



SPEC CPU®2017 Integer Speed Result

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Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9535
2.40 GHz Processor)

SPECspeed®2017_int_base = 17.2

SPECspeed®2017_int_peak = 17.5

CPU2017 License: 9019

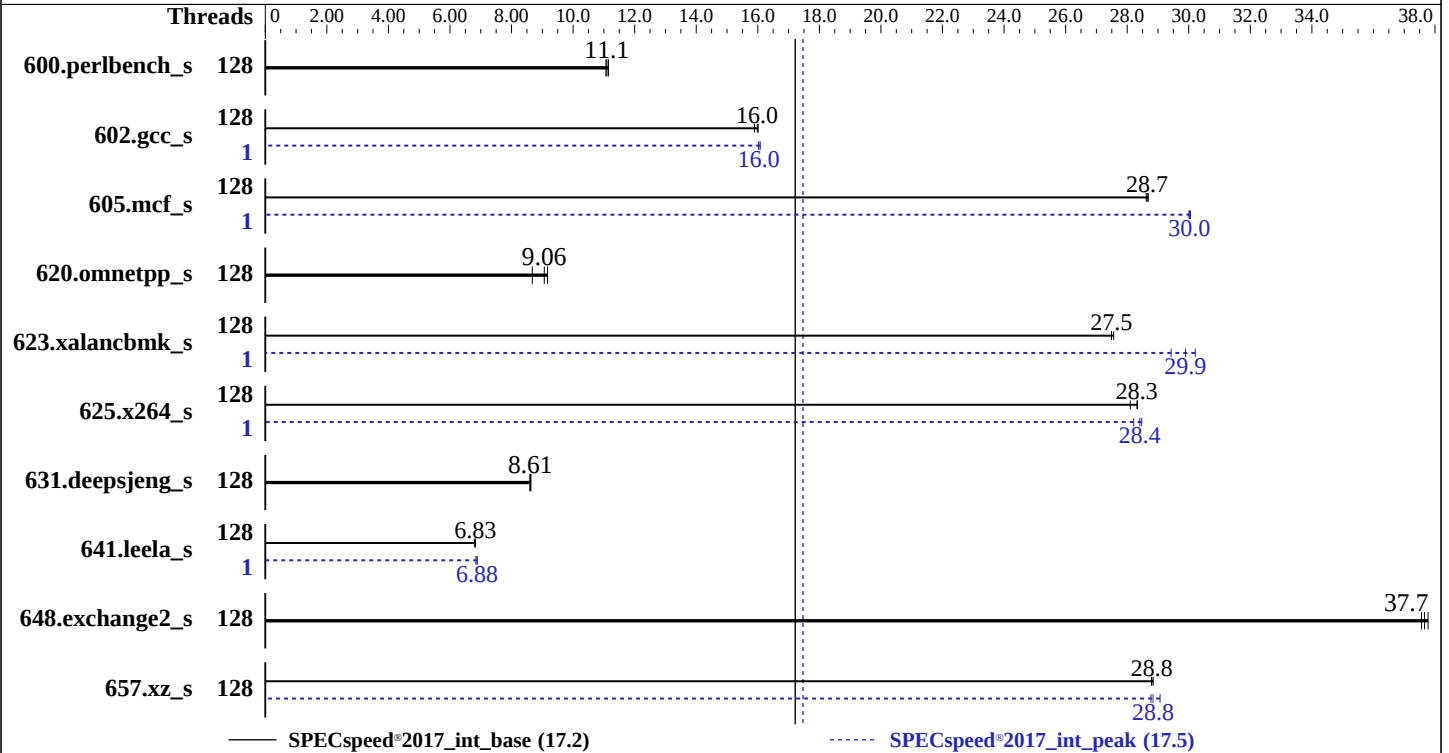
Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2025

Hardware Availability: Oct-2024

Software Availability: Sep-2024



Hardware

CPU Name: AMD EPYC 9535
Max MHz: 4300
Nominal: 2400
Enabled: 128 cores, 2 chips
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 1 MB I+D on chip per core
L3: 256 MB I+D on chip per chip, 16 MB shared / 4 cores
Other: None
Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-6400B-R, running at 6000)
Storage: 1 x 960 GB SATA 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 4.3.5f released Feb-2025
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	128	160	11.1	159	11.1	160	11.1	128	160	11.1	159	11.1	160	11.1
602.gcc_s	128	249	16.0	249	16.0	251	15.9	1	248	16.0	248	16.1	248	16.0
605.mcf_s	128	165	28.7	165	28.6	165	28.7	1	157	30.1	157	30.0	157	30.0
620.omnetpp_s	128	180	9.06	188	8.67	178	9.17	128	180	9.06	188	8.67	178	9.17
623.xalancbmk_s	128	51.5	27.5	51.5	27.5	51.4	27.6	1	48.2	29.4	47.4	29.9	46.9	30.2
625.x264_s	128	62.3	28.3	62.3	28.3	62.8	28.1	1	62.0	28.5	62.5	28.2	62.1	28.4
631.deepsjeng_s	128	166	8.63	166	8.61	167	8.60	128	166	8.63	166	8.61	167	8.60
641.leela_s	128	250	6.83	250	6.83	251	6.80	1	248	6.88	249	6.84	248	6.88
648.exchange2_s	128	77.8	37.8	78.3	37.6	78.1	37.7	128	77.8	37.8	78.3	37.6	78.1	37.7
657.xz_s	128	214	28.8	215	28.8	215	28.8	128	214	28.8	213	29.1	215	28.8

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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 = "0-127"

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 = "128"

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 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"

Environment variables set by runcpu during the 657.xz_s peak run:

GOMP_CPU_AFFINITY = "0-127"

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

Enhanced CPU performance set to Auto

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost Mon Apr 28 00:38:05 2025

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

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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
00:38:05 up 1 min,  2 users,  load average: 0.20, 0.06, 0.02
USER  TTY      FROM             LOGIN@   IDLE   JCPU   PCPU   WHAT
root   tty1      -                00:37    21.00s 0.87s  0.08s /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) 6190631
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) 6190631
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

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Platform Notes (Continued)

```
-----
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 intspeerd
/bin/bash ./amd_speed_aocc500_znver5_A1.sh
runcpu --config amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 intspeerd
runcpu --configfile amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode speed --tune base:peak --size test:train:refspeerd intspeerd --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/temlogs/preenv.intspeerd.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

-----
6. /proc/cpuinfo
model name      : AMD EPYC 9535 64-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 26
model          : 2
stepping       : 1
microcode      : 0xb00211e
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 192 4K pages
cpu cores      : 64
siblings       : 64
2 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids
0-3,16-19,32-35,48-51,64-67,80-83,96-99,112-115,128-131,144-147,160-163,176-179,192-195,208-211,224-227,2
40-243
physical id 1: core ids
0-3,16-19,32-35,48-51,64-67,80-83,96-99,112-115,128-131,144-147,160-163,176-179,192-195,208-211,224-227,2
40-243
physical id 0: apicids
0-3,16-19,32-35,48-51,64-67,80-83,96-99,112-115,128-131,144-147,160-163,176-179,192-195,208-211,224-227,2
40-243
physical id 1: apicids
256-259,272-275,288-291,304-307,320-323,336-339,352-355,368-371,384-387,400-403,416-419,432-435,448-451,4
64-467,480-483,496-499
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):            128
On-line CPU(s) list: 0-127
Vendor ID:         AuthenticAMD
BIOS Vendor ID:    Advanced Micro Devices, Inc.
Model name:        AMD EPYC 9535 64-Core Processor
BIOS Model name:   AMD EPYC 9535 64-Core Processor
BIOS CPU family:   107
CPU family:        26
Unknown CPU @ 2.4GHz
```

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Platform Notes (Continued)

Model: 2
Thread(s) per core: 1
Core(s) per socket: 64
Socket(s): 2
Stepping: 1
Frequency boost: enabled
CPU(s) scaling MHz: 59%
CPU max MHz: 4307.8120
CPU min MHz: 1500.0000
BogoMIPS: 4792.58
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb
rdtscp lm constant_tsc rep_good amd_lbr_v2 nopl nonstop_tsc cpuid
extd_apicid aperfmperf rapl pni pclmulqdq monitor ssse3 fma cx16 pcid
sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm
cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext
perfctr_llc mwaitx cpb cat_l3 cdp_l3 hw_pstate ssbd mba perfmon_v2
ibrs ibpb stibp ibrs_enhanced vmmcall fsgsbase tsc_adjust bmi1 avx2
smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local user_shstk avx_vnni avx512_bf16 clzero irperf
xsaveerptr rdpru wbnoinvd amd_ppin cppc arat npt lbrv svm_lock
nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
pfthreshold avic v_vmsave_vmload vgif x2avic v_spec_ctrl vnmi
avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
avx512_vnni avx512_bitalg avx512_vpopcntdq la57 rdpid bus_lock_detect
movdiri movdir64b overflow_recov succor smca fsrm avx512_vp2intersect
flush_lld debug_swap
Virtualization: AMD-V
L1d cache: 6 MiB (128 instances)
L1i cache: 4 MiB (128 instances)
L2 cache: 128 MiB (128 instances)
L3 cache: 512 MiB (32 instances)
NUMA node(s): 2
NUMA node0 CPU(s): 0-63
NUMA node1 CPU(s): 64-127
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
disabled; 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	6M	12	Data	1	64	1	64
L1i	32K	4M	8	Instruction	1	64	1	64
L2	1M	128M	16	Unified	2	1024	1	64
L3	16M	512M	16	Unified	3	16384	1	64

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Platform Notes (Continued)

8. numactl --hardware

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

available: 2 nodes (0-1)

node 0 cpus: 0-63

node 0 size: 773673 MB

node 0 free: 772173 MB

node 1 cpus: 64-127

node 1 size: 774011 MB

node 1 free: 772927 MB

node distances:

node 0 1

0: 10 32

1: 32 10

9. /proc/meminfo

MemTotal: 1584829392 kB

10. who -r

run-level 3 Apr 28 00:36

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 nvme-fc-boot-connections

nvmmf-autoconnect postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore

virtqemu wickd wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny

enabled-runtime systemd-remount-fs

disabled autofs autostart-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 hv_fcopy_daemon hv_kvp_daemon hv_vss_daemon

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 tcsh udisks2 virtinterfaced

virtlockd virtlogd virtnetworkd virtnodevdev virtnwfilterd virtsecret virtstoraged ypbind

indirect pcsd 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=46707549-98f2-46fd-888c-f84afd8b63bd

splash=silent

mitigations=auto

quiet

security=apparmor

14. cpupower frequency-info

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Platform Notes (Continued)

analyzing CPU 26:

current policy: frequency should be within 1.50 GHz and 2.40 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+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/nvme0n1p2 btrfs 894G  43G  848G   5% /home
-----
```

```
-----
20. /sys/devices/virtual/dmi/id
-----
```

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Platform Notes (Continued)

Vendor: Cisco Systems Inc
Product: UCSX-215C-M8
Product Family: Cisco UCS Rack Server
Serial: FCH282172G8

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:

16x 0xCE00 M321R8GA0PB2-CCPEC 64 GB 2 rank 6400, configured at 6000
8x 0xCE00 M321R8GA0PB2-CCPKC 64 GB 2 rank 6400, configured at 6000

22. BIOS

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

BIOS Vendor: Cisco Systems, Inc.
BIOS Version: X215M8.4.3.5f.0.0218251523
BIOS Date: 02/18/2025
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

InstallDir: /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

InstallDir: /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

InstallDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin



SPEC CPU®2017 Integer Speed Result

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Cisco Systems

Cisco UCS X215c M8 (AMD EPYC 9535
2.40 GHz Processor)

SPECspeed®2017_int_base = 17.2

SPECspeed®2017_int_peak = 17.5

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-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

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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 -flt0 -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



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Test Date: Feb-2025

Hardware Availability: Oct-2024

Software Availability: Sep-2024

Peak Optimization Flags

C benchmarks:

600.perlbench_s: basepeak = yes

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

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

625.x264_s: Same as 602.gcc_s

657.xz_s: Same as 602.gcc_s

C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: -m64 -std=c++14
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-do-block-reorder=advanced -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -DSPEC_OPENMP -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=100 -zopt
-fvirtual-function-elimination -fvisibility=hidden
-mllvm -do-block-reorder=advanced -fopenmp=libomp -lomp
-lamdlibm -lamdalloc-ext -lflang

631.deepsjeng_s: basepeak = yes

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Software Availability: Sep-2024

Peak Optimization Flags (Continued)

```
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-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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