SPEC CPU®2017 Floating Point Speed Result

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

$SPECspeed®2017\_fp\_base = 75.8$

$SPECspeed®2017\_fp\_peak = 75.8$

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

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

Threads		Value
603.bwaves_s	8	304 / 304
607.cactuBSSN_s	8	89.3
619.lbm_s	8	66.0
621.wrf_s	8	65.6
627.cam4_s	8	30.3 / 30.3
628.pop2_s	8	50.8
638.imagick_s	8	115
644.nab_s	8	68.6
649.fotonik3d_s	8	62.5
654.roms_s	8	70.5

Scale: 0 15.0 30.0 45.0 60.0 75.0 90.0 105 120 135 150 165 180 195 210 225 240 255 270 285 305

—— SPECspeed®2017_fp_base (75.8)   ----- SPECspeed®2017_fp_peak (75.8)

Hardware

CPU Name: Intel Xeon Bronze 3508U
 Max MHz: 2200
 Nominal: 2100
Enabled: 8 cores, 1 chip
Orderable: 1 Chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 22.5 MB I+D on chip per chip
 Other: None
Memory: 512 GB (8 x 64 GB 2Rx4 PC5-5600B-R, running at 4400)
Storage: 1 x 960 GB M.2 SSD SATA
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP4
 5.14.21-150400.22-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 4.3.3a released Jan-2024
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

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

SPECspeed®2017_fp_base = 75.8

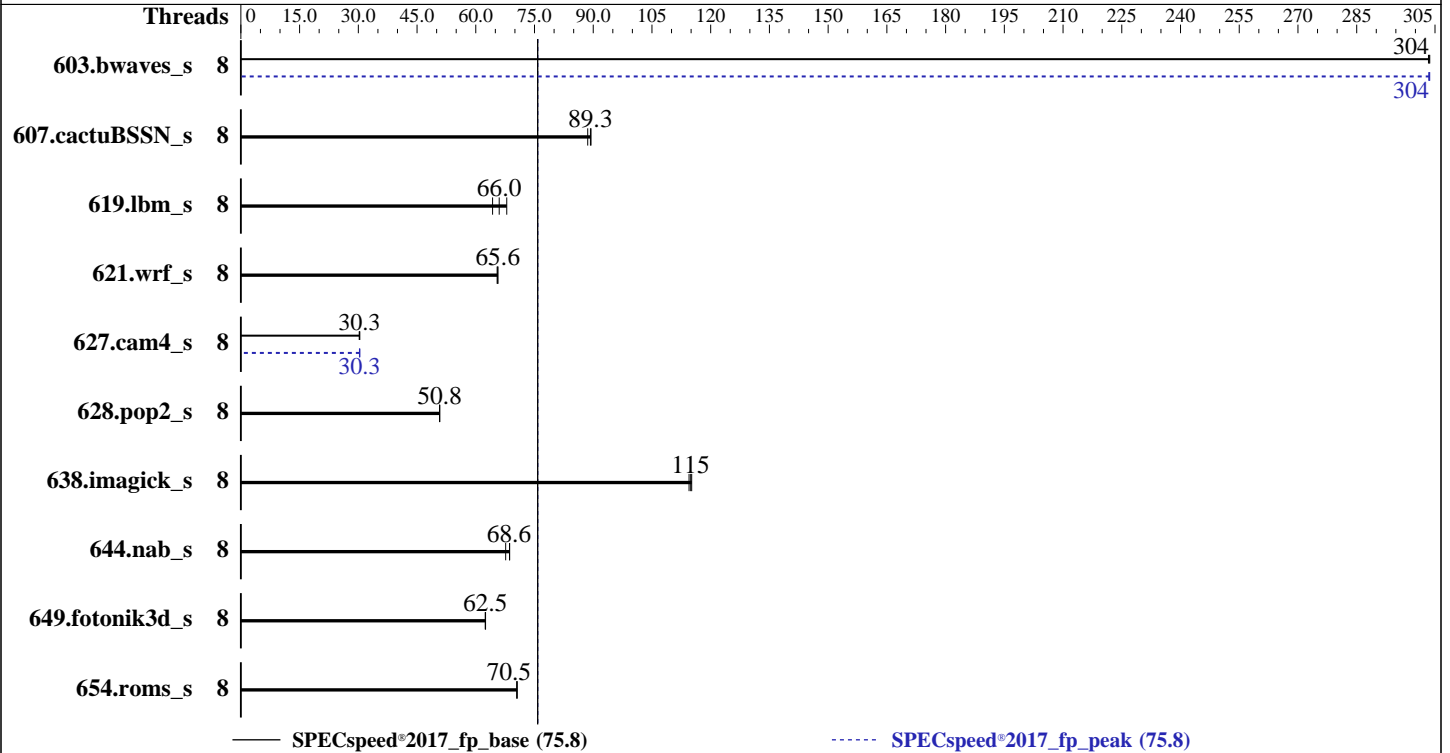SPECspeed®2017_fp_peak = 75.8

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

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

Results Table

Benchmark	Base						Peak					
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	8	**194**	**304**	194	303	194	304	8	194	303	194	304	**194**	**304**
607.cactuBSSN_s	8	188	88.6	186	89.4	**187**	**89.3**	8	188	88.6	186	89.4	**187**	**89.3**
619.lbm_s	8	**79.4**	**66.0**	77.1	67.9	81.5	64.3	8	**79.4**	**66.0**	77.1	67.9	81.5	64.3
621.wrf_s	8	202	65.5	201	65.6	**202**	**65.6**	8	202	65.5	201	65.6	**202**	**65.6**
627.cam4_s	8	293	30.2	292	30.4	**292**	**30.3**	8	293	30.3	292	30.4	**292**	**30.3**
628.pop2_s	8	234	50.8	234	50.8	**234**	**50.8**	8	234	50.8	234	50.8	**234**	**50.8**
638.imagick_s	8	125	115	126	114	**126**	**115**	8	125	115	126	114	**126**	**115**
644.nab_s	8	258	67.6	**255**	**68.6**	255	68.6	8	258	67.6	**255**	**68.6**	255	68.6
649.fotonik3d_s	8	146	62.5	**146**	**62.5**	146	62.4	8	146	62.5	**146**	**62.5**	146	62.4
654.roms_s	8	**223**	**70.5**	223	70.5	223	70.5	8	**223**	**70.5**	223	70.5	223	70.5
SPECspeed®2017_fp_base =		75.8												
SPECspeed®2017_fp_peak =		75.8												

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/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

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

SPECspeed®2017_fp_base = 75.8

SPECspeed®2017_fp_peak = 75.8

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

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

Platform Notes

```
BIOS Settings:
Enhanced CPU performance set to Auto
Sub NUMA Clustering set to Disabled
LLC Dead Line set to Disabled
ADDDC Sparing set to Disabled
Processor C6 Report set to Enabled
UPI Power Management set to Enabled


 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on srv3-EMR Mon Apr 22 15:52:12 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 srv3-EMR 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
    15:52:12 up 1 min,  1 user,  load average: 0.05, 0.02, 0.00
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1     -                15:51   12.00s  1.52s  0.10s -bash

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


 ------------------------------------------------------------
 4. ulimit -a
   core file size          (blocks, -c) unlimited
```

(Continued on next page)

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

SPECspeed®2017_fp_base = 75.8

SPECspeed®2017_fp_peak = 75.8

CPU2017 License: 9019　　　　　　　　　　　　　　　　**Test Date:**　　　　Apr-2024
Test Sponsor:　　Cisco Systems　　　　　　　　　　　**Hardware Availability:** Feb-2024
Tested by:　　　　Cisco Systems　　　　　　　　　　　**Software Availability:**　Dec-2023

Platform Notes (Continued)

```
    data seg size            (kbytes, -d) unlimited
    scheduling priority              (-e) 0
    file size                (blocks, -f) unlimited
    pending signals                  (-i) 2061905
    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) 2061905
    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
 sh runspeed.sh
 runcpu --define default-platform-flags -c ic2024.0.2-lin-sapphirerapids-speed-20231213.cfg --define cores=8
   --tune all -o all --define drop_caches fpspeed
 runcpu --define default-platform-flags --configfile ic2024.0.2-lin-sapphirerapids-speed-20231213.cfg
   --define cores=8 --tune all --output_format all --define drop_caches --nopower --runmode speed --tune
   base:peak --size refspeed fpspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.170/templogs/preenv.fpspeed.170.0.log --lognum 170.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017


    ----------------------------------------------------------
6. /proc/cpuinfo
    model name      : INTEL(R) XEON(R) BRONZE 3508U
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b000571
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 8
    siblings        : 8
    1 physical ids (chips)
    8 processors (hardware threads)
    physical id 0: core ids 0-7
    physical id 0: apicids 0,2,4,6,8,10,12,14
  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):                       8
  On-line CPU(s) list:          0-7
  Vendor ID:                    GenuineIntel
```

(Continued on next page)

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

$SPECspeed^{®}2017\_fp\_base = 75.8$

$SPECspeed^{®}2017\_fp\_peak = 75.8$

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Apr-2024

Hardware Availability: Feb-2024

Software Availability: Dec-2023

Platform Notes (Continued)

```
  Model name:                INTEL(R) XEON(R) BRONZE 3508U
  CPU family:                6
  Model:                     143
  Thread(s) per core:        1
  Core(s) per socket:        8
  Socket(s):                 1
  Stepping:                  8
  CPU max MHz:               2200.0000
  CPU min MHz:               800.0000
  BogoMIPS:                  4200.00
  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 flush_l1d arch_capabilities
  L1d cache:                 384 KiB (8 instances)
  L1i cache:                 256 KiB (8 instances)
  L2 cache:                  16 MiB (8 instances)
  L3 cache:                  22.5 MiB (1 instance)
  NUMA node(s):              1
  NUMA node0 CPU(s):         0-7
  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     384K   12 Data            1    64      1              64
     L1i      32K     256K    8 Instruction     1    64      1              64
     L2        2M      16M   16 Unified         2  2048      1              64
     L3     22.5M    22.5M   15 Unified         3 24576      1              64

  -----------------------------------------------------------
  8. numactl --hardware
  NOTE: a numactl 'node' might or might not correspond to a physical chip.
    available: 1 nodes (0)
    node 0 cpus: 0-7
    node 0 size: 515500 MB
    node 0 free: 514920 MB
    node distances:
    node   0
      0:  10
```

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

SPECspeed®2017_fp_base = 75.8

SPECspeed®2017_fp_peak = 75.8

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

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

Platform Notes (Continued)

```
    ---------------------------------------------------------
    9. /proc/meminfo
       MemTotal:       527872108 kB


    ---------------------------------------------------------
    10. who -r
      run-level 3 Apr 22 15:51


    ---------------------------------------------------------
    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 auditd cron 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 ipmi ipmievd issue-add-ssh-keys kexec-load
                      lunmask man-db-create multipathd 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 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=16c71aca-e386-4aa5-8e77-e7c816146b7c
      splash=silent
      mitigations=auto
      quiet
      security=


    ---------------------------------------------------------
    14. cpupower frequency-info
      analyzing CPU 0:
        current policy: frequency should be within 800 MHz and 2.20 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            0
      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
```

(Continued on next page)

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

$SPECspeed®2017\_fp\_base = 75.8$

$SPECspeed®2017\_fp\_peak = 75.8$

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Apr-2024

Hardware Availability: Feb-2024

Software Availability: Dec-2023

Platform Notes (Continued)

```
   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/sdb2      xfs   891G   26G  865G   3% /


   ------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
   Vendor:         Cisco Systems Inc
   Product:        UCSX-210C-M7
   Serial:         FCH270978F4


   ------------------------------------------------------------
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 0xCE00 M321R8GA0PB0-CWMCH 64 GB 2 rank 5600, configured at 4400


   ------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:    Cisco Systems, Inc.
   BIOS Version:   X210M7.4.3.3a.0.0118241337
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

SPECspeed®2017_fp_base = 75.8

SPECspeed®2017_fp_peak = 75.8

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

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

Platform Notes (Continued)

```
     BIOS Date:       01/18/2024
     BIOS Revision:   5.32
```

Compiler Version Notes

```
==============================================================================
C                 | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_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++, C, Fortran | 607.cactuBSSN_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.
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.
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.
------------------------------------------------------------------------------


==============================================================================
Fortran           | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_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.
------------------------------------------------------------------------------


==============================================================================
Fortran, C        | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_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.
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.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

Fortran benchmarks:
`ifx`

Benchmarks using both Fortran and C:
`ifx icx`

Benchmarks using Fortran, C, and C++:
`icpx icx ifx`

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

$SPECspeed®2017\_fp\_base = 75.8$

$SPECspeed®2017\_fp\_peak = 75.8$

CPU2017 License:	9019	**Test Date:**	Apr-2024
Test Sponsor:	Cisco Systems	**Hardware Availability:**	Feb-2024
Tested by:	Cisco Systems	**Software Availability:**	Dec-2023

Base Portability Flags

603.bwaves_s: `-DSPEC_LP64`
607.cactuBSSN_s: `-DSPEC_LP64`
619.lbm_s: `-DSPEC_LP64`
621.wrf_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
627.cam4_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG`
628.pop2_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian -assume byterecl`
638.imagick_s: `-DSPEC_LP64`
644.nab_s: `-DSPEC_LP64`
649.fotonik3d_s: `-DSPEC_LP64`
654.roms_s: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
```
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using both Fortran and C:
```
-w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte
-auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

SPECspeed®2017_fp_base = 75.8

SPECspeed®2017_fp_peak = 75.8

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

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

Peak Compiler Invocation

C benchmarks:
`icx`

Fortran benchmarks:
`ifx`

Benchmarks using both Fortran and C:
`ifx icx`

Benchmarks using Fortran, C, and C++:
`icpx icx ifx`

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

619.lbm_s: `basepeak = yes`

638.imagick_s: `basepeak = yes`

644.nab_s: `basepeak = yes`

Fortran benchmarks:

603.bwaves_s: `-w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xsapphirerapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs -align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

649.fotonik3d_s: `basepeak = yes`

654.roms_s: `basepeak = yes`

Benchmarks using both Fortran and C:

621.wrf_s: `basepeak = yes`

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X210 M7 (Intel Xeon Bronze 3508U, 2.10GHz)

SPECspeed®2017_fp_base = 75.8

SPECspeed®2017_fp_peak = 75.8

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

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

Peak Optimization Flags (Continued)

627.cam4_s: `-w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

628.pop2_s: `basepeak = yes`

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: `basepeak = yes`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html
http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-EMR-revD.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml
http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-EMR-revD.xml

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

Tested with SPEC CPU®2017 v1.1.9 on 2024-04-22 18:52:11-0400.
Report generated on 2024-05-07 22:23:26 by CPU2017 PDF formatter v6716.
Originally published on 2024-05-07.