



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## xFusion

FusionServer 2258H V8  
(AMD EPYC 9755)

SPECspeed®2017\_int\_base = 18.1

SPECspeed®2017\_int\_peak = 18.3

CPU2017 License: 6488

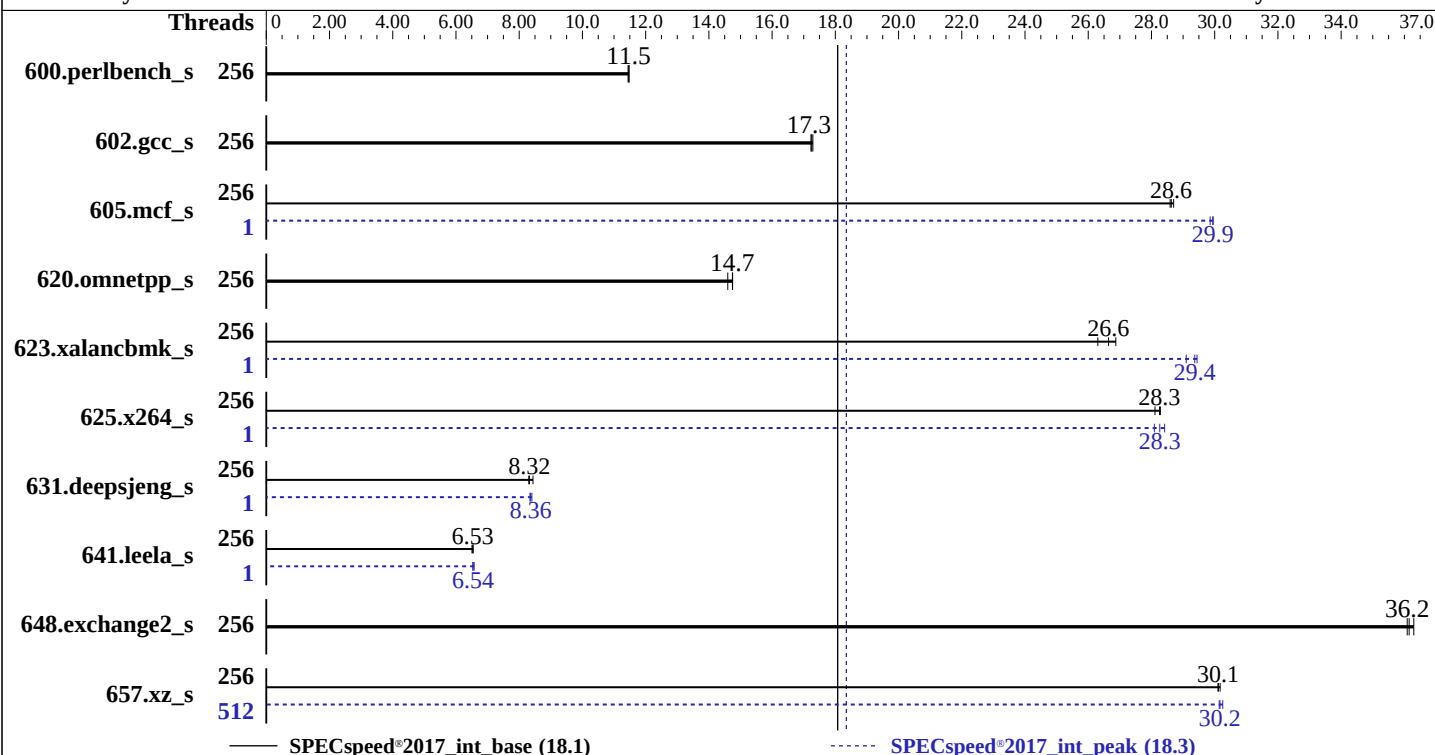
Test Sponsor: xFusion

Tested by: xFusion

Test Date: Sep-2025

Hardware Availability: Sep-2025

Software Availability: Oct-2024



### Hardware

CPU Name: AMD EPYC 9755  
Max MHz: 4100  
Nominal: 2700  
Enabled: 256 cores, 2 chips, 2 threads/core  
Orderable: 1,2 chips  
Cache L1: 32 KB I + 48 KB D on chip per core  
L2: 1 MB I+D on chip per core  
L3: 512 MB I+D on chip per chip, 32 MB shared / 8 cores  
Other: None  
Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-6400B-R)  
Storage: 1 x 1.6 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 00.13.03.05 released Sep-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 | 256     | 155        | 11.5        | <u>155</u> | <u>11.5</u> | 155         | 11.4        | 256     | 155        | 11.5        | <u>155</u>  | <u>11.5</u> | 155         | 11.4        |
| 602.gcc_s       | 256     | <u>231</u> | <u>17.3</u> | 230        | 17.3        | 231         | 17.2        | 256     | <u>231</u> | <u>17.3</u> | 230         | 17.3        | 231         | 17.2        |
| 605.mcf_s       | 256     | 164        | 28.7        | <u>165</u> | <u>28.6</u> | 165         | 28.6        | 1       | 158        | 29.9        | 158         | 30.0        | <u>158</u>  | <u>29.9</u> |
| 620.omnetpp_s   | 256     | <u>111</u> | <u>14.7</u> | 111        | 14.8        | 112         | 14.6        | 256     | <u>111</u> | <u>14.7</u> | 111         | 14.8        | 112         | 14.6        |
| 623.xalancbmk_s | 256     | 53.9       | 26.3        | 52.7       | 26.9        | <u>53.2</u> | <u>26.6</u> | 1       | 48.7       | 29.1        | <u>48.2</u> | <u>29.4</u> | 48.1        | 29.4        |
| 625.x264_s      | 256     | 62.8       | 28.1        | 62.4       | 28.3        | <u>62.4</u> | <u>28.3</u> | 1       | 62.8       | 28.1        | <u>62.4</u> | <u>28.3</u> | 62.1        | 28.4        |
| 631.deepsjeng_s | 256     | 173        | 8.30        | <u>172</u> | <u>8.32</u> | 170         | 8.44        | 1       | 172        | 8.34        | 171         | 8.40        | <u>171</u>  | <u>8.36</u> |
| 641.leela_s     | 256     | 262        | 6.51        | <u>261</u> | <u>6.53</u> | 261         | 6.54        | 1       | 259        | 6.58        | <u>261</u>  | <u>6.54</u> | 261         | 6.53        |
| 648.exchange2_s | 256     | 81.0       | 36.3        | 81.5       | 36.1        | <u>81.3</u> | <u>36.2</u> | 256     | 81.0       | 36.3        | 81.5        | 36.1        | <u>81.3</u> | <u>36.2</u> |
| 657.xz_s        | 256     | 205        | 30.2        | <u>205</u> | <u>30.1</u> | 205         | 30.1        | 512     | 204        | 30.3        | <u>205</u>  | <u>30.2</u> | 205         | 30.1        |

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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  
The kernel stops sending timer ticks to CPUs by using "nohz\_full=1-511"  
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 = "0-511"

LD\_LIBRARY\_PATH =

"/home/Uniautos/cpu2017/amd\_speed\_aocc500\_znver5\_A\_lib/lib:/home/Uniautos/cpu2017/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 = "512"

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 625.x264\_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 657.xz\_s peak run:

GOMP\_CPU\_AFFINITY = "0-511"

## 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 settings:

Determinism Control = Manual

Determinism Enable = Power

TDP Control = Manual

TDP = 500

PPT Control = Manual

PPT = 500

NUMA Nodes Per Socket = NPS4

APBDIS = 1

SMT Mode = Enabled

Sysinfo program /home/Uniautos/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

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## Platform Notes (Continued)

running on xFusion Wed Sep 17 11:07:15 2025

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 xFusion 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
11:07:15 up 1 day, 1:44, 5 users, load average: 0.03, 1.99, 2.66
USER      TTY      FROM          LOGIN@      IDLE        JCPU   PCPU   WHAT
root      tty1      -             Tue09       25:42m     0.06s   0.06s  -bash
root      pts/0    192.168.109.236 09:34       1:27m     0.05s   0.05s  -bash
root      pts/1    192.168.109.236 11:01       11.00s     0.91s   0.00s  less CPU2017.033.intspeed.txt
```

```
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) 6189483
max locked memory       (kbytes, -l) 2097152
max memory size         (kbytes, -m) unlimited
open files              (-n) 65535
pipe size               (512 bytes, -p) 8
```

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### Platform Notes (Continued)

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) 6189483  
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@pts/1
-bash
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/CPU2017.034/templogs/preenv.intspeed.034.0.log --lognum 034.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/Uniautos/cpu2017
```

```
-----
6. /proc/cpuinfo
model name      : AMD EPYC 9755 128-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 26
model          : 2
stepping       : 1
microcode      : 0xb002151
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 192 4K pages
cpu cores      : 128
siblings       : 256
2 physical ids (chips)
512 processors (hardware threads)
physical id 0: core ids 0-127
physical id 1: core ids 0-127
physical id 0: apicids 0-255
physical id 1: apicids 256-511
```

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):              | 512                                                   |
| On-line CPU(s) list: | 0-511                                                 |
| Vendor ID:           | AuthenticAMD                                          |
| BIOS Vendor ID:      | Advanced Micro Devices, Inc.                          |
| Model name:          | AMD EPYC 9755 128-Core Processor                      |
| BIOS Model name:     | AMD EPYC 9755 128-Core Processor Unknown CPU @ 2.7GHz |
| BIOS CPU family:     | 107                                                   |

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### Platform Notes (Continued)

CPU family: 26  
Model: 2  
Thread(s) per core: 2  
Core(s) per socket: 128  
Socket(s): 2  
Stepping: 1  
Frequency boost: enabled  
CPU(s) scaling MHz: 66%  
CPU max MHz: 4121.1909  
CPU min MHz: 1500.0000  
BogoMIPS: 5399.71  
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 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  
AMD-V  
L1d cache: 12 MiB (256 instances)  
L1i cache: 8 MiB (256 instances)  
L2 cache: 256 MiB (256 instances)  
L3 cache: 1 GiB (32 instances)  
NUMA node(s): 8  
NUMA node0 CPU(s): 0-31, 256-287  
NUMA node1 CPU(s): 32-63, 288-319  
NUMA node2 CPU(s): 64-95, 320-351  
NUMA node3 CPU(s): 96-127, 352-383  
NUMA node4 CPU(s): 128-159, 384-415  
NUMA node5 CPU(s): 160-191, 416-447  
NUMA node6 CPU(s): 192-223, 448-479  
NUMA node7 CPU(s): 224-255, 480-511  
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; PBRSE-eIBRS Not affected; BHI Not affected  
Vulnerability Srbds: Not affected  
Vulnerability Tsx async abort: Not affected

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## Platform Notes (Continued)

From lscpu --cache:

| NAME | ONE-SIZE | ALL-SIZE | WAYS | TYPE        | LEVEL | SETS  | PHY-LINE | COHERENCY-SIZE |
|------|----------|----------|------|-------------|-------|-------|----------|----------------|
| L1d  | 48K      | 12M      | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 32K      | 8M       | 8    | Instruction | 1     | 64    | 1        | 64             |
| L2   | 1M       | 256M     | 16   | Unified     | 2     | 1024  | 1        | 64             |
| L3   | 32M      | 1G       | 16   | Unified     | 3     | 32768 | 1        | 64             |

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

available: 8 nodes (0-7)  
node 0 cpus: 0-31,256-287  
node 0 size: 193027 MB  
node 0 free: 191358 MB  
node 1 cpus: 32-63,288-319  
node 1 size: 193519 MB  
node 1 free: 191976 MB  
node 2 cpus: 64-95,320-351  
node 2 size: 193480 MB  
node 2 free: 191830 MB  
node 3 cpus: 96-127,352-383  
node 3 size: 193519 MB  
node 3 free: 191843 MB  
node 4 cpus: 128-159,384-415  
node 4 size: 193519 MB  
node 4 free: 192001 MB  
node 5 cpus: 160-191,416-447  
node 5 size: 193519 MB  
node 5 free: 191799 MB  
node 6 cpus: 192-223,448-479  
node 6 size: 193519 MB  
node 6 free: 191862 MB  
node 7 cpus: 224-255,480-511  
node 7 size: 193293 MB  
node 7 free: 191597 MB  
node distances:  
node 0 1 2 3 4 5 6 7  
0: 10 12 12 12 32 32 32 32  
1: 12 10 12 12 32 32 32 32  
2: 12 12 10 12 32 32 32 32  
3: 12 12 12 10 32 32 32 32  
4: 32 32 32 32 10 12 12 12  
5: 32 32 32 32 12 10 12 12  
6: 32 32 32 32 12 12 10 12  
7: 32 32 32 32 12 12 12 10

9. /proc/meminfo

MemTotal: 1584534512 kB

10. who -r

run-level 3 Sep 16 09:22

11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)

Default Target Status  
multi-user running

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## Platform Notes (Continued)

-----  
12. Services, from systemctl list-unit-files  
STATE UNIT FILES  
enabled YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager firewalld getty@  
irqbalance issue-generator kbdsettings klog lvm2-monitor nscd nvme-fc-boot-connections  
nvmmf-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 ebttables exchange-bmc-os-info fsidd  
gpm grub2-once haveged ipmi ipmievdev issue-add-ssh-keys kexec-load lunmask man-db-create  
multipathd nfs nfs-blkmap powertop rpcbind rpmconfigcheck rsyncd serial-getty@  
smartd\_generate\_opts snmpd snmptrapd systemd-boot-check-no-failures systemd-confext  
systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd tuned  
vncserver@  
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=598ff54f-84bd-49cf-aeb1-10c5c5f6050f  
nohz\_full=1-511  
splash=silent  
quiet  
mitigations=auto  
security=apparmor  
-----

-----  
14. cpupower frequency-info  
analyzing CPU 16:  
current policy: frequency should be within 1.50 GHz and 2.70 GHz.  
The governor "performance" may decide which speed to use  
within this range.  
boost state support:  
Supported: yes  
Active: yes  
-----

-----  
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  
-----

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SPECspeed®2017\_int\_peak = 18.3

**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** Sep-2025  
**Hardware Availability:** Sep-2025  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

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: /home/Uniautos/cpu2017  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/nvme0n1p3 xfs 1.4T 41G 1.4T 3% /  
-----

21. /sys/devices/virtual/dmi/id  
Vendor: XFUSION  
Product: 2258H V8  
Product Family: Turin  
-----

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 SK Hynix HMC94AHBRA481N 64 GB 2 rank 6400  
12x SK Hynix HMC94AHBRA487N 64 GB 2 rank 6400  
-----

23. BIOS  
(This section combines info from /sys/devices and dmidecode.)  
BIOS Vendor: XFUSION  
BIOS Version: 00.13.03.05  
BIOS Date: 09/08/2025  
BIOS Revision: 3.5



# SPEC CPU®2017 Integer Speed Result

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## xFusion

FusionServer 2258H V8  
(AMD EPYC 9755)

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SPECspeed®2017\_int\_peak = 18.3

**CPU2017 License:** 6488  
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**Test Date:** Sep-2025  
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## 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
=====
```

## 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
```

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Test Date: Sep-2025  
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## Base Portability Flags (Continued)

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

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

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SPECspeed®2017\_int\_peak = 18.3

CPU2017 License: 6488  
Test Sponsor: xFusion  
Tested by: xFusion

Test Date: Sep-2025  
Hardware Availability: Sep-2025  
Software Availability: Oct-2024

## Base Other Flags (Continued)

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

## Peak Optimization Flags

C benchmarks:

600.perlbench\_s: basepeak = yes

602.gcc\_s: basepeak = yes

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: -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

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SPECspeed®2017\_int\_peak = 18.3

CPU2017 License: 6488

Test Sponsor: xFusion

Tested by: xFusion

Test Date: Sep-2025

Hardware Availability: Sep-2025

Software Availability: Oct-2024

## Peak Optimization Flags (Continued)

625.x264\_s (continued):

-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

657.xz\_s: Same as 625.x264\_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  
-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:

648.exchange2\_s: basepeak = yes

## Peak Other Flags

C benchmarks:

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

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## xFusion

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CPU2017 License: 6488

Test Sponsor: xFusion

Tested by: xFusion

Test Date: Sep-2025

Hardware Availability: Sep-2025

Software Availability: Oct-2024

## Peak Other Flags (Continued)

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/aocc500-flags.2024-10-10.html>

<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-AMD-V1.8.html>

You can also download the XML flags sources by saving the following links:

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

<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-AMD-V1.8.xml>

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