SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.

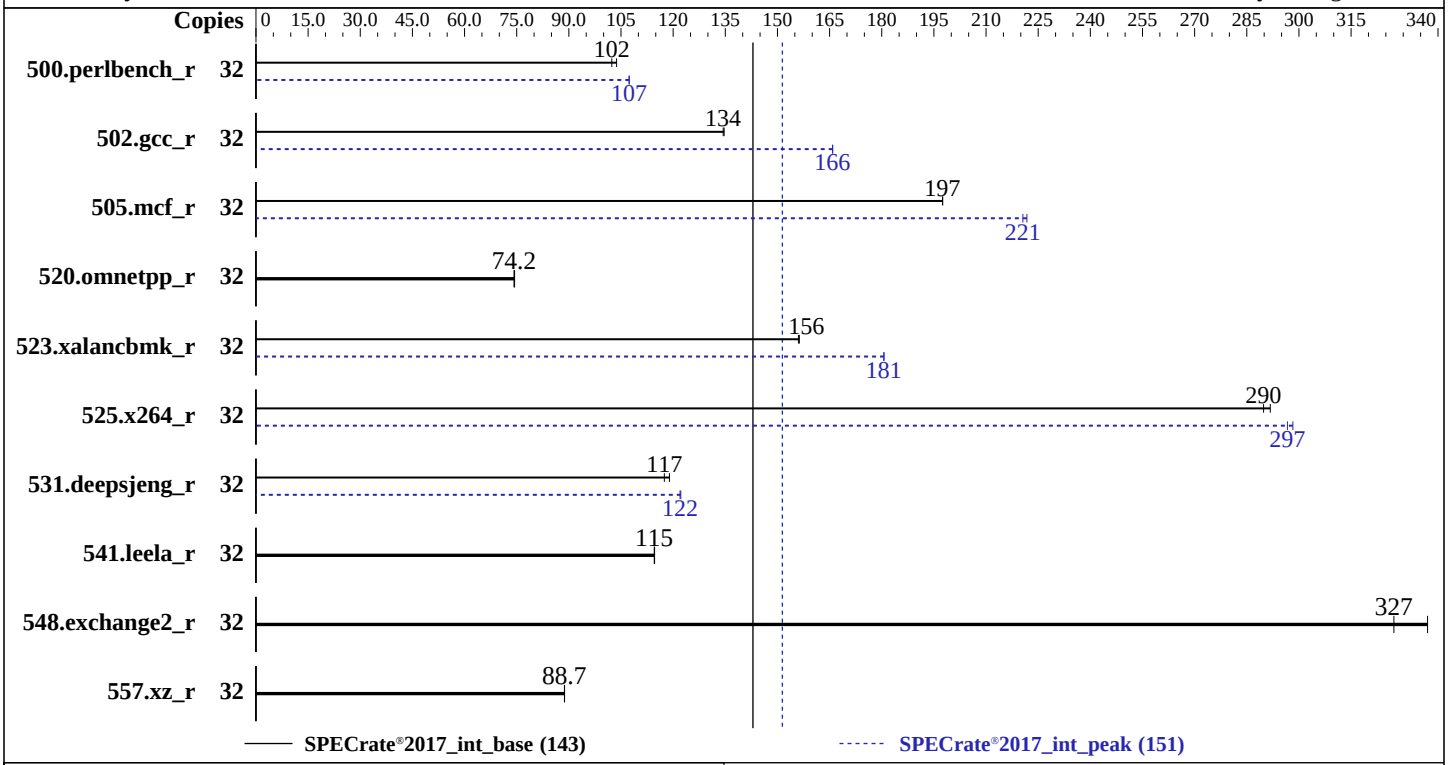
PowerEdge R6515 (AMD EPYC 7F52, 3.50 GHz)

SPECrate®2017_int_base = 143

SPECrate®2017_int_peak = 151

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

Test Date: Jan-2020
Hardware Availability: Apr-2020
Software Availability: Aug-2019



Hardware

CPU Name:	AMD EPYC 7F52
Max MHz:	3900
Nominal:	3500
Enabled:	16 cores, 1 chip, 2 threads/core
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, 16 MB per core
Other:	None
Memory:	128 GB (8 x 16 GB 2Rx8 PC4-3200AA-R, running at 3200)
Storage:	1 x 960 GB SATA SSD
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP1 kernel 4.12.14-195-default
Compiler:	C/C++/Fortran: Version 2.0.0 of AOCC
Parallel:	No
Firmware:	Version 1.2.12 released Dec-2019
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other:	jemalloc: jemalloc memory allocator library v5.2.0
Power Management:	BIOS set to prefer performance at the cost of additional power usage.

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R6515 (AMD EPYC 7F52, 3.50 GHz)

SPECrate®2017_int_base = 143

SPECrate®2017_int_peak = 151

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

Test Date: Jan-2020
Hardware Availability: Apr-2020
Software Availability: Aug-2019

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	32	491	104	**498**	**102**			32	**475**	**107**	474	107		
502.gcc_r	32	336	135	**337**	**134**			32	**273**	**166**	273	166		
505.mcf_r	32	262	198	**262**	**197**			32	**234**	**221**	233	222		
520.omnetpp_r	32	**566**	**74.2**	564	74.4			32	**566**	**74.2**	564	74.4		
523.xalancbmk_r	32	216	156	**217**	**156**			32	187	181	**187**	**181**		
525.x264_r	32	**193**	**290**	192	292			32	188	298	**189**	**297**		
531.deepsjeng_r	32	308	119	**312**	**117**			32	**301**	**122**	300	122		
541.leela_r	32	462	115	**463**	**115**			32	462	115	**463**	**115**		
548.exchange2_r	32	**256**	**327**	249	337			32	**256**	**327**	249	337		
557.xz_r	32	389	88.8	**390**	**88.7**			32	389	88.8	**390**	**88.7**		

SPECrate®2017_int_base = 143

SPECrate®2017_int_peak = 151

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
'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>

Set dirty_ratio=8 to limit dirty cache to 8% of memory
Set swappiness=1 to swap only if necessary
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory
sync then drop_caches=3 to reset caches before invoking runcpu

dirty_ratio, swappiness, zone_reclaim_mode and drop_caches were
all set using privileged echo (e.g. echo 1 > /proc/sys/vm/swappiness).
```

(Continued on next page)

Operating System Notes (Continued)

Transparent huge pages set to 'always' for this run (OS default)

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
"/root/cpu2017-1.1.0/amd_rate_aocc200_rome_C_lib/64;/root/cpu2017-1.1.0/
amd_rate_aocc200_rome_C_lib/32:"
MALLOC_CONF = "retain:true"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using Fedora 26

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 v9.1.0 in Ubuntu 19.04 with -O3 -znver2 -flto
jemalloc 5.2.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.2.0/jemalloc-5.2.0.tar.bz2

Platform Notes

BIOS settings:
NUMA Nodes Per Socket set to 4
CCX as NUMA Domain set to Enabled
System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost Enabled
Cstates set to Enabled
Memory Patrol Scrub Disabled
Memory Refresh Rate set to 1x
PCI ASPM L1 Link Power Management Disabled
Determinism Slider set to Power Determinism
Efficiency Optimized Mode Disabled
Memory Interleaving set to Disabled
Memory Freq set to 3200
Fan Speed = Maximum

(Continued on next page)

Platform Notes (Continued)

```
Sysinfo program /root/cpu2017-1.1.0/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
running on linux-g3ob Thu Jan  2 13:22:07 2020

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 7F52 16-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 : 16
      siblings  : 32
      physical 0: cores 0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60

From lscpu:
     Architecture:        x86_64
     CPU op-mode(s):      32-bit, 64-bit
     Byte Order:          Little Endian
     Address sizes:       43 bits physical, 48 bits virtual
     CPU(s):              32
     On-line CPU(s) list: 0-31
     Thread(s) per core:  2
     Core(s) per socket:  16
     Socket(s):           1
     NUMA node(s):        16
     Vendor ID:           AuthenticAMD
     CPU family:          23
     Model:               49
     Model name:          AMD EPYC 7F52 16-Core Processor
     Stepping:            0
     CPU MHz:             3493.811
     BogoMIPS:            6987.62
     Virtualization:      AMD-V
     L1d cache:           32K
     L1i cache:           32K
     L2 cache:            512K
     L3 cache:            16384K
     NUMA node0 CPU(s):   0,16
     NUMA node1 CPU(s):   1,17
     NUMA node2 CPU(s):   2,18
     NUMA node3 CPU(s):   3,19
     NUMA node4 CPU(s):   4,20
```

(Continued on next page)

Platform Notes (Continued)

```
      NUMA node5 CPU(s):   5,21
      NUMA node6 CPU(s):   6,22
      NUMA node7 CPU(s):   7,23
      NUMA node8 CPU(s):   8,24
      NUMA node9 CPU(s):   9,25
      NUMA node10 CPU(s):  10,26
      NUMA node11 CPU(s):  11,27
      NUMA node12 CPU(s):  12,28
      NUMA node13 CPU(s):  13,29
      NUMA node14 CPU(s):  14,30
      NUMA node15 CPU(s):  15,31
      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 xtopology nonstop_tsc cpuid extd_apicid aperfmperf pni
      pclmulqdq monitor ssse3 fma cx16 sse4_1 sse4_2 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_l2 mwaitx cpb
      cat_l3 cdp_l3 hw_pstate sme ssbd sev ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep
      bmi2 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 arat npt
      lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
      pfthreshold avic v_vmsave_vmload vgif umip rdpid overflow_recov succor smca

  /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: 16 nodes (0-15)
    node 0 cpus: 0 16
    node 0 size: 7485 MB
    node 0 free: 7411 MB
    node 1 cpus: 1 17
    node 1 size: 8063 MB
    node 1 free: 7992 MB
    node 2 cpus: 2 18
    node 2 size: 8063 MB
    node 2 free: 8006 MB
    node 3 cpus: 3 19
    node 3 size: 8062 MB
    node 3 free: 8005 MB
    node 4 cpus: 4 20
    node 4 size: 8063 MB
    node 4 free: 8015 MB
    node 5 cpus: 5 21
    node 5 size: 8063 MB
    node 5 free: 8017 MB
```

(Continued on next page)

Platform Notes (Continued)

```
node 6 cpus: 6 22
node 6 size: 8063 MB
node 6 free: 8018 MB
node 7 cpus: 7 23
node 7 size: 8062 MB
node 7 free: 8021 MB
node 8 cpus: 8 24
node 8 size: 8063 MB
node 8 free: 8024 MB
node 9 cpus: 9 25
node 9 size: 8063 MB
node 9 free: 8021 MB
node 10 cpus: 10 26
node 10 size: 8063 MB
node 10 free: 8011 MB
node 11 cpus: 11 27
node 11 size: 8062 MB
node 11 free: 8021 MB
node 12 cpus: 12 28
node 12 size: 8034 MB
node 12 free: 7983 MB
node 13 cpus: 13 29
node 13 size: 8063 MB
node 13 free: 8018 MB
node 14 cpus: 14 30
node 14 size: 8063 MB
node 14 free: 8005 MB
node 15 cpus: 15 31
node 15 size: 8050 MB
node 15 free: 8000 MB
node distances:
node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
  0:  10  11  11  11  12  12  12  12  12  12  12  12  12  12  12  12
  1:  11  10  11  11  12  12  12  12  12  12  12  12  12  12  12  12
  2:  11  11  10  11  12  12  12  12  12  12  12  12  12  12  12  12
  3:  11  11  11  10  12  12  12  12  12  12  12  12  12  12  12  12
  4:  12  12  12  12  10  11  11  11  12  12  12  12  12  12  12  12
  5:  12  12  12  12  11  10  11  11  12  12  12  12  12  12  12  12
  6:  12  12  12  12  11  11  10  11  12  12  12  12  12  12  12  12
  7:  12  12  12  12  11  11  11  10  12  12  12  12  12  12  12  12
  8:  12  12  12  12  12  12  12  12  10  11  11  11  12  12  12  12
  9:  12  12  12  12  12  12  12  12  11  10  11  11  12  12  12  12
 10:  12  12  12  12  12  12  12  12  11  11  10  11  12  12  12  12
 11:  12  12  12  12  12  12  12  12  11  11  11  10  12  12  12  12
 12:  12  12  12  12  12  12  12  12  12  12  12  12  10  11  11  11
 13:  12  12  12  12  12  12  12  12  12  12  12  12  11  10  11  11
 14:  12  12  12  12  12  12  12  12  12  12  12  12  11  11  10  11
```

(Continued on next page)

Platform Notes (Continued)

```
   15:  12  12  12  12  12  12  12  12  12  12  12  12  11  11  11  10

 From /proc/meminfo
    MemTotal:       131472672 kB
    HugePages_Total:       0
    Hugepagesize:       2048 kB

 From /etc/*release* /etc/*version*
    os-release:
       NAME="SLES"
       VERSION="15-SP1"
       VERSION_ID="15.1"
       PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
       ID="sles"
       ID_LIKE="suse"
       ANSI_COLOR="0;32"
       CPE_NAME="cpe:/o:suse:sles:15:sp1"

 uname -a:
    Linux linux-g3ob 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019 (8fba516)
    x86_64 x86_64 x86_64 GNU/Linux

 Kernel self-reported vulnerability status:

 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: __user pointer sanitization
 CVE-2017-5715 (Spectre variant 2):        Mitigation: Full AMD retpoline, IBPB:
                                          conditional, IBRS_FW, STIBP: conditional, RSB
                                           filling

 run-level 3 Jan 2 13:20 last=5

 SPEC is set to: /root/cpu2017-1.1.0
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      xfs   440G   36G  405G   9% /

 From /sys/devices/virtual/dmi/id
     BIOS:    Dell Inc. 1.2.12 12/12/2019
     Vendor:  Dell Inc.
     Product: PowerEdge R6515
     Product Family: PowerEdge

 Additional information from dmidecode follows.  WARNING: Use caution when you interpret
```

(Continued on next page)

Platform Notes (Continued)

```
 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 80AD80B380AD HMA82GR7CJR8N-XN 16 GB 2 rank 3200
     8x Not Specified Not Specified

 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C       | 502.gcc_r(peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------

==============================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)
        | 525.x264_r(base, peak) 557.xz_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------

==============================================================================
C       | 502.gcc_r(peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------

==============================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)
        | 525.x264_r(base, peak) 557.xz_r(base, peak)
------------------------------------------------------------------------------
```

(Continued on next page)

Compiler Version Notes (Continued)

```
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 523.xalancbmk_r(peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base)
        | 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 523.xalancbmk_r(peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base)
        | 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
```

(Continued on next page)

Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------

==============================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Base Portability Flags

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LINUX -DSPEC_LP64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC

(Continued on next page)

Base Optimization Flags (Continued)

C benchmarks (continued):
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
-march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50
-fremap-arrays -mllvm -function-specialize -mllvm -enable-gvn-hoist
-mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp
-mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000
-flv-function-specialization -z muldefs -lmvec -lamdlibm -ljemalloc
-lflang

C++ benchmarks:
-flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-suppress-fmas -O3 -ffast-math -march=znver2
-mllvm -loop-unswitch-threshold=200000 -mllvm -vector-library=LIBMVEC
-mllvm -unroll-threshold=100 -flv-function-specialization
-mllvm -enable-partial-unswitch -z muldefs -lmvec -lamdlibm
-ljemalloc -lflang

Fortran benchmarks:
-flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC
-Wl,-mllvm -Wl,-reduce-array-computations=3 -ffast-math
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver2 -funroll-loops
-Mrecursive -mllvm -vector-library=LIBMVEC -z muldefs
-mllvm -disable-indvar-simplify -mllvm -unroll-aggressive
-mllvm -unroll-threshold=150 -lmvec -lamdlibm -ljemalloc -lflang

Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Peak Portability Flags

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LINUX -D_FILE_OFFSET_BITS=64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Peak Optimization Flags

C benchmarks:

500.perlbench_r: -flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-vector-library=LIBMVEC
-Wl,-mllvm -Wl,-reduce-array-computations=3
-fprofile-instr-generate(pass 1)
-fprofile-instr-use(pass 2) -Ofast -march=znver2
-mno-sse4a -fstruct-layout=5
-mllvm -vectorize-memory-aggressively
-mllvm -function-specialize -mllvm -enable-gvn-hoist
-mllvm -unroll-threshold=50 -fremap-arrays
-mllvm -vector-library=LIBMVEC
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp -mllvm -inline-threshold=1000
-flv-function-specialization -lmvec -lamdlibm -ljemalloc
-lflang

502.gcc_r: -m32 -flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-vector-library=LIBMVEC
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver2 -mno-sse4a -fstruct-layout=5
-mllvm -vectorize-memory-aggressively
-mllvm -function-specialize -mllvm -enable-gvn-hoist
-mllvm -unroll-threshold=50 -fremap-arrays
-mllvm -vector-library=LIBMVEC
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp -mllvm -inline-threshold=1000
-flv-function-specialization -fgnu89-inline -ljemalloc

(Continued on next page)

Peak Optimization Flags (Continued)

505.mcf_r: `-flto -Wl,-mllvm -Wl,-function-specialize -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC -Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver2 -mno-sse4a -fstruct-layout=5 -mllvm -vectorize-memory-aggressively -mllvm -function-specialize -mllvm -enable-gvn-hoist -mllvm -unroll-threshold=50 -fremap-arrays -mllvm -vector-library=LIBMVEC -mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp -mllvm -inline-threshold=1000 -flv-function-specialization -lmvec -lamdlibm -ljemalloc -lflang`

525.x264_r: `Same as 500.perlbench_r`

557.xz_r: `basepeak = yes`

C++ benchmarks:

520.omnetpp_r: `basepeak = yes`

523.xalancbmk_r: `-m32 -flto -Wl,-mllvm -Wl,-function-specialize -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC -Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver2 -flv-function-specialization -mllvm -unroll-threshold=100 -mllvm -enable-partial-unswitch -mllvm -loop-unswitch-threshold=200000 -mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000 -ljemalloc`

531.deepsjeng_r: `-flto -Wl,-mllvm -Wl,-function-specialize -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC -Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver2 -flv-function-specialization -mllvm -unroll-threshold=100 -mllvm -enable-partial-unswitch -mllvm -loop-unswitch-threshold=200000 -mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000 -lmvec -lamdlibm -ljemalloc -lflang`

(Continued on next page)

Peak Optimization Flags (Continued)

541.leela_r: `basepeak = yes`

Fortran benchmarks:

548.exchange2_r: `basepeak = yes`

Peak Other Flags

C benchmarks:

502.gcc_r: `-L/sppo/dev/cpu2017/v110/amd_rate_aocc200_rome_C_lib/32`

C++ benchmarks:

523.xalancbmk_r: `-L/sppo/dev/cpu2017/v110/amd_rate_aocc200_rome_C_lib/32`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2017/flags/aocc200-flags-B1-speed-Dell.html`
`http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE8.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/aocc200-flags-B1-speed-Dell.xml`
`http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE8.xml`

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.0 on 2020-01-02 14:22:07-0500.
Report generated on 2020-04-14 15:18:29 by CPU2017 PS formatter v6255.
Originally published on 2020-04-14.