SPEC CPU®2017 Integer Rate Result

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Lenovo Global Technology

ThinkSystem SR850 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

$SPECrate^{®}2017\_int\_base = 1430$

$SPECrate^{®}2017_int_peak = $ Not Run

CPU2017 License: 9017	**Test Date:** Aug-2023
Test Sponsor: Lenovo Global Technology	**Hardware Availability:** Jun-2023
Tested by: Lenovo Global Technology	**Software Availability:** Dec-2022

Copies

Benchmark	Copies	Value
500.perlbench_r	320	1030
502.gcc_r	320	1130
505.mcf_r	320	2130
520.omnetpp_r	320	897
523.xalancbmk_r	320	2660
525.x264_r	320	2800
531.deepsjeng_r	320	1030
541.leela_r	320	981
548.exchange2_r	320	3090
557.xz_r	320	679

—— **SPECrate®2017_int_base (1430)**

Hardware

CPU Name: Intel Xeon Platinum 8460H
 Max MHz: 3800
 Nominal: 2200
Enabled: 160 cores, 4 chips, 2 threads/core
Orderable: 2,4 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: 2 TB (32 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 960 GB M.2 NVME SSD
Other: None

Software

OS: Red Hat Enterprise Linux 9.1 (Plow) (x86_64)
 Kernel 5.14.0-162.6.1.el9_1.x86_64
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++
 Compiler for Linux;
 Fortran: Version 2023.0 of Intel Fortran Compiler
 for Linux;
Parallel: No
Firmware: Lenovo BIOS Version RSE105E 1.10 released May-2023
File System: xfs
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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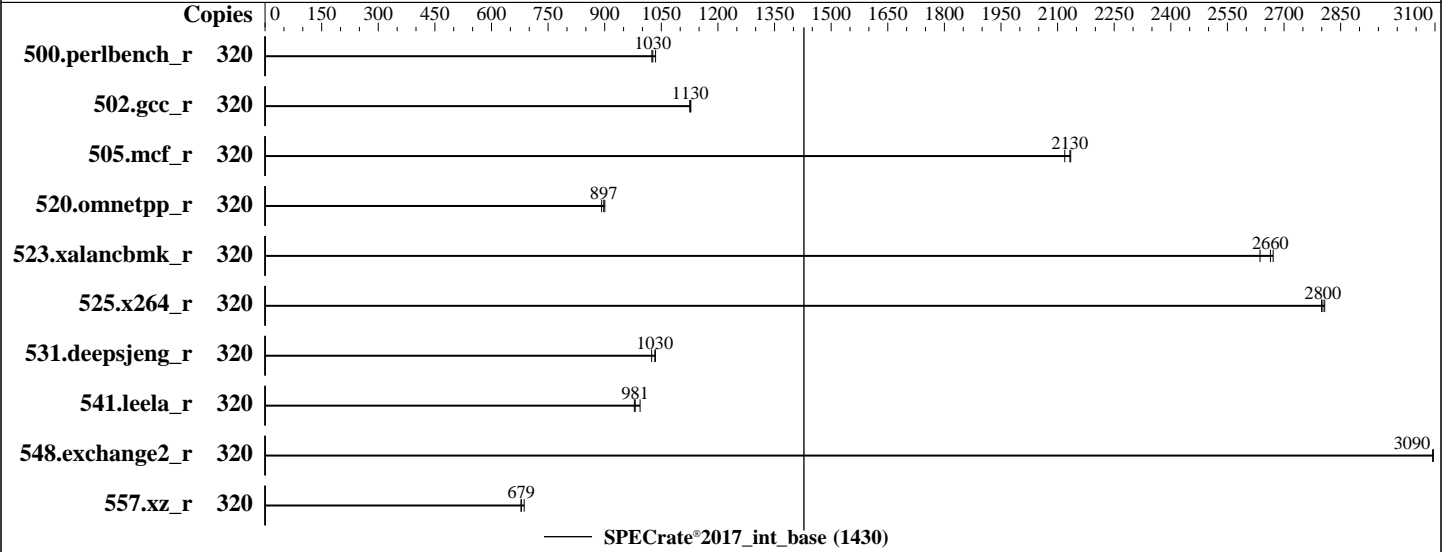
SPECrate®2017_int_peak = Not Run

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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	320	492	1030	497	1020	**496**	**1030**							
502.gcc_r	320	402	1130	403	1130	**402**	**1130**							
505.mcf_r	320	242	2130	244	2120	**242**	**2130**							
520.omnetpp_r	320	**468**	**897**	471	892	466	900							
523.xalancbmk_r	320	**127**	**2660**	127	2670	128	2640							
525.x264_r	320	200	2810	**200**	**2800**	200	2800							
531.deepsjeng_r	320	355	1030	**355**	**1030**	358	1020							
541.leela_r	320	533	994	**540**	**981**	542	978							
548.exchange2_r	320	271	3100	**271**	**3090**	271	3090							
557.xz_r	320	503	687	510	678	**509**	**679**							
SPECrate®2017_int_base =	**1430**													
SPECrate®2017_int_peak =	**Not Run**													

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

Compiler Notes

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

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

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

Submit Notes

```
 The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

Operating System Notes

```
 Stack size set to unlimited using "ulimit -s unlimited"
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
     "/home/cpu2017-1.1.9-ic2023.0/lib/intel64:/home/cpu2017-1.1.9-ic2023.0/lib/ia32:/home/cpu2017-1.1.9-ic
     2023.0/je5.0.1-32"
MALLOC_CONF = "retain:true"
```

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General Notes

```
 Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
 memory using Red Hat Enterprise Linux 8.4
 Transparent Huge Pages enabled by default
 Prior to runcpu invocation
 Filesystem page cache synced and cleared with:
 sync; echo 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)
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.
```

Platform Notes

```
BIOS configuration:
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode
C-States set to Legacy
DCU Streamer Prefetcher set to Disabled
SNC set to SNC4
UPI Link Disable set to Disabled 1 Link
LLC Prefetch set to Disabled

 Sysinfo program /home/cpu2017-1.1.9-ic2023.0/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Thu Aug 31 13:56:01 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 250 (250-12.el9_1)
 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
 ----------------------------------------------------------
```

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Platform Notes (Continued)

```
--------------------------------------------------------------
1. uname -a
  Linux localhost.localdomain 5.14.0-162.6.1.el9_1.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Sep 30 07:36:03 EDT 2022
  x86_64 x86_64 x86_64 GNU/Linux

--------------------------------------------------------------
2. w
   13:56:01 up  2:43,  1 user,  load average: 0.17, 0.04, 0.42
  USER     TTY          LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1         11:12   13.00s  0.96s  0.01s -bash

--------------------------------------------------------------
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) 8255456
  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) 8255456
  virtual memory              (kbytes, -v) unlimited
  file locks                  (-x) unlimited

--------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 30
 login -- root
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=320 -c
   ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=160 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base -o all intrate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=320 --configfile
   ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=160 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
   rate --tune base --size refrate intrate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.134/templogs/preenv.intrate.134.0.log --lognum 134.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2017-1.1.9-ic2023.0

--------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8460H
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b0001b0
```

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Platform Notes (Continued)

```
      bugs              : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
      cpu cores         : 40
      siblings          : 80
      4 physical ids (chips)
      320 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 0: apicids 0-79
      physical id 1: apicids 128-207
      physical id 2: apicids 256-335
      physical id 3: apicids 384-463
   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):                 320
     On-line CPU(s) list:    0-319
     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):              4
     Stepping:               8
     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 amx_bf16 avx512_fp16 amx_tile amx_int8 flush_l1d
                             arch_capabilities
     Virtualization:         VT-x
     L1d cache:              7.5 MiB (160 instances)
     L1i cache:              5 MiB (160 instances)
     L2 cache:               320 MiB (160 instances)
     L3 cache:               420 MiB (4 instances)
```

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Platform Notes (Continued)

```
  NUMA node(s):                16
  NUMA node0 CPU(s):           0-9,160-169
  NUMA node1 CPU(s):           10-19,170-179
  NUMA node2 CPU(s):           20-29,180-189
  NUMA node3 CPU(s):           30-39,190-199
  NUMA node4 CPU(s):           40-49,200-209
  NUMA node5 CPU(s):           50-59,210-219
  NUMA node6 CPU(s):           60-69,220-229
  NUMA node7 CPU(s):           70-79,230-239
  NUMA node8 CPU(s):           80-89,240-249
  NUMA node9 CPU(s):           90-99,250-259
  NUMA node10 CPU(s):          100-109,260-269
  NUMA node11 CPU(s):          110-119,270-279
  NUMA node12 CPU(s):          120-129,280-289
  NUMA node13 CPU(s):          130-139,290-299
  NUMA node14 CPU(s):          140-149,300-309
  NUMA node15 CPU(s):          150-159,310-319
  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     7.5M   12 Data              1      64       1             64
      L1i      32K       5M    8 Instruction       1      64       1             64
      L2        2M     320M   16 Unified           2    2048       1             64
      L3      105M     420M   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: 0-9,160-169
    node 0 size: 128680 MB
    node 0 free: 127584 MB
    node 1 cpus: 10-19,170-179
    node 1 size: 129019 MB
    node 1 free: 128151 MB
    node 2 cpus: 20-29,180-189
    node 2 size: 129019 MB
    node 2 free: 128167 MB
    node 3 cpus: 30-39,190-199
    node 3 size: 129019 MB
    node 3 free: 128144 MB
    node 4 cpus: 40-49,200-209
    node 4 size: 129019 MB
    node 4 free: 128169 MB
    node 5 cpus: 50-59,210-219
    node 5 size: 129019 MB
    node 5 free: 128160 MB
    node 6 cpus: 60-69,220-229
```

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Platform Notes (Continued)

```
  node 6 size: 129019 MB
  node 6 free: 128165 MB
  node 7 cpus: 70-79,230-239
  node 7 size: 129019 MB
  node 7 free: 128167 MB
  node 8 cpus: 80-89,240-249
  node 8 size: 128981 MB
  node 8 free: 128141 MB
  node 9 cpus: 90-99,250-259
  node 9 size: 129019 MB
  node 9 free: 128169 MB
  node 10 cpus: 100-109,260-269
  node 10 size: 129019 MB
  node 10 free: 128175 MB
  node 11 cpus: 110-119,270-279
  node 11 size: 129019 MB
  node 11 free: 128167 MB
  node 12 cpus: 120-129,280-289
  node 12 size: 129019 MB
  node 12 free: 128167 MB
  node 13 cpus: 130-139,290-299
  node 13 size: 129019 MB
  node 13 free: 128164 MB
  node 14 cpus: 140-149,300-309
  node 14 size: 129019 MB
  node 14 free: 128053 MB
  node 15 cpus: 150-159,310-319
  node 15 size: 128988 MB
  node 15 free: 128149 MB
  node distances:
  node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
    0:  10  12  12  12  21  21  21  21  31  31  31  31  21  21  21  21
    1:  12  10  12  12  21  21  21  21  31  31  31  31  21  21  21  21
    2:  12  12  10  12  21  21  21  21  31  31  31  31  21  21  21  21
    3:  12  12  12  10  21  21  21  21  31  31  31  31  21  21  21  21
    4:  21  21  21  21  10  12  12  12  21  21  21  21  31  31  31  31
    5:  21  21  21  21  12  10  12  12  21  21  21  21  31  31  31  31
    6:  21  21  21  21  12  12  10  12  21  21  21  21  31  31  31  31
    7:  21  21  21  21  12  12  12  10  21  21  21  21  31  31  31  31
    8:  31  31  31  31  21  21  21  21  10  12  12  12  21  21  21  21
    9:  31  31  31  31  21  21  21  21  12  10  12  12  21  21  21  21
   10:  31  31  31  31  21  21  21  21  12  12  10  12  21  21  21  21
   11:  31  31  31  31  21  21  21  21  12  12  12  10  21  21  21  21
   12:  21  21  21  21  31  31  31  31  21  21  21  21  10  12  12  12
   13:  21  21  21  21  31  31  31  31  21  21  21  21  12  10  12  12
   14:  21  21  21  21  31  31  31  31  21  21  21  21  12  12  10  12
   15:  21  21  21  21  31  31  31  31  21  21  21  21  12  12  12  10

  ------------------------------------------------------------
  9. /proc/meminfo
     MemTotal:       2113437104 kB


  ------------------------------------------------------------
  10. who -r
    run-level 3 Aug 31 11:12


  ------------------------------------------------------------
  11. Systemd service manager version: systemd 250 (250-12.el9_1)
     Default Target  Status
     multi-user      degraded
```

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Platform Notes (Continued)

```
   ----------------------------------------------------------
   12. Failed units, from systemctl list-units --state=failed
      UNIT                           LOAD   ACTIVE SUB    DESCRIPTION
    * NetworkManager-wait-online.service loaded failed failed Network Manager Wait Online
    * systemd-sysctl.service          loaded failed failed Apply Kernel Variables


   ----------------------------------------------------------
   13. Services, from systemctl list-unit-files
      STATE            UNIT FILES
      enabled          NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd crond
                       dbus-broker getty@ irqbalance kdump low-memory-monitor mdmonitor microcode nis-domainname
                       rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark sshd sssd
                       systemd-network-generator udisks2 upower
      enabled-runtime  systemd-remount-fs
      disabled         canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot
                       console-getty cpupower debug-shell firewalld kvm_stat man-db-restart-cache-update nftables
                       pesign rdisc rhsm rhsm-facts rpmdb-rebuild 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


   ----------------------------------------------------------
   14. Linux kernel boot-time arguments, from /proc/cmdline
     BOOT_IMAGE=(hd0,gpt3)/boot/vmlinuz-5.14.0-162.6.1.el9_1.x86_64
     root=UUID=43a7f1b1-66b0-456a-8c3f-451305a00281
     ro
     resume=UUID=58de1c40-542f-453b-bb6a-6bbd3510660a


   ----------------------------------------------------------
   15. cpupower frequency-info
     analyzing CPU 0:
       Unable to determine current policy
       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
```

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Platform Notes (Continued)

```
   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 9.1 (Plow)
   redhat-release Red Hat Enterprise Linux release 9.1 (Plow)
   system-release Red Hat Enterprise Linux release 9.1 (Plow)


   ------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2023.0
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/nvme0n1p4 xfs   819G   16G  804G   2% /home


   ------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
   Vendor:         Lenovo
   Product:        ThinkSystem SR850 V3
   Product Family: ThinkSystem
   Serial:         None


   ------------------------------------------------------------
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:
     21x SK Hynix HMCG94AEBRA102N 64 GB 2 rank 4800
     4x SK Hynix HMCG94AEBRA109N 64 GB 2 rank 4800
     7x SK Hynix HMCG94AEBRA123N 64 GB 2 rank 4800


   ------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:      Lenovo
   BIOS Version:     RSE105E-1.10
   BIOS Date:        05/12/2023
   BIOS Revision:    1.10
   Firmware Revision: 1.10
```

SPEC CPU®2017 Integer Rate Result

Lenovo Global Technology

ThinkSystem SR850 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

SPECrate®2017_int_base = 1430

SPECrate®2017_int_peak = Not Run

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

Test Date: Aug-2023
Hardware Availability: Jun-2023
Software Availability: Dec-2022

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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------


==================================================================================================
Fortran | 548.exchange2_r(base)
--------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
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`

Lenovo Global Technology

ThinkSystem SR850 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

SPECrate®2017_int_base =   1430

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CPU2017 License: 9017	**Test Date:** Aug-2023
Test Sponsor: Lenovo Global Technology	**Hardware Availability:** Jun-2023
Tested by: Lenovo Global Technology	**Software Availability:** Dec-2022

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/usr/local/intel/compiler/2023.0.0/linux/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/usr/local/intel/compiler/2023.0.0/linux/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/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

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-X.html
http://www.spec.org/cpu2017/flags/Intel-ic2023-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-X.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml

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

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