



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

CPU2017 License: 9016

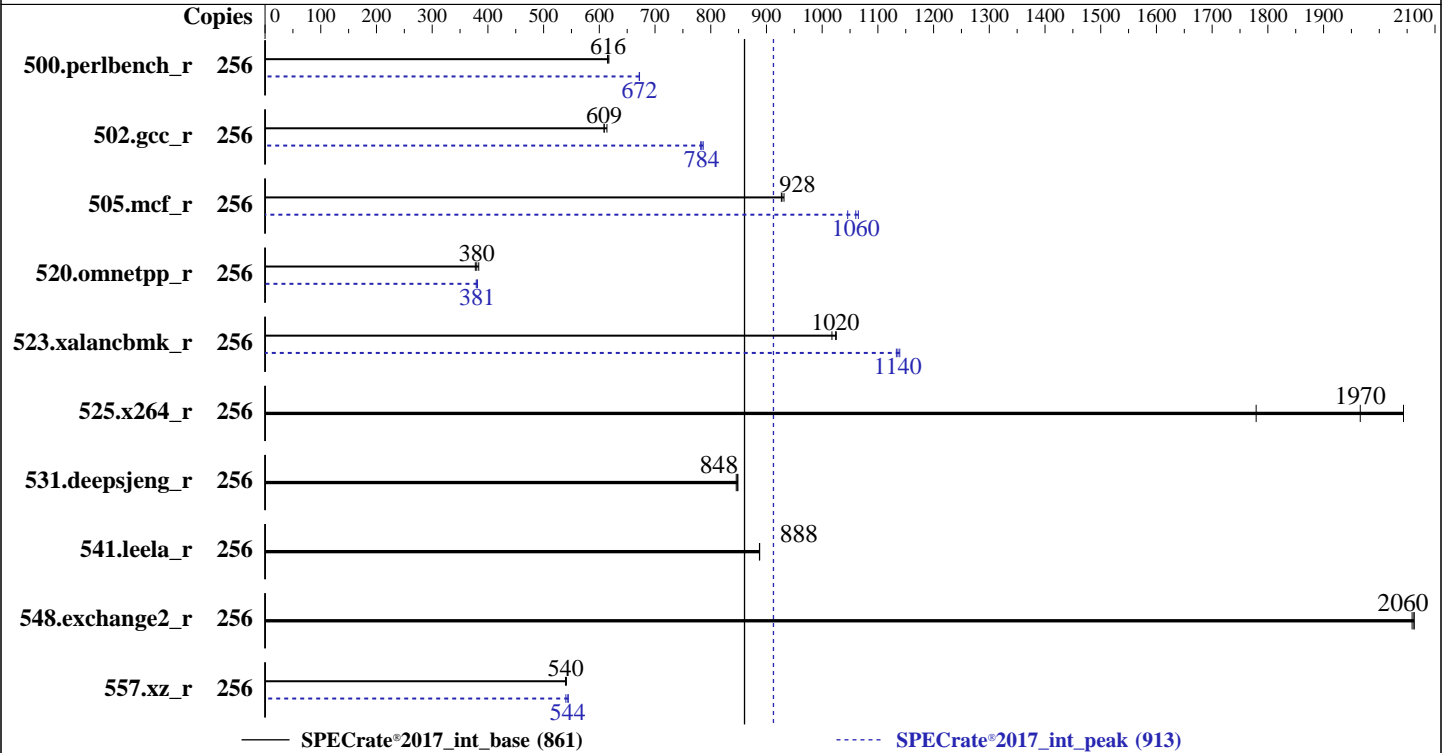
Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2021

Hardware Availability: Aug-2021

Software Availability: Mar-2021



### Hardware

CPU Name: AMD EPYC 7763  
 Max MHz: 3500  
 Nominal: 2450  
 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, 32 MB shared / 8 cores  
 Other: None  
 Memory: 1 TB (16 x 64 GB 4Rx4 PC4-3200AA-L)  
 Storage: 1 x 240 GB SATA SSD  
 Other: None

### Software

OS: SUSE Linux Enterprise Server 15 SP2 (x86\_64)  
 Kernel 5.3.18-22-default  
 Compiler: C/C++/Fortran: Version 3.0.0 of AOCC  
 Parallel: No  
 Firmware: Version 0701 released Aug-2021  
 File System: xfs  
 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 and OS set to prefer performance at the cost of additional power usage.



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2021

Hardware Availability: Aug-2021

Software Availability: Mar-2021

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	256	660	617	<b><u>662</u></b>	<b><u>616</u></b>	663	615	256	607	672	606	672	<b><u>607</u></b>	<b><u>672</u></b>
502.gcc_r	256	596	609	<b><u>596</u></b>	<b><u>609</u></b>	591	614	256	464	782	461	786	<b><u>462</u></b>	<b><u>784</u></b>
505.mcf_r	256	444	932	446	927	<b><u>446</u></b>	<b><u>928</u></b>	256	388	1060	<b><u>390</u></b>	<b><u>1060</u></b>	396	1050
520.omnetpp_r	256	890	377	<b><u>884</u></b>	<b><u>380</u></b>	876	384	256	<b><u>882</u></b>	<b><u>381</u></b>	886	379	881	381
523.xalancbmk_r	256	266	1020	<b><u>264</u></b>	<b><u>1020</u></b>	264	1030	256	239	1130	237	1140	<b><u>238</u></b>	<b><u>1140</u></b>
525.x264_r	256	219	2040	<b><u>228</u></b>	<b><u>1970</u></b>	252	1780	256	219	2040	<b><u>228</u></b>	<b><u>1970</u></b>	252	1780
531.deepsjeng_r	256	<b><u>346</u></b>	<b><u>848</u></b>	347	846	346	849	256	<b><u>346</u></b>	<b><u>848</u></b>	347	846	346	849
541.leela_r	256	478	888	478	887	<b><u>478</u></b>	<b><u>888</u></b>	256	478	888	478	887	<b><u>478</u></b>	<b><u>888</u></b>
548.exchange2_r	256	<b><u>325</u></b>	<b><u>2060</u></b>	325	2060	326	2060	256	<b><u>325</u></b>	<b><u>2060</u></b>	325	2060	326	2060
557.xz_r	256	<b><u>512</u></b>	<b><u>540</u></b>	511	541	513	539	256	<b><u>509</u></b>	<b><u>544</u></b>	508	544	512	540

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

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
OS set to performance mode via cpupower frequency-set -g performance
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
'echo 8 > /proc/sys/vm/dirty_ratio' run as root to limit dirty cache to 8% of
memory.
'echo 1 > /proc/sys/vm/swappiness' run as root to limit swap usage to minimum
necessary.
'echo 1 > /proc/sys/vm/zone_reclaim_mode' run as root to free node-local memory
and avoid remote memory usage.
'sync; echo 3 > /proc/sys/vm/drop_caches' run as root to reset filesystem caches.
'sysctl -w kernel.randomize_va_space=0' run as root to disable address space layout
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**ASUSTeK Computer Inc.**  
ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021

**Hardware Availability:** Aug-2021

**Software Availability:** Mar-2021

## Operating System Notes (Continued)

randomization (ASLR) to reduce run-to-run variability.  
'echo always > /sys/kernel/mm/transparent\_hugepage/enabled' and  
'echo always > /sys/kernel/mm/transparent\_hugepage/defrag' run as root for peak  
integer runs and all FP runs to enable Transparent Hugepages (THP).  
'echo madvise > /sys/kernel/mm/transparent\_hugepage/enabled' run as root for base  
integer runs to enable THP only on request.

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH =  
"/cpull18/amd\_rate\_aocc300\_milan\_B\_lib/lib:/cpull18/amd\_rate\_aocc300\_milan  
\_B\_lib/lib32:"  
MALLOC\_CONF = "retain:true"

Environment variables set by runcpu during the 523.xalanbmk\_r peak run:  
MALLOC\_CONF = "thp:never"

## 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>

## Platform Notes

BIOS Configuration:  
DLWM Support = Disabled  
SVM Mode = Disabled  
NUMA nodes per socket = NPS4  
APBDIS = 1  
Fix SOC P-state = P0  
Engine Boost = Enabled  
ACPI SRAT L3 Cache as NUMA Domain = Enabled

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**ASUSTeK Computer Inc.**  
ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861  
SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016  
**Test Sponsor:** ASUSTeK Computer Inc.  
**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021  
**Hardware Availability:** Aug-2021  
**Software Availability:** Mar-2021

## Platform Notes (Continued)

Memory Interleaving = Disabled

```
Sysinfo program /cpull8/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on localhost Mon Nov 1 17:43:58 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 7763 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 2.33.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 48 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): 16
Vendor ID: AuthenticAMD
CPU family: 25
Model: 1
Model name: AMD EPYC 7763 64-Core Processor
Stepping: 1
CPU MHz: 1719.523
CPU max MHz: 2450.0000
CPU min MHz: 1500.0000
BogoMIPS: 4890.71
Virtualization: AMD-V
L1d cache: 32K
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2021

Hardware Availability: Aug-2021

Software Availability: Mar-2021

### Platform Notes (Continued)

```

L1i cache:          32K
L2 cache:           512K
L3 cache:           32768K
NUMA node0 CPU(s): 0-7,128-135
NUMA node1 CPU(s): 8-15,136-143
NUMA node2 CPU(s): 16-23,144-151
NUMA node3 CPU(s): 24-31,152-159
NUMA node4 CPU(s): 32-39,160-167
NUMA node5 CPU(s): 40-47,168-175
NUMA node6 CPU(s): 48-55,176-183
NUMA node7 CPU(s): 56-63,184-191
NUMA node8 CPU(s): 64-71,192-199
NUMA node9 CPU(s): 72-79,200-207
NUMA node10 CPU(s): 80-87,208-215
NUMA node11 CPU(s): 88-95,216-223
NUMA node12 CPU(s): 96-103,224-231
NUMA node13 CPU(s): 104-111,232-239
NUMA node14 CPU(s): 112-119,240-247
NUMA node15 CPU(s): 120-127,248-255
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 pni pclmulqdq
monitor ssse3 fma cx16 pcid 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 bpext perfctr_llc mwaitx cpb
cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase
bmi1 avx2 smep bmi2 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 irperf xsaveerptr wbnoinvd arat npt lbrv svm_lock nrip_save tsc_scale
vmcb_clean flushbyasid decodeassists pausefilter pfthreshold v_vmsave_vmload vgif
umip pku ospke vaes vpclmulqdq 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 4 5 6 7 128 129 130 131 132 133 134 135
node 0 size: 64310 MB
node 0 free: 63789 MB
node 1 cpus: 8 9 10 11 12 13 14 15 136 137 138 139 140 141 142 143
node 1 size: 64506 MB
node 1 free: 64240 MB
node 2 cpus: 16 17 18 19 20 21 22 23 144 145 146 147 148 149 150 151
node 2 size: 64508 MB
node 2 free: 64305 MB

```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2021

Hardware Availability: Aug-2021

Software Availability: Mar-2021

### Platform Notes (Continued)

```

node 3 cpus: 24 25 26 27 28 29 30 31 152 153 154 155 156 157 158 159
node 3 size: 64506 MB
node 3 free: 64332 MB
node 4 cpus: 32 33 34 35 36 37 38 39 160 161 162 163 164 165 166 167
node 4 size: 64474 MB
node 4 free: 64296 MB
node 5 cpus: 40 41 42 43 44 45 46 47 168 169 170 171 172 173 174 175
node 5 size: 64506 MB
node 5 free: 64326 MB
node 6 cpus: 48 49 50 51 52 53 54 55 176 177 178 179 180 181 182 183
node 6 size: 64508 MB
node 6 free: 64319 MB
node 7 cpus: 56 57 58 59 60 61 62 63 184 185 186 187 188 189 190 191
node 7 size: 64494 MB
node 7 free: 64333 MB
node 8 cpus: 64 65 66 67 68 69 70 71 192 193 194 195 196 197 198 199
node 8 size: 64508 MB
node 8 free: 64359 MB
node 9 cpus: 72 73 74 75 76 77 78 79 200 201 202 203 204 205 206 207
node 9 size: 64506 MB
node 9 free: 64356 MB
node 10 cpus: 80 81 82 83 84 85 86 87 208 209 210 211 212 213 214 215
node 10 size: 64508 MB
node 10 free: 64297 MB
node 11 cpus: 88 89 90 91 92 93 94 95 216 217 218 219 220 221 222 223
node 11 size: 64506 MB
node 11 free: 64304 MB
node 12 cpus: 96 97 98 99 100 101 102 103 224 225 226 227 228 229 230 231
node 12 size: 64508 MB
node 12 free: 64355 MB
node 13 cpus: 104 105 106 107 108 109 110 111 232 233 234 235 236 237 238 239
node 13 size: 64506 MB
node 13 free: 64360 MB
node 14 cpus: 112 113 114 115 116 117 118 119 240 241 242 243 244 245 246 247
node 14 size: 64508 MB
node 14 free: 64352 MB
node 15 cpus: 120 121 122 123 124 125 126 127 248 249 250 251 252 253 254 255
node 15 size: 64504 MB
node 15 free: 64349 MB
node distances:
node 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
0: 10 11 12 12 12 12 12 12 32 32 32 32 32 32 32 32
1: 11 10 12 12 12 12 12 12 32 32 32 32 32 32 32 32
2: 12 12 10 11 12 12 12 12 32 32 32 32 32 32 32 32
3: 12 12 11 10 12 12 12 12 32 32 32 32 32 32 32 32
4: 12 12 12 12 10 11 12 12 32 32 32 32 32 32 32 32
5: 12 12 12 12 11 10 12 12 32 32 32 32 32 32 32 32

```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2021

Hardware Availability: Aug-2021

Software Availability: Mar-2021

### Platform Notes (Continued)

6:	12	12	12	12	12	12	10	11	32	32	32	32	32	32	32	32
7:	12	12	12	12	12	12	11	10	32	32	32	32	32	32	32	32
8:	32	32	32	32	32	32	32	32	10	11	12	12	12	12	12	12
9:	32	32	32	32	32	32	32	32	11	10	12	12	12	12	12	12
10:	32	32	32	32	32	32	32	32	12	12	10	11	12	12	12	12
11:	32	32	32	32	32	32	32	32	12	12	11	10	12	12	12	12
12:	32	32	32	32	32	32	32	32	12	12	12	12	10	11	12	12
13:	32	32	32	32	32	32	32	32	12	12	12	12	11	10	12	12
14:	32	32	32	32	32	32	32	32	12	12	12	12	12	12	10	11
15:	32	32	32	32	32	32	32	32	12	12	12	12	12	12	11	10

From /proc/meminfo

```
MemTotal:      1056633732 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

/sys/devices/system/cpu/cpu\*/cpufreq/scaling\_governor has performance

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

```
os-release:
NAME="SLES"
VERSION="15-SP2"
VERSION_ID="15.2"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP2"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp2"
```

uname -a:

```
Linux localhost 5.3.18-22-default #1 SMP Wed Jun 3 12:16:43 UTC 2020 (720aeba) 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
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,
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016  
**Test Sponsor:** ASUSTeK Computer Inc.  
**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021  
**Hardware Availability:** Aug-2021  
**Software Availability:** Mar-2021

### Platform Notes (Continued)

IBPB: conditional, IBRS\_FW, STIBP:  
always-on, RSB filling

CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected  
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Nov 1 17:42

SPEC is set to: /cpul18

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda4	xf	199G	46G	154G	24%	/

```

From /sys/devices/virtual/dmi/id
Vendor:          ASUSTeK COMPUTER INC.
Product:         RS720A-E11-RS12E
Product Family: Server
Serial:          123456789012

```

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 Samsung M386A8K40DM2-CWE 64 GB 4 rank 3200
16x Unknown Unknown

```

```

BIOS:
BIOS Vendor:     American Megatrends Inc.
BIOS Version:    0701
BIOS Date:       08/09/2021
BIOS Revision:   7.1

```

(End of data from sysinfo program)

### Compiler Version Notes

```

=====
C      | 502.gcc_r(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: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
-----
=====

```

(Continued on next page)





# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021

**Hardware Availability:** Aug-2021

**Software Availability:** Mar-2021

### Compiler Version Notes (Continued)

C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(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 | 502.gcc\_r(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: i386-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin  
-----

=====  
C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(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++ | 523.xalanbmk\_r(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: i386-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin  
-----

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalanbmk\_r(base)  
| 531.deepsjeng\_r(base, peak) 541.leela\_r(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)

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021

**Hardware Availability:** Aug-2021

**Software Availability:** Mar-2021

### Compiler Version Notes (Continued)

Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin

=====  
C++ | 523.xalancbmk\_r(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: i386-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalancbmk\_r(base)  
| 531.deepsjeng\_r(base, peak) 541.leela\_r(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 | 548.exchange2\_r(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



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021

**Hardware Availability:** Aug-2021

**Software Availability:** Mar-2021

## Base Portability Flags

```

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LINUX -DSPEC_LP64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

```

## Base Optimization Flags

### C benchmarks:

```

-m64 -Wl,-allow-multiple-definition -Wl,-mllvm -Wl,-enable-licm-vrp
-flto -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 -ffast-math
-march=znver3 -fveclib=AMDLIBM -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
-lamdlibm -ljemalloc -lflang -lflangrti

```

### C++ benchmarks:

```

-m64 -std=c++98 -Wl,-mllvm -Wl,-do-block-reorder=aggressive -flto
-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 -ffast-math
-march=znver3 -fveclib=AMDLIBM -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 -lamdlibm
-ljemalloc -lflang -lflangrti

```

### Fortran benchmarks:

```

-m64 -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split

```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**ASUSTeK Computer Inc.**

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021

**Hardware Availability:** Aug-2021

**Software Availability:** Mar-2021

## Base Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-flto -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 -ffast-math  
-march=znver3 -fveclib=AMDLIBM -z muldefs -mllvm -unroll-aggressive  
-mllvm -unroll-threshold=500 -lamdlibm -ljemalloc -lflang -lflangrti
```

## Base Other Flags

C benchmarks:

```
-Wno-unused-command-line-argument
```

C++ benchmarks:

```
-Wno-unused-command-line-argument
```

## Peak Compiler Invocation

C benchmarks:

```
clang
```

C++ benchmarks:

```
clang++
```

Fortran benchmarks:

```
flang
```

## Peak Portability Flags

```
500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64  
502.gcc_r: -D_FILE_OFFSET_BITS=64  
505.mcf_r: -DSPEC_LP64  
520.omnetpp_r: -DSPEC_LP64  
523.xalancbmk_r: -DSPEC_LINUX -DSPEC_LP64  
525.x264_r: -DSPEC_LP64  
531.deepsjeng_r: -DSPEC_LP64  
541.leela_r: -DSPEC_LP64  
548.exchange2_r: -DSPEC_LP64  
557.xz_r: -DSPEC_LP64
```



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## ASUSTeK Computer Inc.

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021

**Hardware Availability:** Aug-2021

**Software Availability:** Mar-2021

## Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -m64 -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -flto
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-fprofile-instr-generate(pass 1)
-fprofile-instr-use(pass 2) -Ofast -march=znver3
-fveclib=AMDLIBM -fstruct-layout=7
-mllvm -unroll-threshold=50 -fremap-arrays
-flv-function-specialization -mllvm -inline-threshold=1000
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=false
-mllvm -function-specialize -mllvm -enable-licm-vrp
-mllvm -reduce-array-computations=3 -lamdlibm -ljemalloc
```

```
502.gcc_r: -m32 -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -flto
-Wl,-mllvm -Wl,-function-specialize -Ofast -march=znver3
-fveclib=AMDLIBM -fstruct-layout=7
-mllvm -unroll-threshold=50 -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 -fgnu89-inline
-ljemalloc
```

```
505.mcf_r: -m64 -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -flto
-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 -fstruct-layout=7
-mllvm -unroll-threshold=50 -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 -lamdlibm -ljemalloc
```

525.x264\_r: basepeak = yes

557.xz\_r: Same as 505.mcf\_r

C++ benchmarks:

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**ASUSTeK Computer Inc.**

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2021

Hardware Availability: Aug-2021

Software Availability: Mar-2021

## Peak Optimization Flags (Continued)

520.omnetpp\_r: -m64 -std=c++98

```
-Wl,-mllvm -Wl,-do-block-reorder=aggressive -flto
-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 -finline-aggressive
-mllvm -unroll-threshold=100 -flv-function-specialization
-mllvm -enable-licm-vrp -mllvm -reroll-loops
-mllvm -aggressive-loop-unswitch
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true
-mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-lamdlibm -ljemalloc
```

523.xalancbmk\_r: -m32 -Wl,-mllvm -Wl,-do-block-reorder=aggressive -flto

```
-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 -finline-aggressive
-mllvm -unroll-threshold=100 -flv-function-specialization
-mllvm -enable-licm-vrp -mllvm -reroll-loops
-mllvm -aggressive-loop-unswitch
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true
-mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-ljemalloc
```

531.deepsjeng\_r: basepeak = yes

541.leela\_r: basepeak = yes

Fortran benchmarks:

548.exchange2\_r: basepeak = yes

## Peak Other Flags

C benchmarks (except as noted below):

```
-Wno-unused-command-line-argument
```

```
502.gcc_r: -L/usr/lib -Wno-unused-command-line-argument
-L/spo/bin/cpu2017v115aocc3/amd_rate_aocc300_milan_A_lib/32
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**ASUSTeK Computer Inc.**

ASUS RS720A-E11(KMPP-D32) Server System  
2.45 GHz, AMD EPYC 7763

SPECrate®2017\_int\_base = 861

SPECrate®2017\_int\_peak = 913

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Nov-2021

**Hardware Availability:** Aug-2021

**Software Availability:** Mar-2021

## Peak Other Flags (Continued)

C++ benchmarks (except as noted below):

-Wno-unused-command-line-argument

523.xalancbmk\_r: -L/usr/lib -Wno-unused-command-line-argument

-L/sppo/bin/cpu2017v115aocc3/amd\_rate\_aocc300\_milan\_A\_lib/32

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

<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-AMD-Milan-V1.4.html>

<http://www.spec.org/cpu2017/flags/aocc300-flags-A1.html>

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

<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-AMD-Milan-V1.4.xml>

<http://www.spec.org/cpu2017/flags/aocc300-flags-A1.xml>

SPEC CPU and SPECrate 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 v1.1.8 on 2021-11-01 05:43:58-0400.

Report generated on 2021-12-07 16:58:49 by CPU2017 PDF formatter v6442.

Originally published on 2021-12-07.