



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

### QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

CPU2017 License: 9050

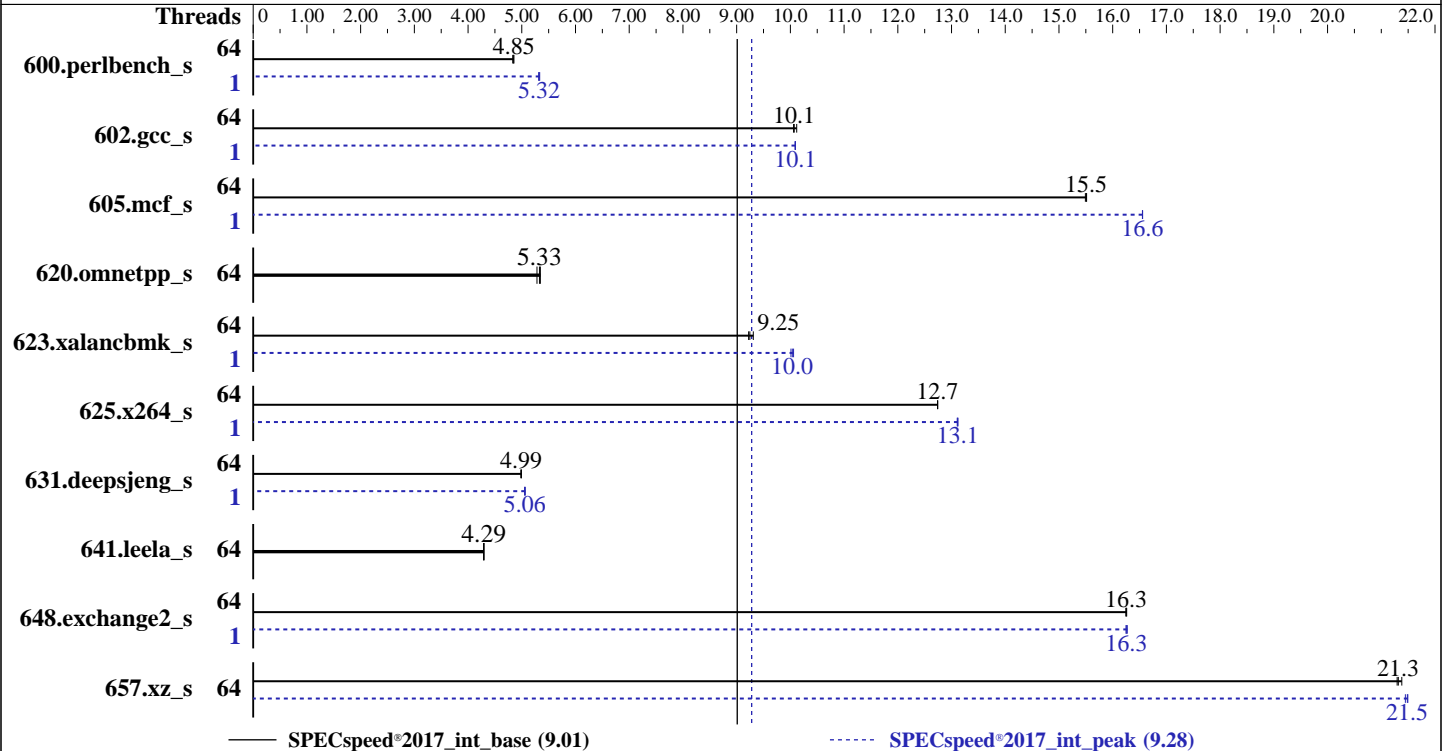
Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Nov-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019



### Hardware

CPU Name: AMD EPYC 7742  
 Max MHz: 3400  
 Nominal: 2250  
 Enabled: 64 cores, 1 chip, 2 threads/core  
 Orderable: 1 chip  
 Cache L1: 32 KB I + 32 KB D on chip per core  
 L2: 512 KB I+D on chip per core  
 L3: 256 MB I+D on chip per chip, 16 MB shared / 4 cores  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R, running at 2933)  
 Storage: 1 x 512GB SATA M.2 SSD  
 Other: None

### Software

OS: Ubuntu 19.04  
 Kernel 5.0.0-25-generic  
 Compiler: C/C++/Fortran: Version 2.0.0 of AOCC  
 Parallel: Yes  
 Firmware: Version 3B05.01 released Oct-2019  
 File System: ext4  
 System State: Run level 5 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other: jemalloc: jemalloc memory allocator library v5.2.1  
 Power Management: --



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

CPU2017 License: 9050

Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Nov-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

## Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	64	<b>366</b>	<b>4.85</b>	367	4.83	366	4.85	1	<b>333</b>	<b>5.32</b>	333	5.33	334	5.31
602.gcc_s	64	394	10.1	<b>395</b>	<b>10.1</b>	396	10.1	1	394	10.1	<b>395</b>	<b>10.1</b>	395	10.1
605.mcf_s	64	<b>304</b>	<b>15.5</b>	305	15.5	304	15.5	1	285	16.6	285	16.6	<b>285</b>	<b>16.6</b>
620.omnetpp_s	64	<b>306</b>	<b>5.33</b>	309	5.28	305	5.35	64	<b>306</b>	<b>5.33</b>	309	5.28	305	5.35
623.xalancbmk_s	64	154	9.22	152	9.31	<b>153</b>	<b>9.25</b>	1	142	10.0	141	10.1	<b>141</b>	<b>10.0</b>
625.x264_s	64	138	12.7	138	12.7	<b>138</b>	<b>12.7</b>	1	135	13.1	<b>135</b>	<b>13.1</b>	134	13.1
631.deepsjeng_s	64	288	4.98	<b>287</b>	<b>4.99</b>	287	4.99	1	283	5.06	284	5.05	<b>283</b>	<b>5.06</b>
641.leela_s	64	397	4.30	<b>397</b>	<b>4.29</b>	398	4.29	64	397	4.30	<b>397</b>	<b>4.29</b>	398	4.29
648.exchange2_s	64	181	16.3	181	16.2	<b>181</b>	<b>16.3</b>	1	181	16.3	181	16.2	<b>181</b>	<b>16.3</b>
657.xz_s	64	290	21.3	289	21.4	<b>290</b>	<b>21.3</b>	64	288	21.4	<b>288</b>	<b>21.5</b>	288	21.5

SPECspeed®2017\_int\_base = **9.01**

SPECspeed®2017\_int\_peak = **9.28**

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

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

**CPU2017 License:** 9050

**Test Sponsor:** Quanta Computer Inc.

**Tested by:** Quanta Computer Inc.

**Test Date:** Nov-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Aug-2019

## General Notes

Environment variables set by runcpu before the start of the run:

GOMP\_CPU\_AFFINITY = "0-127"

LD\_LIBRARY\_PATH = "/root/speccpu/amd\_speed\_aocc200\_rome\_B\_lib/64;/root/speccpu/amd\_speed\_aocc200\_rome\_B\_lib/32:"

MALLOC\_CONF = "retain:true"

OMP\_DYNAMIC = "false"

OMP\_SCHEDULE = "static"

OMP\_STACKSIZE = "128M"

OMP\_THREAD\_LIMIT = "128"

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) is mitigated in the system as tested and documented.

jemalloc: configured and built with GCC v9.1.0 in Ubuntu 19.04 with -O3 -znver2 -flto

jemalloc 5.2.1 is available here:

<https://github.com/jemalloc/jemalloc/releases/download/5.2.1/jemalloc-5.2.1.tar.bz2>

## Platform Notes

BIOS settings:

SMT Control is Auto

NUMA nodes per socket is NPS4

cTDP Control is Manual

cTDP set to 240

Package Power Limit Control is Manual

Package Power Limit set to 240

Determinism Control is Manual

Determinism Slider set to Power

Sysinfo program /root/speccpu/bin/sysinfo

Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9

running on ubuntu Thu Nov 7 19:58:53 2019

SUT (System Under Test) info as seen by some common utilities.

For more information on this section, see

<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : AMD EPYC 7742 64-Core Processor

1 "physical id"s (chips)

128 "processors"

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Quanta Cloud Technology**

(Test Sponsor: Quanta Computer Inc.)

**QuantaGrid S43KL-1U**

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

**CPU2017 License:** 9050

**Test Sponsor:** Quanta Computer Inc.

**Tested by:** Quanta Computer Inc.

**Test Date:** Nov-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Aug-2019

## Platform Notes (Continued)

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
```

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):                128
On-line CPU(s) list:  0-127
Thread(s) per core:    2
Core(s) per socket:    64
Socket(s):              1
NUMA node(s):          16
Vendor ID:              AuthenticAMD
CPU family:             23
Model:                 49
Model name:             AMD EPYC 7742 64-Core Processor
Stepping:               0
CPU MHz:               3225.791
CPU max MHz:           2250.0000
CPU min MHz:           1500.0000
BogoMIPS:              4491.41
Virtualization:        AMD-V
L1d cache:             32K
L1i cache:             32K
L2 cache:              512K
L3 cache:              16384K
NUMA node0 CPU(s):    0-3,64-67
NUMA node1 CPU(s):    4-7,68-71
NUMA node2 CPU(s):    8-11,72-75
NUMA node3 CPU(s):    12-15,76-79
NUMA node4 CPU(s):    16-19,80-83
NUMA node5 CPU(s):    20-23,84-87
NUMA node6 CPU(s):    24-27,88-91
NUMA node7 CPU(s):    28-31,92-95
NUMA node8 CPU(s):    32-35,96-99
NUMA node9 CPU(s):    36-39,100-103
NUMA node10 CPU(s):   40-43,104-107
NUMA node11 CPU(s):   44-47,108-111
NUMA node12 CPU(s):   48-51,112-115
NUMA node13 CPU(s):   52-55,116-119
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Quanta Cloud Technology**

(Test Sponsor: Quanta Computer Inc.)

**QuantaGrid S43KL-1U**

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

**CPU2017 License:** 9050

**Test Sponsor:** Quanta Computer Inc.

**Tested by:** Quanta Computer Inc.

**Test Date:** Nov-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Aug-2019

## Platform Notes (Continued)

NUMA node14 CPU(s): 56-59,120-123

NUMA node15 CPU(s): 60-63,124-127

Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr\_opt pdpe1gb rdtscp lm constant\_tsc rep\_good nopl xtopology nonstop\_tsc cpuid extd\_apicid aperfmperf pni pclmulqdq monitor ssse3 fma cx16 sse4\_1 sse4\_2 movbe popcnt aes xsave avx f16c rdrand lahf\_lm cmp\_legacy svm extapic cr8\_legacy abm sse4a misalignsse 3dnowprefetch osvw ibs skinit wdt tce topoext perfctr\_core perfctr\_nb bpext perfctr\_llc mwaitx cpb cat\_l3 cdp\_l3 hw\_pstate sme ssbd mba sev ibpb stibp vmmcall fsgsbase bml avx2 smep bmi2 cqm rdt\_a rdseed adx smap clflushopt clwb sha\_ni xsaveopt xsavec xgetbv1 xsaves cqm\_llc cqm\_occup\_llc cqm\_mbm\_total cqm\_mbm\_local clzero irperf xsaveerptr wbnoinvd arat npt lbrv svm\_lock nrip\_save tsc\_scale vmcb\_clean flushbyasid decodeassists pausefilter pfthreshold avic v\_vmsave\_vmload vgif umip rdpid overflow\_recov succor smca

```
/proc/cpuinfo cache data
cache size : 512 KB
```

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.

```
available: 16 nodes (0-15)
node 0 cpus: 0 1 2 3 64 65 66 67
node 0 size: 32133 MB
node 0 free: 31593 MB
node 1 cpus: 4 5 6 7 68 69 70 71
node 1 size: 32252 MB
node 1 free: 32007 MB
node 2 cpus: 8 9 10 11 72 73 74 75
node 2 size: 32252 MB
node 2 free: 31994 MB
node 3 cpus: 12 13 14 15 76 77 78 79
node 3 size: 32250 MB
node 3 free: 32092 MB
node 4 cpus: 16 17 18 19 80 81 82 83
node 4 size: 32252 MB
node 4 free: 32045 MB
node 5 cpus: 20 21 22 23 84 85 86 87
node 5 size: 32252 MB
node 5 free: 32100 MB
node 6 cpus: 24 25 26 27 88 89 90 91
node 6 size: 32252 MB
node 6 free: 32029 MB
node 7 cpus: 28 29 30 31 92 93 94 95
node 7 size: 32227 MB
node 7 free: 32071 MB
node 8 cpus: 32 33 34 35 96 97 98 99
node 8 size: 32252 MB
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Quanta Cloud Technology**

(Test Sponsor: Quanta Computer Inc.)

**QuantaGrid S43KL-1U**

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

**CPU2017 License:** 9050

**Test Sponsor:** Quanta Computer Inc.

**Tested by:** Quanta Computer Inc.

**Test Date:** Nov-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Aug-2019

## Platform Notes (Continued)

```

node 8 free: 32089 MB
node 9 cpus: 36 37 38 39 100 101 102 103
node 9 size: 32252 MB
node 9 free: 32078 MB
node 10 cpus: 40 41 42 43 104 105 106 107
node 10 size: 32252 MB
node 10 free: 32131 MB
node 11 cpus: 44 45 46 47 108 109 110 111
node 11 size: 32250 MB
node 11 free: 32127 MB
node 12 cpus: 48 49 50 51 112 113 114 115
node 12 size: 32252 MB
node 12 free: 32127 MB
node 13 cpus: 52 53 54 55 116 117 118 119
node 13 size: 32252 MB
node 13 free: 32132 MB
node 14 cpus: 56 57 58 59 120 121 122 123
node 14 size: 32252 MB
node 14 free: 32138 MB
node 15 cpus: 60 61 62 63 124 125 126 127
node 15 size: 32237 MB
node 15 free: 32117 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
 0:  10 11 11 11 12 12 12 12 12 12 12 12 12 12 12 12
 1:  11 10 11 11 12 12 12 12 12 12 12 12 12 12 12 12
 2:  11 11 10 11 12 12 12 12 12 12 12 12 12 12 12 12
 3:  11 11 11 10 12 12 12 12 12 12 12 12 12 12 12 12
 4:  12 12 12 12 10 11 11 11 12 12 12 12 12 12 12 12
 5:  12 12 12 12 11 10 11 11 12 12 12 12 12 12 12 12
 6:  12 12 12 12 11 11 10 11 12 12 12 12 12 12 12 12
 7:  12 12 12 12 11 11 11 10 12 12 12 12 12 12 12 12
 8:  12 12 12 12 12 12 12 12 10 11 11 11 12 12 12 12
 9:  12 12 12 12 12 12 12 12 11 10 11 11 12 12 12 12
10:  12 12 12 12 12 12 12 12 11 11 10 11 12 12 12 12
11:  12 12 12 12 12 12 12 12 11 11 11 10 12 12 12 12
12:  12 12 12 12 12 12 12 12 12 12 12 12 10 11 11 11
13:  12 12 12 12 12 12 12 12 12 12 12 12 11 10 11 11
14:  12 12 12 12 12 12 12 12 12 12 12 12 11 11 10 11
15:  12 12 12 12 12 12 12 12 12 12 12 12 11 11 11 10

```

From /proc/meminfo

MemTotal: 528261312 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

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

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Quanta Cloud Technology**

(Test Sponsor: Quanta Computer Inc.)

**QuantaGrid S43KL-1U**

(AMD EPYC 7742 64-Core, 2.25GHz)

**SPECspeed®2017\_int\_base = 9.01**

**SPECspeed®2017\_int\_peak = 9.28**

**CPU2017 License:** 9050

**Test Sponsor:** Quanta Computer Inc.

**Tested by:** Quanta Computer Inc.

**Test Date:** Nov-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Aug-2019

## Platform Notes (Continued)

```

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/"

```

```

uname -a:
Linux ubuntu 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-2017-5754 (Meltdown):          Not affected
CVE-2017-5753 (Spectre variant 1): Mitigation: usercopy/swaps 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 5 Nov 7 19:47

```

SPEC is set to: /root/speccpu
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  468G   18G  427G   4% /

```

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

```

BIOS American Megatrends Inc. 3B05.01 10/17/2019
Memory:
  16x SK Hynix HMA84GR7CJR4N-XN 32 GB 2 rank 3200

```

(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)
=====

```

AOCC.LLVM.2.0.0.B191.2019\_07\_19 clang version 8.0.0 (CLANG: Jenkins)

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

**CPU2017 License:** 9050

**Test Sponsor:** Quanta Computer Inc.

**Tested by:** Quanta Computer Inc.

**Test Date:** Nov-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Aug-2019

## 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

=====  
 C++ | 623.xalanbmk\_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.xalanbmk\_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++ | 623.xalanbmk\_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.xalanbmk\_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

(Continued on next page)





# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

CPU2017 License: 9050

Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Nov-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

## Compiler Version Notes (Continued)

=====  
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

## Base Optimization Flags

C benchmarks:

-flto -Wl,-mllvm -Wl,-function-specialize  
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC  
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

**Quanta Cloud Technology**

(Test Sponsor: Quanta Computer Inc.)

**QuantaGrid S43KL-1U**

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

**CPU2017 License:** 9050

**Test Sponsor:** Quanta Computer Inc.

**Tested by:** Quanta Computer Inc.

**Test Date:** Nov-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Aug-2019

## Base Optimization Flags (Continued)

C benchmarks (continued):

```
-march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50
-freemap-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
-DUSE_OPENMP -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
-DUSE_OPENMP -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 -DUSE_OPENMP
-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
```



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

CPU2017 License: 9050

Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Nov-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

## 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
-DUSE_OPENMP -lmvec -lamdlibm -fopenmp=libomp -lomp
-lpthread -ldl -ljemalloc -lflang

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

CPU2017 License: 9050

Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Nov-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

## 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 -DUSE_OPENMP -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
-flv-function-specialization -DSPEC_OPENMP -fopenmp
-DUSE_OPENMP -lmvec -lamdlibm -fopenmp=libomp -lomp
-lpthread -ldl -ljemalloc -lflang
```

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)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

CPU2017 License: 9050

Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Nov-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

## Peak Optimization Flags (Continued)

657.xz\_s (continued):

```
-DUSE_OPENMP -fopenmp=libomp -lomp -lpthread -ldl
-lmvec -lamdlibm -ljemalloc -lflang
```

C++ benchmarks:

620.omnetpp\_s: basepeak = yes

```
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
-DUSE_OPENMP -fopenmp=libomp -lomp -lpthread -ldl
-ljemalloc
```

```
631.deepsjeng_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 -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
-DUSE_OPENMP -fopenmp=libomp -lomp -lpthread -ldl
-lmvec -lamdlibm -ljemalloc -lflang
```

641.leela\_s: basepeak = yes

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
-mllvm -disable-indvar-simplify -mllvm -unroll-aggressive
-mllvm -unroll-threshold=150 -DSPEC_OPENMP -fopenmp -DUSE_OPENMP
-fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid S43KL-1U

(AMD EPYC 7742 64-Core, 2.25GHz)

SPECspeed®2017\_int\_base = 9.01

SPECspeed®2017\_int\_peak = 9.28

CPU2017 License: 9050

Test Sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test Date: Nov-2019

Hardware Availability: Aug-2019

Software Availability: Aug-2019

## Peak Optimization Flags (Continued)

Fortran benchmarks (continued):

-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/sppo/dev/cpu2017/amd\_speed\_aocc200\_rome/amd\_speed\_aocc200\_rome\_B\_lib/32

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/aocc200-flags-B1\\_v2.html](http://www.spec.org/cpu2017/flags/aocc200-flags-B1_v2.html)

[http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-amd-speccpu-setting-v1\\_AMD\\_ROME.html](http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-amd-speccpu-setting-v1_AMD_ROME.html)

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

[http://www.spec.org/cpu2017/flags/aocc200-flags-B1\\_v2.xml](http://www.spec.org/cpu2017/flags/aocc200-flags-B1_v2.xml)

[http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-amd-speccpu-setting-v1\\_AMD\\_ROME.xml](http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-amd-speccpu-setting-v1_AMD_ROME.xml)

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.0.5 on 2019-11-07 06:58:53-0500.

Report generated on 2019-11-26 12:45:38 by CPU2017 PDF formatter v6255.

Originally published on 2019-11-26.