



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Lenovo Global Technology

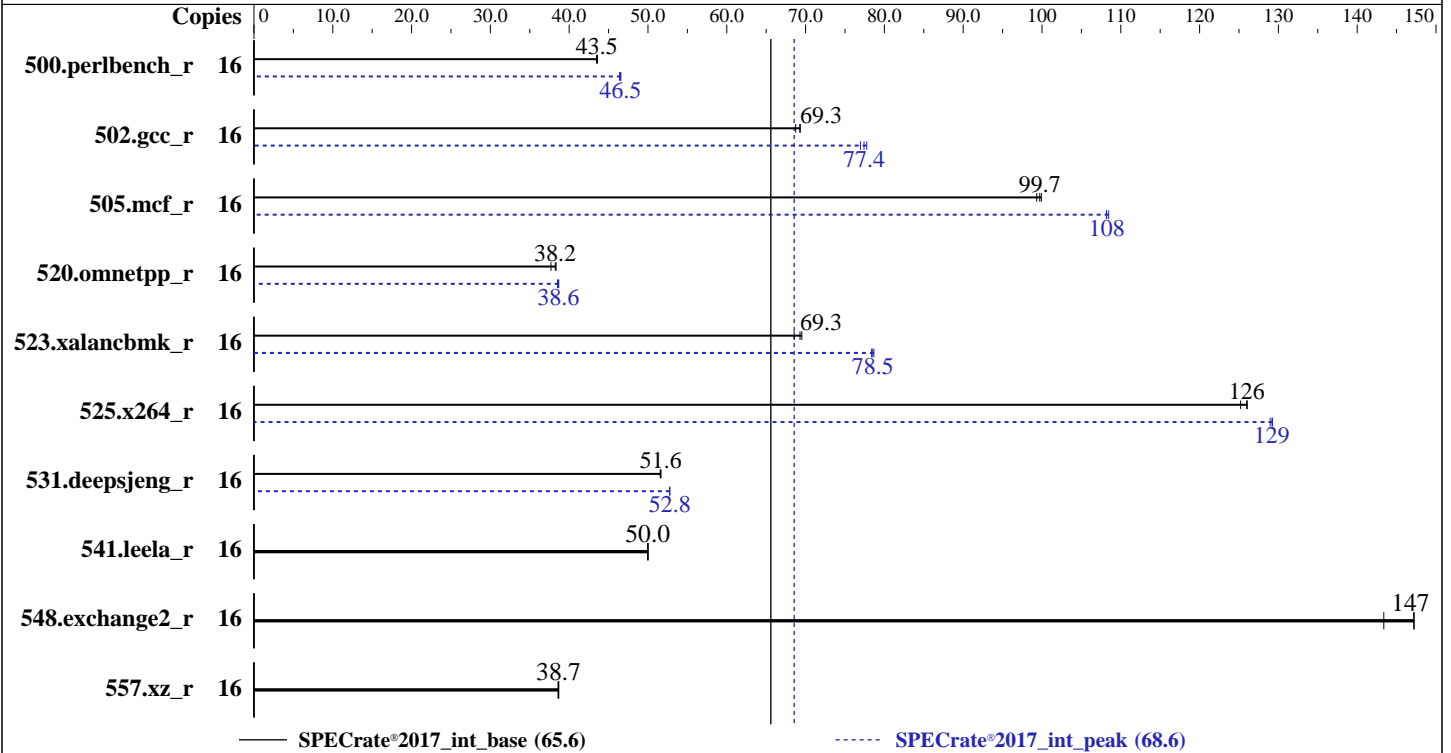
ThinkSystem SR635  
3.20 GHz, AMD EPYC 7262

SPECrate®2017\_int\_base = 65.6

SPECrate®2017\_int\_peak = 68.6

CPU2017 License: 9017  
Test Sponsor: Lenovo Global Technology  
Tested by: Lenovo Global Technology

Test Date: Sep-2019  
Hardware Availability: Aug-2019  
Software Availability: Aug-2019



### Hardware

CPU Name: AMD EPYC 7262  
Max MHz: 3400  
Nominal: 3200  
Enabled: 8 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: 128 MB I+D on chip per chip, 16 MB per core  
Other: None  
Memory: 256 GB (8 x 32 GB 2Rx4 PC4-3200AA-R)  
Storage: 1 x 960 GB SATA SSD  
Other: None

### Software

OS: SUSE Linux Enterprise Server 15 SP1 (x86\_64)  
Kernel 4.12.14-195-default  
Compiler: C/C++/Fortran: Version 2.0.0 of AOCC  
Parallel: No  
Firmware: Lenovo BIOS Version CFE103L released Aug-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: --



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	16	584	43.6	<b><u>585</u></b>	<b><u>43.5</u></b>	586	43.5	16	547	46.6	549	46.4	<b><u>548</u></b>	<b><u>46.5</u></b>
502.gcc_r	16	327	69.3	<b><u>327</u></b>	<b><u>69.3</u></b>	330	68.7	16	<b><u>293</u></b>	<b><u>77.4</u></b>	291	77.8	294	77.0
505.mcf_r	16	<b><u>259</u></b>	<b><u>99.7</u></b>	260	99.3	259	99.9	16	239	108	<b><u>239</u></b>	<b><u>108</u></b>	238	108
520.omnetpp_r	16	548	38.3	<b><u>549</u></b>	<b><u>38.2</u></b>	557	37.7	16	545	38.5	543	38.7	<b><u>543</u></b>	<b><u>38.6</u></b>
523.xalancbmk_r	16	246	68.5	<b><u>244</u></b>	<b><u>69.3</u></b>	243	69.5	16	215	78.7	<b><u>215</u></b>	<b><u>78.5</u></b>	216	78.4
525.x264_r	16	222	126	<b><u>222</u></b>	<b><u>126</u></b>	224	125	16	217	129	217	129	<b><u>217</u></b>	<b><u>129</u></b>
531.deepsjeng_r	16	<b><u>355</u></b>	<b><u>51.6</u></b>	356	51.6	355	51.6	16	<b><u>348</u></b>	<b><u>52.8</u></b>	348	52.7	347	52.8
541.leela_r	16	530	50.0	530	50.0	<b><u>530</u></b>	<b><u>50.0</u></b>	16	530	50.0	530	50.0	<b><u>530</u></b>	<b><u>50.0</u></b>
548.exchange2_r	16	292	143	285	147	<b><u>285</u></b>	<b><u>147</u></b>	16	292	143	285	147	<b><u>285</u></b>	<b><u>147</u></b>
557.xz_r	16	<b><u>447</u></b>	<b><u>38.7</u></b>	447	38.7	448	38.6	16	<b><u>447</u></b>	<b><u>38.7</u></b>	447	38.7	448	38.6

SPECrate®2017\_int\_base = **65.6**

SPECrate®2017\_int\_peak = **68.6**

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).

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## Operating System Notes (Continued)

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 = "/home/cpu2017-1.0.5-amd-rome-aocc200/amd_rate_aocc200_rome_A_lib/64"
```

```
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/cpu2017-1.0.5-amd-rome-aocc200/amd_rate_aocc200_rome_A_lib/32"
```

```
MALLOC_CONF = "retain:true"
```

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.

Yes: The test sponsor attests, as of date of publication, that CVE-2018-3640 (Spectre variant 3a) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2018-3639 (Spectre variant 4) 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:

Operating Mode set to Maximum Performance

NUMA nodes per socket set to NPS4

Sysinfo program /home/cpu2017-1.0.5-amd-rome-aocc200/bin/sysinfo

Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9

running on linux-vapu Fri Sep 27 00:58:41 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
```

```
1 "physical id"s (chips)
```

```
16 "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
```

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### Platform Notes (Continued)

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):                 16
On-line CPU(s) list:   0-15
Thread(s) per core:    2
Core(s) per socket:    8
Socket(s):              1
NUMA node(s):          4
Vendor ID:              AuthenticAMD
CPU family:             23
Model:                  49
Model name:             AMD EPYC 7262 8-Core Processor
Stepping:               0
CPU MHz:                3200.000
CPU max MHz:            3200.0000
CPU min MHz:            1500.0000
BogoMIPS:               6387.95
Virtualization:         AMD-V
L1d cache:              32K
L1i cache:              32K
L2 cache:               512K
L3 cache:               16384K
NUMA node0 CPU(s):     0,1,8,9
NUMA node1 CPU(s):     2,3,10,11
NUMA node2 CPU(s):     4,5,12,13
NUMA node3 CPU(s):     6,7,14,15

```

```

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.

```

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### Platform Notes (Continued)

```

available: 4 nodes (0-3)
node 0 cpus: 0 1 8 9
node 0 size: 64275 MB
node 0 free: 64081 MB
node 1 cpus: 2 3 10 11
node 1 size: 64499 MB
node 1 free: 64293 MB
node 2 cpus: 4 5 12 13
node 2 size: 64499 MB
node 2 free: 64315 MB
node 3 cpus: 6 7 14 15
node 3 size: 64485 MB
node 3 free: 64290 MB
node distances:
node  0  1  2  3
  0:  10  12  12  12
  1:  12  10  12  12
  2:  12  12  10  12
  3:  12  12  12  10

```

From /proc/meminfo

```

MemTotal:      263945564 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-vapu 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-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

```

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### Platform Notes (Continued)

run-level 3 Sep 26 18:27

SPEC is set to: /home/cpu2017-1.0.5-amd-rome-aocc200  
Filesystem      Type   Size   Used Avail Use% Mounted on  
/dev/sdb2       xfs    893G   91G  802G  11% /

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 Lenovo                                   CFE103L 08/19/2019  
Memory:  
  8x Samsung M393A4K40DB2-CWE 32 kB 2 rank 3200  
  8x Unknown Unknown

(End of data from sysinfo program)

### Compiler Version Notes

=====  
C           | 502.gcc\_r(peak)  
=====

AOCC.LLVM.2.0.0.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
  AOCC\_2\_0\_0-Build#179) (based on LLVM AOCC.LLVM.2.0.0.B179.2019\_06\_12)  
Target: i386-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/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.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
  AOCC\_2\_0\_0-Build#179) (based on LLVM AOCC.LLVM.2.0.0.B179.2019\_06\_12)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-2.0.0/bin  
=====

=====  
C           | 502.gcc\_r(peak)  
=====

AOCC.LLVM.2.0.0.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
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Target: i386-unknown-linux-gnu

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### Compiler Version Notes (Continued)

Thread model: posix  
InstalledDir: /opt/AMD/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)  
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AOCC\_2\_0\_0-Build#179) (based on LLVM AOCC.LLVM.2.0.0.B179.2019\_06\_12)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-2.0.0/bin

=====  
C++ | 523.xalanbmk\_r(peak)  
=====

AOCC.LLVM.2.0.0.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
AOCC\_2\_0\_0-Build#179) (based on LLVM AOCC.LLVM.2.0.0.B179.2019\_06\_12)  
Target: i386-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/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.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
AOCC\_2\_0\_0-Build#179) (based on LLVM AOCC.LLVM.2.0.0.B179.2019\_06\_12)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-2.0.0/bin

=====  
C++ | 523.xalanbmk\_r(peak)  
=====

AOCC.LLVM.2.0.0.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
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Target: i386-unknown-linux-gnu  
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## Compiler Version Notes (Continued)

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.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
AOCC\_2\_0\_0-Build#179) (based on LLVM AOCC.LLVM.2.0.0.B179.2019\_06\_12)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-2.0.0/bin  
-----

=====  
Fortran | 548.exchange2\_r(base, peak)

-----  
AOCC.LLVM.2.0.0.B179.2019\_06\_12 clang version 8.0.0 (CLANG: Jenkins  
AOCC\_2\_0\_0-Build#179) (based on LLVM AOCC.LLVM.2.0.0.B179.2019\_06\_12)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-2.0.0/bin  
-----

## Base Compiler Invocation

C benchmarks:  
clang

C++ benchmarks:  
clang++

Fortran benchmarks:  
flang

## Base Portability Flags

500.perlbenc\_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





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## 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
-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



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## 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
```

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# SPEC CPU®2017 Integer Rate Result

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SPECrate®2017\_int\_base = 65.6

ThinkSystem SR635  
3.20 GHz,AMD EPYC 7262

SPECrate®2017\_int\_peak = 68.6

CPU2017 License: 9017

Test Date: Sep-2019

Test Sponsor: Lenovo Global Technology

Hardware Availability: Aug-2019

Tested by: Lenovo Global Technology

Software Availability: Aug-2019

## 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: -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
```

```
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: Same as 520.omnetpp\_r

(Continued on next page)



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Test Date: Sep-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

## 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/amd\_rate\_aocc200\_rome/amd\_rate\_aocc200\_rome\_A\_lib/32

C++ benchmarks:

523.xalancbmk\_r: -L/sppo/dev/cpu2017/amd\_rate\_aocc200\_rome/amd\_rate\_aocc200\_rome\_A\_lib/32

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

<http://www.spec.org/cpu2017/flags/aocc200-flags-A1-1.html>

<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Rome-C.html>

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

<http://www.spec.org/cpu2017/flags/aocc200-flags-A1-1.xml>

<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Rome-C.xml>

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