SPEC CPU®2017 Floating Point Rate Result

New H3C Technologies Co., Ltd.

H3C UniServer R4700 G6 (Intel Xeon Platinum 8568Y+)

SPECrate®2017_fp_base =   1160
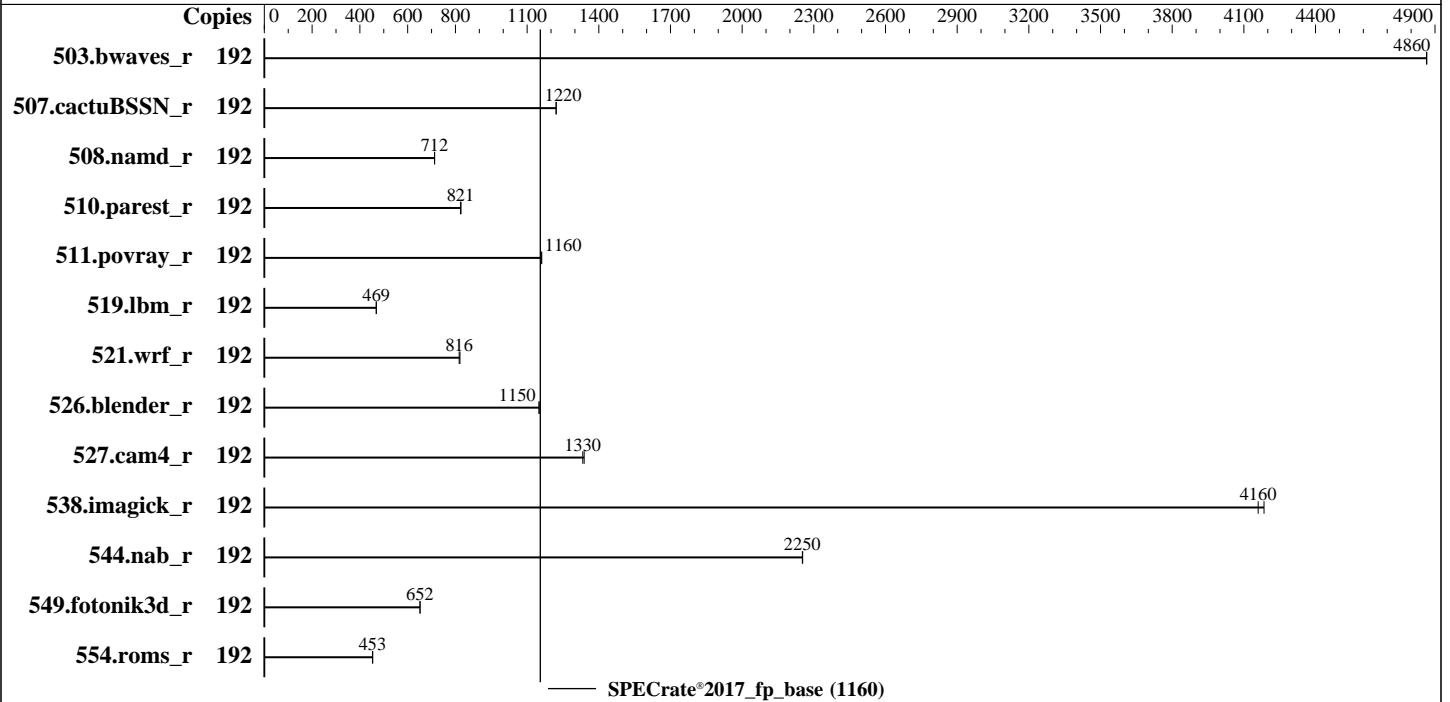
SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Nov-2024

Hardware Availability: Oct-2023

Software Availability: Mar-2024

Copies	Benchmark	Result
503.bwaves_r	192	4860
507.cactuBSSN_r	192	1220
508.namd_r	192	712
510.parest_r	192	821
511.povray_r	192	1160
519.lbm_r	192	469
521.wrf_r	192	816
526.blender_r	192	1150
527.cam4_r	192	1330
538.imagick_r	192	4160
544.nab_r	192	2250
549.fotonik3d_r	192	652
554.roms_r	192	453

SPECrate®2017_fp_base (1160)

Hardware

CPU Name: Intel Xeon Platinum 8568Y+
 Max MHz: 4000
 Nominal: 2300
Enabled: 96 cores, 2 chips, 2 threads/core
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 300 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R, running at 5600)
Storage: 1 x 4.8 TB NVME SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP5
5.14.21-150500.53-default
Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2024.1 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 6.10.45 released Aug-2024 BIOS
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.

https://www.spec.org/

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H3C UniServer R4700 G6 (Intel Xeon Platinum 8568Y+)

SPECrate®2017_fp_base = 1160

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9066	**Test Date:** Nov-2024
Test Sponsor: New H3C Technologies Co., Ltd.	**Hardware Availability:** Oct-2023
Tested by: New H3C Technologies Co., Ltd.	**Software Availability:** Mar-2024

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	192	**396**	**4860**	396	4870									
507.cactuBSSN_r	192	199	1220	**199**	**1220**									
508.namd_r	192	**256**	**712**	256	713									
510.parest_r	192	610	823	**612**	**821**									
511.povray_r	192	386	1160	**387**	**1160**									
519.lbm_r	192	432	469	**432**	**469**									
521.wrf_r	192	525	819	**527**	**816**									
526.blender_r	192	**254**	**1150**	254	1150									
527.cam4_r	192	251	1340	**252**	**1330**									
538.imagick_r	192	**115**	**4160**	114	4180									
544.nab_r	192	**143**	**2250**	143	2250									
549.fotonik3d_r	192	1148	652	**1148**	**652**									
554.roms_r	192	**674**	**453**	672	454									

SPECrate®2017_fp_base = 1160

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

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3>   /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

(Continued on next page)

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Test Date: Nov-2024
Hardware Availability: Oct-2023
Software Availability: Mar-2024

General Notes (Continued)

```
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS Settings:
 SNC = Enable SNC2 (2-clusters)
 Intel VT for Directed I/O = Disabled
 Package C State = C6(Retention) state
 Virtual NUMA = Enabled
BMC Settings:
 Fan mode = powerful mode

 Sysinfo program /home/speccpu/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Wed Nov 13 01:53:45 2024

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

 ------------------------------------------------------------
 Table of contents
 ------------------------------------------------------------
  1. uname -a
  2. w
  3. Username
  4. ulimit -a
  5. sysinfo process ancestry
  6. /proc/cpuinfo
  7. lscpu
  8. numactl --hardware
  9. /proc/meminfo
 10. who -r
 11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
 12. Failed units, from systemctl list-units --state=failed
 13. Services, from systemctl list-unit-files
 14. Linux kernel boot-time arguments, from /proc/cmdline
 15. cpupower frequency-info
 16. tuned-adm active
 17. sysctl
 18. /sys/kernel/mm/transparent_hugepage
 19. /sys/kernel/mm/transparent_hugepage/khugepaged
 20. OS release
 21. Disk information
 22. /sys/devices/virtual/dmi/id
 23. dmidecode
 24. BIOS
 ------------------------------------------------------------

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

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

(Continued on next page)

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Platform Notes (Continued)

```
 2. w
   01:53:45 up 16:54,  2 users,  load average: 0.09, 0.14, 9.18
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     pts/0    172.16.27.225    Tue09    3:52m 0.14s  0.14s -bash
   root     pts/1    172.16.27.225    Tue09    16.00s 0.89s 0.00s sh rate.sh

 ------------------------------------------------------------
 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) 4124777
   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) 4124777
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited

 ------------------------------------------------------------
 5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize 30
  sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
  sshd: root@pts/1
  -bash
  sh rate.sh
  runcpu --nobuild --action validate --define default-platform-flags --define numcopies=192 -c
   ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=96 --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=192 --configfile
   ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=96 --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/CPU2017.158/templogs/preenv.fprate.158.0.log --lognum 158.0 --from_runcpu 2
  specperl $SPEC/bin/sysinfo
  $SPEC = /home/speccpu

 ------------------------------------------------------------
 6. /proc/cpuinfo
   model name      : INTEL(R) XEON(R) PLATINUM 8568Y+
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 207
   stepping        : 2
   microcode       : 0x21000200
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
   cpu cores       : 48
   siblings        : 96
   2 physical ids (chips)
   192 processors (hardware threads)
```

(Continued on next page)

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Platform Notes (Continued)

```
      physical id 0: core ids 0-47
      physical id 1: core ids 0-47
      physical id 0: apicids 0-95
      physical id 1: apicids 128-223
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
   virtualized systems.  Use the above data carefully.


   ------------------------------------------------------------
   7. lscpu

   From lscpu from util-linux 2.37.4:
     Architecture:                    x86_64
     CPU op-mode(s):                  32-bit, 64-bit
     Address sizes:                   52 bits physical, 57 bits virtual
     Byte Order:                      Little Endian
     CPU(s):                          192
     On-line CPU(s) list:             0-191
     Vendor ID:                       GenuineIntel
     Model name:                      INTEL(R) XEON(R) PLATINUM 8568Y+
     CPU family:                      6
     Model:                           207
     Thread(s) per core:              2
     Core(s) per socket:              48
     Socket(s):                       2
     Stepping:                        2
     CPU max MHz:                     4000.0000
     CPU min MHz:                     800.0000
     BogoMIPS:                        4600.00
     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 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 avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts hwp
                                      hwp_act_window hwp_epp hwp_pkg_req hfi avx512vbmi umip pku ospke waitpkg
                                      avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
                                      avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b
                                      enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16
                                      amx_tile flush_l1d arch_capabilities
     Virtualization:                  VT-x
     L1d cache:                       4.5 MiB (96 instances)
     L1i cache:                       3 MiB (96 instances)
     L2 cache:                        192 MiB (96 instances)
     L3 cache:                        600 MiB (2 instances)
     NUMA node(s):                    8
     NUMA node0 CPU(s):               0-11,96-107
     NUMA node1 CPU(s):               12-23,108-119
     NUMA node2 CPU(s):               24-35,120-131
     NUMA node3 CPU(s):               36-47,132-143
     NUMA node4 CPU(s):               48-59,144-155
     NUMA node5 CPU(s):               60-71,156-167
     NUMA node6 CPU(s):               72-83,168-179
     NUMA node7 CPU(s):               84-95,180-191
```

(Continued on next page)

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SPECrate®2017_fp_peak = Not Run

Platform Notes (Continued)

```
   Vulnerability Itlb multihit:      Not affected
   Vulnerability L1tf:               Not affected
   Vulnerability Mds:                Not affected
   Vulnerability Meltdown:           Not affected
   Vulnerability Mmio stale data:    Not affected
   Vulnerability Retbleed:           Not affected
   Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
   Vulnerability Spectre v1:         Mitigation; usercopy/swapgs barriers and __user pointer sanitization
   Vulnerability Spectre v2:         Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSB-eIBRS SW
                                     sequence
   Vulnerability Srbds:              Not affected
   Vulnerability Tsx async abort:    Not affected

 From lscpu --cache:
     NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL   SETS PHY-LINE COHERENCY-SIZE
     L1d      48K     4.5M   12 Data           1     64      1              64
     L1i      32K       3M    8 Instruction    1     64      1              64
     L2        2M     192M   16 Unified        2   2048      1              64
     L3      300M     600M   20 Unified        3 245760      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: 0-11,96-107
   node 0 size: 129016 MB
   node 0 free: 126168 MB
   node 1 cpus: 12-23,108-119
   node 1 size: 128578 MB
   node 1 free: 126111 MB
   node 2 cpus: 24-35,120-131
   node 2 size: 129017 MB
   node 2 free: 126621 MB
   node 3 cpus: 36-47,132-143
   node 3 size: 129017 MB
   node 3 free: 126571 MB
   node 4 cpus: 48-59,144-155
   node 4 size: 128983 MB
   node 4 free: 126484 MB
   node 5 cpus: 60-71,156-167
   node 5 size: 129017 MB
   node 5 free: 126093 MB
   node 6 cpus: 72-83,168-179
   node 6 size: 129017 MB
   node 6 free: 126530 MB
   node 7 cpus: 84-95,180-191
   node 7 size: 128574 MB
   node 7 free: 125243 MB
   node distances:
   node   0   1   2   3   4   5   6   7
     0:  10  20  20  20  20  20  20  20
     1:  20  10  20  20  20  20  20  20
     2:  20  20  10  20  20  20  20  20
     3:  20  20  20  10  20  20  20  20
     4:  20  20  20  20  10  20  20  20
     5:  20  20  20  20  20  10  20  20
     6:  20  20  20  20  20  20  10  20
     7:  20  20  20  20  20  20  20  10

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

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CPU2017 License: 9066   **Test Date:** Nov-2024
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Platform Notes (Continued)

```
 9. /proc/meminfo
    MemTotal:       1055974872 kB


   -----------------------------------------------------------
10. who -r
   run-level 3 Nov 12 08:59


   -----------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
   Default Target  Status
   multi-user      degraded


   -----------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
     UNIT          LOAD   ACTIVE SUB    DESCRIPTION
   * sep5.service loaded failed failed systemd script to load sep5 driver at boot time


   -----------------------------------------------------------
13. Services, from systemctl list-unit-files
    STATE            UNIT FILES
    enabled          ModemManager YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd
                     bluetooth cron display-manager firewalld getty@ irqbalance issue-generator kbdsettings
                     kdump kdump-early klog lvm2-monitor nscd nvmefc-boot-connections postfix purge-kernels
                     rollback rsyslog sep5 smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4
                     wickedd-dhcp6 wickedd-nanny wpa_supplicant
    enabled-runtime  systemd-remount-fs
    disabled         NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon autofs
                     autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates
                     chrony-wait chronyd console-getty cups cups-browsed debug-shell dmraid-activation dnsmasq
                     ebtables exchange-bmc-os-info fancontrol gpm grub2-once haveged haveged-switch-root ipmi
                     ipmievd irqbindall issue-add-ssh-keys kexec-load ksm kvm_stat lm_sensors lunmask
                     man-db-create multipathd nfs nfs-blkmap nmb nvmf-autoconnect openvpn@ ostree-remount
                     rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@ set_kthread_prio
                     smartd_generate_opts smb snmpd snmptrapd speech-dispatcherd systemd-boot-check-no-failures
                     systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
                     udisks2 update-system-flatpaks upower vncserver@ wpa_supplicant@
    indirect         pcscd saned@ wickedd


   -----------------------------------------------------------
14. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
    root=UUID=a88cec4e-8c93-48e1-b1c1-5874d40c9a64
    splash=silent
    resume=/dev/disk/by-uuid/88c758ac-d10b-493d-b755-89620eeac1b1
    mitigations=auto
    quiet
    security=apparmor
    crashkernel=404M,high
    crashkernel=72M,low


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

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Platform Notes (Continued)

```
    ----------------------------------------------------------
    16. tuned-adm active
      Current active profile: throughput-performance


    ----------------------------------------------------------
    17. 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
      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                      10
      vm.watermark_boost_factor          15000
      vm.watermark_scale_factor          10
      vm.zone_reclaim_mode               0


    ----------------------------------------------------------
    18. /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


    ----------------------------------------------------------
    19. /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


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


    ----------------------------------------------------------
    21. Disk information
    SPEC is set to: /home/speccpu
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/nvme0n1p3 xfs   4.8T  378G  4.5T   8% /home


    ----------------------------------------------------------
    22. /sys/devices/virtual/dmi/id
       Vendor:        New H3C Technologies Co., Ltd.
       Product:       H3C UniServer R4700 G6
       Product Family: Rack
       Serial:        210235A4FYH242000015
```

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New H3C Technologies Co., Ltd.

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Platform Notes (Continued)

```
      --------------------------------------------------------------
   23. dmidecode
     Additional information from dmidecode 3.4 follows.  WARNING: Use caution when you interpret this section.
     The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately
     determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the
     "DMTF SMBIOS" standard.
     Memory:
       16x Hynix HMCG94AHBRA480N 64 GB 2 rank 6400, configured at 5600


      --------------------------------------------------------------
   24. BIOS
   (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:        American Megatrends International, LLC.
     BIOS Version:       6.10.45
     BIOS Date:          08/23/2024
     BIOS Revision:      5.32
```

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 2024.1.0 Build 20240308
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------------------------------------------------------------------------------


==============================================================================
C++            | 508.namd_r(base) 510.parest_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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------------------------------------------------------------------------------


==============================================================================
C++, C         | 511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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------------------------------------------------------------------------------


==============================================================================
C++, C, Fortran | 507.cactuBSSN_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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------------------------------------------------------------------------------


==============================================================================
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 2024.1.0 Build 20240308
```

(Continued on next page)

New H3C Technologies Co., Ltd.

H3C UniServer R4700 G6 (Intel Xeon Platinum 8568Y+)

SPECrate®2017_fp_base =   1160

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9066
Test Sponsor: New H3C Technologies Co., Ltd.
Tested by: New H3C Technologies Co., Ltd.

Test Date: Nov-2024
Hardware Availability: Oct-2023
Software Availability: Mar-2024

Compiler Version Notes (Continued)

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


==============================================================================
Fortran, C    | 521.wrf_r(base) 527.cam4_r(base)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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`

(Continued on next page)

New H3C Technologies Co., Ltd.

H3C UniServer R4700 G6 (Intel Xeon Platinum 8568Y+)

SPECrate®2017_fp_base =   1160

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Nov-2024

Hardware Availability: Oct-2023

Software Availability: Mar-2024

Base Portability Flags (Continued)

549.fotonik3d_r: `-DSPEC_LP64`
554.roms_r: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
```
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

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

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

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
```

New H3C Technologies Co., Ltd.

H3C UniServer R4700 G6 (Intel Xeon Platinum 8568Y+)

SPECrate®2017_fp_base = 1160

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9066		**Test Date:**	Nov-2024
Test Sponsor:	New H3C Technologies Co., Ltd.	**Hardware Availability:**	Oct-2023
Tested by:	New H3C Technologies Co., Ltd.	**Software Availability:**	Mar-2024

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

http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html
http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-intel-RevB.html

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

http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml
http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-intel-RevB.xml

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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Report generated on 2024-12-05 10:07:57 by CPU2017 PDF formatter v6716.
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