SPEC CPU®2026 Floating Point Rate Result

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Lenovo Global Technology

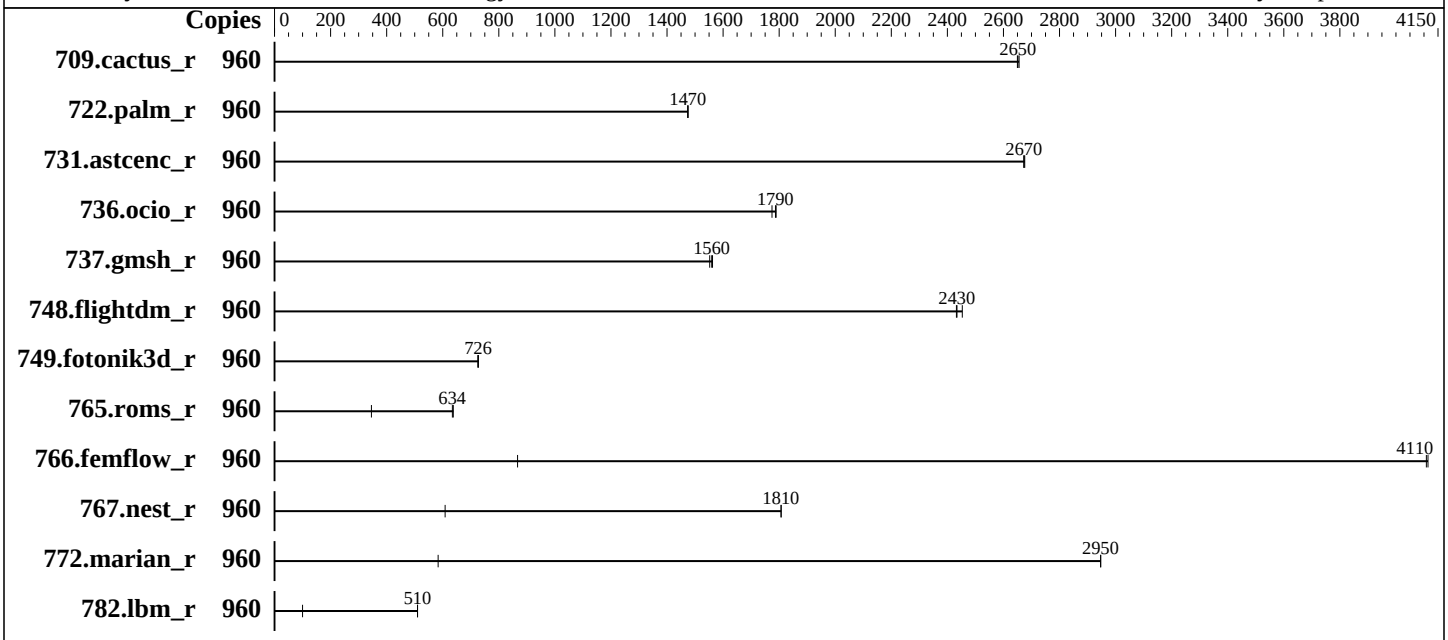
ThinkSystem SR950 V3
(1.90 GHz,Intel Xeon Platinum 8490H)

SPECrate®2026_fp_base = 1630

SPECrate®2026_fp_peak = Not Run

CPU2026 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Jun-2026
Hardware Availability: Oct-2023
Software Availability: Apr-2026



Hardware

CPU Name:	Intel Xeon Platinum 8490H
Max MHz:	3500
Nominal:	1900
Enabled:	480 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:	112.5 MB I+D on chip per chip
Other:	None
Memory:	4 TB (64 x 64 GB 2Rx4 PC5-4800B-R)
Storage:	1 x 960 GB M.2 NVME SSD
Cooling:	Air
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP7 Kernel 6.4.0-150700.51-default
Compiler:	C/C++: Version 2026.0 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2026.0 of Intel Fortran Compiler for Linux
Compiler Category:	Vendor
Firmware:	Lenovo BIOS Version EBE123G 7.50 released May-2026
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other:	tcmalloc memory allocator v2.18.1
Power Management:	BIOS 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
709.cactus_r	960	**311**	**2650**	311	2650	310	2660							
722.palm_r	960	859	1470	**859**	**1470**	860	1470							
731.astcenc_r	960	**302**	**2670**	302	2670	301	2680							
736.ocio_r	960	469	1790	473	1770	**470**	**1790**							
737.gmsh_r	960	284	1550	**283**	**1560**	282	1560							
748.flightdm_r	960	**282**	**2430**	280	2450	283	2430							
749.fotonik3d_r	960	1529	726	**1528**	**726**	1526	727							
765.roms_r	960	2371	638	**2384**	**634**	4375	346							
766.femflow_r	960	**343**	**4110**	342	4110	1625	867							
767.nest_r	960	**421**	**1810**	421	1810	1251	608							
772.marian_r	960	514	2950	**514**	**2950**	2598	584							
782.lbm_r	960	**1079**	**510**	1078	510	5503	100							

SPECrate®2026_fp_base = 1630

SPECrate®2026_fp_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 = "/home/cpu2026-1.0.1-ic2026.0-rate/lib"
```

General Notes

```
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using CentOS Stream 9.
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.:
```

(Continued on next page)

General Notes (Continued)

```
 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.
 tcmalloc, a fast, multithreaded malloc implementation
 built with the CentOS Stream 9, and the system compiler gcc 11.5.0
 sources available from github.com/gperftools/gperftools
```

Platform Notes

```
BIOS configuration:
Choose Operating Mode set to Maximum Performance
DCU Streamer Prefetcher set to Disabled
SNC set to SNC4
Misc set to Option4

 Sysinfo program /home/cpu2026-1.0.1-ic2026.0-rate/bin/sysinfo
 Rev: 779ab21020787073335a329f3a45e2cd
 running on localhost Wed Jun 24 04:03:40 2026

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

 ------------------------------------------------------------
 Table of contents
 ------------------------------------------------------------
  1. uname -srvm
  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 254 (254.24+suse.148.g83b9060b6e)
 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
```

(Continued on next page)

Platform Notes (Continued)

```
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -srvm
  Linux 6.4.0-150700.51-default #1 SMP PREEMPT_DYNAMIC Wed Apr 30 21:35:43 UTC 2025 (6930611) x86_64

------------------------------------------------------------
2. w
   04:03:40 up 4 min,  1 user,  load average: 1.66, 7.24, 4.07
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT

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

------------------------------------------------------------
4. ulimit -a
  core file size          (blocks, -c) unlimited
  data seg size           (kbytes, -d) unlimited
  scheduling priority             (-e) 0
  file size               (blocks, -f) unlimited
  pending signals                 (-i) 16510495
  max locked memory       (kbytes, -l) 8192
  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) 16510495
  virtual memory          (kbytes, -v) unlimited
  file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=43
 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
 sshd: root [priv]
 sshd: root@notty
 /bin/bash ./02.remote_local_SPECcpu_1.02.sh
 sh Run503-compliant-ic2026.0-lin-sapphirerapids-ratefp-base-smt-on-20260429_revB.sh
 runcpu --nobuild --iterations=3 --reportable --action validate --define default-platform-flags --copies 960
```

(Continued on next page)

Platform Notes (Continued)

```
   -c ic2026.0-sapphirerapids-cpu2026-1.0.1-rate-20260429_revB.cfg --define smt-on --define cores=480
   --define physicalfirst --define invoke_with_interleave --define drop_caches --tune base -o all fprate
runcpu --nobuild --iterations 3 --reportable --action validate --define default-platform-flags --copies 960
   --configfile ic2026.0-sapphirerapids-cpu2026-1.0.1-rate-20260429_revB.cfg --define smt-on --define
   cores=480 --define physicalfirst --define invoke_with_interleave --define drop_caches --tune base
   --output_format all --nopower --runmode rate --tune base --size refrate fprate --nopreenv --note-preenv
   --logfile $SPEC/tmp/CPU2026.009/templogs/preenv.fprate.009.0.log --lognum 009.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026-1.0.1-ic2026.0-rate

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8490H
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b000661
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
    cpu cores       : 60
    siblings        : 120
    8 physical ids (chips)
    960 processors (hardware threads)
    physical id 0: core ids 0-59
    physical id 1: core ids 0-59
    physical id 2: core ids 0-59
    physical id 3: core ids 0-59
    physical id 4: core ids 0-59
    physical id 5: core ids 0-59
    physical id 6: core ids 0-59
    physical id 7: core ids 0-59
    physical id 0: apicids 0-119
    physical id 1: apicids 128-247
    physical id 2: apicids 256-375
    physical id 3: apicids 384-503
    physical id 4: apicids 512-631
    physical id 5: apicids 640-759
    physical id 6: apicids 768-887
    physical id 7: apicids 896-1015
 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 2.40.4:
  Architecture:                         x86_64
```

(Continued on next page)

Platform Notes (Continued)

```
  CPU op-mode(s):                  32-bit, 64-bit
  Address sizes:                   46 bits physical, 57 bits virtual
  Byte Order:                      Little Endian
  CPU(s):                          960
  On-line CPU(s) list:             0-959
  Vendor ID:                       GenuineIntel
  Model name:                      Intel(R) Xeon(R) Platinum 8490H
  CPU family:                      6
  Model:                           143
  Thread(s) per core:              2
  Core(s) per socket:              60
  Socket(s):                       8
  Stepping:                        8
  CPU(s) scaling MHz:              23%
  CPU max MHz:                     3500.0000
  CPU min MHz:                     800.0000
  BogoMIPS:                        3800.00
  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 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 intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp
                                   ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad fsgsbase
                                   tsc_adjust bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f
                                   avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd
                                   sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc
                                   cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect
                                   user_shstk avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts vnmi
                                   avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq
                                   avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid
                                   bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear
                                   serialize tsxldtrk pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile
                                   amx_int8 flush_l1d arch_capabilities
  Virtualization:                  VT-x
  L1d cache:                       22.5 MiB (480 instances)
  L1i cache:                       15 MiB (480 instances)
  L2 cache:                        960 MiB (480 instances)
  L3 cache:                        900 MiB (8 instances)
  NUMA node(s):                    32
  NUMA node0 CPU(s):               0-14,480-494
  NUMA node1 CPU(s):               15-29,495-509
  NUMA node2 CPU(s):               30-44,510-524
  NUMA node3 CPU(s):               45-59,525-539
  NUMA node4 CPU(s):               60-74,540-554
```

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Platform Notes (Continued)

```
   NUMA node5 CPU(s):                    75-89,555-569
   NUMA node6 CPU(s):                    90-104,570-584
   NUMA node7 CPU(s):                    105-119,585-599
   NUMA node8 CPU(s):                    120-134,600-614
   NUMA node9 CPU(s):                    135-149,615-629
   NUMA node10 CPU(s):                   150-164,630-644
   NUMA node11 CPU(s):                   165-179,645-659
   NUMA node12 CPU(s):                   180-194,660-674
   NUMA node13 CPU(s):                   195-209,675-689
   NUMA node14 CPU(s):                   210-224,690-704
   NUMA node15 CPU(s):                   225-239,705-719
   NUMA node16 CPU(s):                   240-254,720-734
   NUMA node17 CPU(s):                   255-269,735-749
   NUMA node18 CPU(s):                   270-284,750-764
   NUMA node19 CPU(s):                   285-299,765-779
   NUMA node20 CPU(s):                   300-314,780-794
   NUMA node21 CPU(s):                   315-329,795-809
   NUMA node22 CPU(s):                   330-344,810-824
   NUMA node23 CPU(s):                   345-359,825-839
   NUMA node24 CPU(s):                   360-374,840-854
   NUMA node25 CPU(s):                   375-389,855-869
   NUMA node26 CPU(s):                   390-404,870-884
   NUMA node27 CPU(s):                   405-419,885-899
   NUMA node28 CPU(s):                   420-434,900-914
   NUMA node29 CPU(s):                   435-449,915-929
   NUMA node30 CPU(s):                   450-464,930-944
   NUMA node31 CPU(s):                   465-479,945-959
   Vulnerability Gather data sampling:   Not affected
   Vulnerability Itlb multihit:          Not affected
   Vulnerability L1tf:                   Not affected
   Vulnerability Mds:                    Not affected
   Vulnerability Meltdown:               Not affected
   Vulnerability Mmio stale data:        Not affected
   Vulnerability Reg file data sampling: Not affected
   Vulnerability Retbleed:               Not affected
   Vulnerability Spec rstack overflow:   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 / Automatic IBRS; IBPB conditional; RSB filling;
                                         PBRSB-eIBRS SW sequence; BHI BHI_DIS_S
   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    22.5M   12 Data            1     64        1             64
      L1i       32K      15M    8 Instruction     1     64        1             64
```

(Continued on next page)

Platform Notes (Continued)

```
      L2          2M      960M   16 Unified          2   2048        1              64
      L3      112.5M      900M   15 Unified          3 122880        1              64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 32 nodes (0-31)
  node 0 cpus: 0-14,480-494
  node 0 size: 128353 MB
  node 0 free: 127474 MB
  node 1 cpus: 15-29,495-509
  node 1 size: 129015 MB
  node 1 free: 128671 MB
  node 2 cpus: 30-44,510-524
  node 2 size: 129015 MB
  node 2 free: 128594 MB
  node 3 cpus: 45-59,525-539
  node 3 size: 129015 MB
  node 3 free: 128599 MB
  node 4 cpus: 60-74,540-554
  node 4 size: 129015 MB
  node 4 free: 128682 MB
  node 5 cpus: 75-89,555-569
  node 5 size: 129015 MB
  node 5 free: 128721 MB
  node 6 cpus: 90-104,570-584
  node 6 size: 129015 MB
  node 6 free: 128730 MB
  node 7 cpus: 105-119,585-599
  node 7 size: 129015 MB
  node 7 free: 128671 MB
  node 8 cpus: 120-134,600-614
  node 8 size: 129015 MB
  node 8 free: 128587 MB
  node 9 cpus: 135-149,615-629
  node 9 size: 129015 MB
  node 9 free: 128584 MB
  node 10 cpus: 150-164,630-644
  node 10 size: 128977 MB
  node 10 free: 128557 MB
  node 11 cpus: 165-179,645-659
  node 11 size: 129015 MB
  node 11 free: 128536 MB
  node 12 cpus: 180-194,660-674
  node 12 size: 129015 MB
  node 12 free: 128596 MB
  node 13 cpus: 195-209,675-689
```

(Continued on next page)

Platform Notes (Continued)

```
node 13 size: 129015 MB
node 13 free: 128596 MB
node 14 cpus: 210-224,690-704
node 14 size: 129015 MB
node 14 free: 128275 MB
node 15 cpus: 225-239,705-719
node 15 size: 129015 MB
node 15 free: 128450 MB
node 16 cpus: 240-254,720-734
node 16 size: 129015 MB
node 16 free: 128477 MB
node 17 cpus: 255-269,735-749
node 17 size: 129015 MB
node 17 free: 128503 MB
node 18 cpus: 270-284,750-764
node 18 size: 129015 MB
node 18 free: 128384 MB
node 19 cpus: 285-299,765-779
node 19 size: 129015 MB
node 19 free: 128175 MB
node 20 cpus: 300-314,780-794
node 20 size: 129015 MB
node 20 free: 128607 MB
node 21 cpus: 315-329,795-809
node 21 size: 129015 MB
node 21 free: 128629 MB
node 22 cpus: 330-344,810-824
node 22 size: 129015 MB
node 22 free: 128659 MB
node 23 cpus: 345-359,825-839
node 23 size: 129015 MB
node 23 free: 128424 MB
node 24 cpus: 360-374,840-854
node 24 size: 129015 MB
node 24 free: 128398 MB
node 25 cpus: 375-389,855-869
node 25 size: 129015 MB
node 25 free: 128631 MB
node 26 cpus: 390-404,870-884
node 26 size: 129015 MB
node 26 free: 128587 MB
node 27 cpus: 405-419,885-899
node 27 size: 129015 MB
node 27 free: 128625 MB
node 28 cpus: 420-434,900-914
node 28 size: 129015 MB
node 28 free: 128471 MB
```

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Platform Notes (Continued)

```
  node 29 cpus: 435-449,915-929
  node 29 size: 129015 MB
  node 29 free: 128673 MB
  node 30 cpus: 450-464,930-944
  node 30 size: 129015 MB
  node 30 free: 128471 MB
  node 31 cpus: 465-479,945-959
  node 31 size: 128860 MB
  node 31 free: 128426 MB
  node distances:
 node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24
  25  26  27  28  29  30  31
   0:  10  12  12  12  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
   1:  12  10  12  12  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
   2:  12  12  10  12  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
   3:  12  12  12  10  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
   4:  21  21  21  21  10  12  12  12  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
   5:  21  21  21  21  12  10  12  12  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
   6:  21  21  21  21  12  12  10  12  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
   7:  21  21  21  21  12  12  12  10  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
   8:  21  21  21  21  31  31  31  31  10  12  12  12  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
   9:  21  21  21  21  31  31  31  31  12  10  12  12  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
  10:  21  21  21  21  31  31  31  31  12  12  10  12  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
  11:  21  21  21  21  31  31  31  31  12  12  12  10  21  21  21  21  21  21  21  21  31  31  31  31  31
    31  31  31  21  21  21  21
  12:  31  31  31  31  21  21  21  21  21  21  21  21  10  12  12  12  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
  13:  31  31  31  31  21  21  21  21  21  21  21  21  12  10  12  12  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
  14:  31  31  31  31  21  21  21  21  21  21  21  21  12  12  10  12  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
  15:  31  31  31  31  21  21  21  21  21  21  21  21  12  12  12  10  31  31  31  31  21  21  21  21  21
    21  21  21  31  31  31  31
  16:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  10  12  12  12  21  21  21  21  21
    21  21  21  31  31  31  31
  17:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12  10  12  12  21  21  21  21  21
```

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Platform Notes (Continued)

```
    21  21  21  31  31  31  31
   18:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12  12  10  12  21  21  21  21  21
    21  21  21  31  31  31  31
   19:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12  12  12  10  21  21  21  21  21
    21  21  21  31  31  31  31
   20:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  10  12  12  12  31
    31  31  31  21  21  21  21
   21:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  12  10  12  12  31
    31  31  31  21  21  21  21
   22:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  12  12  10  12  31
    31  31  31  21  21  21  21
   23:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  12  12  12  10  31
    31  31  31  21  21  21  21
   24:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  10
    12  12  12  21  21  21  21
   25:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12
    10  12  12  21  21  21  21
   26:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12
    12  10  12  21  21  21  21
   27:  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12
    12  12  10  21  21  21  21
   28:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  10  12  12  12
   29:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  12  10  12  12
   30:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  12  12  10  12
   31:  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
    21  21  21  12  12  12  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       4226715952 kB

------------------------------------------------------------
10. who -r
  run-level 3 Jun 24 03:59

------------------------------------------------------------
11. Systemd service manager version: systemd 254 (254.24+suse.148.g83b9060b6e)
  Default Target  Status
  multi-user      running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron getty@ irqbalance issue-generator
```

(Continued on next page)

Platform Notes (Continued)

```
                kbdsettings klog lvm2-monitor nscd nvmefc-boot-connections nvmf-autoconnect postfix
                 purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked wickedd-auto4
                   wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
  enabled-runtime  systemd-remount-fs
  disabled        autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                  chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
                 firewalld fsidd gpm grub2-once haveged ipmi ipmievd issue-add-ssh-keys kexec-load lunmask
                  man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd serial-getty@
                  smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures systemd-confext
                  systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd
  indirect          systemd-userdbd wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.51-default
  root=UUID=e1445b64-10ff-47e2-9082-84446e3c722f
  splash=silent
  mitigations=auto
  quiet
  security=apparmor

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 394:
    current policy: frequency should be within 800 MHz and 3.50 GHz.
                    The governor "powersave" 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
```

(Continued on next page)

Platform Notes (Continued)

```
  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
  scan_sleep_millisecs    10000

------------------------------------------------------------
18. OS release
  From /etc/*-release /etc/*-version
  os-release SUSE Linux Enterprise Server 15 SP7

------------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu2026-1.0.1-ic2026.0-rate
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p3 xfs   893G  135G  758G  16% /

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:          Lenovo
    Product:         ThinkSystem SR950 V3
    Product Family:  ThinkSystem
    Serial:          JPBLR002

------------------------------------------------------------
21. dmidecode
  Additional information from dmidecode 3.6 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.
```

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Platform Notes (Continued)

```
   Memory:
     1x Samsung M321R8GA0BB0-CQKDG 64 GB 2 rank 4800
     3x Samsung M321R8GA0BB0-CQKEG 64 GB 2 rank 4800
     14x Samsung M321R8GA0BB0-CQKMG 64 GB 2 rank 4800
     46x Samsung M321R8GA0BB0-CQKVG 64 GB 2 rank 4800


 ------------------------------------------------------------
 22. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       Lenovo
    BIOS Version:      EBE123G-7.50
    BIOS Date:         05/15/2026
    BIOS Revision:     7.50
    Firmware Revision: 7.10
```

Compiler Version Notes

```
==============================================================================
C       | 782.lbm_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
C++     | 731.astcenc_r(base) 736.ocio_r(base) 748.flightdm_r(base)
        | 766.femflow_r(base) 767.nest_r(base) 772.marian_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
C++, C  | 709.cactus_r(base) 737.gmsh_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
Fortran | 722.palm_r(base) 749.fotonik3d_r(base) 765.roms_r(base)
------------------------------------------------------------------------------
```

(Continued on next page)

Compiler Version Notes (Continued)

```
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Benchmarks using both C and C++:
icpx icx

Base Portability Flags

737.gmsh_r: -fno-associative-math

Base Optimization Flags

C benchmarks:
-m64 -std=c18 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xsapphirerapids -mprefer-vector-width=512 -O3 -ffp-model=fast -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/tcmalloc-2.18.1/lib -ltcmalloc_minimal

C++ benchmarks:
-m64 -std=c++17 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xsapphirerapids -mprefer-vector-width=512 -O3 -ffp-model=fast -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/tcmalloc-2.18.1/lib -ltcmalloc_minimal

Fortran benchmarks:
-m64 -stand f18 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xsapphirerapids -mprefer-vector-width=512 -O3 -ffp-model=fast -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

(Continued on next page)

Base Optimization Flags (Continued)

Fortran benchmarks (continued):
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/tcmalloc-2.18.1/lib -ltcmalloc_minimal

Benchmarks using both C and C++:
-m64 -std=c++17 -std=c18 -Wl,-z,muldefs
-Wl,-plugin-opt=-inline-threshold=1500 -xsapphirerapids
-mprefer-vector-width=512 -O3 -ffp-model=fast -flto -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/tcmalloc-2.18.1/lib -ltcmalloc_minimal

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2026/results/flags/Lenovo-Platform-SPECcpu2026-Flags-V1.2-Eaglestream-AD.html
http://www.spec.org/cpu2026/results/flags/Intel-ic2026-official-linux64-v1.1.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2026/results/flags/Lenovo-Platform-SPECcpu2026-Flags-V1.2-Eaglestream-AD.xml
http://www.spec.org/cpu2026/results/flags/Intel-ic2026-official-linux64-v1.1.xml

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Tested with SPEC CPU®2026 v1.0.1 on 2026-06-23 16:03:39-0400.
Report generated on 2026-08-11 15:33:14 by CPU2026 PS formatter (86729d3b).
Originally published on 2026-07-14.