# SPEC CPU®2017 Integer Speed Result

## Supermicro
A+ Server 2124BT-HNTR  
(H12DST-B, AMD EPYC 7702)

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**SPECspeed®2017_int_base = 9.04**  
**SPECspeed®2017_int_peak = 9.05**

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<table>
<thead>
<tr>
<th>Thread</th>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
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<tbody>
<tr>
<td>600.perlbench_s</td>
<td>9.61</td>
<td>4.95</td>
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<tr>
<td>602.gcc_s</td>
<td>15.3</td>
<td>10.2</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>15.3</td>
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</tr>
<tr>
<td>620.omnetpp_s</td>
<td>13.5</td>
<td>4.84</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>13.5</td>
<td>4.31</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>17.3</td>
<td>4.20</td>
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<tr>
<td>631.deepsjeng_s</td>
<td>17.4</td>
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</tr>
<tr>
<td>641.leela_s</td>
<td>20.3</td>
<td>20.3</td>
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<tr>
<td>648.exchange2_s</td>
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<td>20.3</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>20.3</td>
<td>20.3</td>
</tr>
</tbody>
</table>

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### Hardware
- **CPU Name:** AMD EPYC 7702  
- **Max MHz:** 3350  
- **Nominal:** 2000  
- **Enabled:** 128 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:** 256 MB I+D on chip per chip, 16 MB shared / 4 cores  
- **Other:** None  
- **Memory:** 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R)  
- **Storage:** 1 x 200 GB SATA III SSD  
- **Other:** None

### Software
- **OS:** Ubuntu 20.04.3 LTS  
- **Compiler:** C/C++/Fortran: Version 3.0.0 of AOCC  
- **Parallel:** Yes  
- **Firmware:** Version 2.2 released Aug-2021  
- **File System:** ext4  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 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.
RESULTS TABLE

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Peak Seconds</th>
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<td>306</td>
<td>20.2</td>
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<td>20.2</td>
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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 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.
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,
Operating System Notes (Continued)

'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 = "0-255"
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_SCHEDULER = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "256"

Environment variables set by runcpu during the 605.mcf_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 625.x264_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 648.exchange2_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-127"

General Notes

Binaries were compiled on a system with 2x 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
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(H12DST-B, AMD EPYC 7702)

SPECspeed\textsuperscript{®}2017\_int\_base = 9.04
SPECspeed\textsuperscript{®}2017\_int\_peak = 9.05

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

Test Date: Oct-2021
Hardware Availability: Aug-2019
Software Availability: Sep-2021

**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: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on h12dst-7702 Sat Oct 2 10:04:05 2021

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 7702 64-Core Processor
  2 "physical id"s (chips)
256 "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 : 64
siblings : 128
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60 61 62 63
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60 61 62 63

From lscpu from util-linux 2.34:
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): 256
On-line CPU(s) list: 0-255
Thread(s) per core: 2
Core(s) per socket: 64
Socket(s): 2
NUMA node(s): 32
Vendor ID: AuthenticAMD
CPU family: 23
Model: 49

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SPECspeed®2017_int_base = 9.04
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CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Platform Notes (Continued)

Model name: AMD EPYC 7702 64-Core Processor
Stepping: 0
Frequency boost: enabled
CPU MHz: 3182.853
CPU max MHz: 2000.0000
CPU min MHz: 1500.0000
BogoMIPS: 4000.19
Virtualization: AMD-V
L1d cache: 4 MiB
L1i cache: 4 MiB
L2 cache: 64 MiB
L3 cache: 512 MiB
NUMA node0 CPU(s): 0-3, 128-131
NUMA node1 CPU(s): 4-7, 132-135
NUMA node2 CPU(s): 8-11, 136-139
NUMA node3 CPU(s): 12-15, 140-143
NUMA node4 CPU(s): 16-19, 144-147
NUMA node5 CPU(s): 20-23, 148-151
NUMA node6 CPU(s): 24-27, 152-155
NUMA node7 CPU(s): 28-31, 156-159
NUMA node8 CPU(s): 32-35, 160-163
NUMA node9 CPU(s): 36-39, 164-167
NUMA node10 CPU(s): 40-43, 168-171
NUMA node11 CPU(s): 44-47, 172-175
NUMA node12 CPU(s): 48-51, 176-179
NUMA node13 CPU(s): 52-55, 180-183
NUMA node14 CPU(s): 56-59, 184-187
NUMA node15 CPU(s): 60-63, 188-191
NUMA node16 CPU(s): 64-67, 192-195
NUMA node17 CPU(s): 68-71, 196-199
NUMA node18 CPU(s): 72-75, 200-203
NUMA node19 CPU(s): 76-79, 204-207
NUMA node20 CPU(s): 80-83, 208-211
NUMA node21 CPU(s): 84-87, 212-215
NUMA node22 CPU(s): 88-91, 216-219
NUMA node23 CPU(s): 92-95, 220-223
NUMA node24 CPU(s): 96-99, 224-227
NUMA node25 CPU(s): 100-103, 228-231
NUMA node26 CPU(s): 104-107, 232-235
NUMA node27 CPU(s): 108-111, 236-239
NUMA node28 CPU(s): 112-115, 240-243
NUMA node29 CPU(s): 116-119, 244-247
NUMA node30 CPU(s): 120-123, 248-251
NUMA node31 CPU(s): 124-127, 252-255
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected

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Platform Notes (Continued)

Vulnerability Meltdown: 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; Full AMD retpoline, IBFB conditional, IBS_F2, STIBF conditional, RSB filling
Vulnerability Srbs: Not affected
Vulnerability Tsx async abort: Not affected
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 rdtsscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extapicid aperf perf perf32 pni pclmulqdq monitor ssse3 fma cx16 sse4_1 sse4_2 x2apic 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 bpfext perfctr_llc mwaitx cpb cat_l3 cdq_l3 hw_pstate sme ssbd mba sev ibs ibpb sticky vmmcall fsqsbse bmicl avx2 sse2 cmp rdt_a rdseed adx smap clflushopt clwb sha ni xsaveopt xsavec xgetbv1 xsaves cmq_llc cmq_occup_llc cmq_mbb_total cmq_mbb_local clzero irperf xsaveerptr wbnoinvd arat nppt lbv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists paaflush pfthresh avic v_vmsave_vmlload vgif umip rdpid overflow_recov succor smca

From lscpu --cache:
NAME ONE-SIZE ALL-SIZE WAYS TYPE LEVEL
L1d 32K 4M 8 Data 1
L1i 32K 4M 8 Instruction 1
L2 512K 64M 8 Unified 2
L3 16M 512M 16 Unified 3

From numactl --hardware
WARNING: a numactl 'node' might or might not correspond to a physical chip.
available: 32 nodes (0-31)
node 0 cpus: 0 1 2 3 128 129 130 131
node 0 size: 32127 MB
node 0 free: 31756 MB
node 1 cpus: 4 5 6 7 132 133 134 135
node 1 size: 32254 MB
node 1 free: 31860 MB
node 2 cpus: 8 9 10 11 136 137 138 139
node 2 size: 32254 MB
node 2 free: 31922 MB
node 3 cpus: 12 13 14 15 140 141 142 143
node 3 size: 32253 MB
node 3 free: 31911 MB

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SPEC CPU®2017 Integer Speed Result

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SPECspeed®2017_int_base = 9.04
SPECspeed®2017_int_peak = 9.05

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

Test Date: Oct-2021
Hardware Availability: Aug-2019
Software Availability: Sep-2021

Platform Notes (Continued)

node 4 cpus: 16 17 18 19 144 145 146 147
node 4 size: 32254 MB
node 4 free: 31925 MB
node 5 cpus: 20 21 22 23 148 149 150 151
node 5 size: 32229 MB
node 5 free: 31885 MB
node 6 cpus: 24 25 26 27 152 153 154 155
node 6 size: 32254 MB
node 6 free: 31912 MB
node 7 cpus: 28 29 30 31 156 157 158 159
node 7 size: 32253 MB
node 7 free: 31920 MB
node 8 cpus: 32 33 34 35 160 161 162 163
node 8 size: 32254 MB
node 8 free: 31928 MB
node 9 cpus: 36 37 38 39 164 165 166 167
node 9 size: 32254 MB
node 9 free: 31933 MB
node 10 cpus: 40 41 42 43 168 169 170 171
node 10 size: 32254 MB
node 10 free: 31934 MB
node 11 cpus: 44 45 46 47 172 173 174 175
node 11 size: 32253 MB
node 11 free: 31931 MB
node 12 cpus: 48 49 50 51 176 177 178 179
node 12 size: 32254 MB
node 12 free: 31932 MB
node 13 cpus: 52 53 54 55 180 181 182 183
node 13 size: 32254 MB
node 13 free: 31926 MB
node 14 cpus: 56 57 58 59 184 185 186 187
node 14 size: 32254 MB
node 14 free: 31910 MB
node 15 cpus: 60 61 62 63 188 189 190 191
node 15 size: 32241 MB
node 15 free: 31919 MB
node 16 cpus: 64 65 66 67 192 193 194 195
node 16 size: 32254 MB
node 16 free: 31764 MB
node 17 cpus: 68 69 70 71 196 197 198 199
node 17 size: 32254 MB
node 17 free: 31917 MB
node 18 cpus: 72 73 74 75 200 201 202 203
node 18 size: 32254 MB
node 18 free: 31829 MB
node 19 cpus: 76 77 78 79 204 205 206 207
node 19 size: 32253 MB

(Continued on next page)
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**SPECspeed® 2017_int_base = 9.04**  
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<td>Aug-2019</td>
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<td>Supermicro</td>
<td>Software Availability:</td>
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**Platform Notes (Continued)**

<table>
<thead>
<tr>
<th>node 19</th>
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<tbody>
<tr>
<td>node 20</td>
<td>cpus: 80 81 82 83 208 209 210 211</td>
</tr>
<tr>
<td>node 20</td>
<td>size: 32254 MB</td>
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<tr>
<td>node 20</td>
<td>free: 31930 MB</td>
</tr>
<tr>
<td>node 21</td>
<td>cpus: 84 85 86 87 212 213 214 215</td>
</tr>
<tr>
<td>node 21</td>
<td>size: 32254 MB</td>
</tr>
<tr>
<td>node 21</td>
<td>free: 31909 MB</td>
</tr>
<tr>
<td>node 22</td>
<td>cpus: 88 89 90 91 216 217 218 219</td>
</tr>
<tr>
<td>node 22</td>
<td>size: 32254 MB</td>
</tr>
<tr>
<td>node 22</td>
<td>free: 31930 MB</td>
</tr>
<tr>
<td>node 23</td>
<td>cpus: 92 93 94 95 220 221 222 223</td>
</tr>
<tr>
<td>node 23</td>
<td>size: 32253 MB</td>
</tr>
<tr>
<td>node 23</td>
<td>free: 31932 MB</td>
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<tr>
<td>node 24</td>
<td>cpus: 96 97 98 99 224 225 226 227</td>
</tr>
<tr>
<td>node 24</td>
<td>size: 32254 MB</td>
</tr>
<tr>
<td>node 24</td>
<td>free: 31925 MB</td>
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<tr>
<td>node 25</td>
<td>cpus: 100 101 102 103 228 229 230 231</td>
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<tr>
<td>node 25</td>
<td>size: 32254 MB</td>
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<tr>
<td>node 25</td>
<td>free: 31940 MB</td>
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<tr>
<td>node 26</td>
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<td>node 26</td>
<td>size: 32254 MB</td>
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<td>node 26</td>
<td>free: 31924 MB</td>
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<td>node 27</td>
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<tr>
<td>node 27</td>
<td>free: 31931 MB</td>
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<tr>
<td>node 28</td>
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<td>node 30</td>
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<td>free: 31930 MB</td>
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<tr>
<td>node 31</td>
<td>cpus: 124 125 126 127 252 253 254 255</td>
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<tr>
<td>node 31</td>
<td>size: 32250 MB</td>
</tr>
<tr>
<td>node 31</td>
<td>free: 31927 MB</td>
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<table>
<thead>
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<th>node distances:</th>
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<td>node 0  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19</td>
</tr>
<tr>
<td>0: 10 11 11 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12</td>
</tr>
<tr>
<td>1: 11 10 11 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12</td>
</tr>
<tr>
<td>2: 11 11 10 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12</td>
</tr>
<tr>
<td>3: 11 11 11 10 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12</td>
</tr>
</tbody>
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CPU2017 License: 001176
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Test Date: Oct-2021
Hardware Availability: Aug-2019
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Platform Notes (Continued)

<table>
<thead>
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(Continued on next page)
**SPEC CPU®2017 Integer Speed Result**

**Supermicro**

A+ Server 2124BT-HNTR

(H12DST-B , AMD EPYC 7702)

---

**SPECspeed®2017_int_base = 9.04**

**SPECspeed®2017_int_peak = 9.05**

---

**Platform Notes (Continued)**

| CPU2017 License | Test Date: Oct-2021 |
| Test Sponsor: | Hardware Availability: Aug-2019 |
| Tested by: | Software Availability: Sep-2021 |

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From /proc/meminfo

MemTotal: 1056724908 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/sbin/tuned-adm active

Current active profile: throughput-performance

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

/usr/bin/lsb_release -d

Ubuntu 20.04.3 LTS

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

debian_version: bullseye/sid

os-release:
    NAME="Ubuntu"
    VERSION="20.04.3 LTS (Focal Fossa)"
    ID=ubuntu
    ID_LIKE=debian
    PRETTY_NAME="Ubuntu 20.04.3 LTS"
    VERSION_ID="20.04"
    HOME_URL="https://www.ubuntu.com/"
    SUPPORT_URL="https://help.ubuntu.com/"

uname -a:

Linux h12dst-7702 5.4.0-88-generic #99-Ubuntu SMP Thu Sep 23 17:29:00 UTC 2021 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
CVE-2017-5754 (Meltdown): Not affected

(Continued on next page)
## Platform Notes (Continued)

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<th>CVE</th>
<th>Mitigation</th>
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<tr>
<td>2018-3639 (Speculative Store Bypass)</td>
<td>Speculative Store Bypass disabled via prctl and seccomp</td>
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<tr>
<td>2017-5753 (Spectre variant 1)</td>
<td>usercopy/swapgs barriers and __user pointer sanitization</td>
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<tr>
<td>2017-5715 (Spectre variant 2)</td>
<td>Full AMD retpoline, IBPB: conditional, IBRS_FW, STIBP: conditional, RSB filling</td>
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<td>2020-0543 (Special Register Buffer Data Sampling)</td>
<td>Not affected</td>
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<tr>
<td>2019-11135 (TSX Asynchronous Abort)</td>
<td>Not affected</td>
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run-level 3 Oct 1 17:30

**SPEC is set to:** /home/cpu2017

```
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      ext4  178G   18G  152G  11% /
```

From /sys/devices/virtual/dmi/id

- **Vendor:** Supermicro
- **Product:** Super Server
- **Serial:** 0123456789

Additional information from dmidecode 3.2 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 HMAA8GR7AJR4N-XN 64 GB 2 rank 3200

**BIOS:**

- **Vendor:** American Megatrends Inc.
- **Version:** 2.2
- **Date:** 08/31/2021
- **Revision:** 5.14

(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 Version.12.0.0)
## SPEC CPU®2017 Integer Speed Result

**Supermicro**
A+ Server 2124BT-HNTR  
(H12DST-B , AMD EPYC 7702)

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<td>Hardware Availability:</td>
<td>Aug-2019</td>
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<td>Tested by:</td>
<td>Supermicro</td>
<td>Software Availability:</td>
<td>Sep-2021</td>
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### SPECspeed®2017_int_base = 9.04

### SPECspeed®2017_int_peak = 9.05

**Compiler Version Notes (Continued)**

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

---

### 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

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

Supermicro
A+ Server 2124BT-HNTR
(H12DST-B, AMD EPYC 7702)

SPECspeed®2017_int_base = 9.04
SPECspeed®2017_int_peak = 9.05

CPU2017 License: 001176
Test Sponsor: Supermicro
Test Date: Oct-2021
Tested by: Supermicro
Hardware Availability: Aug-2019
Software Availability: Sep-2021

Base Portability Flags (Continued)

623.xalancbmk_s: -DSPEC_LINUX -DSPEC_LP64
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.llela_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 -Dspec_LP64
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-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
-DSPEC_OPENMP -fopenmpmp -fopenmpmp=libomp -long -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 -Dspec_LP64
-fveclib=AMDLIBM -ffast-math -flto -mllvm -enable-partial-unswitch
-mllvm -unroll-threshold=100 -finline-aggressive
-flv-function-specialization -mllvm -loop-unswitch-threshold=200000
-mllvm -reroil-ops -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
-fopenmpmp -fopenmpmp=libomp -long -lamdlibm -ljemalloc -lflang
-lflangrti

Fortran benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize

(Continued on next page)
Supermicro
A+ Server 2124BT-HNTR (H12DST-B, AMD EPYC 7702)

SPECspeed®2017_int_base = 9.04
SPECspeed®2017_int_peak = 9.05

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro
Test Date: Oct-2021
Hardware Availability: Aug-2019
Software Availability: Sep-2021

Base Optimization Flags (Continued)

Fortran benchmarks (continued):
-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
-mlvm -unroll-aggressive -mlvm -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

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: basepeak = yes
602.gcc_s: basepeak = yes
625.x264_s: Same as 605.mcf_s
657.xz_s: Same as 605.mcf_s

C++ benchmarks:

620.omnetpp_s: basepeak = yes
623.xalancbmk_s: basepeak = yes
631.deepsjeng_s: basepeak = yes
641.leela_s: basepeak = yes

Fortran benchmarks:

## SPEC CPU®2017 Integer Speed Result

### Supermicro
A+ Server 2124BT-HNTR
(H12DST-B , AMD EPYC 7702)

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<td>Supermicro</td>
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### SPECspeed®2017 Integer Speed Result

- **SPECspeed®2017_int_base = 9.04**
- **SPECspeed®2017_int_peak = 9.05**

### 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:


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


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

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