



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

CPU2017 License: 9017

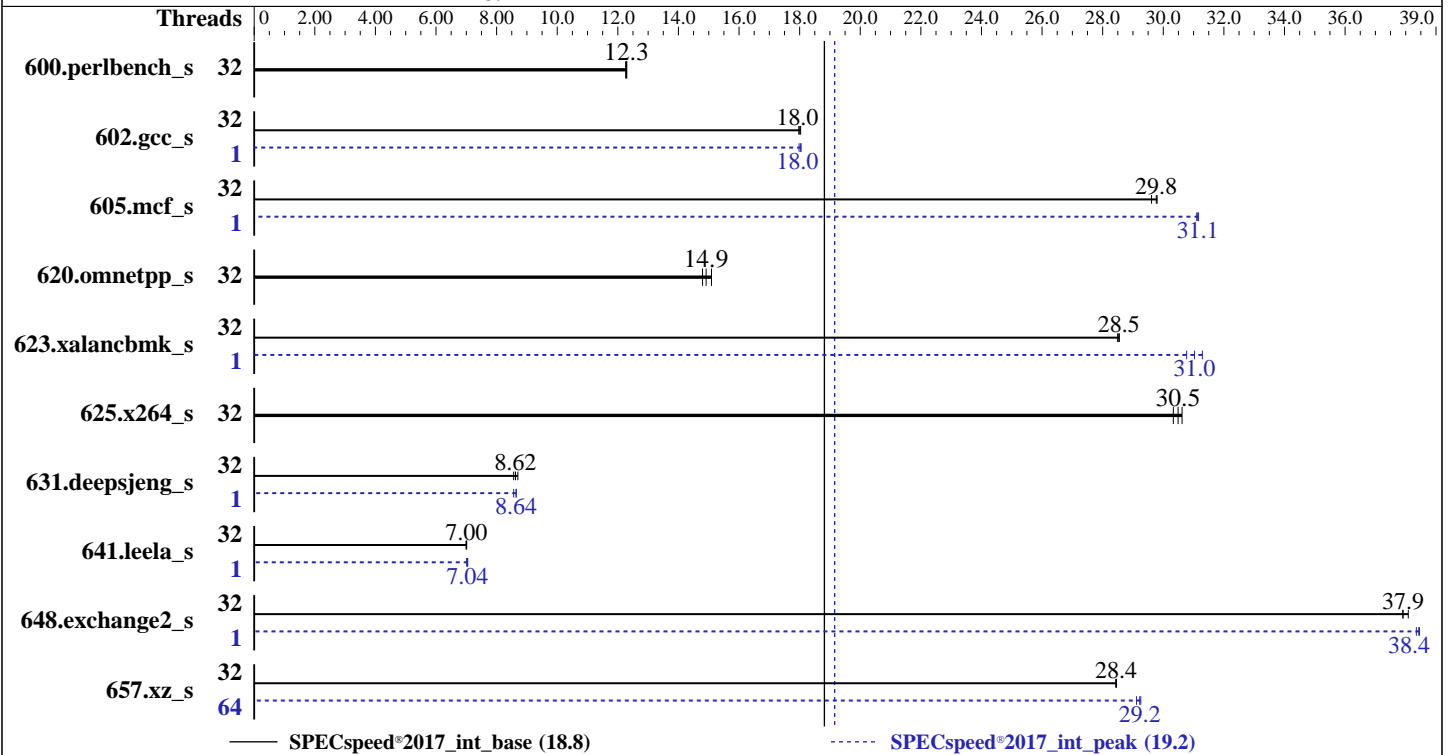
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2024

Hardware Availability: Nov-2024

Software Availability: Oct-2024



### Hardware

CPU Name: AMD EPYC 9355P  
 Max MHz: 4400  
 Nominal: 3550  
 Enabled: 32 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: 256 MB I+D on chip per chip,  
 32 MB shared / 4 cores  
 Other: None  
 Memory: 384 GB (12 x 32 GB 2Rx8 PC5-6400B-R, running at 6000)  
 Storage: 1 x 480 GB SATA SSD  
 Other: CPU Cooling: Air

### Software

OS: Red Hat Enterprise Linux 9.4 (Plow)  
 Kernel 5.14.0-427.13.1.el9\_4.x86\_64  
 Compiler: C/C++/Fortran: Version 5.0.0 of AOCC  
 Parallel: Yes  
 Firmware: Lenovo BIOS Version KAE127C 5.10 released Sep-2024  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 Other: None  
 Power Management: BIOS set to prefer performance at the cost of additional power usage



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

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

**Test Date:** Oct-2024  
**Hardware Availability:** Nov-2024  
**Software Availability:** Oct-2024

### Results Table

| Benchmark       | Base    |             |             |             |             |            | Peak        |         |             |             |            |             |             |             |
|-----------------|---------|-------------|-------------|-------------|-------------|------------|-------------|---------|-------------|-------------|------------|-------------|-------------|-------------|
|                 | Threads | Seconds     | Ratio       | Seconds     | Ratio       | Seconds    | Ratio       | Threads | Seconds     | Ratio       | Seconds    | Ratio       | Seconds     | Ratio       |
| 600.perlbench_s | 32      | <b>144</b>  | <b>12.3</b> | 144         | 12.3        | 145        | 12.3        | 32      | <b>144</b>  | <b>12.3</b> | 144        | 12.3        | 145         | 12.3        |
| 602.gcc_s       | 32      | 222         | 18.0        | 221         | 18.0        | <b>221</b> | <b>18.0</b> | 1       | <b>221</b>  | <b>18.0</b> | 221        | 18.0        | 221         | 18.0        |
| 605.mcf_s       | 32      | 159         | 29.6        | <b>159</b>  | <b>29.8</b> | 158        | 29.8        | 1       | 152         | 31.2        | <b>152</b> | <b>31.1</b> | 152         | 31.1        |
| 620.omnetpp_s   | 32      | 108         | 15.1        | <b>109</b>  | <b>14.9</b> | 110        | 14.8        | 32      | 108         | 15.1        | <b>109</b> | <b>14.9</b> | 110         | 14.8        |
| 623.xalancbmk_s | 32      | 49.7        | 28.5        | <b>49.7</b> | <b>28.5</b> | 49.6       | 28.6        | 1       | 46.1        | 30.8        | 45.3       | 31.3        | <b>45.7</b> | <b>31.0</b> |
| 625.x264_s      | 32      | <b>57.9</b> | <b>30.5</b> | 58.2        | 30.3        | 57.6       | 30.6        | 32      | <b>57.9</b> | <b>30.5</b> | 58.2       | 30.3        | 57.6        | 30.6        |
| 631.deepsjeng_s | 32      | 165         | 8.70        | <b>166</b>  | <b>8.62</b> | 167        | 8.56        | 1       | 166         | 8.65        | 167        | 8.56        | <b>166</b>  | <b>8.64</b> |
| 641.leela_s     | 32      | 244         | 6.99        | <b>244</b>  | <b>7.00</b> | 243        | 7.01        | 1       | 243         | 7.01        | <b>242</b> | <b>7.04</b> | 242         | 7.05        |
| 648.exchange2_s | 32      | <b>77.5</b> | <b>37.9</b> | 77.6        | 37.9        | 77.2       | 38.1        | 1       | 76.5        | 38.5        | 76.7       | 38.4        | <b>76.5</b> | <b>38.4</b> |
| 657.xz_s        | 32      | <b>217</b>  | <b>28.4</b> | 217         | 28.5        | 217        | 28.4        | 64      | <b>212</b>  | <b>29.2</b> | 212        | 29.1        | 211         | 29.3        |

SPECspeed®2017\_int\_base = **18.8**

SPECspeed®2017\_int\_peak = **19.2**

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

### Compiler Notes

The AMD64 AOCC Compiler Suite is available at  
<http://developer.amd.com/amd-aocc/>

### 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) only on request for base runs,  
'echo madvise > /sys/kernel/mm/transparent\_hugepage/enabled' run as root.  
To enable THP for all allocations for peak runs,  
'echo always > /sys/kernel/mm/transparent\_hugepage/enabled' and  
'echo always > /sys/kernel/mm/transparent\_hugepage/defrag' run as root.



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2024

**Hardware Availability:** Nov-2024

**Software Availability:** Oct-2024

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

GOMP\_CPU\_AFFINITY = "0-63"

LD\_LIBRARY\_PATH =

"/home/cpu2017-1.1.9-amd-aocc500\_znver5\_A1/amd\_speed\_aocc500\_znver5\_A\_lib/lib:/home/cpu2017-1.1.9-amd-aocc500\_znver5\_A1/amd\_speed\_aocc500\_znver5\_A\_lib/lib32:"

LIBOMP\_NUM\_HIDDEN\_HELPER\_THREADS = "0"

MALLOC\_CONF = "retain:true"

OMP\_DYNAMIC = "false"

OMP\_SCHEDULE = "static"

OMP\_STACKSIZE = "128M"

OMP\_THREAD\_LIMIT = "64"

Environment variables set by runcpu during the 602.gcc\_s peak run:

GOMP\_CPU\_AFFINITY = "0"

Environment variables set by runcpu during the 605.mcf\_s peak run:

GOMP\_CPU\_AFFINITY = "0"

Environment variables set by runcpu during the 623.xalancbmk\_s peak run:

GOMP\_CPU\_AFFINITY = "0"

Environment variables set by runcpu during the 631.deepsjeng\_s peak run:

GOMP\_CPU\_AFFINITY = "0"

Environment variables set by runcpu during the 641.leela\_s peak run:

GOMP\_CPU\_AFFINITY = "0"

Environment variables set by runcpu during the 648.exchange2\_s peak run:

GOMP\_CPU\_AFFINITY = "0"

Environment variables set by runcpu during the 657.xz\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

## General Notes

Binaries were compiled on a system with 2x AMD EPYC 9D64 CPU + 500GiB Memory using Ubuntu 22.04

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

NUMA Nodes per Socket set to NPS4

Sysinfo program /home/cpu2017-1.1.9-amd-aocc500\_znver5\_A1/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost.localdomain Fri Oct 18 23:22:48 2024

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

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2024

Hardware Availability: Nov-2024

Software Availability: Oct-2024

## Platform Notes (Continued)

### Table of contents

- 1. uname -a
- 2. w
- 3. Username
- 4. ulimit -a
- 5. sysinfo process ancestry
- 6. /proc/cpuinfo
- 7. lscpu
- 8. numactl --hardware
- 9. /proc/meminfo
- 10. who -r
- 11. Systemd service manager version: systemd 252 (252-32.e19\_4)
- 12. Failed units, from systemctl list-units --state=failed
- 13. Services, from systemctl list-unit-files
- 14. Linux kernel boot-time arguments, from /proc/cmdline
- 15. cpupower frequency-info
- 16. sysctl
- 17. /sys/kernel/mm/transparent\_hugepage
- 18. /sys/kernel/mm/transparent\_hugepage/khugepaged
- 19. OS release
- 20. Disk information
- 21. /sys/devices/virtual/dmi/id
- 22. dmidecode
- 23. BIOS

```
1. uname -a
Linux localhost.localdomain 5.14.0-427.13.1.e19_4.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 10 10:29:16 EDT
2024 x86_64 x86_64 x86_64 GNU/Linux
```

```
2. w
23:22:48 up 3 min, 0 users, load average: 0.10, 0.12, 0.06
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
```

```
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) 1546007
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) 1546007
virtual memory (kbytes, -v) unlimited
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

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

**Test Date:** Oct-2024  
**Hardware Availability:** Nov-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

file locks (-x) unlimited

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 31
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@notty
/bin/bash ./02.remote_local_SPECCpu_1.01.sh
/bin/bash ./Run035-compliant-amd-speedint.sh
python3 ./run_amd_speed_aocc500_znver5_A1.py
/bin/bash ./amd_speed_aocc500_znver5_A1.sh
runcpu --config amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 intspeak
runcpu --configfile amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode speed --tune base:peak --size test:train:refspeed intspeak --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.168/templogs/preenv.intspeak.168.0.log --lognum 168.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-amd-aocc500_znver5_A1
-----

```

```

-----
6. /proc/cpuinfo
model name      : AMD EPYC 9355P 32-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 26
model          : 2
stepping       : 1
microcode      : 0xb002116
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 192 4K pages
cpu cores      : 32
siblings       : 64
1 physical ids (chips)
64 processors (hardware threads)
physical id 0: core ids 0-3,8-11,16-19,24-27,32-35,40-43,48-51,56-59
physical id 0: apicids 0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119
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:         52 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                64
On-line CPU(s) list:   0-63
Vendor ID:             AuthenticAMD
BIOS Vendor ID:       Advanced Micro Devices, Inc.
Model name:            AMD EPYC 9355P 32-Core Processor
BIOS Model name:      AMD EPYC 9355P 32-Core Processor
CPU family:           26
Model:                2
Thread(s) per core:    2
Core(s) per socket:    32
Socket(s):            1
Stepping:              1
BogoMIPS:              7089.10
Flags:                 fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
-----

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

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

**Test Date:** Oct-2024  
**Hardware Availability:** Nov-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

```
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
aperfperf rapl pni pclmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2
x2apic movbe popcnt aes xsave avx fl6c 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 smep bmi2 erms
invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma
clflushopt clwb avx512cd sha_ni avx512bw avx512v1 xsaveopt xsavec
xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
avx_vnni avx512_bf16 clzero irperf xsaveerptr rdpru wbnoinvd amd_ppin
cппc arat npt lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid
decodeassists pausefilter pftreshold avic v_omsave_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_llid debug_swap
```

```
Virtualization: AMD-V
L1d cache: 1.5 MiB (32 instances)
L1i cache: 1 MiB (32 instances)
L2 cache: 32 MiB (32 instances)
L3 cache: 256 MiB (8 instances)
NUMA node(s): 4
NUMA node0 CPU(s): 0-7,32-39
NUMA node1 CPU(s): 8-15,40-47
NUMA node2 CPU(s): 16-23,48-55
NUMA node3 CPU(s): 24-31,56-63
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 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, PBRSE-eIBRS 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 1.5M 12 Data 1 64 1 64
L1i 32K 1M 8 Instruction 1 64 1 64
L2 1M 32M 16 Unified 2 1024 1 64
L3 32M 256M 16 Unified 3 32768 1 64
```

```
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
available: 4 nodes (0-3)
node 0 cpus: 0-7,32-39
node 0 size: 96305 MB
node 0 free: 95914 MB
node 1 cpus: 8-15,40-47
node 1 size: 96763 MB
node 1 free: 96346 MB
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

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

**Test Date:** Oct-2024  
**Hardware Availability:** Nov-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

```
node 2 cpus: 16-23,48-55
node 2 size: 96763 MB
node 2 free: 96346 MB
node 3 cpus: 24-31,56-63
node 3 size: 96708 MB
node 3 free: 95866 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:      395817996 kB
```

```
-----
10. who -r
    run-level 3 Oct 18 23:20
```

```
-----
11. Systemd service manager version: systemd 252 (252-32.el9_4)
    Default Target   Status
    multi-user       degraded
```

```
-----
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
```

```
-----
13. Services, from systemctl list-unit-files
    STATE    UNIT FILES
enabled    NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
           dbus-broker firewalld getty@ insights-client-boot irqbalance kdump low-memory-monitor
           mdmonitor microcode nis-domainname rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark
           sshd sssd systemd-boot-update systemd-network-generator udisks2 upower
enabled-runtime
           systemd-remount-fs
disabled   canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot
           chrony-wait chronyd-restricted console-getty cpupower debug-shell dnf-system-upgrade
           hwloc-dump-hwdata kvm_stat man-db-restart-cache-update nftables pesign rdisc rhcd rhsm
           rhsm-facts rpmdb-rebuild selinux-check-proper-disable serial-getty@ sshd-keygen@
           systemd-boot-check-no-failures systemd-pstore systemd-sysex
indirect   sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo systemd-sysupdate
           systemd-sysupdate-reboot
```

```
-----
14. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=(hd3,gpt3)/boot/vmlinuz-5.14.0-427.13.1.el9_4.x86_64
    root=UUID=273c79f3-13a9-4ae6-9c36-e82799318ef8
    ro
    resume=UUID=19c8733f-555f-4142-8f61-7554d0dc64ae
```

```
-----
15. cpupower frequency-info
    analyzing CPU 63:
    Unable to determine current policy
    boost state support:
    Supported: yes
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

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

**Test Date:** Oct-2024  
**Hardware Availability:** Nov-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

Active: yes  
Boost States: 0  
Total States: 3  
Pstate-P0: 19800MHz

```

-----
16. 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
vm.watermark_scale_factor      10
vm.zone_reclaim_mode           1

-----
17. /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

-----
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 9.4 (Plow)
redhat-release  Red Hat Enterprise Linux release 9.4 (Plow)
system-release  Red Hat Enterprise Linux release 9.4 (Plow)

-----
20. Disk information
SPEC is set to: /home/cpu2017-1.1.9-amd-aocc500_znver5_A1
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda4       xfs   372G  83G  289G  23% /home

-----
21. /sys/devices/virtual/dmi/id
Vendor:          Lenovo

```

(Continued on next page)





# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2024

Hardware Availability: Nov-2024

Software Availability: Oct-2024

### Platform Notes (Continued)

Product: ThinkSystem SR635V3  
Product Family: ThinkSystem  
Serial: 1234567890

#### 22. dmidecode

Additional information from dmidecode 3.5 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:

12x SK Hynix HMC888AHBRA290N 32 GB 2 rank 6400, configured at 6000

#### 23. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: Lenovo  
BIOS Version: KAE127C-5.10  
BIOS Date: 09/18/2024  
BIOS Revision: 5.10  
Firmware Revision: 53.9

### Compiler Version Notes

C | 600.perlbench\_s(base, peak) 602.gcc\_s(base, peak) 605.mcf\_s(base, peak) 625.x264\_s(base, peak)  
| 657.xz\_s(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC\_5.0.0-Build#1316 2024\_09\_09)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C++ | 620.omnetpp\_s(base, peak) 623.xalancbmk\_s(base, peak) 631.deepsjeng\_s(base, peak)  
| 641.leela\_s(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC\_5.0.0-Build#1316 2024\_09\_09)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

Fortran | 648.exchange2\_s(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC\_5.0.0-Build#1316 2024\_09\_09)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2024

**Hardware Availability:** Nov-2024

**Software Availability:** Oct-2024

## Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

## Base Portability Flags

```
600.perlbench_s: -DSPEC_LINUX_X64 -DSPEC_LP64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LINUX -DSPEC_LP64
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64
```

## Base Optimization Flags

C benchmarks:

```
-m64 -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
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP
-flto -fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -fopenmp=libomp -lomp -lamdlibm
-lflang -lamdalloc
```

C++ benchmarks:

```
-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP -flto
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=100 -zopt
-fvirtual-function-elimination -fvisibility=hidden -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc-ext
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2024

Hardware Availability: Nov-2024

Software Availability: Oct-2024

## Base Optimization Flags (Continued)

Fortran benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-iv-split -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -O3 -march=znver5 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -mllvm -optimize-strided-mem-cost
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc
```

## Base Other Flags

C benchmarks:

```
-Wno-return-type -Wno-unused-command-line-argument
```

C++ benchmarks:

```
-Wno-unused-command-line-argument
```

Fortran benchmarks:

```
-Wno-unused-command-line-argument
```

## Peak Compiler Invocation

C benchmarks:

```
clang
```

C++ benchmarks:

```
clang++
```

Fortran benchmarks:

```
flang
```

## Peak Portability Flags

Same as Base Portability Flags



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2024

**Hardware Availability:** Nov-2024

**Software Availability:** Oct-2024

## Peak Optimization Flags

C benchmarks:

600.perlbench\_s: basepeak = yes

```
602.gcc_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-extra-inliner -Ofast -march=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-DSPEC_OPENMP -fremap-arrays -fstrip-mining
-fstruct-layout=9 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -fopenmp=libomp -lomp
-lamdlibm -lamdalloc -lflang
```

```
605.mcf_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-extra-inliner -Ofast -march=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-DSPEC_OPENMP -fremap-arrays -fstrip-mining
-fstruct-layout=9 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -fopenmp=libomp -lomp
-lamdlibm -lamdalloc -lflang
```

625.x264\_s: basepeak = yes

657.xz\_s: Same as 602.gcc\_s

C++ benchmarks:

620.omnetpp\_s: basepeak = yes

```
623.xalancbmk_s: -m64 -std=c++14
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-do-block-reorder=advanced -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -DSPEC_OPENMP -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=100 -zopt
-fvirtual-function-elimination -fvisibility=hidden
-mllvm -do-block-reorder=advanced -fopenmp=libomp -lomp
-lamdlibm -lamdalloc-ext -lflang
```

```
631.deepsjeng_s: -m64 -std=c++14
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2024

Hardware Availability: Nov-2024

Software Availability: Oct-2024

## Peak Optimization Flags (Continued)

631.deepsjeng\_s (continued):

```
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -DSPEC_OPENMP -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=100 -zopt
-fvirtual-function-elimination -fvisibility=hidden
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

641.leela\_s: Same as 631.deepsjeng\_s

Fortran benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-iv-split -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -O3 -march=znver5 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -mllvm -optimize-strided-mem-cost
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -fopenmp=libomp
-lomp -lamdlibm -lamdalloc -lflang
```

## Peak Other Flags

C benchmarks:

```
-Wno-return-type -Wno-unused-command-line-argument
```

C++ benchmarks:

```
-Wno-unused-command-line-argument
```

Fortran benchmarks:

```
-Wno-unused-command-line-argument
```

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-Turin-A.html>  
<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.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-Turin-A.xml>  
<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.xml>



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR635 V3  
(3.55 GHz, AMD EPYC 9355P)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.2

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2024

**Hardware Availability:** Nov-2024

**Software Availability:** Oct-2024

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2024-10-18 11:22:48-0400.  
Report generated on 2024-11-20 11:12:11 by CPU2017 PDF formatter v6716.  
Originally published on 2024-11-19.