

# SPEC CPU®2017 Floating Point Speed Result

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My Corporation

SPECspeed®2017\_fp\_base = 29.4

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: nnn (Your SPEC license number)

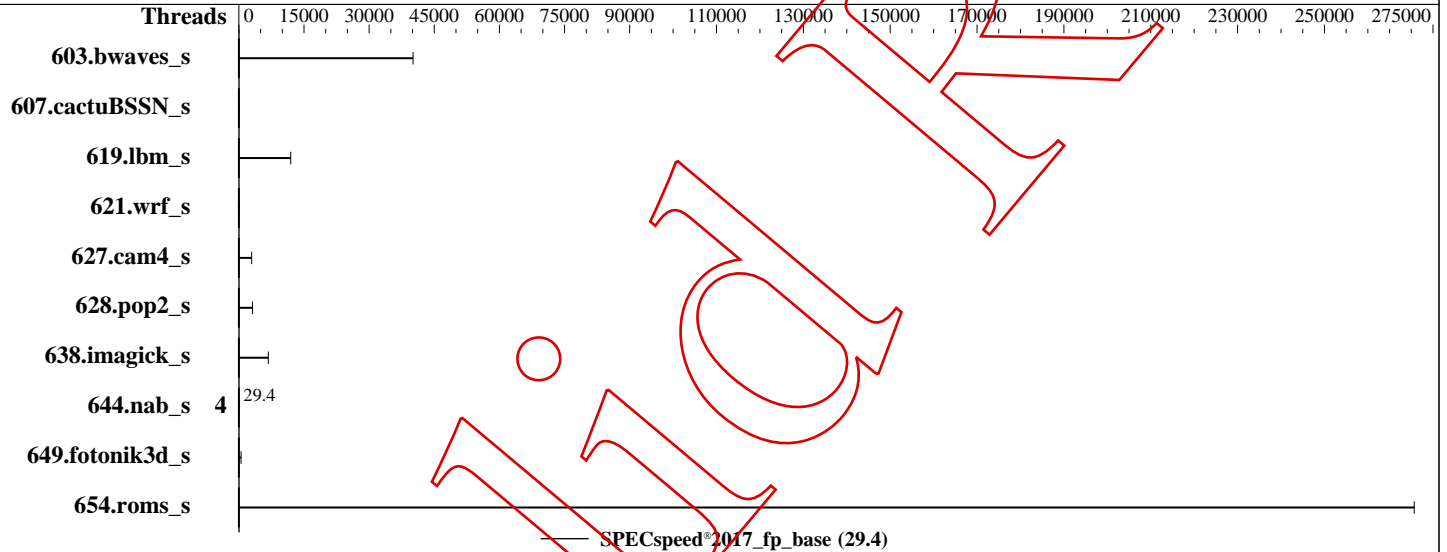
Test Sponsor: My Corporation

Tested by: My Corporation

Test Date: Oct-2024

Hardware Availability:

Software Availability:



## Hardware

CPU Name: 06/8f  
Max MHz:  
Nominal:  
Enabled: cores, 1 chip, threads/core  
Orderable:  
Cache L1:  
L2:  
L3:  
Other:  
Memory: 1.785 GB fixme: If using DDR4, the format is:  
'N GB (N x N GB nRxn PC4-nnnnX-X)'  
Storage: 51 GB add more disk info here  
Other:

## Software

OS: Ubuntu 24.04 LTS  
6.8.0-35-generic  
Compiler: C/C++/Fortran: Version 10.1.0 of GCC, the  
GNU Compiler Collection  
Parallel: Yes  
Firmware:  
File System: ext4  
System State: Run level 5 (add definition here)  
Base Pointers: 64-bit  
Peak Pointers: Not Applicable  
Other:  
Power Management:

## Errors

'reportable' flag not set during run  
627.cam4\_s (base) did not have enough runs!  
654.roms\_s (base) did not have enough runs!  
649.fotonik3d\_s (base) did not have enough runs!  
603.bwaves\_s (base) did not have enough runs!  
628.pop2\_s (base) did not have enough runs!  
621.wrf\_s (base) did not have enough runs!  
619.lbm\_s (base) did not have enough runs!  
644.nab\_s (base) did not have enough runs!  
638.imagick\_s (base) did not have enough runs!  
607.cactuBSSN\_s (base) did not have enough runs!

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## Errors (Continued)

627.cam4\_s (base) had invalid runs!  
654.roms\_s (base) had invalid runs!  
649.fotonik3d\_s (base) had invalid runs!  
603.bwaves\_s (base) had invalid runs!  
628.pop2\_s (base) had invalid runs!  
621.wrf\_s (base) had invalid runs!  
619.lbm\_s (base) had invalid runs!  
638.imagick\_s (base) had invalid runs!  
607.cactuBSSN\_s (base) had invalid runs!  
Run of 603.bwaves\_s (base) was not valid; status is RE  
Run of 607.cactuBSSN\_s (base) was not valid; status is CE  
Run of 619.lbm\_s (base) was not valid; status is RE  
Run of 621.wrf\_s (base) was not valid; status is CE  
Run of 627.cam4\_s (base) was not valid; status is RE  
Run of 628.pop2\_s (base) was not valid; status is RE  
Run of 638.imagick\_s (base) was not valid; status is RE  
Run of 649.fotonik3d\_s (base) was not valid; status is RE  
Run of 654.roms\_s (base) was not valid; status is RE

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	4	1.47	0.00											
607.cactuBSSN_s	1	0.00	0.00											
619.lbm_s	4	0.439	0.00											
621.wrf_s	1	0.00	0.00											
627.cam4_s	4	3.01	0.00											
628.pop2_s	4	3.78	0.00											
638.imagick_s	4	2.13	0.00											
644.nab_s	4	<b>595</b>	<b>29.4</b>											
649.fotonik3d_s	4	18.1	0.00											
654.roms_s	4	0.0582	0.00											

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

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/usr/lib64:/usr/lib:/lib64"  
OMP\_STACKSIZE = "120M"

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## Platform Notes

Sysinfo program /home/tdx/speccpu2017/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on tdx-guest Tue Oct 29 08:05:12 2024

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

### Table of contents

1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 255 (255.4-lubuntu8.1)
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/dmidecode
22. dmidecode
23. BIOS

1. uname -a  
Linux tdx-guest 6.8.0-35-generic #35-Ubuntu SMP PREEMPT\_DYNAMIC Mon May 20 15:51:52 UTC 2024 x86\_64 x86\_64  
x86\_64 GNU/Linux

2. w  
08:05:12 up 2:07, 1 user, load average: 5.46, 7.85, 7.31  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root hvc0 - 05:57 18:06 11.41s ? sh -c w 2>/dev/null

3. Username  
From environment variable \$USER: root

4. ulimit -a  
time(seconds) unlimited  
file(blocks) unlimited  
data(kbytes) unlimited  
stack(kbytes) 8192  
coredump(blocks) 0  
memory(kbytes) unlimited  
locked memory(kbytes) 233908  
process 7107

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**Hardware Availability:**

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## Platform Notes (Continued)

nofiles 1024  
vmemory(kbytes) unlimited  
locks unlimited  
rtprio 0

### 5. sysinfo process ancestry

```
/sbin/init
/bin/login -p --
-bash
runcpu --config=tdx2.cfg --tune=base --size=ref all --copies=15
runcpu --configfile tdx2.cfg --tune base --size ref --copies 15 --moreportable --nopower --runmode speed
--tune base --size refs speed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.026/temlogs/preenv.fpspeed.026.1.log --lognum 026.1 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/tdx/speccpu2017
```

### 6. /proc/cpuinfo

```
model name      : 06/8f
vendor_id       : GenuineIntel
cpu family      : 6
model           : 143
stepping        : 8
microcode       : 0x2b0005d1
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
cpu cores       : 16
siblings        : 16
1 physical ids (chips)
16 processors (hardware threads)
physical id 0: core ids 0-15
physical id 0: apicids 0-15
```

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:	52 bits physical, 57 bits virtual
Byte Order:	Little Endian
CPU(s):	16
On-line CPU(s) / list:	0-15
Vendor ID:	GenuineIntel
BIOS Vendor ID:	QEMU
Model name:	06/8f
BIOS Model name:	pc-q35-8.2 CPU @ 2.0GHz
BIOS CPU family:	1
CPU family:	6
Model:	143
Thread(s) per core:	1
Core(s) per socket:	16
Socket(s):	1
Stepping:	8
BogoMIPS:	4800.00
Flags:	fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat clflush dts mmx fxsr sse sse2 ss ht tm syscall nx pdpe1gb rdtscp lm constant_tsc bts rep_good nopl tsc_reliable nonstop_tsc cpuid

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## Platform Notes (Continued)

tsc\_known\_freq pni pclmulqdq dtes64 ds\_cpl ssse3 fma cx16 pdcml pcid  
sse4\_1 sse4\_2 x2apic movbe popcnt tsc\_deadline\_timer aes xsave avx  
f16c rdrand hypervisor lahf\_lm abm 3dnowprefetch cpuid\_fault ssbd  
ibrs ibpb stibp ibrs\_enhanced tdx guest tsbsbase bml avx2 smep bmi2  
erms invpcid avx512f avx512dq rdseed adx smap avx512ifma clflushopt  
clwb avx512cd sha\_ni avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves  
avx\_vnni avx512\_bf16 wbnoinvd avx512\_vbmi umip pku ospke avx512\_vbmi2  
gfni vaes vpclmulqdq avx512\_vnni avx512\_bitalg avx512\_vpopcntdq la57  
rdrpid bus\_lock\_detect cldemote movdiri movdir64b fsrm md\_clear  
serialize tsxldtrk amx\_bf16 avx512\_fp16 amx\_tile amx\_int8 flush\_l1d  
arch\_capabilities

Hypervisor vendor: KVM  
Virtualization type: full  
L1d cache: 512 KiB (16 instances)  
L1i cache: 512 KiB (16 instances)  
L2 cache: 64 MiB (16 instances)  
L3 cache: 16 MiB (1 instance)  
NUMA node(s): 1  
NUMA node0 CPU(s): 0-15  
Vulnerability Gather data sampling: Not affected  
Vulnerability Itlb multihit: Not affected  
Vulnerability Lltf: Not affected  
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;  
PBRBS-eIBRS SW sequence; BHI BHI\_DIS\_S  
Vulnerability Smbds: 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	32K	512K	8	Data	1	64	1	64
L1i	32K	512K	8	Instruction	1	64	1	64
L2	4M	64M	16	Unified	2	4096	1	64
L3	16M	16M	16	Unified	3	16384	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: 0-15  
node 0 size: 1827 MB  
node 0 free: 422 MB  
node distances:  
node 0  
0: 10

9. /proc/meminfo

MemTotal: 1871284 kB

10. who -r

run-level 5 Oct 29 05:57

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## Platform Notes (Continued)

11. Systemd service manager version: systemd 255 (255.4-lubuntu8.1)

Default Target	Status
graphical	degraded

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

UNIT	LOAD	ACTIVE	SUB	DESCRIPTION
* user@0.service	loaded	failed	failed	User Manager for UID 0

Legend: LOAD -> Reflects whether the unit definition was properly loaded.  
ACTIVE -> The high-level unit activation state, i.e. generalization of SUB.  
SUB -> The low-level unit activation state, values depend on unit type.  
1 loaded units listed.

13. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager apparmor appport blk-availability cloud-config cloud-final cloud-init cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ grub-common grub-initrd-fallback keyboard-setup lvm2-monitor multipathd networkd-dispatcher open-iscsi open-vm-tools rsyslog secureboot-db setvtrgb snapd ssh sysstat systemd-networkd systemd-networkd-wait-online systemd-pstore systemd-resolved systemd-timesyncd ua-reboot-cmds ubuntu-advantage udisks2 ufw unattended-upgrades vgauth
enabled-runtime	netplan-ovs-cleanrp systemd-fsck-root systemd-remount-fs
disabled	console-getty debug-shell iscsid nftables rsync systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysext systemd-time-wait-sync
indirect	serial-getty@ systemd-sysupdate systemd-sysupdate-reboot uidd
masked	cryptdisks cryptdisks-early hwclock multipath-tools-boot pollinate screen-cleanup sudo x11-common

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

BOOT\_IMAGE=/vmlinuz-6.8.0-35-generic  
root=UUID=41106c9e-97fc-4396-8622-4f692c8c5bb1  
ro  
console=tty1  
console=ttyS0

15. cpupower frequency-info

analyzing CPU 9:  
Unable to determine current policy  
boost state support:  
Supported: no  
Active: no

16. 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

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## Platform Notes (Continued)

```
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
```

```
-----
17. /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
-----
```

```
-----
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 Ubuntu 24.04 LTS
-----
```

```
-----
20. Disk information
SPEC is set to: /home/tdx/speccpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/vda1       ext4   51G   30G   22G   59% /
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor:      QEMU
Product:     Standard PC (Q35 + ICH9, 2009)
-----
```

```
-----
22. dmidecode
Additional information from dmidecode 3.5 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:
1x QEMU Not Specified 2 GB
-----
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Ubuntu distribution of EDK II
-----
```

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## Platform Notes (Continued)

BIOS Version: 2024.02-3+tdx1.0  
BIOS Date: 07/03/2024  
BIOS Revision: 0.0

## Compiler Version Notes

=====  
C | 619.lbm\_s(base) 638.imagick\_s(base) 644.mab\_s(base)  
=====

gcc (Ubuntu 13.2.0-23ubuntu4) 13.2.0  
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This is free software; see the source for copying conditions. There is NO  
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  
=====

=====  
Fortran | 603.bwaves\_s(base) 649.fotonik3d\_s(base) 654.rms\_s(base)  
=====

GNU Fortran (Ubuntu 13.2.0-23ubuntu4) 13.2.0  
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=====

=====  
Fortran, C | 627.cam4\_s(base) 628.pop2\_s(base)  
=====

GNU Fortran (Ubuntu 13.2.0-23ubuntu4) 13.2.0  
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=====

## Base Compiler Invocation

C benchmarks:

gcc

Fortran benchmarks:

gfortran

Benchmarks using both Fortran and C (except as noted below):

gfortran gcc



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## Base Portability Flags

603.bwaves\_s: -DSPEC\_LP64  
619.lbm\_s: -DSPEC\_LP64  
627.cam4\_s: -DSPEC\_CASE\_FLAG -DSPEC\_LP64  
628.pop2\_s: -DSPEC\_CASE\_FLAG -fconvert=big-endian -DSPEC\_LP64  
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=c99 -g -O3 -march=native -fno-strict-aliasing -fopenmp  
-DSPEC\_OPENMP

Fortran benchmarks:

-m64 -g -O3 -march=native -DSPEC\_OPENMP -fopenmp

Benchmarks using both Fortran and C:

627.cam4\_s: -m64 -std=c99 -g -O3 -march=native -fno-strict-aliasing  
-DSPEC\_OPENMP -fopenmp

628.pop2\_s: Same as 627.cam4\_s

## Base Other Flags

Fortran benchmarks:

-fallow-argument-mismatch

Benchmarks using both Fortran and C (except as noted below):

-fallow-argument-mismatch

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