



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## New H3C Technologies Co., Ltd.

### H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723

SPECrate®2017\_fp\_peak = Not Run

CPU2017 License: 9066

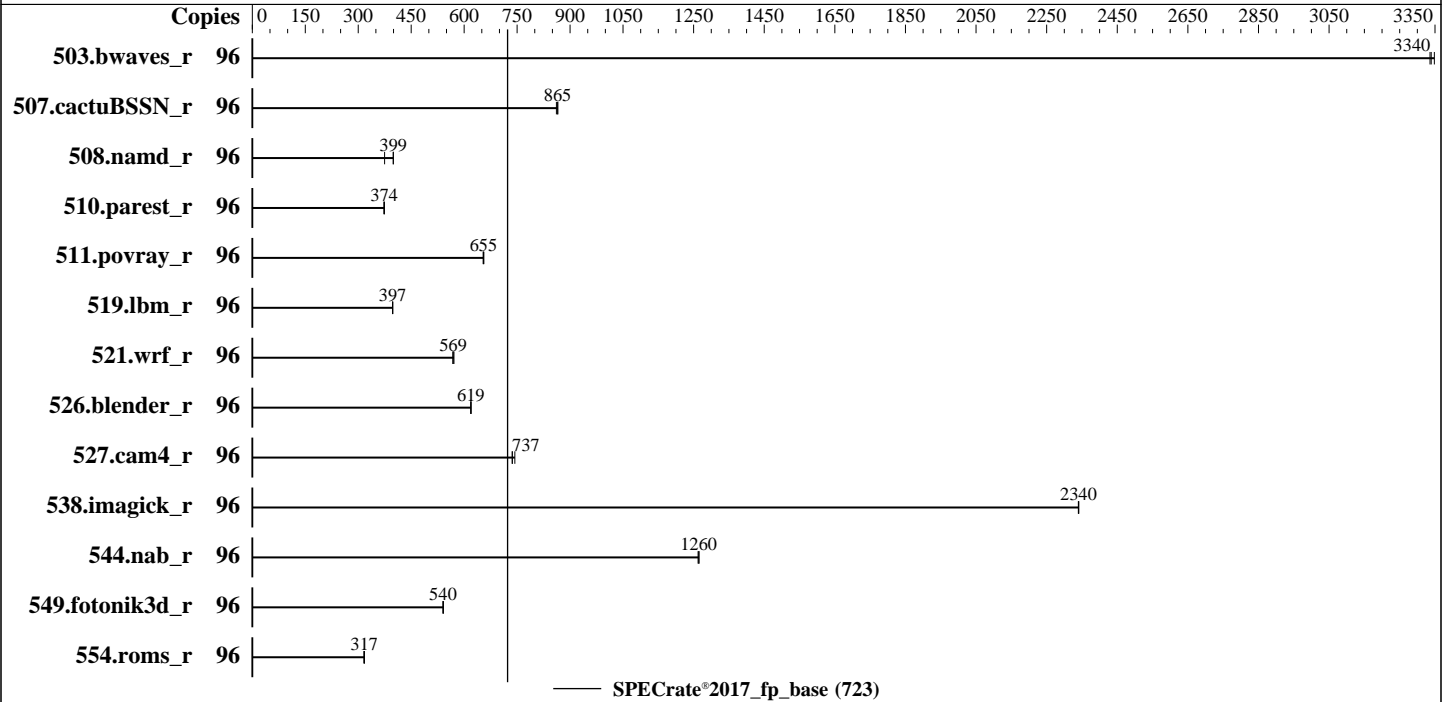
Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jul-2024

Hardware Availability: Oct-2023

Software Availability: Mar-2024



### Hardware

CPU Name: Intel Xeon Gold 6542Y  
 Max MHz: 4100  
 Nominal: 2900  
 Enabled: 48 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: 60 MB I+D on chip per chip  
 Other: None  
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R, running at 5200)  
 Storage: 1 x 3.2 TB NVME SSD  
 Other: CPU Cooling: Air

### Software

OS: SUSE Linux Enterprise High Performance Computing 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 6.10.38P60 released Apr-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.



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723  
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: Jul-2024  
Hardware Availability: Oct-2023  
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	96	288	3350	289	3340	<u>288</u>	<u>3340</u>							
507.cactuBSSN_r	96	141	861	140	865	<u>141</u>	<u>865</u>							
508.namd_r	96	243	375	228	399	<u>228</u>	<u>399</u>							
510.parest_r	96	674	373	<u>672</u>	<u>374</u>	671	374							
511.povray_r	96	<u>342</u>	<u>655</u>	343	654	342	656							
519.lbm_r	96	255	397	254	398	<u>255</u>	<u>397</u>							
521.wrf_r	96	377	571	<u>378</u>	<u>569</u>	379	568							
526.blender_r	96	<u>236</u>	<u>619</u>	236	619	236	619							
527.cam4_r	96	226	744	228	736	<u>228</u>	<u>737</u>							
538.imagick_r	96	102	2340	102	2340	<u>102</u>	<u>2340</u>							
544.nab_r	96	128	1270	128	1260	<u>128</u>	<u>1260</u>							
549.fotonik3d_r	96	<u>692</u>	<u>540</u>	692	540	691	541							
554.roms_r	96	480	318	<u>481</u>	<u>317</u>	483	316							

SPECrate®2017\_fp\_base = 723

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/speccpunew/lib/intel64:/home/speccpunew/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)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723

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:** Jul-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)  
Power Performance Tuning = BIOS Controls EFB  
ENERGY\_PERF\_BIAS\_CFG mode = Performance

Sysinfo program /home/specpunew/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost Wed Jul 3 14:12:11 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. 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 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

```

```

2. w
14:12:11 up 2:37, 2 users, load average: 57.63, 86.68, 92.46
USER      TTY      FROM          LOGIN@      IDLE   JCPU   PCPU   WHAT
root      tty1    -              11:39      2:32m  0.77s  0.00s  sh intrate.sh

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723  
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:** Jul-2024  
**Hardware Availability:** Oct-2023  
**Software Availability:** Mar-2024

## Platform Notes (Continued)

```
root pts/0 172.16.27.225 11:36 2:33m 0.07s 0.07s -bash
```

### 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) 4124730
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) 4124730
virtual memory         (kbytes, -v) unlimited
file locks             (-x) unlimited
```

### 5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
sh intrate.sh
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=96 -c
ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=48 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base -o all fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=96 --configfile
ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=48 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.002/templots/preenv.fprate.002.0.log --lognum 002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/specpunew
```

### 6. /proc/cpuinfo

```
model name      : INTEL(R) XEON(R) GOLD 6542Y
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      : 24
siblings       : 48
2 physical ids (chips)
96 processors (hardware threads)
physical id 0: core ids 0-23
physical id 1: core ids 0-23
physical id 0: apicids 0-47
physical id 1: apicids 128-175
```

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECrate®2017\_fp\_base = 723

H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_peak = Not Run

CPU2017 License: 9066

Test Date: Jul-2024

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: Oct-2023

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Mar-2024

## Platform Notes (Continued)

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:         46 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                96
On-line CPU(s) list:   0-95
Vendor ID:             GenuineIntel
Model name:            INTEL(R) XEON(R) GOLD 6542Y
CPU family:            6
Model:                207
Thread(s) per core:    2
Core(s) per socket:    24
Socket(s):             2
Stepping:              2
CPU max MHz:           4100.0000
CPU min MHz:           800.0000
BogoMIPS:              5800.00
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
                        vmi 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_lld arch_capabilities
Virtualization:        VT-x
L1d cache:             2.3 MiB (48 instances)
L1i cache:             1.5 MiB (48 instances)
L2 cache:              96 MiB (48 instances)
L3 cache:              120 MiB (2 instances)
NUMA node(s):         4
NUMA node0 CPU(s):    0-11,48-59
NUMA node1 CPU(s):    12-23,60-71
NUMA node2 CPU(s):    24-35,72-83
NUMA node3 CPU(s):    36-47,84-95
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/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSE-eIBRS SW

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723

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:** Jul-2024  
**Hardware Availability:** Oct-2023  
**Software Availability:** Mar-2024

## Platform Notes (Continued)

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	2.3M	12	Data	1	64	1	64
L1i	32K	1.5M	8	Instruction	1	64	1	64
L2	2M	96M	16	Unified	2	2048	1	64
L3	60M	120M	15	Unified	3	65536	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: 0-11,48-59
node 0 size: 257546 MB
node 0 free: 249181 MB
node 1 cpus: 12-23,60-71
node 1 size: 258007 MB
node 1 free: 251865 MB
node 2 cpus: 24-35,72-83
node 2 size: 258041 MB
node 2 free: 251965 MB
node 3 cpus: 36-47,84-95
node 3 size: 257617 MB
node 3 free: 250899 MB
node distances:
node  0  1  2  3
  0:  10  12  21  21
  1:  12  10  21  21
  2:  21  21  10  12
  3:  21  21  12  10

```

9. /proc/meminfo

MemTotal: 1055962616 kB

10. who -r

run-level 3 Jul 3 11:34

11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)

```

Default Target Status
multi-user      running

```

12. Services, from systemctl list-unit-files

```

STATE UNIT FILES
enabled YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager firewalld getty@
irqbalance issue-generator kbdsettings kdump kdump-early klog lvm2-monitor nscd
nvme-fc-boot-connections postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore
wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs
disabled autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
chronyd console-getty cups cups-browsed debug-shell dmraid-activation ebttables
exchange-bmc-os-info gpm grub2-once haveged haveged-switch-root ipmi ipmiev d irqbindall
issue-add-ssh-keys kexec-load ksm kvm_stat lunmask man-db-create multipathd nfs nfs-blkmap
nvme-autoconnect rpcbind rpmconfigcheck rsyncd serial-getty@ set_kthread_prio

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723

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:** Jul-2024  
**Hardware Availability:** Oct-2023  
**Software Availability:** Mar-2024

## Platform Notes (Continued)

```
smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures
systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd tuned
udisks2 vncserver@
wickedd
indirect
```

-----  
13. Linux kernel boot-time arguments, from /proc/cmdline  
BOOT\_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default  
root=UUID=4607dbe1-932d-4bea-b43c-6701598385ba  
splash=silent  
resume=/dev/disk/by-uuid/2ccfd1c4-5b7d-4cdb-9370-aca95a4f79b6  
mitigations=auto  
quiet  
security=apparmor  
crashkernel=403M,high  
crashkernel=72M,low

-----  
14. cpupower frequency-info  
analyzing CPU 0:  
current policy: frequency should be within 800 MHz and 4.10 GHz.  
The governor "performance" may decide which speed to use  
within this range.  
boost state support:  
Supported: yes  
Active: yes

-----  
15. tuned-adm active  
It seems that tuned daemon is not running, preset profile is not activated.  
Preset profile: throughput-performance

-----  
16. 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 60  
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

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723

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: Jul-2024

Hardware Availability: Oct-2023

Software Availability: Mar-2024

## Platform Notes (Continued)

```
-----
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 SUSE Linux Enterprise High Performance Computing 15 SP5
-----
```

```
-----
20. Disk information
   SPEC is set to: /home/speccpunew
   Filesystem  Type  Size  Used Avail Use% Mounted on
   /dev/nvme0n1p3 xfs   1.0T  338G  687G  33% /home
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
   Vendor:      N/A
   Product:     N/A
   Product Family: Rack
   Serial:      N/A
-----
```

```
-----
22. 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 HMC94AHBRA487N 64 GB 2 rank 6400, configured at 5200
-----
```

```
-----
23. BIOS
   (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:      American Megatrends International, LLC.
   BIOS Version:     6.10.38P60
   BIOS Date:        04/03/2024
   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
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
-----
```

```
=====
C++ | 508.namd_r(base) 510.parest_r(base)
-----
```

(Continued on next page)





# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723

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: Jul-2024

Hardware Availability: Oct-2023

Software Availability: Mar-2024

## Compiler Version Notes (Continued)

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.

=====  
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  
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.

=====  
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  
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.

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.

=====  
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  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

=====  
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

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723

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:** Jul-2024  
**Hardware Availability:** Oct-2023  
**Software Availability:** Mar-2024

## Base Compiler Invocation (Continued)

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  
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

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R4900 G6 Ultra (Intel Xeon Gold 6542Y)

SPECrate®2017\_fp\_base = 723  
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:** Jul-2024  
**Hardware Availability:** Oct-2023  
**Software Availability:** Mar-2024

## Base Optimization Flags (Continued)

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
```

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-V1.0-SPR-RevD.html](http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevD.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-V1.0-SPR-RevD.xml](http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-V1.0-SPR-RevD.xml)

SPEC CPU and SPECrate 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 2024-07-03 02:12:11-0400.  
Report generated on 2024-07-30 19:31:15 by CPU2017 PDF formatter v6716.  
Originally published on 2024-07-30.