SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334 2.70 GHz Processor)

$SPECspeed®2017\_int\_base = 15.4$

$SPECspeed®2017\_int\_peak = 15.6$

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Jan-2025

Hardware Availability: Oct-2024

Software Availability: Sep-2024

Benchmark	Threads	Result
600.perlbench_s	64	9.22
	1	9.24
602.gcc_s	64	15.1
	1	15.1
605.mcf_s	64	24.8
	1	25.4
620.omnetpp_s	64	11.4
	1	11.5
623.xalancbmk_s	64	21.0
	1	23.0
625.x264_s	64	24.2
	1	24.2
631.deepsjeng_s	64	8.00
641.leela_s	64	6.13
	1	6.17
648.exchange2_s	64	27.7
657.xz_s	64	27.1

SPECspeed®2017_int_base (15.4)　　SPECspeed®2017_int_peak (15.6)

Hardware

CPU Name: AMD EPYC 9334
 Max MHz: 3900
 Nominal: 2700
Enabled: 64 cores, 2 chips
Orderable: 1,2 chips
Cache L1: 32 KB I + 32 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: 1536 GB (24 x 64 GB 2Rx4 PC5-5600B-R, running at 4800)
Storage: 1 x 960 GB NVMe 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 4.3.5a released Sep-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.

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4
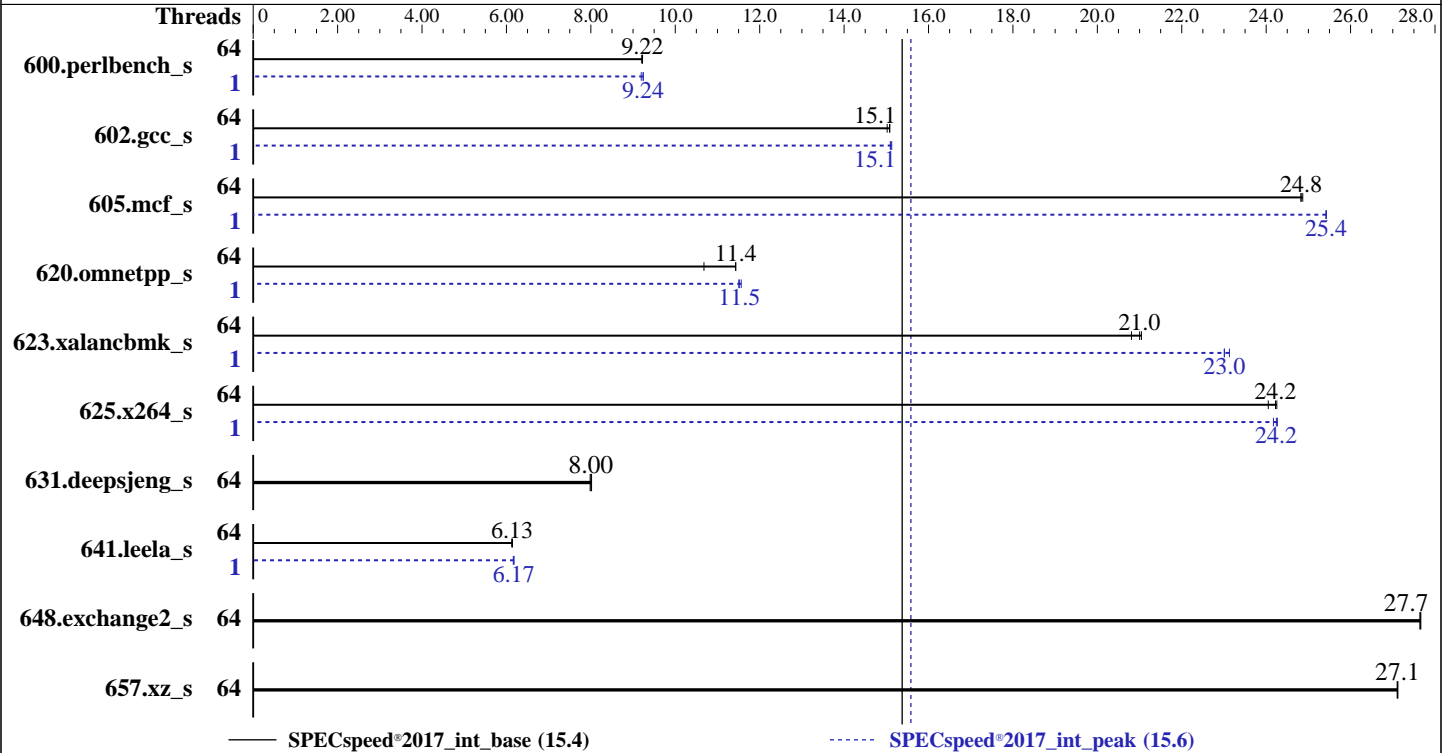
SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Results Table

Benchmark	Base						Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	64	193	9.21	**193**	**9.22**	192	9.22	1	193	9.19	192	9.24	**192**	**9.24**
602.gcc_s	64	264	15.1	**264**	**15.1**	265	15.0	1	263	15.1	264	15.1	**264**	**15.1**
605.mcf_s	64	**190**	**24.8**	190	24.9	190	24.8	1	186	25.4	**186**	**25.4**	186	25.4
620.omnetpp_s	64	**143**	**11.4**	153	10.7	143	11.4	1	142	11.5	141	11.6	**142**	**11.5**
623.xalancbmk_s	64	67.3	21.0	**67.5**	**21.0**	68.1	20.8	1	61.6	23.0	**61.6**	**23.0**	61.3	23.1
625.x264_s	64	72.7	24.3	**72.8**	**24.2**	73.3	24.0	1	72.7	24.3	73.0	24.2	**72.8**	**24.2**
631.deepsjeng_s	64	179	7.98	179	8.02	**179**	**8.00**	64	179	7.98	179	8.02	**179**	**8.00**
641.leela_s	64	278	6.13	**278**	**6.13**	278	6.14	1	276	6.18	277	6.16	**276**	**6.17**
648.exchange2_s	64	106	27.7	106	27.6	**106**	**27.7**	64	106	27.7	106	27.6	**106**	**27.7**
657.xz_s	64	228	27.1	**228**	**27.1**	228	27.1	64	228	27.1	**228**	**27.1**	228	27.1
SPECspeed®2017_int_base =				**15.4**									
SPECspeed®2017_int_peak =				**15.6**									

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

Compiler Notes

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

Submit Notes

```
The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.
```

Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size limit
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run
variability, 'sysctl -w kernel.randomize_va_space=0' run as root.

To enable Transparent Hugepages (THP) only on request for base runs,
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root.
To enable THP for all allocations for peak runs,
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
```

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-63"
LD_LIBRARY_PATH =
     "/home/cpu2017/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 602.gcc_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 605.mcf_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 620.omnetpp_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 641.leela_s peak run:
GOMP_CPU_AFFINITY = "0"
```

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:
SMT Mode set to Disabled
NUMA nodes per socket set to NPS1
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 Jan 19 04:30:32 2025
```

(Continued on next page)

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334 2.70 GHz Processor)

$SPECspeed®2017\_int\_base = 15.4$

$SPECspeed®2017\_int\_peak = 15.6$

CPU2017 License: 9019		**Test Date:**	Jan-2025
Test Sponsor: Cisco Systems		**Hardware Availability:**	Oct-2024
Tested by: Cisco Systems		**Software Availability:**	Sep-2024

Platform Notes (Continued)

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

-----------------------------------------------------------
Table of contents
-----------------------------------------------------------
 1. uname -a
 2. w
 3. Username
 4. ulimit -a
 5. sysinfo process ancestry
 6. /proc/cpuinfo
 7. lscpu
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. 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
   04:30:32 up 9 min,  3 users,  load average: 0.07, 0.22, 0.23
  USER     TTY     FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1    -                04:29   24.00s  1.14s  0.12s /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) 6191365
  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
```

(Continued on next page)

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Platform Notes (Continued)

```
  max user processes              (-u) 6191365
  virtual memory        (kbytes, -v) unlimited
  file locks                      (-x) unlimited


  -------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=42
 login -- root
 -bash
 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/templogs/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 9334 32-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 25
    model           : 17
    stepping        : 1
    microcode       : 0xa101148
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso
    TLB size        : 3584 4K pages
    cpu cores       : 32
    siblings        : 32
    2 physical ids (chips)
    64 processors (hardware threads)
    physical id 0: core ids 0-7,16-23,32-39,48-55
    physical id 1: core ids 0-7,16-23,32-39,48-55
    physical id 0: apicids 0-7,16-23,32-39,48-55
    physical id 1: apicids 64-71,80-87,96-103,112-119
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
  virtualized systems.  Use the above data carefully.


  -------------------------------------------------------------
7. lscpu

 From lscpu from util-linux 2.39.3:
  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 9334 32-Core Processor
  BIOS Model name:          AMD EPYC 9334 32-Core Processor              Unknown CPU @ 2.7GHz
  BIOS CPU family:          107
  CPU family:               25
  Model:                    17
  Thread(s) per core:       1
  Core(s) per socket:       32
  Socket(s):                2
  Stepping:                 1
```

(Continued on next page)

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Jan-2025

Hardware Availability: Oct-2024

Software Availability: Sep-2024

Platform Notes (Continued)

```
    Frequency boost:                    enabled
    CPU(s) scaling MHz:                 73%
    CPU max MHz:                        3910.2529
    CPU min MHz:                        1500.0000
    BogoMIPS:                           5391.65
    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 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 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 overflow_recov succor smca fsrm flush_l1d
                                        debug_swap
    Virtualization:                     AMD-V
    L1d cache:                          2 MiB (64 instances)
    L1i cache:                          2 MiB (64 instances)
    L2 cache:                           64 MiB (64 instances)
    L3 cache:                           256 MiB (8 instances)
    NUMA node(s):                       4
    NUMA node0 CPU(s):                  0-15
    NUMA node1 CPU(s):                  16-31
    NUMA node2 CPU(s):                  32-47
    NUMA node3 CPU(s):                  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: Mitigation; Safe RET
    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
                                        disabled; RSB filling; PBRSB-eIBRS Not affected; BHI Not affected
    Vulnerability Srbds:                Not affected
    Vulnerability Tsx async abort:      Not affected


  From lscpu --cache:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE          LEVEL  SETS PHY-LINE COHERENCY-SIZE
      L1d       32K       2M  8 Data              1    64     1              64
      L1i       32K       2M  8 Instruction       1    64     1              64
      L2         1M      64M  8 Unified           2  2048     1              64
      L3        32M     256M 16 Unified           3 32768     1              64


  ------------------------------------------------------------
  8. numactl --hardware
  NOTE: a numactl 'node' might or might not correspond to a physical chip.
```

(Continued on next page)

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Jan-2025

Hardware Availability: Oct-2024

Software Availability: Sep-2024

Platform Notes (Continued)

```
   available: 4 nodes (0-3)
   node 0 cpus: 0-15
   node 0 size: 386764 MB
   node 0 free: 386121 MB
   node 1 cpus: 16-31
   node 1 size: 387067 MB
   node 1 free: 386386 MB
   node 2 cpus: 32-47
   node 2 size: 387028 MB
   node 2 free: 386470 MB
   node 3 cpus: 48-63
   node 3 size: 387006 MB
   node 3 free: 386483 MB
   node distances:
   node   0   1   2   3
     0:  10  12  32  32
     1:  12  10  32  32
     2:  32  32  10  12
     3:  32  32  12  10


   ----------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1585016828 kB


   ----------------------------------------------------------
10. who -r
   run-level 3 Jan 19 04:21


   ----------------------------------------------------------
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 nscd nvmefc-boot-connections
                   nvmf-autoconnect 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 ebtables exchange-bmc-os-info
                   firewalld fsidd gpm grub2-once haveged hv_fcopy_daemon hv_kvp_daemon hv_vss_daemon
                   hwloc-dump-hwdata ipmi ipmievd iscsi-init iscsid issue-add-ssh-keys kexec-load ksm
                   kvm_stat libvirt-guests lunmask man-db-create multipathd nfs nfs-blkmap nfs-server
                   nfsserver rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@ 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 virtsecretd virtstoraged
   indirect        pcscd systemd-userdbd tftp wickedd


   ----------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
   root=UUID=5d106d92-ac35-417e-b9aa-58e20fc2854f
   splash=silent
   mitigations=auto
   quiet
```

(Continued on next page)

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Platform Notes (Continued)

```
     security=apparmor


   ----------------------------------------------------------
   14. cpupower frequency-info
     analyzing CPU 37:
       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. sysctl
     kernel.numa_balancing            1
     kernel.randomize_va_space        0
     vm.compaction_proactiveness     20
     vm.dirty_background_bytes        0
     vm.dirty_background_ratio       10
     vm.dirty_bytes                   0
     vm.dirty_expire_centisecs     3000
     vm.dirty_ratio                   8
     vm.dirty_writeback_centisecs   500
     vm.dirtytime_expire_seconds  43200
     vm.extfrag_threshold           500
     vm.min_unmapped_ratio            1
     vm.nr_hugepages                  0
     vm.nr_hugepages_mempolicy        0
     vm.nr_overcommit_hugepages       0
     vm.swappiness                    1
     vm.watermark_boost_factor    15000
     vm.watermark_scale_factor       10
     vm.zone_reclaim_mode             1


   ----------------------------------------------------------
   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
```

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334 2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Platform Notes (Continued)

```
  /dev/nvme0n1p2 btrfs  371G   11G  357G   3% /home


   ----------------------------------------------------------
20. /sys/devices/virtual/dmi/id
     Vendor:         Cisco Systems Inc
     Product:        UCSX-215C-M8
     Serial:         FCH282172B4


   ----------------------------------------------------------
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:
     15x 0xCE00 M321R8GA0PB0-CWMCH 64 GB 2 rank 5600, configured at 4800
     2x 0xCE00 M321R8GA0PB0-CWMJH 64 GB 2 rank 5600, configured at 4800
     7x 0xCE00 M321R8GA0PB0-CWMKJ 64 GB 2 rank 5600, configured at 4800


   ----------------------------------------------------------
22. BIOS
   (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:       Cisco Systems, Inc.
     BIOS Version:      X215M8.4.3.5a.0.0904241153
     BIOS Date:         09/04/2024
     BIOS Revision:     5.27
```

Compiler Version Notes

```
==============================================================================================
C      | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
       | 657.xz_s(base, peak)
----------------------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
----------------------------------------------------------------------------------------------


==============================================================================================
C++    | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
       | 641.leela_s(base, peak)
----------------------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran | 648.exchange2_s(base, peak)
----------------------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
----------------------------------------------------------------------------------------------
```

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334 2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Base Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

Fortran benchmarks:
`flang`

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Wl,-mllvm -Wl,-extra-inliner -O3
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP
-flto -fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -fopenmp=libomp -lomp -lamdlibm
-lflang -lamdalloc
```

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

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

$SPECspeed®2017\_int\_base = 15.4$

$SPECspeed®2017\_int\_peak = 15.6$

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Base Optimization Flags (Continued)

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

Base Other Flags

C benchmarks:
```
-Wno-return-type -Wno-unused-command-line-argument
```

C++ benchmarks:
```
-Wno-unused-command-line-argument
```

Fortran benchmarks:
```
-Wno-unused-command-line-argument
```

Peak Compiler Invocation

C benchmarks:
```
clang
```

C++ benchmarks:
```
clang++
```

Fortran benchmarks:
```
flang
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

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`

602.gcc_s: `Same as 600.perlbench_s`

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

625.x264_s: `Same as 600.perlbench_s`

657.xz_s: `basepeak = yes`

C++ benchmarks:

620.omnetpp_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-ext -lflang`

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`

(Continued on next page)

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019		**Test Date:**	Jan-2025
Test Sponsor: Cisco Systems		**Hardware Availability:**	Oct-2024
Tested by: Cisco Systems		**Software Availability:**	Sep-2024

Peak Optimization Flags (Continued)

623.xalancbmk_s (continued):
```
-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

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-v3-revA.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-v3-revA.xml
```

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

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9334
2.70 GHz Processor)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.6

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU®2017 v1.1.9 on 2025-01-19 04:30:32-0500.
Report generated on 2025-02-25 19:06:53 by CPU2017 PDF formatter v6716.
Originally published on 2025-02-25.