SPEC CPU®2017 Integer Speed Result

ASUSTeK Computer Inc.

ASUS RS520QA-E13-RS8U
(3.60 GHz, AMD EPYC 9015)

$SPECspeed^®2017\_int\_base = 17.7$

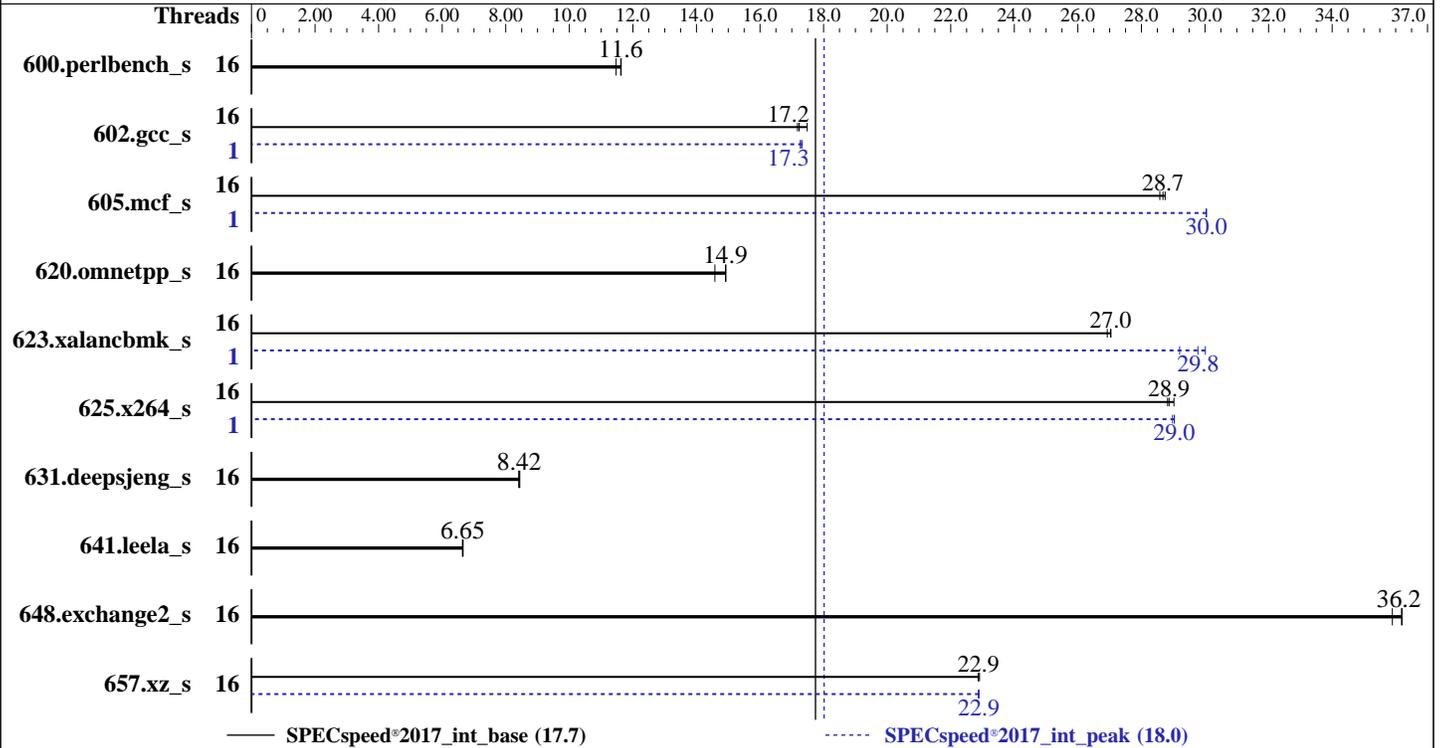$SPECspeed^®2017\_int\_peak = 18.0$

CPU2017 License: 9016　　　　　　　　　　　　　　　　**Test Date:** Jan-2026
Test Sponsor: ASUSTeK Computer Inc.　　　　　　　　**Hardware Availability:** Jun-2025
Tested by: ASUSTeK Computer Inc.　　　　　　　　　**Software Availability:** Oct-2024

Threads		
600.perlbench_s	16	11.6
602.gcc_s	16	17.2
	1	17.3
605.mcf_s	16	28.7
	1	30.0
620.omnetpp_s	16	14.9
623.xalancbmk_s	16	27.0
	1	29.8
625.x264_s	16	28.9
	1	29.0
631.deepsjeng_s	16	8.42
641.leela_s	16	6.65
648.exchange2_s	16	36.2
657.xz_s	16	22.9
		22.9

SPECspeed®2017_int_base (17.7)　　　　　　SPECspeed®2017_int_peak (18.0)

Hardware

CPU Name: AMD EPYC 9015
　Max MHz: 4100
　Nominal: 3600
Enabled: 8 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: 64 MB I+D on chip per chip,
　　32 MB shared / 4 cores
　Other: None
Memory: 384 GB (12 x 32 GB 2Rx4 PC5-6400B-R)
Storage: 1 x 3.2 TB PCIe NVMe SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP6 (x86_64)
　　Kernel 6.4.0-150600.21-default
Compiler: C/C++/Fortran: Version 5.0.0 of AOCC
Parallel: Yes
Firmware: Version 0302 released Jun-2025
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 prefer performance
　　at the cost of additional power usage.

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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	16	153	11.6	**153**	**11.6**	155	11.5	16	153	11.6	**153**	**11.6**	155	11.5
602.gcc_s	16	**231**	**17.2**	228	17.5	232	17.2	1	230	17.3	**231**	**17.3**	231	17.3
605.mcf_s	16	164	28.7	**165**	**28.7**	165	28.6	1	157	30.0	**157**	**30.0**	157	30.0
620.omnetpp_s	16	112	14.6	109	14.9	**109**	**14.9**	16	112	14.6	109	14.9	**109**	**14.9**
623.xalancbmk_s	16	52.4	27.0	**52.4**	**27.0**	52.6	26.9	1	**47.6**	**29.8**	48.5	29.2	47.2	30.0
625.x264_s	16	60.8	29.0	61.2	28.8	**61.1**	**28.9**	1	60.7	29.0	60.9	29.0	**60.8**	**29.0**
631.deepsjeng_s	16	170	8.41	**170**	**8.42**	170	8.44	16	170	8.41	**170**	**8.42**	170	8.44
641.leela_s	16	**257**	**6.65**	256	6.66	257	6.64	16	**257**	**6.65**	256	6.66	257	6.64
648.exchange2_s	16	81.9	35.9	**81.2**	**36.2**	81.2	36.2	16	81.9	35.9	**81.2**	**36.2**	81.2	36.2
657.xz_s	16	**270**	**22.9**	270	22.9	270	22.9	16	270	22.9	270	22.9	**270**	**22.9**
SPECspeed®2017_int_base =		**17.7**												
SPECspeed®2017_int_peak =								**18.0**						

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
OS set to performance mode via cpupower frequency-set -g performance
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.
```

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Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-15"
LD_LIBRARY_PATH =
    "/aocc500A1/amd_speed_aocc500_znver5_A_lib/lib:/aocc500A1/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 = "16"

Environment variables set by runcpu during the 602.gcc_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 605.mcf_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 623.xalancbmk_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 625.x264_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-15"
```

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:
SR-IOV Support = Disabled
SVM Mode = Disabled
NUMA nodes per socket = NPS2
Determinism Control = Manual
DRAM Scrub time = Disabled
Engine Boost = Aggressive
TDP Control = Manual
TDP = 155
PPT Control = Manual
PPT = 155
BMC Configuration:
Fan mode = Full speed mode

 Sysinfo program /aocc500A1/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Fri Jan 16 04:51:51 2026
```

(Continued on next page)

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Platform Notes (Continued)

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

-----------------------------------------------------------
Table of contents
-----------------------------------------------------------
  1. uname -a
  2. w
  3. Username
  4. ulimit -a
  5. sysinfo process ancestry
  6. /proc/cpuinfo
  7. lscpu
  8. numactl --hardware
  9. /proc/meminfo
 10. who -r
 11. Systemd service manager version: systemd 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. tuned-adm active
 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 6.4.0-150600.21-default #1 SMP PREEMPT_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)
  x86_64 x86_64 x86_64 GNU/Linux

-----------------------------------------------------------
2. w
  04:51:51 up 14:44,  2 users,  load average: 4.47, 5.91, 4.30
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                Thu14  11:04m  0.77s  0.03s /bin/bash ./amd_speed_aocc500_znver5_A1.sh
  root     tty2     -                17:43  11:05m  0.02s  0.02s -bash

-----------------------------------------------------------
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) 1545049
  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
```

(Continued on next page)

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Platform Notes (Continued)

```
  stack size              (kbytes, -s) unlimited
  cpu time                (seconds, -t) unlimited
  max user processes            (-u) 1545049
  virtual memory          (kbytes, -v) unlimited
  file locks                    (-x) unlimited

  ------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=42
 login -- root
 -bash
 /bin/bash ./speed.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 intspeed
 runcpu --configfile amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode speed --tune base:peak --size test:train:refspeed intspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.742/templogs/preenv.intspeed.742.0.log --lognum 742.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /aocc500A1


  ------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9015 8-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 26
    model           : 2
    stepping        : 1
    microcode       : 0xb002147
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
    TLB size        : 192 4K pages
    cpu cores       : 8
    siblings        : 16
    1 physical ids (chips)
    16 processors (hardware threads)
    physical id 0: core ids 0-3,8-11
    physical id 0: apicids 0-7,16-23
  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):                     16
  On-line CPU(s) list:        0-15
  Vendor ID:                  AuthenticAMD
  BIOS Vendor ID:             Advanced Micro Devices, Inc.
  Model name:                 AMD EPYC 9015 8-Core Processor
  BIOS Model name:            AMD EPYC 9015 8-Core Processor           Unknown CPU @ 3.6GHz
  BIOS CPU family:            107
  CPU family:                 26
  Model:                      2
  Thread(s) per core:         2
  Core(s) per socket:         8
  Socket(s):                  1
```

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Platform Notes (Continued)

```
Stepping:                          1
Frequency boost:                   enabled
CPU(s) scaling MHz:                96%
CPU max MHz:                       4113.2808
CPU min MHz:                       1500.0000
BogoMIPS:                          7189.43
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 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 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
L1d cache:                         384 KiB (8 instances)
L1i cache:                         256 KiB (8 instances)
L2 cache:                          8 MiB (8 instances)
L3 cache:                          64 MiB (2 instances)
NUMA node(s):                      2
NUMA node0 CPU(s):                 0-3,8-11
NUMA node1 CPU(s):                 4-7,12-15
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      384K   12 Data           1    64     1          64
    L1i      32K      256K    8 Instruction    1    64     1          64
    L2        1M        8M   16 Unified        2  1024     1          64
    L3       32M       64M   16 Unified        3 32768     1          64

    -----------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
```

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Platform Notes (Continued)

```
  node 0 cpus: 0-3,8-11
  node 0 size: 192844 MB
  node 0 free: 192433 MB
  node 1 cpus: 4-7,12-15
  node 1 size: 193443 MB
  node 1 free: 192971 MB
  node distances:
  node   0   1
    0:  10  12
    1:  12  10


  ------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       395559296 kB


  ------------------------------------------------------------
10. who -r
   run-level 3 Jan 15 14:08


  ------------------------------------------------------------
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 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 hwloc-dump-hwdata 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 svnserve systemd-boot-check-no-failures
                   systemd-confext systemd-network-generator systemd-sysext systemd-time-wait-sync
                   systemd-timesyncd tuned udisks2
   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=8bcfdda5-8f30-49cc-9aa9-2e306fa29252
   splash=silent
   mitigations=auto
   quiet
   security=apparmor
   video=1024x768


  ------------------------------------------------------------
14. cpupower frequency-info
   analyzing CPU 4:
     current policy: frequency should be within 1.50 GHz and 3.60 GHz.
                     The governor "performance" may decide which speed to use
                     within this range.
     boost state support:
       Supported: yes
       Active: yes
```

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Platform Notes (Continued)

```
--------------------------------------------------------------
15. tuned-adm active
  It seems that tuned daemon is not running, preset profile is not activated.
  Preset profile: throughput-performance


--------------------------------------------------------------
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 SUSE Linux Enterprise Server 15 SP6


--------------------------------------------------------------
20. Disk information
SPEC is set to: /aocc500A1
  Filesystem    Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p4 xfs  2.8T  100G  2.7T   4% /


--------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         ASUSTeK COMPUTER INC.
    Product:        RS520QA-E13-RS8U
```

(Continued on next page)

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Platform Notes (Continued)

```
     Product Family: Server
     Serial:         /psn/


   ------------------------------------------------------------
 22. 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:
     12x Samsung M321R4GA3PB2-CCPKC 32 GB 2 rank 6400


   ------------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends Inc.
   BIOS Version:      0302
   BIOS Date:         06/26/2025
   BIOS Revision:     3.2
```

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#1377 2024_09_24)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.0.0/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#1377 2024_09_24)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.0.0/bin
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran  | 648.exchange2_s(base, peak)
----------------------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1377 2024_09_24)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.0.0/bin
----------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:

clang

(Continued on next page)

ASUSTeK Computer Inc.

ASUS RS520QA-E13-RS8U
(3.60 GHz, AMD EPYC 9015)

SPECspeed®2017_int_base = 17.7

SPECspeed®2017_int_peak = 18.0

CPU2017 License:	9016	**Test Date:**	Jan-2026
Test Sponsor:	ASUSTeK Computer Inc.	**Hardware Availability:**	Jun-2025
Tested by:	ASUSTeK Computer Inc.	**Software Availability:**	Oct-2024

Base Compiler Invocation (Continued)

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
```

SPEC CPU®2017 Integer Speed Result

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CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Test Date: Jan-2026
Hardware Availability: Jun-2025
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
```

ASUSTeK Computer Inc.

ASUS RS520QA-E13-RS8U
(3.60 GHz, AMD EPYC 9015)

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SPECspeed®2017_int_peak = 18.0

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Test Date: Jan-2026
Hardware Availability: Jun-2025
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: Same as 602.gcc_s

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: basepeak = yes

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Standard Performance Evaluation Corporation (info@spec.org)
https://www.spec.org/

SPEC CPU®2017 Integer Speed Result

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ASUSTeK Computer Inc.

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CPU2017 License:	9016	**Test Date:**	Jan-2026
Test Sponsor:	ASUSTeK Computer Inc.	**Hardware Availability:**	Jun-2025
Tested by:	ASUSTeK Computer Inc.	**Software Availability:**	Oct-2024

Peak Optimization Flags (Continued)

641.leela_s: `basepeak = yes`

Fortran benchmarks:

648.exchange2_s: `basepeak = yes`

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/ASUSTekPlatform-Settings-AMD-K15-V1.2.html`
`http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.00.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-AMD-K15-V1.2.xml`
`http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.00.xml`

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