SPEC CPU®2017 Integer Speed Result

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ASUSTeK Computer Inc.

ASUS RS720-E11-RS12U
(1.80 GHz, Intel Xeon Gold 6428N)

$SPECspeed®2017\_int\_base = 15.1$
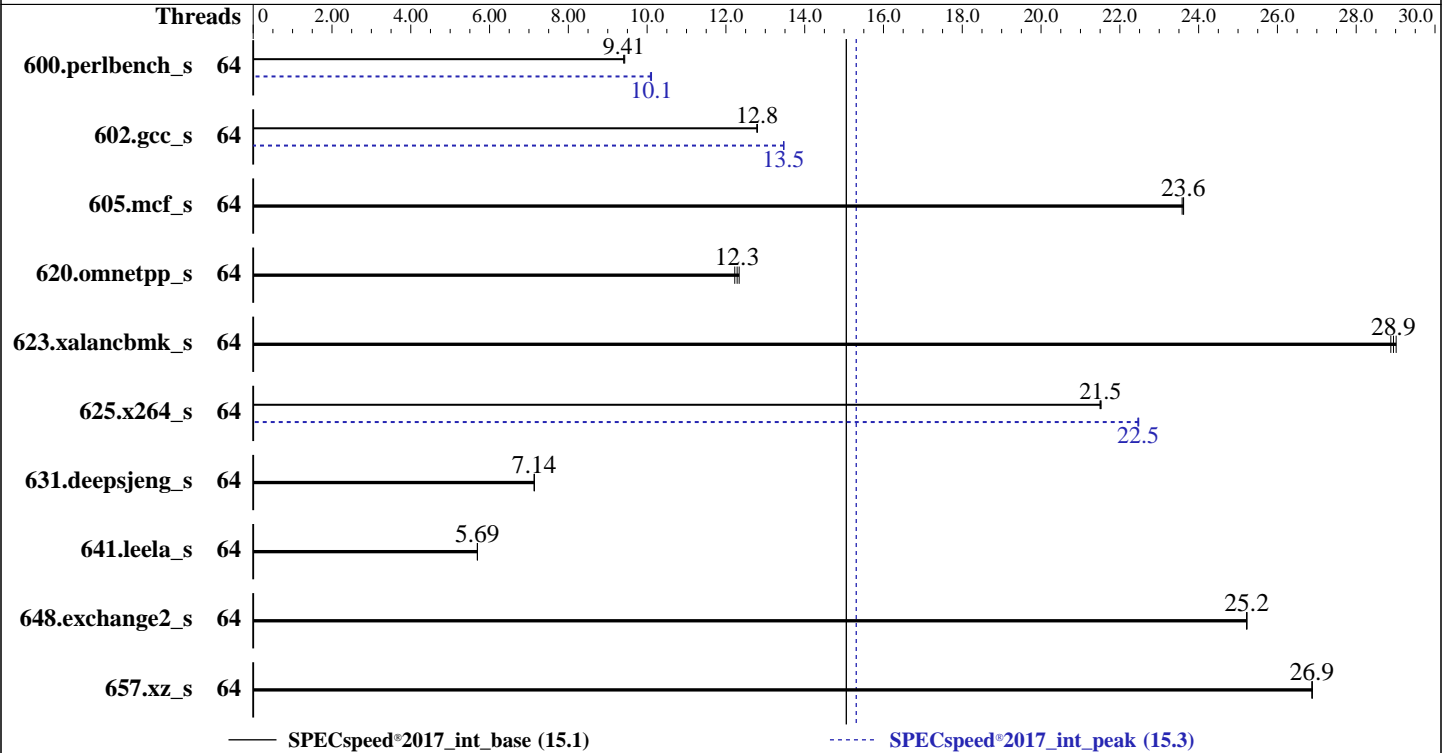
$SPECspeed®2017\_int\_peak = 15.3$

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

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

Threads			Value
600.perlbench_s	64	base	9.41
		peak	10.1
602.gcc_s	64	base	12.8
		peak	13.5
605.mcf_s	64		23.6
620.omnetpp_s	64		12.3
623.xalancbmk_s	64		28.9
625.x264_s	64	base	21.5
		peak	22.5
631.deepsjeng_s	64		7.14
641.leela_s	64		5.69
648.exchange2_s	64		25.2
657.xz_s	64		26.9

SPECspeed®2017_int_base (15.1)   SPECspeed®2017_int_peak (15.3)

Hardware

CPU Name: Intel Xeon Gold 6428N
 Max MHz: 3800
 Nominal: 1800
Enabled: 64 cores, 2 chips
Orderable: 1, 2 chip(s)
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 60 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R, running at 4000)
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: Yes
Firmware: Version 0701 released May-2023
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 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.

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

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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	64	189	9.41	**189**	**9.41**	188	9.43	64	176	10.1	176	10.1	**176**	**10.1**
602.gcc_s	64	**311**	**12.8**	311	12.8	311	12.8	64	296	13.5	**296**	**13.5**	296	13.5
605.mcf_s	64	200	23.6	200	23.6	**200**	**23.6**	64	200	23.6	200	23.6	**200**	**23.6**
620.omnetpp_s	64	133	12.2	132	12.3	**133**	**12.3**	64	133	12.2	132	12.3	**133**	**12.3**
623.xalancbmk_s	64	48.8	29.0	**49.0**	**28.9**	49.1	28.9	64	48.8	29.0	**49.0**	**28.9**	49.1	28.9
625.x264_s	64	82.1	21.5	82.0	21.5	**82.0**	**21.5**	64	78.5	22.5	**78.5**	**22.5**	78.5	22.5
631.deepsjeng_s	64	201	7.13	**201**	**7.14**	201	7.14	64	201	7.13	**201**	**7.14**	201	7.14
641.leela_s	64	300	5.69	300	5.69	**300**	**5.69**	64	300	5.69	300	5.69	**300**	**5.69**
648.exchange2_s	64	117	25.2	117	25.2	**117**	**25.2**	64	117	25.2	117	25.2	**117**	**25.2**
657.xz_s	64	230	26.9	230	26.9	**230**	**26.9**	64	230	26.9	230	26.9	**230**	**26.9**

SPECspeed®2017_int_base =	**15.1**
SPECspeed®2017_int_peak =	**15.3**

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.xalancbmk_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.
```

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:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/cpu119/lib/intel64:/cpu119/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

General Notes

```
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Redhat Enterprise Linux 8.0
Transparent Huge Pages enabled by default
```

(Continued on next page)

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General Notes (Continued)

```
 Prior to runcpu invocation
 Filesystem page cache synced and cleared with:
 sync; echo 3>        /proc/sys/vm/drop_caches
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
 sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS Configuration:
VT-d = Disabled
Patrol Scrub = Disabled
Hyper-Threading = Disable
Engine Boost = Aggressive
SR-IOV Support = Disabled
BMC Configuration:
Fan mode = Full speed mode

 Sysinfo program /cpu119/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Tue Jul 18 02:33:19 2023

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

 -----------------------------------------------------------
 Table of contents
 -----------------------------------------------------------
  1. uname -a
  2. w
  3. Username
  4. ulimit -a
  5. sysinfo process ancestry
  6. /proc/cpuinfo
  7. lscpu
  8. numactl --hardware
  9. /proc/meminfo
 10. who -r
 11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
 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/khugepaged
 18. OS release
 19. Disk information
 20. /sys/devices/virtual/dmi/id
 21. dmidecode
 22. BIOS
 -----------------------------------------------------------


 -----------------------------------------------------------
  1. uname -a
```

(Continued on next page)

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Platform Notes (Continued)

```
  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
   02:33:19 up 16:50,  2 users,  load average: 46.69, 56.12, 57.56
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                Mon09   16:49m  0.84s  0.00s /bin/bash ./speed.sh
  root     tty2     -                15:39   10:52m  0.03s  0.03s -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                 (-i) 4126920
  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) 4126920
  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
 /bin/bash ./speed.sh
 /bin/bash ./speed.sh
 runcpu --nobuild --action validate --define default-platform-flags -c
   ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=64 --tune base,peak -o all --define
   intspeedaffinity --define drop_caches intspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=64 --tune base,peak --output_format all
   --define intspeedaffinity --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed
   intspeed --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.659/templogs/preenv.intspeed.659.0.log
   --lognum 659.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /cpu119


  --------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Gold 6428N
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b000461
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
```

(Continued on next page)

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Platform Notes (Continued)

```
      cpu cores       : 32
      siblings        : 32
      2 physical ids (chips)
      64 processors (hardware threads)
      physical id 0: core ids 0-31
      physical id 1: core ids 0-31
      physical id 0: apicids
      0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62
      physical id 1: apicids
      128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,1
      80,182,184,186,188,190
  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):                   64
    On-line CPU(s) list:      0-63
    Vendor ID:                GenuineIntel
    Model name:               Intel(R) Xeon(R) Gold 6428N
    CPU family:               6
    Model:                    143
    Thread(s) per core:       1
    Core(s) per socket:       32
    Socket(s):                2
    Stepping:                 8
    CPU max MHz:              3800.0000
    CPU min MHz:              800.0000
    BogoMIPS:                 3600.00
    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 pdpe1gb rdtscp
                              lm constant_tsc art 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_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced
                              tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle
                              avx2 smep bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap
                              avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
                              xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                              cqm_mbm_local split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida
                              arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku
                              ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                              tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b
                              enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16
                              amx_tile flush_l1d arch_capabilities
    Virtualization:           VT-x
    L1d cache:                3 MiB (64 instances)
    L1i cache:                2 MiB (64 instances)
    L2 cache:                 128 MiB (64 instances)
    L3 cache:                 120 MiB (2 instances)
    NUMA node(s):             2
    NUMA node0 CPU(s):        0-31
```

(Continued on next page)

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Platform Notes (Continued)

```
  NUMA node1 CPU(s):          32-63
  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 Tsx async abort:  Not affected

From lscpu --cache:
    NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
    L1d     48K       3M  12 Data          1    64       1             64
    L1i     32K       2M   8 Instruction   1    64       1             64
    L2       2M     128M  16 Unified       2  2048       1             64
    L3      60M     120M  15 Unified       3 65536       1             64

  ---------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0-31
  node 0 size: 515695 MB
  node 0 free: 514418 MB
  node 1 cpus: 32-63
  node 1 size: 516058 MB
  node 1 free: 513162 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10

  ---------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056516088 kB

  ---------------------------------------------------------------
10. who -r
   run-level 3 Jul 17 09:43

  ---------------------------------------------------------------
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 lvm2-monitor nscd nvmefc-boot-connections
                    postfix purge-kernels rollback rsyslog smartd sshd wicked wickedd-auto4 wickedd-dhcp4
                    wickedd-dhcp6 wickedd-nanny
   enabled-runtime  systemd-remount-fs
   disabled         autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                    chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
                    firewalld gpm grub2-once haveged-switch-root hwloc-dump-hwdata ipmi ipmievd
                    issue-add-ssh-keys kexec-load lunmask man-db-create multipath nfs nfs-blkmap
                    nvmf-autoconnect rdisc rpcbind rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts
                    snmpd snmptrapd svnserve systemd-boot-check-no-failures systemd-network-generator
```

(Continued on next page)

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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 3.80 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   24G  1.2T   2% /

   ----------------------------------------------------------
   20. /sys/devices/virtual/dmi/id
       Vendor:          ASUSTeK COMPUTER INC.
       Product:         RS720-E11-RS12U
       Product Family: Server
       Serial:          R1S0MD000002

   ----------------------------------------------------------
   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:
       16x Samsung M321R8GA0BB0-CQKVG 64 GB 2 rank 4800, configured at 4000


   ----------------------------------------------------------
   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      | 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)
------------------------------------------------------------------------------
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++    | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
       | 641.leela_s(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.
------------------------------------------------------------------------------


==============================================================================
Fortran | 648.exchange2_s(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
```

(Continued on next page)

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CPU2017 License: 9016
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Tested by: ASUSTeK Computer Inc.

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

Compiler Version Notes (Continued)

```
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------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Base Portability Flags

600.perlbench_s: `-DSPEC_LP64 -DSPEC_LINUX_X64`
602.gcc_s: `-DSPEC_LP64`
605.mcf_s: `-DSPEC_LP64`
620.omnetpp_s: `-DSPEC_LP64`
623.xalancbmk_s: `-DSPEC_LP64 -DSPEC_LINUX`
625.x264_s: `-DSPEC_LP64`
631.deepsjeng_s: `-DSPEC_LP64`
641.leela_s: `-DSPEC_LP64`
648.exchange2_s: `-DSPEC_LP64`
657.xz_s: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
`-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp`
`-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

C++ benchmarks:
`-m64 -std=c++14 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math`
`-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Fortran benchmarks:
`-m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`

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

SPEC CPU®2017 Integer Speed Result

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ASUSTeK Computer Inc.

ASUS RS720-E11-RS12U
(1.80 GHz, Intel Xeon Gold 6428N)

SPECspeed®2017_int_base = 15.1

SPECspeed®2017_int_peak = 15.3

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Base Optimization Flags (Continued)

Fortran benchmarks (continued):
```
-nostandard-realloc-lhs -align array32byte
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

Fortran benchmarks:
```
ifx
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

600.perlbench_s: `-m64 -std=c11 -Wl,-z,muldefs -fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast`(pass 1) `-xCORE-AVX512 -O3 -ffast-math`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-fiopenmp -DSPEC_OPENMP -fno-strict-overflow`
`-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

602.gcc_s: `-m64 -std=c11 -Wl,-z,muldefs -fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast`(pass 1) `-xCORE-AVX512 -O3 -ffast-math`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib`
`-ljemalloc`

605.mcf_s: `basepeak = yes`

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ASUSTeK Computer Inc.

ASUS RS720-E11-RS12U
(1.80 GHz, Intel Xeon Gold 6428N)

SPECspeed®2017_int_base = 15.1

SPECspeed®2017_int_peak = 15.3

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Peak Optimization Flags (Continued)

625.x264_s: `-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

657.xz_s: `basepeak = yes`

C++ benchmarks:

620.omnetpp_s: `basepeak = yes`

623.xalancbmk_s: `basepeak = yes`

631.deepsjeng_s: `basepeak = yes`

641.leela_s: `basepeak = yes`

Fortran benchmarks:

648.exchange2_s: `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
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html

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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
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.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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