



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

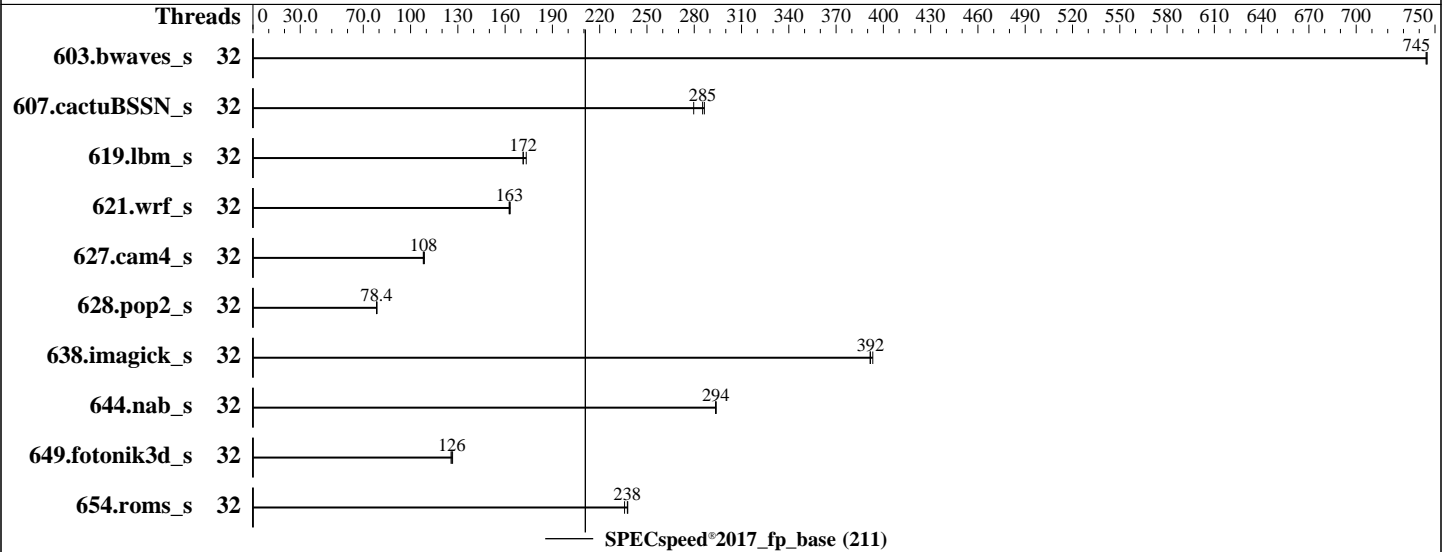
Test Date: Mar-2023

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: Jan-2023

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Aug-2022



## Hardware

CPU Name: Intel Xeon Gold 5416S  
 Max MHz: 4000  
 Nominal: 2000  
 Enabled: 32 cores, 2 chips  
 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: 30 MB I+D on chip per chip  
 Other: None  
 Memory: 1 TB (16 x 64 GB 2Rx8 PC5-4800B-R, running at 4000)  
 Storage: 1 x 960GB SATA 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 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;  
 Parallel: Yes  
 Firmware: Version 5.29 released Dec-2022 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.



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Date: Mar-2023

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: Jan-2023

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Aug-2022

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	32	<b>79.2</b>	<b>745</b>	79.3	744	79.2	745							
607.cactuBSSN_s	32	59.6	280	<b>58.4</b>	<b>285</b>	58.2	286							
619.lbm_s	32	<b>30.5</b>	<b>172</b>	30.6	171	30.2	173							
621.wrf_s	32	81.0	163	<b>81.3</b>	<b>163</b>	81.4	163							
627.cam4_s	32	81.5	109	82.0	108	<b>81.8</b>	<b>108</b>							
628.pop2_s	32	<b>151</b>	<b>78.4</b>	151	78.4	151	78.7							
638.imagick_s	32	36.7	393	<b>36.8</b>	<b>392</b>	36.8	392							
644.nab_s	32	59.5	294	<b>59.5</b>	<b>294</b>	59.5	294							
649.fotonik3d_s	32	72.5	126	72.0	127	<b>72.2</b>	<b>126</b>							
654.roms_s	32	66.8	236	<b>66.3</b>	<b>238</b>	66.2	238							

SPECspeed®2017\_fp\_base = 211

SPECspeed®2017\_fp\_peak = Not Run

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

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
tuned-adm profile was set to Throughput-Performance using "tuned-adm profile throughput-performance"

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact"  
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 Redhat Enterprise Linux 8.0  
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.  
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

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## General Notes (Continued)

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

Sysinfo program /home/speccpu/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Tue Mar 7 03:28:56 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. 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
- -----

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Platform Notes (Continued)

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`

```
03:28:56 up 1:42, 1 user, load average: 5.69, 5.94, 3.54
USER      TTY      LOGIN@  IDLE   JCPU   PCPU   WHAT
root      tty1     01:46   1:41m  0.78s  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) 4124807
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) 4124807
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
ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=32 --tune base -o all --define drop_caches
fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=32 --tune base --output_format all --define
drop_caches --nopower --runmode speed --tune base --size refspeed fpspeed --nopreenv --note-preenv
--logfile $SPEC/tmp/CPU2017.002/templogs/preenv.fpspeed.002.0.log --lognum 002.0 --from_runcpu 2
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Platform Notes (Continued)

```
specperl $SPEC/bin/sysinfo
$SPEC = /home/speccpu
```

### 6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) Gold 5416S
vendor_id       : GenuineIntel
cpu family      : 6
model           : 143
stepping        : 7
microcode       : 0x2b000111
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores       : 16
siblings        : 16
2 physical ids (chips)
32 processors (hardware threads)
physical id 0:  core ids 0-15
physical id 1:  core ids 0-15
physical id 0:  apicids 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30
physical id 1:  apicids 128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158
```

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):                32
On-line CPU(s) list:   0-31
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Gold 5416S
BIOS Model name:       Intel(R) Xeon(R) Gold 5416S
CPU family:            6
Model:                 143
Thread(s) per core:    1
Core(s) per socket:    16
Socket(s):             2
Stepping:              7
CPU max MHz:           4000.0000
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
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Date: Mar-2023

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: Jan-2023

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Aug-2022

## Platform Notes (Continued)

```

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
enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16
amx_tile flush_lld arch_capabilities

```

Virtualization: VT-x

L1d cache: 1.5 MiB (32 instances)

L1i cache: 1 MiB (32 instances)

L2 cache: 64 MiB (32 instances)

L3 cache: 60 MiB (2 instances)

NUMA node(s): 2

NUMA node0 CPU(s): 0-15

NUMA node1 CPU(s): 16-31

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	1.5M	12	Data	1	64	1	64
L1i	32K	1M	8	Instruction	1	64	1	64
L2	2M	64M	16	Unified	2	2048	1	64
L3	30M	60M	15	Unified	3	32768	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

available: 2 nodes (0-1)

node 0 cpus: 0-15

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Platform Notes (Continued)

```

node 0 size: 515217 MB
node 0 free: 510219 MB
node 1 cpus: 16-31
node 1 size: 516045 MB
node 1 free: 515574 MB
node distances:
node 0 1
  0: 10 21
  1: 21 10

```

```

-----
9. /proc/meminfo
   MemTotal:      1056012816 kB

```

```

-----
10. who -r
    run-level 3 Mar 7 01:46

```

```

-----
11. Systemd service manager version: systemd 250 (250-6.e19_0)
    Default Target Status
    multi-user      degraded

```

```

-----
12. Failed units, from systemctl list-units --state=failed
    UNIT                                LOAD    ACTIVE SUB    DESCRIPTION
* dnf-makecache.service loaded failed failed dnf makecache

```

```

-----
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 firewalld
gdm getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt
low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
nvme-fc-boot-connections ostree-remount power-profiles-daemon qemu-guest-agent rhsmcertd
rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control
systemd-network-generator udisks2 upower vgauthd vmtoolsd
enabled-runtime 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 iprdump iprprint iprupdate iscsid iscsiuiop kpatch kvm_stat
ledmon man-db-restart-cache-update nftables nvme-autoconnect podman podman-auto-update
podman-restart psacct ras-mc-ctl rasdaemon rdisc rhcd rhsm rhsm-facts rpmdm-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

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Platform Notes (Continued)

```

-----
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 4.00 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.
  boost state support:
    Supported: yes
    Active: yes

```

```

-----
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                 20
vm.dirty_writeback_centisecs   500
vm.dirtytime_expire_seconds   43200
vm.extfrag_threshold           500
vm.min_unmapped_ratio         1
vm.nr_hugepages                0
vm.nr_hugepages_mempolicy     0
vm.nr_overcommit_hugepages    0
vm.swappiness                  60
vm.watermark_boost_factor     15000
vm.watermark_scale_factor      10
vm.zone_reclaim_mode          0

```

```

-----
17. /sys/kernel/mm/transparent_hugepage

```

(Continued on next page)





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Platform Notes (Continued)

```

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

```

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

```

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

```

### 19. OS release

```

From /etc/*-release /etc/*-version
os-release      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   819G   31G  789G   4% /home

```

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

```

Vendor:          New H3C Technologies Co., Ltd.
Product:         H3C UniServer R4900 G6 Ultra
Product Family:  Rack
Serial:          210235A4CJ4900060001

```

### 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 determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:

```

14x Hynix HMCG94AEBRA102N 64 GB 2 rank 4800, configured at 4400
2x Hynix HMCG94AEBRA109N 64 GB 2 rank 4800, configured at 4400

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Platform Notes (Continued)

### 23. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: American Megatrends International, LLC.

BIOS Version: 6.00.08

BIOS Date: 01/09/2023

BIOS Revision: 5.29

## Compiler Version Notes

=====  
C | 619.lbm\_s(base) 638.imagick\_s(base) 644.nab\_s(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, Fortran | 607.cactuBSSN\_s(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 | 603.bwaves\_s(base) 649.fotonik3d\_s(base) 654.roms\_s(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.  
-----

=====  
Fortran, C | 621.wrf\_s(base) 627.cam4\_s(base) 628.pop2\_s(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,  
-----

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Compiler Version Notes (Continued)

Version 2022.1.0 Build 20220316  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

## Base Portability Flags

603.bwaves\_s: -DSPEC\_LP64  
607.cactuBSSN\_s: -DSPEC\_LP64  
619.lbm\_s: -DSPEC\_LP64  
621.wrf\_s: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG -convert big\_endian  
627.cam4\_s: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG  
628.pop2\_s: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG -convert big\_endian  
-assume byterecl  
638.imagick\_s: -DSPEC\_LP64  
644.nab\_s: -DSPEC\_LP64  
649.fotonik3d\_s: -DSPEC\_LP64  
654.roms\_s: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto  
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp  
-DSPEC\_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:

-m64 -Wl,-z,muldefs -DSPEC\_OPENMP -xCORE-AVX512 -Ofast -ffast-math

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 211

H3C UniServer R4900 G6 (Intel Xeon Gold 5416S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Mar-2023

Hardware Availability: Jan-2023

Software Availability: Aug-2022

## Base Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using both Fortran and C:

```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:

```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

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/Intel-ic2022-official-linux64_revA.html)

[http://www.spec.org/cpu2017/flags/New\\_H3C-Platform-Settings-V1.0-SPR-RevA.html](http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevA.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/Intel-ic2022-official-linux64_revA.xml)

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

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2023-03-07 03:28:56-0500.

Report generated on 2023-03-29 00:34:05 by CPU2017 PDF formatter v6442.

Originally published on 2023-03-28.