SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

$SPECspeed®2017\_fp\_base = 206$
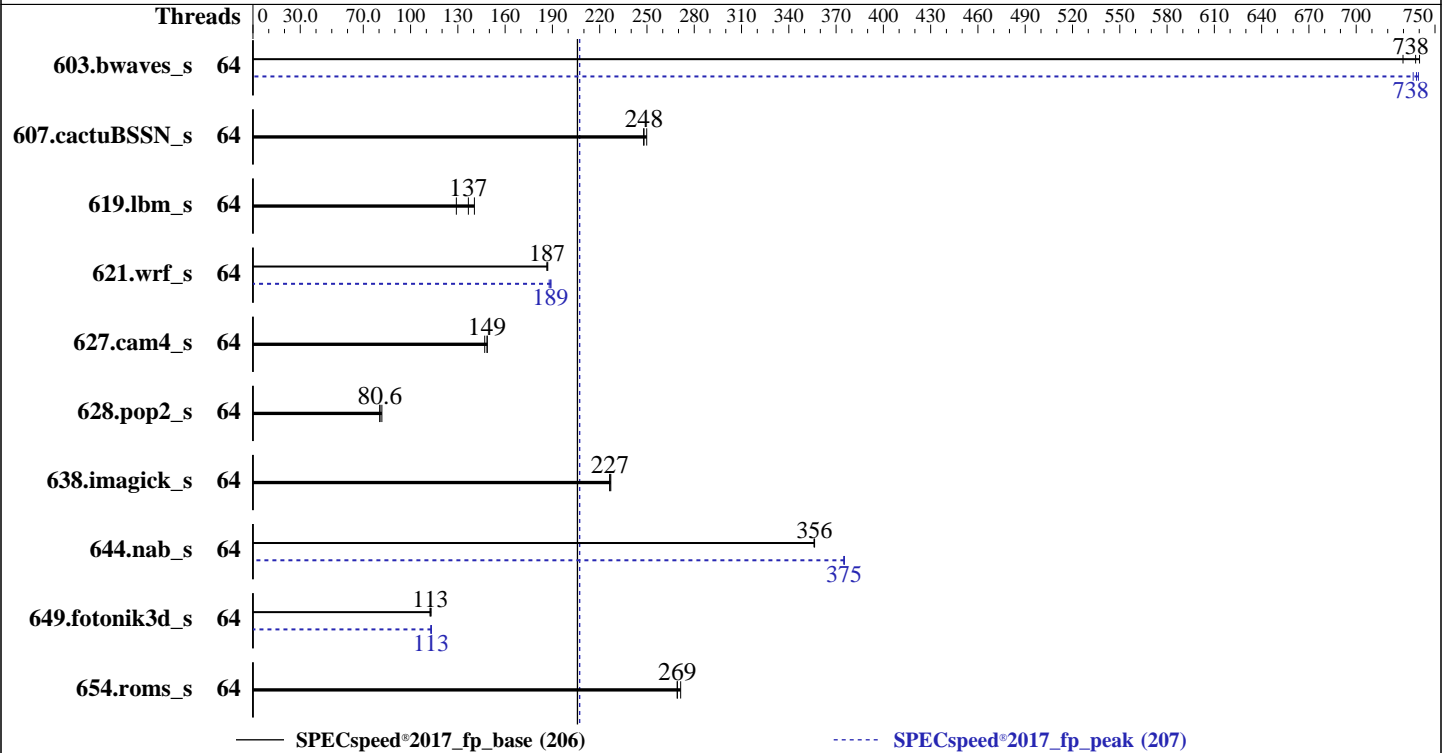
$SPECspeed®2017\_fp\_peak = 207$

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Nov-2021

Hardware Availability: Sep-2021

Software Availability: Sep-2021

Threads | 0 30.0 70.0 100 130 160 190 220 250 280 310 340 370 400 430 460 490 520 550 580 610 640 670 700 750

- **603.bwaves_s** 64 — 738 / 738
- **607.cactuBSSN_s** 64 — 248
- **619.lbm_s** 64 — 137
- **621.wrf_s** 64 — 187 / 189
- **627.cam4_s** 64 — 149
- **628.pop2_s** 64 — 80.6
- **638.imagick_s** 64 — 227
- **644.nab_s** 64 — 356 / 375
- **649.fotonik3d_s** 64 — 113 / 113
- **654.roms_s** 64 — 269

—— **SPECspeed®2017_fp_base (206)**   ----- **SPECspeed®2017_fp_peak (207)**

Hardware

CPU Name: Intel Xeon Gold 6338
 Max MHz: 3200
 Nominal: 2000
Enabled: 64 cores, 2 chips
Orderable: 1,2 Chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 1.25 MB I+D on chip per core
 L3: 48 MB I+D on chip per chip
 Other: None
Memory: 2 TB (32 x 64 GB 2Rx4 PC4-3200AA-R)
Storage: 1 x 240 GB M.2 SSD SATA
Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP3
 5.3.18-57-default
Compiler: C/C++: Version 2021.4.0 of Intel oneAPI DPC++/C++ Compiler Build 20210924 for Linux;
 Fortran: Version 2021.4.0 of Intel Fortran Compiler
 Classic Build 20210910 for Linux;
 C/C++: Version 2021.4.0 of Intel C/C++ Compiler Classic Build 20210910 for Linux;
Parallel: Yes
Firmware: Version 5.0.1d released Aug-2021
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

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

CPU2017 License: 9019	**Test Date:** Nov-2021
Test Sponsor: Cisco Systems	**Hardware Availability:** Sep-2021
Tested by: Cisco Systems	**Software Availability:** Sep-2021

Results Table

Benchmark	Base						Peak					
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	64	80.9	730	**80.0**	**738**	79.7	740	64	**79.9**	**738**	80.1	736	79.8	739
607.cactuBSSN_s	64	66.7	250	67.3	248	**67.2**	**248**	64	66.7	250	67.3	248	**67.2**	**248**
619.lbm_s	64	**38.3**	**137**	40.6	129	37.3	141	64	**38.3**	**137**	40.6	129	37.3	141
621.wrf_s	64	**70.8**	**187**	70.9	187	70.7	187	64	**70.1**	**189**	69.9	189	70.4	188
627.cam4_s	64	59.6	149	**59.7**	**149**	60.3	147	64	59.6	149	**59.7**	**149**	60.3	147
628.pop2_s	64	145	81.8	148	80.5	**147**	**80.6**	64	145	81.8	148	80.5	**147**	**80.6**
638.imagick_s	64	**63.7**	**227**	63.5	227	63.7	226	64	**63.7**	**227**	63.5	227	63.7	226
644.nab_s	64	49.1	356	**49.0**	**356**	49.0	356	64	46.6	375	46.6	375	**46.6**	**375**
649.fotonik3d_s	64	81.1	112	80.6	113	**81.0**	**113**	64	80.8	113	**80.6**	**113**	80.5	113
654.roms_s	64	58.0	271	58.5	269	**58.5**	**269**	64	58.0	271	58.5	269	**58.5**	**269**
SPECspeed®2017_fp_base =	**206**											
SPECspeed®2017_fp_peak =	**207**											

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/intel/tbb/2021.4.0/env/../lib/intel64/gcc4.8:/home/intel/mpi/2021
     .4.0//libfabric/lib:/home/intel/mpi/2021.4.0//lib/release:/home/intel/mp
     i/2021.4.0//lib:/home/intel/compiler/2021.4.0/linux/compiler/lib/intel64
     _lin:/home/intel/compiler/2021.4.0/linux/lib:/home/intel/clck/2021.4.0/l
     ib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

General Notes

```
 Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB 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)
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

$SPECspeed®2017\_fp\_base = 206$

$SPECspeed®2017\_fp\_peak = 207$

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

Test Date: Nov-2021
Hardware Availability: Sep-2021
Software Availability: Sep-2021

General Notes (Continued)

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 Settings:
Adjacent Cache Line Prefetcher set to Disabled
DCU Streamer Prefetch set to Disabled
Sub NUMA Clustering set to Enabled
LLC Dead Line set to Disabled
Memory Refresh Rate set to 1x Refresh
ADDDC Sparing set to Disabled
Patrol Scrub set to Disabled
Intel Hyper-Threading Technology set to Disabled

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on perf-blade1 Sun Nov 28 23:07:39 2021

 SUT (System Under Test) info as seen by some common utilities.
 For more information on this section, see
    https://www.spec.org/cpu2017/Docs/config.html#sysinfo

 From /proc/cpuinfo
    model name : Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
       2  "physical id"s (chips)
       64 "processors"
    cores, siblings (Caution: counting these is hw and system dependent. The following
    excerpts from /proc/cpuinfo might not be reliable.  Use with caution.)
       cpu cores : 32
       siblings  : 32
       physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
       25 26 27 28 29 30 31
       physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
       25 26 27 28 29 30 31

 From lscpu from util-linux 2.36.2:
    Architecture:              x86_64
    CPU op-mode(s):            32-bit, 64-bit
    Byte Order:                Little Endian
    Address sizes:             46 bits physical, 57 bits virtual
    CPU(s):                    64
```

(Continued on next page)

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

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

Test Date: Nov-2021
Hardware Availability: Sep-2021
Software Availability: Sep-2021

Platform Notes (Continued)

```
On-line CPU(s) list:            0-63
Thread(s) per core:             1
Core(s) per socket:             32
Socket(s):                      2
NUMA node(s):                   2
Vendor ID:                      GenuineIntel
CPU family:                     6
Model:                          106
Model name:                     Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
Stepping:                       6
CPU MHz:                        1219.654
CPU max MHz:                    3200.0000
CPU min MHz:                    800.0000
BogoMIPS:                       4000.00
Virtualization:                 VT-x
L1d cache:                      3 MiB
L1i cache:                      2 MiB
L2 cache:                       80 MiB
L3 cache:                       96 MiB
NUMA node0 CPU(s):              0-31
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
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 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 invpcid_single 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 wbnoinvd dtherm ida arat
pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku ospke
avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq
la57 rdpid fsrm md_clear pconfig flush_l1d arch_capabilities
```

(Continued on next page)

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

Platform Notes (Continued)

```
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        1.3M      80M  20 Unified        2   1024        1             64
    L3         48M      96M  12 Unified        3  65536        1             64

/proc/cpuinfo cache data
   cache size : 49152 KB

From numactl --hardware
WARNING: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
  28 29 30 31
  node 0 size: 1031743 MB
  node 0 free: 1030663 MB
  node 1 cpus: 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56
  57 58 59 60 61 62 63
  node 1 size: 1032180 MB
  node 1 free: 1031445 MB
  node distances:
  node   0   1
    0:  10  20
    1:  20  10

From /proc/meminfo
   MemTotal:       2113458424 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
   performance

From /etc/*release* /etc/*version*
   os-release:
      NAME="SLES"
      VERSION="15-SP3"
      VERSION_ID="15.3"
      PRETTY_NAME="SUSE Linux Enterprise Server 15 SP3"
      ID="sles"
      ID_LIKE="suse"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:15:sp3"

uname -a:
```

(Continued on next page)

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

$SPECspeed®2017\_fp\_base = 206$

$SPECspeed®2017\_fp\_peak = 207$

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Nov-2021

Hardware Availability: Sep-2021

Software Availability: Sep-2021

Platform Notes (Continued)

```
    Linux perf-blade1 5.3.18-57-default #1 SMP Wed Apr 28 10:54:41 UTC 2021 (ba3c2e9)
    x86_64 x86_64 x86_64 GNU/Linux


  Kernel self-reported vulnerability status:

  CVE-2018-12207 (iTLB Multihit):                       Not affected
  CVE-2018-3620 (L1 Terminal Fault):                    Not affected
  Microarchitectural Data Sampling:                     Not affected
  CVE-2017-5754 (Meltdown):                             Not affected
  CVE-2018-3639 (Speculative Store Bypass):             Mitigation: Speculative Store
                                                        Bypass disabled via prctl and
                                                        seccomp
  CVE-2017-5753 (Spectre variant 1):                    Mitigation: usercopy/swapgs
                                                        barriers and __user pointer
                                                        sanitization
  CVE-2017-5715 (Spectre variant 2):                    Mitigation: Enhanced IBRS, IBPB:
                                                        conditional, RSB filling
  CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
  CVE-2019-11135 (TSX Asynchronous Abort):              Not affected

  run-level 3 Nov 24 21:13

  SPEC is set to: /home/cpu2017
     Filesystem      Type  Size  Used Avail Use% Mounted on
     /dev/sda3       xfs   181G   52G  130G  29% /home

  From /sys/devices/virtual/dmi/id
      Vendor:         Cisco Systems Inc
      Product:        UCSX-210C-M6
      Serial:         FCH25057AMV


  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:
      32x 0xCE00 M393A8G40AB2-CWE 64 GB 2 rank 3200

  BIOS:
     BIOS Vendor:        Cisco Systems, Inc.
     BIOS Version:       X210M6.5.0.1d.0.0816211754
     BIOS Date:          08/16/2021
     BIOS Revision:      5.22

  (End of data from sysinfo program)
```

SPEC CPU®2017 Floating Point Speed Result

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

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

Test Date: Nov-2021
Hardware Availability: Sep-2021
Software Availability: Sep-2021

Compiler Version Notes

```
================================================================================
C                  | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
                   | 644.nab_s(base)
--------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C                  | 644.nab_s(peak)
--------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.4.0 Build 20210924
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C                  | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
                   | 644.nab_s(base)
--------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C                  | 644.nab_s(peak)
--------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.4.0 Build 20210924
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C++, C, Fortran | 607.cactuBSSN_s(base, peak)
--------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 Intel Corporation.  All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------
```

(Continued on next page)

 https://www.spec.org/

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

Compiler Version Notes (Continued)

```
==============================================================================
Fortran       | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
              | 654.roms_s(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 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 Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.4.0 Build 20210910_000000
Copyright (C) 1985-2021 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icc`

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`ifort icc`

Benchmarks using Fortran, C, and C++:
`icpc icc ifort`

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`

(Continued on next page)

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

Base Portability Flags (Continued)

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:
`-m64 -std=c11 -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP -mbranches-within-32B-boundaries`

Fortran benchmarks:
`-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs -mbranches-within-32B-boundaries -L/home/cpu2017/je5.0.1-64 -ljemalloc`

Benchmarks using both Fortran and C:
`-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs -L/home/cpu2017/je5.0.1-64 -ljemalloc`

Benchmarks using Fortran, C, and C++:
`-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs -L/home/cpu2017/je5.0.1-64 -ljemalloc`

Peak Compiler Invocation

C benchmarks (except as noted below):
`icc`

644.nab_s: `icx`

Fortran benchmarks:
`ifort`

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
```
ifort icc
```

Benchmarks using Fortran, C, and C++:
```
icpc icc ifort
```

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: `-m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math`
`-flto -mfpmath=sse -funroll-loops -fiopenmp`
`-DSPEC_OPENMP -qopt-mem-layout-trans=4`
`-fimf-accuracy-bits=14:sqrt`
`-mbranches-within-32B-boundaries -L/home/cpu2017/je5.0.1-64`
`-ljemalloc`

Fortran benchmarks:

603.bwaves_s: `-m64 -Wl,-z,muldefs -prof-gen`(pass 1) `-prof-use`(pass 2)
`-DSPEC_SUPPRESS_OPENMP -DSPEC_OPENMP -ipo -xCORE-AVX2`
`-O3 -no-prec-div -qopt-prefetch -ffinite-math-only`
`-qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs`
`-mbranches-within-32B-boundaries -L/home/cpu2017/je5.0.1-64`
`-ljemalloc`

649.fotonik3d_s: `Same as 603.bwaves_s`

654.roms_s: `basepeak = yes`

Benchmarks using both Fortran and C:

621.wrf_s: `-m64 -std=c11 -Wl,-z,muldefs -prof-gen`(pass 1)
`-prof-use`(pass 2) `-ipo -xCORE-AVX2 -O3 -no-prec-div`

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

Cisco Systems

Cisco UCS X210c M6 (Intel Xeon Gold 6338, 2.00GHz)

SPECspeed®2017_fp_base = 206

SPECspeed®2017_fp_peak = 207

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

Test Date: Nov-2021
Hardware Availability: Sep-2021
Software Availability: Sep-2021

Peak Optimization Flags (Continued)

621.wrf_s (continued):
```
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-mbranches-within-32B-boundaries -nostandard-realloc-lhs
-L/home/cpu2017/je5.0.1-64 -ljemalloc
```

627.cam4_s: `basepeak = yes`

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-ic2021-official-linux64_revA.2021-12-22.html
http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-ICX-revJ.html

---

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.2021-12-22.xml
http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-ICX-revJ.xml

---

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

Tested with SPEC CPU®2017 v1.1.8 on 2021-11-29 02:07:38-0500.
Report generated on 2021-12-22 12:30:51 by CPU2017 PDF formatter v6442.
Originally published on 2021-12-21.