SPEC CPU®2017 Integer Speed Result

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Supermicro

Hyper A+ Server AS -2126HS-TN
(H14DSH , AMD EPYC 9135)

$SPECspeed^{®}2017\_int\_base = 16.7$

$SPECspeed^{®}2017\_int\_peak = 17.1$

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

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

Threads		
600.perlbench_s	32	11.1
602.gcc_s	32	15.2
	1	15.2
605.mcf_s	32	28.0
	1	29.4
620.omnetpp_s	32	8.50
623.xalancbmk_s	32	27.4
	1	30.0
625.x264_s	32	28.0
	1	28.2
631.deepsjeng_s	32	8.39
	1	8.52
641.leela_s	32	6.81
	1	6.89
648.exchange2_s	32	37.4
	1	37.5
657.xz_s	32	26.4
	64	27.0

SPECspeed®2017_int_base (16.7)   SPECspeed®2017_int_peak (17.1)

Hardware

CPU Name: AMD EPYC 9135
  Max MHz: 4300
  Nominal: 3650
Enabled: 32 cores, 2 chips, 2 threads/core
Orderable: 2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
  L2: 1 MB I+D on chip per core
  L3: 64 MB I+D on chip per chip, 16 MB shared / 4 cores
  Other: None
Memory: 3 TB (24 x 128 GB 2Rx4 PC5-6400B-R, running at 6000)
Storage: 1 x 7.0 TB NVMe SSD
Other: CPU Cooling: Air

Software

OS: Ubuntu 24.04.2 LTS
  Kernel 6.8.0-58-generic
Compiler: C/C++/Fortran: Version 5.0.0 of AOCC
Parallel: Yes
Firmware: Version 1.4 released Mar-2025
File System: ext4
System State: Run level 5 (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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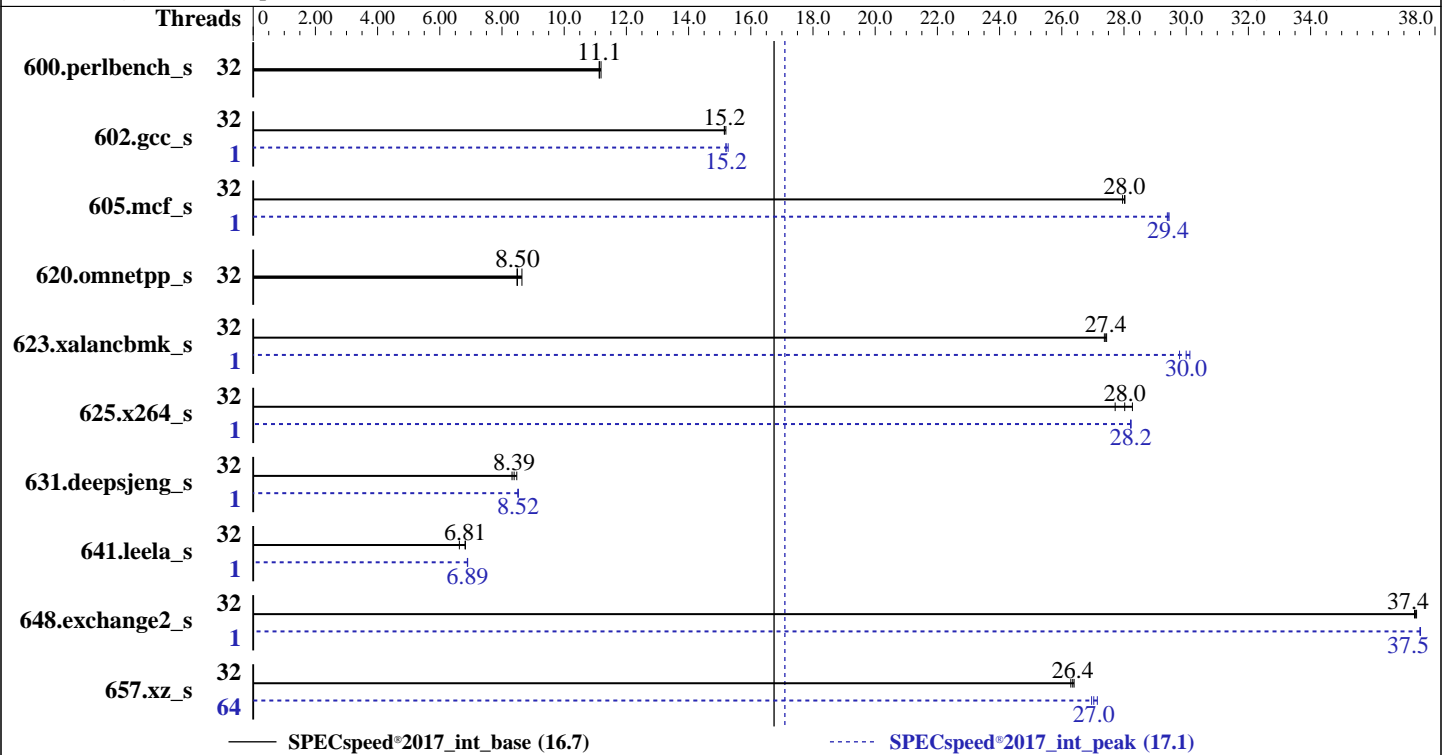SPECspeed®2017_int_peak = 17.1

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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	**159**	**11.1**	160	11.1	159	11.2	32	**159**	**11.1**	160	11.1	159	11.2
602.gcc_s	32	**263**	**15.2**	262	15.2	263	15.1	1	261	15.3	262	15.2	**262**	**15.2**
605.mcf_s	32	168	28.0	169	28.0	**169**	**28.0**	1	160	29.4	**160**	**29.4**	161	29.4
620.omnetpp_s	32	**192**	**8.50**	192	8.48	189	8.64	32	**192**	**8.50**	192	8.48	189	8.64
623.xalancbmk_s	32	**51.7**	**27.4**	51.6	27.4	51.8	27.4	1	**47.2**	**30.0**	47.0	30.1	47.6	29.8
625.x264_s	32	63.6	27.7	**62.9**	**28.0**	62.4	28.3	1	62.5	28.2	**62.5**	**28.2**	62.5	28.2
631.deepsjeng_s	32	**171**	**8.39**	172	8.32	169	8.48	1	168	8.52	168	8.52	**168**	**8.52**
641.leela_s	32	**250**	**6.81**	257	6.63	250	6.83	1	**248**	**6.89**	248	6.89	247	6.90
648.exchange2_s	32	78.6	37.4	78.7	37.3	**78.7**	**37.4**	1	78.4	37.5	**78.3**	**37.5**	78.3	37.5
657.xz_s	32	235	26.3	234	26.4	**235**	**26.4**	64	**229**	**27.0**	229	27.0	228	27.1
SPECspeed®2017_int_base =		**16.7**												
SPECspeed®2017_int_peak =								**17.1**						

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.
```

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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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 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 631.deepsjeng_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
```

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Platform Notes (Continued)

```
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on smc Wed Apr 30 17:07:54 2025

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

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

-----------------------------------------------------------
1. uname -a
  Linux smc 6.8.0-58-generic #60-Ubuntu SMP PREEMPT_DYNAMIC Fri Mar 14 18:29:48 UTC 2025 x86_64 x86_64 x86_64
  GNU/Linux

-----------------------------------------------------------
2. w
  17:07:54 up  8:00,  1 user,  load average: 4.61, 28.06, 41.74
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU  WHAT
  smc      tty1     -                09:07    7:56m  0.76s  0.75s 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
```

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Platform Notes (Continued)

```
   process            12383797
   nofiles            1024
   vmemory(kbytes)    unlimited
   locks              unlimited
   rtprio             0


   --------------------------------------------------------------
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 9135 16-Core Processor
   vendor_id       : AuthenticAMD
   cpu family      : 26
   model           : 2
   stepping        : 1
   microcode       : 0xb002147
   bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
   TLB size        : 192 4K pages
   cpu cores       : 16
   siblings        : 32
   2 physical ids (chips)
   64 processors (hardware threads)
   physical id 0: core ids 0-3,8-11,16-19,24-27
   physical id 1: core ids 0-3,8-11,16-19,24-27
   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 9135 16-Core Processor
 BIOS Model name:        AMD EPYC 9135 16-Core Processor              Unknown CPU @ 3.6GHz
 BIOS CPU family:        107
```

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Platform Notes (Continued)

```
    CPU family:                      26
    Model:                           2
    Thread(s) per core:              2
    Core(s) per socket:              16
    Socket(s):                       2
    Stepping:                        1
    Frequency boost:                 enabled
    CPU(s) scaling MHz:              85%
    CPU max MHz:                     4305.8589
    CPU min MHz:                     1500.0000
    BogoMIPS:                        7300.52
    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 amd_ibpb_ret arat npt lbrv
                                     svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
                                     pausefilter pfthreshold avic v_vmsave_vmload vgif x2avic v_spec_ctrl
                                     vnmi avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
                                     avx512_vnni avx512_bitalg avx512_vpopcntdq la57 rdpid bus_lock_detect
                                     movdiri movdir64b overflow_recov succor smca 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 (8 instances)
    NUMA node(s):                    8
    NUMA node0 CPU(s):               0-3,32-35
    NUMA node1 CPU(s):               4-7,36-39
    NUMA node2 CPU(s):               8-11,40-43
    NUMA node3 CPU(s):               12-15,44-47
    NUMA node4 CPU(s):               16-19,48-51
    NUMA node5 CPU(s):               20-23,52-55
    NUMA node6 CPU(s):               24-27,56-59
    NUMA node7 CPU(s):               28-31,60-63
    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
```

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Platform Notes (Continued)

```
  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       16M     128M   16 Unified        3 16384       1              64


  ----------------------------------------------------------
  8. numactl --hardware
  NOTE: a numactl 'node' might or might not correspond to a physical chip.
    available: 8 nodes (0-7)
    node 0 cpus: 0-3,32-35
    node 0 size: 386640 MB
    node 0 free: 385622 MB
    node 1 cpus: 4-7,36-39
    node 1 size: 387025 MB
    node 1 free: 386329 MB
    node 2 cpus: 8-11,40-43
    node 2 size: 387068 MB
    node 2 free: 386373 MB
    node 3 cpus: 12-15,44-47
    node 3 size: 387068 MB
    node 3 free: 386280 MB
    node 4 cpus: 16-19,48-51
    node 4 size: 387068 MB
    node 4 free: 386439 MB
    node 5 cpus: 20-23,52-55
    node 5 size: 387068 MB
    node 5 free: 386522 MB
    node 6 cpus: 24-27,56-59
    node 6 size: 387068 MB
    node 6 free: 386357 MB
    node 7 cpus: 28-31,60-63
    node 7 size: 387013 MB
    node 7 free: 386275 MB
    node distances:
    node   0   1   2   3   4   5   6   7
      0:  10  12  12  12  32  32  32  32
      1:  12  10  12  12  32  32  32  32
      2:  12  12  10  12  32  32  32  32
      3:  12  12  12  10  32  32  32  32
      4:  32  32  32  32  10  12  12  12
      5:  32  32  32  32  12  10  12  12
      6:  32  32  32  32  12  12  10  12
      7:  32  32  32  32  12  12  12  10


  ----------------------------------------------------------
  9. /proc/meminfo
     MemTotal:       3170328308 kB


  ----------------------------------------------------------
  10. who -r
    run-level 5 Apr 30 09:07


  ----------------------------------------------------------
  11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.6)
    Default Target  Status
    graphical       running
```

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Platform Notes (Continued)

```
--------------------------------------------------------------
12. 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


--------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.8.0-58-generic
  root=UUID=029b0995-a64a-431d-bf03-d6908a9c5945
  ro


--------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 25:
    current policy: frequency should be within 1.50 GHz and 3.65 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:  3650MHz


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


--------------------------------------------------------------
16. 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
```

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Platform Notes (Continued)

```
  vm.swappiness                       1
  vm.watermark_boost_factor       15000
  vm.watermark_scale_factor          10
  vm.zone_reclaim_mode                1


-------------------------------------------------------------
17. /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


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


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


-------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p2 ext4  7.0T   16G  6.6T   1% /


-------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         Supermicro
    Product:        Super Server
    Product Family: SMC H14
    Serial:         0123456789


-------------------------------------------------------------
22. 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:
    24x Samsung M321RAJA0MB2-CCPWF 128 GB 2 rank 6400, configured at 6000



-------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
  BIOS Vendor:      American Megatrends International, LLC.
  BIOS Version:     1.4
  BIOS Date:        03/31/2025
  BIOS Revision:    5.35
```

SPEC CPU®2017 Integer Speed Result

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Supermicro

Hyper A+ Server AS -2126HS-TN
(H14DSH , AMD EPYC 9135)

SPECspeed®2017_int_base = 16.7

SPECspeed®2017_int_peak = 17.1

CPU2017 License: 001176　　　　　　　　　　　　　　　　**Test Date:** Apr-2025
Test Sponsor: Supermicro　　　　　　　　　　　　　　　**Hardware Availability:** Oct-2024
Tested by: Supermicro　　　　　　　　　　　　　　　　**Software Availability:** Mar-2025

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`

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`

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Software Availability: Mar-2025

Base Portability Flags (Continued)

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
```

Base Other Flags

C benchmarks:

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

C++ benchmarks:

```
-Wno-unused-command-line-argument
```

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Test Sponsor:　　Supermicro　　　　　　　　　　　　**Hardware Availability:** Oct-2024
Tested by:　　　　Supermicro　　　　　　　　　　　　**Software Availability:**　Mar-2025

Base Other Flags (Continued)

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: 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`

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

Peak Optimization Flags (Continued)

605.mcf_s (continued):
```
-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: `-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
```

641.leela_s: `Same as 631.deepsjeng_s`

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
```

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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CPU2017 License:	001176	**Test Date:**	Apr-2025
Test Sponsor:	Supermicro	**Hardware Availability:**	Oct-2024
Tested by:	Supermicro	**Software Availability:**	Mar-2025

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/Supermicro-Platform-Settings-V1.2-Turin-revD.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/Supermicro-Platform-Settings-V1.2-Turin-revD.xml

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

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