



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C225 M8 (AMD EPYC 9335 32-Core Processor)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.1

CPU2017 License: 9019

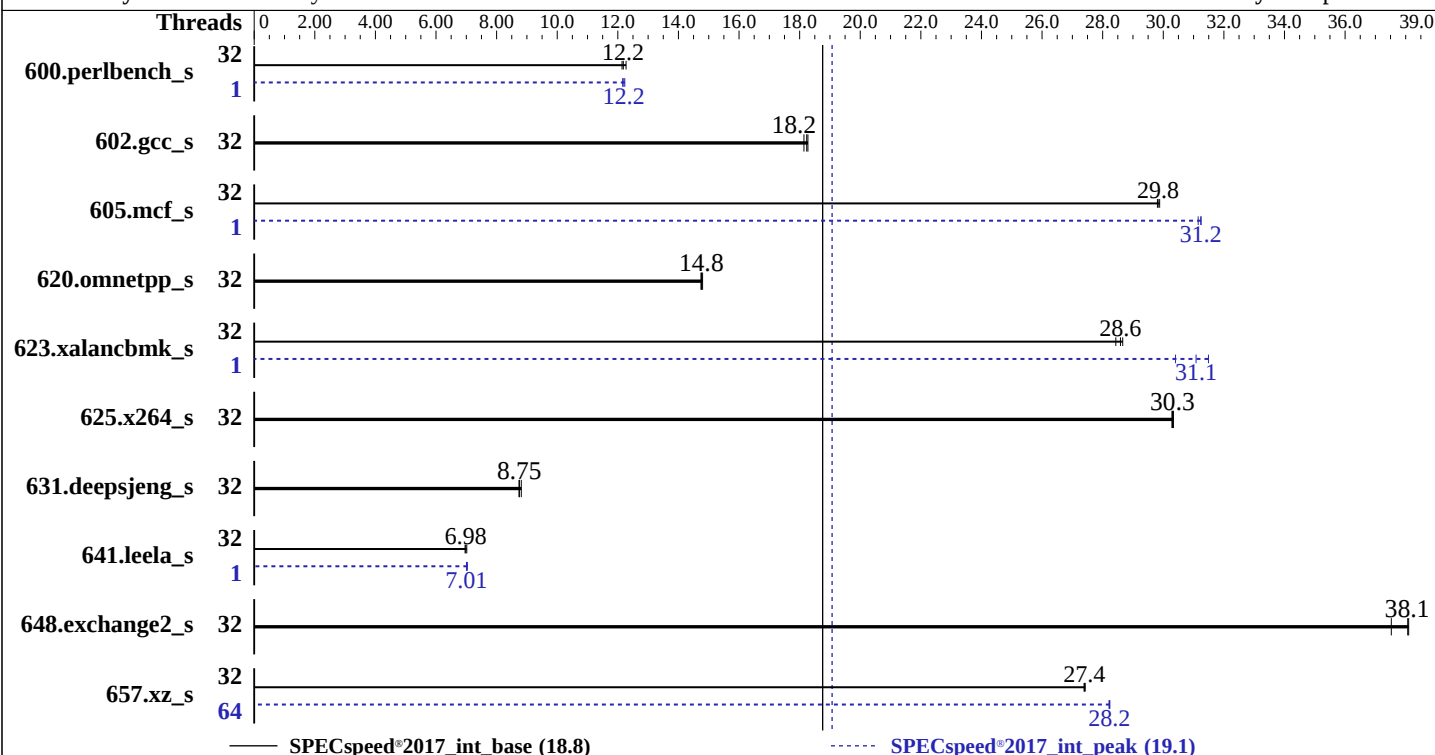
Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Mar-2025

Hardware Availability: Oct-2024

Software Availability: Sep-2024



### Hardware

CPU Name: AMD EPYC 9335  
Max MHz: 4400  
Nominal: 3000  
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: 128 MB I+D on chip per chip, 32 MB shared / 8 cores  
Other: None  
Memory: 768 GB (12 x 64 GB 2Rx4 PC5-6400B-R, running at 6000)  
Storage: 1 x 240 GB M.2 SSD  
Other: CPU Cooling: Air

### Software

OS: SUSE Linux Enterprise Server 15 SP6  
kernel version 6.4.0-150600.21-default  
Compiler: C/C++/Fortran: Version 5.0.0 of AOCC  
Parallel: Yes  
Firmware: Version 4.3.5c released Dec-2024  
File System: btrfs  
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 | 32      | 145                | 12.3               | <b><u>146</u></b> | <b><u>12.2</u></b> | 146                | 12.1               | <b><u>1</u></b>  | <b><u>146</u></b>  | <b><u>12.2</u></b> | 146               | 12.2               | 145     | 12.2  |
| 602.gcc_s       | 32      | 219                | 18.1               | <b><u>218</u></b> | <b><u>18.2</u></b> | 218                | 18.3               | <b><u>32</u></b> | <b><u>219</u></b>  | <b><u>18.1</u></b> | <b><u>218</u></b> | <b><u>18.2</u></b> | 218     | 18.3  |
| 605.mcf_s       | 32      | <b><u>158</u></b>  | <b><u>29.8</u></b> | 158               | 29.8               | 158                | 29.9               | <b><u>1</u></b>  | <b><u>151</u></b>  | <b><u>31.2</u></b> | 151               | 31.2               | 152     | 31.2  |
| 620.omnetpp_s   | 32      | <b><u>110</u></b>  | <b><u>14.8</u></b> | 111               | 14.7               | 110                | 14.8               | <b><u>32</u></b> | <b><u>110</u></b>  | <b><u>14.8</u></b> | 111               | 14.7               | 110     | 14.8  |
| 623.xalancbmk_s | 32      | 49.8               | 28.4               | 49.4              | 28.7               | <b><u>49.6</u></b> | <b><u>28.6</u></b> | <b><u>1</u></b>  | <b><u>45.6</u></b> | <b><u>31.1</u></b> | 45.0              | 31.5               | 46.6    | 30.4  |
| 625.x264_s      | 32      | <b><u>58.2</u></b> | <b><u>30.3</u></b> | 58.2              | 30.3               | 58.1               | 30.3               | <b><u>32</u></b> | <b><u>58.2</u></b> | <b><u>30.3</u></b> | 58.2              | 30.3               | 58.1    | 30.3  |
| 631.deepsjeng_s | 32      | <b><u>164</u></b>  | <b><u>8.75</u></b> | 164               | 8.74               | 163                | 8.81               | <b><u>32</u></b> | <b><u>164</u></b>  | <b><u>8.75</u></b> | 164               | 8.74               | 163     | 8.81  |
| 641.leela_s     | 32      | 243                | 7.02               | 245               | 6.96               | <b><u>244</u></b>  | <b><u>6.98</u></b> | <b><u>1</u></b>  | <b><u>243</u></b>  | <b><u>7.01</u></b> | <b><u>243</u></b> | <b><u>7.01</u></b> | 242     | 7.04  |
| 648.exchange2_s | 32      | <b><u>77.2</u></b> | <b><u>38.1</u></b> | 78.3              | 37.5               | 77.2               | 38.1               | <b><u>32</u></b> | <b><u>77.2</u></b> | <b><u>38.1</u></b> | 78.3              | 37.5               | 77.2    | 38.1  |
| 657.xz_s        | 32      | 225                | 27.4               | 226               | 27.4               | <b><u>226</u></b>  | <b><u>27.4</u></b> | <b><u>64</u></b> | <b><u>219</u></b>  | <b><u>28.2</u></b> | <b><u>219</u></b> | <b><u>28.2</u></b> | 219     | 28.2  |

SPECspeed®2017\_int\_base = **18.8**

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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) 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.



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## Environment Variables Notes

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

GOMP\_CPU\_AFFINITY = "0-63"

LD\_LIBRARY\_PATH =

"/home/cpu2017/amd\_speed\_aocc500\_znver5\_A\_lib/lib:/home/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 = "64"

Environment variables set by runcpu during the 600.perlbench\_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 641.leela\_s peak run:

GOMP\_CPU\_AFFINITY = "0"

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

GOMP\_CPU\_AFFINITY = "0-63"

## 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 settings:

NUMA nodes per socket set to NPS2

Determinism Slider set to Power

DF C-States set to Disabled

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost Sun Mar 23 18:46:14 2025

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

-----  
Table of contents  
-----

1. uname -a
2. w

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## Platform Notes (Continued)

```
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS
```

```
-----
1. uname -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
18:46:14 up 1 min, 1 user, load average: 0.24, 0.10, 0.03
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
root      tty1      -             18:45    22.00s 0.75s  0.05s /bin/bash ./amd_speed_aocc500_znver5_A1.sh
```

```
-----
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) 3094312
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) 3094312
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

```
-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
login -- root
```

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## Platform Notes (Continued)

```
-bash
python3 ./run_amd_speed_aocc500_znver5_A1.py -b intspeed
/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/CPU2017.001/templots/preenv.intspeed.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

```
-----
6. /proc/cpuinfo
model name      : AMD EPYC 9335 32-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 26
model          : 2
stepping       : 1
microcode      : 0xb00211a
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 0-31
physical id 0: apicids 0-63
```

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):              | 64                                                                                                                                                                                                                                                                                                                                                              |
| On-line CPU(s) list: | 0-63                                                                                                                                                                                                                                                                                                                                                            |
| Vendor ID:           | AuthenticAMD                                                                                                                                                                                                                                                                                                                                                    |
| BIOS Vendor ID:      | Advanced Micro Devices, Inc.                                                                                                                                                                                                                                                                                                                                    |
| Model name:          | AMD EPYC 9335 32-Core Processor                                                                                                                                                                                                                                                                                                                                 |
| BIOS Model name:     | AMD EPYC 9335 32-Core Processor                                                                                                                                                                                                                                                                                                                                 |
| BIOS CPU family:     | 107                                                                                                                                                                                                                                                                                                                                                             |
| CPU family:          | 26                                                                                                                                                                                                                                                                                                                                                              |
| Model:               | 2                                                                                                                                                                                                                                                                                                                                                               |
| Thread(s) per core:  | 2                                                                                                                                                                                                                                                                                                                                                               |
| Core(s) per socket:  | 32                                                                                                                                                                                                                                                                                                                                                              |
| Socket(s):           | 1                                                                                                                                                                                                                                                                                                                                                               |
| Stepping:            | 1                                                                                                                                                                                                                                                                                                                                                               |
| Frequency boost:     | enabled                                                                                                                                                                                                                                                                                                                                                         |
| CPU(s) scaling MHz:  | 70%                                                                                                                                                                                                                                                                                                                                                             |
| CPU max MHz:         | 4420.8979                                                                                                                                                                                                                                                                                                                                                       |
| CPU min MHz:         | 1500.0000                                                                                                                                                                                                                                                                                                                                                       |
| BogoMIPS:            | 5991.11                                                                                                                                                                                                                                                                                                                                                         |
| Flags:               | fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat<br>pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb<br>rdtscp lm constant_tsc rep_good amd_lbr_v2 nopl nonstop_tsc cpuid<br>extd_apicid aperfmperf rapl pni pclmulqdq monitor ssse3 fma cx16 pcid<br>sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm |

Unknown CPU @ 3.0GHz

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## Platform Notes (Continued)

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: 1.5 MiB (32 instances)  
L1i cache: 1 MiB (32 instances)  
L2 cache: 32 MiB (32 instances)  
L3 cache: 128 MiB (4 instances)

NUMA node(s): 2

NUMA node0 CPU(s): 0-15,32-47

NUMA node1 CPU(s): 16-31,48-63

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 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

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      | 128M     | 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)

node 0 cpus: 0-15,32-47

node 0 size: 386609 MB

node 0 free: 385770 MB

node 1 cpus: 16-31,48-63

node 1 size: 386995 MB

node 1 free: 386180 MB

node distances:

node 0 1

0: 10 12

1: 12 10

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## Platform Notes (Continued)

9. /proc/meminfo

MemTotal: 792172120 kB

10. who -r

run-level 3 Mar 23 18:45

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 iscsi            |
|                 | issue-generator kbdsettings klog lvm2-monitor nsd postfix purge-kernels rollback rsyslog   |
|                 | smartd sshd systemd-pstore virtqemud 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 dnsmasq ebttables exchange-bmc-os-info |
|                 | firewalld fsidd gpm grub2-once haveged hwloc-dump-hwdata ipmi ipmiev d iscsi-init iscsid   |
|                 | issue-add-ssh-keys kexec-load ksm kvm_stat libvirt-guests lunmask man-db-create multipathd |
|                 | munge nfs nfs-blkmap nfs-server nfsserver rpcbind rpmconfigcheck rsyncd rtkit-daemon       |
|                 | salt-minion serial-getty@ slurmd smartd_generate_opts snmpd snmptrapd strongswan           |
|                 | strongswan-starter svnserve systemd-boot-check-no-failures systemd-confext                 |
|                 | systemd-network-generator systemd-nspawn@ systemd-sysext systemd-time-wait-sync            |
|                 | systemd-timesyncd tcsd udisks2 virtinterfaced virtlockd virtlogd virtnetworkd virtnodedevd |
|                 | virtnwfilterd virtsecret d virtstoraged ypbind                                             |
| indirect        | pcscd systemd-userdbd tftpd wickedd                                                        |

13. Linux kernel boot-time arguments, from /proc/cmdline

BOOT\_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default  
root=UUID=076ee295-de6f-47c7-95ad-f8ccc04c1b41  
splash=silent  
mitigations=auto  
quiet  
security=apparmor

14. cpupower frequency-info

analyzing CPU 4:

current policy: frequency should be within 1.50 GHz and 3.00 GHz.  
The governor "performance" may decide which speed to use within this range.

boost state support:

Supported: yes  
Active: yes

15. sysctl

|                             |    |
|-----------------------------|----|
| kernel.numa_balancing       | 1  |
| kernel.randomize_va_space   | 0  |
| vm.compaction_proactiveness | 20 |
| vm.dirty_background_bytes   | 0  |
| vm.dirty_background_ratio   | 10 |
| vm.dirty_bytes              | 0  |

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### Platform Notes (Continued)

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

```
-----
19. Disk information
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdb2       btrfs 224G  8.4G  211G   4% /home
-----
```

```
-----
20. /sys/devices/virtual/dmi/id
Vendor:      Cisco Systems Inc
Product:     UCSC-C225-M8S
Product Family: Cisco UCS Rack Server
Serial:      WZP28199HWP
-----
```

```
-----
21. dmidecode
Additional information from dmidecode 3.4 follows.  WARNING: Use caution when you interpret this section.
The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately
determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the
"DMTF SMBIOS" standard.
Memory:
  12x 0xAD00 HMC94AHBRA480N 64 GB 2 rank 6400, configured at 6000
-----
```

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# SPEC CPU®2017 Integer Speed Result

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## Cisco Systems

Cisco UCS C225 M8 (AMD EPYC 9335 32-Core Processor)

SPECspeed®2017\_int\_base = 18.8

SPECspeed®2017\_int\_peak = 19.1

**CPU2017 License:** 9019

**Test Sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test Date:** Mar-2025

**Hardware Availability:** Oct-2024

**Software Availability:** Sep-2024

## Platform Notes (Continued)

### 22. BIOS

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

BIOS Vendor: Cisco Systems, Inc.  
BIOS Version: C225M8.4.3.5c.0.1202241036  
BIOS Date: 12/02/2024  
BIOS Revision: 5.35

## 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



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## 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

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



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**Software Availability:** Sep-2024

## 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

## Peak Optimization Flags

C benchmarks:

```
600.perlbench_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
```

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Software Availability: Sep-2024

## Peak Optimization Flags (Continued)

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: basepeak = yes

657.xz\_s: Same as 600.perlbench\_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

641.leela\_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

Fortran benchmarks:

648.exchange2\_s: basepeak = yes



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**Software Availability:** Sep-2024

## 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/aocc500-flags.html>

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-AMD-Turin-v1.1-revG.html>

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

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

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-AMD-Turin-v1.1-revG.xml>

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