SPEC CPU®2017 Integer Speed Result

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New H3C Technologies Co., Ltd.

H3C UniServer R6700 G6 (Intel Xeon Platinum 8450H)

$SPECspeed^{®}2017\_int\_base = 13.5$

$SPECspeed^{®}2017\_int\_peak = 13.7$

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

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

Threads

Benchmark	Threads	base	peak
600.perlbench_s	112	8.64	9.32
602.gcc_s	112	11.1	11.7
605.mcf_s	112	20.5	
620.omnetpp_s	112	9.90	
623.xalancbmk_s	112	25.9	
625.x264_s	112	19.8	20.7
631.deepsjeng_s	112	6.52	
641.leela_s	112	5.23	
648.exchange2_s	112	23.1	
657.xz_s	112	25.8	

SPECspeed®2017_int_base (13.5)   SPECspeed®2017_int_peak (13.7)

Hardware

CPU Name: Intel Xeon Platinum 8450H
 Max MHz: 3500
 Nominal: 2000
Enabled: 112 cores, 4 chips
Orderable: 1,2,3,4 chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 75 MB I+D on chip per chip
 Other: None
Memory: 1 TB (32 x 32 GB 2Rx8 PC5-4800B-R)
Storage: 1 x 7.68 TB NVME SSD
Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
5.14.0-70.22.1.el9_0.x86_64
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++
Compiler for Linux;
Fortran: Version 2023.0 of Intel Fortran Compiler
for Linux;
Parallel: Yes
Firmware: Version 5.29 released Jun-2023 BIOS
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance at the cost of
additional power usage.

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

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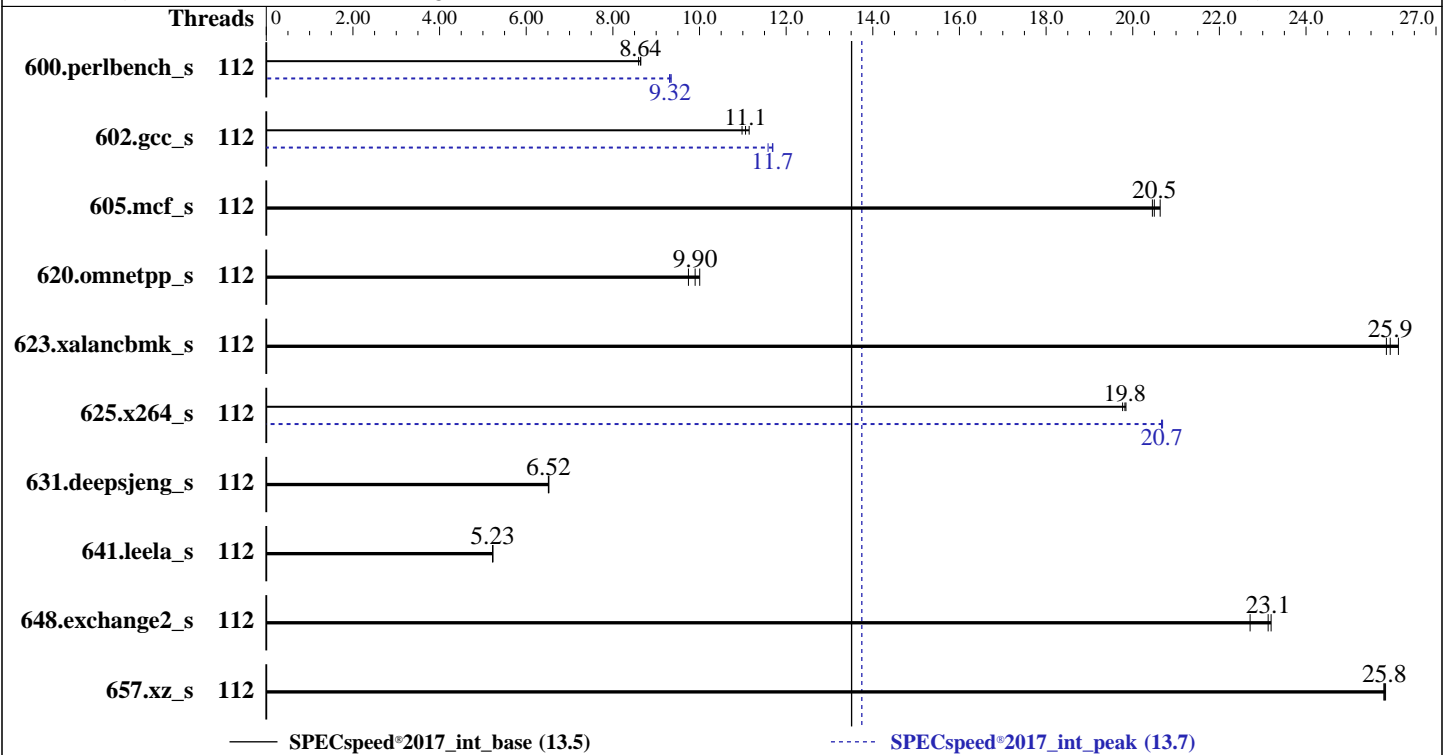|	
New H3C Technologies Co., Ltd.	SPECspeed®2017_int_base = 13.5
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Results Table

Benchmark	Base Threads	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Threads	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
600.perlbench_s	112	207	8.59	**206**	**8.64**	205	8.65	112	190	9.35	191	9.31	**190**	**9.32**
602.gcc_s	112	**360**	**11.1**	357	11.1	363	11.0	112	341	11.7	**341**	**11.7**	344	11.6
605.mcf_s	112	229	20.6	231	20.5	**230**	**20.5**	112	229	20.6	231	20.5	**230**	**20.5**
620.omnetpp_s	112	163	10.0	167	9.74	**165**	**9.90**	112	163	10.0	167	9.74	**165**	**9.90**
623.xalancbmk_s	112	**54.6**	**25.9**	54.2	26.1	54.8	25.9	112	**54.6**	**25.9**	54.2	26.1	54.8	25.9
625.x264_s	112	89.2	19.8	**89.0**	**19.8**	88.9	19.8	112	85.3	20.7	85.4	20.7	**85.3**	**20.7**
631.deepsjeng_s	112	220	6.51	220	6.52	**220**	**6.52**	112	220	6.51	220	6.52	**220**	**6.52**
641.leela_s	112	**326**	**5.23**	327	5.22	326	5.23	112	**326**	**5.23**	327	5.22	326	5.23
648.exchange2_s	112	127	23.2	**127**	**23.1**	129	22.7	112	127	23.2	**127**	**23.1**	129	22.7
657.xz_s	112	**240**	**25.8**	240	25.8	239	25.8	112	**240**	**25.8**	240	25.8	239	25.8

SPECspeed®2017_int_base =	**13.5**
SPECspeed®2017_int_peak =	**13.7**

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

Compiler Notes

```
SPEC has ruled that the compiler used for this result was performing a compilation
that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_s
benchmarks using a priori knowledge of the SPEC code and dataset to perform a
transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4
https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer
publish results using this optimization.

This result is left in the SPEC results database for historical reference.
```

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:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/speccpu/lib/intel64:/home/speccpu/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

General Notes

```
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Red Hat Enterprise Linux 8.4
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
```

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CPU2017 License: 9066	**Test Date:** Jul-2023
Test Sponsor: New H3C Technologies Co., Ltd.	**Hardware Availability:** Mar-2023
Tested by: New H3C Technologies Co., Ltd.	**Software Availability:** Dec-2022

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.
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
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:
Set Enable LP [Global] to Single LP
Set Patrol Scrub to Disabled
Set Power Performance Tuning to BIOS Controls EFB
Set ENERGY_PERF_BIAS_CFG_mode to Performance
Set LLC Prefetch to Disabled
Set FB Thread Slicing to Enabled

Sysinfo program /home/speccpu/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Thu Jul 20 16:56:21 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. 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
```

New H3C Technologies Co., Ltd.

$SPECspeed®2017\_int\_base = 13.5$

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Platform Notes (Continued)

```
  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
   16:56:21 up 11 min,  2 users,  load average: 0.00, 0.19, 0.27
  USER     TTY         LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1        16:54   13.00s  0.93s  0.00s -bash
  root     pts/0       16:47    8:24   0.00s  0.00s -bash


  ----------------------------------------------------------
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) 4124466
  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) 4124466
  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
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags -c
   ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=112 --tune base,peak -o all --define
   intspeedaffinity --define drop_caches intspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=112 --tune base,peak --output_format all
   --define intspeedaffinity --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed
   intspeed --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.018/templogs/preenv.intspeed.018.0.log
   --lognum 018.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/speccpu


  ----------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8450H
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 6
    microcode       : 0x2b000181
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
```

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Platform Notes (Continued)

```
     cpu cores      : 28
     siblings       : 28
     4 physical ids (chips)
     112 processors (hardware threads)
     physical id 0: core ids 0-27
     physical id 1: core ids 0-27
     physical id 2: core ids 0-27
     physical id 3: core ids 0-27
     physical id 0: apicids 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54
     physical id 1: apicids
     128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,1
     80,182
     physical id 2: apicids
     256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300,302,304,306,3
     08,310
     physical id 3: apicids
     384,386,388,390,392,394,396,398,400,402,404,406,408,410,412,414,416,418,420,422,424,426,428,430,432,434,4
     36,438
   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):                  112
     On-line CPU(s) list:     0-111
     Vendor ID:               GenuineIntel
     BIOS Vendor ID:          Intel(R) Corporation
     Model name:              Intel(R) Xeon(R) Platinum 8450H
     BIOS Model name:         Intel(R) Xeon(R) Platinum 8450H
     CPU family:              6
     Model:                   143
     Thread(s) per core:      1
     Core(s) per socket:      28
     Socket(s):               4
     Stepping:                6
     CPU max MHz:             3500.0000
     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 hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku
                              ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                              tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b
```

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Platform Notes (Continued)

```
                            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:                 300 MiB (4 instances)
  NUMA node(s):             4
  NUMA node0 CPU(s):        0-27
  NUMA node1 CPU(s):        28-55
  NUMA node2 CPU(s):        56-83
  NUMA node3 CPU(s):        84-111
  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
  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       75M     300M  15 Unified         3 81920      1            64

  -----------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0-27
  node 0 size: 257099 MB
  node 0 free: 255051 MB
  node 1 cpus: 28-55
  node 1 size: 258005 MB
  node 1 free: 257480 MB
  node 2 cpus: 56-83
  node 2 size: 258041 MB
  node 2 free: 257491 MB
  node 3 cpus: 84-111
  node 3 size: 258031 MB
  node 3 free: 257392 MB
  node distances:
  node   0   1   2   3
    0:  10  21  21  21
    1:  21  10  21  21
    2:  21  21  10  21
    3:  21  21  21  10

  -----------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1055926400 kB

  -----------------------------------------------------------
10. who -r
   run-level 3 Jul 20 16:45
```

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Platform Notes (Continued)

```
  ----------------------------------------------------------
  11. Systemd service manager version: systemd 250 (250-6.el9_0)
    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 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 lm_sensors
                    low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
                    nvmefc-boot-connections ostree-remount pmcd pmie pmlogger power-profiles-daemon
                    qemu-guest-agent rhsmcertd rpcbind rsyslog rtkit-daemon selinux-autorelabel-mark sep5
                    smartd sshd sssd switcheroo-control sysstat systemd-network-generator tuned udisks2 upower
                    vgauthd virtqemud vmtoolsd
    enabled-runtime systemd-remount-fs
    disabled        arp-ethers autofs 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 dovecot fancontrol fcoe firewalld grafana-server gssproxy
                    httpd httpd@ ibacm iprdump iprinit iprupdate ipsec iscsid iscsiuio kpatch kvm_stat ledmon
                    libvirt-guests libvirtd lldpad man-db-restart-cache-update named named-chroot nfs-blkmap
                    nfs-server nftables nmb numad nvmf-autoconnect pmfind pmie_farm pmlogger_farm pmproxy
                    podman podman-auto-update podman-restart postfix powertop psacct ras-mc-ctl rasdaemon
                    rdisc rhcd rhsm rhsm-facts rpmdb-rebuild rrdcached saslauthd serial-getty@ smb snmpd
                    snmptrapd spamassassin speech-dispatcherd srp_daemon srp_daemon_port@ sshd-keygen@
                    systemd-boot-check-no-failures systemd-nspawn@ systemd-pstore systemd-sysext target
                    targetclid tog-pegasus trace-cmd virtinterfaced virtnetworkd virtnodedevd virtnwfilterd
                    virtproxyd virtsecretd virtstoraged vsftpd wpa_supplicant
    indirect        pcscd spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
                    virtlockd virtlogd vsftpd@


  ----------------------------------------------------------
  14. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.22.1.el9_0.x86_64
    root=/dev/mapper/rhel-root
    ro
    crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
    resume=/dev/mapper/rhel-swap
    rd.lvm.lv=rhel/root
    rd.lvm.lv=rhel/swap
    rhgb
    quiet


  ----------------------------------------------------------
  15. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 800 MHz and 3.50 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           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                  40
    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     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)


    ----------------------------------------------------------
  21. Disk information
  SPEC is set to: /home/speccpu
    Filesystem            Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-home xfs   7.0T  225G  6.7T   4% /home


    ----------------------------------------------------------
  22. /sys/devices/virtual/dmi/id
      Product Family: Rack

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

(Continued on next page)

New H3C Technologies Co., Ltd.

H3C UniServer R6700 G6 (Intel Xeon Platinum 8450H)

SPECspeed®2017_int_base = 13.5

SPECspeed®2017_int_peak = 13.7

CPU2017 License: 9066   **Test Date:** Jul-2023
Test Sponsor: New H3C Technologies Co., Ltd.   **Hardware Availability:** Mar-2023
Tested by: New H3C Technologies Co., Ltd.   **Software Availability:** Dec-2022

Platform Notes (Continued)

```
 23. 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:
     30x Micron MTC20F2085S1RC48BA1 32 GB 2 rank 4800
     1x Samsung M321R4GA3BB6-CQKMG 32 GB 2 rank 4800
     1x Samsung M321R4GA3BB6-CQKVG 32 GB 2 rank 4800


   ------------------------------------------------------------
 24. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:        American Megatrends International, LLC.
    BIOS Version:       6.00.23
    BIOS Date:          06/20/2023
    BIOS Revision:      5.29
```

Compiler Version Notes

```
==============================================================================================
C        | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
         | 657.xz_s(base, peak)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
C++      | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
         | 641.leela_s(base, peak)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran | 648.exchange2_s(base, peak)
----------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

SPEC CPU®2017 Integer Speed Result

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New H3C Technologies Co., Ltd.

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Tested by: New H3C Technologies Co., Ltd.

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

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

C++ benchmarks:
-m64 -std=c++14 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:
-m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Peak Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

SPEC CPU®2017 Integer Speed Result
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New H3C Technologies Co., Ltd.

H3C UniServer R6700 G6 (Intel Xeon Platinum 8450H)

SPECspeed®2017_int_base = 13.5

SPECspeed®2017_int_peak = 13.7

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

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

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

602.gcc_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc

605.mcf_s: basepeak = yes

625.x264_s: -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
-fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

SPEC CPU®2017 Integer Speed Result

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H3C UniServer R6700 G6 (Intel Xeon Platinum 8450H)

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CPU2017 License: 9066		**Test Date:**	Jul-2023
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Tested by:	New H3C Technologies Co., Ltd.	**Software Availability:**	Dec-2022

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

```
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html
http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevC.html
```

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

```
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml
http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevC.xml
```

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

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