



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## New H3C Technologies Co., Ltd.

SPECspeed®2017\_int\_base = 13.3

### H3C UniServer R6700 G6 (Intel Xeon Platinum 8454H)

SPECspeed®2017\_int\_peak = 13.5

CPU2017 License: 9066

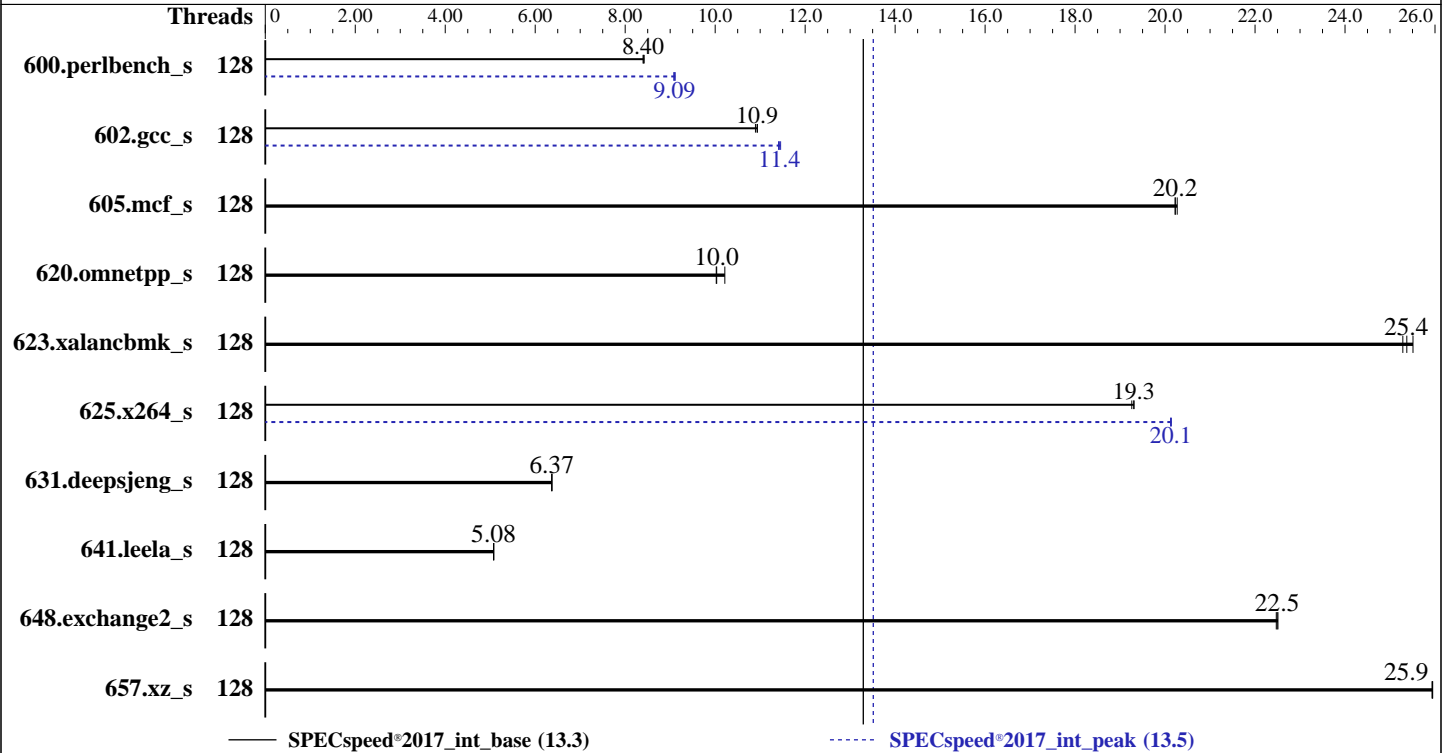
Test Date: Aug-2023

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: Mar-2023

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Dec-2022



### Hardware

CPU Name: Intel Xeon Platinum 8454H  
 Max MHz: 3400  
 Nominal: 2100  
 Enabled: 128 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: 82.5 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.



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## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	128	211	8.42	211	8.40	<b>211</b>	<b>8.40</b>	128	195	9.11	195	9.08	<b>195</b>	<b>9.09</b>
602.gcc_s	128	<b>364</b>	<b>10.9</b>	364	10.9	365	10.9	128	348	11.5	<b>348</b>	<b>11.4</b>	349	11.4
605.mcf_s	128	233	20.3	233	20.2	<b>233</b>	<b>20.2</b>	128	233	20.3	233	20.2	<b>233</b>	<b>20.2</b>
620.omnetpp_s	128	163	10.0	<b>163</b>	<b>10.0</b>	160	10.2	128	163	10.0	<b>163</b>	<b>10.0</b>	160	10.2
623.xalancbmk_s	128	55.5	25.5	<b>55.8</b>	<b>25.4</b>	56.0	25.3	128	55.5	25.5	<b>55.8</b>	<b>25.4</b>	56.0	25.3
625.x264_s	128	91.6	19.3	<b>91.4</b>	<b>19.3</b>	91.3	19.3	128	87.7	20.1	87.6	20.1	<b>87.6</b>	<b>20.1</b>
631.deepsjeng_s	128	<b>225</b>	<b>6.37</b>	225	6.37	225	6.37	128	<b>225</b>	<b>6.37</b>	225	6.37	225	6.37
641.leela_s	128	336	5.08	336	5.07	<b>336</b>	<b>5.08</b>	128	336	5.08	336	5.07	<b>336</b>	<b>5.08</b>
648.exchange2_s	128	131	22.5	<b>131</b>	<b>22.5</b>	131	22.5	128	131	22.5	<b>131</b>	<b>22.5</b>	131	22.5
657.xz_s	128	<b>238</b>	<b>25.9</b>	238	25.9	238	25.9	128	<b>238</b>	<b>25.9</b>	238	25.9	238	25.9

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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](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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## 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 Fri Aug 11 16:00:05 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. Systemd service manager version: systemd 250 (250-6.el9\_0)
11. Failed units, from systemctl list-units --state=failed
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent\_hugepage
18. /sys/kernel/mm/transparent\_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

-----  
1. uname -a  
Linux 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

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## Platform Notes (Continued)

x86\_64 x86\_64 GNU/Linux

```

-----
2. w
 16:00:05 up 3 min,  1 user,  load average: 0.00, 0.02, 0.00
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
root      tty1     15:57   13.00s 0.92s  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) 4124453
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) 4124453
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=128 --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=128 --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/CPU2017.041/templogs/preenv.intspeed.041.0.log
  --lognum 041.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/speccpu

```

```

-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Platinum 8454H
vendor_id      : GenuineIntel
cpu family      : 6
model           : 143
stepping        : 6
microcode       : 0x2b000181
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores       : 32
siblings        : 32

```

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## Platform Notes (Continued)

```

4 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids 0-31
physical id 1: core ids 0-31
physical id 2: core ids 0-31
physical id 3: core ids 0-31
physical id 0: apicids
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62
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
80,182,184,186,188,190
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
08,310,312,314,316,318
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
36,438,440,442,444,446

```

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):                128
On-line CPU(s) list:   0-127
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Platinum 8454H
BIOS Model name:      Intel(R) Xeon(R) Platinum 8454H
CPU family:            6
Model:                 143
Thread(s) per core:   1
Core(s) per socket:   32
Socket(s):             4
Stepping:              6
CPU max MHz:           3400.0000
CPU min MHz:           800.0000
BogoMIPS:              4200.00
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 stibp ibrs_enhanced
                        tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmil 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
                        enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16

```

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## Platform Notes (Continued)

```

Virtualization:          amx_tile flush_lld arch_capabilities
L1d cache:              VT-x
L1i cache:              6 MiB (128 instances)
L2 cache:               4 MiB (128 instances)
L3 cache:               256 MiB (128 instances)
NUMA node(s):           330 MiB (4 instances)
NUMA node0 CPU(s):      4
NUMA node1 CPU(s):      0-31
NUMA node2 CPU(s):      32-63
NUMA node3 CPU(s):      64-95
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/swaps 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	6M	12	Data	1	64	1	64
L1i	32K	4M	8	Instruction	1	64	1	64
L2	2M	256M	16	Unified	2	2048	1	64
L3	82.5M	330M	15	Unified	3	90112	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: 0-31
node 0 size: 257098 MB
node 0 free: 255550 MB
node 1 cpus: 32-63
node 1 size: 258004 MB
node 1 free: 257436 MB
node 2 cpus: 64-95
node 2 size: 258041 MB
node 2 free: 257446 MB
node 3 cpus: 96-127
node 3 size: 258030 MB
node 3 free: 257224 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: 1055923000 kB

'who -r' did not return a run level

10. Systemd service manager version: systemd 250 (250-6.el9\_0)

Default Target Status

(Continued on next page)



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## Platform Notes (Continued)

multi-user starting

### 11. 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

### 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 lm_sensors low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname nvme-fc-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 virtgemud 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 iscsiuiio kpatch kvm_stat ledmon libvirt-guests libvirtd lldpad man-db-restart-cache-update named named-chroot nfs-blkmap nfs-server nftables nmb numad nvme-fc-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 rpmbd-rebuild rrdcached saslauthd serial-getty@ smb snmpd snmptrapd spamassassin speech-dispatcherd srp_daemon srp_daemon_port@ sshd-keygen@ systemd-boot-check-no-failures systemd-nsd systemd-nsd@ systemd-pstore systemd-sysex target targetclid tog-pegasus trace-cmd virtinterfaced virtnetworkd virtnodevdev virtnwfilterd virtproxyd virtsecretd virtstoraged vsftpd wpa_supplicant
indirect	pcsd spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo virtlockd virtlogd vsftpd@

### 13. 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

```

### 14. cpupower frequency-info

```

analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 3.40 GHz.
                   The governor "performance" may decide which speed to use
                   within this range.

  boost state support:
    Supported: yes
    Active: yes

```

### 15. tuned-adm active

Current active profile: throughput-performance

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## Platform Notes (Continued)

### 16. 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

```

### 17. /sys/kernel/mm/transparent\_hugepage

```

defrag          always defer defer+madvice [madvice] never
enabled         [always] madvice never
hpage_pmd_size 2097152
shmem_enabled   always within_size advise [never] deny force

```

### 18. /sys/kernel/mm/transparent\_hugepage/khugepaged

```

alloc_sleep_millisecs 60000
defrag                 1
max_ptes_none         511
max_ptes_shared       256
max_ptes_swap         64
pages_to_scan         4096
scan_sleep_millisecs 10000

```

### 19. OS release

```

From /etc/*-release /etc/*-version
os-release      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)

```

### 20. Disk information

```

SPEC is set to: /home/speccpu
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs      7.0T      231G  6.7T   4% /home

```

### 21. /sys/devices/virtual/dmi/id

Product Family: Rack

### 22. 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

(Continued on next page)





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SPECspeed®2017\_int\_peak = 13.5

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Aug-2023

Hardware Availability: Mar-2023

Software Availability: Dec-2022

## Platform Notes (Continued)

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

-----  
23. 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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## 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



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SPECspeed®2017\_int\_peak = 13.5

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Aug-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.profddata(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.profddata(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



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**Test Date:** Aug-2023

**Hardware Availability:** Mar-2023

**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\\_revB.html](http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64_revB.html)

[http://www.spec.org/cpu2017/flags/New\\_H3C-Platform-Settings-V1.0-SPR-RevC.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\\_revB.xml](http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64_revB.xml)

[http://www.spec.org/cpu2017/flags/New\\_H3C-Platform-Settings-V1.0-SPR-RevC.xml](http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevC.xml)

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