SPEC CPU®2017 Integer Speed Result

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Lenovo Global Technology

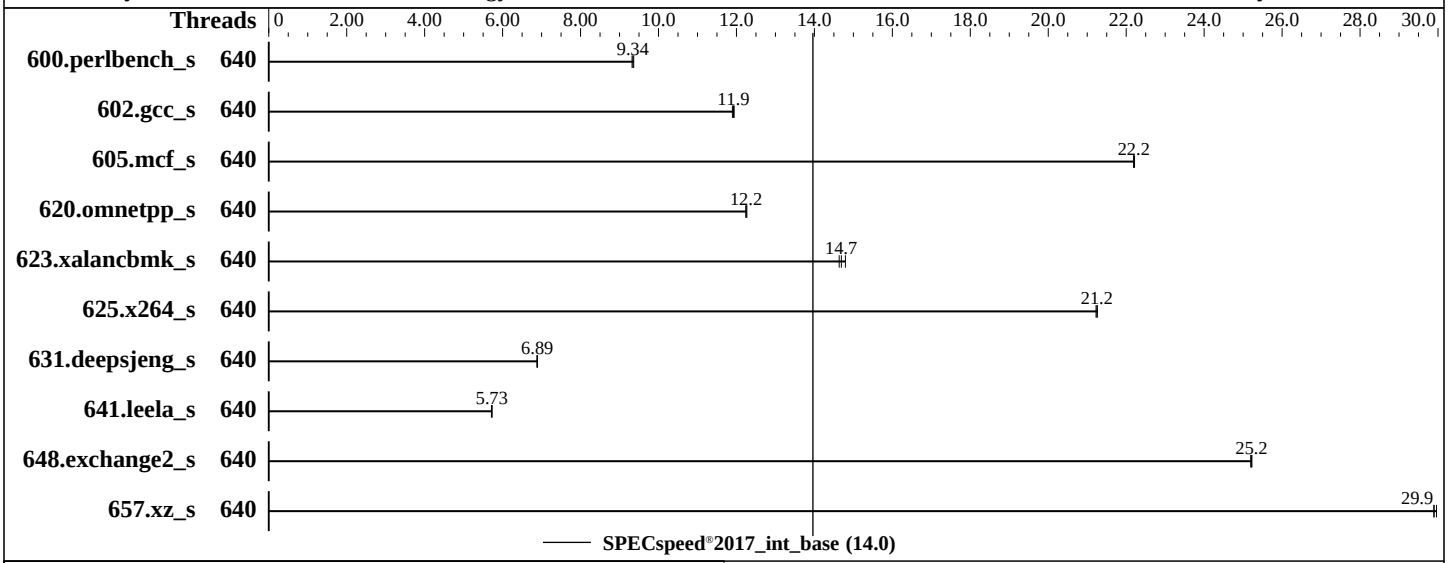
ThinkSystem SR950 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

SPECspeed®2017_int_base = 14.0

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Dec-2023
Hardware Availability: Oct-2023
Software Availability: Dec-2023



Hardware

CPU Name:	Intel Xeon Platinum 8460H
Max MHz:	3800
Nominal:	2200
Enabled:	320 cores, 8 chips, 2 threads/core
Orderable:	8 chips
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	2 MB I+D on chip per core
L3:	105 MB I+D on chip per chip
Other:	None
Memory:	4 TB (64 x 64 GB 2Rx4 PC5-4800B-R)
Storage:	1 x 480 GB SATA SSD
Other:	None

Software

OS:	Red Hat Enterprise Linux 9.2 (Plow) Kernel 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:	Yes
Firmware:	Lenovo BIOS Version EBE103M 1.10 released Oct-2023
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
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						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	640	190	9.36	190	9.32	**190**	**9.34**							
602.gcc_s	640	333	11.9	335	11.9	**334**	**11.9**							
605.mcf_s	640	213	22.2	213	22.2	**213**	**22.2**							
620.omnetpp_s	640	133	12.3	133	12.2	**133**	**12.2**							
623.xalancbmk_s	640	95.8	14.8	**96.5**	**14.7**	96.8	14.6							
625.x264_s	640	83.1	21.2	**83.0**	**21.2**	83.0	21.3							
631.deepsjeng_s	640	208	6.89	208	6.88	**208**	**6.89**							
641.leela_s	640	298	5.73	**298**	**5.73**	299	5.71							
648.exchange2_s	640	**117**	**25.2**	117	25.2	117	25.2							
657.xz_s	640	**207**	**29.9**	207	29.9	206	30.0							

SPECspeed®2017_int_base = 14.0

SPECspeed®2017_int_peak = Not Run

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

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/cpu2017-1.1.9-ic2023.2.3/lib/intel64:/home/cpu2017-1.1.9-ic2023.2.3/lib/ia32:/home/cpu2017-1.1.
     9-ic2023.2.3/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 Redhat Enterprise Linux 8.0
 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
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)
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.
 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 configuration:
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode
C-States set to Legacy
SNC set to SNC2

 Sysinfo program /home/cpu2017-1.1.9-ic2023.2.3/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Fri Dec 15 00:15:17 2023

 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. sysctl
 16. /sys/kernel/mm/transparent_hugepage
 17. /sys/kernel/mm/transparent_hugepage/khugepaged
 18. OS release
 19. Disk information
 20. /sys/devices/virtual/dmi/id
 21. dmidecode
 22. 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
    00:15:17 up 22:57,  1 user,  load average: 0.04, 1.34, 1.52
   USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1      Thu01   12.00s  0.89s  0.00s /bin/bash ./speccpu_rock.sh

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

(Continued on next page)

Platform Notes (Continued)

```
  pending signals                 (-i) 16511430
  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) 16511430
  virtual memory              (kbytes, -v) unlimited
  file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 31
 login -- root
 -bash
 /bin/bash ./speccpu_rock.sh
 /bin/bash ./speccpu_rock.sh
 runcpu --nobuild --action validate --define default-platform-flags -c
   ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=320 --tune base -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=320 --tune base --output_format all
   --define intspeedaffinity --define smt-on --define drop_caches --nopower --runmode speed --tune base
   --size refspeed intspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.087/templogs/preenv.intspeed.087.0.log --lognum 087.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-ic2023.2.3

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8460H
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b0004b1
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    cpu cores       : 40
    siblings        : 80
    8 physical ids (chips)
    640 processors (hardware threads)
    physical id 0: core ids 0-39
    physical id 1: core ids 0-39
    physical id 2: core ids 0-39
    physical id 3: core ids 0-39
    physical id 4: core ids 0-39
    physical id 5: core ids 0-39
    physical id 6: core ids 0-39
    physical id 7: core ids 0-39
    physical id 0: apicids 0-79
    physical id 1: apicids 128-207
    physical id 2: apicids 256-335
    physical id 3: apicids 384-463
    physical id 4: apicids 512-591
    physical id 5: apicids 640-719
    physical id 6: apicids 768-847
    physical id 7: apicids 896-975
```

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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):                          640
  On-line CPU(s) list:             0-639
  Vendor ID:                       GenuineIntel
  BIOS Vendor ID:                  Intel(R) Corporation
  Model name:                      Intel(R) Xeon(R) Platinum 8460H
  BIOS Model name:                 Intel(R) Xeon(R) Platinum 8460H
  CPU family:                      6
  Model:                           143
  Thread(s) per core:              2
  Core(s) per socket:              40
  Socket(s):                       8
  Stepping:                        8
  CPU max MHz:                     3800.0000
  CPU min MHz:                     800.0000
  BogoMIPS:                        4400.00
  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 vnmi 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 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:                       15 MiB (320 instances)
  L1i cache:                       10 MiB (320 instances)
  L2 cache:                        640 MiB (320 instances)
  L3 cache:                        840 MiB (8 instances)
  NUMA node(s):                    16
  NUMA node0 CPU(s):               0-19,320-339
  NUMA node1 CPU(s):               20-39,340-359
  NUMA node2 CPU(s):               40-59,360-379
  NUMA node3 CPU(s):               60-79,380-399
  NUMA node4 CPU(s):               80-99,400-419
  NUMA node5 CPU(s):               100-119,420-439
  NUMA node6 CPU(s):               120-139,440-459
  NUMA node7 CPU(s):               140-159,460-479
  NUMA node8 CPU(s):               160-179,480-499
  NUMA node9 CPU(s):               180-199,500-519
```

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Platform Notes (Continued)

```
  NUMA node10 CPU(s):              200-219,520-539
  NUMA node11 CPU(s):              220-239,540-559
  NUMA node12 CPU(s):              240-259,560-579
  NUMA node13 CPU(s):              260-279,580-599
  NUMA node14 CPU(s):              280-299,600-619
  NUMA node15 CPU(s):              300-319,620-639
  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      15M   12 Data            1     64        1             64
     L1i       32K      10M    8 Instruction     1     64        1             64
     L2         2M     640M   16 Unified         2   2048        1             64
     L3       105M     840M   15 Unified         3 114688        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 16 nodes (0-15)
  node 0 cpus: 0-19,320-339
  node 0 size: 257376 MB
  node 0 free: 256623 MB
  node 1 cpus: 20-39,340-359
  node 1 size: 258039 MB
  node 1 free: 257665 MB
  node 2 cpus: 40-59,360-379
  node 2 size: 258039 MB
  node 2 free: 257707 MB
  node 3 cpus: 60-79,380-399
  node 3 size: 258039 MB
  node 3 free: 256172 MB
  node 4 cpus: 80-99,400-419
  node 4 size: 258039 MB
  node 4 free: 257505 MB
  node 5 cpus: 100-119,420-439
  node 5 size: 258039 MB
  node 5 free: 257719 MB
  node 6 cpus: 120-139,440-459
  node 6 size: 258039 MB
  node 6 free: 257569 MB
  node 7 cpus: 140-159,460-479
  node 7 size: 258039 MB
  node 7 free: 257648 MB
  node 8 cpus: 160-179,480-499
  node 8 size: 258039 MB
  node 8 free: 257669 MB
  node 9 cpus: 180-199,500-519
  node 9 size: 258039 MB
  node 9 free: 257668 MB
```

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Platform Notes (Continued)

```
   node 10 cpus: 200-219,520-539
   node 10 size: 258039 MB
   node 10 free: 256734 MB
   node 11 cpus: 220-239,540-559
   node 11 size: 257999 MB
   node 11 free: 256350 MB
   node 12 cpus: 240-259,560-579
   node 12 size: 258039 MB
   node 12 free: 257691 MB
   node 13 cpus: 260-279,580-599
   node 13 size: 258039 MB
   node 13 free: 257056 MB
   node 14 cpus: 280-299,600-619
   node 14 size: 258039 MB
   node 14 free: 256051 MB
   node 15 cpus: 300-319,620-639
   node 15 size: 258013 MB
   node 15 free: 256177 MB
   node distances:
   node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
     0:  10  12  21  21  21  21  31  31  31  31  21  21  21  21  31  31
     1:  12  10  21  21  21  21  31  31  31  31  21  21  21  21  31  31
     2:  21  21  10  12  31  31  21  21  21  21  31  31  31  31  21  21
     3:  21  21  12  10  31  31  21  21  21  21  31  31  31  31  21  21
     4:  21  21  31  31  10  12  21  21  21  21  31  31  31  31  21  21
     5:  21  21  31  31  12  10  21  21  21  21  31  31  31  31  21  21
     6:  31  31  21  21  21  21  10  12  31  31  21  21  21  21  31  31
     7:  31  31  21  21  21  21  12  10  31  31  21  21  21  21  31  31
     8:  31  31  21  21  21  21  31  31  10  12  21  21  21  21  31  31
     9:  31  31  21  21  21  21  31  31  12  10  21  21  21  21  31  31
    10:  21  21  31  31  31  31  21  21  21  21  10  12  31  31  21  21
    11:  21  21  31  31  31  31  21  21  21  21  12  10  31  31  21  21
    12:  21  21  31  31  31  31  21  21  21  21  31  31  10  12  21  21
    13:  21  21  31  31  31  31  21  21  21  21  31  31  12  10  21  21
    14:  31  31  21  21  21  21  31  31  31  31  21  21  21  21  10  12
    15:  31  31  21  21  21  21  31  31  31  31  21  21  21  21  12  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       4226967172 kB

------------------------------------------------------------
10. who -r
  run-level 3 Dec 14 01:18

------------------------------------------------------------
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          NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
                   dbus-broker firewalld getty@ insights-client-boot irqbalance kdump low-memory-monitor
                   mdmonitor microcode nis-domainname rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark
                   sshd sssd systemd-boot-update systemd-network-generator udisks2 upower
  enabled-runtime  systemd-remount-fs
  disabled         canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot
                   chrony-wait console-getty cpupower debug-shell dnf-system-upgrade kvm_stat
```

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Platform Notes (Continued)

```
                  man-db-restart-cache-update nftables pesign rdisc rhcd rhsm rhsm-facts rpmdb-rebuild
                  selinux-check-proper-disable serial-getty@ sshd-keygen@ systemd-boot-check-no-failures
                  systemd-pstore systemd-sysext
  indirect        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=(hd1,gpt2)/boot/vmlinuz-5.14.0-284.11.1.el9_2.x86_64
  root=UUID=116409c2-57ac-4857-ace6-bb315b1769ff
  ro
  resume=UUID=075e4fda-52f2-4584-8323-c813820fb1bd

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 3.80 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. 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                    20
  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                     60
  vm.watermark_boost_factor      15000
  vm.watermark_scale_factor         10
  vm.zone_reclaim_mode               0

------------------------------------------------------------
16. /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

------------------------------------------------------------
17. /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
```

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Platform Notes (Continued)

```
  scan_sleep_millisecs    10000

------------------------------------------------------------
18. 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)

------------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2023.2.3
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sdc4      xfs   371G  236G  136G  64% /home

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         Lenovo
    Product:        ThinkSystem SR950 V3
    Product Family: ThinkSystem
    Serial:         BLRSDV044

------------------------------------------------------------
21. 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:
    41x SK Hynix HMCG94AEBRA102N 64 GB 2 rank 4800
    14x SK Hynix HMCG94AEBRA109N 64 GB 2 rank 4800
    9x SK Hynix HMCG94AEBRA123N 64 GB 2 rank 4800


------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       Lenovo
   BIOS Version:      EBE103M-1.10
   BIOS Date:         10/10/2023
   BIOS Revision:     1.10
   Firmware Revision: 1.10
```

Compiler Version Notes

```
==============================================================================================================
C       | 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base) 657.xz_s(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++     | 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base) 641.leela_s(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.
--------------------------------------------------------------------------------------------------------------
```

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Compiler Version Notes (Continued)

```
==============================================================================================================
Fortran | 648.exchange2_s(base)
--------------------------------------------------------------------------------------------------------------
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

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

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Base Optimization Flags (Continued)

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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Eaglestream-AA.html
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Eaglestream-AA.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml

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

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