



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.

R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134

SPECrate®2017_int_peak = 140

CPU2017 License: 9082

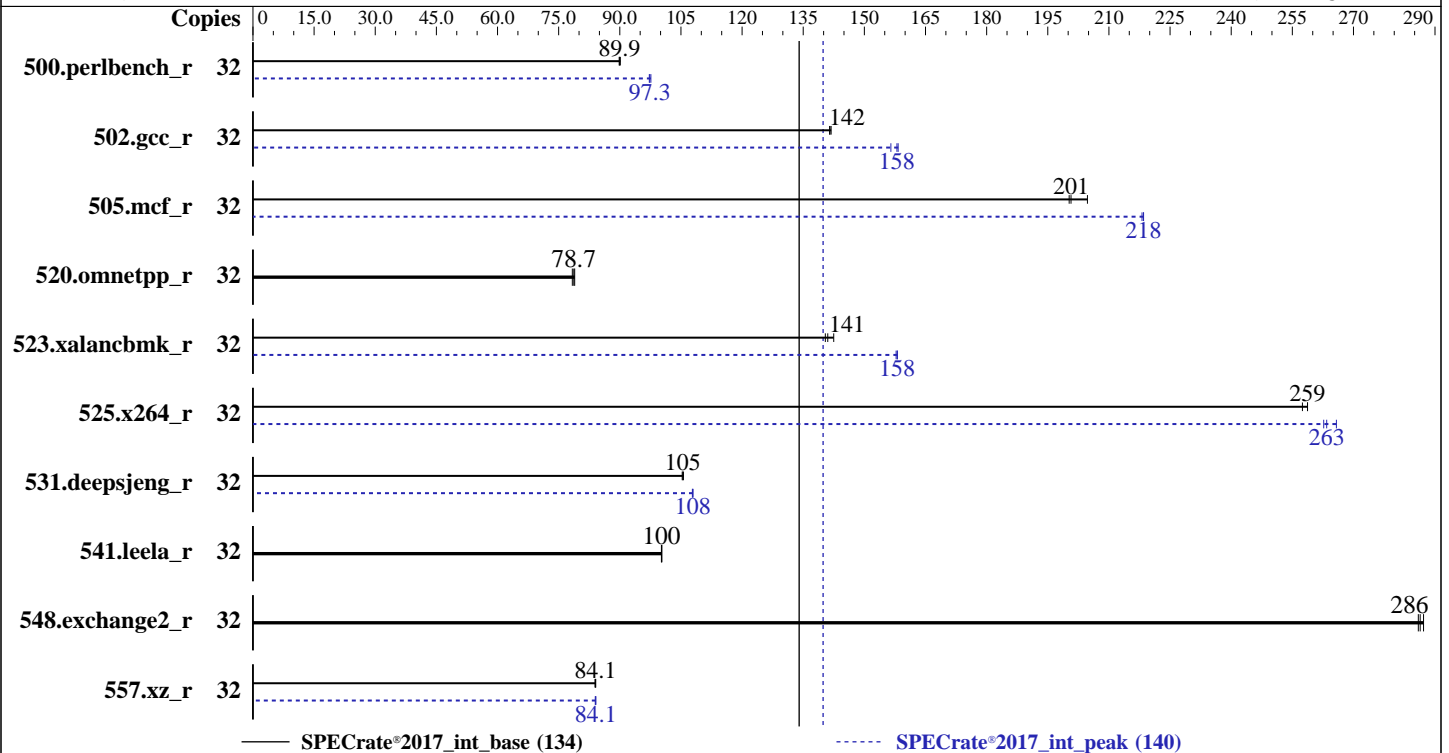
Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019



Hardware

CPU Name: AMD EPYC 7262
 Max MHz: 3400
 Nominal: 3200
 Enabled: 16 cores, 2 chips, 2 threads/core
 Orderable: 1,2 chips
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 512 KB I+D on chip per core
 L3: 128 MB I+D on chip per chip, 16 MB per core
 Other: None
 Memory: 1 TB (16 x 64 GB 4DRx4 PC4-3200AA-L)
 Storage: 1 x 1.92 TB SATA SSD
 Other: None

Software

OS: Ubuntu 19.04 (x86_64)
 kernel version 5.0.0-16-generic
 C/C++/Fortran: Version 2.0.0 of AOCC
 Compiler: No
 Parallel: Version R05 released Aug-2019
 Firmware: ext4
 File System: Run level 5 (multi-user)
 System State: 64-bit
 Base Pointers: 32/64-bit
 Peak Pointers: jemalloc: jemalloc memory allocator library v5.2.0
 Other: --
 Power Management: --



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134
SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

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	565	90.1	567	89.9	567	89.9	32	523	97.3	522	97.6	524	97.2
502.gcc_r	32	320	142	319	142	320	141	32	286	158	290	157	287	158
505.mcf_r	32	253	205	258	201	258	200	32	237	218	237	218	237	219
520.omnetpp_r	32	536	78.4	532	78.9	533	78.7	32	536	78.4	532	78.9	533	78.7
523.xalancbmk_r	32	240	141	237	142	241	140	32	214	158	214	158	214	158
525.x264_r	32	217	259	218	257	217	259	32	213	263	213	263	211	266
531.deepsjeng_r	32	347	106	348	105	348	105	32	340	108	340	108	340	108
541.leela_r	32	528	100	529	100	529	100	32	528	100	529	100	529	100
548.exchange2_r	32	293	286	293	286	292	287	32	293	286	293	286	292	287
557.xz_r	32	411	84.1	411	84.1	412	83.9	32	411	84.1	412	84.0	411	84.1

SPECrate®2017_int_base = 134

SPECrate®2017_int_peak = 140

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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).

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

General Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2017/amd_rate_aocc200_rome_B_lib/64;/root/cpu2017/amd_rate_aocc200_rome_B_lib/32:"
MALLOC_CONF = "retain:true"

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134
SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

General Notes (Continued)

Binaries were compiled on a system with 2p 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.

The AMD64 AOCC Compiler Suite is available at
<http://developer.amd.com/amd-aocc/>

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:

cTDP = 180

Determinism Slider set to Power

SMT set to auto

IOMMU set to enable

Package Power Limit set to 180

Sysinfo program /root/cpu2017/bin/sysinfo

Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9

running on test Thu Aug 29 22:45:22 2019

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 7262 8-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 : 8

siblings : 16

physical 0: cores 0 4 8 12 16 20 24 28

physical 1: cores 0 4 8 12 16 20 24 28

From lscpu:

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.

SPECrate®2017_int_base = 134

R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Date: Aug-2019

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Hardware Availability: Aug-2019

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Software Availability: Aug-2019

Platform Notes (Continued)

```

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:    8
Socket(s):             2
NUMA node(s):          8
Vendor ID:             AuthenticAMD
CPU family:            23
Model:                 49
Model name:            AMD EPYC 7262 8-Core Processor
Stepping:              0
CPU MHz:               2572.137
CPU max MHz:           3200.0000
CPU min MHz:           1500.0000
BogoMIPS:              6400.08
Virtualization:        AMD-V
L1d cache:             32K
L1i cache:             32K
L2 cache:              512K
L3 cache:              16384K
NUMA node0 CPU(s):    0,1,16,17
NUMA node1 CPU(s):    2,3,18,19
NUMA node2 CPU(s):    4,5,20,21
NUMA node3 CPU(s):    6,7,22,23
NUMA node4 CPU(s):    8,9,24,25
NUMA node5 CPU(s):    10,11,26,27
NUMA node6 CPU(s):    12,13,28,29
NUMA node7 CPU(s):    14,15,30,31
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_llc mwaitx cpb
cat_l3 cdp_l3 hw_pstate sme ssbd mba sev ibrs ibpb stibp vmmcall fsgsbase bml 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
wbnoinvd 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

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134
SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

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 16 17
node 0 size: 128898 MB
node 0 free: 128552 MB
node 1 cpus: 2 3 18 19
node 1 size: 128993 MB
node 1 free: 128666 MB
node 2 cpus: 4 5 20 21
node 2 size: 129016 MB
node 2 free: 128716 MB
node 3 cpus: 6 7 22 23
node 3 size: 129004 MB
node 3 free: 128691 MB
node 4 cpus: 8 9 24 25
node 4 size: 129016 MB
node 4 free: 128757 MB
node 5 cpus: 10 11 26 27
node 5 size: 129016 MB
node 5 free: 128730 MB
node 6 cpus: 12 13 28 29
node 6 size: 129016 MB
node 6 free: 128751 MB
node 7 cpus: 14 15 30 31
node 7 size: 129015 MB
node 7 free: 128744 MB
node distances:
node  0  1  2  3  4  5  6  7
  0: 10 12 12 12 32 32 32 32
  1: 12 10 12 12 32 32 32 32
  2: 12 12 10 12 32 32 32 32
  3: 12 12 12 10 32 32 32 32
  4: 32 32 32 32 10 12 12 12
  5: 32 32 32 32 12 10 12 12
  6: 32 32 32 32 12 12 10 12
  7: 32 32 32 32 12 12 12 10

```

```

From /proc/meminfo
MemTotal:      1056746064 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
Ubuntu 19.04

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134
SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

Platform Notes (Continued)

From /etc/*release* /etc/*version*

debian_version: buster/sid

os-release:

NAME="Ubuntu"

VERSION="19.04 (Disco Dingo)"

ID=ubuntu

ID_LIKE=debian

PRETTY_NAME="Ubuntu 19.04"

VERSION_ID="19.04"

HOME_URL="https://www.ubuntu.com/"

SUPPORT_URL="https://help.ubuntu.com/"

uname -a:

Linux test 5.0.0-16-generic #17-Ubuntu SMP Wed May 15 10:52:21 UTC 2019 x86_64 x86_64
x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2017-5754 (Meltdown): Not affected

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 5 Aug 29 22:36

SPEC is set to: /root/cpu2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda2	ext4	1.8T	43G	1.6T	3%	/

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.

BIOS GIGABYTE R05 08/21/2019

Memory:

16x Samsung M386A8K40DM2-CWE 64 kB 4 rank 3200

16x Unknown Unknown

(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)

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.

R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134

SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

Compiler Version Notes (Continued)

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)
=====

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

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.

R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134

SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

Compiler Version Notes (Continued)

```
=====
C++      | 520.omnetpp_r(base, peak) 523.xalanbmk_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.xalanbmk_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.xalanbmk_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
-----
```

```
=====
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
-----
```




SPEC CPU[®]2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate[®]2017_int_base = 134

SPECrate[®]2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

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
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
-march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50
-freemap-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
```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134

SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-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
```



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134

SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

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
```

```
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
```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134
SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

Peak Optimization Flags (Continued)

525.x264_r: Same as 500.perlbench_r

557.xz_r: Same as 505.mcf_r

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

541.leela_r: basepeak = yes

Fortran benchmarks:

548.exchange2_r: basepeak = yes

Peak Other Flags

C benchmarks:

502.gcc_r: -L/sppo/dev/cpu2017/amd_rate_aocc200_rome/amd_rate_aocc200_rome_B_lib/32

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

GIGA-BYTE TECHNOLOGY CO., LTD.
R282-Z90
(AMD EPYC 7262 , 3.2GHz)

SPECrate®2017_int_base = 134

SPECrate®2017_int_peak = 140

CPU2017 License: 9082

Test Sponsor: GIGA-BYTE TECHNOLOGY CO., LTD.

Tested by: GIGA-BYTE TECHNOLOGY CO., LTD.

Test Date: Aug-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

Peak Other Flags (Continued)

C++ benchmarks:

523.xalancbmk_r: -L/sppo/dev/cpu2017/amd_rate_aocc200_rome/amd_rate_aocc200_rome_B_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.html>

<http://www.spec.org/cpu2017/flags/GIGA-BYTE-Platform-SPECcpu2017-Flags-V1.1-Rome-B.2019-09-17.html>

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

<http://www.spec.org/cpu2017/flags/aocc200-flags-B1.xml>

<http://www.spec.org/cpu2017/flags/GIGA-BYTE-Platform-SPECcpu2017-Flags-V1.1-Rome-B.2019-09-17.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 v1.0.5 on 2019-08-29 10:45:22-0400.

Report generated on 2019-09-17 16:08:35 by CPU2017 PDF formatter v6255.

Originally published on 2019-09-17.