SPEC CPU®2017 Integer Speed Result

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Supermicro
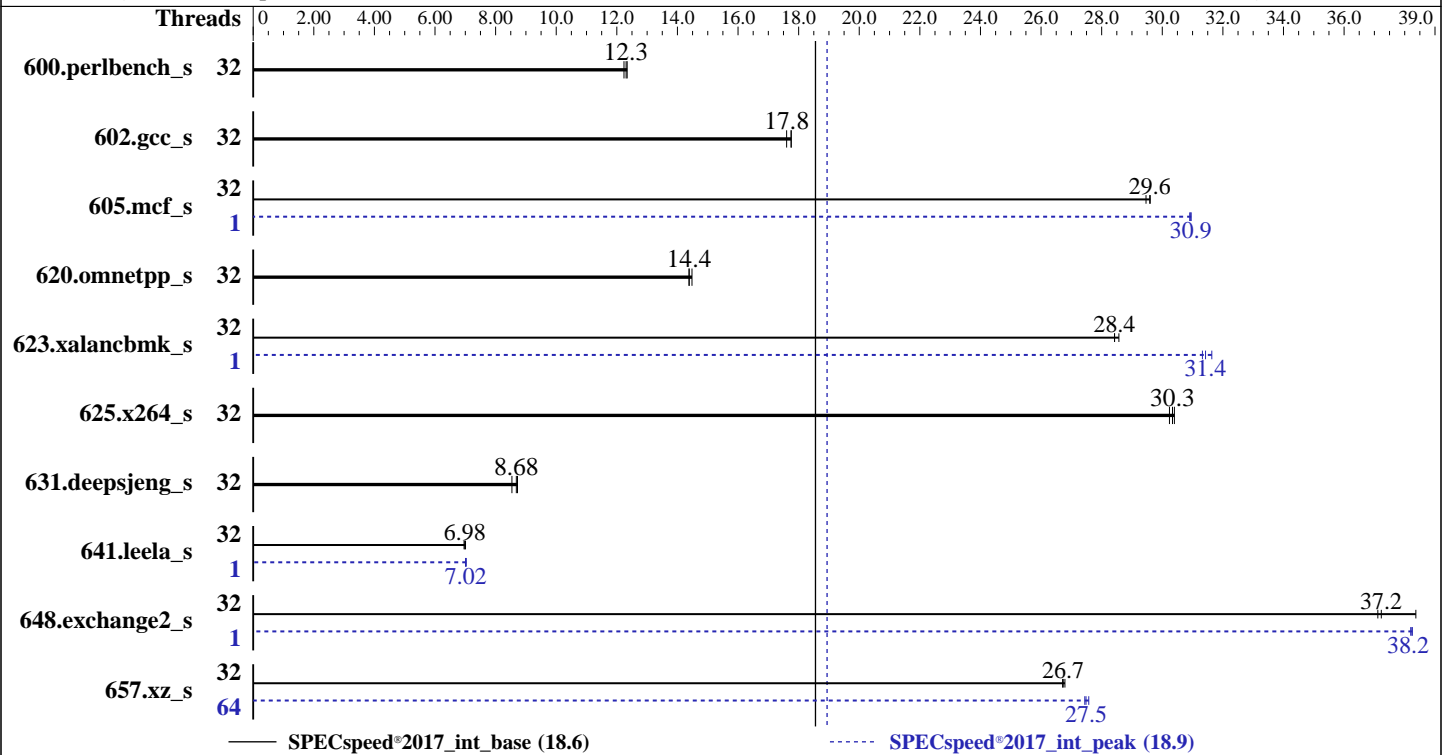
CloudDC A+ Server AS -1115CS-TNR
(H13SSW , AMD EPYC 9335)

$SPECspeed®2017\_int\_base = 18.6$

$SPECspeed®2017\_int\_peak = 18.9$

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Mar-2025
Hardware Availability: Oct-2024
Software Availability: Feb-2025

Threads

Benchmark	Threads	Value
600.perlbench_s	32	12.3
602.gcc_s	32	17.8
605.mcf_s	32	29.6
	1	30.9
620.omnetpp_s	32	14.4
623.xalancbmk_s	32	28.4
	1	31.4
625.x264_s	32	30.3
631.deepsjeng_s	32	8.68
641.leela_s	32	6.98
	1	7.02
648.exchange2_s	32	37.2
	1	38.2
657.xz_s	32	26.7
	64	27.5

———— SPECspeed®2017_int_base (18.6)
- - - - SPECspeed®2017_int_peak (18.9)

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: 128 GB (8 x 16 GB 2Rx4 PC5-5600B-R)
Storage: 1 x 960 GB NVMe SSD
Other: CPU Cooling: Air

Software

OS: Ubuntu 24.04.2 LTS
  Kernel 6.8.0-54-generic
Compiler: C/C++/Fortran: Version 5.0.0 of AOCC
Parallel: Yes
Firmware: Version 3.4 released Feb-2025
File System: ext4
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.

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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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	144	12.3	145	12.2	**144**	**12.3**	32	144	12.3	145	12.2	**144**	**12.3**
602.gcc_s	32	224	17.8	226	17.6	**224**	**17.8**	32	224	17.8	226	17.6	**224**	**17.8**
605.mcf_s	32	159	29.6	**160**	**29.6**	160	29.5	1	153	31.0	153	30.9	**153**	**30.9**
620.omnetpp_s	32	113	14.4	**113**	**14.4**	113	14.5	32	113	14.4	**113**	**14.4**	113	14.5
623.xalancbmk_s	32	**49.8**	**28.4**	49.9	28.4	49.6	28.6	1	44.8	31.6	45.2	31.3	**45.1**	**31.4**
625.x264_s	32	**58.1**	**30.3**	58.0	30.4	58.3	30.2	32	**58.1**	**30.3**	58.0	30.4	58.3	30.2
631.deepsjeng_s	32	**165**	**8.68**	168	8.54	164	8.72	32	**165**	**8.68**	168	8.54	164	8.72
641.leela_s	32	245	6.96	243	7.01	**244**	**6.98**	1	**243**	**7.02**	243	7.01	243	7.03
648.exchange2_s	32	76.6	38.4	**79.0**	**37.2**	79.2	37.1	1	76.9	38.3	**76.9**	**38.2**	77.0	38.2
657.xz_s	32	231	26.7	**231**	**26.7**	231	26.8	64	224	27.6	225	27.4	**225**	**27.5**
SPECspeed®2017_int_base =		**18.6**											
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

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

Submit Notes

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

Operating System Notes

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

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

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

To enable Transparent Hugepages (THP) for all allocations,
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.

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Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-63"
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 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 648.exchange2_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 = NPS4
Determinism Control = Manual
Determinism Enable = Power
TDP Control = Manual
TDP = 240
Package Power Limit Control = Manual
Package Power Limit = 240
TSME = Disabled

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on as-1115cs-tnr-9335 Tue Mar  4 11:02:22 2025

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

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

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Platform Notes (Continued)

```
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-------------------------------------------------------------
 1. uname -a
 2. w
 3. Username
 4. ulimit -a
 5. sysinfo process ancestry
 6. /proc/cpuinfo
 7. lscpu
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.5)
12. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. tuned-adm active
17. sysctl
18. /sys/kernel/mm/transparent_hugepage
19. /sys/kernel/mm/transparent_hugepage/khugepaged
20. OS release
21. Disk information
22. /sys/devices/virtual/dmi/id
23. dmidecode
24. BIOS
-------------------------------------------------------------


-------------------------------------------------------------
1. uname -a
  Linux as-1115cs-tnr-9335 6.8.0-54-generic #56-Ubuntu SMP PREEMPT_DYNAMIC Sat Feb  8 00:37:57 UTC 2025
  x86_64 x86_64 x86_64 GNU/Linux


-------------------------------------------------------------
2. w
   11:02:22 up  7:58,  1 user,  load average: 5.34, 23.34, 35.99
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU  WHAT
   smc      tty1     -                03:05    7:52m  1.24s  1.16s sudo su -


-------------------------------------------------------------
3. Username
  From environment variable $USER:  root
  From the command 'logname':       smc


-------------------------------------------------------------
4. ulimit -a
  time(seconds)       unlimited
  file(blocks)        unlimited
  data(kbytes)        unlimited
  stack(kbytes)       unlimited
  coredump(blocks)    0
  memory(kbytes)      unlimited
  locked memory(kbytes) 2097152
  process             513652
  nofiles             1024
  vmemory(kbytes)     unlimited
  locks               unlimited
  rtprio              0


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

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Platform Notes (Continued)

```
5. sysinfo process ancestry
 /sbin/init
 /bin/login -p --
 -bash
 sudo su -
 sudo su -
 su -
 -bash
 python3 ./run_amd_speed_aocc500_znver5_A1.py
 /bin/bash ./amd_speed_aocc500_znver5_A1.sh
 runcpu --config amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 intspeed
 runcpu --configfile amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode speed --tune base:peak --size test:train:refspeed intspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.001/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 9335 32-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       : 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          Unknown CPU @ 3.0GHz
  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
```

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Platform Notes (Continued)

```
  CPU min MHz:                        1500.0000
  BogoMIPS:                           5999.80
  Flags:                              fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
                                      pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb
                                      rdtscp lm constant_tsc rep_good amd_lbr_v2 nopl nonstop_tsc cpuid
                                      extd_apicid aperfmperf rapl pni pclmulqdq monitor ssse3 fma cx16 pcid
                                      sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm
                                      cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
                                      osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext
                                      perfctr_llc mwaitx cpb cat_l3 cdp_l3 hw_pstate ssbd mba perfmon_v2
                                      ibrs ibpb stibp ibrs_enhanced vmmcall fsgsbase tsc_adjust bmi1 avx2
                                      smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
                                      avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
                                      xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                                      cqm_mbm_local user_shstk avx_vnni avx512_bf16 clzero irperf
                                      xsaveerptr rdpru wbnoinvd amd_ppin cppc arat npt lbrv svm_lock
                                      nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
                                      pfthreshold avic v_vmsave_vmload vgif x2avic v_spec_ctrl vnmi
                                      avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
                                      avx512_vnni avx512_bitalg avx512_vpopcntdq la57 rdpid bus_lock_detect
                                      movdiri movdir64b overflow_recov succor smca fsrm avx512_vp2intersect
                                      flush_l1d debug_swap
  Virtualization:                     AMD-V
  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):                       4
  NUMA node0 CPU(s):                  0-7,32-39
  NUMA node1 CPU(s):                  8-15,40-47
  NUMA node2 CPU(s):                  16-23,48-55
  NUMA node3 CPU(s):                  24-31,56-63
  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; 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       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: 4 nodes (0-3)
    node 0 cpus: 0-7,32-39
```

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Platform Notes (Continued)

```
  node 0 size: 31830 MB
  node 0 free: 31235 MB
  node 1 cpus: 8-15,40-47
  node 1 size: 32207 MB
  node 1 free: 31813 MB
  node 2 cpus: 16-23,48-55
  node 2 size: 32250 MB
  node 2 free: 31796 MB
  node 3 cpus: 24-31,56-63
  node 3 size: 32199 MB
  node 3 free: 31645 MB
  node distances:
  node   0   1   2   3
    0:  10  12  12  12
    1:  12  10  12  12
    2:  12  12  10  12
    3:  12  12  12  10


  --------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       131571360 kB


  --------------------------------------------------------------
10. who -r
   run-level 3 Mar 4 03:04


  --------------------------------------------------------------
11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.5)
   Default Target  Status
   multi-user      degraded


  --------------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
    UNIT              LOAD   ACTIVE SUB    DESCRIPTION
  * user@1000.service loaded failed failed User Manager for UID 1000
   Legend: LOAD  -> Reflects whether the unit definition was properly loaded.
           ACTIVE -> The high-level unit activation state, i.e. generalization of SUB.
           SUB    -> The low-level unit activation state, values depend on unit type.
   1 loaded units listed.


  --------------------------------------------------------------
13. Services, from systemctl list-unit-files
   STATE            UNIT FILES
   enabled          ModemManager apparmor apport blk-availability cloud-config cloud-final cloud-init
                    cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
                    grub-common grub-initrd-fallback keyboard-setup lvm2-monitor multipathd
                    networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog secureboot-db setvtrgb
                    snapd sysstat systemd-networkd systemd-networkd-wait-online systemd-pstore
                    systemd-resolved systemd-timesyncd thermald tuned ua-reboot-cmds ubuntu-advantage udisks2
                    ufw unattended-upgrades vgauth
   enabled-runtime  netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
   disabled         console-getty debug-shell iscsid nftables rsync serial-getty@ ssh
                    systemd-boot-check-no-failures systemd-confext systemd-network-generator
                    systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code
                    systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy
                    systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysext
                    systemd-time-wait-sync upower
   indirect         systemd-sysupdate systemd-sysupdate-reboot uuidd
   masked           cryptdisks cryptdisks-early hwclock multipath-tools-boot screen-cleanup sudo x11-common
```

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Platform Notes (Continued)

```
----------------------------------------------------------
14. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-6.8.0-54-generic
   root=UUID=afd77683-fe04-45a7-a0c2-997c380461e9
   ro


----------------------------------------------------------
15. cpupower frequency-info
   analyzing CPU 60:
      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
        Boost States: 0
        Total States: 3
        Pstate-P0:  3000MHz


----------------------------------------------------------
16. tuned-adm active
   Current active profile: throughput-performance


----------------------------------------------------------
17. 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


----------------------------------------------------------
18. /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


----------------------------------------------------------
19. /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
```

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Platform Notes (Continued)

```
  scan_sleep_millisecs    10000


    ----------------------------------------------------------
20. OS release
   From /etc/*-release /etc/*-version
   os-release Ubuntu 24.04.2 LTS


    ----------------------------------------------------------
21. Disk information
SPEC is set to: /home/cpu2017
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/nvme0n1p2 ext4  879G   16G  818G   2% /


    ----------------------------------------------------------
22. /sys/devices/virtual/dmi/id
     Vendor:          Supermicro
     Product:         AS -1115CS-TNR
     Product Family:  SMC H13
     Serial:          FruPS12150934


    ----------------------------------------------------------
23. dmidecode
   Additional information from dmidecode 3.5 follows.  WARNING: Use caution when you interpret this section.
   The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately
   determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the
   "DMTF SMBIOS" standard.
   Memory:
     4x Micron Technology MTC10F1084S1RC56BD1 MLCC 16 GB 1 rank 5600
     4x Micron Technology MTC10F1084S1RC56BD1 QLFF 16 GB 1 rank 5600



    ----------------------------------------------------------
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      3.4
   BIOS Date:         02/13/2025
   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
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
```

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Supermicro

CloudDC A+ Server AS -1115CS-TNR
(H13SSW , AMD EPYC 9335)

SPECspeed®2017_int_base = 18.6

SPECspeed®2017_int_peak = 18.9

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Mar-2025
Hardware Availability: Oct-2024
Software Availability: Feb-2025

Compiler Version Notes (Continued)

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

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

Base Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

Fortran benchmarks:
`flang`

Base Portability Flags

600.perlbench_s: `-DSPEC_LINUX_X64 -DSPEC_LP64`
602.gcc_s: `-DSPEC_LP64`
605.mcf_s: `-DSPEC_LP64`
620.omnetpp_s: `-DSPEC_LP64`
623.xalancbmk_s: `-DSPEC_LINUX -DSPEC_LP64`
625.x264_s: `-DSPEC_LP64`
631.deepsjeng_s: `-DSPEC_LP64`
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`

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Base Optimization Flags (Continued)

C benchmarks (continued):
```
-mllvm -unroll-threshold=50 -zopt -fopenmp=libomp -lomp -lamdlibm
-lflang -lamdalloc
```

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

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

Base Other Flags

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

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

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

Peak Compiler Invocation

C benchmarks:
```
clang
```

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

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CloudDC A+ Server AS -1115CS-TNR
(H13SSW , AMD EPYC 9335)

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Software Availability: Feb-2025

Peak Compiler Invocation (Continued)

Fortran benchmarks:
`flang`

Peak Portability Flags

`Same as Base Portability Flags`

Peak Optimization Flags

C benchmarks:

600.perlbench_s: `basepeak = yes`

602.gcc_s: `basepeak = yes`

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

625.x264_s: `basepeak = yes`

657.xz_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`

C++ benchmarks:

620.omnetpp_s: `basepeak = yes`

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CloudDC A+ Server AS -1115CS-TNR
(H13SSW , AMD EPYC 9335)

$SPECspeed^{®}2017\_int\_base = 18.6$

$SPECspeed^{®}2017\_int\_peak = 18.9$

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Mar-2025
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Software Availability: Feb-2025

Peak Optimization Flags (Continued)

```
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:
```
-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 -lamdalloc -lflang
```

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
```

SPEC CPU®2017 Integer Speed Result

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CloudDC A+ Server AS -1115CS-TNR
(H13SSW , AMD EPYC 9335)

SPECspeed®2017_int_base = 18.6

SPECspeed®2017_int_peak = 18.9

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Mar-2025

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Software Availability: Feb-2025

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.html
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Turin-revD.html

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

http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.xml
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Turin-revD.xml

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

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