



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

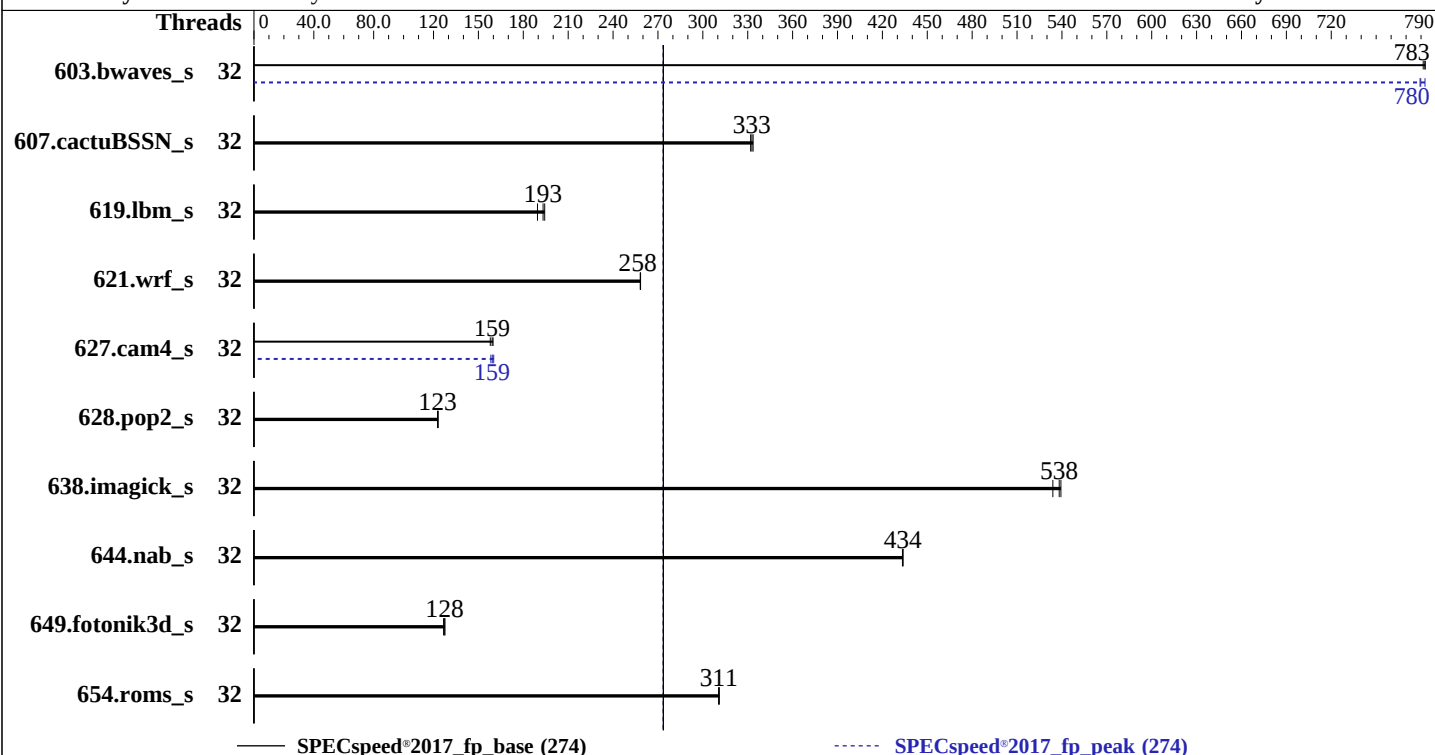
Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024



### Hardware

CPU Name: Intel Xeon 6731P  
Max MHz: 4100  
Nominal: 2500  
Enabled: 32 cores, 1 chip  
Orderable: 1 Chip  
Cache L1: 64 KB I + 48 KB D on chip per core  
L2: 2 MB I+D on chip per core  
L3: 144 MB I+D on chip per chip  
Other: None  
Memory: 512 GB (8 x 64 GB 2Rx4 PC5-6400B-R)  
Storage: 1 x 222 GB NVME SSD  
Other: CPU Cooling: Air

### Software

OS: SUSE Linux Enterprise Server 15 SP6  
6.4.0-150600.21-default  
Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++  
Compiler for Linux;  
Fortran: Version 2024.1 of Intel Fortran Compiler  
for Linux;  
Parallel: Yes  
Firmware: Version 4.3.6b released Apr-2025  
File System: btrfs  
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 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## Results Table

| Benchmark       | Base    |             |            |         |       |             |            | Peak    |             |            |         |       |             |            |
|-----------------|---------|-------------|------------|---------|-------|-------------|------------|---------|-------------|------------|---------|-------|-------------|------------|
|                 | Threads | Seconds     | Ratio      | Seconds | Ratio | Seconds     | Ratio      | Threads | Seconds     | Ratio      | Seconds | Ratio | Seconds     | Ratio      |
| 603.bwaves_s    | 32      | <u>75.4</u> | <u>783</u> | 75.4    | 783   | 75.5        | 781        | 32      | <u>75.7</u> | <u>780</u> | 75.7    | 779   | 75.4        | 783        |
| 607.cactuBSSN_s | 32      | 50.0        | 334        | 50.2    | 332   | <u>50.1</u> | <u>333</u> | 32      | 50.0        | 334        | 50.2    | 332   | <u>50.1</u> | <u>333</u> |
| 619.lbm_s       | 32      | <u>27.1</u> | <u>193</u> | 27.6    | 189   | 27.0        | 194        | 32      | <u>27.1</u> | <u>193</u> | 27.6    | 189   | 27.0        | 194        |
| 621.wrf_s       | 32      | 51.2        | 258        | 51.2    | 258   | <u>51.2</u> | <u>258</u> | 32      | 51.2        | 258        | 51.2    | 258   | <u>51.2</u> | <u>258</u> |
| 627.cam4_s      | 32      | <u>55.7</u> | <u>159</u> | 55.5    | 160   | 56.1        | 158        | 32      | 55.3        | 160        | 56.0    | 158   | <u>55.6</u> | <u>159</u> |
| 628.pop2_s      | 32      | <u>96.6</u> | <u>123</u> | 96.5    | 123   | 96.7        | 123        | 32      | <u>96.6</u> | <u>123</u> | 96.5    | 123   | 96.7        | 123        |
| 638.imagick_s   | 32      | <u>26.8</u> | <u>538</u> | 27.0    | 534   | 26.7        | 539        | 32      | <u>26.8</u> | <u>538</u> | 27.0    | 534   | 26.7        | 539        |
| 644.nab_s       | 32      | 40.3        | 433        | 40.3    | 434   | <u>40.3</u> | <u>434</u> | 32      | 40.3        | 433        | 40.3    | 434   | <u>40.3</u> | <u>434</u> |
| 649.fotonik3d_s | 32      | 71.5        | 128        | 71.9    | 127   | <u>71.5</u> | <u>128</u> | 32      | 71.5        | 128        | 71.9    | 127   | <u>71.5</u> | <u>128</u> |
| 654.roms_s      | 32      | 50.7        | 311        | 50.6    | 311   | <u>50.7</u> | <u>311</u> | 32      | 50.7        | 311        | 50.6    | 311   | <u>50.7</u> | <u>311</u> |

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## 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,scatter"

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 Red Hat Enterprise Linux 8.4

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

runcpu command invoked through numactl i.e.:

numactl --interleave=all runcpu <etc>

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.

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## General Notes (Continued)

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:

Hardware prefetcher set to Enabled

Adjacent cache line prefetcher set to Enabled

Patrol scrub set to Disabled

XPT prefetch set to Auto

LLC prefetch set to Enabled

Enhanced CPU performance set to Auto

Hyper-Threading set to Disabled

Intel SST-Performance Profile set to Profile0

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost Wed Sep 24 03:18:26 2025

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 254 (254.10+suse.84.ge8d77af424)
  12. Failed units, from systemctl list-units --state=failed
  13. Services, from systemctl list-unit-files
  14. Linux kernel boot-time arguments, from /proc/cmdline
  15. cpupower frequency-info
  16. tuned-adm active
  17. sysctl
  18. /sys/kernel/mm/transparent\_hugepage
  19. /sys/kernel/mm/transparent\_hugepage/khugepaged
  20. OS release
  21. Disk information
  22. /sys/devices/virtual/dmi/id
  23. dmidecode
  24. BIOS
- 
- 
1. uname -a  
Linux localhost 6.4.0-150600.21-default #1 SMP PREEMPT\_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)  
x86\_64 x86\_64 x86\_64 GNU/Linux

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## Platform Notes (Continued)

```
-----
2. w
03:18:26 up 1:23, 1 user, load average: 0.04, 0.01, 0.00
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
root      pts/0    10.29.148.129 03:17    2.00s  0.76s  0.00s -bash
```

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

```
-----
4. ulimit -a
core file size          (blocks, -c) unlimited
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 2058261
max locked memory       (kbytes, -l) 8192
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) 2058261
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

```
-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=31
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@pts/0
-bash
-bash
runcpu --nobuild -n 3 --action validate --define default-platform-flags --configfile
ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=32 --tune base --output_format all --define
intspeedaffinity --define drop_caches --nopower --runmode speed --tune base,peak --size refspeed fpspeed
runcpu --nobuild --iterations 3 --action validate --define default-platform-flags --configfile
ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=32 --tune base --output_format all --define
intspeedaffinity --define drop_caches --nopower --runmode speed --tune base,peak --size refspeed --nopower
--runmode speed --tune base:peak --size refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.082/temlogs/preenv.fpspeed.082.0.log --lognum 082.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

```
-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) 6731P
vendor_id      : GenuineIntel
cpu family     : 6
model          : 173
stepping       : 1
microcode      : 0xa0000c0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores      : 32
siblings       : 32
1 physical ids (chips)
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## Platform Notes (Continued)

32 processors (hardware threads)

physical id 0: core ids 0-31

physical id 0: apicids

0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62

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 2.39.3:

```
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):                      32
On-line CPU(s) list:         0-31
Vendor ID:                   GenuineIntel
BIOS Vendor ID:              Intel(R) Corporation
Model name:                  Intel(R) Xeon(R) 6731P
BIOS Model name:             Intel(R) Xeon(R) 6731P   CPU @ 3.0GHz
BIOS CPU family:             179
CPU family:                  6
Model:                       173
Thread(s) per core:          1
Core(s) per socket:          32
Socket(s):                   1
Stepping:                    1
CPU(s) scaling MHz:          66%
CPU max MHz:                 4100.0000
CPU min MHz:                 800.0000
BogoMIPS:                    6000.00
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 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 user_shstk 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 ibt amx_bf16 avx512_fp16 amx_tile
                             amx_int8 flush_l1d arch_capabilities
L1d cache:                   1.5 MiB (32 instances)
L1i cache:                   2 MiB (32 instances)
L2 cache:                    64 MiB (32 instances)
L3 cache:                    144 MiB (1 instance)
NUMA node(s):                1
NUMA node0 CPU(s):           0-31
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:  Not affected
Vulnerability L1tf:          Not affected
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## Platform Notes (Continued)

|                                       |                                                                                                                |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Vulnerability Mds:                    | Not affected                                                                                                   |
| Vulnerability Meltdown:               | Not affected                                                                                                   |
| Vulnerability Mmio stale data:        | Not affected                                                                                                   |
| Vulnerability Reg file data sampling: | Not affected                                                                                                   |
| Vulnerability Retbleed:               | Not affected                                                                                                   |
| Vulnerability Spec rstack overflow:   | Not affected                                                                                                   |
| Vulnerability Spec store bypass:      | Mitigation; Speculative Store Bypass disabled via prctl                                                        |
| Vulnerability Spectre v1:             | Mitigation; usercopy/swapgs barriers and __user pointer sanitization                                           |
| Vulnerability Spectre v2:             | Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling; PBRSSB-eIBRS Not affected; BHI BHI_DIS_S |
| 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  | 64K      | 2M       | 16   | Instruction | 1     | 64     | 1        | 64             |
| L2   | 2M       | 64M      | 16   | Unified     | 2     | 2048   | 1        | 64             |
| L3   | 144M     | 144M     | 16   | Unified     | 3     | 147456 | 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: 0-31
node 0 size: 514590 MB
node 0 free: 513488 MB
node distances:
node
0: 10
```

9. /proc/meminfo

MemTotal: 526940488 kB

10. who -r

run-level 3 Sep 24 01:55

11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)

|                |          |
|----------------|----------|
| Default Target | Status   |
| multi-user     | degraded |

12. Failed units, from systemctl list-units --state=failed

| UNIT              | LOAD   | ACTIVE | SUB    | DESCRIPTION                  |
|-------------------|--------|--------|--------|------------------------------|
| * postfix.service | loaded | failed | failed | Postfix Mail Transport Agent |

13. Services, from systemctl list-unit-files

| STATE           | UNIT FILES                                                                                                                                                                                                                                                                                                                                               |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enabled         | apparmor auditd cron getty@ irqbalance issue-generator kbdsettings kdump kdump-early kdump-notify postfix purge-kernels rollback sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny                                                                                                                                      |
| enabled-runtime | systemd-remount-fs                                                                                                                                                                                                                                                                                                                                       |
| disabled        | boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell ebtables firewallld fsidd grub2-once haveged issue-add-ssh-keys kexec-load lunmask nfs nfs-blkmap rpcbind rpmconfigcheck serial-getty@ systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd tuned |

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## Platform Notes (Continued)

indirect systemd-userdbd wickedd

### 14. Linux kernel boot-time arguments, from /proc/cmdline

```
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
root=UUID=d4e057bf-4e4b-4e72-b0d4-5cbb8854b3eb
splash=silent
mitigations=auto
quiet
security=apparmor
crashkernel=364M,high
crashkernel=72M,low
```

### 15. cpupower frequency-info

```
analyzing CPU 31:
  current policy: frequency should be within 800 MHz and 4.10 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.

  boost state support:
    Supported: yes
    Active: yes
```

### 16. tuned-adm active

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

### 17. 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
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
```

### 18. /sys/kernel/mm/transparent\_hugepage

```
defrag      always defer defer+madvice [madvice] never
enabled     [always] madvice never
hpage_pmd_size 2097152
shmem_enabled always within_size advise [never] deny force
```

### 19. /sys/kernel/mm/transparent\_hugepage/khugepaged

```
alloc_sleep_millisecs 60000
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## Platform Notes (Continued)

```
defrag                1
max_ptes_none         511
max_ptes_shared       256
max_ptes_swap         64
pages_to_scan         4096
scan_sleep_millisecs  10000
```

```
-----
20. OS release
From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP6
-----
```

```
-----
21. Disk information
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdb2       btrfs 222G  8.7G  211G   4% /home
-----
```

```
-----
22. /sys/devices/virtual/dmi/id
Vendor:         Cisco Systems Inc
Product:        UCSC-C220-M8S
Serial:         WZP28479TTU
-----
```

```
-----
23. 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:
  4x 0xCE00 M321R8GA0PB2-CCPEC 64 GB 2 rank 6400
  4x 0xCE00 M321R8GA0PB2-CCPKC 64 GB 2 rank 6400
-----
```

```
-----
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Cisco Systems, Inc.
BIOS Version:     C220M8.4.3.6b.0.0430251037
BIOS Date:        04/30/2025
BIOS Revision:    5.35
-----
```

## 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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## Compiler Version Notes (Continued)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 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

## 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



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## 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
```

## 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



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Sep-2025

Hardware Availability: Feb-2025

Software Availability: Jun-2024

## 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

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



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6731P 2.5 GHz processor)

SPECspeed®2017\_fp\_base = 274

SPECspeed®2017\_fp\_peak = 274

**CPU2017 License:** 9019

**Test Sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test Date:** Sep-2025

**Hardware Availability:** Feb-2025

**Software Availability:** Jun-2024

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.2025-06-17.html>

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V2.0-GNR-revM.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.2025-06-17.xml>

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V2.0-GNR-revM.xml>

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2025-09-24 03:18:26-0400.

Report generated on 2025-10-29 17:28:07 by CPU2017 PDF formatter v6716.

Originally published on 2025-10-29.