SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

$SPECrate®2017\_fp\_base = 909$

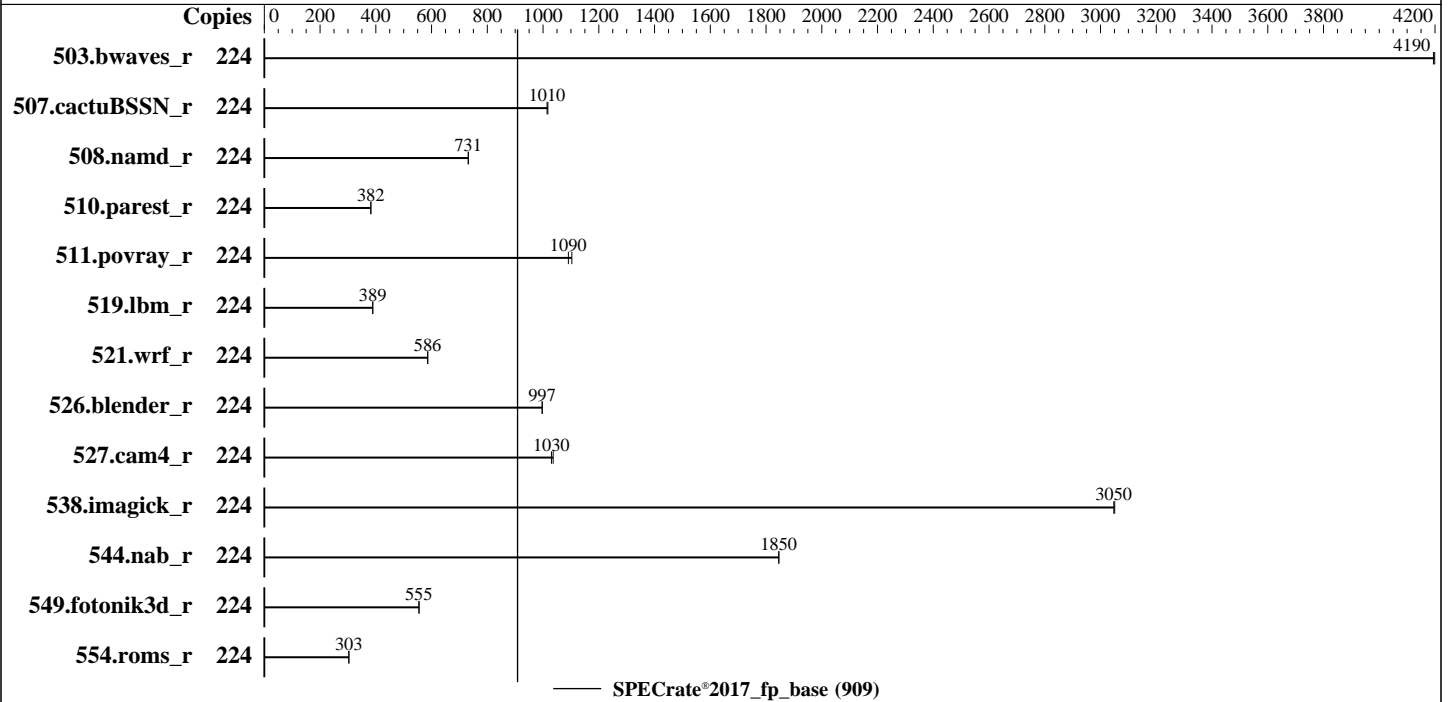$SPECrate®2017\_fp\_peak = Not Run$

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Copies	
503.bwaves_r	224 — 4190
507.cactuBSSN_r	224 — 1010
508.namd_r	224 — 731
510.parest_r	224 — 382
511.povray_r	224 — 1090
519.lbm_r	224 — 389
521.wrf_r	224 — 586
526.blender_r	224 — 997
527.cam4_r	224 — 1030
538.imagick_r	224 — 3050
544.nab_r	224 — 1850
549.fotonik3d_r	224 — 555
554.roms_r	224 — 303

SPECrate®2017_fp_base (909)

Hardware

CPU Name: Intel Xeon Platinum 8480+
 Max MHz: 3800
 Nominal: 2000
Enabled: 112 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: 105 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 7.68 TB PCIe 4.0x4 NVMe SSD
Other: None

Software

OS: Red Hat Enterprise Linux release 9.0 (Plow)
 Kernel 5.14.0-70.22.1.el9_0.x86_64
Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++
 Compiler for Linux;
 Fortran: Version 2022.1 of Intel Fortran Compiler
 for Linux;
Parallel: No
Firmware: Version 3A11 released Dec-2022
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance
 at the cost of additional power usage.

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_base = 909

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050	**Test Date:** Jan-2023
Test Sponsor: Quanta Computer Inc.	**Hardware Availability:** Nov-2022
Tested by: Quanta Computer Inc.	**Software Availability:** Aug-2022

Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
503.bwaves_r	224	**536**	**4190**	535	4200									
507.cactuBSSN_r	224	279	1020	**280**	**1010**									
508.namd_r	224	291	732	**291**	**731**									
510.parest_r	224	**1533**	**382**	1533	382									
511.povray_r	224	474	1100	**480**	**1090**									
519.lbm_r	224	**607**	**389**	607	389									
521.wrf_r	224	856	586	**856**	**586**									
526.blender_r	224	**342**	**997**	342	997									
527.cam4_r	224	**380**	**1030**	378	1040									
538.imagick_r	224	183	3050	**183**	**3050**									
544.nab_r	224	204	1850	**204**	**1850**									
549.fotonik3d_r	224	1572	555	**1574**	**555**									
554.roms_r	224	**1174**	**303**	1173	303									
SPECrate®2017_fp_base =			**909**											
SPECrate®2017_fp_peak =			**Not Run**											

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 = "/root/cpu2017/lib/intel64:/root/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

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

$SPECrate^{®}2017\_fp\_base =$ 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

$SPECrate^{®}2017\_fp\_peak =$ Not Run

CPU2017 License: 9050	**Test Date:**	Jan-2023
Test Sponsor: Quanta Computer Inc.	**Hardware Availability:** Nov-2022
Tested by: Quanta Computer Inc.	**Software Availability:** Aug-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 Configuration
Intel VT for Directed I/O set to Disabled
Patrol Scrub set to Disabled
SNC set to SNC4
Hardware P-States set to Disable

 Sysinfo program /root/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Sun Feb 12 07:51:19 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 250 (250-6.el9_0)
 12. Services, from systemctl list-unit-files
 13. Linux kernel boot-time arguments, from /proc/cmdline
 14. cpupower frequency-info
 15. sysctl
 16. /sys/kernel/mm/transparent_hugepage
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base =   909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Platform Notes (Continued)

```
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 localhost.localdomain 5.14.0-70.22.1.el9_0.x86_64 #1 SMP PREEMPT Tue Aug 2 10:02:12 EDT 2022 x86_64
   x86_64 x86_64 GNU/Linux


   ------------------------------------------------------------
2. w
   07:51:19 up  4:48,  1 user,  load average: 138.21, 201.49, 215.52
   USER     TTY          LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1      03:03    4:48m  1.05s  0.09s /bin/bash ./S6Qtest.sh

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


   ------------------------------------------------------------
4. ulimit -a
   real-time non-blocking time  (microseconds, -R) unlimited
   core file size              (blocks, -c) 0
   data seg size               (kbytes, -d) unlimited
   scheduling priority               (-e) 0
   file size                   (blocks, -f) unlimited
   pending signals                   (-i) 4124181
   max locked memory           (kbytes, -l) unlimited
   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) 4124181
   virtual memory              (kbytes, -v) unlimited
   file locks                        (-x) unlimited


   ------------------------------------------------------------
5. sysinfo process ancestry
  /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
   login -- root
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base = 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050		**Test Date:**	Jan-2023
Test Sponsor:	Quanta Computer Inc.	**Hardware Availability:**	Nov-2022
Tested by:	Quanta Computer Inc.	**Software Availability:**	Aug-2022

Platform Notes (Continued)

```
  -bash
 /bin/bash ./S6Qtest.sh
 /bin/bash ./S6Qtest.sh
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=224 -c
   ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=112 --define physicalfirst
    --define invoke_with_interleave --define drop_caches --tune base -o all fprate -n 2
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=224 --configfile
   ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=112 --define physicalfirst
    --define invoke_with_interleave --define drop_caches --tune base --output_format all --iterations 2
    --nopower --runmode rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
     $SPEC/tmp/CPU2017.023/templogs/preenv.fprate.023.0.log --lognum 023.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /root/cpu2017


 ------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8480+
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b000111
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 56
    siblings        : 112
    2 physical ids (chips)
    224 processors (hardware threads)
    physical id 0: core ids 0-55
    physical id 1: core ids 0-55
    physical id 0: apicids 0-111
    physical id 1: apicids 128-239
  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:               52 bits physical, 57 bits virtual
  Byte Order:                  Little Endian
  CPU(s):                      224
  On-line CPU(s) list:         0-223
  Vendor ID:                   GenuineIntel
  BIOS Vendor ID:              Intel(R) Corporation
  Model name:                  Intel(R) Xeon(R) Platinum 8480+
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base = 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)   SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050	**Test Date:** Jan-2023
Test Sponsor: Quanta Computer Inc.	**Hardware Availability:** Nov-2022
Tested by: Quanta Computer Inc.	**Software Availability:** Aug-2022

Platform Notes (Continued)

```
  BIOS Model name:                  Intel(R) Xeon(R) Platinum 8480+
  CPU family:                       6
  Model:                            143
  Thread(s) per core:               2
  Core(s) per socket:               56
  Socket(s):                        2
  Stepping:                         8
  Frequency boost:                  enabled
  CPU max MHz:                      2001.0000
  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 avx2
                                       smep bmi2 erms invpcid 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 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_l1d arch_capabilities
  Virtualization:                   VT-x
  L1d cache:                        5.3 MiB (112 instances)
  L1i cache:                        3.5 MiB (112 instances)
  L2 cache:                         224 MiB (112 instances)
  L3 cache:                         210 MiB (2 instances)
  NUMA node(s):                     8
  NUMA node0 CPU(s):                0-13,112-125
  NUMA node1 CPU(s):                14-27,126-139
  NUMA node2 CPU(s):                28-41,140-153
  NUMA node3 CPU(s):                42-55,154-167
  NUMA node4 CPU(s):                56-69,168-181
  NUMA node5 CPU(s):                70-83,182-195
  NUMA node6 CPU(s):                84-97,196-209
  NUMA node7 CPU(s):                98-111,210-223
  Vulnerability Itlb multihit:      Not affected
  Vulnerability L1tf:               Not affected
  Vulnerability Mds:                Not affected
  Vulnerability Meltdown:           Not affected
  Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
```

(Continued on next page)

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base = 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Platform Notes (Continued)

```
  Vulnerability Spectre v1:        Mitigation; usercopy/swapgs 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     5.3M   12 Data              1      64        1             64
     L1i       32K     3.5M    8 Instruction       1      64        1             64
     L2         2M     224M   16 Unified           2    2048        1             64
     L3       105M     210M   15 Unified           3  114688        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: 0-13,112-125
   node 0 size: 128033 MB
   node 0 free: 126453 MB
   node 1 cpus: 14-27,126-139
   node 1 size: 128981 MB
   node 1 free: 127924 MB
   node 2 cpus: 28-41,140-153
   node 2 size: 129017 MB
   node 2 free: 127958 MB
   node 3 cpus: 42-55,154-167
   node 3 size: 129017 MB
   node 3 free: 127942 MB
   node 4 cpus: 56-69,168-181
   node 4 size: 129017 MB
   node 4 free: 127897 MB
   node 5 cpus: 70-83,182-195
   node 5 size: 129017 MB
   node 5 free: 127960 MB
   node 6 cpus: 84-97,196-209
   node 6 size: 129017 MB
   node 6 free: 127954 MB
   node 7 cpus: 98-111,210-223
   node 7 size: 128998 MB
   node 7 free: 127949 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
     4:   21   21   21   21   10   12   12   12
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base = 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz) SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Platform Notes (Continued)

```
    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:       1055849740 kB


------------------------------------------------------------
10. who -r
   run-level 3 Feb 12 03:03


------------------------------------------------------------
11. Systemd service manager version: systemd 250 (250-6.el9_0)
   Default Target  Status
   multi-user      running


------------------------------------------------------------
12. Services, from systemctl list-unit-files
   STATE            UNIT FILES
   enabled          ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
                    accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker gdm
                     getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt
                    low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
                    nvmefc-boot-connections ostree-remount power-profiles-daemon qemu-guest-agent rhsmcertd
                    rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control
                        systemd-network-generator udisks2 upower vgauthd vmtoolsd
   enabled-runtime  rc-local systemd-remount-fs
   disabled         arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
                    canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed
                    dbus-daemon debug-shell dnsmasq firewalld gssproxy iprdump iprinit iprupdate ipsec iscsid
                    iscsiuio kpatch kvm_stat ledmon man-db-restart-cache-update nfs-blkmap nfs-server nftables
                     nvmf-autoconnect podman podman-auto-update podman-restart psacct ras-mc-ctl rasdaemon
                    rdisc rhcd rhsm rhsm-facts rpmdb-rebuild serial-getty@ speech-dispatcherd sshd-keygen@
                        systemd-boot-check-no-failures systemd-pstore systemd-sysext wpa_supplicant
   indirect         spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=(hd4,gpt2)/vmlinuz-5.14.0-70.22.1.el9_0.x86_64
   root=UUID=3224807a-bb12-4011-9c08-e4342403c547
   ro
   crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
   resume=UUID=ffab002c-001d-4ca9-b552-95895861c71a
   nomodeset
   rhgb
   quiet
```

(Continued on next page)

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

$SPECrate^{®}2017\_fp\_base =$ 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

$SPECrate^{®}2017\_fp\_peak =$ Not Run

CPU2017 License:	9050	**Test Date:**	Jan-2023
Test Sponsor:	Quanta Computer Inc.	**Hardware Availability:**	Nov-2022
Tested by:	Quanta Computer Inc.	**Software Availability:**	Aug-2022

Platform Notes (Continued)

```
  selinux=0
  default_hugepagesz=1G
  hugepagesz=1G


  ----------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 2.00 GHz.
                    The governor "performance" may decide which speed to use
                    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                     60
  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
```

(Continued on next page)

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

$SPECrate^®2017\_fp\_base =$ 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

$SPECrate^®2017\_fp\_peak = Not Run$

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Platform Notes (Continued)

```
   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
  os-release     Red Hat Enterprise Linux 9.0 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
  system-release Red Hat Enterprise Linux release 9.0 (Plow)


  ----------------------------------------------------------------
19. Disk information
SPEC is set to: /root/cpu2017
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p6 xfs   310G   21G  290G   7% /


  ----------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
     Vendor:         Quanta Cloud Technology Inc.
     Product:        QuantaGrid D54Q-2U


  ----------------------------------------------------------------
21. dmidecode
  Additional information from dmidecode 3.3 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 Micron MTC40F2046S1RC48BA1 64 GB 2 rank 4800



  ----------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:      American Megatrends International, LLC.
   BIOS Version:     3A11
   BIOS Date:        12/02/2022
   BIOS Revision:    5.29
   Firmware Revision: 3.8
```

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base = 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Compiler Version Notes

```
==============================================================================
C                | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++              | 508.namd_r(base) 510.parest_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++, C           | 511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++, C, Fortran | 507.cactuBSSN_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran          | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base = 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Compiler Version Notes (Continued)

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

==========================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base)
--------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
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`

(Continued on next page)

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base = 909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050
Test Sponsor: Quanta Computer Inc.
Tested by: Quanta Computer Inc.

Test Date: Jan-2023
Hardware Availability: Nov-2022
Software Availability: Aug-2022

Base Portability Flags (Continued)

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 -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

C++ benchmarks:
```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -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 -xCORE-AVX512 -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 C and C++:
```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:
```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -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
```

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Quanta Cloud Technology
(Test Sponsor: Quanta Computer Inc.)

SPECrate®2017_fp_base =   909

D54Q-2U (Intel Xeon Platinum 8480+, 2.0GHz)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9050		**Test Date:**	Jan-2023
Test Sponsor:	Quanta Computer Inc.	**Hardware Availability:**	Nov-2022
Tested by:	Quanta Computer Inc.	**Software Availability:**	Aug-2022

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

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-Eagle_Stream-Platform-Settings-V1.0.html

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

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/Quanta-Computer-Inc-Eagle_Stream-Platform-Settings-V1.0.xml

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 2023-02-11 18:51:19-0500.
Report generated on 2023-03-02 11:27:29 by CPU2017 PDF formatter v6442.
Originally published on 2023-02-28.