# SPEC CPU®2017 Integer Speed Result

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## Dell Inc.

$SPECspeed^{®}2017\_int\_base =$ 13.9

PowerEdge R6625 (AMD EPYC 9534 64-Core Processor)

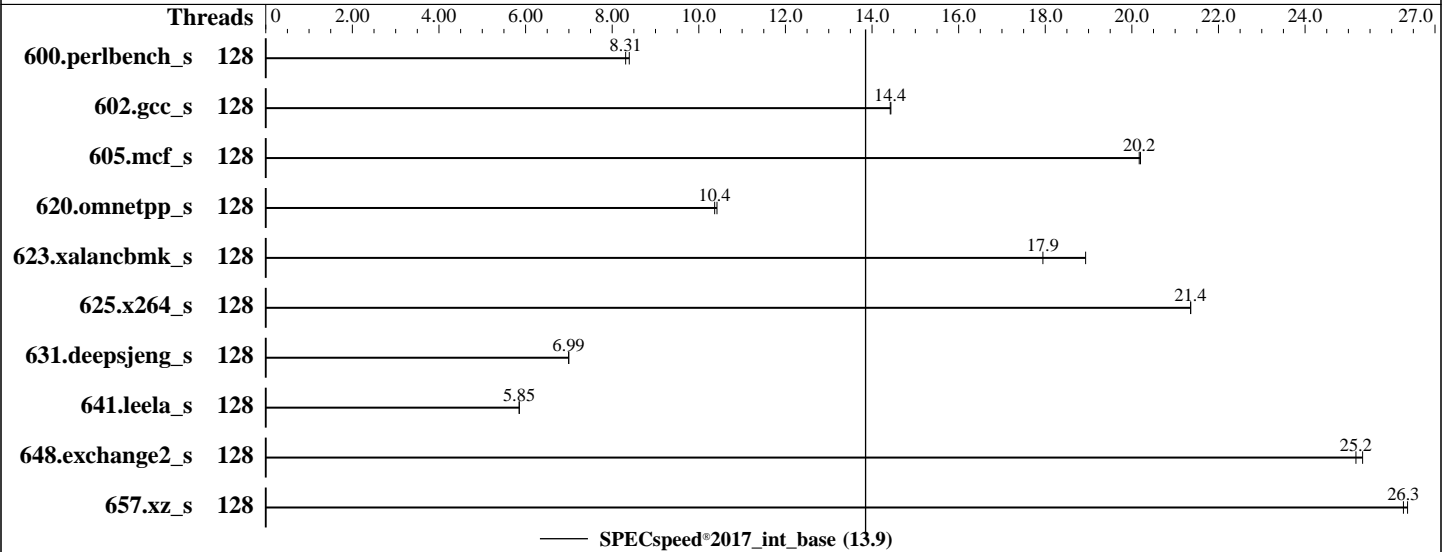$SPECspeed^{®}2017\_int\_peak =$ Not Run

**CPU2017 License:** 6573
**Test Sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test Date:** Mar-2023
**Hardware Availability:** Feb-2023
**Software Availability:** Nov-2022

| Threads | | |
|---|---|---|
| 600.perlbench_s | 128 | 8.31 |
| 602.gcc_s | 128 | 14.4 |
| 605.mcf_s | 128 | 20.2 |
| 620.omnetpp_s | 128 | 10.4 |
| 623.xalancbmk_s | 128 | 17.9 |
| 625.x264_s | 128 | 21.4 |
| 631.deepsjeng_s | 128 | 6.99 |
| 641.leela_s | 128 | 5.85 |
| 648.exchange2_s | 128 | 25.2 |
| 657.xz_s | 128 | 26.3 |

SPECspeed®2017_int_base (13.9)

## Hardware

CPU Name: AMD EPYC 9534
 Max MHz: 3700
 Nominal: 2450
Enabled: 128 cores, 2 chips
Orderable: 1,2 chips
Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 256 MB I+D on chip per chip, 32 MB shared / 8 cores
 Other: None
Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 125 GB on tmpfs
Other: None

## Software

OS: Ubuntu 22.04.1 LTS
 5.15.0-46-generic
Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
Parallel: Yes
Firmware: Version 1.3.7 released Mar-2023
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: None
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 600.perlbench_s | 128 | **214** | **8.31** | 211 | 8.39 | | | | | | | | | |
| 602.gcc_s | 128 | 276 | 14.4 | **276** | **14.4** | | | | | | | | | |
| 605.mcf_s | 128 | 234 | 20.2 | **234** | **20.2** | | | | | | | | | |
| 620.omnetpp_s | 128 | 157 | 10.4 | **157** | **10.4** | | | | | | | | | |
| 623.xalancbmk_s | 128 | **79.0** | **17.9** | 74.8 | 18.9 | | | | | | | | | |
| 625.x264_s | 128 | 82.6 | 21.4 | **82.6** | **21.4** | | | | | | | | | |
| 631.deepsjeng_s | 128 | 205 | 7.00 | **205** | **6.99** | | | | | | | | | |
| 641.leela_s | 128 | 291 | 5.85 | **292** | **5.85** | | | | | | | | | |
| 648.exchange2_s | 128 | 116 | 25.3 | **117** | **25.2** | | | | | | | | | |
| 657.xz_s | 128 | **235** | **26.3** | 234 | 26.4 | | | | | | | | | |
| SPECspeed®2017_int_base = | 13.9 | | | | | | | | | | | | | |
| SPECspeed®2017_int_peak = | Not Run | | | | | | | | | | | | | |

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 = "0-127"
LD_LIBRARY_PATH = "/mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e/amd_speed_aocc400_genoa_B_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 = "128"
```

## 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.


 Benchmark run from a 125 GB ramdisk created with the cmd: "mount -t tmpfs -o size=125G tmpfs /mnt/ramdisk"
```

## Platform Notes

```
 BIOS settings:
             DRAM Refresh Delay : Performance
          DIMM Self Healing on
     Uncorrectable Memory Error : Disabled
              Logical Processor : Disabled
     Virtualization Technology : Disabled
            NUMA Nodes per Socket : 4
        L3 Cache as NUMA Domain : Enabled

                 System Profile : Custom
                       C-States : Disabled
            Memory Patrol Scrub : Disabled
           PCI ASPM L1 Link
             Power Management : Disabled
             Determinism Slider : Power Determinism
       Algorithm Performance
         Boost Disable (ApbDis) : Enabled

 Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on genoa-sut Tue Mar  7 05:32:03 2023

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

 -----------------------------------------------------------
 Table of contents
 -----------------------------------------------------------
  1. uname -a
  2. w
  3. Username
```

**(Continued on next page)**

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

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## Platform Notes (Continued)

```
  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 249 (249.11-0ubuntu3.4)
 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 genoa-sut 5.15.0-46-generic #49-Ubuntu SMP Thu Aug 4 18:03:25 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux


    ------------------------------------------------------------
  2. w
     05:32:03 up 5 min,  1 user,  load average: 0.26, 0.75, 0.45
    USER      TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
    root      tty1     -                05:28   35.00s  1.67s  0.33s /bin/bash ./amd_speed_aocc400_genoa_B1.sh


    ------------------------------------------------------------
  3. Username
    From environment variable $USER:  root


    ------------------------------------------------------------
  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              6190417
    nofiles              1024
    vmemory(kbytes)      unlimited
    locks                unlimited
    rtprio               0


    ------------------------------------------------------------
  5. sysinfo process ancestry
  /sbin/init
  /bin/login -p --
  -bash
  /bin/bash ./DELL_speed.sh
  /bin/bash ./dell-run-main.sh speed
  /bin/bash ./dell-run-main.sh speed
  /bin/bash ./dell-run-specspeed.sh --output_format csv,html,pdf,txt -define
```

**(Continued on next page)**

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## Platform Notes (Continued)

```
    Dell-BIOS-inc=Dell-BIOS_EPYC-4.inc --define Dell-BIOS-LogProcD=1
  python3 ./run_amd_speed_aocc400_genoa_B1.py
  /bin/bash ./amd_speed_aocc400_genoa_B1.sh
  runcpu --config amd_speed_aocc400_genoa_B1.cfg --tune base --reportable --iterations 2 --output_format
    csv,html,pdf,txt -define Dell-BIOS-inc=Dell-BIOS_EPYC-4.inc --define Dell-BIOS-LogProcD=1 intspeed
  runcpu --configfile amd_speed_aocc400_genoa_B1.cfg --tune base --reportable --iterations 2 --output_format
    csv,html,pdf,txt --define Dell-BIOS-inc=Dell-BIOS_EPYC-4.inc --define Dell-BIOS-LogProcD=1 --nopower
    --runmode speed --tune base --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 = /mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e

  --------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9534 64-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 25
    model           : 17
    stepping        : 1
    microcode       : 0xa101116
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
    TLB size        : 3584 4K pages
    cpu cores       : 64
    siblings        : 64
    2 physical ids (chips)
    128 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 1: 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
    physical id 1: apicids 128-135,144-151,160-167,176-183,192-199,208-215,224-231,240-247
  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):                 128
  On-line CPU(s) list:    0-127
  Vendor ID:              AuthenticAMD
  Model name:             AMD EPYC 9534 64-Core Processor
  CPU family:             25
  Model:                  17
  Thread(s) per core:     1
  Core(s) per socket:     64
  Socket(s):              2
  Stepping:               1
  Frequency boost:        enabled
  CPU max MHz:            3719.0000
  CPU min MHz:            400.0000
  BogoMIPS:               4901.26
  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
```

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## Platform Notes (Continued)

```
                         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
                         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:                       4 MiB (128 instances)
    L1i cache:                       4 MiB (128 instances)
    L2 cache:                        128 MiB (128 instances)
    L3 cache:                        512 MiB (16 instances)
    NUMA node(s):                    16
    NUMA node0 CPU(s):               0-7
    NUMA node1 CPU(s):               32-39
    NUMA node2 CPU(s):               16-23
    NUMA node3 CPU(s):               48-55
    NUMA node4 CPU(s):               24-31
    NUMA node5 CPU(s):               56-63
    NUMA node6 CPU(s):               8-15
    NUMA node7 CPU(s):               40-47
    NUMA node8 CPU(s):               64-71
    NUMA node9 CPU(s):               96-103
    NUMA node10 CPU(s):              80-87
    NUMA node11 CPU(s):              112-119
    NUMA node12 CPU(s):              88-95
    NUMA node13 CPU(s):              120-127
    NUMA node14 CPU(s):              72-79
    NUMA node15 CPU(s):              104-111
    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
    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       4M   8 Data            1    64       1            64
      L1i      32K       4M   8 Instruction     1    64       1            64
      L2        1M     128M   8 Unified         2  2048       1            64
      L3       32M     512M  16 Unified         3 32768       1            64

    ----------------------------------------------------------
    8. numactl --hardware
    NOTE: a numactl 'node' might or might not correspond to a physical chip.
      available: 16 nodes (0-15)
      node 0 cpus: 0-7
      node 0 size: 96312 MB
      node 0 free: 96012 MB
```

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## Platform Notes (Continued)

```
   node 1 cpus: 32-39
   node 1 size: 96764 MB
   node 1 free: 96527 MB
   node 2 cpus: 16-23
   node 2 size: 96765 MB
   node 2 free: 96587 MB
   node 3 cpus: 48-55
   node 3 size: 96764 MB
   node 3 free: 96589 MB
   node 4 cpus: 24-31
   node 4 size: 96765 MB
   node 4 free: 96600 MB
   node 5 cpus: 56-63
   node 5 size: 96764 MB
   node 5 free: 96581 MB
   node 6 cpus: 8-15
   node 6 size: 96730 MB
   node 6 free: 96543 MB
   node 7 cpus: 40-47
   node 7 size: 96748 MB
   node 7 free: 96576 MB
   node 8 cpus: 64-71
   node 8 size: 96765 MB
   node 8 free: 96477 MB
   node 9 cpus: 96-103
   node 9 size: 96764 MB
   node 9 free: 96430 MB
   node 10 cpus: 80-87
   node 10 size: 96765 MB
   node 10 free: 93033 MB
   node 11 cpus: 112-119
   node 11 size: 96764 MB
   node 11 free: 96590 MB
   node 12 cpus: 88-95
   node 12 size: 96765 MB
   node 12 free: 96593 MB
   node 13 cpus: 120-127
   node 13 size: 96764 MB
   node 13 free: 96598 MB
   node 14 cpus: 72-79
   node 14 size: 96765 MB
   node 14 free: 96575 MB
   node 15 cpus: 104-111
   node 15 size: 96739 MB
   node 15 free: 96551 MB
   node distances:
   node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
     0:  10  11  12  12  12  12  12  12  32  32  32  32  32  32  32  32
     1:  11  10  12  12  12  12  12  12  32  32  32  32  32  32  32  32
     2:  12  12  10  11  12  12  12  12  32  32  32  32  32  32  32  32
     3:  12  12  11  10  12  12  12  12  32  32  32  32  32  32  32  32
     4:  12  12  12  12  10  11  12  12  32  32  32  32  32  32  32  32
     5:  12  12  12  12  11  10  12  12  32  32  32  32  32  32  32  32
     6:  12  12  12  12  12  12  10  11  32  32  32  32  32  32  32  32
     7:  12  12  12  12  12  12  11  10  32  32  32  32  32  32  32  32
     8:  32  32  32  32  32  32  32  32  10  11  12  12  12  12  12  12
     9:  32  32  32  32  32  32  32  32  11  10  12  12  12  12  12  12
    10:  32  32  32  32  32  32  32  32  12  12  10  11  12  12  12  12
    11:  32  32  32  32  32  32  32  32  12  12  11  10  12  12  12  12
    12:  32  32  32  32  32  32  32  32  12  12  12  12  10  11  12  12
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## Platform Notes (Continued)

```
   13:  32  32  32  32  32  32  32  32  12  12  12  12  11  10  12  12
   14:  32  32  32  32  32  32  32  32  12  12  12  12  12  12  10  11
   15:  32  32  32  32  32  32  32  32  12  12  12  12  12  12  11  10

   ------------------------------------------------------------
   9. /proc/meminfo
     MemTotal:       1584860820 kB


   ------------------------------------------------------------
   10. who -r
     run-level 3 Mar 7 05:27


   ------------------------------------------------------------
   11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.4)
     Default Target  Status
     multi-user      running


   ------------------------------------------------------------
   12. Services, from systemctl list-unit-files
     STATE             UNIT FILES
     enabled           ModemManager blk-availability cloud-config cloud-final cloud-init cloud-init-local
                       console-setup cron dmesg e2scrub_reap finalrd getty@ grub-common grub-initrd-fallback
                       irqbalance keyboard-setup lm-sensors lvm2-monitor lxd-agent networkd-dispatcher open-iscsi
                       open-vm-tools pollinate rsync rsyslog secureboot-db setvtrgb ssh systemd-networkd
                       systemd-networkd-wait-online systemd-pstore systemd-resolved systemd-timesyncd thermald
                       tuned ua-reboot-cmds ubuntu-advantage udisks2 vgauth
     enabled-runtime   netplan-ovs-cleanup rc-local systemd-remount-fs
     disabled          apparmor console-getty debug-shell iscsid multipathd nftables powertop serial-getty@
                       smartmontools sysstat systemd-boot-check-no-failures systemd-network-generator
                       systemd-sysext systemd-time-wait-sync ufw upower
     generated         apport
     indirect          uuidd
     masked            accounts-daemon alsa-utils atd cryptdisks cryptdisks-early gpu-manager hwclock lvm2
                       multipath-tools-boot rc rcS screen-cleanup sudo x11-common

   ------------------------------------------------------------
   13. Linux kernel boot-time arguments, from /proc/cmdline
     BOOT_IMAGE=/vmlinuz-5.15.0-46-generic
     root=/dev/mapper/ubuntu--vg-ubuntu--lv
     ro

   ------------------------------------------------------------
   14. cpupower frequency-info
     analyzing CPU 0:
       current policy: frequency should be within 400 MHz and 3.72 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:  2450MHz


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


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

**(Continued on next page)**

## Dell Inc.

PowerEdge R6625 (AMD EPYC 9534 64-Core Processor)

SPECspeed®2017_int_base =     13.9

SPECspeed®2017_int_peak = Not Run

**CPU2017 License:** 6573
**Test Sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test Date:** Mar-2023
**Hardware Availability:** Feb-2023
**Software Availability:** Nov-2022

## Platform Notes (Continued)

```
   kernel.numa_balancing              1
   kernel.randomize_va_space          0
   vm.compaction_proactiveness       20
   vm.dirty_background_bytes          0
   vm.dirty_background_ratio          3
   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


   -------------------------------------------------------------
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 22.04.1 LTS


   -------------------------------------------------------------
20. Disk information
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e
   Filesystem     Type   Size  Used Avail Use% Mounted on
   tmpfs          tmpfs 125G  3.5G  122G   3% /mnt/ramdisk


   -------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
   Vendor:         Dell Inc.
   Product:        PowerEdge R6625
   Product Family: PowerEdge
   Serial:         BGP4016


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

**(Continued on next page)**

# SPEC CPU®2017 Integer Speed Result

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## Dell Inc.

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## Platform Notes (Continued)

```
     "DMTF SMBIOS" standard.
    Memory:
      24x 802C0000802C MTC40F2046S1RC48BA1 64 GB 2 rank 4800


   --------------------------------------------------------------
  23. BIOS
  (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       Dell Inc.
    BIOS Version:      1.3.7
    BIOS Date:         03/06/2023
    BIOS Revision:     1.3
```

## Compiler Version Notes

```
==============================================================================
C      | 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base) 657.xz_s(base)
------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin
------------------------------------------------------------------------------


==============================================================================
C++    | 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base) 641.leela_s(base)
------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin
------------------------------------------------------------------------------


==============================================================================
Fortran | 648.exchange2_s(base)
------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin
------------------------------------------------------------------------------
```

## Base Compiler Invocation

C benchmarks:
```
clang
```

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

Fortran benchmarks:
```
flang
```

# SPEC CPU®2017 Integer Speed Result

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## 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 -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
```

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# 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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/aocc400-flags.html
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc400-flags.xml
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.0.xml

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

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