SPEC CPU®2017 Integer Speed Result

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Cisco Systems

Cisco UCS C220 M7 (Intel Xeon Platinum 8460Y+, 2.00GHz)

$SPECspeed^{®}2017\_int\_base = 12.9$

$SPECspeed^{®}2017\_int\_peak = 13.2$

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

Test Date: Feb-2024
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Benchmark	Threads	base	peak
600.perlbench_s	80	8.78	9.72
602.gcc_s	80	11.2	11.8
605.mcf_s	80	21.4	
620.omnetpp_s	80	11.0	
623.xalancbmk_s	80	14.0	
625.x264_s	80	20.5	21.7
631.deepsjeng_s	80	6.68	
641.leela_s	80	5.53	
648.exchange2_s	80	21.4	
657.xz_s	80	24.8	

SPECspeed®2017_int_base (12.9)   SPECspeed®2017_int_peak (13.2)

Hardware

CPU Name: Intel Xeon Platinum 8460Y+
  Max MHz: 3700
  Nominal: 2000
Enabled: 80 cores, 2 chips
Orderable: 1,2 Chips
Cache L1: 32 KB I + 48 KB D on chip per core
  L2: 2 MB I+D on chip per core
  L3: 105 MB I+D on chip per chip
  Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 960 GB M.2 SSD SATA
Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP4
  5.14.21-150400.22-default
Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++
  Compiler for Linux;
  Fortran: Version 2023.2.3 of Intel Fortran
  Compiler for Linux;
Parallel: Yes
Firmware: Version 4.3.2d released Nov-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 set to prefer power save
  with minimal impact on performance

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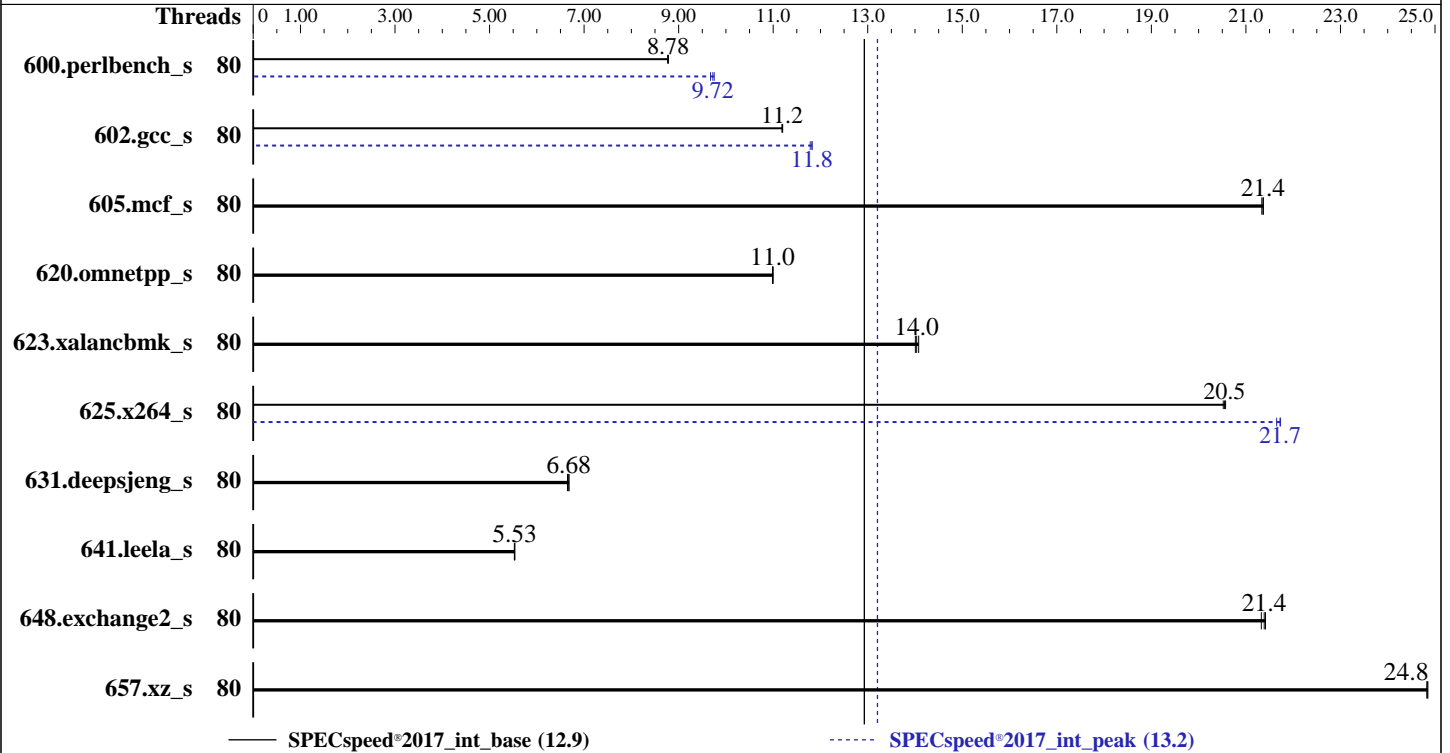
SPECspeed®2017_int_peak = 13.2

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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	80	**202**	**8.78**	202	8.77	202	8.78	80	**183**	**9.72**	182	9.75	183	9.67
602.gcc_s	80	356	11.2	**356**	**11.2**	356	11.2	80	338	11.8	**337**	**11.8**	337	11.8
605.mcf_s	80	**221**	**21.4**	221	21.4	221	21.3	80	**221**	**21.4**	221	21.4	221	21.3
620.omnetpp_s	80	**148**	**11.0**	148	11.0	148	11.0	80	**148**	**11.0**	148	11.0	148	11.0
623.xalancbmk_s	80	**101**	**14.0**	101	14.1	101	14.0	80	**101**	**14.0**	101	14.1	101	14.0
625.x264_s	80	**85.8**	**20.5**	85.8	20.6	86.0	20.5	80	81.5	21.7	81.2	21.7	**81.2**	**21.7**
631.deepsjeng_s	80	216	6.65	**215**	**6.68**	214	6.68	80	216	6.65	**215**	**6.68**	214	6.68
641.leela_s	80	308	5.53	309	5.52	**308**	**5.53**	80	308	5.53	309	5.52	**308**	**5.53**
648.exchange2_s	80	137	21.4	138	21.3	**137**	**21.4**	80	137	21.4	138	21.3	**137**	**21.4**
657.xz_s	80	**249**	**24.8**	249	24.8	249	24.8	80	**249**	**24.8**	249	24.8	249	24.8
SPECspeed®2017_int_base =		**12.9**												
SPECspeed®2017_int_peak =		**13.2**												

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"
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/lib/ia32:/home/cpu2017/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
 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 Settings:
Intel Hyper-Threading Technology set to Disabled
Sub NUMA Clustering set to Disabled
LLC Dead Line set to Disabled
ADDDC Sparing set to Disabled
Processor C6 Report set to Enabled
UPI Link Enablement 1
UPI Power Management Enabled


 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Fri Feb  2 04:54:46 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 (249.11+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
   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
    04:54:46 up 3 min,  1 user,  load average: 0.29, 0.55, 0.26
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1     -                04:53    6.00s  1.59s  0.29s -bash


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


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

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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) 4126908
    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) 4126908
    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
    runcpu --define default-platform-flags -c ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define cores=80
      --tune all -o all --define drop_caches intspeed
    runcpu --define default-platform-flags --configfile ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define
      cores=80 --tune all --output_format all --define drop_caches --nopower --runmode speed --tune base:peak
      --size refspeed intspeed --nopreenv --note-preenv --logfile
      $SPEC/tmp/CPU2017.059/templogs/preenv.intspeed.059.0.log --lognum 059.0 --from_runcpu 2
    specperl $SPEC/bin/sysinfo
    $SPEC = /home/cpu2017


    ----------------------------------------------------------
    6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8460Y+
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b0004b1
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 40
    siblings        : 40
    2 physical ids (chips)
    80 processors (hardware threads)
    physical id 0: core ids 0-39
    physical id 1: core ids 0-39
    physical id 0: apicids
    0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72
    ,74,76,78
    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
    80,182,184,186,188,190,192,194,196,198,200,202,204,206
    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:
```

(Continued on next page)

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Platform Notes (Continued)

```
  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):                              80
  On-line CPU(s) list:                 0-79
  Vendor ID:                           GenuineIntel
  Model name:                          Intel(R) Xeon(R) Platinum 8460Y+
  CPU family:                          6
  Model:                               143
  Thread(s) per core:                  1
  Core(s) per socket:                  40
  Socket(s):                           2
  Stepping:                            8
  CPU max MHz:                         3700.0000
  CPU min MHz:                         800.0000
  BogoMIPS:                            4000.00
  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 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 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
  L1d cache:                           3.8 MiB (80 instances)
  L1i cache:                           2.5 MiB (80 instances)
  L2 cache:                            160 MiB (80 instances)
  L3 cache:                            210 MiB (2 instances)
  NUMA node(s):                        2
  NUMA node0 CPU(s):                   0-39
  NUMA node1 CPU(s):                   40-79
  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     3.8M   12 Data             1     64        1             64
      L1i       32K     2.5M    8 Instruction      1     64        1             64
      L2         2M     160M   16 Unified          2   2048        1             64
      L3       105M     210M   15 Unified          3 114688        1             64

  ------------------------------------------------------------
  8. numactl --hardware
```

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

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Platform Notes (Continued)

```
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0-39
  node 0 size: 515694 MB
  node 0 free: 513471 MB
  node 1 cpus: 40-79
  node 1 size: 516056 MB
  node 1 free: 515458 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10


  ------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056513124 kB


  ------------------------------------------------------------
10. who -r
   run-level 3 Feb 2 04:52


  ------------------------------------------------------------
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 getty@ haveged irqbalance iscsi
                   issue-generator kbdsettings klog libvirtd 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 dnsmasq ebtables exchange-bmc-os-info
                   firewalld gpm grub2-once haveged-switch-root ipmi ipmievd iscsi-init iscsid
                   issue-add-ssh-keys kdump kdump-early kexec-load ksm kvm_stat libvirt-guests lunmask
                   man-db-create multipathd nfs nfs-blkmap nfs-server nfsserver nvmf-autoconnect rdisc
                   rpcbind rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts snmpd snmptrapd
                   strongswan strongswan-starter svnserve systemd-boot-check-no-failures
                   systemd-network-generator systemd-nspawn@ systemd-sysext systemd-time-wait-sync
                   systemd-timesyncd tcsd udisks2 virtinterfaced virtnetworkd virtnodedevd virtnwfilterd
                   virtproxyd virtqemud virtsecretd virtstoraged
   indirect        pcscd virtlockd virtlogd wickedd

  ------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
   root=UUID=2b0c4aea-8b1a-49f8-af79-68404a8ed1d3
   splash=silent
   resume=/dev/disk/by-uuid/acc9eb67-bac8-42f3-9795-20ae507d267e
   mitigations=auto
   quiet
   security=apparmor


  ------------------------------------------------------------
14. cpupower frequency-info
   analyzing CPU 0:
     current policy: frequency should be within 800 MHz and 3.70 GHz.
```

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Platform Notes (Continued)

```
              The governor "powersave" 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                      1
  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


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


  ----------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu2017
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p3 xfs   741G   13G  728G   2% /home


  ----------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:        Cisco Systems Inc
    Product:       UCSC-C220-M7N
```

(Continued on next page)

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Platform Notes (Continued)

```
     Serial:         WZP27010H2C

   ------------------------------------------------------------
 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:
     15x 0xCE00 M321R8GA0BB0-CQKDG 64 GB 2 rank 4800
     1x 0xCE00 M321R8GA0BB0-CQKMG 64 GB 2 rank 4800


   ------------------------------------------------------------
 22. BIOS
 (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:        Cisco Systems, Inc.
   BIOS Version:       C220M7.4.3.2d.0.1101232037
   BIOS Date:          11/01/2023
   BIOS Revision:      5.31
```

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 2023.2.3 Build x
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 2023.2.3 Build x
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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

(Continued on next page)

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Base Compiler Invocation (Continued)

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 -xCORE-AVX512 -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 -xCORE-AVX512 -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 -xCORE-AVX512 -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`

Peak Compiler Invocation

C benchmarks:
`icx`

Cisco Systems

Cisco UCS C220 M7 (Intel Xeon Platinum 8460Y+, 2.00GHz)

SPECspeed®2017_int_base = 12.9

SPECspeed®2017_int_peak = 13.2

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

Test Date: Feb-2024
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Peak Compiler Invocation (Continued)

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 -xCORE-AVX512 -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:

(Continued on next page)

Cisco Systems

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Peak Optimization Flags (Continued)

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/Intel-ic2023-official-linux64.html`
`http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-SPR-revM.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-SPR-revM.xml`

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

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