## SPEC CPU® 2017 Integer Speed Result

**Supermicro**

A+ Server 2124BT-HTR  
(H12DST-B , AMD EPYC 7F32)

### CPU2017 License: 001176

Test Sponsor: Supermicro  
Tested by: Supermicro

**SPECspeed®2017_int_base = 9.81**

**SPECspeed®2017_int_peak = 10.4**

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed®2017_int_base (9.81)</th>
<th>SPECspeed®2017_int_peak (10.4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** AMD EPYC 7F32  
- **Max MHz:** 3900  
- **Nominal:** 3700  
- **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:** 512 GB (16 x 32 GB 2Rx4 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 1.1 released Jan-2020  
- **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.
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SPECspeed®2017_int_base = 9.81
SPECspeed®2017_int_peak = 10.4

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>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>16</td>
<td>349</td>
<td>5.08</td>
<td>330</td>
<td>5.37</td>
<td>332</td>
<td>5.35</td>
<td>1</td>
<td>305</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>16</td>
<td>374</td>
<td>10.6</td>
<td>380</td>
<td><strong>10.5</strong></td>
<td>381</td>
<td>10.5</td>
<td>1</td>
<td>367</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>16</td>
<td><strong>277</strong></td>
<td><strong>17.0</strong></td>
<td>277</td>
<td>17.0</td>
<td>277</td>
<td>17.0</td>
<td>1</td>
<td><strong>259</strong></td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>16</td>
<td><strong>361</strong></td>
<td><strong>4.51</strong></td>
<td>500</td>
<td>3.26</td>
<td>299</td>
<td>5.46</td>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>623.xalanchmk_s</td>
<td>16</td>
<td><strong>130</strong></td>
<td><strong>10.9</strong></td>
<td>130</td>
<td>10.9</td>
<td>131</td>
<td>10.8</td>
<td>1</td>
<td>122</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>16</td>
<td>121</td>
<td>14.6</td>
<td>121</td>
<td>14.6</td>
<td>121</td>
<td>14.6</td>
<td>1</td>
<td>118</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>16</td>
<td><strong>259</strong></td>
<td><strong>5.54</strong></td>
<td>259</td>
<td>5.54</td>
<td>258</td>
<td>5.54</td>
<td>1</td>
<td>253</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>16</td>
<td>346</td>
<td>4.93</td>
<td>346</td>
<td>4.93</td>
<td>346</td>
<td>4.93</td>
<td>16</td>
<td>346</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>16</td>
<td>157</td>
<td>18.7</td>
<td><strong>157</strong></td>
<td><strong>18.7</strong></td>
<td>158</td>
<td>18.7</td>
<td>1</td>
<td>153</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>16</td>
<td>262</td>
<td>23.6</td>
<td>262</td>
<td>23.6</td>
<td>262</td>
<td>23.6</td>
<td>16</td>
<td>262</td>
</tr>
</tbody>
</table>

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).

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

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SPECspeed®2017_int_base = 9.81
SPECspeed®2017_int_peak = 10.4

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-31"
LD_LIBRARY_PATH =
"/home/cpu2017/amd_speed_aocc200_rome_C_lib/64;/home/cpu2017/amd_speed_aocc200_rome_C_lib/32:"
MALLOCONF = "retain: true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "32"

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 648.exchange2_s peak run:
GOMP_CPU_AFFINITY = "0"

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)

(Continued on next page)
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SPECspeed®2017_int_base = 9.81
SPECspeed®2017_int_peak = 10.4

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 = 200
Package Power Limit Control = Manual
Package Power Limit = 200
APBDIS = 1
NUMA Nodes Per Socket = NPS4

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edc1e6e4e46a485a0011
running on h12dse-01 Fri Apr 17 12:00:02 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 7F32 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:
  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

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

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<table>
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<tr>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
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<tbody>
<tr>
<td>9.81</td>
<td>10.4</td>
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</table>

**CPU2017 License:** 001176  
**Test Date:** Apr-2020  
**Test Sponsor:** Supermicro  
**Hardware Availability:** Apr-2020  
**Tested by:** Supermicro  
**Software Availability:** Aug-2019

**Platform Notes (Continued)**

- Core(s) per socket: 8  
- Socket(s): 2  
- NUMA node(s): 8  
- Vendor ID: AuthenticAMD  
- CPU family: 23  
- Model: 49  
- Model name: AMD EPYC 7F32 8-Core Processor  
- Stepping: 0  
- CPU MHz: 3786.644  
- CPU max MHz: 3700.0000  
- CPU min MHz: 2500.0000  
- BogoMIPS: 7399.97  
- 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 bpxext perfctr_llc mwaitx cpb cat_l3 cdp_l3 hw_pstate sme ssbd mba sev ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep bmi2 cqm rdt_a rdseed adx smap clflushopt clwb sha_ni xsaveopt xsavec xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local clzero irperf xsaveerptr wbnoinvd arat npt lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassist pausefilter pfthreshold avic v_vmsave_vmload vgif umip rdpid overflow_reocv 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: 8 nodes (0-7)  
- node 0 cpus: 0 1 16 17  
- node 0 size: 64391 MB  
- node 0 free: 64243 MB

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SPEC<sup>®</sup>2017_int_base = 9.81
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Software Availability: Aug-2019

Platform Notes (Continued)

- node 1 cpus: 2 3 18 19
- node 1 size: 64509 MB
- node 1 free: 64372 MB
- node 2 cpus: 4 5 20 21
- node 2 size: 64509 MB
- node 2 free: 64190 MB
- node 3 cpus: 6 7 22 23
- node 3 size: 64497 MB
- node 3 free: 64363 MB
- node 4 cpus: 8 9 24 25
- node 4 size: 64509 MB
- node 4 free: 64414 MB
- node 5 cpus: 10 11 26 27
- node 5 size: 64486 MB
- node 5 free: 64399 MB
- node 6 cpus: 12 13 28 29
- node 6 size: 64509 MB
- node 6 free: 64392 MB
- node 7 cpus: 14 15 30 31
- node 7 size: 64510 MB
- node 7 free: 64417 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 10 12 12 12
6: 32 32 32 32 12 10 12 12
7: 32 32 32 32 12 12 10 10

From /proc/meminfo

MemTotal: 528307424 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /usr/bin/lsb_release -d
Ubuntu 19.04

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

debian_version: buster/sid
os-release:
  NAME="Ubuntu"
  VERSION="19.04 (Disco Dingo)"
  ID=ubuntu
  ID_LIKE=debian

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

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SPECspeed®2017_int_base = 9.81
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Platform Notes (Continued)

PRETTY_NAME="Ubuntu 19.04"
VERSION_ID="19.04"
HOME_URL="https://www.ubuntu.com/
SUPPORT_URL="https://help.ubuntu.com/

uname -a:
    Linux h12dst-01 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:

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

run-level 3 Apr 17 10:33

SPEC is set to: /home/cpu2017

From /sys/devices/virtual/dmi/id
    BIOS: American Megatrends Inc. 1.1 01/10/2020
    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 SK Hynix HMA84GR7CJR4N-XN 32 kB 2 rank 3200

(End of data from sysinfo program)
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Hardware Availability: Apr-2020
Software Availability: Aug-2019

Compiler Version Notes

C
  600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak) 657.xz_s(base, peak)

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: x86_64-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)

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++

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

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Compiler Version Notes (Continued)
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 | 648.exchange2_s(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

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
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Base Optimization Flags

C benchmarks:
- -flto -W1,-mllvm -W1,-function-specialize
- -W1,-mllvm -W1,-region-vectorize -W1,-mllvm -W1,-vector-library=LIBMVEC
- -W1,-mllvm -W1,-reduce-array-computations=3 -O3 -ffast-math
- -march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50
- -flv-function-specialization -z muldefs -DSPEC_OPENMP -fopenmp
- -fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc
- -lflang

C++ benchmarks:
- -flto -W1,-mllvm -W1,-function-specialize
- -W1,-mllvm -W1,-region-vectorize -W1,-mllvm -W1,-vector-library=LIBMVEC
- -W1,-mllvm -W1,-reduce-array-computations=3
- -W1,-mllvm -W1,-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 -W1,-mllvm -W1,-function-specialize
- -W1,-mllvm -W1,-region-vectorize -W1,-mllvm -W1,-vector-library=LIBMVEC
- -W1,-mllvm -W1,-reduce-array-computations=3 -ffast-math
- -W1,-mllvm -W1,-inline-recursion=4 -W1,-mllvm -W1,-isr-in-nested-loop
- -W1,-mllvm -W1,-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

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

Fortran benchmarks:
- -Wno-return-type
## Peak Compiler Invocation

C benchmarks:
- clang

C++ benchmarks:
- clang++

Fortran benchmarks:
- flang

## Peak Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
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<tbody>
<tr>
<td>600.perlbench_s</td>
<td>-DSPEC_LINUX_X64 -DSPEC_LP64</td>
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<tr>
<td>602.gcc_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>-DSPEC_LINUX -D_FILE_OFFSET_BITS=64</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>-DSPEC_LP64</td>
</tr>
</tbody>
</table>

## Peak Optimization Flags

C benchmarks:

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
</table>

(Continued on next page)
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
 -fllvm-function-specialization -z muldefs -DSPEC_OPENMP
 -fopenmp -fgnu89-inline -fopenmp=libomp -lomp -lpthread
 -ldl -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
 -fllvm-function-specialization -DSPEC_OPENMP -fopenmp
 -lmvec -lamdlibm -fopenmp=libomp -lomp -lpthread -ldl
 -ljemalloc -lflang

625.x264_s: Same as 600.perlbench_s

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_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 -fllvm-function-specialization
 -mllvm -unroll-threshold=100
 -mllvm -enable-partial-unswitch
 -mllvm -loop-unswitch-threshold=200000

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

Supermicro
A+ Server 2124BT-HTR
(H12DST-B, AMD EPYC 7F32)

SPECspeed®2017_int_base = 9.81
SPECspeed®2017_int_peak = 10.4

CPU2017 License: 001176
Test Sponsor: Supermicro
Test Date: Apr-2020
Tested by: Supermicro
Hardware Availability: Apr-2020
Software Availability: Aug-2019

Peak Optimization Flags (Continued)

620.omnetpp_s (continued):
-mllvm -vector-library=LIBMVEC
-mllvm -inline-threshold=1000 -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
-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 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lpthread -ldl -ljemalloc

631.deepsjeng_s: Same as 620.omnetpp_s

641.leela_s: basepeak = yes

Fortran benchmarks:
-fflat -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,-lrs-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver2 -funroll-loops
-Mrecursive -mllvm -vector-library=LIBMVEC
-mllvm -disable-indvar-simplify -mllvm -unroll-aggressive
-mllvm -unroll-threshold=150 -DSPEC_OPENMP -fopenmp -fopenmp=libomp
-lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc -lflang

Peak Other Flags

C benchmarks:
-Wno-return-type

C++ benchmarks (except as noted below):
-Wno-return-type

623.xalancbmk_s: -Wno-return-type
-L/spo/dev/cpu2017/v110/amd_speed_aocc200_rome/C_lib/32

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SPEC CPU®2017 Integer Speed Result
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Supermicro
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Peak Other Flags (Continued)

Fortran benchmarks:
-Wno-return-type

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

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Rome-revB.xml

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