SPEC CPU®2017 Floating Point Speed Result

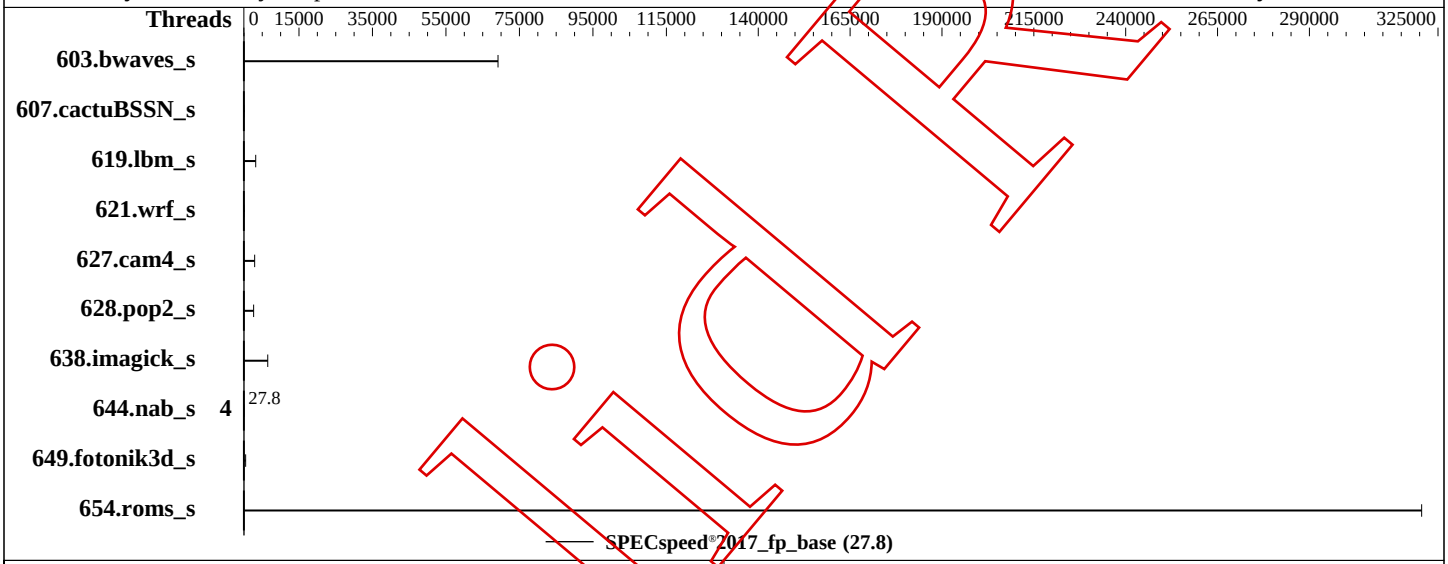
My Corporation

SPECspeed®2017_fp_base = 27.8

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!
644.nab_s (base) did not have enough runs!
649.fotonik3d_s (base) did not have enough runs!
628.pop2_s (base) did not have enough runs!
607.cactuBSSN_s (base) did not have enough runs!
654.roms_s (base) did not have enough runs!
619.lbm_s (base) did not have enough runs!
603.bwaves_s (base) did not have enough runs!
638.imagick_s (base) did not have enough runs!
621.wrf_s (base) did not have enough runs!

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Software Availability:

Errors (Continued)

627.cam4_s (base) had invalid runs!
649.fotonik3d_s (base) had invalid runs!
628.pop2_s (base) had invalid runs!
607.cactuBSSN_s (base) had invalid runs!
654.roms_s (base) had invalid runs!
619.lbm_s (base) had invalid runs!
603.bwaves_s (base) had invalid runs!
638.imagick_s (base) had invalid runs!
621.wrf_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 VE
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	0.853	0.00											
607.cactuBSSN_s	1	0.00	0.00											
619.lbm_s	4	1.62	0.00											
621.wrf_s	1	0.00	0.00											
627.cam4_s	4	3.02	0.00											
628.pop2_s	4	4.47	0.00											
638.imagick_s	4	2.22	0.00											
644.nab_s	4	**629**	**27.8**											
649.fotonik3d_s	4	18.8	0.00											
654.roms_s	4	0.0491	0.00											

SPECspeed®2017_fp_base = 27.8

SPECspeed®2017_fp_peak = Not Run

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"
```

Platform Notes

```
Sysinfo program /home/tdx/speccpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on tdx-guest Sun Oct 27 06:32:40 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 (255.4-1ubuntu8.1)
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/dmi/id
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
   06:32:40 up  1:55,  1 user,  load average: 1.00, 1.00, 1.37
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     hvc0     -                05:34   56:40   2.42s   ?    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
```

(Continued on next page)

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
 runcpu --configfile tdx2.cfg --tune base --size ref --noreportable --nopower --runmode speed --tune base
   --size refspeed fpspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.016/templogs/preenv.fpspeed.016.1.log --lognum 016.1 --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 pdcm 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 fsgsbase bmi1 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 avx512vbmi umip pku ospke avx512_vbmi2
                                  gfni vaes vpclmulqdq avx512_vnni avx512_bitalg avx512_vpopcntdq la57
                                  rdpid 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 L1tf:                   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;
                                  PBRSB-eIBRS SW sequence; 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       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: 900 MB
  node distances:
  node   0
    0:  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:        1871280 kB

------------------------------------------------------------
10. who -r
  run-level 5 Oct 27 04:37
```

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Platform Notes (Continued)

```
------------------------------------------------------------
11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.1)
  Default Target  Status
  graphical       degraded

------------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
    UNIT                  LOAD   ACTIVE SUB    DESCRIPTION
  * fwupd-refresh.service loaded failed failed Refresh fwupd metadata and update motd
  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 apport 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-cleanup 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 uuidd
  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=41106c9c-97fc-4396-8622-4f692c8c5bb1
  ro
  console=tty1
  console=ttyS0

------------------------------------------------------------
15. cpupower frequency-info
  analyzing CPU 4:
    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
```

(Continued on next page)

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   19G   33G  37% /

------------------------------------------------------------
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
```

(Continued on next page)

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.nab_s(base)
--------------------------------------------------------------------------------------------------------------
gcc (Ubuntu 13.2.0-23ubuntu4) 13.2.0
Copyright (C) 2023 Free Software Foundation, Inc.
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.roms_s(base)
--------------------------------------------------------------------------------------------------------------
GNU Fortran (Ubuntu 13.2.0-23ubuntu4) 13.2.0
Copyright (C) 2023 Free Software Foundation, Inc.
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, C | 627.cam4_s(base) 628.pop2_s(base)
--------------------------------------------------------------------------------------------------------------
GNU Fortran (Ubuntu 13.2.0-23ubuntu4) 13.2.0
Copyright (C) 2023 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
gcc (Ubuntu 13.2.0-23ubuntu4) 13.2.0
Copyright (C) 2023 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
--------------------------------------------------------------------------------------------------------------
```

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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Test Date: Oct-2024
Hardware Availability:
Software Availability:

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`

Tested with SPEC CPU®2017 v1.1.9 on 2024-10-27 06:32:39+0000.
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