



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

CPU2017 License: 6573

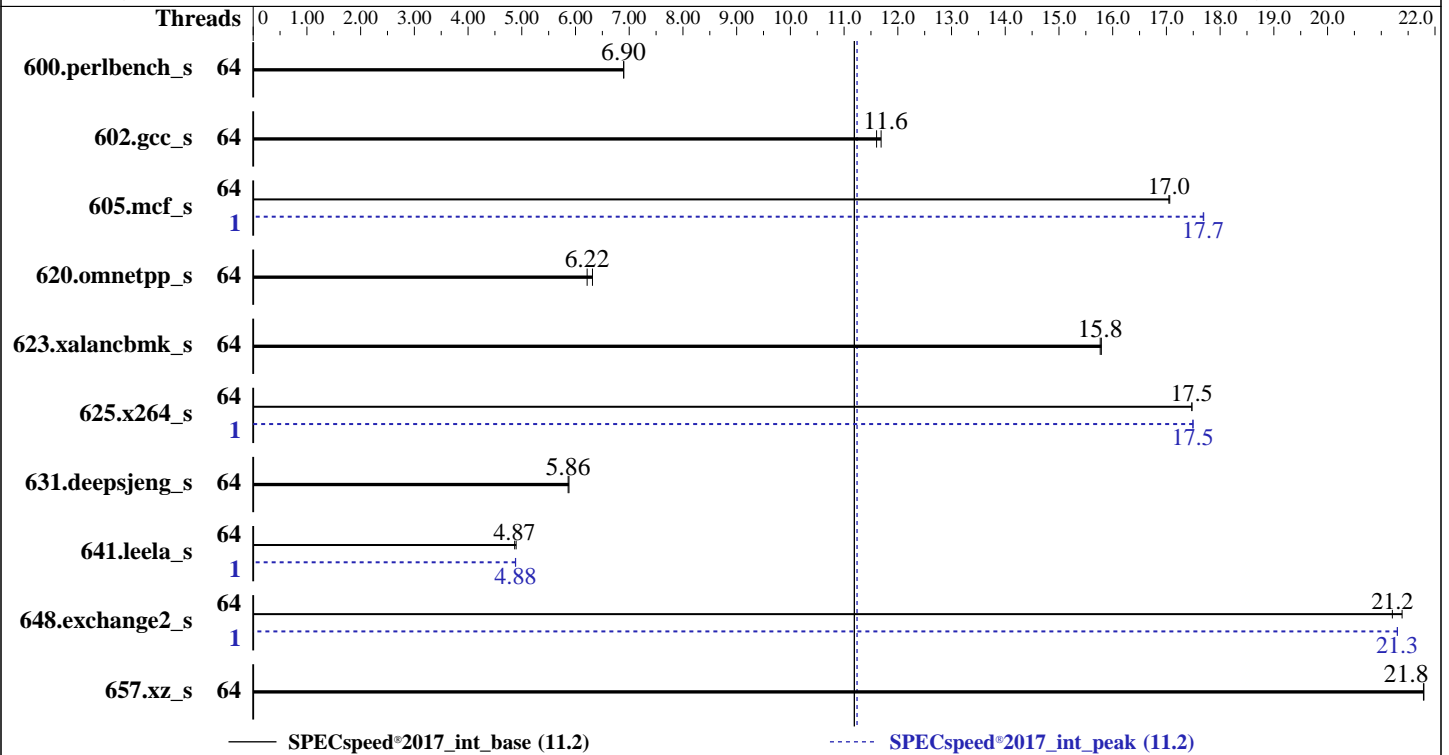
Test Date: Aug-2023

Test Sponsor: Dell Inc.

Hardware Availability: Sep-2023

Tested by: Dell Inc.

Software Availability: Jul-2023



### Hardware

CPU Name: AMD EPYC 8534P  
 Max MHz: 3100  
 Nominal: 2300  
 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: 192 GB (6 x 32 GB 2Rx8 PC5-4800B-R)  
 Storage: 60 GB on tmpfs  
 Other: None

### Software

OS: Ubuntu 22.04.2 LTS  
 5.15.0-78-generic  
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC  
 Parallel: Yes  
 Firmware: Version 1.0.2 released Jul-2023  
 File System: tmpfs  
 System State: Run level 5 (graphical 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

## Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

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	<u>257</u>	<u>6.90</u>	257	6.90			64	<u>257</u>	<u>6.90</u>	257	6.90		
602.gcc_s	64	341	11.7	<u>343</u>	<u>11.6</u>			64	341	11.7	<u>343</u>	<u>11.6</u>		
605.mcf_s	64	277	17.1	<u>277</u>	<u>17.0</u>			1	<u>267</u>	<u>17.7</u>	267	17.7		
620.omnetpp_s	64	258	6.32	<u>262</u>	<u>6.22</u>			64	258	6.32	<u>262</u>	<u>6.22</u>		
623.xalancbmk_s	64	<u>89.9</u>	<u>15.8</u>	89.7	15.8			64	<u>89.9</u>	<u>15.8</u>	89.7	15.8		
625.x264_s	64	<u>101</u>	<u>17.5</u>	101	17.5			1	<u>101</u>	<u>17.5</u>	101	17.5		
631.deepsjeng_s	64	244	5.88	<u>244</u>	<u>5.86</u>			64	244	5.88	<u>244</u>	<u>5.86</u>		
641.leela_s	64	349	4.89	<u>350</u>	<u>4.87</u>			1	349	4.89	<u>349</u>	<u>4.88</u>		
648.exchange2_s	64	<u>139</u>	<u>21.2</u>	137	21.4			1	138	21.3	<u>138</u>	<u>21.3</u>		
657.xz_s	64	<u>284</u>	<u>21.8</u>	284	21.8			64	<u>284</u>	<u>21.8</u>	284	21.8		

SPECspeed®2017\_int\_base = **11.2**

SPECspeed®2017\_int\_peak = **11.2**

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 = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

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

**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 = "/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 = "64"
```

Environment variables set by runcpu during the 605.mcf\_s peak run:

```
GOMP_CPU_AFFINITY = "15"
```

Environment variables set by runcpu during the 625.x264\_s peak run:

```
GOMP_CPU_AFFINITY = "15"
```

Environment variables set by runcpu during the 641.leela\_s peak run:

```
GOMP_CPU_AFFINITY = "15"
```

Environment variables set by runcpu during the 648.exchange2\_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.

Benchmark run from a 60 GB ramdisk created with the cmd: "mount -t tmpfs -o size=60G 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
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

**CPU2017 License:** 6573

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Aug-2023

**Hardware Availability:** Sep-2023

**Software Availability:** Jul-2023

## Platform Notes (Continued)

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-aocc400-znver4-A1/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on nt2 Wed Aug 16 18:03:38 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
- 8. numactl --hardware
- 9. /proc/meminfo
- 10. who -r
- 11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.7)
- 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 nt2 5.15.0-78-generic #85-Ubuntu SMP Fri Jul 7 15:25:09 UTC 2023 x86_64 x86_64 x86_64 GNU/Linux
```

```
2. w
18:03:38 up 13 min, 2 users, load average: 0.35, 0.09, 0.03
USER   TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
dell   tty1    -             18:02   1:21   0.12s  0.00s  -bash
dell   pts/0   -             18:02   34.00s 1.39s  0.08s  sudo su
```

```
3. Username
From environment variable $USER:  root
From the command 'logname':      dell
```

```
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            771445
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

**CPU2017 License:** 6573

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Aug-2023

**Hardware Availability:** Sep-2023

**Software Availability:** Jul-2023

## Platform Notes (Continued)

nfiles	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/bash ./DELL_speed.sh
/bin/bash ./dell-run-main.sh speed
/bin/bash ./dell-run-main.sh speed
/bin/bash ./dell-run-speccpu.sh speed --define DL-BIOSinc=Dell-BIOS_EPYC-4.inc --define DL-BIOS-LogProcD=1
--define DL-BIOS-VirtD=1 --define DL-VERS=v4.6 --output_format html,pdf,txt
python3 ./run_amd_speed_aocc400_znver4_A1.py
/bin/bash ./amd_speed_aocc400_znver4_A1.sh
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-VirtD=1 --define DL-VERS=v4.6
--output_format html,pdf,txt intspeed
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-VirtD=1 --define DL-VERS=v4.6
--output_format html,pdf,txt --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 = /mnt/ramdisk/cpu2017-1.1.9-aocc400-znver4-A1
-----
```

```
6. /proc/cpuinfo
model name      : AMD EPYC 8534P 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
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

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

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

### Platform Notes (Continued)

```

On-line CPU(s) list:      0-63
Vendor ID:                AuthenticAMD
Model name:              AMD EPYC 8534P 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:             3101.8550
CPU min MHz:             1500.0000
BogoMIPS:                4593.18
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 pdpelgb 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 bml
                        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 cpc 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):           8
NUMA node0 CPU(s):     0-7
NUMA node1 CPU(s):     8-15
NUMA node2 CPU(s):     16-23
NUMA node3 CPU(s):     24-31
NUMA node4 CPU(s):     32-39
NUMA node5 CPU(s):     40-47
NUMA node6 CPU(s):     48-55
NUMA node7 CPU(s):     56-63
Vulnerability Itlb multihit: Not affected
Vulnerability Lltf:      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	2M	8	Data	1	64	1	64
L1i	32K	2M	8	Instruction	1	64	1	64

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

**CPU2017 License:** 6573

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Aug-2023

**Hardware Availability:** Sep-2023

**Software Availability:** Jul-2023

### Platform Notes (Continued)

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: 8 nodes (0-7)

node 0 cpus: 0-7

node 0 size: 23736 MB

node 0 free: 23567 MB

node 1 cpus: 8-15

node 1 size: 24189 MB

node 1 free: 23947 MB

node 2 cpus: 16-23

node 2 size: 24189 MB

node 2 free: 24043 MB

node 3 cpus: 24-31

node 3 size: 24142 MB

node 3 free: 23979 MB

node 4 cpus: 32-39

node 4 size: 24189 MB

node 4 free: 24035 MB

node 5 cpus: 40-47

node 5 size: 24146 MB

node 5 free: 23958 MB

node 6 cpus: 48-55

node 6 size: 24189 MB

node 6 free: 20502 MB

node 7 cpus: 56-63

node 7 size: 24189 MB

node 7 free: 24005 MB

node distances:

node	0	1	2	3	4	5	6	7
0:	10	11	11	11	11	11	11	11
1:	11	10	11	11	11	11	11	11
2:	11	11	10	11	11	11	11	11
3:	11	11	11	10	11	11	11	11
4:	11	11	11	11	10	11	11	11
5:	11	11	11	11	11	10	11	11
6:	11	11	11	11	11	11	10	11
7:	11	11	11	11	11	11	11	10

9. /proc/meminfo

MemTotal: 197606692 kB

10. who -r

run-level 5 Aug 16 17:50

11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.7)

Default Target	Status
graphical	running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	apparmor blk-availability cloud-config cloud-final cloud-init cloud-init-local console-setup e2scrub_reap finalrd getty@ gpu-manager grub-common grub-initrd-fallback

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

**CPU2017 License:** 6573

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Aug-2023

**Hardware Availability:** Sep-2023

**Software Availability:** Jul-2023

### Platform Notes (Continued)

```

enabled-runtime keyboard-setup lm-sensors lvm2-monitor multipathd networkd-dispatcher open-iscsi pollinate
disabled secureboot-db setvtrgb ssh systemd-networkd systemd-networkd-wait-online systemd-pstore
generated netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
masked console-getty debug-shell iscsid rsync serial-getty@ systemd-boot-check-no-failures
systemd-network-generator systemd-sysext systemd-time-wait-sync upower
cryptdisks cryptdisks-early hwclock lvm2 multipath-tools-boot rc rcS sudo x11-common

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/vmlinuz-5.15.0-78-generic
root=/dev/mapper/ubuntu--vg-ubuntu--lv
ro

```

```

-----
14. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 1.50 GHz and 2.30 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: 2300MHz

```

```

-----
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
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

```

(Continued on next page)





# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Aug-2023

Hardware Availability: Sep-2023

Software Availability: Jul-2023

## Platform Notes (Continued)

```
-----
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 22.04.2 LTS
-----
```

```
-----
20. 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 60G 3.5G 57G 6% /mnt/ramdisk
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge C6615
Product Family: PowerEdge
Serial: SC665C2
-----
```

```
-----
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 80CE000080CE M321R4GA3BB6-CQKVG 32 GB 2 rank 4800
-----
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: Dell Inc.
BIOS Version: 1.0.2
BIOS Date: 07/26/2023
BIOS Revision: 1.0
-----
```

## 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 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
-----
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Aug-2023

Hardware Availability: Sep-2023

Software Availability: Jul-2023

## Compiler Version Notes (Continued)

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  
648.exchange2\_s: -DSPEC\_LP64  
657.xz\_s: -DSPEC\_LP64



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Aug-2023

Hardware Availability: Sep-2023

Software Availability: Jul-2023

## 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
-freemap-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
```

Fortran benchmarks:

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



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Aug-2023

Hardware Availability: Sep-2023

Software Availability: Jul-2023

## 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: basepeak = yes

605.mcf\_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

625.x264\_s: Same as 605.mcf\_s

657.xz\_s: basepeak = yes

C++ benchmarks:

620.omnetpp\_s: basepeak = yes

623.xalancbmk\_s: basepeak = yes

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Aug-2023

Hardware Availability: Sep-2023

Software Availability: Jul-2023

## Peak Optimization Flags (Continued)

631.deepsjeng\_s: basepeak = yes

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

Fortran benchmarks:

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

## Peak Other Flags

C benchmarks:

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

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

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®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 11.2

PowerEdge C6615 (AMD EPYC 8534P 64-Core Processor)

SPECspeed®2017\_int\_peak = 11.2

**CPU2017 License:** 6573

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Aug-2023

**Hardware Availability:** Sep-2023

**Software Availability:** Jul-2023

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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2023-08-16 14:03:37-0400.  
Report generated on 2023-09-18 21:00:14 by CPU2017 PDF formatter v6716.  
Originally published on 2023-09-18.