# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

$SPECspeed®2017\_int\_base = 11.2$

$SPECspeed®2017\_int\_peak = 11.4$

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

**Threads** 0 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0 22.0

- 600.perlbench_s — 64: 6.90 — 1: 6.90
- 602.gcc_s — 64: 11.6
- 605.mcf_s — 64: 17.0 — 1: 17.7
- 620.omnetpp_s — 64: 6.20
- 623.xalancbmk_s — 64: 15.8 — 1: 17.1
- 625.x264_s — 64: 17.4 — 1: 17.5
- 631.deepsjeng_s — 64: 5.90
- 641.leela_s — 64: 4.90
- 648.exchange2_s — 64: 21.4
- 657.xz_s — 64: 21.8

——— SPECspeed®2017_int_base (11.2)          ------- SPECspeed®2017_int_peak (11.4)

## Hardware

CPU Name: AMD EPYC 8534PN
 Max MHz: 3100
 Nominal: 2000
Enabled: 64 cores, 1 chip
Orderable: 1 chip
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, 16 MB shared / 8 cores
 Other: None
Memory: 384 GB (6 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 256 GB M.2 NVMe SSD
Other: None

## Software

OS: Ubuntu 22.04.3 LTS
 Kernel 5.15.0-79-generic
Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
Parallel: Yes
Firmware: Version 1.0 released Aug-2023
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.

# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2
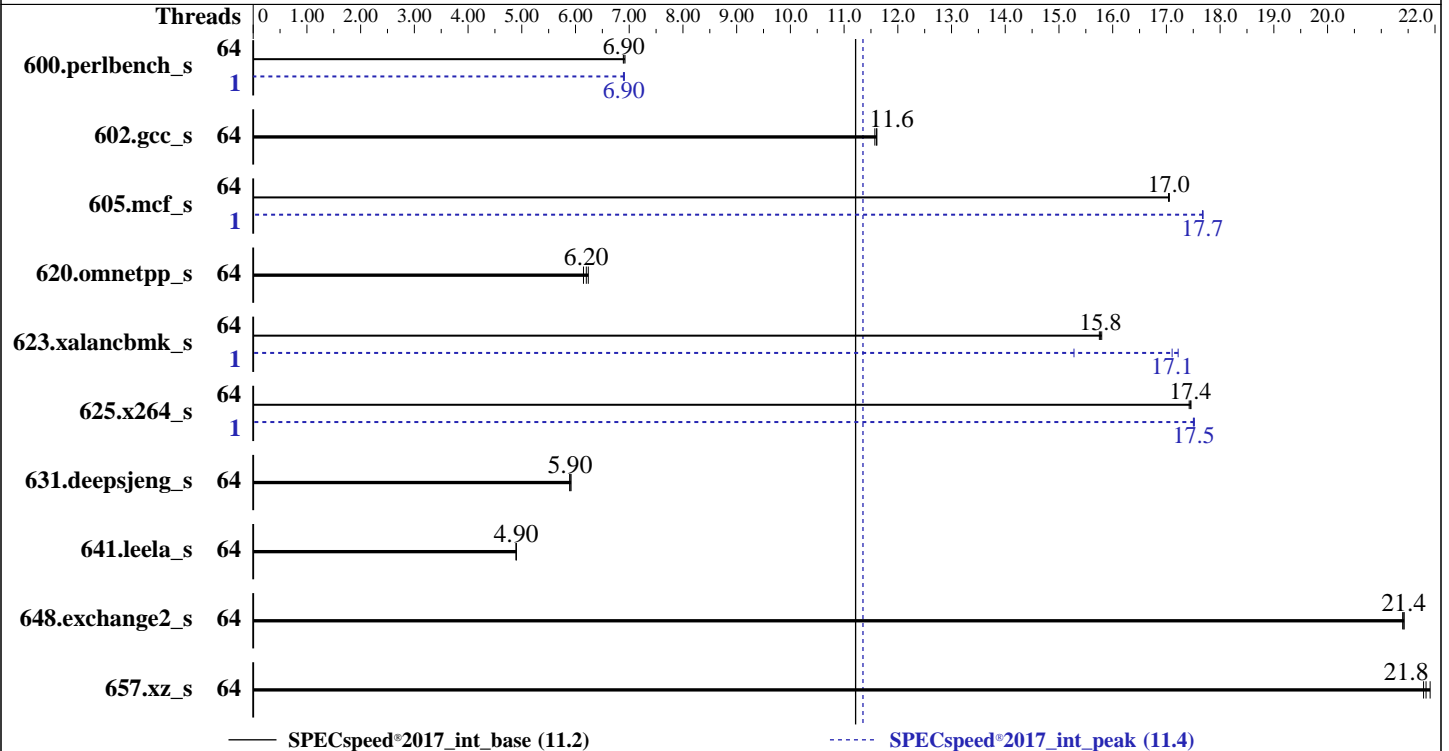
SPECspeed®2017_int_peak = 11.4

**CPU2017 License:** 001176

**Test Sponsor:** Supermicro

**Tested by:** Supermicro

**Test Date:** Aug-2023

**Hardware Availability:** Sep-2023

**Software Availability:** Jul-2023

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 600.perlbench_s | 64 | 256 | 6.92 | **257** | **6.90** | 258 | 6.89 | 1 | **257** | **6.90** | 257 | 6.91 | 258 | 6.89 |
| 602.gcc_s | 64 | 343 | 11.6 | 344 | 11.6 | **343** | **11.6** | 64 | 343 | 11.6 | 344 | 11.6 | **343** | **11.6** |
| 605.mcf_s | 64 | 277 | 17.0 | **277** | **17.0** | 277 | 17.1 | 1 | **267** | **17.7** | 267 | 17.7 | 267 | 17.7 |
| 620.omnetpp_s | 64 | 265 | 6.15 | **263** | **6.20** | 261 | 6.24 | 64 | 265 | 6.15 | **263** | **6.20** | 261 | 6.24 |
| 623.xalancbmk_s | 64 | 90.0 | 15.8 | **89.8** | **15.8** | 89.7 | 15.8 | 1 | **82.8** | **17.1** | 92.7 | 15.3 | 82.3 | 17.2 |
| 625.x264_s | 64 | 101 | 17.4 | **101** | **17.4** | 101 | 17.5 | 1 | 101 | 17.5 | 101 | 17.5 | **101** | **17.5** |
| 631.deepsjeng_s | 64 | 243 | 5.89 | **243** | **5.90** | 242 | 5.92 | 64 | 243 | 5.89 | **243** | **5.90** | 242 | 5.92 |
| 641.leela_s | 64 | 348 | 4.90 | 348 | 4.90 | **348** | **4.90** | 64 | 348 | 4.90 | 348 | 4.90 | **348** | **4.90** |
| 648.exchange2_s | 64 | **137** | **21.4** | 137 | 21.4 | 137 | 21.4 | 64 | **137** | **21.4** | 137 | 21.4 | 137 | 21.4 |
| 657.xz_s | 64 | **283** | **21.8** | 282 | 21.9 | 284 | 21.8 | 64 | **283** | **21.8** | 282 | 21.9 | 284 | 21.8 |
| SPECspeed®2017_int_base = | | | | **11.2** | | | | | | | | | | |
| SPECspeed®2017_int_peak = | | | | **11.4** | | | | | | | | | | |

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.
```

# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

## 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_aocc400_znver4_A_lib/lib:"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
MALLOC_CONF = "oversize_threshold:0,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 = "15"

Environment variables set by runcpu during the 605.mcf_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 623.xalancbmk_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 625.x264_s peak run:
GOMP_CPU_AFFINITY = "15"
```

## General Notes

```
Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

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 Control = Disabled
Determinism Control = Manual
Determinism Enable = Disable Performance Determinism

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on as-2015sv-wtnrt-8534p Fri Aug 25 11:26:50 2023

 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
```

# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

## Platform Notes (Continued)

```
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.9)
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. 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 as-2015sv-wtnrt-8534p 5.15.0-79-generic #86-Ubuntu SMP Mon Jul 10 16:07:21 UTC 2023 x86_64 x86_64
   x86_64 GNU/Linux

     -----------------------------------------------------------
2. w
    11:26:50 up 9 min,  2 users,  load average: 0.17, 0.10, 0.07
   USER      TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   lab       tty1     -                11:19    6:58   1.61s  0.01s -bash
   lab       pts/0    -                11:19    16.00s 1.19s  1.58s sudo su -

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

     -----------------------------------------------------------
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              1545560
   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
  /bin/sh ./amd2017run.sh
```

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

**CPU2017 License:** 001176      **Test Date:** Aug-2023
**Test Sponsor:** Supermicro      **Hardware Availability:** Sep-2023
**Tested by:** Supermicro      **Software Availability:** Jul-2023

## Platform Notes (Continued)

```
 python3 $SPEC/run_amd_speed_aocc400_znver4_A1.py
 /bin/bash ./amd_speed_aocc400_znver4_A1.sh
 runcpu --config amd_speed_aocc400_znver4_A1.cfg --tune all --reportable --iterations 3 intspeed
 runcpu --configfile amd_speed_aocc400_znver4_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 8534PN 64-Core Processor
   vendor_id       : AuthenticAMD
   cpu family      : 25
   model           : 160
   stepping        : 2
   microcode       : 0xaa00212
   bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
   TLB size        : 3584 4K pages
   cpu cores       : 64
   siblings        : 64
   1 physical ids (chips)
   64 processors (hardware threads)
   physical id 0: core ids 0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119
   physical id 0: apicids 0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119
 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 2.37.2:
  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
  Model name:             AMD EPYC 8534PN 64-Core Processor
  CPU family:             25
  Model:                  160
  Thread(s) per core:     1
  Core(s) per socket:     64
  Socket(s):              1
  Stepping:               2
  Frequency boost:        enabled
  CPU max MHz:            3109.3750
  CPU min MHz:            1500.0000
  BogoMIPS:               3994.07
  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 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
                          invpcid_single hw_pstate ssbd mba ibrs ibpb stibp 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
```

**(Continued on next page)**

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

**CPU2017 License:** 001176

**Test Sponsor:** Supermicro

**Tested by:** Supermicro

**Test Date:** Aug-2023

**Hardware Availability:** Sep-2023

**Software Availability:** Jul-2023

## Platform Notes (Continued)

```
                           xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
                           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 v_spec_ctrl avx512vbmi
                           umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                           avx512_vpopcntdq la57 rdpid overflow_recov succor smca fsrm flush_l1d
  Virtualization:          AMD-V
  L1d cache:               2 MiB (64 instances)
  L1i cache:               2 MiB (64 instances)
  L2 cache:                64 MiB (64 instances)
  L3 cache:                128 MiB (8 instances)
  NUMA node(s):            1
  NUMA node0 CPU(s):       0-63
  Vulnerability Itlb multihit:   Not affected
  Vulnerability L1tf:            Not affected
  Vulnerability Mds:             Not affected
  Vulnerability Meltdown:        Not affected
  Vulnerability Mmio stale data: Not affected
  Vulnerability Retbleed:        Not affected
  Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
  Vulnerability Spectre v1:      Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:      Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP disabled, RSB
                                 filling, PBRSB-eIBRS 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       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: 1 nodes (0)
  node 0 cpus: 0-63
  node 0 size: 386504 MB
  node 0 free: 385320 MB
  node distances:
  node   0
    0:  10

------------------------------------------------------------
9. /proc/meminfo
  MemTotal:       395780748 kB

------------------------------------------------------------
10. who -r
  run-level 5 Aug 25 11:19

------------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.9)
  Default Target  Status
  graphical       degraded

------------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
    UNIT                             LOAD   ACTIVE SUB    DESCRIPTION
```

**(Continued on next page)**

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

## Platform Notes (Continued)

```
     * systemd-networkd-wait-online.service loaded failed failed Wait for Network to be Configured

    ----------------------------------------------------------------
13. Services, from systemctl list-unit-files
    STATE            UNIT FILES
    enabled          ModemManager apparmor 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 irqbalance keyboard-setup lm-sensors lvm2-monitor
                     lxd-agent multipathd networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog
                     secureboot-db setvtrgb ssh systemd-networkd systemd-networkd-wait-online systemd-pstore
                     systemd-resolved systemd-timesyncd thermald ua-reboot-cmds ubuntu-advantage udisks2 ufw
                     vgauth
    enabled-runtime  netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
    disabled         console-getty debug-shell iscsid nftables rsync serial-getty@
                     systemd-boot-check-no-failures systemd-network-generator systemd-sysext
                     systemd-time-wait-sync upower
    generated        apport
    indirect         uuidd
    masked           cryptdisks cryptdisks-early hwclock lvm2 multipath-tools-boot rc rcS screen-cleanup sudo
                     x11-common

    ----------------------------------------------------------------
14. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-5.15.0-79-generic
    root=UUID=2034b692-48be-4c78-992e-067070f5ab82
    ro

    ----------------------------------------------------------------
15. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 1.50 GHz and 2.00 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:  2000MHz

    ----------------------------------------------------------------
16. sysctl
    kernel.numa_balancing            0
    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
```

**(Continued on next page)**

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

## Platform Notes (Continued)

```
   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 22.04.3 LTS


  ----------------------------------------------------------------
  20. Disk information
  SPEC is set to: /home/cpu2017
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/nvme0n1p2 ext4  233G   49G  172G  23% /


  ----------------------------------------------------------------
  21. /sys/devices/virtual/dmi/id
     Vendor:         Supermicro
     Product:        Super Server
     Product Family: SMC H13
     Serial:         123456789


  ----------------------------------------------------------------
  22. dmidecode
    Additional information from dmidecode 3.3 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:
      6x Micron Technology MTC40F2046S1RC48BA1 64 GB 2 rank 4800



  ----------------------------------------------------------------
  23. BIOS
  (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:      American Megatrends International, LLC.
    BIOS Version:     1.0
    BIOS Date:        08/18/2023
    BIOS Revision:    5.30
```

## Compiler Version Notes

```
==============================================================================
C      | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
```

**(Continued on next page)**

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

## Compiler Version Notes (Continued)

```
        | 657.xz_s(base, peak)
--------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/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 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin
--------------------------------------------------------------------------------


================================================================================
Fortran | 648.exchange2_s(base, peak)
--------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/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`

**(Continued on next page)**

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

**CPU2017 License:** 001176　　　　　　　　　　　　　　　　**Test Date:**　　　　　　Aug-2023
**Test Sponsor:**　　Supermicro　　　　　　　　　　　　**Hardware Availability:** Sep-2023
**Tested by:**　　　　Supermicro　　　　　　　　　　　　**Software Availability:**　Jul-2023

## Base Portability Flags (Continued)

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 -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -fopenmp=libomp -lomp -lamdlibm -lflang
-lamdalloc
```

C++ benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -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,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver4 -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
```

**(Continued on next page)**

# SPEC CPU®2017 Integer Speed Result
Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

## 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: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Ofast -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-fstruct-layout=9 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

```
602.gcc_s: basepeak = yes
```

```
605.mcf_s: Same as 600.perlbench_s
```

```
625.x264_s: Same as 600.perlbench_s
```

```
657.xz_s: basepeak = yes
```

**(Continued on next page)**

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

# Peak Optimization Flags (Continued)

C++ benchmarks:

620.omnetpp_s: `basepeak = yes`

623.xalancbmk_s: `-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6`
`-Wl,-mllvm -Wl,-reduce-array-computations=3`
`-Wl,-mllvm -Wl,-do-block-reorder=aggressive -Ofast`
`-march=znver4 -fveclib=AMDLIBM -ffast-math -fopenmp`
`-flto -finline-aggressive -mllvm -unroll-threshold=100`
`-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt`
`-mllvm -do-block-reorder=aggressive`
`-fvirtual-function-elimination -fvisibility=hidden`
`-fopenmp=libomp -lomp -lamdlibm -lamdalloc-ext -lflang`

631.deepsjeng_s: `basepeak = yes`

641.leela_s: `basepeak = yes`

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/aocc400-flags.2023-09-13.html`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Siena-revA.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/aocc400-flags.2023-09-13.xml`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Siena-revA.xml`

# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

A+ Server AS -2015SV-WTNRT
(H13SVW-NT , AMD EPYC 8534PN)

SPECspeed®2017_int_base = 11.2

SPECspeed®2017_int_peak = 11.4

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

**Test Date:** Aug-2023
**Hardware Availability:** Sep-2023
**Software Availability:** Jul-2023

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 2023-08-25 07:26:50-0400.
Report generated on 2023-09-18 11:40:37 by CPU2017 PDF formatter v6716.
Originally published on 2023-09-18.