



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

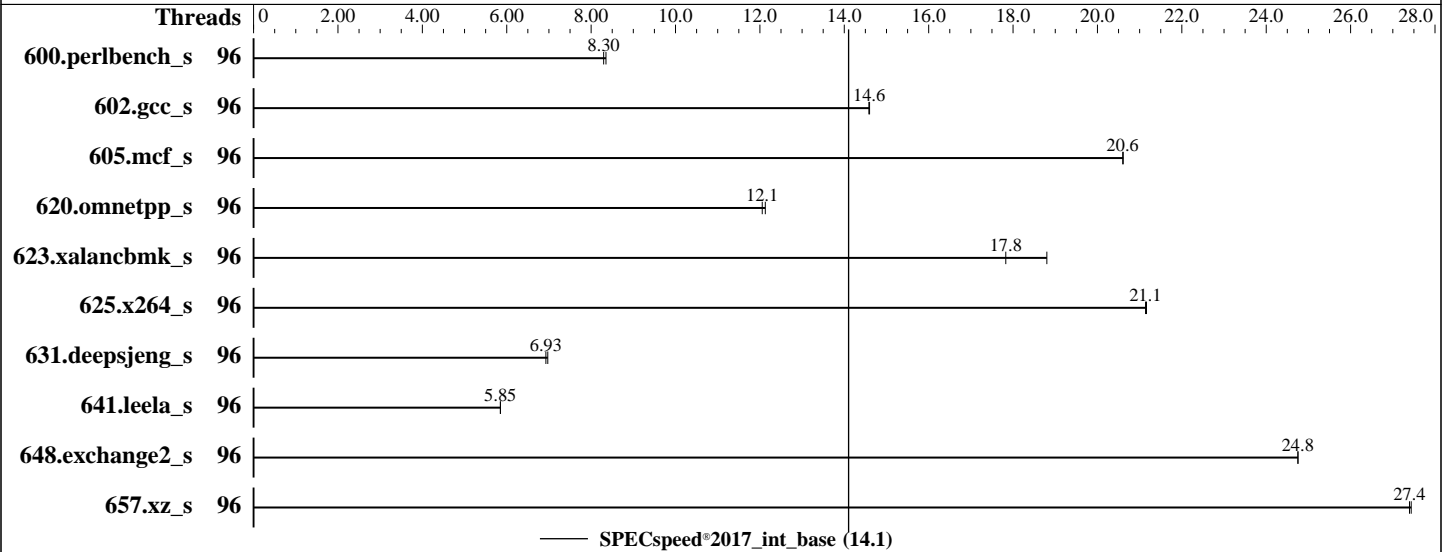
Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023



Hardware

CPU Name: AMD EPYC 9684X
 Max MHz: 3700
 Nominal: 2550
 Enabled: 96 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: 1152 MB I+D on chip per chip, 96 MB shared / 8 cores
 Other: None
 Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 70 GB on tmpfs
 Other: None

Software

OS: Ubuntu 22.04.1 LTS
 5.15.0-58-generic
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
 Parallel: Yes
 Firmware: Version 1.4.2 released May-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.



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	96	<u>214</u>	<u>8.30</u>	213	8.35									
602.gcc_s	96	<u>273</u>	<u>14.6</u>	273	14.6									
605.mcf_s	96	<u>229</u>	<u>20.6</u>	229	20.6									
620.omnetpp_s	96	<u>135</u>	<u>12.1</u>	134	12.1									
623.xalancbmk_s	96	75.4	18.8	<u>79.5</u>	<u>17.8</u>									
625.x264_s	96	83.4	21.2	<u>83.4</u>	<u>21.1</u>									
631.deepsjeng_s	96	<u>207</u>	<u>6.93</u>	206	6.97									
641.leela_s	96	292	5.85	<u>292</u>	<u>5.85</u>									
648.exchange2_s	96	<u>119</u>	<u>24.8</u>	119	24.8									
657.xz_s	96	<u>226</u>	<u>27.4</u>	225	27.4									

SPECspeed®2017_int_base = 14.1

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.



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023

Environment Variables Notes

Environment variables set by runcpu before the start of the run:

```
GOMP_CPU_AFFINITY = "0-95"
LD_LIBRARY_PATH = "/mnt/ramdisk/cpu2017-1.1.9-aocc400-znver4-A1/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 = "96"
```

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 70 GB ramdisk created with the cmd: "mount -t tmpfs -o size=70G 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-znver4-A1/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on amd-sut Wed May 17 11:58:34 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)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023

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 (249.11-0ubuntu3.6)
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 amd-sut 5.15.0-58-generic #64-Ubuntu SMP Thu Jan 5 11:43:13 UTC 2023 x86_64 x86_64 x86_64 GNU/Linux
-----
```

```
-----
2. w
11:58:34 up 6:24, 1 user, load average: 0.14, 0.03, 0.01
USER      TTY      FROM          LOGIN@      IDLE        JCPU        PCPU        WHAT
root      tty1     -             05:36       26.00s     1.60s     0.31s  /bin/bash ./amd_speed_aocc400_znver4_A1.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                3093893
nofiles                1024
vmemory(kbytes)        unlimited
locks                  unlimited
rtprio                 0
-----
```

```
-----
5. sysinfo process ancestry
/sbin/init
/bin/login -p --
-bash
/bin/bash ./DELL_speed.sh --tune base
/bin/bash ./dell-run-main.sh speed --tune base
/bin/bash ./dell-run-main.sh speed --tune base
-----
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023

Platform Notes (Continued)

```

/bin/bash ./dell-run-speccpu.sh speed --define DL-BIOSinc=Dell-BIOS_EPYC-4.inc --define DL-BIOS-LogProcD=1
--define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-VERS=v4.5 --output_format html,pdf,txt
--tune base
python3 ./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 2 --define
DL-BIOSinc=Dell-BIOS_EPYC-4.inc --define DL-BIOS-LogProcD=1 --define DL-BIOS-adddcD=1 --define
DL-BIOS-VirtD=1 --define DL-VERS=v4.5 --output_format html,pdf,txt --tune base intspeer
runcpu --configfile amd_speed_aocc400_znver4_A1.cfg --tune all --reportable --iterations 2 --define
DL-BIOSinc=Dell-BIOS_EPYC-4.inc --define DL-BIOS-LogProcD=1 --define DL-BIOS-adddcD=1 --define
DL-BIOS-VirtD=1 --define DL-VERS=v4.5 --output_format html,pdf,txt --tune base --nopower --runmode speed
--tune base --size test:train:refspeed intspeer --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/templogs/preenv.intspeer.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-aocc400-znver4-A1

```

```

-----
6. /proc/cpuinfo
model name      : AMD EPYC 9684X 96-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 25
model          : 17
stepping       : 2
microcode      : 0xa101207
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size       : 3584 4K pages
cpu cores      : 96
siblings       : 96
1 physical ids (chips)
96 processors (hardware threads)
physical id 0: core ids 0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183
physical id 0: apicids 0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183
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):                 96
On-line CPU(s) list:   0-95
Vendor ID:              AuthenticAMD
Model name:             AMD EPYC 9684X 96-Core Processor
CPU family:             25
Model:                  17
Thread(s) per core:    1
Core(s) per socket:    96
Socket(s):              1
Stepping:               2
Frequency boost:       enabled
CPU max MHz:            3716.0000
CPU min MHz:           400.0000
BogoMIPS:               5101.59
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

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023

Platform Notes (Continued)

```
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
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
AMD-V
```

Virtualization:

```
L1d cache: 3 MiB (96 instances)
L1i cache: 3 MiB (96 instances)
L2 cache: 96 MiB (96 instances)
L3 cache: 1.1 GiB (12 instances)
NUMA node(s): 4
NUMA node0 CPU(s): 0-23
NUMA node1 CPU(s): 24-47
NUMA node2 CPU(s): 48-71
NUMA node3 CPU(s): 72-95
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/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP disabled, RSB
filling, PBRSE-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	3M	8	Data	1	64	1	64
L1i	32K	3M	8	Instruction	1	64	1	64
L2	1M	96M	8	Unified	2	2048	1	64
L3	96M	1.1G	16	Unified	3	98304	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: 0-23
node 0 size: 193074 MB
node 0 free: 192360 MB
node 1 cpus: 24-47
node 1 size: 193528 MB
node 1 free: 192727 MB
node 2 cpus: 48-71
node 2 size: 193493 MB
node 2 free: 189066 MB
node 3 cpus: 72-95
node 3 size: 193488 MB
node 3 free: 192458 MB
node distances:
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Jul-2023

Software Availability: Jan-2023

Platform Notes (Continued)

```

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:      792150484 kB

```

```

-----
10. who -r
     run-level 3 May 17 05:36

```

```

-----
11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.6)
     Default Target Status
     multi-user      degraded

```

```

-----
12. Failed units, from systemctl list-units --state=failed
     UNIT                                LOAD    ACTIVE SUB    DESCRIPTION
 * 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      blk-availability console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
               grub-common grub-initrd-fallback irqbalance keyboard-setup lm-sensors networkd-dispatcher
               open-iscsi open-vm-tools pollinate rsyslog secureboot-db setvtrgb ssh systemd-networkd
               systemd-pstore systemd-resolved systemd-timesyncd thermald tuned ua-reboot-cmds
               ubuntu-advantage udisks2 vgauth wpa_supplicant
 enabled-runtime netplan-ovs-cleanup systemd-fsck-root systemd-networkd-wait-online systemd-remount-fs
 disabled      ModemManager apparmor console-getty debug-shell iscsid lvm2-monitor lxd-agent multipathd
               nftables rsync serial-getty@ systemd-boot-check-no-failures systemd-network-generator
               systemd-sysext systemd-time-wait-sync ufw upower wpa_supplicant-nl80211@
               wpa_supplicant-wired@ wpa_supplicant@
 generated     apport
 indirect      uuid
 masked        NetworkManager NetworkManager-dispatcher NetworkManager-wait-online 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-5.15.0-58-generic
     root=UUID=593ab29a-c8fe-4d75-821a-b60d5c945311
     ro

```

```

-----
15. 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: 2550MHz

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Jul-2023

Software Availability: Jan-2023

Platform Notes (Continued)

16. tuned-adm active
Current active profile: latency-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 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

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
scan_sleep_millisecs 10000

20. OS release
From /etc/*-release /etc/*-version
os-release Ubuntu 22.04.1 LTS

21. Disk information
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-aocc400-znver4-A1
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 70G 3.5G 67G 5% /mnt/ramdisk

22. /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge R6615
Product Family: PowerEdge

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Jul-2023

Software Availability: Jan-2023

Platform Notes (Continued)

Serial: GLM4018

23. 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:

12x 802C0000802C MTC40F2046S1RC48BA1 64 GB 2 rank 4800

24. BIOS

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

BIOS Vendor: Dell Inc.
BIOS Version: 1.4.2
BIOS Date: 05/05/2023
BIOS Revision: 1.4

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#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) 623.xalancbmk_s(base) 631.deepsjeng_s(base) 641.leela_s(base)

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)

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

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023

Base Compiler Invocation (Continued)

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 -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

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.1

PowerEdge R6615 (AMD EPYC 9684X 96-Core Processor)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jul-2023

Tested by: Dell Inc.

Software Availability: Jan-2023

Base Optimization Flags (Continued)

Fortran benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-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
```

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-v1.1.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-v1.1.xml>

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 2023-05-17 07:58:34-0400.

Report generated on 2023-06-13 15:16:20 by CPU2017 PDF formatter v6716.

Originally published on 2023-06-13.