



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 206

PowerEdge R6715 (AMD EPYC 9135 16-Core Processor)

SPECspeed®2017\_fp\_peak = 214

CPU2017 License: 6573

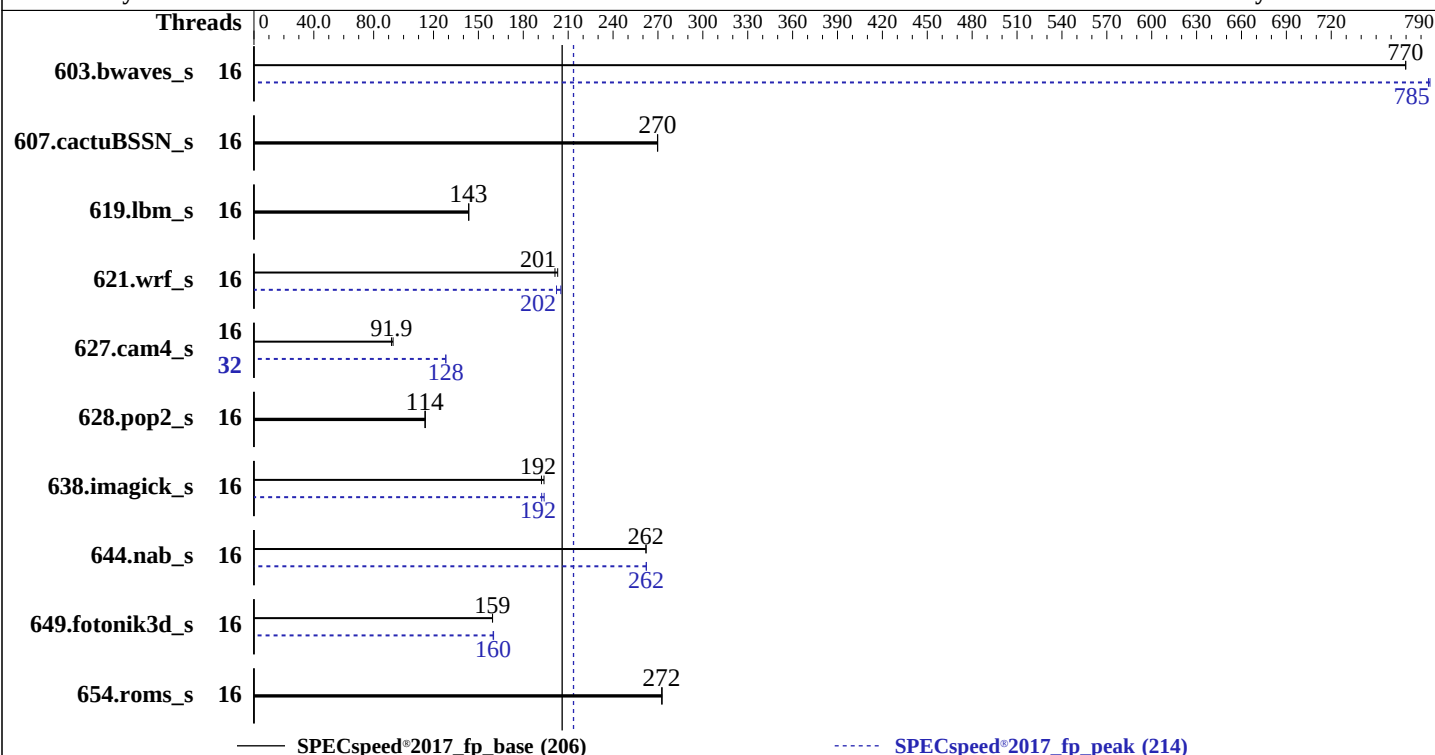
Test Date: Oct-2025

Test Sponsor: Dell Inc.

Hardware Availability: Nov-2025

Tested by: Dell Inc.

Software Availability: Oct-2025



## Hardware

CPU Name: AMD EPYC 9135  
Max MHz: 4300  
Nominal: 3650  
Enabled: 16 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, 16 MB shared / 4 cores  
Other: None  
Memory: 768 GB (12 x 64 GB 2Rx4 PC5-6400B-R, running at 5200)  
Storage: 40 GB on tmpfs  
Other: CPU Cooling: Air

## Software

OS: Ubuntu 24.04.2 LTS  
6.8.0-86-generic  
Compiler: C/C++/Fortran: Version 5.0.0 of AOCC  
Parallel: Yes  
Firmware: Version 1.3.3 released Jun-2025  
File System: tmpfs  
System State: Run level 5 (graphical 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.



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## Results Table

| Benchmark       | Base    |             |            |             |             |         |       | Peak    |             |            |            |            |         |       |
|-----------------|---------|-------------|------------|-------------|-------------|---------|-------|---------|-------------|------------|------------|------------|---------|-------|
|                 | Threads | Seconds     | Ratio      | Seconds     | Ratio       | Seconds | Ratio | Threads | Seconds     | Ratio      | Seconds    | Ratio      | Seconds | Ratio |
| 603.bwaves_s    | 16      | 76.6        | 770        | <u>76.7</u> | <u>770</u>  |         |       | 16      | <u>75.2</u> | <u>785</u> | 75.1       | 786        |         |       |
| 607.cactuBSSN_s | 16      | <b>61.8</b> | <b>270</b> | 61.8        | 270         |         |       | 16      | <b>61.8</b> | <b>270</b> | 61.8       | 270        |         |       |
| 619.lbm_s       | 16      | <b>36.5</b> | <b>143</b> | 36.5        | 144         |         |       | 16      | <b>36.5</b> | <b>143</b> | 36.5       | 144        |         |       |
| 621.wrf_s       | 16      | <b>65.7</b> | <b>201</b> | 65.2        | 203         |         |       | 16      | <b>65.4</b> | <b>202</b> | 64.5       | 205        |         |       |
| 627.cam4_s      | 16      | 95.3        | 93.0       | <b>96.4</b> | <b>91.9</b> |         |       | 32      | <b>69.1</b> | <b>128</b> | 69.1       | 128        |         |       |
| 628.pop2_s      | 16      | 104         | 115        | <b>104</b>  | <b>114</b>  |         |       | 16      | 104         | 115        | <b>104</b> | <b>114</b> |         |       |
| 638.imagick_s   | 16      | <b>75.1</b> | <b>192</b> | 74.4        | 194         |         |       | 16      | <b>75.0</b> | <b>192</b> | 74.4       | 194        |         |       |
| 644.nab_s       | 16      | 66.7        | 262        | <b>66.7</b> | <b>262</b>  |         |       | 16      | <b>66.6</b> | <b>262</b> | 66.6       | 262        |         |       |
| 649.fotonik3d_s | 16      | <b>57.2</b> | <b>159</b> | 57.2        | 159         |         |       | 16      | <b>57.0</b> | <b>160</b> | 56.9       | 160        |         |       |
| 654.roms_s      | 16      | <b>57.8</b> | <b>272</b> | 57.7        | 273         |         |       | 16      | <b>57.8</b> | <b>272</b> | 57.7       | 273        |         |       |

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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

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 = "0-31"

LD\_LIBRARY\_PATH =

"/mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5\_A1.4/amd\_speed\_aocc500\_znver5\_A\_lib/lib:/mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5\_A1.4/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 = "32"

Environment variables set by runcpu during the 603.bwaves\_s peak run:

GOMP\_CPU\_AFFINITY = "0-15"

Environment variables set by runcpu during the 621.wrf\_s peak run:

GOMP\_CPU\_AFFINITY = "0-15"

Environment variables set by runcpu during the 627.cam4\_s peak run:

GOMP\_CPU\_AFFINITY = "0-31"

Environment variables set by runcpu during the 638.imagick\_s peak run:

GOMP\_CPU\_AFFINITY = "0-15"

Environment variables set by runcpu during the 644.nab\_s peak run:

GOMP\_CPU\_AFFINITY = "0-15"

Environment variables set by runcpu during the 649.fotonik3d\_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

Benchmark run from a 40 GB ramdisk created with the cmd: "mount -t tmpfs -o size=40G tmpfs /mnt/ramdisk"

## Platform Notes

BIOS Settings:

Virtualization Technology : Disabled

System Profile : Custom

C-States : Disabled

Memory Patrol Scrub : Disabled

PCI ASPM L1 Link Power Management : Disabled

Periodic Directory Rinse Tuning : Blended

Determinism Control : Manual

Determinism Slider : Power Determinism

Optimizer Mode : Enabled

Algorithm Performance Boost Disable : Enabled

CPPC : Auto

Adaptive Allocation : Enabled

Dram Refresh Delay : Performance

DIMM Self Healing -

on Uncorrectable Memory Error : Disabled

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## Platform Notes (Continued)

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5\_A1.4/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on SLR6711-R6715 Wed Oct 29 09:32:52 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 255 (255.4-1ubuntu8.8)
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 -a  
Linux SLR6711-R6715 6.8.0-86-generic #87-Ubuntu SMP PREEMPT\_DYNAMIC Mon Sep 22 18:03:36 UTC 2025 x86\_64  
x86\_64 x86\_64 GNU/Linux

2. w  
09:32:52 up 2:02, 1 user, load average: 6.37, 5.82, 3.54  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 - 07:30 2:00m 1.79s 0.49s /bin/bash ./amd\_speed\_aocc500\_znver5\_A1.sh

3. Username  
From environment variable \$USER: root

4. ulimit -a  
time(seconds) unlimited  
file(blocks) unlimited  
data(kbytes) unlimited  
stack(kbytes) unlimited  
coredump(blocks) 0  
memory(kbytes) unlimited  
locked memory(kbytes) 2097152  
process 3091485  
nofiles 1024  
vmemory(kbytes) unlimited

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## Platform Notes (Continued)

locks unlimited  
rtprio 0

### 5. sysinfo process ancestry

```
/sbin/init
/bin/login -p --
-bash
/bin/bash /home/DellFiles/bin/DELL_speed.sh
/bin/bash /home/DellFiles/bin/dell-run-main.sh speed
/bin/bash /home/DellFiles/bin/dell-run-main.sh speed
/bin/bash /home/DellFiles/bin/AMD/dell-run-speccpu.sh speed --define DL-VERS=6.3b --output_format
html,pdf,txt
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 2 --define DL-VERS=6.3b
--output_format html,pdf,txt fpspeed
runcpu --configfile amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 2 --define
DL-VERS=6.3b --output_format html,pdf,txt --nopower --runmode speed --tune base:peak --size
test:train:refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.002/temlogs/preenv.fpspeed.002.0.log --lognum 002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5_A1.4
```

### 6. /proc/cpuinfo

```
model name      : AMD EPYC 9135 16-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       : 16
siblings        : 32
1 physical ids (chips)
32 processors (hardware threads)
physical id 0:  core ids 0-3,8-11,16-19,24-27
physical id 0:  apicids 0-7,16-23,32-39,48-55
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):                32
On-line CPU(s) list:    0-31
Vendor ID:              AuthenticAMD
BIOS Vendor ID:         AMD
Model name:             AMD EPYC 9135 16-Core Processor
BIOS Model name:        AMD EPYC 9135 16-Core Processor
BIOS CPU family:        107
CPU family:             26
Model:                  2
                        CPU @ 3.6GHz
```

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## Platform Notes (Continued)

Thread(s) per core: 2  
Core(s) per socket: 16  
Socket(s): 1  
Stepping: 1  
Frequency boost: enabled  
CPU(s) scaling MHz: 49%  
CPU max MHz: 3650.0000  
CPU min MHz: 1500.0000  
BogoMIPS: 7289.40  
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 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 amd\_ibpb\_ret 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 avx512\_vp2intersect flush\_l1d debug\_swap  
L1d cache: 768 KiB (16 instances)  
L1i cache: 512 KiB (16 instances)  
L2 cache: 16 MiB (16 instances)  
L3 cache: 64 MiB (4 instances)  
NUMA node(s): 1  
NUMA node0 CPU(s): 0-31  
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; PBRBS-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      | 768K     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 32K      | 512K     | 8    | Instruction | 1     | 64    | 1        | 64             |
| L2   | 1M       | 16M      | 16   | Unified     | 2     | 1024  | 1        | 64             |
| L3   | 16M      | 64M      | 16   | Unified     | 3     | 16384 | 1        | 64             |

8. numactl --hardware

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## Platform Notes (Continued)

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

```
available: 1 nodes (0)
node 0 cpus: 0-31
node 0 size: 772948 MB
node 0 free: 768385 MB
node distances:
node 0
0: 10
```

```
-----
9. /proc/meminfo
MemTotal:      791499396 kB
```

```
-----
10. who -r
run-level 5 Oct 29 07:30
```

```
-----
11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.8)
Default Target    Status
graphical         running
```

```
-----
12. Services, from systemctl list-unit-files
STATE      UNIT FILES
enabled    apparmor apport blk-availability cloud-config cloud-final cloud-init cloud-init-local
           console-setup e2scrub_reap finalrd getty@ gpu-manager grub-common grub-initrd-fallback
           keyboard-setup lvm2-monitor multipathd networkd-dispatcher open-iscsi pollinate
           secureboot-db setvtrgb snapd ssh systemd-networkd systemd-networkd-wait-online
           systemd-pstore systemd-resolved systemd-timesyncd thermald ufw unattended-upgrades
enabled-runtime netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled      console-getty debug-shell firewalld iscsid nftables serial-getty@
           systemd-boot-check-no-failures systemd-confext systemd-network-generator
           systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code
           systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy
           systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysext
           systemd-time-wait-sync upower
indirect     systemd-sysupdate systemd-sysupdate-reboot
masked       cryptdisks cryptdisks-early hwclock multipath-tools-boot sudo x11-common
```

```
-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.8.0-86-generic
root=UUID=fa3d59b1-ab45-4b01-b377-210cfb333189
ro
```

```
-----
14. cpupower frequency-info
analyzing CPU 12:
  current policy: frequency should be within 1.50 GHz and 3.65 GHz.
                  The governor "schedutil" may decide which speed to use
                  within this range.
  boost state support:
    Supported: yes
    Active: yes
    Boost States: 0
    Total States: 3
    Pstate-P0: 3650MHz
```

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## Platform Notes (Continued)

### 15. sysctl

|                              |       |
|------------------------------|-------|
| kernel.numa_balancing        | 0     |
| 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     |

### 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 Ubuntu 24.04.2 LTS

### 19. Disk information

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5\_A1.4

| Filesystem | Type  | Size | Used | Avail | Use% | Mounted on   |
|------------|-------|------|------|-------|------|--------------|
| tmpfs      | tmpfs | 40G  | 3.3G | 37G   | 9%   | /mnt/ramdisk |

### 20. /sys/devices/virtual/dmi/id

|                 |                 |
|-----------------|-----------------|
| Vendor:         | Dell Inc.       |
| Product:        | PowerEdge R6715 |
| Product Family: | PowerEdge       |
| Serial:         | SLR6711         |

### 21. 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

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## Platform Notes (Continued)

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:

12x 802C0000802C MTC40F2046S1RC64BD2 64 GB 2 rank 6400, configured at 5200

### 22. BIOS

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

BIOS Vendor: Dell Inc.

BIOS Version: 1.3.3

BIOS Date: 06/26/2025

BIOS Revision: 1.3

## Compiler Version Notes

C | 619.lbm\_s(base, peak) 638.imagick\_s(base, peak) 644.nab\_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++, C, Fortran | 607.cactuBSSN\_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

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

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 | 603.bwaves\_s(base, peak) 649.fotonik3d\_s(base, peak) 654.roms\_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, C | 621.wrf\_s(base, peak) 627.cam4\_s(base, peak) 628.pop2\_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

AMD clang version 17.0.6 (CLANG: AOCC\_5.0.0-Build#1377 2024\_09\_24)

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# SPEC CPU®2017 Floating Point Speed Result

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Dell Inc.

SPECspeed®2017\_fp\_base = 206

PowerEdge R6715 (AMD EPYC 9135 16-Core Processor)

SPECspeed®2017\_fp\_peak = 214

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Oct-2025

Hardware Availability: Nov-2025

Software Availability: Oct-2025

## Compiler Version Notes (Continued)

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

Fortran benchmarks:

flang

Benchmarks using both Fortran and C:

flang clang

Benchmarks using Fortran, C, and C++:

clang++ clang flang

## Base Portability Flags

603.bwaves\_s: -DSPEC\_LP64

607.cactuBSSN\_s: -DSPEC\_LP64

619.lbm\_s: -DSPEC\_LP64

621.wrf\_s: -DSPEC\_CASE\_FLAG -Mbyteswapio -DSPEC\_LP64

627.cam4\_s: -DSPEC\_CASE\_FLAG -DSPEC\_LP64

628.pop2\_s: -DSPEC\_CASE\_FLAG -Mbyteswapio -DSPEC\_LP64

638.imagick\_s: -DSPEC\_LP64

644.nab\_s: -DSPEC\_LP64

649.fotonik3d\_s: -DSPEC\_LP64

654.roms\_s: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

-m64 -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

-fremap-arrays -fstrip-mining -fstruct-layout=7

-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3

-mllvm -unroll-threshold=50 -zopt -mrecip=none -fopenmp=libomp -lomp

-lamdlibm -lamdalloc -lflang

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Hardware Availability: Nov-2025

Software Availability: Oct-2025

## 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-X86-prefetching -DSPEC\_OPENMP -O3 -march=znver5  
-fveclib=AMDLIB -ffast-math -fopenmp -flto -funroll-loops  
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3  
-Mrecursive -zopt -fopenmp=libomp -lomp -lamdlibm -lamdalloc  
-lflang

Benchmarks using both Fortran and C:

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -O3 -march=znver5  
-fveclib=AMDLIB -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 -funroll-loops  
-mllvm -lsr-in-nested-loop -Mrecursive -mrecip=none -fopenmp=libomp  
-lomp -lamdlibm -lamdalloc -lflang

Benchmarks using Fortran, C, and C++:

-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver5  
-fveclib=AMDLIB -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  
-mllvm -loop-unswitch-threshold=2000000 -mllvm -unroll-threshold=100  
-funroll-loops -mllvm -lsr-in-nested-loop -Mrecursive -mrecip=none  
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang

## Base Other Flags

C benchmarks:

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

Fortran benchmarks:

-Wno-unused-command-line-argument

Benchmarks using both Fortran and C:

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

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Hardware Availability: Nov-2025

Software Availability: Oct-2025

## Base Other Flags (Continued)

Benchmarks using Fortran, C, and C++:

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

## Peak Compiler Invocation

C benchmarks:

clang

Fortran benchmarks:

flang

Benchmarks using both Fortran and C:

flang clang

Benchmarks using Fortran, C, and C++:

clang++ clang flang

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

619.lbm\_s: basepeak = yes

638.imagick\_s: -m64 -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 -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

644.nab\_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast

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## Peak Optimization Flags (Continued)

644.nab\_s (continued):

```
-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 -mrecip=none  
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

Fortran benchmarks:

```
603.bwaves_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -DSPEC_OPENMP  
-Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math  
-fopenmp -fscalar-transform -fvector-transform  
-mllvm -reduce-array-computations=3 -Mrecursive  
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

```
649.fotonik3d_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -DSPEC_OPENMP  
-Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math  
-fopenmp -flto -mllvm -reduce-array-computations=3  
-Mrecursive -zopt -fopenmp=libomp -lomp -lamdlibm  
-lamdalloc -lflang
```

654.roms\_s: basepeak = yes

Benchmarks using both Fortran and C:

```
621.wrf_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -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 -funroll-loops  
-mllvm -lsr-in-nested-loop -Mrecursive -fopenmp=libomp  
-lomp -lamdlibm -lamdalloc -lflang
```

```
627.cam4_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -Ofast  
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp  
-flto -DSPEC_OPENMP -fremap-arrays -fstrip-mining
```

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## Peak Optimization Flags (Continued)

627.cam4\_s (continued):

-fstruct-layout=9 -mllvm -inline-threshold=1000  
-mllvm -reduce-array-computations=3  
-mllvm -unroll-threshold=50 -zopt -Mrecursive  
-mrecip=none -fopenmp=libomp -lomp -lamdlibm -lamdalloc  
-lflang

628.pop2\_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN\_s: basepeak = yes

## Peak Other Flags

C benchmarks:

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

Fortran benchmarks:

-Wno-unused-command-line-argument

Benchmarks using both Fortran and C:

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

Benchmarks using Fortran, C, and C++:

-Wno-return-type -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/Dell-Platform-Flags-PowerEdge-AMD-EPYC-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/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.8.xml>

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