



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

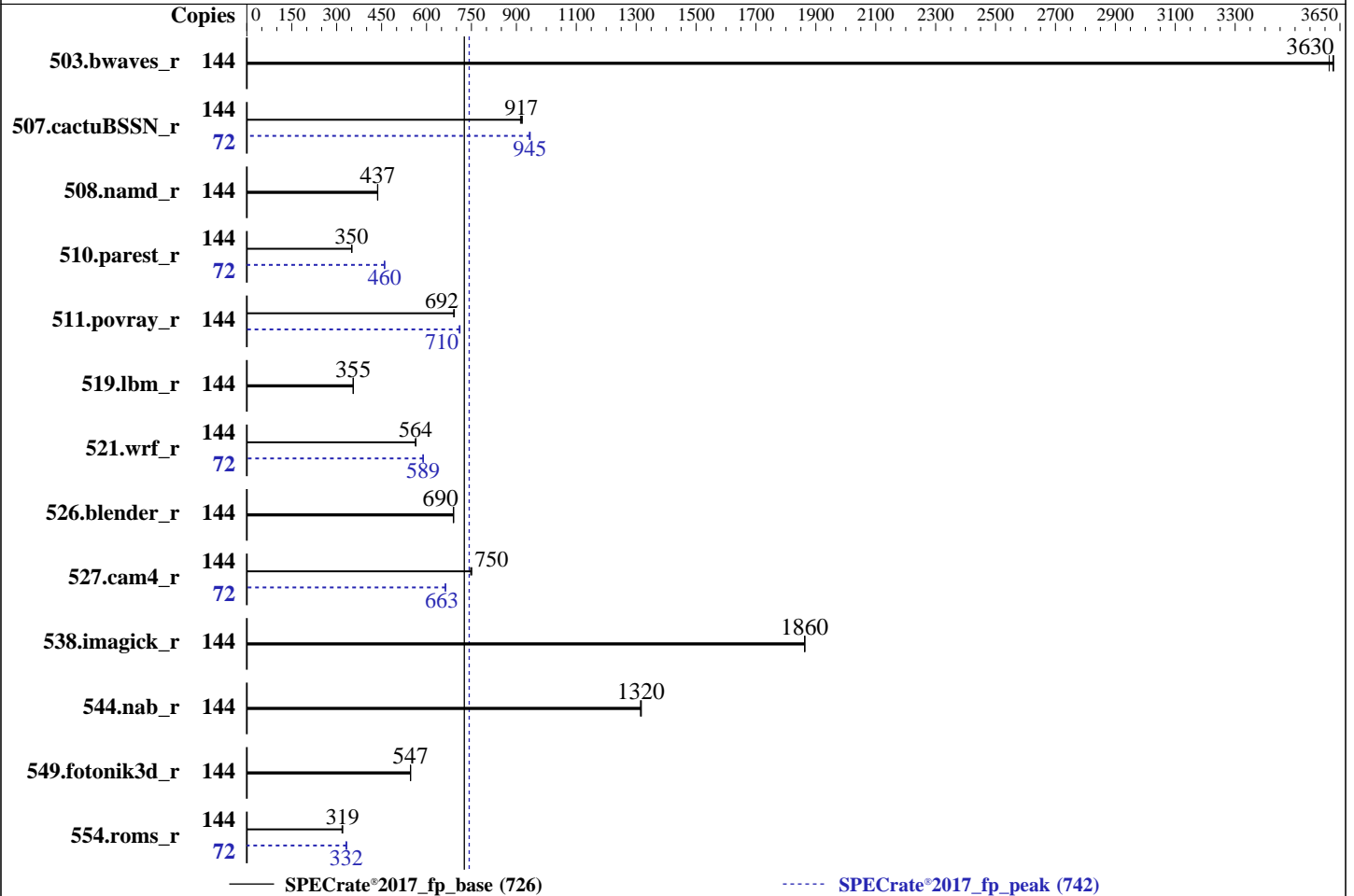
Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022



Hardware

CPU Name: Intel Xeon Platinum 8452Y
 Max MHz: 3200
 Nominal: 2000
 Enabled: 72 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: 67.5 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 1 x 960 GB M.2 SSD SATA
 Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP4 5.14.21-150400.22-default
 Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;
 Parallel: No
 Firmware: Version 4.3.1a released Feb-2023
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc memory allocator V5.0.1
 Power Management: BIOS set to prefer performance at the cost of additional power usage



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	144	400	3610	<u>398</u>	<u>3630</u>	398	3630	144	400	3610	<u>398</u>	<u>3630</u>	398	3630
507.cactuBSSN_r	144	198	920	200	914	<u>199</u>	<u>917</u>	72	96.3	946	96.7	943	<u>96.4</u>	<u>945</u>
508.namd_r	144	313	437	314	436	<u>313</u>	<u>437</u>	144	313	437	314	436	<u>313</u>	<u>437</u>
510.parest_r	144	1072	351	<u>1077</u>	<u>350</u>	1077	350	72	<u>410</u>	<u>460</u>	409	460	410	460
511.povray_r	144	485	693	487	691	<u>486</u>	<u>692</u>	144	474	709	472	712	<u>473</u>	<u>710</u>
519.lbm_r	144	<u>427</u>	<u>355</u>	427	356	427	355	144	<u>427</u>	<u>355</u>	427	356	427	355
521.wrf_r	144	571	565	<u>572</u>	<u>564</u>	573	563	72	274	588	<u>274</u>	<u>589</u>	274	589
526.blender_r	144	318	691	<u>318</u>	<u>690</u>	318	689	144	318	691	<u>318</u>	<u>690</u>	318	689
527.cam4_r	144	335	751	<u>336</u>	<u>750</u>	337	747	72	<u>190</u>	<u>663</u>	190	664	190	663
538.imagick_r	144	192	1860	192	1860	<u>192</u>	<u>1860</u>	144	192	1860	192	1860	<u>192</u>	<u>1860</u>
544.nab_r	144	184	1310	<u>184</u>	<u>1320</u>	184	1320	144	184	1310	<u>184</u>	<u>1320</u>	184	1320
549.fotonik3d_r	144	1027	546	<u>1027</u>	<u>547</u>	1026	547	144	1027	546	<u>1027</u>	<u>547</u>	1026	547
554.roms_r	144	720	318	<u>717</u>	<u>319</u>	715	320	72	343	334	<u>345</u>	<u>332</u>	345	331

SPECrate®2017_fp_base = **726**

SPECrate®2017_fp_peak = **742**

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:

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

General Notes (Continued)

```
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.

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 SNC4
LLC Dead Line set to Disabled
ADDDC Sparing set to Disabled
Processor C6 Report set to Enabled
UPI Link Enablement 3
UPI Link Power Management Enabled
```

```
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on specsrv Mon Feb 27 06:42:56 2023
```

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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Platform Notes (Continued)

- 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 specsrv 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
06:42:56 up 3:01, 1 user, load average: 78.12, 126.74, 137.22
USER      TTY      FROM          LOGIN@      IDLE        JCPU      PCPU      WHAT
root      tty1    -              03:48       2:54m      1.30s     0.23s    -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) 4126790
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) 4126790
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
-----
```

```
-----
5. sysinfo process ancestry
-----
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Platform Notes (Continued)

```

/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-bash
runcpu --action=build --action validate --define default-platform-flags --define numcopies=144 -c
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --reportable --iterations 3 --define smt-on --define
cores=72 --define physicalfirst --define invoke_with_interleave --define drop_caches --tune all -o all
fprate
runcpu --action build --action validate --define default-platform-flags --define numcopies=144 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --reportable --iterations 3 --define smt-on --define
cores=72 --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/CPU2017.101/templogs/preenv.fprate.101.0.log --lognum 101.0
--from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

```

```

-----
6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) Platinum 8452Y
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 143
   stepping        : 8
   microcode       : 0x2b000161
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swaggs
   cpu cores       : 36
   siblings        : 72
   2 physical ids (chips)
   144 processors (hardware threads)
   physical id 0:  core ids 0-35
   physical id 1:  core ids 0-35
   physical id 0:  apicids 0-71
   physical id 1:  apicids 128-199

```

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):            144
On-line CPU(s) list: 0-143

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

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

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

Platform Notes (Continued)

```

Vendor ID: GenuineIntel
Model name: Intel(R) Xeon(R) Platinum 8452Y
CPU family: 6
Model: 143
Thread(s) per core: 2
Core(s) per socket: 36
Socket(s): 2
Stepping: 8
CPU max MHz: 3200.0000
CPU min MHz: 800.0000
BogoMIPS: 4000.00
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
        clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
        lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
        nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
        ds_cpl 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 cat_l2 cdp_l3
        invpcid_single intel_ppin cdp_l2 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 avx_vnni avx512_bf16 wbnoinvd dtherm ida
        arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku
        ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
        tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b
        enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16
        amx_tile flush_lld arch_capabilities
Virtualization: VT-x
L1d cache: 3.4 MiB (72 instances)
L1i cache: 2.3 MiB (72 instances)
L2 cache: 144 MiB (72 instances)
L3 cache: 135 MiB (2 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-8,72-80
NUMA node1 CPU(s): 9-17,81-89
NUMA node2 CPU(s): 18-26,90-98
NUMA node3 CPU(s): 27-35,99-107
NUMA node4 CPU(s): 36-44,108-116
NUMA node5 CPU(s): 45-53,117-125
NUMA node6 CPU(s): 54-62,126-134
NUMA node7 CPU(s): 63-71,135-143
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Platform Notes (Continued)

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

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	3.4M	12	Data	1	64	1	64
L1i	32K	2.3M	8	Instruction	1	64	1	64
L2	2M	144M	16	Unified	2	2048	1	64
L3	67.5M	135M	15	Unified	3	73728	1	64

8. numactl --hardware

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

available: 8 nodes (0-7)

node 0 cpus: 0-8,72-80

node 0 size: 128667 MB

node 0 free: 127285 MB

node 1 cpus: 9-17,81-89

node 1 size: 129019 MB

node 1 free: 128116 MB

node 2 cpus: 18-26,90-98

node 2 size: 129019 MB

node 2 free: 128171 MB

node 3 cpus: 27-35,99-107

node 3 size: 129019 MB

node 3 free: 128159 MB

node 4 cpus: 36-44,108-116

node 4 size: 129019 MB

node 4 free: 128109 MB

node 5 cpus: 45-53,117-125

node 5 size: 129019 MB

node 5 free: 128168 MB

node 6 cpus: 54-62,126-134

node 6 size: 128984 MB

node 6 free: 128120 MB

node 7 cpus: 63-71,135-143

node 7 size: 128972 MB

node 7 free: 128129 MB

node distances:

node	0	1	2	3	4	5	6	7
0:	10	12	12	12	21	21	21	21
1:	12	10	12	12	21	21	21	21
2:	12	12	10	12	21	21	21	21
3:	12	12	12	10	21	21	21	21

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

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

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

Platform Notes (Continued)

4:	21	21	21	21	10	12	12	12
5:	21	21	21	21	12	10	12	12
6:	21	21	21	21	12	12	10	12
7:	21	21	21	21	12	12	12	10

```
-----
9. /proc/meminfo
   MemTotal:          1056483080 kB
-----
```

```
-----
10. who -r
    run-level 3 Feb 27 03:42
-----
```

```
-----
11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
    Default Target   Status
    multi-user       running
-----
```

```
-----
12. Services, from systemctl list-unit-files
    STATE                UNIT FILES
    enabled              YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron getty@ haveged irqbalance
                        issue-generator kbdsettings klog lvm2-monitor nscd 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 ebttables 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 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=7a984919-bd0d-4451-8476-5139e3d5b29b
    splash=silent
    mitigations=auto
    quiet
    security=apparmor
-----
```

```
-----
14. cpupower frequency-info
    analyzing CPU 0:
        current policy: frequency should be within 800 MHz and 3.20 GHz.
                        The governor "performance" may decide which speed to use
-----
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Platform Notes (Continued)

within this range.
boost state support:
Supported: yes
Active: yes

15. sysctl

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

16. /sys/kernel/mm/transparent_hugepage

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

17. /sys/kernel/mm/transparent_hugepage/khugepaged

alloc_sleep_millisecs	60000
defrag	1
max_ptes_none	511
max_ptes_shared	256
max_ptes_swap	64
pages_to_scan	4096
scan_sleep_millisecs	10000

18. OS release

From /etc/*-release /etc/*-version

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

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

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

Platform Notes (Continued)

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/sda3	xfs	220G	13G	208G	6%	/

20. /sys/devices/virtual/dmi/id

Vendor:	Cisco Systems Inc
Product:	UCSC-C240-M7SX
Serial:	WZP26330JLV

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:
16x 0xAD00 HMC94MEBRA109N 64 GB 2 rank 4800

22. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor:	Cisco Systems, Inc.
BIOS Version:	C240M7.4.3.1a.0.0201231701
BIOS Date:	02/01/2023
BIOS Revision:	5.29

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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

```
=====
C++       | 508.namd_r(base, peak) 510.parest_r(base, peak)
-----
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Compiler Version Notes (Continued)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2023.0.0 Build 20221201
Copyright (C) 1985-2022 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
2023.0.0 Build 20221201
Copyright (C) 1985-2022 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
2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2023.0.0 Build 20221201

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Compiler Version Notes (Continued)

Copyright (C) 1985-2022 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

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



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y, 2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

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
```

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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y,
2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Peak Compiler Invocation (Continued)

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

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 -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:

503.bwaves_r: basepeak = yes

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y,
2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

Peak Optimization Flags (Continued)

549.fotonik3d_r: basepeak = yes

```
554.roms_r: -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
```

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++:

```
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)
-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 -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
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html>

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

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml>

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



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS C240 M7 (Intel Xeon Platinum 8452Y,
2.00GHz)

SPECrate®2017_fp_base = 726

SPECrate®2017_fp_peak = 742

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Feb-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

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 2023-02-27 09:42:55-0500.

Report generated on 2023-03-29 00:36:05 by CPU2017 PDF formatter v6442.

Originally published on 2023-03-28.