**SPEC CPU®2017 Integer Rate Result**

ASUStek Computer Inc.  
ASUS RS720-E11-RS12U  
(1.90 GHz, Intel Xeon Gold 5411N)

**SPECrates®2017_int_base = 219**  
**SPECrates®2017_int_peak = 226**

**CPU2017 License:** 9016  
**Test Sponsor:** ASUStek Computer Inc.  
**Tested by:** ASUStek Computer Inc.  
**Software Availability:** Dec-2022  
**Hardware Availability:** Feb-2023  
**Test Date:** Sep-2023

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**Hardware**

**CPU Name:** Intel Xeon Gold 5411N  
**Max MHz:** 3900  
**Nominal:** 1900  
**Enabled:** 24 cores, 1 chip, 2 threads/core  
**Orderable:** 1 chip  
**Cache L1:** 32 KB I + 48 KB D on chip per core  
**L2:** 2 MB I+D on chip per core  
**L3:** 45 MB I+D on chip per chip  
**Other:** None  
**Memory:** 512 GB (8 x 64 GB 2Rx4 PC5-4800B-R, running at 4400)  
**Storage:** 1 x 1.6 TB PCIe NVMe SSD  
**Other:** None

---

**Software**

**OS:** SUSE Linux Enterprise Server 15 SP4 (x86_64)  
**Kernel:** 5.14.21-150400.22-default  
**Compiler:** C/C++; Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;  
**Parallel:** No  
**Firmware:** Version 0701 released May-2023  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 64-bit  
**Peak Pointers:** 32/64-bit  
**Other:** jemalloc memory allocator V5.0.1  
**Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage.
SPEC CPU®2017 Integer Rate Result

ASUSTeK Computer Inc.

ASUS RS720-E11-RS12U
(1.90 GHz, Intel Xeon Gold 5411N)

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

Test Date: Sep-2023
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>48</td>
<td>494</td>
<td>155</td>
<td>494</td>
<td>155</td>
<td>507</td>
<td>151</td>
<td>494</td>
<td>155</td>
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<td>151</td>
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<tr>
<td>502.gcc_r</td>
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<td>359</td>
<td>189</td>
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<tr>
<td>505.mcf_r</td>
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<tr>
<td>520.omnetpp_r</td>
<td>48</td>
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<td>164</td>
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<td>523.xalancbmk_r</td>
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<tr>
<td>525.x264_r</td>
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</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>48</td>
<td>373</td>
<td>147</td>
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<td>136</td>
<td>583</td>
<td>136</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>48</td>
<td>295</td>
<td>426</td>
<td>296</td>
<td>424</td>
<td>290</td>
<td>433</td>
<td>295</td>
<td>426</td>
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</tr>
<tr>
<td>557.xz_r</td>
<td>48</td>
<td>508</td>
<td>102</td>
<td>510</td>
<td>102</td>
<td>512</td>
<td>101</td>
<td>508</td>
<td>102</td>
<td>510</td>
<td>102</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

SPEC has ruled that the compiler used for this result was performing a compilation that specifically improves the performance of the 523.xalancbmk_r / 623.xalanchmk_s benchmarks using a priori knowledge of the SPEC code and dataset to perform a transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4 https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer publish results using this optimization.

This result is left in the SPEC results database for historical reference.

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
OS set to performance mode via cpupower frequency-set -g performance

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/cpu119/lib/intel64:/cpu119/lib/ia32:/cpu119/je5.0.1-32"
MALLOC_CONF = "retain:true"
ASUSTeK Computer Inc.  
ASUS RS720-E11-RS12U  
(1.90 GHz, Intel Xeon Gold 5411N)

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

**General Notes**

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default
Filesystem page cache synced and cleared with:
  sync; echo 3>/proc/sys/vm/drop_caches
  runcpu command invoked through numactl i.e.:
  numactl --interleave=all runcpu <etc>
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, a general purpose malloc implementation built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

**Platform Notes**

BIOS Configuration:
  VT-d = Disabled
  Patrol Scrub = Disabled
  SNC = Enable SNC2 (2-clusters)
  Engine Boost = Aggressive
  SR-IOV Support = Disabled

BMC Configuration:
  Fan mode = Full speed mode

Sysinfo program /cpu19/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Fri Sep 22 17:12:35 2023

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

---

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4. ulimit -a
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7. lscpu
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10. who -r
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12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/klhugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id

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

21. `dmidecode`
22. `BIOS`

```
-----------------------------------------------------------------------------
1. `uname -a`
Linux localhost 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18 UTC 2022 (49db222)
 x86_64 x86_64 x86_64 GNU/Linux
-----------------------------------------------------------------------------
2. `w`
17:12:35 up 0 min,  1 user,  load average: 3.77, 1.23, 0.43
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
root     tty1     -                17:12    7.00s  0.87s  0.00s -bash
-----------------------------------------------------------------------------
3. `Username`
From environment variable $USER: root
-----------------------------------------------------------------------------
4. `ulimit -a`
core file size          (blocks, -c) unlimited
data seg size           (kbytes, -d) unlimited
scheduling priority             (-e) 0
file size               (blocks, -f) unlimited
pending signals                 (-l) 2062589
max locked memory       (kbytes, -l) 64
max memory size         (kbytes, -m) unlimited
open files                      (-n) 1024
pipe size            (512 bytes, -p) 8
POSIX message queues     (bytes, -q) 819200
real-time priority              (-r) 0
stack size              (kbytes, -s) unlimited
cpu time               (seconds, -t) unlimited
max user processes              (-u) 2062589
virtual memory          (kbytes, -v) unlimited
file locks                      (-x) unlimited
-----------------------------------------------------------------------------
5. `sysinfo process ancestry`
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-bash
-bash
```
`runcpu --nobuild --action validate --define default-platform-flags --define numcopies=48 -c`
`ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=24 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate`
`runcpu --nobuild --action validate --define default-platform-flags --define numcopies=48 --configfile`
`ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=24 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
--runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile`
`$SPEC/tmp/CPU2017.993/templogs/preenv.intrate.993.0.log --lognum 993.0 --from_runcpu 2`
`specperl $SPEC/bin/sysinfo`  
`$SPEC = /cpu119`
```
-----------------------------------------------------------------------------
6. `/proc/cpuinfo`
  model name : Intel(R) Xeon(R) Gold 5411N
  vendor_id : GenuineIntel
```

(Continued on next page)
Platform Notes (Continued)

cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2b000461
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 24
siblings       : 48
1 physical ids (chips)
48 processors (hardware threads)
physical id 0: core ids 0-23
physical id 0: apic ids 0-47
Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.2:
Architecture:                    x86_64
CPU op-mode(s):                  32-bit, 64-bit
Address sizes:                   46 bits physical, 57 bits virtual
Byte Order:                      Little Endian
CPU(s):                          48
On-line CPU(s) list:             0-47
Vendor ID:                       GenuineIntel
Model name:                      Intel(R) Xeon(R) Gold 5411N
CPU family:                      6
Model:                           143
Thread(s) per core:              2
Core(s) per socket:              24
Socket(s):                       1
Stepping:                        8
CPU max MHz:                     3900.0000
CPU min MHz:                     800.0000
BogoMIPS:                        3900.00
Flags:                           fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdelbg rdtsscp
lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology
nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1
sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand
lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
invpcid_single intel_pnpin cdpl_cdp 1sd bda mbi ibpb ibrs ibrs_enhanced
Virtualization:                  VT-x
L1d cache:                       1.1 MiB (24 instances)
L1i cache:                       768 KiB (24 instances)
L2 cache:                        48 MiB (24 instances)
L3 cache:                        45 MiB (1 instance)
NUMA node(s):                     2
NUMA node0 CPU(s):               0-11,24-35

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SPECrate®2017_int_base = 219
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Test Date: Sep-2023
Software Availability: Dec-2022
Hardware Availability: Feb-2023

Platform Notes (Continued)

NUMA node1 CPU(s): 12-23,36-47
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
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; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbds: 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; Enhanced IBRS, IBPB conditional, RSB filling
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Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbds: Not affected

From lscpu --cache:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1d</td>
<td>48K</td>
<td>1.1M</td>
<td>12</td>
<td>Data</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L1i</td>
<td>32K</td>
<td>768K</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L2</td>
<td>2M</td>
<td>48M</td>
<td>16</td>
<td>Unified</td>
<td>2</td>
<td>2048</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L3</td>
<td>45M</td>
<td>45M</td>
<td>15</td>
<td>Unified</td>
<td>3</td>
<td>49152</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

Note: a numactl 'node' might or might not correspond to a physical chip.

8. numactl --hardware

9. /proc/meminfo
MemTotal: 528047364 kB

10. who -r
run-level 3 Sep 22 17:12

11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
Default Target Status
multi-user running

12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager getty@ haveged irqbalance issue-generator kbdsettings klog 1vm2-monitor nacd nvmefc-boot-connections postfix purge-kernels rollback rsyslog smartd sshd                     wicked wicked-auto4 wickedd-auto4 wickedd-dhcpc4 wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs

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Platform Notes (Continued)

systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2
indirect
wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
   root=UUID=1821a225-9785-4821-9a33-99bd3ded8cae
   splash=silent
   mitigations=auto
   quiet
   security=apparmor

14. cpupower frequency-info
   analyzing CPU 0:
   current policy: frequency should be within 800 MHz and 3.90 GHz.
   The governor "performance" may decide which speed to use
   within this range.
   boost state support:
   Supported: yes
   Active: yes

15. sysctl
   kernel.numa_balancing 1
   kernel.randomize_va_space 2
   vm.compaction_proactiveness 20
   vm.dirty_background_bytes 0
   vm.dirty_background_ratio 10
   vm.dirty_bytes 0
   vm.dirty_expire_centisecs 3000
   vm.dirty_ratio 20
   vm.dirty_writeback_centisecs 500
   vm.dirtytime_expire_seconds 43200
   vm.extfrag_threshold 500
   vm.min_unmapped_ratio 1
   vm.nr_hugepages 0
   vm.nr_hugepages_mempolicy 0
   vm.nr_overcommit_hugepages 0
   vm.swappiness 60
   vm.watermark_boost_factor 15000
   vm.watermark_scale_factor 10
   vm.zone_reclaim_mode 0

16. /sys/kernel/mm/transparent_hugepage
   defrag always defer defer+madvise [madvise] never
   enabled [always] madvise never
   hpage_pmd_size 2097152
   shmem_enabled always within_size advise [never] deny force

17. /sys/kernel/mm/transparent_hugepage/khugepaged
   alloc_sleep_millisecs 60000
   defrag 1
   max_ptes_none 511
   max_ptes_shared 256
   max_ptes_swap 64
   pages_to_scan 4096
   scan_sleep_millisecs 10000

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Platform Notes (Continued)

18. OS release
From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP4

19. Disk information
SPEC is set to: /cpu119
Filesystem Type Size Used Avail Use% Mounted on
/dev/nvme0n1p8 xfs 1.3T 25G 1.2T 2% /

20. /sys/devices/virtual/dmi/id
Vendor: ASUSTeK COMPUTER INC.
Product: RS720-E11-RS12U
Product Family: Server
Serial: R1SOMD000002

21. dmidecode
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:
8x Samsung M321R8GA0BB0-CQKV 64 GB 2 rank 4800, configured at 4400

22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends Inc.
BIOS Version: 0701
BIOS Date: 05/02/2023
BIOS Revision: 7.1

Compiler Version Notes

C      502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

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)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

C      502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201
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Compiler Version Notes (Continued)

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| 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)          |
------------------------------------------------------------------------------------------------------------
| C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak) |
|         | 541.leela_r(base, peak)       |
------------------------------------------------------------------------------------------------------------
| Fortran | 548.exchange2_r(base, peak)   |
------------------------------------------------------------------------------------------------------------

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
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

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<th>Test Date</th>
<th>Test Sponsor</th>
<th>ASUSTeK Computer Inc.</th>
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<td>9016</td>
<td>Sep-2023</td>
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</table>

## SPECrate®2017 int_base = 219  
SPECrate®2017 int_peak = 226

## Base Optimization Flags

**C benchmarks:**
- `-w` `-std=c11` `-m64` `-Wl,-z,muldefs` `-xsapphirerapids` `-O3` `-ffast-math`  
- `-flto` `-mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`  
- `-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`  
- `-lqkmalloc`

**C++ benchmarks:**
- `-w` `-std=c++14` `-m64` `-Wl,-z,muldefs` `-xsapphirerapids` `-O3` `-ffast-math`  
- `-flto` `-mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`  
- `-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`  
- `-lqkmalloc`

**Fortran benchmarks:**
- `-w` `-m64` `-Wl,-z,muldefs` `-xsapphirerapids` `-O3` `-ffast-math` `-flto`  
- `-mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`  
- `-nostandard-realloc-lhs` `-align array32byte` `-auto`  
- `-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`  
- `-lqkmalloc`

## Peak Compiler Invocation

**C benchmarks:**
- `icx`

**C++ benchmarks:**
- `icpx`

**Fortran benchmarks:**
- `ifx`

## Peak Portability Flags

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

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

**ASUSTeK Computer Inc.**  
ASUS RS720-E11-RS12U  
(1.90 GHz, Intel Xeon Gold 5411N)

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**CPU2017 License:** 9016  
**Test Sponsor:** ASUSTeK Computer Inc.  
**Tested by:** ASUSTeK Computer Inc.  
**Test Date:** Sep-2023  
**Hardware Availability:** Feb-2023  
**Software Availability:** Dec-2022

### Peak Portability Flags (Continued)

557.xz_r: -DSPEC_LP64

### Peak Optimization Flags

**C benchmarks:**

500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs  
-fprofile-generate(pass 1)  
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)  
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse  
-funroll-loops -gopt-mem-layout-trans=4  
-fno-strict-overflow  
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin  
-lqkmalloc

502.gcc_r: -m32  
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/ia32_lin  
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)  
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)  
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse  
-funroll-loops -gopt-mem-layout-trans=4  
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-gopt-mem-layout-trans=4 -fno-alias  
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin  
-lqkmalloc

557.xz_r: basepeak = yes

**C++ benchmarks:**

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: basepeak = yes

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

(Continued on next page)
ASUSTeK Computer Inc.

Spec CPU®2017 Integer Rate Result

ASUS RS720-E11-RS12U
(1.90 GHz, Intel Xeon Gold 5411N)

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Peak Optimization Flags (Continued)

Fortran benchmarks:

548.exchange2_r.basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z13-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z13-V1.2.xml

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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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