



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

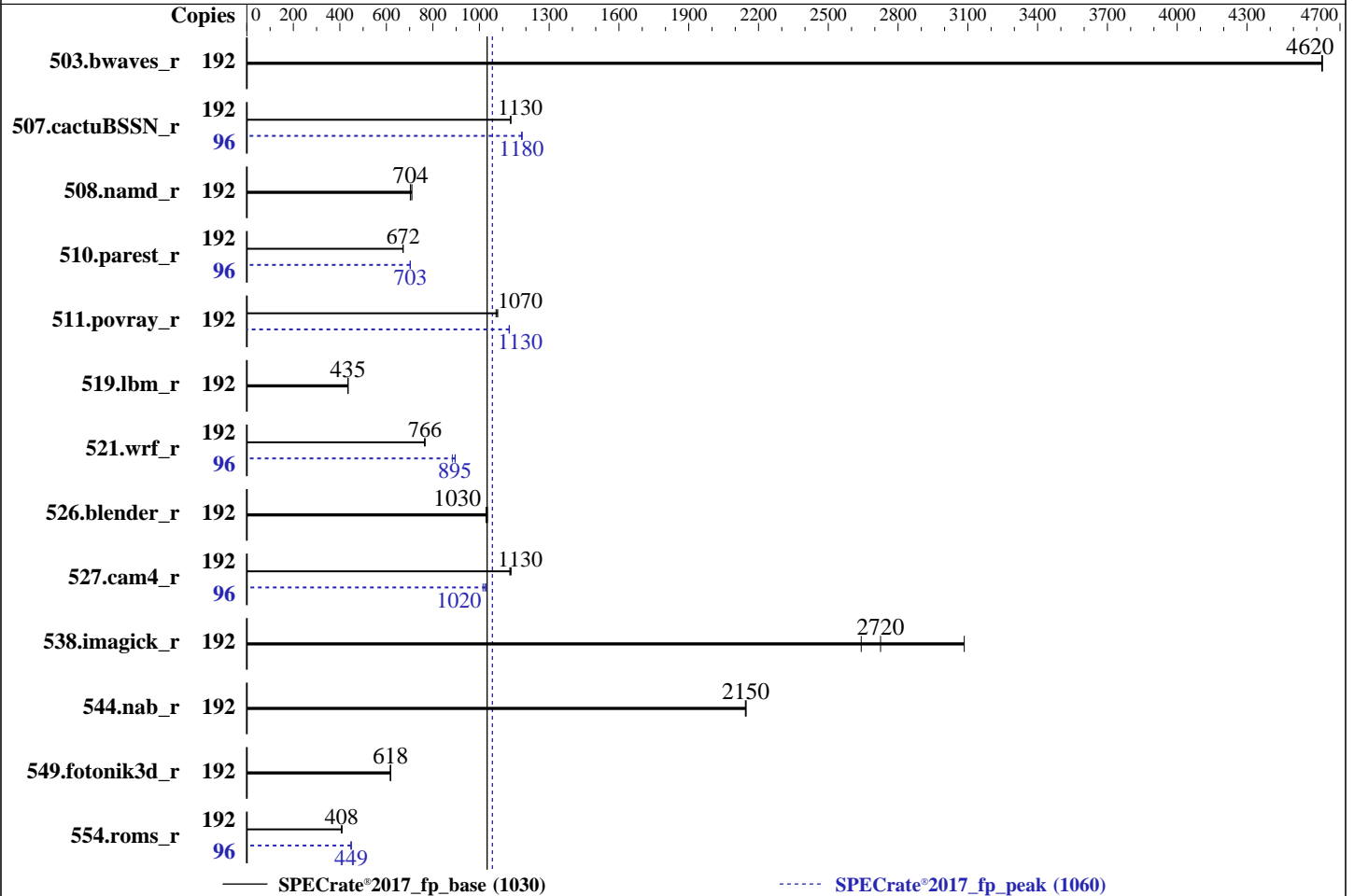
Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023



Hardware

CPU Name: Intel Xeon Platinum 8558P
 Max MHz: 4000
 Nominal: 2700
 Enabled: 96 cores, 2 chips, 2 threads/core
 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: 260 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-5600B-R)
 Storage: 1 x 960 GB M.2 SSD SATA
 Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP5
 5.14.21-150500.53-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: No
 Firmware: Version 4.3.3a released Jan-2024
 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 set to prefer performance at the cost
 of additional power usage



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	192	416	4620	417	4620	416	4620	192	416	4620	417	4620	416	4620
507.cactuBSSN_r	192	214	1130	214	1130	214	1130	96	103	1180	103	1180	103	1180
508.namd_r	192	259	703	259	704	257	710	192	259	703	259	704	257	710
510.parest_r	192	749	671	748	672	747	672	96	357	703	357	703	358	702
511.povray_r	192	418	1070	417	1070	416	1080	192	397	1130	397	1130	398	1130
519.lbm_r	192	465	435	465	435	465	435	192	465	435	465	435	465	435
521.wrf_r	192	562	766	562	766	563	764	96	240	896	243	884	240	895
526.blender_r	192	284	1030	284	1030	283	1030	192	284	1030	284	1030	283	1030
527.cam4_r	192	297	1130	297	1130	296	1140	96	164	1020	165	1020	163	1030
538.imagick_r	192	175	2720	155	3080	181	2640	192	175	2720	155	3080	181	2640
544.nab_r	192	151	2150	151	2140	151	2150	192	151	2150	151	2140	151	2150
549.fotonik3d_r	192	1210	618	1211	618	1211	618	192	1210	618	1211	618	1211	618
554.roms_r	192	748	408	747	409	750	407	96	340	448	340	449	340	449

SPECrate®2017_fp_base = **1030**

SPECrate®2017_fp_peak = **1060**

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:
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"

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.

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

General Notes (Continued)

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>

Platform Notes

BIOS Settings:

Sub NUMA Clustering set to Enable SNC2(2-clusters)

Adjacent cache line prefetcher set to Enabled

DCU streamer prefetch set to Disabled

Enhanced CPU performance set to Auto

LLC Dead Line set to Disabled

Processor C6 Report set to Enabled

ADDDC Sparing set to Disabled

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost Thu Feb 15 16:24:24 2024

SUT (System Under Test) info as seen by some common utilities.

Table of contents

1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
12. 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. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

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

Test Date: Feb-2024
Hardware Availability: Feb-2024
Software Availability: Jun-2023

Platform Notes (Continued)

```
-----
2. w
   16:24:24 up  5:53,  1 user,  load average: 132.54, 176.56, 184.44
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
root      tty1     -             10:32    5:48m  1.22s  0.31s  -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) 4126743
   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) 4126743
   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 --nobuild --action validate --define default-platform-flags --define numcopies=192 -c
ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --reportable --iterations 3 --define smt-on --define
cores=96 --define physicalfirst --define invoke_with_interleave --define drop_caches --tune all -o all
fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=192 --configfile
ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --reportable --iterations 3 --define smt-on --define
cores=96 --define physicalfirst --define invoke_with_interleave --define drop_caches --tune all
--output_format all --nopower --runmode rate --tune base:peak --size refrate fprate --nopreenv
--note-preenv --logfile $SPEC/tmp/CPU2017.008/templogs/preenv.fprate.008.0.log --lognum 008.0
--from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

```
-----
6. /proc/cpuinfo
   model name      : INTEL(R) XEON(R) PLATINUM 8558P
   vendor_id      : GenuineIntel
   cpu family     : 6
   model          : 207
   stepping       : 2
   microcode      : 0x21000200
   bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
   cpu cores      : 48
   siblings       : 96
   2 physical ids (chips)
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Platform Notes (Continued)

192 processors (hardware threads)

physical id 0: core ids 0-47

physical id 1: core ids 0-47

physical id 0: apicids 0-95

physical id 1: apicids 128-223

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.4:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          46 bits physical, 57 bits virtual
Byte Order:             Little Endian
CPU(s):                 192
On-line CPU(s) list:   0-191
Vendor ID:              GenuineIntel
Model name:             INTEL(R) XEON(R) PLATINUM 8558P
CPU family:             6
Model:                  207
Thread(s) per core:    2
Core(s) per socket:    48
Socket(s):              2
Stepping:               2
CPU max MHz:           4000.0000
CPU min MHz:           800.0000
BogoMIPS:               5400.00
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
                        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 avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts hwp
                        hwp_act_window hwp_epp hwp_pkg_req hfi avx512vbmi umip pku ospke waitpkg
                        avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
                        avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b
                        enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16
                        amx_tile flush_lld arch_capabilities
L1d cache:              4.5 MiB (96 instances)
L1i cache:              3 MiB (96 instances)
L2 cache:               192 MiB (96 instances)
L3 cache:               520 MiB (2 instances)
NUMA node(s):          4
NUMA node0 CPU(s):     0-23,96-119
NUMA node1 CPU(s):     24-47,120-143
NUMA node2 CPU(s):     48-71,144-167
NUMA node3 CPU(s):     72-95,168-191
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:     Not affected
Vulnerability Mds:      Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Platform Notes (Continued)

Vulnerability Retbleed: Not affected
 Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
 Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
 Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSE-eIBRS SW sequence
 Vulnerability Srbds: Not affected
 Vulnerability Tsx async abort: Not affected

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	4.5M	12	Data	1	64	1	64
L1i	32K	3M	8	Instruction	1	64	1	64
L2	2M	192M	16	Unified	2	2048	1	64
L3	260M	520M	20	Unified	3	212992	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```

available: 4 nodes (0-3)
node 0 cpus: 0-23,96-119
node 0 size: 257682 MB
node 0 free: 227331 MB
node 1 cpus: 24-47,120-143
node 1 size: 258035 MB
node 1 free: 238767 MB
node 2 cpus: 48-71,144-167
node 2 size: 258035 MB
node 2 free: 238664 MB
node 3 cpus: 72-95,168-191
node 3 size: 257962 MB
node 3 free: 238764 MB
node distances:
node  0  1  2  3
 0:  10  12  21  21
 1:  12  10  21  21
 2:  21  21  10  12
 3:  21  21  12  10

```

9. /proc/meminfo

MemTotal: 1056477932 kB

10. who -r

run-level 3 Feb 15 10:31

11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)

```

Default Target Status
multi-user      degraded

```

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

```

UNIT          LOAD ACTIVE SUB    DESCRIPTION
* smartd.service loaded failed failed Self Monitoring and Reporting Technology (SMART) Daemon

```

13. Services, from systemctl list-unit-files

```

STATE          UNIT FILES
enabled        YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager getty@ irqbalance

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Platform Notes (Continued)

```

issue-generator kbdsettings klog lvm2-monitor nscd postfix purge-kernels rollback rsyslog
smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs
disabled autofsd autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
chronyd console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info
firewalld gpm grub2-once haveged haveged-switch-root ipmi ipmievd issue-add-ssh-keys
kexec-load lunmask man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd
serial-getty@ smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures
systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2
vncserver@
indirect wickedd

```

```

-----
14. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
root=UUID=lae035da-2948-4dc2-9bb2-437ad0076efe
splash=silent
mitigations=auto
quiet
security=apparmor

```

```

-----
15. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 4.00 GHz.
                   The governor "performance" may decide which speed to use
                   within this range.

  boost state support:
    Supported: yes
    Active: yes

```

```

-----
16. sysctl
kernel.numa_balancing          1
kernel.randomize_va_space     2
vm.compaction_proactiveness    20
vm.dirty_background_bytes      0
vm.dirty_background_ratio     10
vm.dirty_bytes                 0
vm.dirty_expire_centisecs     3000
vm.dirty_ratio                 20
vm.dirty_writeback_centisecs   500
vm.dirtytime_expire_seconds   43200
vm.extfrag_threshold           500
vm.min_unmapped_ratio         1
vm.nr_hugepages                0
vm.nr_hugepages_mempolicy     0
vm.nr_overcommit_hugepages    0
vm.swappiness                  1
vm.watermark_boost_factor     15000
vm.watermark_scale_factor     10
vm.zone_reclaim_mode          0

```

```

-----
17. /sys/kernel/mm/transparent_hugepage
defrag          always defer defer+madvice [madvice] never
enabled        [always] madvice never
hpage_pmd_size 2097152
shmem_enabled  always within_size advise [never] deny force

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Platform Notes (Continued)

```

18. /sys/kernel/mm/transparent_hugepage/khugepaged
alloc_sleep_millisecs 60000
defrag 1
max_ptes_none 511
max_ptes_shared 256
max_ptes_swap 64
pages_to_scan 4096
scan_sleep_millisecs 10000

```

```

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

```

```

20. Disk information
SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 btrfs 222G 89G 132G 41% /home

```

```

21. /sys/devices/virtual/dmi/id
Vendor: Cisco Systems Inc
Product: UCSC-C240-M7SX
Serial: WZP27100DJ4

```

```

22. dmidecode
Additional information from dmidecode 3.4 follows. WARNING: Use caution when you interpret this section.
The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately
determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the
"DMTF SMBIOS" standard.
Memory:
16x 0xCE00 M321R8GA0PB0-CWMCH 64 GB 2 rank 5600

```

```

23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: Cisco Systems, Inc.
BIOS Version: C240M7.4.3.3a.0.0118241337
BIOS Date: 01/18/2024
BIOS Revision: 5.32

```

Compiler Version Notes

```

=====
C | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(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++ | 508.namd_r(base, peak) 510.parest_r(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.

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Compiler Version Notes (Continued)

=====
C++, C | 511.povray_r(base, peak) 526.blender_r(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.
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++, C, Fortran | 507.cactuBSSN_r(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.
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.
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.

=====
Fortran | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(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.

=====
Fortran, C | 521.wrf_r(base, peak) 527.cam4_r(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.
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.

Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Base Portability Flags

```

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -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
-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

```

C++ benchmarks:

```

-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

```

Fortran benchmarks:

```

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

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Base Optimization Flags (Continued)

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
-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both 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 -Wno-implicit-int -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:

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

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

519.lbm_r: basepeak = yes

538.imagick_r: basepeak = yes

544.nab_r: basepeak = yes

C++ benchmarks:

508.namd_r: basepeak = yes

510.parest_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xsaphirerapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

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

Benchmarks using both Fortran and C:

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

Benchmarks using both C and C++:

511.povray_r: -w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1) -fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8558P, 2.70GHz)

SPECrate®2017_fp_base = 1030

SPECrate®2017_fp_peak = 1060

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2024

Hardware Availability: Feb-2024

Software Availability: Jun-2023

Peak Optimization Flags (Continued)

511.povray_r (continued):

```
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4 -Wno-implicit-int
-mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

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

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-EMR-revA.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.0-EMR-revA.xml>

SPEC CPU and SPECrate 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.

Tested with SPEC CPU®2017 v1.1.9 on 2024-02-15 19:24:24-0500.

Report generated on 2024-04-11 15:34:05 by CPU2017 PDF formatter v6716.

Originally published on 2024-03-13.