SPEC CPU®2017 Integer Speed Result

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ASUSTeK Computer Inc.

ASUS RS720-E11-RS12U
(2.80 GHz, Intel Xeon Gold 6526Y)

$SPECspeed^{®}2017\_int\_base = 14.2$

$SPECspeed^{®}2017\_int\_peak = 14.5$

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

Test Date: Apr-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Threads		
600.perlbench_s	64	9.84 / 11.0
602.gcc_s	64	13.3 / 14.0
605.mcf_s	64	24.4
620.omnetpp_s	64	11.0
623.xalancbmk_s	64	13.7
625.x264_s	64	22.8 / 23.6
631.deepsjeng_s	64	7.40
641.leela_s	64	5.88
648.exchange2_s	64	26.1
657.xz_s	64	27.6

SPECspeed®2017_int_base (14.2)   SPECspeed®2017_int_peak (14.5)

Hardware

CPU Name: Intel Xeon Gold 6526Y
 Max MHz: 3900
 Nominal: 2800
Enabled: 32 cores, 2 chips, 2 threads/core
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: 37.5 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-5600B-R, running at 5200)
Storage: 1 x 1.6 TB PCIe NVMe SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise High Performance Computing 15 SP5 (x86_64) Kernel 5.14.21-150500.53-default
Compiler: C/C++: Version 2024.0.2 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2024.0.2 of Intel Fortran Compiler for Linux;
Parallel: Yes
Firmware: Version 2201 released Dec-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.

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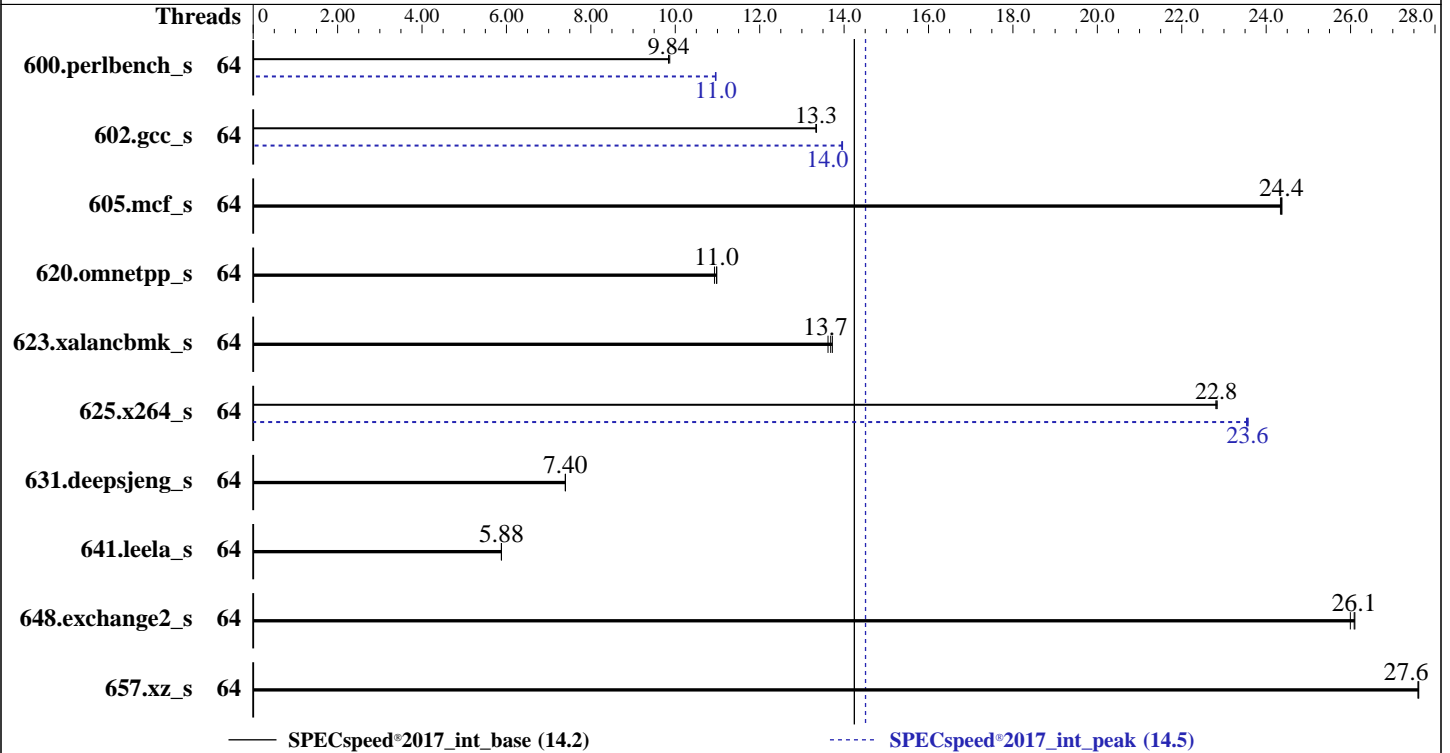SPECspeed®2017_int_peak = 14.5

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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	**180**	**9.84**	180	9.84	180	9.87	64	**162**	**11.0**	162	11.0	162	11.0
602.gcc_s	64	**298**	**13.3**	298	13.3	299	13.3	64	286	13.9	**285**	**14.0**	285	14.0
605.mcf_s	64	194	24.4	194	24.3	**194**	**24.4**	64	194	24.4	194	24.3	**194**	**24.4**
620.omnetpp_s	64	148	11.0	149	10.9	**149**	**11.0**	64	148	11.0	149	10.9	**149**	**11.0**
623.xalancbmk_s	64	**104**	**13.7**	103	13.7	104	13.6	64	**104**	**13.7**	103	13.7	104	13.6
625.x264_s	64	77.3	22.8	77.2	22.8	**77.3**	**22.8**	64	**74.9**	**23.6**	74.8	23.6	75.0	23.5
631.deepsjeng_s	64	**194**	**7.40**	194	7.40	194	7.40	64	**194**	**7.40**	194	7.40	194	7.40
641.leela_s	64	**290**	**5.88**	290	5.88	290	5.88	64	**290**	**5.88**	290	5.88	290	5.88
648.exchange2_s	64	113	26.0	113	26.1	**113**	**26.1**	64	113	26.0	113	26.1	**113**	**26.1**
657.xz_s	64	224	27.6	**224**	**27.6**	224	27.6	64	224	27.6	**224**	**27.6**	224	27.6
SPECspeed®2017_int_base =		**14.2**												
SPECspeed®2017_int_peak =		**14.5**												

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

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 = "/ic24u0/lib/intel64:/ic24u0/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 Red Hat Enterprise Linux 8.0
Transparent Huge Pages enabled by default
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
```

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Platform Notes

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

Sysinfo program /ic24u0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Mon Apr 29 23:56:42 2024

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 (249.16+suse.171.gdad0071f15)
 12. Services, from systemctl list-unit-files
 13. Linux kernel boot-time arguments, from /proc/cmdline
 14. cpupower frequency-info
 15. tuned-adm active
 16. sysctl
 17. /sys/kernel/mm/transparent_hugepage
 18. /sys/kernel/mm/transparent_hugepage/khugepaged
 19. OS release
 20. Disk information
 21. /sys/devices/virtual/dmi/id
 22. dmidecode
 23. BIOS
----------------------------------------------------------

----------------------------------------------------------
1. uname -a
  Linux localhost 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b630043)
  x86_64 x86_64 x86_64 GNU/Linux

----------------------------------------------------------
2. w
  23:56:42 up 13:18,  2 users,  load average: 6.16, 5.91, 3.54
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                10:39    6:25m  0.84s  0.00s /bin/bash ./speed.sh
  root     tty2     -                10:39    6:25m  0.03s  0.03s -bash

----------------------------------------------------------
3. Username
  From environment variable $USER:  root

----------------------------------------------------------
4. ulimit -a
```

(Continued on next page)

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Platform Notes (Continued)

```
   core file size          (blocks, -c) unlimited
   data seg size           (kbytes, -d) unlimited
   scheduling priority             (-e) 0
   file size               (blocks, -f) unlimited
   pending signals                 (-i) 4126913
   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) 4126913
   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
   ic2024.0.2-lin-sapphirerapids-speed-20231213.cfg --define cores=64 --tune base,peak -o all --define
   intspeedaffinity --define drop_caches intspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2024.0.2-lin-sapphirerapids-speed-20231213.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/CPU2017.244/templogs/preenv.intspeed.244.0.log
   --lognum 244.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /ic24u0


   ------------------------------------------------------------
6. /proc/cpuinfo
   model name      : INTEL(R) XEON(R) GOLD 6526Y
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 207
   stepping        : 2
   microcode       : 0x21000200
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
   cpu cores       : 16
   siblings        : 32
   2 physical ids (chips)
   64 processors (hardware threads)
   physical id 0: core ids 0-15
   physical id 1: core ids 0-15
   physical id 0: apicids 0-31
   physical id 1: apicids 128-159
 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 2.37.4:
   Architecture:                    x86_64
```

(Continued on next page)

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Platform Notes (Continued)

```
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 6526Y
CPU family:                 6
Model:                      207
Thread(s) per core:         2
Core(s) per socket:         16
Socket(s):                  2
Stepping:                   2
CPU max MHz:                3900.0000
CPU min MHz:                800.0000
BogoMIPS:                   5600.00
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 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 avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts hwp
                            hwp_act_window hwp_epp hwp_pkg_req hfi 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:                  1.5 MiB (32 instances)
L1i cache:                  1 MiB (32 instances)
L2 cache:                   64 MiB (32 instances)
L3 cache:                   75 MiB (2 instances)
NUMA node(s):               2
NUMA node0 CPU(s):          0-15,32-47
NUMA node1 CPU(s):          16-31,48-63
Vulnerability Itlb multihit:   Not affected
Vulnerability L1tf:            Not affected
Vulnerability Mds:             Not affected
Vulnerability Meltdown:        Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed:        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, PBRSB-eIBRS SW
                                sequence
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     1.5M  12 Data            1    64        1              64
    L1i       32K       1M   8 Instruction     1    64        1              64
    L2         2M      64M  16 Unified         2  2048        1              64
```

(Continued on next page)

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Platform Notes (Continued)

```
     L3         37.5M      75M   15 Unified          3 40960          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: 0-15,32-47
  node 0 size: 515691 MB
  node 0 free: 512825 MB
  node 1 cpus: 16-31,48-63
  node 1 size: 516066 MB
  node 1 free: 515238 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10


     -------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056520568 kB


     -------------------------------------------------------------
10. who -r
   run-level 3 Apr 29 10:38


     -------------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
   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 systemd-pstore 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 multipathd ndctl-monitor nfs
                    nfs-blkmap nvmf-autoconnect rpcbind rpmconfigcheck rsyncd serial-getty@
                    smartd_generate_opts snmpd snmptrapd svnserve systemd-boot-check-no-failures
                    systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
                    udisks2 vncserver@
   indirect         wickedd


     -------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
   root=UUID=1821a225-9785-4821-9a33-99bd3ded8cae
   splash=silent
   mitigations=auto
   quiet
   security=apparmor


     -------------------------------------------------------------
14. cpupower frequency-info
   analyzing CPU 0:
```

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Platform Notes (Continued)

```
      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. tuned-adm active
      It seems that tuned daemon is not running, preset profile is not activated.
      Preset profile: latency-performance


    ----------------------------------------------------------------
    16. 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


    ----------------------------------------------------------------
    17. /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


    ----------------------------------------------------------------
    18. /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


    ----------------------------------------------------------------
    19. OS release
      From /etc/*-release /etc/*-version
      os-release SUSE Linux Enterprise High Performance Computing 15 SP5


    ----------------------------------------------------------------
    20. Disk information
    SPEC is set to: /ic24u0
      Filesystem     Type  Size  Used Avail Use% Mounted on
```

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Platform Notes (Continued)

```
   /dev/nvme0n1p8 xfs  1.3T  103G  1.2T   9% /


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


  ----------------------------------------------------------
 22. dmidecode
   Additional information from dmidecode 3.4 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 M321R8GA0PB0-CWMXJ 64 GB 2 rank 5600, configured at 5200


  ----------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:        American Megatrends Inc.
   BIOS Version:       2201
   BIOS Date:          12/22/2023
   BIOS Revision:      22.1
```

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 2024.0.2 Build 20231213
Copyright (C) 1985-2023 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 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran | 648.exchange2_s(base, peak)
----------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:

icx

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Base Compiler Invocation (Continued)

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:
```
-w -std=c11 -m64 -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:
```
-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/jemalloc64-5.0.1/lib -ljemalloc
```

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
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

SPEC CPU®2017 Integer Speed Result

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ASUSTeK Computer Inc.

ASUS RS720-E11-RS12U
(2.80 GHz, Intel Xeon Gold 6526Y)

SPECspeed®2017_int_base = 14.2

SPECspeed®2017_int_peak = 14.5

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

Test Date: Apr-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

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: -w -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: -w -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
```

```
625.x264_s: -w -std=c11 -m64 -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
```

(Continued on next page)

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

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ASUS RS720-E11-RS12U
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Peak Optimization Flags (Continued)

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-V1.3.html`
`http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z13-V1.3.xml`
`http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml`

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

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