SPEC CPU®2017 Integer Speed Result

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Cisco Systems

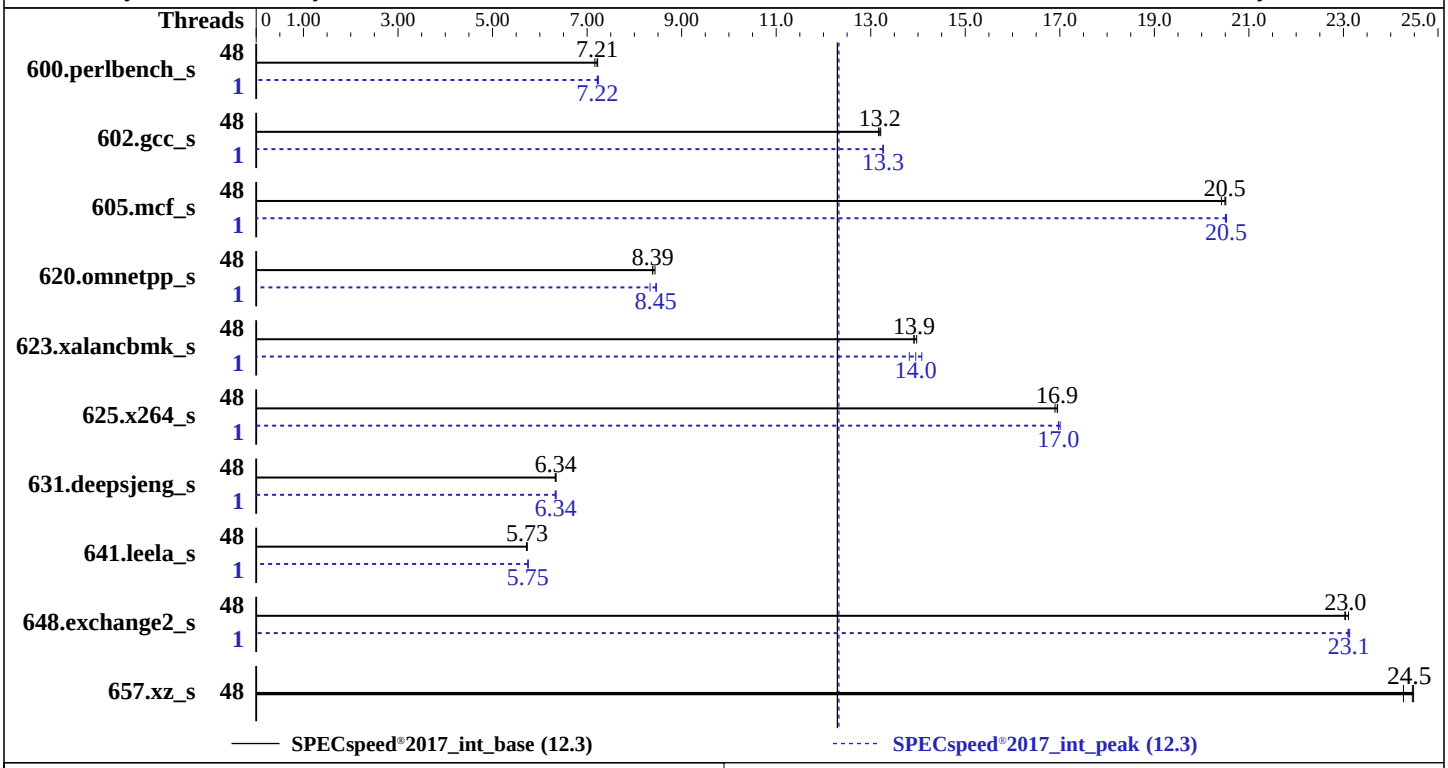
Cisco UCS C225 M6 (AMD EPYC 7643 48-Core)

SPECspeed®2017_int_base = 12.3

SPECspeed®2017_int_peak = 12.3

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

Test Date: Dec-2021
Hardware Availability: Jun-2021
Software Availability: Jun-2021



Hardware

CPU Name:	AMD EPYC 7643
Max MHz:	3600
Nominal:	2300
Enabled:	48 cores, 1 chip
Orderable:	1 chips
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 / 6 cores
Other:	None
Memory:	1 TB (8 x 128 GB 4Rx4 PC4-3200V-L)
Storage:	1 x 1.6 TB SSD SATA
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP3 (x86_64) 5.3.18-57-default
Compiler:	C/C++/Fortran: Version 3.0.0 of AOCC
Parallel:	Yes
Firmware:	Version 4.2.1c released Aug-2021
File System:	xfs
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

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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	48	246	7.22	248	7.16	**246**	**7.21**	1	245	7.24	**246**	**7.22**	246	7.21
602.gcc_s	48	**302**	**13.2**	302	13.2	301	13.2	1	**300**	**13.3**	300	13.3	300	13.3
605.mcf_s	48	230	20.5	231	20.4	**230**	**20.5**	1	**230**	**20.5**	230	20.5	230	20.5
620.omnetpp_s	48	**194**	**8.39**	195	8.38	193	8.44	1	193	8.47	196	8.33	**193**	**8.45**
623.xalancbmk_s	48	102	13.9	101	14.0	**102**	**13.9**	1	101	14.1	103	13.8	**102**	**14.0**
625.x264_s	48	**104**	**16.9**	104	16.9	104	17.0	1	104	17.0	104	17.0	**104**	**17.0**
631.deepsjeng_s	48	226	6.34	**226**	**6.34**	227	6.33	1	227	6.32	**226**	**6.34**	226	6.34
641.leela_s	48	298	5.73	**298**	**5.73**	298	5.72	1	297	5.75	297	5.75	**297**	**5.75**
648.exchange2_s	48	127	23.1	128	23.0	**128**	**23.0**	1	127	23.1	127	23.1	**127**	**23.1**
657.xz_s	48	255	24.3	252	24.5	**253**	**24.5**	48	255	24.3	252	24.5	**253**	**24.5**

SPECspeed®2017_int_base = 12.3

SPECspeed®2017_int_peak = 12.3

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,
```

(Continued on next page)

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 = "0-47"
LD_LIBRARY_PATH =
     "/home/cpu2017/amd_speed_aocc300_milan_B_lib/lib;/home/cpu2017/amd_speed
     _aocc300_milan_B_lib/lib32:"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "16G"
OMP_THREAD_LIMIT = "48"

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

Environment variables set by runcpu during the 602.gcc_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 623.xalancbmk_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.
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
```

Platform Notes

```
 SMT Mode set to Disabled
 NUMA nodes per socket set to NPS1
 ACPI SRAT L3 Cache As NUMA Domain set to Enabled
 DRAM Scrub Time set to Disabled
 Determinism Slider set to Power
 L1 Stream HW Prefetcher set to Enabled
 APBDIS set to 1

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on localhost Fri Dec  3 18:47:10 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 7643 48-Core Processor
       1  "physical id"s (chips)
       48 "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 : 48
       siblings  : 48
       physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
       32 33 34 35 36 37 40 41 42 43 44 45 48 49 50 51 52 53 56 57 58 59 60 61

 From lscpu from util-linux 2.36.2:
      Architecture:                    x86_64
      CPU op-mode(s):                  32-bit, 64-bit
      Byte Order:                      Little Endian
```

(Continued on next page)

Platform Notes (Continued)

```
Address sizes:                   48 bits physical, 48 bits virtual
CPU(s):                          48
On-line CPU(s) list:             0-47
Thread(s) per core:              1
Core(s) per socket:              48
Socket(s):                       1
NUMA node(s):                    8
Vendor ID:                       AuthenticAMD
CPU family:                      25
Model:                           1
Model name:                      AMD EPYC 7643 48-Core Processor
Stepping:                        1
Frequency boost:                 enabled
CPU MHz:                         1496.431
CPU max MHz:                     2300.0000
CPU min MHz:                     1500.0000
BogoMIPS:                        4591.26
Virtualization:                  AMD-V
L1d cache:                       1.5 MiB
L1i cache:                       1.5 MiB
L2 cache:                        24 MiB
L3 cache:                        256 MiB
NUMA node0 CPU(s):               0-5
NUMA node1 CPU(s):               6-11
NUMA node2 CPU(s):               12-17
NUMA node3 CPU(s):               18-23
NUMA node4 CPU(s):               24-29
NUMA node5 CPU(s):               30-35
NUMA node6 CPU(s):               36-41
NUMA node7 CPU(s):               42-47
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 and seccomp
Vulnerability Spectre v1:        Mitigation; usercopy/swapgs barriers and __user
pointer sanitization
Vulnerability Spectre v2:        Mitigation; Full AMD retpoline, IBPB conditional,
IBRS_FW, STIBP disabled, RSB filling
Vulnerability Srbds:             Not affected
Vulnerability Tsx async abort:   Not affected
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 movbe popcnt aes
xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a
```

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Platform Notes (Continued)

```
      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 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

  From lscpu --cache:
       NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
       L1d       32K     1.5M    8 Data            1    64        1             64
       L1i       32K     1.5M    8 Instruction     1    64        1             64
       L2       512K      24M    8 Unified         2  1024        1             64
       L3        32M     256M   16 Unified         3 32768        1             64

  /proc/cpuinfo cache data
     cache size : 512 KB

  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 4 5
    node 0 size: 128838 MB
    node 0 free: 125995 MB
    node 1 cpus: 6 7 8 9 10 11
    node 1 size: 129022 MB
    node 1 free: 128817 MB
    node 2 cpus: 12 13 14 15 16 17
    node 2 size: 129022 MB
    node 2 free: 128342 MB
    node 3 cpus: 18 19 20 21 22 23
    node 3 size: 129022 MB
    node 3 free: 128453 MB
    node 4 cpus: 24 25 26 27 28 29
    node 4 size: 128988 MB
    node 4 free: 128631 MB
    node 5 cpus: 30 31 32 33 34 35
    node 5 size: 129022 MB
    node 5 free: 128477 MB
    node 6 cpus: 36 37 38 39 40 41
    node 6 size: 129022 MB
    node 6 free: 127919 MB
    node 7 cpus: 42 43 44 45 46 47
    node 7 size: 116908 MB
    node 7 free: 114897 MB
    node distances:
```

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Platform Notes (Continued)

```
  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:       1044322708 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

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

From /etc/*release* /etc/*version*
   os-release:
      NAME="SLES"
      VERSION="15-SP3"
      VERSION_ID="15.3"
      PRETTY_NAME="SUSE Linux Enterprise Server 15 SP3"
      ID="sles"
      ID_LIKE="suse"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:15:sp3"

uname -a:
   Linux localhost 5.3.18-57-default #1 SMP Wed Apr 28 10:54:41 UTC 2021 (ba3c2e9) 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:
```

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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 Dec 3 15:03

 SPEC is set to: /home/cpu2017
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/nvme0n1p3 xfs   1.5T   18G  1.5T   2% /

 From /sys/devices/virtual/dmi/id
     Vendor:         Cisco Systems Inc
     Product:        UCSC-C225-M6N
     Serial:         WZP25230TMY

 Additional information from dmidecode 3.2 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 0xCE00 M386AAG40AM3-CWE 128 GB 4 rank 3200

 BIOS:
    BIOS Vendor:       Cisco Systems, Inc.
    BIOS Version:      C225M6.4.2.1c.0.0806211349
    BIOS Date:         08/06/2021
    BIOS Revision:     5.22

 (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)
```

(Continued on next page)

Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------
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)
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
-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`

(Continued on next page)

Peak Optimization Flags (Continued)

600.perlbench_s (continued):
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

602.gcc_s: Same as 600.perlbench_s

605.mcf_s: Same as 600.perlbench_s

625.x264_s: Same as 600.perlbench_s

657.xz_s: basepeak = yes

C++ benchmarks:
-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

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

(Continued on next page)

Peak Other Flags (Continued)

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-B2.html
http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-AMD-v2-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc300-flags-B2.xml
http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-AMD-v2-revC.xml

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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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