcc_r	128	467
505.mcf_r	128	920
520.omnetpp_r	128	383
523.xalancbmk_r	128	783
525.x264_r	128	1120
531.deepsjeng_r	128	416
541.leela_r	128	398
548.exchange2_r	128	1200
557.xz_r	128	277

SPECrate®2017_int_base (566)

Hardware

CPU Name: Intel Xeon Gold 6448Y
 Max MHz: 4100
 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 PC5-5600B-R, running at 4800)
Storage: 80 GB on tmpfs
Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 9.2 (Plow)
5.14.0-284.11.1.el9_2.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 1.9.12 released Nov-2023
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: None
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	128	478	427	**478**	**426**									
502.gcc_r	128	386	470	**388**	**467**									
505.mcf_r	128	224	921	**225**	**920**									
520.omnetpp_r	128	437	384	**439**	**383**									
523.xalancbmk_r	128	173	783	**173**	**783**									
525.x264_r	128	**201**	**1120**	201	1120									
531.deepsjeng_r	128	**353**	**416**	353	416									
541.leela_r	128	525	404	**532**	**398**									
548.exchange2_r	128	278	1210	**279**	**1200**									
557.xz_r	128	498	278	**499**	**277**									
SPECrate®2017_int_base =		**566**												
SPECrate®2017_int_peak =		**Not Run**												

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:
LD_LIBRARY_PATH =
     "/mnt/ramdisk/cpu2017-1.1.9-ic2023.2.3/lib/intel64:/mnt/ramdisk/cpu2017-1.1.9-ic2023.2.3/lib/ia32:/mnt
     /ramdisk/cpu2017-1.1.9-ic2023.2.3/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>

 NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
```

(Continued on next page)

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General Notes (Continued)

```
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.

Benchmark run from a 80 GB ramdisk created with the cmd: "mount -t tmpfs -o size=80G tmpfs /mnt/ramdisk"
```

Platform Notes

```
BIOS settings:
                 ADDDC Setting : Disabled
        DIMM Self Healing on
   Uncorrectable Memory Error : Disabled

     Virtualization Technology : Disabled
       DCU Streamer Prefetcher : Disabled
             Sub NUMA Cluster : 2-way Clustering
                  LLC Prefetch : Disabled
          Dead Line LLC Alloc : Disabled

               System Profile : Custom
         CPU Power Management : Maximum Performance
                          C1E : Disabled
                     C States : Autonomous
           Memory Patrol Scrub : Disabled
       Energy Efficiency Policy : Performance
             PCI ASPM L1 Link
             Power Management : Disabled
               Optimizer Mode : Enabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2023.2.3/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Thu Apr  4 07:59:44 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 (252-13.el9_2)
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
```

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Platform Notes (Continued)

```
 21. /sys/devices/virtual/dmi/id
 22. dmidecode
 23. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -a
  Linux localhost.localdomain 5.14.0-284.11.1.el9_2.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 12 10:45:03 EDT
  2023 x86_64 x86_64 x86_64 GNU/Linux

------------------------------------------------------------
2. w
   07:59:44 up 1 min,  1 user,  load average: 0.48, 0.20, 0.08
  USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1      07:59   24.00s  0.92s  0.00s /bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh
  rate --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-LogProc=1 --define DL-BIOS-adddcD=1 --define
  DL-VERS=5.1 --output_format html,pdf,txt --tune base

------------------------------------------------------------
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) 4126034
  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) 4126034
  virtual memory              (kbytes, -v) unlimited
  file locks                        (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd rhgb cpu0_hotplug --switched-root --system --deserialize 31
 login -- root
 -bash
 /bin/bash ./DELL_rate.sh --tune base
 /bin/bash /home/DellFiles/bin/dell-run-main.sh rate --tune base
 /bin/bash /home/DellFiles/bin/dell-run-main.sh rate --tune base
 /bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh rate --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc
   --define DL-BIOS-LogProc=1 --define DL-BIOS-adddcD=1 --define DL-VERS=5.1 --output_format html,pdf,txt
   --tune base
 /bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh rate --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc
   --define DL-BIOS-LogProc=1 --define DL-BIOS-adddcD=1 --define DL-VERS=5.1 --output_format html,pdf,txt
   --tune base
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 -c
   ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=64 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak -o all --define DL-BIOS-SNC=2
   --iterations 2 --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-LogProc=1 --define
```

(Continued on next page)

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Platform Notes (Continued)

```
    DL-BIOS-adddcD=1 --define DL-VERS=5.1 --output_format html,pdf,txt --tune base intrate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 --configfile
   ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=64 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --define
   DL-BIOS-SNC=2 --iterations 2 --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-LogProc=1 --define
   DL-BIOS-adddcD=1 --define DL-VERS=5.1 --output_format html,pdf,txt --tune base --nopower --runmode rate
   --tune base --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 = /mnt/ramdisk/cpu2017-1.1.9-ic2023.2.3

    ------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Gold 6448Y
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 7
    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
  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
  Model name:                 Intel(R) Xeon(R) Gold 6448Y
  BIOS Model name:            Intel(R) Xeon(R) Gold 6448Y
  CPU family:                 6
  Model:                      143
  Thread(s) per core:         2
  Core(s) per socket:         32
  Socket(s):                  2
  Stepping:                   7
  CPU max MHz:                4100.0000
  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
```

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Platform Notes (Continued)

```
                        abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3 invpcid_single
                        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 hfi 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):         4
  NUMA node0 CPU(s):    0,4,8,12,16,20,24,28,32,36,40,44,48,50,54,58,64,68,72,76,80,84,88,92,96,10
                        0,104,108,112,114,118,122
  NUMA node1 CPU(s):    2,6,10,14,18,22,26,30,34,38,42,46,52,56,60,62,66,70,74,78,82,86,90,94,98,1
                        02,106,110,116,120,124,126
  NUMA node2 CPU(s):    1,5,9,13,17,21,25,29,33,37,41,47,49,53,57,61,65,69,73,77,81,85,89,93,97,10
                        1,105,111,113,117,121,125
  NUMA node3 CPU(s):    3,7,11,15,19,23,27,31,35,39,43,45,51,55,59,63,67,71,75,79,83,87,91,95,99,1
                        03,107,109,115,119,123,127
  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 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 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       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: 4 nodes (0-3)
  node 0 cpus:
  0,4,8,12,16,20,24,28,32,36,40,44,48,50,54,58,64,68,72,76,80,84,88,92,96,100,104,108,112,114,118,122
  node 0 size: 257454 MB
  node 0 free: 256454 MB
  node 1 cpus:
  2,6,10,14,18,22,26,30,34,38,42,46,52,56,60,62,66,70,74,78,82,86,90,94,98,102,106,110,116,120,124,126
  node 1 size: 258040 MB
  node 1 free: 257387 MB
  node 2 cpus:
  1,5,9,13,17,21,25,29,33,37,41,47,49,53,57,61,65,69,73,77,81,85,89,93,97,101,105,111,113,117,121,125
  node 2 size: 258040 MB
  node 2 free: 257417 MB
```

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Platform Notes (Continued)

```
   node 3 cpus:
   3,7,11,15,19,23,27,31,35,39,43,45,51,55,59,63,67,71,75,79,83,87,91,95,99,103,107,109,115,119,123,127
   node 3 size: 258035 MB
   node 3 free: 248972 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:       1056329364 kB


  -----------------------------------------------------------
10. who -r
   run-level 3 Apr 4 07:58


  -----------------------------------------------------------
11. Systemd service manager version: systemd 252 (252-13.el9_2)
   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 gdm
                    getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt
                    low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
                    nvmefc-boot-connections ostree-remount power-profiles-daemon qemu-guest-agent rhsmcertd
                    rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control
                    systemd-boot-update systemd-network-generator tuned udisks2 upower vgauthd vmtoolsd
   enabled-runtime  systemd-remount-fs
   disabled         arp-ethers 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 firewalld hwloc-dump-hwdata iprdump
                    iprinit iprupdate iscsid iscsiuio kpatch kvm_stat ledmon man-db-restart-cache-update
                    nftables nvmf-autoconnect ostree-readonly-sysroot-migration podman podman-auto-update
                    podman-clean-transient podman-kube@ podman-restart psacct ras-mc-ctl rasdaemon rdisc rhcd
                    rhsm rhsm-facts rpmdb-rebuild selinux-check-proper-disable serial-getty@
                    speech-dispatcherd sshd-keygen@ systemd-boot-check-no-failures systemd-pstore
                    systemd-sysext wpa_supplicant
   indirect         spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
                    systemd-sysupdate systemd-sysupdate-reboot


  -----------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=(hd0,gpt5)/vmlinuz-5.14.0-284.11.1.el9_2.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
   cpu0_hotplug


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

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Platform Notes (Continued)

```
 14. cpupower frequency-info
   analyzing CPU 0:
     current policy: frequency should be within 4.10 GHz and 4.10 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
   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 9.2 (Plow)
   redhat-release Red Hat Enterprise Linux release 9.2 (Plow)
   system-release Red Hat Enterprise Linux release 9.2 (Plow)

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

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PowerEdge R760 (Intel Xeon Gold 6448Y)

SPECrate®2017_int_base =   566

SPECrate®2017_int_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Apr-2024
Hardware Availability: Apr-2023
Software Availability: Dec-2023

Platform Notes (Continued)

```
 20. Disk information
 SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-ic2023.2.3
   Filesystem      Type   Size  Used Avail Use% Mounted on
   tmpfs           tmpfs  80G   4.1G   76G   6% /mnt/ramdisk


 ------------------------------------------------------------
 21. /sys/devices/virtual/dmi/id
     Vendor:        Dell Inc.
     Product:       PowerEdge R760
     Product Family: PowerEdge
     Serial:        SLR7602


 ------------------------------------------------------------
 22. dmidecode
   Additional information from dmidecode 3.3 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 002C0632002C MTC40F2046S1RC56BG1 64 GB 2 rank 5600, configured at 4800



 ------------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:      Dell Inc.
   BIOS Version:     1.9.12
   BIOS Date:        11/10/2023
   BIOS Revision:    1.9
```

Compiler Version Notes

```
==============================================================================
C      | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_r(base)
------------------------------------------------------------------------------
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) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_r(base)
------------------------------------------------------------------------------
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)
------------------------------------------------------------------------------
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.
------------------------------------------------------------------------------
```

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

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Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

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
```

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

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CPU2017 License: 6573		**Test Date:**	Apr-2024
Test Sponsor:	Dell Inc.	**Hardware Availability:**	Apr-2023
Tested by:	Dell Inc.	**Software Availability:**	Dec-2023

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/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.6.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/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.6.xml

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

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