



# SPEC CPU®2017 Integer Speed Result

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## Lenovo Global Technology

SPECspeed®2017\_int\_base = 12.8

ThinkSystem SR950 V3  
(2.00 GHz, Intel Xeon Platinum 8450H)

SPECspeed®2017\_int\_peak = Not Run

CPU2017 License: 9017

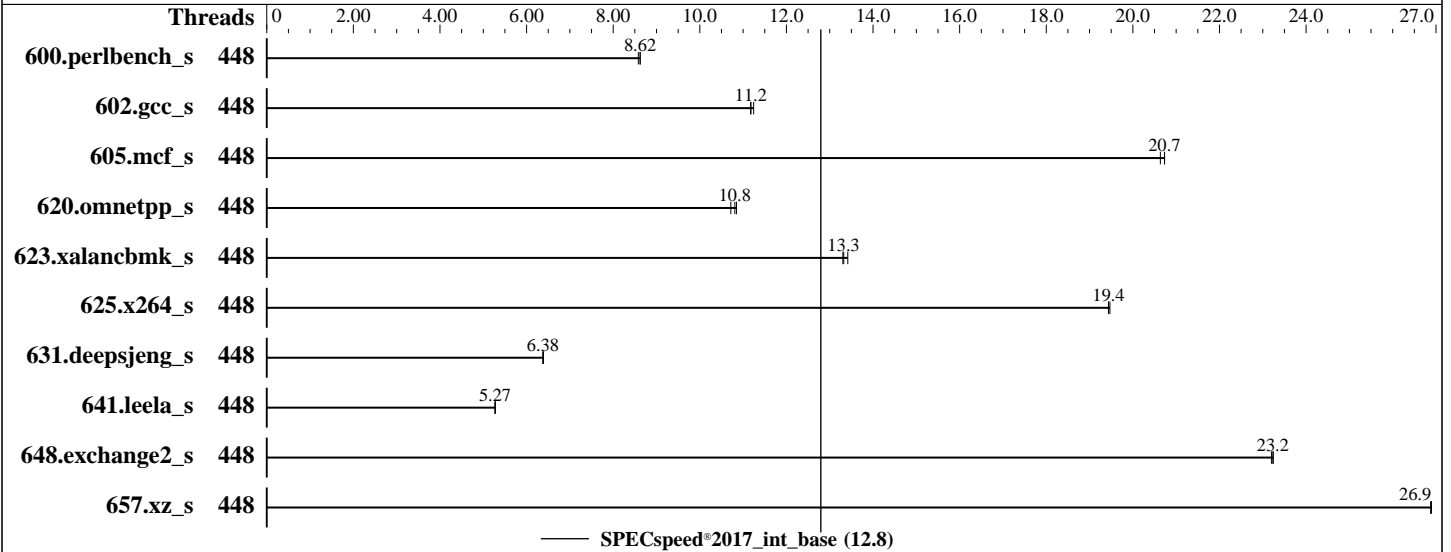
Test Date: Dec-2023

Test Sponsor: Lenovo Global Technology

Hardware Availability: Oct-2023

Tested by: Lenovo Global Technology

Software Availability: Dec-2023



### Hardware

CPU Name: Intel Xeon Platinum 8450H  
 Max MHz: 3500  
 Nominal: 2000  
 Enabled: 224 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: 75 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 EBE1040-1.10 released Dec-2023;  
 tested with pre-release version EBE103M-1.10  
 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	448	<b>206</b>	<b>8.62</b>	207	8.58	206	8.62							
602.gcc_s	448	<b>356</b>	<b>11.2</b>	356	11.2	354	11.2							
605.mcf_s	448	229	20.6	<b>228</b>	<b>20.7</b>	228	20.7							
620.omnetpp_s	448	150	10.8	152	10.7	<b>151</b>	<b>10.8</b>							
623.xalancbmk_s	448	<b>106</b>	<b>13.3</b>	107	13.3	106	13.4							
625.x264_s	448	90.8	19.4	<b>90.7</b>	<b>19.4</b>	90.6	19.5							
631.deepsjeng_s	448	224	6.39	225	6.38	<b>225</b>	<b>6.38</b>							
641.leela_s	448	323	5.28	324	5.27	<b>324</b>	<b>5.27</b>							
648.exchange2_s	448	<b>127</b>	<b>23.2</b>	126	23.2	127	23.2							
657.xz_s	448	230	26.9	230	26.9	<b>230</b>	<b>26.9</b>							

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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/intel164:/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



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## 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 Wed Dec 27 20:34:31 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.e19\_2)
12. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. 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 5.14.0-284.11.1.e19_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
20:34:31 up 1:54, 1 user, load average: 0.32, 2.27, 2.00
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
root     tty1      18:40   1:52m  0.94s  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
```

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### Platform Notes (Continued)

```

file size                (blocks, -f) unlimited
pending signals          (-i) 16512114
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) 16512114
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=224 --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=224 --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/CPU2017.125/temlogs/preenv.intspeed.125.0.log --lognum 125.0 --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 8450H
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     : 28
siblings      : 56
8 physical ids (chips)
448 processors (hardware threads)
physical id 0: core ids 0-27
physical id 1: core ids 0-27
physical id 2: core ids 0-27
physical id 3: core ids 0-27
physical id 4: core ids 0-27
physical id 5: core ids 0-27
physical id 6: core ids 0-27
physical id 7: core ids 0-27
physical id 0: apicids 0-55
physical id 1: apicids 128-183
physical id 2: apicids 256-311
physical id 3: apicids 384-439
physical id 4: apicids 512-567
physical id 5: apicids 640-695
physical id 6: apicids 768-823

```

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### Platform Notes (Continued)

physical id 7: apicids 896-951

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):                448
On-line CPU(s) list:  0-447
Vendor ID:            GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:           Intel(R) Xeon(R) Platinum 8450H
BIOS Model name:      Intel(R) Xeon(R) Platinum 8450H
CPU family:           6
Model:                143
Thread(s) per core:   2
Core(s) per socket:   28
Socket(s):            8
Stepping:             8
CPU max MHz:          3500.0000
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 vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmlil 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_vpoperndq 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_lld arch_capabilities

Virtualization:       VT-x
L1d cache:           10.5 MiB (224 instances)
L1i cache:           7 MiB (224 instances)
L2 cache:            448 MiB (224 instances)
L3 cache:            600 MiB (8 instances)
NUMA node(s):        16
NUMA node0 CPU(s):   0-13,224-237
NUMA node1 CPU(s):   14-27,238-251
NUMA node2 CPU(s):   28-41,252-265
NUMA node3 CPU(s):   42-55,266-279
NUMA node4 CPU(s):   56-69,280-293
NUMA node5 CPU(s):   70-83,294-307
NUMA node6 CPU(s):   84-97,308-321
NUMA node7 CPU(s):   98-111,322-335
NUMA node8 CPU(s):   112-125,336-349

```

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### Platform Notes (Continued)

```

NUMA node9 CPU(s):          126-139,350-363
NUMA node10 CPU(s):         140-153,364-377
NUMA node11 CPU(s):         154-167,378-391
NUMA node12 CPU(s):         168-181,392-405
NUMA node13 CPU(s):         182-195,406-419
NUMA node14 CPU(s):         196-209,420-433
NUMA node15 CPU(s):         210-223,434-447
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, PBRSE-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	10.5M	12	Data	1	64	1	64
L1i	32K	7M	8	Instruction	1	64	1	64
L2	2M	448M	16	Unified	2	2048	1	64
L3	75M	600M	15	Unified	3	81920	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: 0-13,224-237
node 0 size: 257506 MB
node 0 free: 256818 MB
node 1 cpus: 14-27,238-251
node 1 size: 258041 MB
node 1 free: 257563 MB
node 2 cpus: 28-41,252-265
node 2 size: 258041 MB
node 2 free: 257567 MB
node 3 cpus: 42-55,266-279
node 3 size: 258041 MB
node 3 free: 257580 MB
node 4 cpus: 56-69,280-293
node 4 size: 258041 MB
node 4 free: 257485 MB
node 5 cpus: 70-83,294-307
node 5 size: 258041 MB
node 5 free: 257578 MB
node 6 cpus: 84-97,308-321
node 6 size: 258041 MB
node 6 free: 257453 MB
node 7 cpus: 98-111,322-335
node 7 size: 258041 MB
node 7 free: 257558 MB
node 8 cpus: 112-125,336-349
node 8 size: 258041 MB
node 8 free: 257578 MB
node 9 cpus: 126-139,350-363
node 9 size: 258041 MB

```

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### Platform Notes (Continued)

```

node 9 free: 257577 MB
node 10 cpus: 140-153,364-377
node 10 size: 258041 MB
node 10 free: 257609 MB
node 11 cpus: 154-167,378-391
node 11 size: 258041 MB
node 11 free: 257631 MB
node 12 cpus: 168-181,392-405
node 12 size: 258041 MB
node 12 free: 256716 MB
node 13 cpus: 182-195,406-419
node 13 size: 258002 MB
node 13 free: 257026 MB
node 14 cpus: 196-209,420-433
node 14 size: 258041 MB
node 14 free: 255351 MB
node 15 cpus: 210-223,434-447
node 15 size: 258017 MB
node 15 free: 257627 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:      4227142116 kB

```

```

10. who -r
    run-level 3 Dec 27 18:40

```

```

11. Systemd service manager version: systemd 252 (252-13.el9_2)
    Default Target Status
    multi-user      degraded

```

```

12. Failed units, from systemctl list-units --state=failed
    UNIT                                LOAD ACTIVE SUB    DESCRIPTION
* dnf-makecache.service loaded failed failed dnf makecache

```

```

13. Services, from systemctl list-unit-files
    STATE UNIT FILES
enabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond

```

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### Platform Notes (Continued)

```

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
                    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-sysexit
indirect             sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo systemd-sysupdate
                    systemd-sysupdate-reboot

```

```

-----
14. 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

```

```

-----
15. 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

```

```

-----
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                 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

```

```

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

```

```

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

```

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### Platform Notes (Continued)

```
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)

-----  
20. 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

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

-----  
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:  
41x SK Hynix HMC94AEBRA102N 64 GB 2 rank 4800  
14x SK Hynix HMC94AEBRA109N 64 GB 2 rank 4800  
9x SK Hynix HMC94AEBRA123N 64 GB 2 rank 4800

-----  
23. 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.  
-----  
=====

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# SPEC CPU®2017 Integer Speed Result

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**Lenovo Global Technology**

SPECspeed®2017\_int\_base = 12.8

ThinkSystem SR950 V3  
(2.00 GHz, Intel Xeon Platinum 8450H)

SPECspeed®2017\_int\_peak = Not Run

**CPU2017 License:** 9017

**Test Date:** Dec-2023

**Test Sponsor:** Lenovo Global Technology

**Hardware Availability:** Oct-2023

**Tested by:** Lenovo Global Technology

**Software Availability:** Dec-2023

## Compiler Version Notes (Continued)

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.  
-----

=====  
Fortran | 648.exchange2\_s(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.  
-----

## 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 -xsaphirerapids -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

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# SPEC CPU®2017 Integer Speed Result

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## Lenovo Global Technology

SPECspeed®2017\_int\_base = 12.8

ThinkSystem SR950 V3  
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SPECspeed®2017\_int\_peak = Not Run

**CPU2017 License:** 9017

**Test Date:** Dec-2023

**Test Sponsor:** Lenovo Global Technology

**Hardware Availability:** Oct-2023

**Tested by:** Lenovo Global Technology

**Software Availability:** Dec-2023

## Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

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](mailto:info@spec.org).

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