SPEC CPU®2017 Integer Speed Result

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

$SPECspeed®2017\_int\_base = 16.3$

$SPECspeed®2017\_int\_peak = 16.4$

Threads		Value
600.perlbench_s	32	9.94
602.gcc_s	32	16.6
	1	16.6
605.mcf_s	32	23.4
	1	24.4
620.omnetpp_s	32	11.7
623.xalancbmk_s	32	22.5
625.x264_s	32	25.3
631.deepsjeng_s	32	8.05
641.leela_s	32	6.96
648.exchange2_s	32	29.0
	1	29.3
657.xz_s	32	30.9
	1	31.0

SPECspeed®2017_int_base (16.3)   SPECspeed®2017_int_peak (16.4)

Hardware

CPU Name: AMD EPYC 9174F
  Max MHz: 4400
  Nominal: 4100
Enabled: 32 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 / 2 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 1.0.2 released Oct-2022
File System: tmpfs
System State: Run level 3 (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.

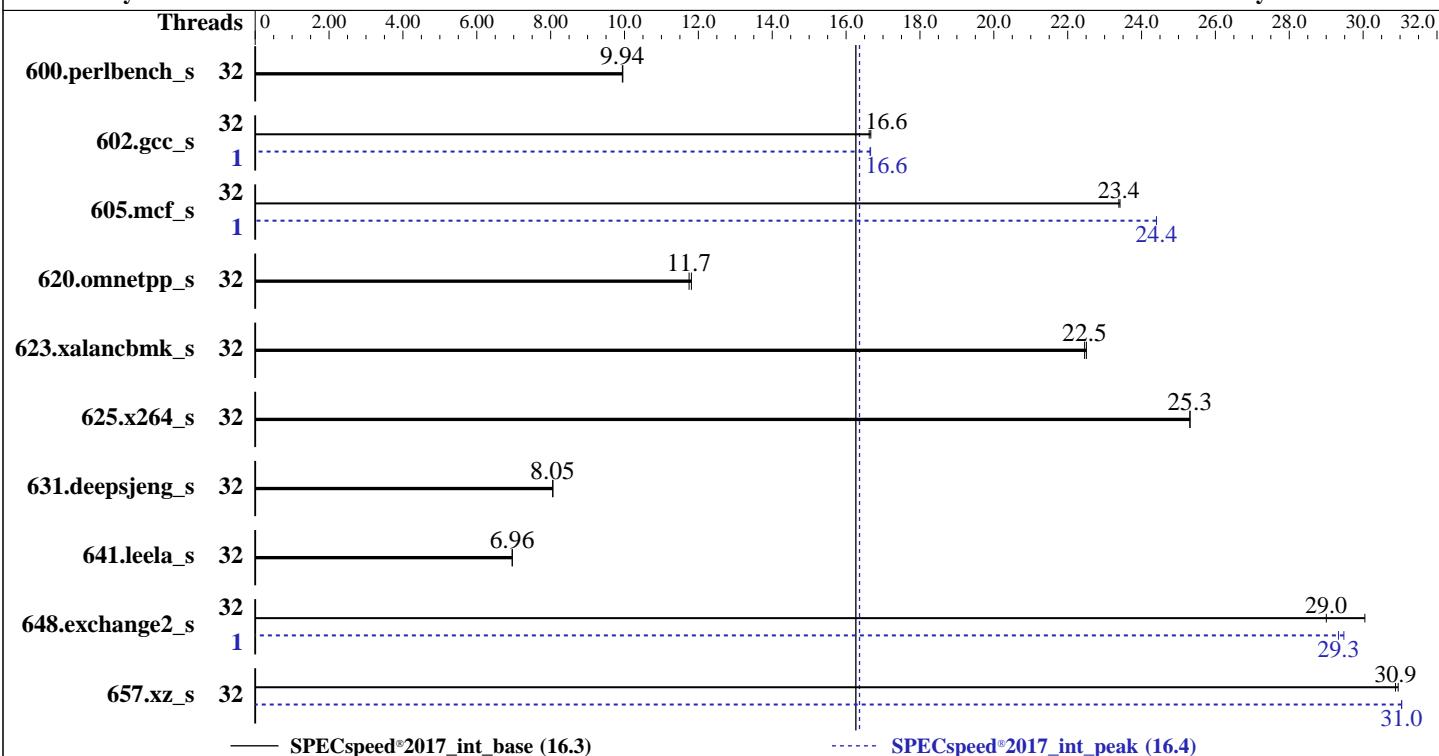PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

SPECspeed®2017_int_base = 16.3

SPECspeed®2017_int_peak = 16.4

CPU2017 License: 6573	**Test Date:** Oct-2022
Test Sponsor: Dell Inc.	**Hardware Availability:** Feb-2023
Tested by: Dell Inc.	**Software Availability:** Nov-2022

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	32	**179**	**9.94**	178	9.96			32	**179**	**9.94**	178	9.96		
602.gcc_s	32	239	16.7	**240**	**16.6**			1	239	16.7	**239**	**16.6**		
605.mcf_s	32	**202**	**23.4**	202	23.4			1	**193**	**24.4**	193	24.4		
620.omnetpp_s	32	138	11.8	**139**	**11.7**			32	138	11.8	**139**	**11.7**		
623.xalancbmk_s	32	**63.1**	**22.5**	63.0	22.5			32	**63.1**	**22.5**	63.0	22.5		
625.x264_s	32	**69.7**	**25.3**	69.7	25.3			32	**69.7**	**25.3**	69.7	25.3		
631.deepsjeng_s	32	**178**	**8.05**	178	8.06			32	**178**	**8.05**	178	8.06		
641.leela_s	32	245	6.96	**245**	**6.96**			32	245	6.96	**245**	**6.96**		
648.exchange2_s	32	**101**	**29.0**	97.8	30.0			1	99.7	29.5	**100**	**29.3**		
657.xz_s	32	**200**	**30.9**	200	30.9			32	**199**	**31.0**	199	31.0		
SPECspeed®2017_int_base =		**16.3**												
SPECspeed®2017_int_peak =		**16.4**												

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.
```

(Continued on next page)

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

Dell Inc.

SPECspeed®2017_int_base = 16.3

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

SPECspeed®2017_int_peak = 16.4

CPU2017 License: 6573		**Test Date:**	Oct-2022
Test Sponsor:	Dell Inc.	**Hardware Availability:**	Feb-2023
Tested by:	Dell Inc.	**Software Availability:**	Nov-2022

Operating System Notes (Continued)

```
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.
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-31"
LD_LIBRARY_PATH =
     "/mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b/amd_speed_aocc400_genoa_B_lib/li
     b:"
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 = "32"

Environment variables set by runcpu during the 602.gcc_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 648.exchange2_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-31"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "8"
```

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"
```

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

SPECspeed®2017_int_base = 16.3

SPECspeed®2017_int_peak = 16.4

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

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/cpu2017-1.1.8-aocc400-B1b/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on amd-sut Sat Oct 29 20:33:01 2022

 SUT (System Under Test) info as seen by some common utilities.
 For more information on this section, see
    https://www.spec.org/cpu2017/Docs/config.html#sysinfo

 From /proc/cpuinfo
    model name : AMD EPYC 9174F 16-Core Processor
       2  "physical id"s (chips)
       32 "processors"
    cores, siblings (Caution: counting these is hw and system dependent. The following
    excerpts from /proc/cpuinfo might not be reliable.  Use with caution.)
       cpu cores : 16
       siblings  : 16
       physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

 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):                     32
       On-line CPU(s) list:        0-31
       Vendor ID:                  AuthenticAMD
       Model name:                 AMD EPYC 9174F 16-Core Processor
```

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

SPECspeed®2017_int_base = 16.3

SPECspeed®2017_int_peak = 16.4

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
CPU family:                    25
Model:                         17
Thread(s) per core:            1
Core(s) per socket:            16
Socket(s):                     2
Stepping:                      1
Frequency boost:               enabled
CPU max MHz:                   4409.0000
CPU min MHz:                   400.0000
BogoMIPS:                      8202.56
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 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:                     1 MiB (32 instances)
L1i cache:                     1 MiB (32 instances)
L2 cache:                      32 MiB (32 instances)
L3 cache:                      512 MiB (16 instances)
NUMA node(s):                  16
NUMA node0 CPU(s):             0,1
NUMA node1 CPU(s):             8,9
NUMA node2 CPU(s):             4,5
NUMA node3 CPU(s):             12,13
NUMA node4 CPU(s):             6,7
NUMA node5 CPU(s):             14,15
NUMA node6 CPU(s):             2,3
NUMA node7 CPU(s):             10,11
NUMA node8 CPU(s):             16,17
NUMA node9 CPU(s):             24,25
NUMA node10 CPU(s):            20,21
NUMA node11 CPU(s):            28,29
NUMA node12 CPU(s):            22,23
NUMA node13 CPU(s):            30,31
NUMA node14 CPU(s):            18,19
NUMA node15 CPU(s):            26,27
```

(Continued on next page)

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

$SPECspeed®2017\_int\_base = 16.3$

$SPECspeed®2017\_int\_peak = 16.4$

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
     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       1M    8 Data          1     64        1              64
     L1i       32K       1M    8 Instruction   1     64        1              64
     L2         1M      32M    8 Unified       2   2048        1              64
     L3        32M     512M   16 Unified       3  32768        1              64

  /proc/cpuinfo cache data
     cache size : 1024 KB

  From numactl --hardware
  WARNING: a numactl 'node' might or might not correspond to a physical chip.
    available: 16 nodes (0-15)
    node 0 cpus: 0 1
    node 0 size: 96313 MB
    node 0 free: 96141 MB
    node 1 cpus: 8 9
    node 1 size: 96766 MB
    node 1 free: 96641 MB
    node 2 cpus: 4 5
    node 2 size: 96767 MB
    node 2 free: 96647 MB
    node 3 cpus: 12 13
    node 3 size: 96766 MB
    node 3 free: 96684 MB
    node 4 cpus: 6 7
    node 4 size: 96767 MB
    node 4 free: 96632 MB
    node 5 cpus: 14 15
    node 5 size: 96730 MB
    node 5 free: 96611 MB
    node 6 cpus: 2 3
```

(Continued on next page)

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

$SPECspeed®2017\_int\_base = 16.3$

$SPECspeed®2017\_int\_peak = 16.4$

CPU2017 License: 6573   **Test Date:** Oct-2022
Test Sponsor: Dell Inc.   **Hardware Availability:** Feb-2023
Tested by: Dell Inc.   **Software Availability:** Nov-2022

Platform Notes (Continued)

```
     node 6 size: 96767 MB
     node 6 free: 94302 MB
     node 7 cpus: 10 11
     node 7 size: 96750 MB
     node 7 free: 95344 MB
     node 8 cpus: 16 17
     node 8 size: 96767 MB
     node 8 free: 96663 MB
     node 9 cpus: 24 25
     node 9 size: 96766 MB
     node 9 free: 96681 MB
     node 10 cpus: 20 21
     node 10 size: 96767 MB
     node 10 free: 96687 MB
     node 11 cpus: 28 29
     node 11 size: 96766 MB
     node 11 free: 96638 MB
     node 12 cpus: 22 23
     node 12 size: 96767 MB
     node 12 free: 96643 MB
     node 13 cpus: 30 31
     node 13 size: 96766 MB
     node 13 free: 96678 MB
     node 14 cpus: 18 19
     node 14 size: 96767 MB
     node 14 free: 96680 MB
     node 15 cpus: 26 27
     node 15 size: 96745 MB
     node 15 free: 96611 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
      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
```

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

SPECspeed®2017_int_base = 16.3

SPECspeed®2017_int_peak = 16.4

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       1584888412 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/sbin/tuned-adm active
    Current active profile: latency-performance

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
   performance

/usr/bin/lsb_release -d
   Ubuntu 22.04.1 LTS

From /etc/*release* /etc/*version*
   debian_version: bookworm/sid
   os-release:
      PRETTY_NAME="Ubuntu 22.04.1 LTS"
      NAME="Ubuntu"
      VERSION_ID="22.04"
      VERSION="22.04.1 LTS (Jammy Jellyfish)"
      VERSION_CODENAME=jammy
      ID=ubuntu
      ID_LIKE=debian
      HOME_URL="https://www.ubuntu.com/"

uname -a:
   Linux amd-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

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):           Not affected
CVE-2018-3620 (L1 Terminal Fault):        Not affected
Microarchitectural Data Sampling:         Not affected
CVE-2017-5754 (Meltdown):                 Not affected
mmio_stale_data:                          Not affected
retbleed:                                 Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store
                                          Bypass disabled via prctl and
                                          seccomp
CVE-2017-5753 (Spectre variant 1):        Mitigation: usercopy/swapgs
                                          barriers and __user pointer
                                          sanitization
CVE-2017-5715 (Spectre variant 2):        Mitigation: Retpolines, IBPB:
                                          conditional, IBRS_FW, STIBP:
```

(Continued on next page)

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

SPECspeed®2017_int_base = 16.3

SPECspeed®2017_int_peak = 16.4

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
                                                disabled, RSB filling
 CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
 CVE-2019-11135 (TSX Asynchronous Abort):               Not affected

 run-level 3 Oct 29 20:32

 SPEC is set to: /mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b
    Filesystem      Type   Size  Used Avail Use% Mounted on
    tmpfs           tmpfs  125G  3.4G  122G   3% /mnt/ramdisk

 From /sys/devices/virtual/dmi/id
    Vendor:         Dell Inc.
    Product:        PowerEdge R7625
    Product Family: PowerEdge
    Serial:         1234567

 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:
     24x 80AD000080AD HMCG94MEBRA109N 64 GB 2 rank 4800

 BIOS:
    BIOS Vendor:       Dell Inc.
    BIOS Version:      1.0.2
    BIOS Date:         10/17/2022
    BIOS Revision:     1.0

 (End of data from sysinfo program)
```

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#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, peak) 623.xalancbmk_s(base, peak)
```

(Continued on next page)

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

$SPECspeed^{®}2017\_int\_base = 16.3$

$SPECspeed^{®}2017\_int\_peak = 16.4$

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Compiler Version Notes (Continued)

```
        | 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)
------------------------------------------------------------------------------
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, peak)
------------------------------------------------------------------------------
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`

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.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

$SPECspeed^{®}2017\_int\_base = 16.3$

$SPECspeed^{®}2017\_int\_peak = 16.4$

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

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
```

Fortran benchmarks:
```
-Wno-unused-command-line-argument
```

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

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

$SPECspeed^®2017\_int\_base = 16.3$

$SPECspeed^®2017\_int\_peak = 16.4$

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Oct-2022

Hardware Availability: Feb-2023

Software Availability: Nov-2022

Peak Compiler Invocation

C benchmarks:
```
clang
```

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

Fortran benchmarks:
```
flang
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: basepeak = yes
```

```
602.gcc_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -z muldefs -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
```

```
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: basepeak = yes
```

(Continued on next page)

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

SPECspeed®2017_int_base = 16.3

SPECspeed®2017_int_peak = 16.4

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

Test Date: Oct-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Peak Optimization Flags (Continued)

657.xz_s: Same as 605.mcf_s

C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

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-v1.0.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

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R7625 (AMD EPYC 9174F 16-Core Processor)

$SPECspeed®2017\_int\_base = 16.3$

$SPECspeed®2017\_int\_peak = 16.4$

CPU2017 License:	6573	**Test Date:**	Oct-2022
Test Sponsor:	Dell Inc.	**Hardware Availability:**	Feb-2023
Tested by:	Dell Inc.	**Software Availability:**	Nov-2022

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

Tested with SPEC CPU®2017 v1.1.8 on 2022-10-29 16:33:01-0400.
Report generated on 2023-02-01 18:19:48 by CPU2017 PDF formatter v6442.
Originally published on 2023-02-01.