## SPEC CPU®2017 Integer Speed Result

**Supermicro**  
A+ Server 1123US-TR4  
(H11DSU-iN , AMD EPYC 7352)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base = 8.47</th>
<th>SPECspeed®2017_int_peak = 8.70</th>
</tr>
</thead>
</table>

**Threads**

| Benchmark       | Threads | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|-----------------|---------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 600.perlbench_s | 48       | 1 | 4.60 | 4.88 |
| 602.gcc_s       | 48       | 1 | 9.20 |
| 605.mcf_s       | 48       | 1 | 9.26 |
| 620.omnetpp_s   | 48       | 1 | 4.73 |
| 623.xalancbmk_s | 48       | 1 | 4.82 |
| 625.x264_s      | 48       | 1 | 8.96 |
| 631.deepsjeng_s | 48       | 1 | 4.95 |
| 641.leela_s     | 48       | 1 | 4.05 |
| 648.exchange2_s | 48       | 1 | 15.8 |
| 657.xz_s        | 48       | 1 | 20.7 |

### Hardware

- **CPU Name:** AMD EPYC 7352  
- **Max MHz:** 3200  
- **Nominal:** 2300  
- **Enabled:** 48 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 shared / 3 cores  
- **Other:** None  
- **Memory:** 256 GB (16 x 16 GB 2Rx8 PC4-3200AA-R)  
- **Storage:** 1 x 200 GB SATA III SSD  
- **Other:** None

### Software

- **OS:** Ubuntu 19.04  
- **Compiler:** kernel 5.0.0-25.generic  
- **Parallel:** Yes  
- **Firmware:** Version 2.0b released Nov-2019  
- **File System:** ext4  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 32/64-bit  
- **Other:** jemalloc: jemalloc memory allocator library v5.1.0  
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage.
## Supermicro

A+ Server 1123US-TR4  
(H11DSU-iN, AMD EPYC 7352)

### CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

### Test Information

- **Test Date:** Feb-2020
- **Hardware Availability:** Aug-2019
- **Software Availability:** Aug-2019

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>600.perlbench_s</td>
<td>48</td>
<td>388</td>
<td>4.58</td>
<td>386</td>
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<td>363</td>
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<td>605.mcf_s</td>
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<td>305</td>
<td>15.5</td>
<td>306</td>
<td>15.4</td>
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<tr>
<td>620.omnetpp_s</td>
<td>48</td>
<td>349</td>
<td>4.67</td>
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<td>4.73</td>
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<td>4.82</td>
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<td>623.xalanchmk_s</td>
<td>48</td>
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<td>8.96</td>
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<td>8.89</td>
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<td>9.64</td>
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<td>625.x264_s</td>
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<td>657.xz_s</td>
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<td>297</td>
<td>20.8</td>
<td>296</td>
<td>20.9</td>
</tr>
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</table>

### 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).

Transparent huge pages set to 'always' for this run (OS default)
SPEC CPU®2017 Integer Speed Result

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A+ Server 1123US-TR4
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SPECspeed®2017_int_base = 8.47
SPECspeed®2017_int_peak = 8.70

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-95"
LD_LIBRARY_PATH =
"/home/cpu2017/amd_speed_aocc200_rome_C_lib/64;/home/cpu2017/amd_speed_aocc200_rome_C_lib/32:"
Malloc_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "96"

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"
OMP_STACKSIZE = "128M"

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 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-47"

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)
spec

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CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Feb-2020
Hardware Availability: Aug-2019
Software Availability: Aug-2019

General Notes (Continued)

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 5.1.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2

Platform Notes

BIOS Settings:
Determinism Control = Manual
Determinism Slider = Power
cTDP Control = Manual
cTDP = 180
Package Power Limit Control = Manual
Package Power Limit = 180
APBDIS = 1

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011
running on h11dsu-02 Sat Feb 22 16:09:16 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 7352 24-Core Processor
  2 "physical id"s (chips)
  96 "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 : 24
siblings : 48
physical 0: cores 0 1 2 4 5 6 8 9 10 12 13 14 16 17 18 20 21 22 24 25 26 28 29 30
physical 1: cores 0 1 2 4 5 6 8 9 10 12 13 14 16 17 18 20 21 22 24 25 26 28 29 30

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): 96
On-line CPU(s) list: 0-95
Thread(s) per core: 2
Core(s) per socket: 24

(Continued on next page)
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SPECspeed®2017_int_base = 8.47
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Platform Notes (Continued)

Socket(s): 2
NUMA node(s): 8
Vendor ID: AuthenticAMD
CPU family: 23
Model: 49
Model name: AMD EPYC 7352 24-Core Processor
Stepping: 0
CPU MHz: 1799.768
CPU max MHz: 2300.0000
CPU min MHz: 1500.0000
BogoMIPS: 4600.15
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K
L2 cache: 512K
L3 cache: 16384K
NUMA node0 CPU(s): 0-5,48-53
NUMA node1 CPU(s): 6-11,54-59
NUMA node2 CPU(s): 12-17,60-65
NUMA node3 CPU(s): 18-23,66-71
NUMA node4 CPU(s): 24-29,72-77
NUMA node5 CPU(s): 30-35,78-83
NUMA node6 CPU(s): 36-41,84-89
NUMA node7 CPU(s): 42-47,90-95
Flags: fpu vme de pse tsc msr pae mce 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 pcmlmulqdq 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 ibr int wdte topeext perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3 hw_pstate mem ssbd mba sev ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep bmi2 cqm rdt_a rdseed adx smap clflushopt clwb sha_ni xsaveopt xsavec xgetbv1 xsave prefix pffree threshold avic vmsave_vmload vgif umip rdpid overflow_recov succor smca

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 48 49 50 51 52 53
node 0 size: 32112 MB
node 0 free: 31676 MB
node 1 cpus: 6 7 8 9 10 11 54 55 56 57 58 59

(Continued on next page)
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Platform Notes (Continued)

node 1 size: 32248 MB
node 1 free: 31805 MB
node 2 cpus: 12 13 14 15 16 17 60 61 62 63 64 65
node 2 size: 32248 MB
node 2 free: 31671 MB
node 3 cpus: 18 19 20 21 22 23 66 67 68 69 70 71
node 3 size: 32236 MB
node 3 free: 31855 MB
node 4 cpus: 24 25 26 27 28 29 72 73 74 75 76 77
node 4 size: 32248 MB
node 4 free: 31859 MB
node 5 cpus: 30 31 32 33 34 35 78 79 80 81 82 83
node 5 size: 32225 MB
node 5 free: 31848 MB
node 6 cpus: 36 37 38 39 40 41 84 85 86 87 88 89
node 6 size: 32248 MB
node 6 free: 31843 MB
node 7 cpus: 42 43 44 45 46 47 90 91 92 93 94 95
node 7 size: 32247 MB
node 7 free: 31848 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: 264005176 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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/"

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Platform Notes (Continued)

uname -a:
Linux h11dsu-02 5.0.0-25-generic #26-Ubuntu SMP Thu Aug 1 12:04:58 UTC 2019 x86_64
x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

<table>
<thead>
<tr>
<th>CVE-2018-3620 (L1 Terminal Fault):</th>
<th>Not affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microarchitectural Data Sampling:</td>
<td>Not affected</td>
</tr>
<tr>
<td>CVE-2017-5754 (Meltdown):</td>
<td>Not affected</td>
</tr>
<tr>
<td>CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp</td>
<td></td>
</tr>
<tr>
<td>CVE-2017-5753 (Spectre variant 1):</td>
<td>Mitigation: usercopy/swapgs barriers and __user pointer sanitization</td>
</tr>
<tr>
<td>CVE-2017-5715 (Spectre variant 2):</td>
<td>Mitigation: Full AMD retpoline, IBPB: conditional, IBRS_FW, STIBP: conditional, RSB filling</td>
</tr>
</tbody>
</table>

run-level 3 Feb 21 17:41

SPEC is set to: /home/cpu2017
From /sys/devices/virtual/dmi/id
  BIOS: American Megatrends Inc. 2.0b 11/15/2019
  Vendor: Supermicro
  Product: Super Server
  Serial: 0123456789

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:
  16x NO DIMM Unknown
  16x SK Hynix HMA82GR7DJR8N-XN 16 kB 2 rank 3200

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
<table>
<thead>
<tr>
<th>C</th>
</tr>
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<tbody>
<tr>
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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++ | 623.xalancbmk_s(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++ | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base) 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)

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C++ | 623.xalancbmk_s(peak)

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C++ | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base)

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<td>Aug-2019</td>
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</table>

**Compiler Version Notes (Continued)**

---

```plaintext
Fortran | 648.exchange2_s(base, peak)
```

---

**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:**  
  - `-flto -Wl,-mlllvm -Wl,-function-specialize`
  - `-Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -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 -DSPEC_OPENMP -fopenmp
- fopenmp=libomp -lomp -lpthread -ldl -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 -DSPEC_OPENMP -fopenmp
- fopenmp=libomp -lomp -lpthread -ldl -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 -DSPEC_OPENMP -fopenmp -fopenmp=libomp
- lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc
- lflang

Base Other Flags

C benchmarks:
- Wno-return-type -DUSE_OPENMP

C++ benchmarks:
- Wno-return-type -DUSE_OPENMP

Fortran benchmarks:
- DUSE_OPENMP -Wno-return-type
## SPEC CPU®2017 Integer Speed Result

**Supermicro**  
A+ Server 1123US-TR4  
(H11DSU-iN, AMD EPYC 7352)

<table>
<thead>
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<th>CPU2017 License:</th>
<th>001176</th>
<th>Test Date:</th>
<th>Feb-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Supermicro</td>
<td>Hardware Availability:</td>
<td>Aug-2019</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Supermicro</td>
<td>Software Availability:</td>
<td>Aug-2019</td>
</tr>
</tbody>
</table>

### SPECspeed®2017_int_base = 8.47
### SPECspeed®2017_int_peak = 8.70

#### Peak Compiler Invocation

C benchmarks:  
clang  

C++ benchmarks:  
clang++  

Fortran benchmarks:  
flang

#### Peak 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 -D_FILE_OFFSET_BITS=64  
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

#### Peak Optimization Flags

C benchmarks:  
600.perlbench_s: -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 -DSPEC_OPENMP -fopenmp  
-lmvec -lamlidl -lflang

(Continued on next page)
Supermicro
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SPECspeed®2017_int_base = 8.47
SPECspeed®2017_int_peak = 8.70

Peak Optimization Flags (Continued)

602.gcc_s: -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 -z muldefs -DSPEC_OPENMP
- fopenmp -fgnu89-inline -fopenmp=libomp -lomp -lpthread
- ld1 -ljemalloc

605.mcf_s: -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 -z muldefs -DSPEC_OPENMP - fopenmp
- lmvec -lamdlibm -fopenmp=libomp -lomp -lpthread -ld1
- ljemalloc -liflang

625.x264_s: Same as 600.perlbench_s

657.xz_s: -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 -DSPEC_OPENMP - fopenmp

(Continued on next page)
Peak Optimization Flags (Continued)

657.xz_s (continued):
-fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
-ljemalloc -lflang

C++ benchmarks:

620.omnetpp_s: -flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-vector-library=LIBMVEC
-march=znver2 -flv-function-specialization
-flto -Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-fltorun-threshold=100
-mlvm -enable-unswitch
-mlvm -loop-unswitch-threshold=200000
-mlvm -vector-library=LIBMVEC
-mlvm -inline-threshold=10000 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
-ljemalloc -lflang

623.xalancbmk_s: -m32 -flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-vector-library=LIBMVEC
-march=znver2 -flv-function-specialization
-fltorun-threshold=100
-mlvm -enable-unswitch
-mlvm -loop-unswitch-threshold=200000
-mlvm -vector-library=LIBMVEC
-mlvm -inline-threshold=10000 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lpthread -ldl -ljemalloc

631.deepsjeng_s: Same as 620.omnetpp_s

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

Peak Other Flags

C benchmarks:
-Wno-return-type -DUSE_OPENMP

(Continued on next page)
**SPEC CPU®2017 Integer Speed Result**

**Supermicro**
A+ Server 1123US-TR4  
(H11DSU-iN, AMD EPYC 7352)

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**SPECspeed®2017_int_base = 8.47**

**SPECspeed®2017_int_peak = 8.70**

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**CPU2017 License:** 001176  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro

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| Test Date: | Feb-2020 |
| Test Sponsor: | Supermicro |
| Hardware Availability: | Aug-2019 |
| Software Availability: | Aug-2019 |

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### Peak Other Flags (Continued)

C++ benchmarks (except as noted below):

- `-Wno-return-type -DUSE_OPENMP`

623.xalancbmk_s: `-Wno-return-type -DUSE_OPENMP`

- `-L/sppo/dev/cpu2017/v110/amd_speed_aocc200_rome_C_lib/32`

Fortran benchmarks:

- `-DUSE_OPENMP -Wno-return-type`

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


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


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