# SPEC CPU®2026 Integer Speed Result

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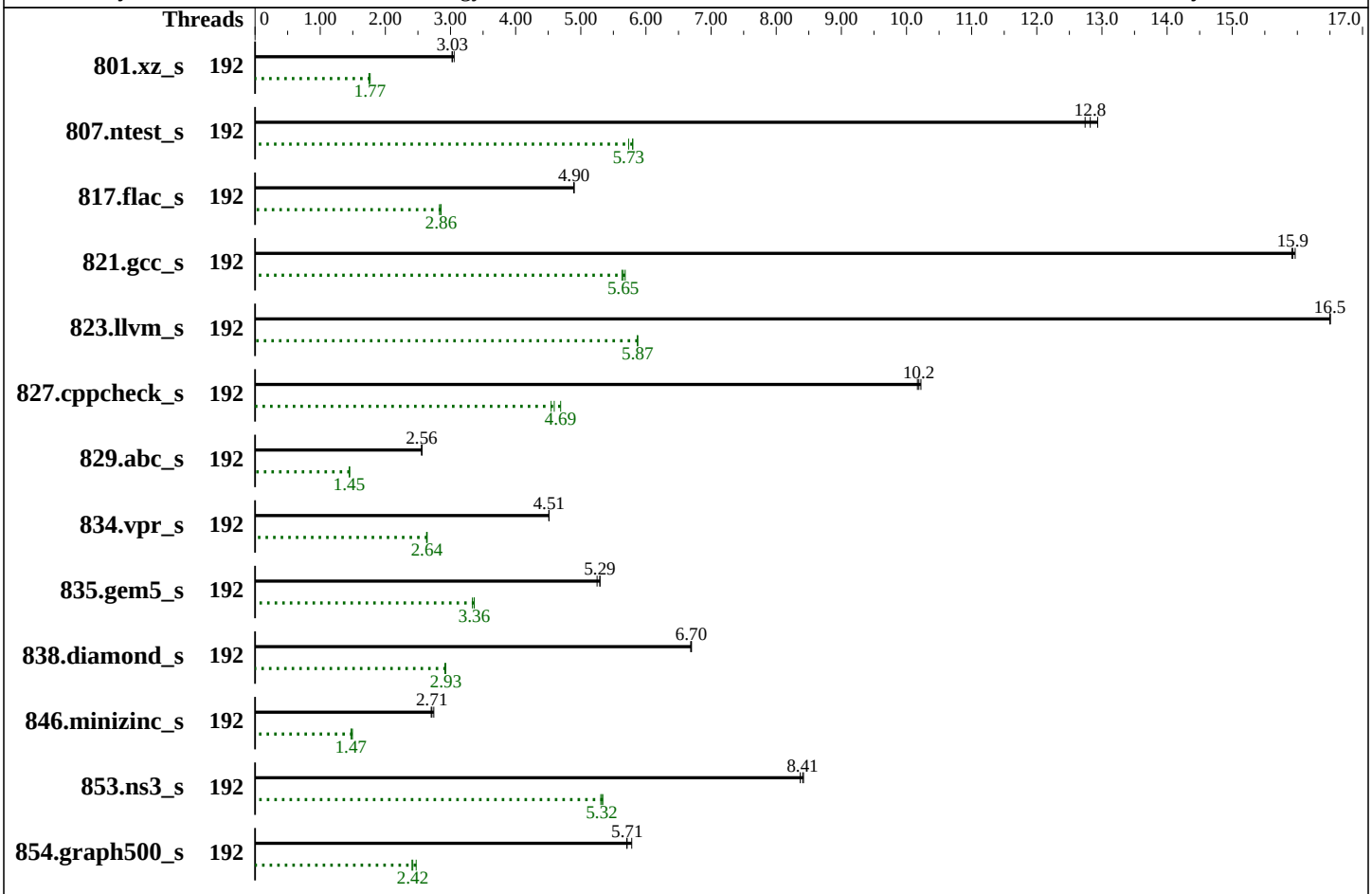
## Lenovo Global Technology

## ThinkSystem SR655 V3 (2.60 GHz, AMD EPYC 9655)

| | |
|---|---|
| SPECspeed®2026_int_base = | 6.35 |
| SPECspeed®2026_int_energy_base = | 3.17 |
| SPECspeed®2026_int_peak = | 6.35 |
| SPECspeed®2026_int_energy_peak = | 3.17 |

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

**Test Date:** Feb-2026
**Hardware Availability:** Jul-2025
**Software Availability:** Jan-2026




### Hardware

| | |
|---|---|
| CPU Name: | AMD EPYC 9655 |
| Max MHz: | 4500 |
| Nominal: | 2600 |
| Enabled: | 96 cores, 1 chip, 2 threads/core |
| Orderable: | 1 chip |
| Cache L1: | 32 KB I + 48 KB D on chip per core |
| L2: | 1 MB I+D on chip per core |
| L3: | 384 MB I+D on chip per chip, 32 MB shared / 8 cores |
| Other: | None |
| Memory: | 384 GB (12 x 32 GB 2Rx8 PC5-6400B-R, running at 4800) |
| Storage: | 1 x 480 GB SATA SSD |
| Cooling: | Air |

**(Continued on next page)**

### Software

| | |
|---|---|
| OS: | SUSE Linux Enterprise Server 15 SP6<br>Kernel 6.4.0-150600.21-default |
| Compiler: | C/C++: Version 5.1.0 of AOCC<br>Fortran: Flang v22 |
| Compiler Category: | Vendor |
| Firmware: | Lenovo BIOS Version KAE141G 5.81 released Jan-2026 |
| File System: | xfs |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 64-bit |
| Peak Pointers: | 64-bit |
| Other: | None |
| Power Management: | BIOS and OS set to balance power and performance |

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### Hardware (Continued)

Other: None

### Power

Max. Power (W): 638.03
Idle Power (W): 90.77
Min. Temperature (C): 21.00
Elevation (m): 43
Line Standard: 220 V / 50 Hz / 1 phase / 3 wires
Provisioning: Line-powered

### Power Settings

Management FW: Version 56.20 of KAX367O
Memory Mode: Normal

### Power-Relevant Hardware

Power Supply: 1 x 1100 W (non-redundant)
Details: ThinkSystem 1100W 230V Titanium Power Supply 4P57A72666
Backplane: 8 x 2.5-inch HDD back plane
Other Storage: None
Storage Model #s: 4XB7A17107
NICs Installed: 1 x ThinkSystem Ethernet 4-port Adaptor @ 1 Gb
NICs Enabled (FW/OS): 4 / 1
NICs Connected/Speed: 1 @ 1 Gb
Other HW Model #s: 6 x Performance fans

### Power Analyzer

Power Analyzer: WIN:9888
Hardware Vendor: YOKOGAWA, Inc.
Model: YokogawaWT310E
Serial Number: C3UD17025E
Input Connection: Default
Metrology Institute: CNAS
Calibration By: CEPREI Calibration and Testing Centre
Calibration Label: 1GA25011731-0006
Calibration Date: 16-Sep-2025
PTDaemon® Version: 1.11.1 (462c978e; 2024-09-07)
Setup Description: Connected to PSU1
Current Ranges Used: 2.5A
Voltage Range Used: 300V

### Temperature Meter

Temperature Meter: WIN:9889
Hardware Vendor: Digi International, Inc.
Model: DigiWATCHPORT_H
Serial Number: W63390099
Input Connection: USB
PTDaemon Version: 1.11.1 (462c978e; 2024-09-07)
Setup Description: 50 mm in front of SUT main intake

## Base Results Table

| Benchmark | Threads | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 801.xz_s | 192 | **195** | **3.03** | **46.9** | **1.77** | **240** | **556** | 195 | 3.02 | 47.4 | 1.75 | 242 | 566 | 193 | 3.06 | 47.3 | 1.75 | 245 | 570 |
| 807.ntest_s | 192 | 89.5 | 12.7 | 40.0 | 5.80 | 447 | 485 | 88.1 | 12.9 | 40.0 | 5.80 | 454 | 511 | **88.9** | **12.8** | **40.5** | **5.73** | **455** | **504** |
| 817.flac_s | 192 | 355 | 4.90 | 65.2 | 2.85 | 184 | 415 | 355 | 4.89 | 65.7 | 2.83 | 185 | 418 | **355** | **4.90** | **65.1** | **2.86** | **183** | **415** |
| 821.gcc_s | 192 | **130** | **15.9** | **75.2** | **5.65** | **579** | **604** | 130 | 15.9 | 75.5 | 5.63 | 581 | 605 | 130 | 16.0 | 74.8 | 5.68 | 577 | 606 |
| 823.llvm_s | 192 | 85.5 | 16.5 | 49.9 | 5.87 | 583 | 615 | 85.5 | 16.5 | 49.9 | 5.87 | 583 | 624 | **85.5** | **16.5** | **49.8** | **5.87** | **583** | **613** |
| 827.cppcheck_s | 192 | 109 | 10.2 | 53.5 | 4.54 | 488 | 637 | **110** | **10.2** | **51.8** | **4.69** | **472** | **635** | 110 | 10.2 | 52.9 | 4.59 | 481 | 638 |
| 829.abc_s | 192 | **325** | **2.56** | **48.2** | **1.45** | **149** | **164** | 325 | 2.56 | 48.3 | 1.44 | 148 | 165 | 325 | 2.56 | 48.0 | 1.45 | 148 | 163 |
| 834.vpr_s | 192 | **211** | **4.51** | **30.4** | **2.64** | **144** | **156** | 212 | 4.51 | 30.4 | 2.63 | 144 | 156 | 211 | 4.51 | 30.3 | 2.64 | 143 | 155 |

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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

**Test Date:** Feb-2026
**Hardware Availability:** Jul-2025
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## Base Results Table (Continued)

| Benchmark | Threads | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 835.gem5_s | 192 | **215** | **5.29** | **28.7** | **3.36** | **134** | **136** | 217 | 5.25 | 29.0 | 3.34 | 134 | 136 | 215 | 5.29 | 28.8 | 3.36 | 134 | 136 |
| 838.diamond_s | 192 | 150 | 6.69 | 68.5 | 2.92 | 458 | 511 | **149** | **6.70** | **68.4** | **2.93** | **457** | **511** | 149 | 6.70 | 68.7 | 2.91 | 460 | 511 |
| 846.minizinc_s | 192 | **247** | **2.71** | **42.6** | **1.47** | **172** | **191** | 244 | 2.74 | 41.9 | 1.50 | 172 | 190 | 248 | 2.70 | 42.3 | 1.48 | 171 | 189 |
| 853.ns3_s | 192 | 138 | 8.37 | 18.7 | 5.31 | 136 | 137 | **137** | **8.41** | **18.6** | **5.32** | **136** | **137** | 137 | 8.42 | 18.6 | 5.34 | 136 | 137 |
| 854.graph500_s | 192 | 106 | 5.78 | 52.5 | 2.47 | 497 | 633 | **107** | **5.71** | **53.6** | **2.42** | **501** | **632** | 107 | 5.71 | 53.9 | 2.41 | 503 | 632 |
| **SPECspeed®2026_int_base =** | | | **6.35** | | | | | | | | | | | | | | | | |
| **SPECspeed®2026_int_energy_base =** | | | | | **3.17** | | | | | | | | | | | | | | |

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

## Peak Results Table

| Benchmark | Threads | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power | Seconds | Ratio | Energy (kJ) | Energy Ratio | Average Power | Maximum Power |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 801.xz_s | 192 | **195** | **3.03** | **46.9** | **1.77** | **240** | **556** | 195 | 3.02 | 47.4 | 1.75 | 242 | 566 | 193 | 3.06 | 47.3 | 1.75 | 245 | 570 |
| 807.ntest_s | 192 | 89.5 | 12.7 | 40.0 | 5.80 | 447 | 485 | 88.1 | 12.9 | 40.0 | 5.80 | 454 | 511 | **88.9** | **12.8** | **40.5** | **5.73** | **455** | **504** |
| 817.flac_s | 192 | 355 | 4.90 | 65.2 | 2.85 | 184 | 415 | 355 | 4.89 | 65.7 | 2.83 | 185 | 418 | **355** | **4.90** | **65.1** | **2.86** | **183** | **415** |
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| 823.llvm_s | 192 | 85.5 | 16.5 | 49.9 | 5.87 | 583 | 615 | 85.5 | 16.5 | 49.9 | 5.87 | 583 | 624 | **85.5** | **16.5** | **49.8** | **5.87** | **583** | **613** |
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| 829.abc_s | 192 | **325** | **2.56** | **48.2** | **1.45** | **149** | **164** | 325 | 2.56 | 48.3 | 1.44 | 148 | 165 | 325 | 2.56 | 48.0 | 1.45 | 148 | 163 |
| 834.vpr_s | 192 | **211** | **4.51** | **30.4** | **2.64** | **144** | **156** | 212 | 4.51 | 30.4 | 2.63 | 144 | 156 | 211 | 4.51 | 30.3 | 2.64 | 143 | 155 |
| 835.gem5_s | 192 | **215** | **5.29** | **28.7** | **3.36** | **134** | **136** | 217 | 5.25 | 29.0 | 3.34 | 134 | 136 | 215 | 5.29 | 28.8 | 3.36 | 134 | 136 |
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| 853.ns3_s | 192 | 138 | 8.37 | 18.7 | 5.31 | 136 | 137 | **137** | **8.41** | **18.6** | **5.32** | **136** | **137** | 137 | 8.42 | 18.6 | 5.34 | 136 | 137 |
| 854.graph500_s | 192 | 106 | 5.78 | 52.5 | 2.47 | 497 | 633 | **107** | **5.71** | **53.6** | **2.42** | **501** | **632** | 107 | 5.71 | 53.9 | 2.41 | 503 | 632 |
| **SPECspeed®2026_int_peak =** | | | **6.35** | | | | | | | | | | | | | | | | |
| **SPECspeed®2026_int_energy_peak =** | | | | | **3.17** | | | | | | | | | | | | | | |

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## Compiler Notes

```
The AMD64 AOCC Compiler Suite is available at
http://developer.amd.com/amd-aocc/
Flang v22 is available at
https://flang.llvm.org/
```

## Submit Notes

```
The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size limit
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run
variability, 'sysctl -w kernel.randomize_va_space=0' run as root.
To enable Transparent Hugepages (THP) for all allocations,
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
```

## Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-191"
LD_LIBRARY_PATH =
     "/home/cpu2026-0.902.0-amd_aocc510_znver5_A1/amd_speed_aocc510_flang22_z
     nver5_A_lib/lib:/home/cpu2026-0.902.0-amd_aocc510_znver5_A1/amd_speed_ao
     cc510_flang22_znver5_A_lib/lib32:"
MALLOC_CONF = "retain:true"
```

## General Notes

```
Binaries were compiled on a system with an AMD EPYC 9754 CPU + 768 GiB Memory using Ubuntu 24.04
```

## Platform Notes

```
BIOS configuration:
Choose Operating Mode set to Custom Mode
Power Profile Selection set to Balanced Memory Performance Mode
NUMA Nodes per Socket set to NPS4
Memory Speed set to Minimum

 Sysinfo program /home/cpu2026-0.902.0-amd_aocc510_znver5_A1/bin/sysinfo
 Rev: 069f95da7e7f5d81b2ce48a82150e54f
```

**(Continued on next page)**

## Platform Notes (Continued)

```
running on localhost Sun Feb  8 01:17:17 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 (254.10+suse.84.ge8d77af424)
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 -srvm
  Linux 6.4.0-150600.21-default #1 SMP PREEMPT_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09) x86_64

------------------------------------------------------------
2. w
   01:17:17 up  9:30,  1 user,  load average: 14.00, 41.97, 41.52
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT

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

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

**(Continued on next page)**

## Platform Notes (Continued)

```
 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) 1545783
   max locked memory       (kbytes, -l) 2097152
   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) 1545783
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited

 ------------------------------------------------------------
 5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize=42
  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
  /bin/bash ./Run032-compliant-amd-speedint_base.sh
  python3 ./run_amd_speed_aocc510_flang22_znver5_A1.py
  /bin/bash ./amd_speed_aocc510_flang22_znver5_A1.sh
 runcpu --power --config amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3
    intspeed
 runcpu --power --configfile amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3
   --runmode speed --tune base --size test:train:refspeed intspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2026.021/templogs/preenv.intspeed.021.0.log --lognum 021.0 --from_runcpu 2
  specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2026-0.902.0-amd_aocc510_znver5_A1

 ------------------------------------------------------------
 6. /proc/cpuinfo
     model name      : AMD EPYC 9655 96-Core Processor
     vendor_id       : AuthenticAMD
     cpu family      : 26
     model           : 2
     stepping        : 1
     microcode       : 0xb002152
     bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
```

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## Platform Notes (Continued)

```
     TLB size        : 192 4K pages
     cpu cores       : 96
     siblings        : 192
     1 physical ids (chips)
     192 processors (hardware threads)
     physical id 0: core ids 0-95
     physical id 0: apicids 0-191
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
    virtualized systems.  Use the above data carefully.

 ------------------------------------------------------------
 7. lscpu

 From lscpu from util-linux 2.39.3:
   Architecture:                         x86_64
   CPU op-mode(s):                       32-bit, 64-bit
   Address sizes:                        52 bits physical, 57 bits virtual
   Byte Order:                           Little Endian
   CPU(s):                               192
   On-line CPU(s) list:                  0-191
   Vendor ID:                            AuthenticAMD
   BIOS Vendor ID:                       Advanced Micro Devices, Inc.
   Model name:                           AMD EPYC 9655 96-Core Processor
   BIOS Model name:                      AMD EPYC 9655 96-Core Processor               Unknown CPU @ 2.6GHz
   BIOS CPU family:                      107
   CPU family:                           26
   Model:                                2
   Thread(s) per core:                   2
   Core(s) per socket:                   96
   Socket(s):                            1
   Stepping:                             1
   Frequency boost:                      enabled
   CPU(s) scaling MHz:                   34%
   CPU max MHz:                          4509.3750
   CPU min MHz:                          1500.0000
   BogoMIPS:                             5191.94
   Flags:                                fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
                                        pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb
                                         rdtscp lm constant_tsc rep_good amd_lbr_v2 nopl nonstop_tsc cpuid
                                        extd_apicid aperfmperf rapl pni pclmulqdq monitor ssse3 fma cx16 pcid
                                         sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm
                                        cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
                                           osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext
                                         perfctr_llc mwaitx cpb cat_l3 cdp_l3 hw_pstate ssbd mba perfmon_v2
                                        ibrs ibpb stibp ibrs_enhanced vmmcall fsgsbase tsc_adjust bmi1 avx2
```

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## Platform Notes (Continued)

```
                                smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
                              avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
                                   xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                                  cqm_mbm_local user_shstk avx_vnni avx512_bf16 clzero irperf
                                 xsaveerptr rdpru wbnoinvd amd_ppin cppc arat npt lbrv svm_lock
                                nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
                                   pfthreshold avic v_vmsave_vmload vgif x2avic v_spec_ctrl vnmi
                                    avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
                                avx512_vnni avx512_bitalg avx512_vpopcntdq la57 rdpid bus_lock_detect
                                movdiri movdir64b overflow_recov succor smca fsrm avx512_vp2intersect
                                          flush_l1d debug_swap
  Virtualization:                         AMD-V
  L1d cache:                              4.5 MiB (96 instances)
  L1i cache:                              3 MiB (96 instances)
  L2 cache:                               96 MiB (96 instances)
  L3 cache:                               384 MiB (12 instances)
  NUMA node(s):                           4
  NUMA node0 CPU(s):                      0-23,96-119
  NUMA node1 CPU(s):                      24-47,120-143
  NUMA node2 CPU(s):                      48-71,144-167
  NUMA node3 CPU(s):                      72-95,168-191
  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; STIBP
                                          always-on; RSB filling; PBRSB-eIBRS Not affected; BHI Not affected
  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     4.5M   12 Data            1    64        1             64
     L1i       32K       3M    8 Instruction     1    64        1             64
     L2         1M      96M   16 Unified         2  1024        1             64
     L3        32M     384M   16 Unified         3 32768        1             64

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

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## Platform Notes (Continued)

```
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0-23,96-119
  node 0 size: 96338 MB
  node 0 free: 95690 MB
  node 1 cpus: 24-47,120-143
  node 1 size: 96755 MB
  node 1 free: 96452 MB
  node 2 cpus: 48-71,144-167
  node 2 size: 96716 MB
  node 2 free: 96320 MB
  node 3 cpus: 72-95,168-191
  node 3 size: 96660 MB
  node 3 free: 96319 MB
  node distances:
  node   0   1   2   3
    0:  10  12  12  12
    1:  12  10  12  12
    2:  12  12  10  12
    3:  12  12  12  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       395747500 kB

------------------------------------------------------------
10. who -r
  run-level 3 Feb 7 15:47

------------------------------------------------------------
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
  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
                   kbdsettings klog lvm2-monitor nscd 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 hwloc-dump-hwdata ipmi ipmievd issue-add-ssh-keys
```

**(Continued on next page)**

## Platform Notes (Continued)

```
                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
  generated         ntp_sync
  indirect          systemd-userdbd wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
  root=UUID=d6bdf3a8-2c29-4379-81b5-741d24d52760
  splash=silent
  quiet
  security=apparmor
  mitigations=auto

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 139:
    current policy: frequency should be within 1.50 GHz and 2.60 GHz.
                    The governor "ondemand" 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           0
  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                      8
  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                       1
  vm.watermark_boost_factor       15000
```

**(Continued on next page)**

## Platform Notes (Continued)

```
  vm.watermark_scale_factor          10
  vm.zone_reclaim_mode                1

------------------------------------------------------------
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 SP6

------------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu2026-0.902.0-amd_aocc510_znver5_A1
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda3      xfs   443G  115G  328G  26% /

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:          Lenovo
    Product:         ThinkSystem SR655V3
    Product Family:  ThinkSystem
    Serial:          1234567890

------------------------------------------------------------
21. dmidecode
  Additional information from dmidecode 3.4 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:
```

**(Continued on next page)**

## Platform Notes (Continued)

```
     12x Samsung M321R4GA3PB1-CCPPC 32 GB 2 rank 6400, configured at 4800


 ------------------------------------------------------------
 22. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       Lenovo
    BIOS Version:      KAE141G-5.81
    BIOS Date:         01/22/2026
    BIOS Revision:     5.81
    Firmware Revision: 56.20
```

## Compiler Version Notes

```
==============================================================================
C      | 854.graph500_s(base)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------

==============================================================================
C++    | 807.ntest_s(base) 827.cppcheck_s(base) 853.ns3_s(base)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------

==============================================================================
C++, C | 801.xz_s(base) 817.flac_s(base) 821.gcc_s(base) 823.llvm_s(base)
       | 829.abc_s(base) 834.vpr_s(base) 835.gem5_s(base) 838.diamond_s(base)
       | 846.minizinc_s(base)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------
```

## Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Benchmarks using both C and C++:
clang++ clang

## Base Portability Flags

801.xz_s: -DSPEC_LP64
807.ntest_s: -DSPEC_LP64
817.flac_s: -DSPEC_LP64
821.gcc_s: -DSPEC_LP64
823.llvm_s: -DSPEC_LP64
827.cppcheck_s: -DSPEC_LP64
829.abc_s: -DSPEC_LP64
834.vpr_s: -fno-finite-math-only -DSPEC_LP64
835.gem5_s: -fno-finite-math-only -DSPEC_LP64
838.diamond_s: -DSPEC_LP64
846.minizinc_s: -DSPEC_LP64
853.ns3_s: -fno-finite-math-only -DSPEC_LP64
854.graph500_s: -DSPEC_LP64

## Base Optimization Flags

C benchmarks:
-m64 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Wl,-mllvm -Wl,-extra-inliner -O3 -flto
-march=znver5 -fveclib=AMDLIBM -ffast-math -zopt -fremap-arrays
-fstrip-mining -fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50
-fopenmp -DSPEC_OPENMP -lamdalloc -lamdlibm -fopenmp=libomp -lomp

C++ benchmarks:
-m64 -std=c++17 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3

**(Continued on next page)**

## Base Optimization Flags (Continued)

C++ benchmarks (continued):
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -zopt -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -fopenmp -DSPEC_OPENMP
-fvirtual-function-elimination -fvisibility=hidden -lamdalloc
-lamdlibm -fopenmp=libomp -lomp

Benchmarks using both C and C++:
-m64 -std=c++17 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -zopt -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp -lomp

## Base Other Flags

C benchmarks:
-Wno-return-type

Benchmarks using both C and C++:
-Wno-return-type

## Peak Optimization Flags

C benchmarks:

854.graph500_s: basepeak = yes

C++ benchmarks:

807.ntest_s: basepeak = yes

827.cppcheck_s: basepeak = yes

**(Continued on next page)**

# Peak Optimization Flags (Continued)

853.ns3_s: `basepeak = yes`

Benchmarks using both C and C++:

801.xz_s: `basepeak = yes`

817.flac_s: `basepeak = yes`

821.gcc_s: `basepeak = yes`

823.llvm_s: `basepeak = yes`

829.abc_s: `basepeak = yes`

834.vpr_s: `basepeak = yes`

835.gem5_s: `basepeak = yes`

838.diamond_s: `basepeak = yes`

846.minizinc_s: `basepeak = yes`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2026/results/flags/Lenovo-Platform-SPECcpu-Flags-V1.2-Turin-M.html`
`http://www.spec.org/cpu2026/results/flags/aocc-flags.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2026/results/flags/Lenovo-Platform-SPECcpu-Flags-V1.2-Turin-M.xml`
`http://www.spec.org/cpu2026/results/flags/aocc-flags.xml`


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