# SPEC CPU®2017 Integer Speed Result

## Supermicro

A+ Server 2124US-TNRP
(H12DSU-iN , AMD EPYC 7313)

SPECspeed®2017_int_base =

SPECspeed®2017_int_peak =

| | | | |
|---|---|---|---|
| **CPU2017 License:** 001176 | | **Test Date:** | Jan-2023 |
| **Test Sponsor:** Supermicro | | **Hardware Availability:** | Aug-2019 |
| **Tested by:** Supermicro | | **Software Availability:** | Jan-2023 |

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Threads

- 600.perlbench_s
- 602.gcc_s
- 605.mcf_s
- 620.omnetpp_s
- 623.xalancbmk_s
- 625.x264_s
- 631.deepsjeng_s
- 641.leela_s
- 648.exchange2_s
- 657.xz_s

**Non-Compliant**

| Hardware | | Software | |
|---|---|---|---|
| CPU Name: AMD EPYC 7313 | | OS: | Ubuntu 22.04.1 LTS |
| | | | Kernel 5.15.0-58-generic |
| Nominal: 3000 | | Compiler: | C/C++/Fortran: Version 3.0.0 of AOCC |
| Enabled: 32 cores, 2 chips, 2 threads/core | | Parallel: | Yes |
| Orderable: 1,2 chips | | Firmware: | Version 2.5 released Sep-2022 |
| Cache L1: 32 KB I + 32 KB D on chip per core | | File System: | ext4 |
| L2: 512 KB I+D on chip per core | | System State: | Run level 5 (multi-user) |
| L3: 128 MB I+D on chip per chip, 32 MB shared / 4 cores | | Base Pointers: | 64-bit |
| | | Peak Pointers: | 64-bit |
| Other: None | | Other: | jemalloc: jemalloc memory allocator library v5.1.0 |
| Memory: 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R) | | Power Management: | BIOS and OS set to max performance at the cost of additional power usage. |
| Storage: 1 x 200 GB SATA III SSD | | | |
| Other: None | | | |

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 600.perlbench_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 602.gcc_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 605.mcf_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 620.omnetpp_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 623.xalancbmk_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 625.x264_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 631.deepsjeng_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 641.leela_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 648.exchange2_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 657.xz_s | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**SPECspeed®2017_int_base =**

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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 limit
'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>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
```

**(Continued on next page)**

Non-Compliant

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### Operating System Notes (Continued)

```
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run
variability, 'sysctl -w kernel.randomize_va_space=0' run as root.

To enable Transparent Hugepages (THP) for all allocations,
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
```

### Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-63"
LD_LIBRARY_PATH =
     "/home/cpu2017/amd_speed_aocc300_milan_B_lib/lib;/home/cpu2017/amd_speed
     _aocc300_milan_B_lib/lib32:"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "64"

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 625.x264_s peak run:
GOMP_CPU_AFFINITY = "0"
```

**(Continued on next page)**

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### Environment Variables Notes (Continued)

```
Environment variables set by runcpu during the 631.deepsjeng_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 641.leela_s peak run:
GOMP_CPU_AFFINITY = "0"
```

### General Notes

```
Binaries were compiled on a system with 1x AMD EPYC 7742 CPU + 1TiB Memory using openSUSE 15.2

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 v4.8.2 in RHEL 7.4 (No options specified)
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
NUMA Nodes Per Socket = NPS4

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on h12dsu-7513 Thu Jan 19 18:15:49 2023
```

**(Continued on next page)**

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## Platform Notes (Continued)

```
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 7313 16-Core Processor
      2  "physical id"s (chips)
      64 "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 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
      physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu from util-linux 2.37.2:
      Architecture:          x86_64
      CPU op-mode(s):        32-bit, 64-bit
      Address sizes:         48 bits physical, 48 bits virtual
      Byte Order:            Little Endian
      CPU(s):                64
      On-line CPU(s) list:   0-63
      Vendor ID:             AuthenticAMD
      Model name:            AMD EPYC 7313 16-Core Processor
      CPU family:            25
      Model:                 1
      Thread(s) per core:    2
      Core(s) per socket:    16
      Socket(s):             2
      Stepping:              1
      Frequency boost:       enabled
      CPU max MHz:           3729.4919
      CPU min MHz:           1500.0000
      BogoMIPS:              6000.17
      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 nonstop_tsc cpuid extd_apicid
      aperfmperf rapl pni pclmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2 movbe popcnt
      aes xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a
```

**(Continued on next page)**

Standard Performance Evaluation Corporation (info@spec.org) https://www.spec.org/

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## Platform Notes (Continued)

```
    misalignsse 3dnowprefetch osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb
    bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs
    ibpb stibp vmmcall fsgsbase bmi1 avx2 smep bmi2 erms invpcid 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 xsaveerptr rdpru wbnoinvd amd_ppin arat
    npt lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
    pausefilter pfthreshold v_vmsave_vmload vgif v_spec_ctrl umip pku ospke vaes
    vpclmulqdq rdpid overflow_recov succor smca fsrm
Virtualization:                 AMD-V
L1d cache:                      1 MiB (32 instances)
L1i cache:                      1 MiB (32 instances)
L2 cache:                       16 MiB (32 instances)
L3 cache:                       256 MiB (8 instances)
NUMA node(s):                   8
NUMA node0 CPU(s):              0-3,32-35
NUMA node1 CPU(s):              4-7,36-39
NUMA node2 CPU(s):              8-11,40-43
NUMA node3 CPU(s):              12-15,44-47
NUMA node4 CPU(s):              16-19,48-51
NUMA node5 CPU(s):              20-23,52-55
NUMA node6 CPU(s):              24-27,56-59
NUMA node7 CPU(s):              28-31,60-63
Vulnerability Itlb multihit:    Not affected
Vulnerability L1tf:             Not affected
Vulnerability Mds:              Not affected
Vulnerability Meltdown:         Not affected
Vulnerability Mmio stale data:  Not affected
Vulnerability Retbleed:         Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via
prctl and seccomp
Vulnerability Spectre v1:        Mitigation; usercopy/swapgs barriers and __user
pointer sanitization
Vulnerability Spectre v2:        Mitigation; Retpolines, IBPB conditional, IBRS_FW,
STIBP always-on, RSB filling, PBRSB-eIBRS Not affected
Vulnerability Srbds:            Not affected
Vulnerability Tsx async abort:  Not affected

From lscpu --cache:
    NAME ONE-SIZE ALL-SIZE WAYS TYPE         LEVEL   SETS PHY-LINE COHERENCY-SIZE
    L1d      32K       1M   8 Data              1     64      1               64
```

**(Continued on next page)**

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### Platform Notes (Continued)

```
    L1i        32K       1M    8 Instruction     1    64         1              64
    L2        512K      16M    8 Unified         2  1024         1              64
    L3         32M     256M   16 Unified           32768         1              64

 /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 2 3 32 33 34 35
   node 0 size: 128822 MB
   node 0 free: 128270 MB
   node 1 cpus: 4 5 6 7 36 37 38 39
   node 1 size: 129021 MB
   node 1 free: 128282 MB
   node 2 cpus: 8 9 10 11 40 41 42 43
   node 2 size: 129021 MB
   node 2 free: 128404 MB
   node 3 cpus: 12 13 14 15 44 45 46 47
   node 3 size: 129009 MB
   node 3 free: 128461 MB
   node 4 cpus: 16 17 18 19 48 49 50 51
   node 4 size: 129021 MB
   node 4 free: 128483 MB
   node 5 cpus: 20 21 22 23 52 53 54 55
   node 5 size: 128985 MB
   node 5 free: 128380 MB
   node 6 cpus: 24 25 26 27 56 57 58 59
   node 6 size: 129021 MB
   node 6 free: 128465 MB
   node 7 cpus: 28 29 30 31 60 61 62 63
   node 7 size: 129018 MB
   node 7 free: 128413 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
```

**(Continued on next page)**

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### Platform Notes (Continued)

```
    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:        1056687440 kB
   HugePages_Total:         0
   Hugepagesize:          2048 kB

/sbin/tuned-adm active
   Current active profile: balanced

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
   performance

/usr/bin/lsb_release -d
   Ubuntu 22.04.1 LTS

From /etc/*release* /etc/*version*
   debian_version: bookworm/sid
   os-release:
     PRETTY_NAME="Ubuntu 22.04.1 LTS"
     NAME="Ubuntu"
     VERSION_ID="22.04"
     VERSION="22.04.1 LTS (Jammy Jellyfish)"
     VERSION_CODENAME=jammy
     ID=ubuntu
     ID_LIKE=debian
     HOME_URL="https://www.ubuntu.com/"

uname -a:
   Linux h12dsu-7513 5.15.0-58-generic #64-Ubuntu SMP Thu Jan 5 11:43:13 UTC 2023 x86_64
   x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):                      Not affected
CVE-2018-3620 (L1 Terminal Fault):                   Not affected
Microarchitectural Data Sampling:                    Not affected
```

**(Continued on next page)**

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### Platform Notes (Continued)

```
CVE-2017-5754 (Meltdown):                         Not affected
mmio_stale_data:                                  Not affected
retbleed:                                         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: Retpolines, IBPB:
                                                  conditional, IBRS_FW, STIBP:
                                                  always-on, RSB filling,
                                                  PBRSB-eIBRS: Not affected
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort):          Not affected

run-level 5 Jan 18 08:04

SPEC is set to: /home/cpu2017
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      ext4  182G   37G  136G  21% /

From /sys/devices/virtual/dmi/id
    Vendor:         Supermicro
    Product:        Super Server
    Serial:         0123456789

Additional information from dmidecode 3.3 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 HMAA8GR7AJR4N-XN 64 GB 2 rank 3200

BIOS:
    BIOS Vendor:    American Megatrends Inc.
    BIOS Version:   2.5
    BIOS Date:      09/14/2022
    BIOS Revision:  5.22
```

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## Platform Notes (Continued)

```
(End of data from sysinfo program)
```

## 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)
------------------------------------------------------------------------------
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
  LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
------------------------------------------------------------------------------


==============================================================================
C++      | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak)
         | 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)
------------------------------------------------------------------------------
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
  LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
------------------------------------------------------------------------------


==============================================================================
Fortran | 648.exchange2_s(base, peak)
------------------------------------------------------------------------------
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
  LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
------------------------------------------------------------------------------
```

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## 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:
```
-m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3 -z muldefs
```

**(Continued on next page)**

## Supermicro

A+ Server 2124US-TNRP
(H12DSU-iN , AMD EPYC 7313)

SPECspeed®2017_int_base =

SPECspeed®2017_int_peak =

| | | | |
|---|---|---|---|
| **CPU2017 License:** 001176 | | **Test Date:** | Jan-2023 |
| **Test Sponsor:** | Supermicro | **Hardware Availability:** | Aug-2019 |
| **Tested by:** | Supermicro | **Software Availability:** | Jan-2023 |

**PEC has determined that this result does not comply with the SPEC CPU 2017 ru
and reporting rules. Specifically, the submitter notified SPEC that the system
as configured violates rule 2.3.1 (a) due to the use of an unsafe compiler option.**

## Base Optimization Flags (Continued)

C benchmarks (continued):
```
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-lflang -lflangrti
```

C++ benchmarks:
```
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-do-block-reorder=aggressive
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -mllvm -enable-partial-unswitch
-mllvm -unroll-threshold=100 -finline-aggressive
-flv-function-specialization -mllvm -loop-unswitch-threshold=200000
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -extra-vectorizer-passes -mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -mllvm -convert-pow-exp-to-int=false
-z muldefs -mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-lflangrti
```

Fortran benchmarks:
```
-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-reorder-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -z muldefs
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-lflangrti
```

## Base Other Flags

C benchmarks:
```
-Wno-unused-command-line-argument -Wno-return-type
```

**(Continued on next page)**

# SPEC CPU®2017 Integer Speed Result

## Supermicro

A+ Server 2124US-TNRP
(H12DSU-iN , AMD EPYC 7313)

SPECspeed®2017_int_base =

SPECspeed®2017_int_peak =

| | | | |
|---|---|---|---|
| **CPU2017 License:** 001176 | | **Test Date:** | Jan-2023 |
| **Test Sponsor:** Supermicro | | **Hardware Availability:** | Aug-2019 |
| **Tested by:** Supermicro | | **Software Availability:** | Jan-2023 |

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the submitter notified SPEC that the system as configured violates rule 2.3.1 (a) due to the use of an unsafe compiler option.**

## Base Other Flags (Continued)

C++ benchmarks:
```
-Wno-unused-command-line-argument -Wno-return-type
```

Fortran benchmarks:
```
-Wno-return-type
```

## Peak Compiler Invocation

C benchmarks:
```
clang
```

C++ benchmarks:
```
clang++
```

Fortran benchmarks:
```
flang
```

## Peak Portability Flags

```
Same as Base Portability Flags
```

## Peak Optimization Flags

C benchmarks:

```
 600.perlbench_s: -m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=5 -mllvm -unroll-threshold=50
```

**(Continued on next page)**

Standard Performance Evaluation Corporation (info@spec.org)  https://www.spec.org/

## Supermicro

A+ Server 2124US-TNRP
(H12DSU-iN , AMD EPYC 7313)

SPECspeed®2017_int_base =

SPECspeed®2017_int_peak =

| | | | |
|---|---|---|---|
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| **Tested by:** Supermicro | | **Software Availability:** | Jan-2023 |

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## Peak Optimization Flags (Continued)

600.perlbench_s (continued):
```
-fremap-arrays -flv-function-specialization
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-mllvm -global-vectorize-slp=true
-mllvm -function-specialize -mllvm -enable-licm-vrp
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
```

602.gcc_s: Same as 600.perlbench_s

605.mcf_s: Same as 600.perlbench_s

625.x264_s: Same as 600.perlbench_s

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_s: -m64 -std=c++98 -mno-adx -mno-sse4a
```
-Wl,-mllvm -Wl,-no-block-reorder=aggressive
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -mveclib=AMDLIBM -ffast-math -flto
-finline-aggressive -mllvm -unroll-threshold=100
-function-specialization -mllvm -enable-licm-vrp
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true
-mllvm -no-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-ljemalloc -lflang
```

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: Same as 620.omnetpp_s

**(Continued on next page)**

# SPEC CPU®2017 Integer Speed Result

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## Supermicro

A+ Server 2124US-TNRP
(H12DSU-iN , AMD EPYC 7313)

SPECspeed®2017_int_base =

SPECspeed®2017_int_peak =

| | | | |
|---|---|---|---|
| **CPU2017 License:** 001176 | | **Test Date:** | Jan-2023 |
| **Test Sponsor:** Supermicro | | **Hardware Availability:** | Aug-2019 |
| **Tested by:** Supermicro | | **Software Availability:** | Jan-2023 |

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the submitter notified SPEC that the system as configured violates rule 2.3.1 (a) due to the use of an unsafe compiler option.**

## Peak Optimization Flags (Continued)

641.leela_s: `Same as 620.omnetpp_s`

Fortran benchmarks:

648.exchange2_s: `basepeak = yes`

## Peak Other Flags

C benchmarks:
`-Wno-unused-command-line-argument -Wno-return-type`

C++ benchmarks:
`-Wno-unused-command-line-argument -Wno-return-type`

Fortran benchmarks:
`-Wno-return-type`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/aocc300-flags-B2.html
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Milan-revG.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc300-flags-B2.xml
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Milan-revG.xml

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

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