SPEC CPU®2017 Integer Speed Result

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Dell Inc.

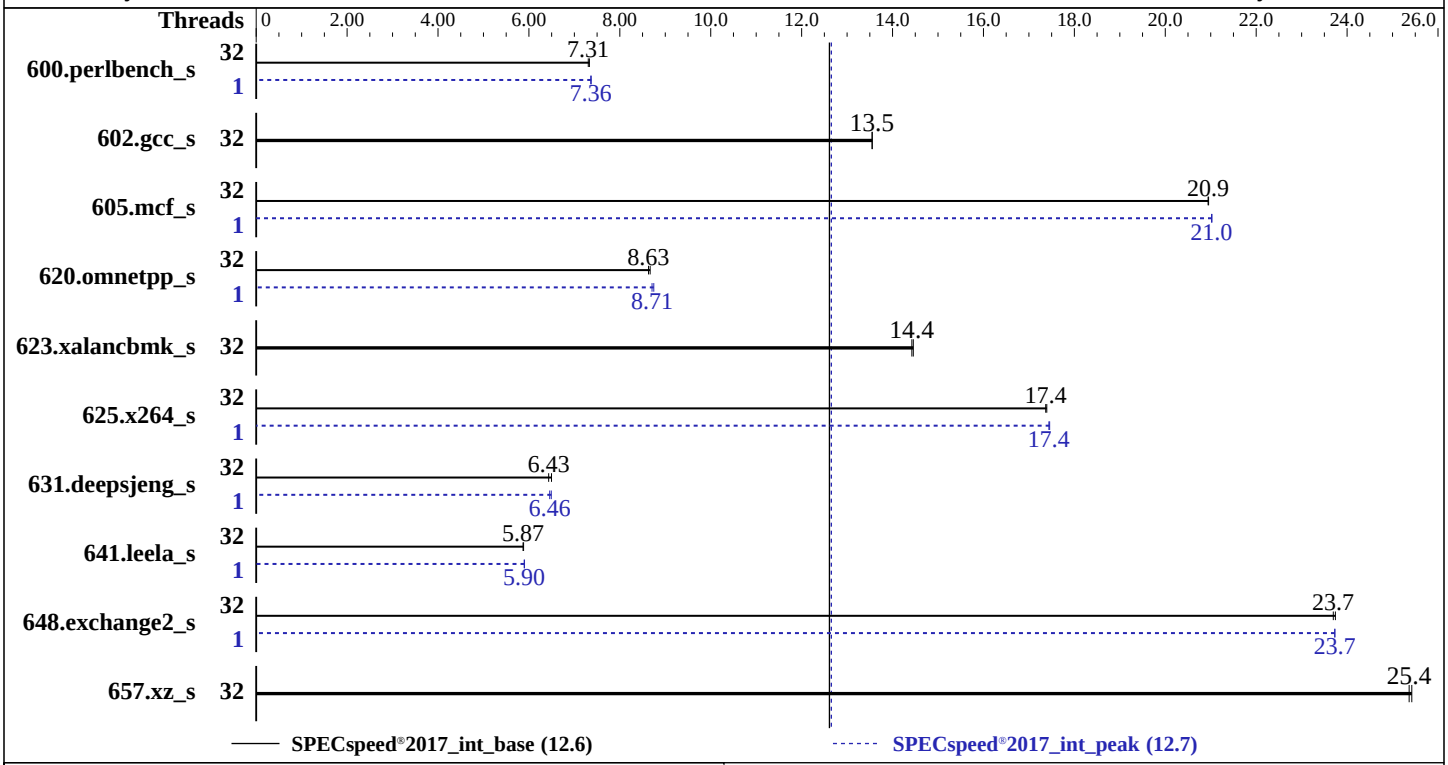
PowerEdge R6525 (AMD EPYC 7543P 32-Core Processor)

SPECspeed®2017_int_base = 12.6

SPECspeed®2017_int_peak = 12.7

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: May-2021
Hardware Availability: Jun-2021
Software Availability: Mar-2021



Hardware

CPU Name:	AMD EPYC 7543P
Max MHz:	3700
Nominal:	2800
Enabled:	32 cores, 1 chip
Orderable:	1 chip
Cache L1:	32 KB I + 32 KB D on chip per core
L2:	512 KB I+D on chip per core
L3:	256 MB I+D on chip per chip, 32 MB shared / 4 cores
Other:	None
Memory:	1 TB (8 x 128 GB 4Rx4 PC4-3200AA-L)
Storage:	128 GB on tmpfs
Other:	None

Software

OS:	Red Hat Enterprise Linux 8.3 (Ootpa) 4.18.0-240.el8.x86_64
Compiler:	C/C++/Fortran: Version 3.0.0 of AOCC
Parallel:	Yes
Firmware:	Version 2.2.5 released Apr-2021
File System:	tmpfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other:	jemalloc: jemalloc memory allocator library v5.1.0
Power Management:	BIOS and OS set to prefer performance at the cost of additional power usage.

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	32	**243**	**7.31**	242	7.33			1	**241**	**7.36**	241	7.37		
602.gcc_s	32	**294**	**13.5**	294	13.6			32	**294**	**13.5**	294	13.6		
605.mcf_s	32	**225**	**20.9**	225	21.0			1	225	21.0	**225**	**21.0**		
620.omnetpp_s	32	**189**	**8.63**	188	8.67			1	186	8.75	**187**	**8.71**		
623.xalancbmk_s	32	98.0	14.5	**98.2**	**14.4**			32	98.0	14.5	**98.2**	**14.4**		
625.x264_s	32	**102**	**17.4**	101	17.4			1	**101**	**17.4**	101	17.5		
631.deepsjeng_s	32	221	6.50	**223**	**6.43**			1	**222**	**6.46**	221	6.49		
641.leela_s	32	290	5.88	**291**	**5.87**			1	**289**	**5.90**	289	5.90		
648.exchange2_s	32	**124**	**23.7**	124	23.7			1	**124**	**23.7**	124	23.7		
657.xz_s	32	243	25.4	**244**	**25.4**			32	243	25.4	**244**	**25.4**		

SPECspeed®2017_int_base = 12.6

SPECspeed®2017_int_peak = 12.7

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,
```

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Operating System Notes (Continued)

```
'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/cpu2017-1.1.7-aocc300-B2/amd_speed_aocc300_milan_B_lib/lib
     ;/mnt/ramdisk/cpu2017-1.1.7-aocc300-B2/amd_speed_aocc300_milan_B_lib/lib
     32:"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "32"

Environment variables set by runcpu during the 600.perlbench_s peak run:
GOMP_CPU_AFFINITY = "0"

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

Environment variables set by runcpu during the 620.omnetpp_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 625.x264_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 631.deepsjeng_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 641.leela_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 648.exchange2_s peak run:
GOMP_CPU_AFFINITY = "0"
```

General Notes

```
Binaries were compiled on a system with 2x AMD EPYC 7742 CPU + 1TiB Memory using openSUSE 15.2

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

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General Notes (Continued)

```
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.

jemalloc: configured and built with GCC v4.8.2 in RHEL 7.4 (No options specified)
jemalloc 5.1.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2


 Benchmark run from a 128 GB ramdisk created with the cmd: "mount -t tmpfs -o size=128G tmpfs /mnt/ramdisk"
```

Platform Notes

```
BIOS settings:
         Logical Processor : Disabled
   L3 Cache as NUMA Domain : Enabled
 Virtualization Technology : Disabled
        DRAM Refresh Delay : Performance

            System Profile : Custom
      CPU Power Management : Maximum Performance
       Memory Patrol Scrub : Disabled
       PCI ASPM L1 Link
          Power Management : Disabled
  Algorithm Performance
     Boost Disable (ApbDis): Enabled

 Sysinfo program /mnt/ramdisk/cpu2017-1.1.7-aocc300-B2/bin/sysinfo
 Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
 running on rhel-8-3-amd Wed May 19 11:46:37 2021

 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 7543P 32-Core Processor
       1  "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 : 32
       siblings  : 32
       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
```

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Platform Notes (Continued)

```
       25 26 27 28 29 30 31

 From lscpu:
      Architecture:        x86_64
      CPU op-mode(s):      32-bit, 64-bit
      Byte Order:          Little Endian
      CPU(s):              32
      On-line CPU(s) list: 0-31
      Thread(s) per core:  1
      Core(s) per socket:  32
      Socket(s):           1
      NUMA node(s):        8
      Vendor ID:           AuthenticAMD
      CPU family:          25
      Model:               1
      Model name:          AMD EPYC 7543P 32-Core Processor
      Stepping:            1
      CPU MHz:             3617.956
      BogoMIPS:            5590.04
      Virtualization:      AMD-V
      L1d cache:           32K
      L1i cache:           32K
      L2 cache:            512K
      L3 cache:            32768K
      NUMA node0 CPU(s):   0-3
      NUMA node1 CPU(s):   4-7
      NUMA node2 CPU(s):   8-11
      NUMA node3 CPU(s):   12-15
      NUMA node4 CPU(s):   16-19
      NUMA node5 CPU(s):   20-23
      NUMA node6 CPU(s):   24-27
      NUMA node7 CPU(s):   28-31
      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 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 sme ssbd mba sev ibrs ibpb stibp vmmcall
     fsgsbase bmi1 avx2 smep bmi2 invpcid cqm rdt_a rdseed adx smap clflushopt clwb
     sha_ni xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
     cqm_mbm_local clzero irperf xsaveerptr wbnoinvd amd_ppin arat npt lbrv svm_lock
     nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter pfthreshold
     v_vmsave_vmload vgif umip pku ospke vaes vpclmulqdq rdpid overflow_recov succor smca

 /proc/cpuinfo cache data
    cache size : 512 KB
```

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Platform Notes (Continued)

```
From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
physical chip.
  available: 8 nodes (0-7)
  node 0 cpus: 0 1 2 3
  node 0 size: 128418 MB
  node 0 free: 128177 MB
  node 1 cpus: 4 5 6 7
  node 1 size: 129020 MB
  node 1 free: 124774 MB
  node 2 cpus: 8 9 10 11
  node 2 size: 129020 MB
  node 2 free: 128855 MB
  node 3 cpus: 12 13 14 15
  node 3 size: 129018 MB
  node 3 free: 128861 MB
  node 4 cpus: 16 17 18 19
  node 4 size: 129016 MB
  node 4 free: 128915 MB
  node 5 cpus: 20 21 22 23
  node 5 size: 129020 MB
  node 5 free: 128793 MB
  node 6 cpus: 24 25 26 27
  node 6 size: 129018 MB
  node 6 free: 128887 MB
  node 7 cpus: 28 29 30 31
  node 7 size: 116909 MB
  node 7 free: 116810 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

From /proc/meminfo
   MemTotal:       1043935032 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

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

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Platform Notes (Continued)

```
From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux"
      VERSION="8.3 (Ootpa)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="8.3"
      PLATFORM_ID="platform:el8"
      PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
      ANSI_COLOR="0;31"
   redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
   system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
   Linux rhel-8-3-amd 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020 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 and
                                                         seccomp
CVE-2017-5753 (Spectre variant 1):                       Mitigation: usercopy/swapgs
                                                         barriers and __user pointer
                                                         sanitization
CVE-2017-5715 (Spectre variant 2):                       Mitigation: Full AMD retpoline,
                                                        IBPB: conditional, IBRS_FW, STIBP:
                                                         disabled, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort):                 Not affected

run-level 3 Nov 26 12:35

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.7-aocc300-B2
   Filesystem     Type   Size  Used Avail Use% Mounted on
   tmpfs          tmpfs  128G  4.0G  125G   4% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
    Vendor:         Dell Inc.
    Product:        PowerEdge R6525
    Product Family: PowerEdge
    Serial:         1234567
```

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Platform Notes (Continued)

```
 Additional information from dmidecode 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:
     8x 802C8632802C 72ASS16G72LZ-3G2B3 128 GB 4 rank 3200
     24x Not Specified Not Specified

 BIOS:
    BIOS Vendor:       Dell Inc.
    BIOS Version:      2.2.5
    BIOS Date:         04/08/2021
    BIOS Revision:     2.2

 (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 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
  LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/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 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
  LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
------------------------------------------------------------------------------

==============================================================================
Fortran | 648.exchange2_s(base, peak)
------------------------------------------------------------------------------
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
  LLVM Mirror.Version.12.0.0)
```

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Compiler Version Notes (Continued)

```
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/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

Base Optimization Flags

C benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true

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Base Optimization Flags (Continued)

C benchmarks (continued):
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3 -z muldefs
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-lflang -lflangrti

C++ benchmarks:
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-do-block-reorder=aggressive
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -mllvm -enable-partial-unswitch
-mllvm -unroll-threshold=100 -finline-aggressive
-flv-function-specialization -mllvm -loop-unswitch-threshold=200000
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -extra-vectorizer-passes -mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -mllvm -convert-pow-exp-to-int=false
-z muldefs -mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-lflangrti

Fortran benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -z muldefs
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-lflangrti

Base Other Flags

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

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

Fortran benchmarks:
-Wno-return-type

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: -m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=5 -mllvm -unroll-threshold=50
-fremap-arrays -flv-function-specialization
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-mllvm -global-vectorize-slp=true
-mllvm -function-specialize -mllvm -enable-licm-vrp
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

602.gcc_s: basepeak = yes

605.mcf_s: Same as 600.perlbench_s

625.x264_s: Same as 600.perlbench_s

657.xz_s: basepeak = yes

C++ benchmarks:

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Peak Optimization Flags (Continued)

620.omnetpp_s: `-m64 -std=c++98 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-do-block-reorder=aggressive -Wl,-mllvm -Wl,-function-specialize -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6 -Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver3 -fveclib=AMDLIBM -ffast-math -flto -finline-aggressive -mllvm -unroll-threshold=100 -flv-function-specialization -mllvm -enable-licm-vrp -mllvm -reroll-loops -mllvm -aggressive-loop-unswitch -mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp=true -mllvm -do-block-reorder=aggressive -fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang`

623.xalancbmk_s: `basepeak = yes`

631.deepsjeng_s: `Same as 620.omnetpp_s`

641.leela_s: `Same as 620.omnetpp_s`

Fortran benchmarks:
`-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split -Wl,-mllvm -Wl,-function-specialize -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6 -Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3 -fveclib=AMDLIBM -ffast-math -flto -mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang`

Peak Other Flags

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

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

Fortran benchmarks:
`-Wno-return-type`

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2017/flags/aocc300-flags-A1.html
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-Milan-rev2.2.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2017/flags/aocc300-flags-A1.xml
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-Milan-rev2.2.xml

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

Tested with SPEC CPU®2017 v1.1.7 on 2021-05-19 12:46:37-0400.
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