SPEC CPU®2017 Integer Speed Result

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Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen11
(2.40 GHz, AMD EPYC 9654P)

SPECspeed®2017_int_base =
SPECspeed®2017_int_peak =

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Oct-2022
Hardware Availability: Dec-2022
Software Availability: Nov-2022

SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.

Non-Compliant

Threads
600.perlbench_s
602.gcc_s
605.mcf_s
620.omnetpp_s
623.xalancbmk_s
625.x264_s
631.deepsjeng_s
641.leela_s
648.exchange2_s
657.xz_s

Hardware

CPU Name:	AMD EPYC 9654P
Max MHz:	
Nominal:	2400
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:	384 MB I+D on chip per chip, 32 MB shared / 8 cores
Other:	None
Memory:	384 GB (12 x 32 GB 2Rx8 PC5-4800B-R)
Storage:	1 x 960 GB SATA SSD
Other:	None

Software

OS:	Red Hat Enterprise Linux 9.0 (Plow) Kernel 5.14.0-70.13.1.el9_0.x86_64
Compiler:	C/C++/Fortran: Version 4.0.0 of AOCC
Parallel:	Yes
Firmware:	HPE BIOS Version v1.10 10/06/2022 released Oct-2022
File System:	xfs
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

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Results Tab

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
602.gcc_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
605.mcf_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
620.omnetpp_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
623.xalancbmk_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
625.x264_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
631.deepsjeng_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
641.leela_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
648.exchange2_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
657.xz_s	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

SPECspeed®2017_int_base =

SPECspeed®2017_int_peak =

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

config file option 'submit' was used.
numactl is 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.

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Operating System Notes (Continued)

```
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.
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-95"
LD_LIBRARY_PATH = "/home/cpu2017_sw/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 = "96"

Environment variables set by runcpu during the 605.mcf_s peak run:
GOMP_CPU_AFFINITY = "0-95"

Environment variables set by runcpu during the 623.xalancbmk_s peak run:
GOMP_CPU_AFFINITY = "0-95"
```

General Notes

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

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.
```

Platform Notes

```
BIOS Configuration
 Workload Profile set to General Peak Frequency Compute
 Determinism Control set to Manual
  Performance Determinism set to Power Deterministic
 AMD SMT Option set to Disabled
 Last-Level Cache (LLC) as NUMA Node set to Enabled
```


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Non-Compliant

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Platform Notes (Continued)

```
  NUMA memory domains per socket set to Four memory domains per socket
  Memory PStates set to Disabled
  ACPI CST C2 Latency set to 18 microseconds
  Thermal Configuration set to Maximum Cooling
  Workload Profile set to Custom

 The system ROM used for this result contains microcode version 0xa10110d for the
 AMD EPYC 9nn4X family of processors. The reference code AGESA version used in this
 ROM is version GenoaPI 1.0.0.1-L2

  Sysinfo program /home/cpu2017_new/bin/sysinfo
  Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
  running on localhost.localdomain Thu Apr  7 05:22:33 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 9654P 96-Core Processor
        1  "physical id"s (chips)
        96 "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 : 96
        siblings
        physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
        25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
        53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
        81 82 83 84 85 86 87 88 89 90 91 92 93 94 95

  From lscpu from util-linux 2.37.4:
        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
        BIOS Vendor ID:                  Advanced Micro Devices, Inc.
        Model name:                      AMD EPYC 9654P 96-Core Processor
        BIOS Model name:                 AMD EPYC 9654P 96-Core Processor
        CPU family:                      25
        Model:                           17
        Thread(s) per core:              1
        Core(s) per socket:              96
        Socket(s):                       1
        Stepping:                        1
        Frequency boost:                 enabled
        CPU max MHz:                     3707.8120
        CPU min MHz:                     1500.0000
```


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Non-Compliant

Platform Notes (Continued)

```
      BogoMIPS:                        4792.80
      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 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:
      L1d cache:                       3 MiB (96 instances)
      L1i cache:                       3 MiB (96 instances)
      L2 cache:                        96 MiB (96 instances)
      L3 cache:                        384 MiB (12 instances)
      NUMA node(s):                    12
      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
      NUMA node8 CPU(s):               64-71
      NUMA node9 CPU(s):               72-79
      NUMA node10 CPU(s):              80-87
      NUMA node11 CPU(s):              88-95
      Vulnerability Itlb multihit:     Not affected
      Vulnerability L1tf:              Not affected
      Vulnerability Mds:               Not affected
      Vulnerability Meltdown:          Not affected
      Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via
      prctl
      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       3M    8 Data            1    64        1             64
      L1i       32K       3M    8 Instruction     1    64        1             64
```


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Platform Notes (Continued)

```
     L2         1M      96M    8 Unified         2  20[illegible]        1              64
     L3        32M     384M   16 Unified         3 32[illegible]68        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: 12 nodes (0-11)
  node 0 cpus: 0 1 2 3 4 5 6 7
  node 0 size: 31971 MB
  node 0 free: 31614 MB
  node 1 cpus: 8 9 10 11 12 13 [illegible] 15
  node 1 size: 32254 MB
  node 1 free: 32122 MB
  node 2 cpus: 16 17 18 19 20 21 [illegible]
  node 2 size: 32254 MB
  node 2 free: 32098 MB
  node 3 cpus: 24 25 26 27 28 29 [illegible]0 31
  node 3 size: 32254 MB
  node 3 free: 32121 MB
  node 4 cpus: 32 33 3[illegible] 35 [illegible] 37 38 39
  node 4 size: 32254 MB
  node 4 free: 31939 [illegible]
  node 5 cpus: 40 41 42 [illegible] 44 45 46 47
  node 5 size: [illegible] MB
  node 5 free: 32129 [illegible]
  node 6 cpus: 48 49 5[illegible] 51 52 53 54 55
  node 6 size: 32254 MB
  node [illegible] free: [illegible]027 MB
  node 7 cpus: 5[illegible] [illegible]8 59 60 61 62 63
  node 7 size: 32254 MB
  node 7 free: 32114 MB
  node 8 cpus: [illegible] 65 66 67 68 69 70 71
  node 8 size: 32254 MB
  node 8 free: 32001 MB
  node 9 cpus: 72 73 74 75 76 77 78 79
  node [illegible] size: 32203 MB
  node 9 free: 32063 MB
  node 10 cpus: 80 81 82 83 84 85 86 87
  node 10 size: 32254 MB
  node 10 free: 31970 MB
  node 11 cpus: 88 89 90 91 92 93 94 95
  node 11 size: 32254 MB
  node 11 free: 32113 MB
  node distances:
  node   0   1   2   3   4   5   6   7   8   9  10  11
    0:  10  12  12  12  11  12  12  12  11  12  12  12
    1:  12  10  12  12  12  11  12  12  12  11  12  12
    2:  12  12  10  12  12  12  11  12  12  12  11  12
    3:  12  12  12  10  12  12  12  11  12  12  12  11
```

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Non-Compliant

Platform Notes (Continued)

```
     4:  11  12  12  12  10  12  12  12  11  12  12  12
     5:  12  11  12  12  12  10  12  12  12  11  12  12
     6:  12  12  11  12  12  12  10  12  12  12  11  12
     7:  12  12  12  11  12  12  12  10  12  12  12  12
     8:  11  12  12  12  11  12  12  12  10  12  12  12
     9:  12  11  12  12  12  11  12  12  12  10  12  12
    10:  12  12  11  12  12  12  11  12  12  12  10  12
    11:  12  12  12  11  12  12  12  11  12  12  12  10

From /proc/meminfo
   MemTotal:       395998020 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

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

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

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux"
      VERSION="9.0 (Plow)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="9.0"
      PLATFORM_ID="platform:el9"
      PRETTY_NAME="Red Hat Enterprise Linux 9.0 (Plow)"
      ANSI_COLOR="0;31"
   redhat-release: Red Hat Enterprise Linux release 9.0 (Plow)
   system-release: Red Hat Enterprise Linux release 9.0 (Plow)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:9::baseos

uname -a:
   Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14
   12:42:38 EDT 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
CVE-2018-3639 (Speculative Store Bypass):          Mitigation: Speculative Store
                                                   Bypass disabled via prctl
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:
```


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Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen11
(2.40 GHz, AMD EPYC 9654P)

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SPECspeed®2017_int_peak =

CPU2017 License: 3
Test Sponsor: HPE
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Test Date: Oct-2022
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Non-Compliant

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 Apr 7 05:30

SPEC is set to: /home/cpu2017_new
   Filesystem            Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   819G   54G  7[illegible]G   7% /home

From /sys/devices/virtual/dmi/id
    Vendor:         HPE
    Product:        ProLiant DL325 Gen11
    Product Family: ProLiant
    Serial:         DL325G11-010

Additional information from dmidecode [illegible] 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 Hynix HMCG88MEBRA113N 32 GB 2 rank 4800
    6x Hynix HMCG88MEBRA115N [illegible] GB 2 rank 4800

BIOS:
   BIOS Vendor:       HPE
   BIOS Version:      1.10
   BIOS Date:         [illegible]/06/2022
   BIOS Revision:     1.10
   Firmware Revision: 1.10

(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) 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)
```

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Compiler Version Notes (Continued)

```
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-32[illegible]389/bin
------------------------------------------------------------------------------
==============================================================================
Fortran | 648.exchange2_s(base, peak)
------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-B[illegible]d#389 2[illegible]22_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

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Non-Compliant

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=
-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

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Base Other Flags (Continued)

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

Peak Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

Fortran benchmarks:
`flang`

Peak Portability Flags

`Same as Base Portability Flags`

Peak Optimization Flags

C benchmarks:

600.perlbench_s: `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`

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Non-Compliant

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Peak Optimization Flags (Continued)

605.mcf_s (continued):
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang

625.x264_s: basepeak = yes

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_s: basepeak = yes

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

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

Peak Other Flags

C benchmarks:
-Wno-return-type -Wno-unused-command-line-argument

(Continued on next page)

Non-Compliant

SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.

Peak Other Flags (Continued)

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/HPE-Platform-Flags-AMD-Genoa-rev2.0.html`
`http://www.spec.org/cpu2017/flags/aocc400-flags.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-Genoa-rev2.0.xml`
`http://www.spec.org/cpu2017/flags/aocc400-flags.xml`

Non-Compliant

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

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