



SPEC CPU®2017 Floating Point Rate Result

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New H3C Technologies Co., Ltd.

SPECrate®2017_fp_base = 1370

H3C UniServer R3900 G7 (Intel Xeon 6980P)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9066

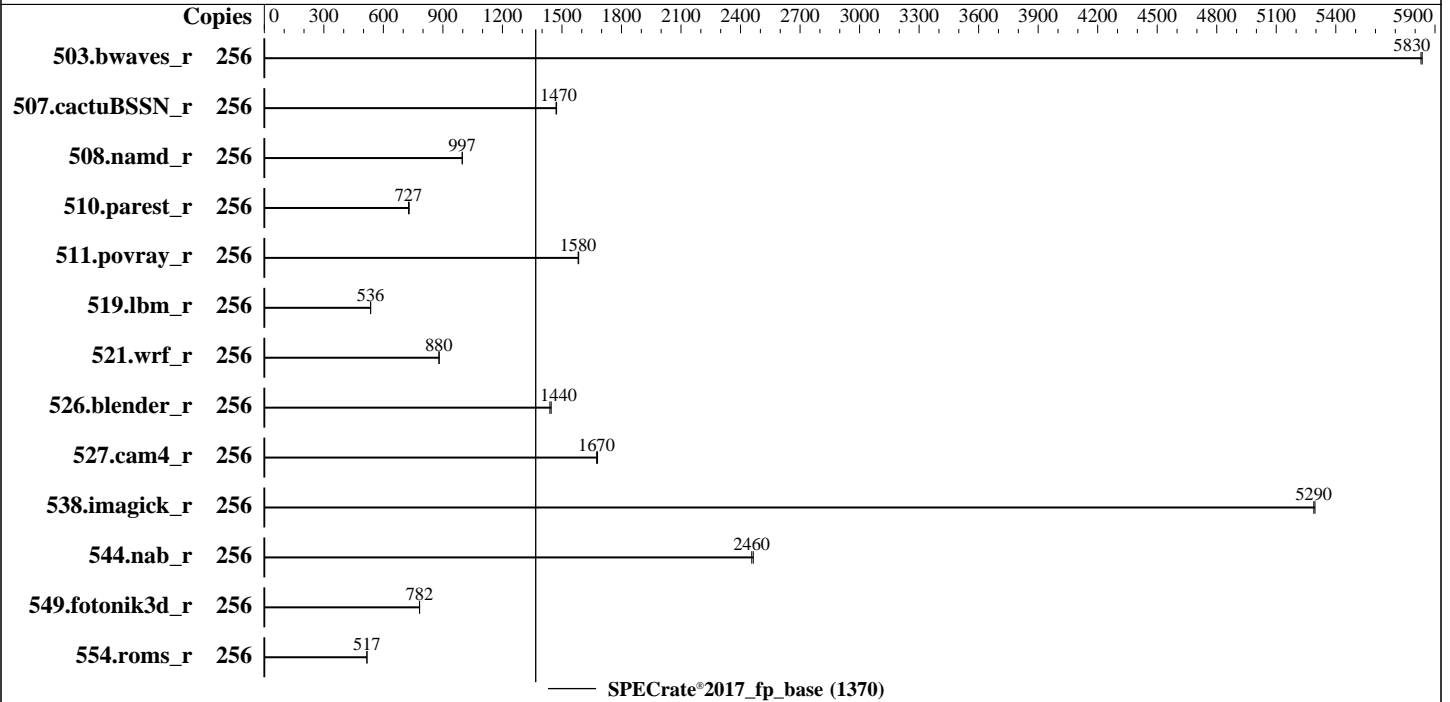
Test Date: Nov-2024

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: Jan-2025

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Apr-2024



Hardware

CPU Name: Intel Xeon 6980P
 Max MHz: 3900
 Nominal: 2000
 Enabled: 128 cores, 1 chip, 2 threads/core
 Orderable: 1 chip
 Cache L1: 64 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 504 MB I+D on chip per chip
 Other: None
 Memory: 768 GB (12 x 64 GB 4Rx8 PC5-12800B-R, running at 8800)
 Storage: 1 x 3.84 TB NVME SSD
 Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 9.4 (Plow)
 5.14.0-427.13.1.el9_4.x86_64
 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 7.10.04 released Oct-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.



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Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|-----------------|--------|------------|------------|-------------|-------------|---------|-------|--------|---------|-------|---------|-------|---------|-------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 503.bwaves_r | 256 | 440 | 5840 | 440 | 5830 | | | | | | | | | |
| 507.cactuBSSN_r | 256 | 220 | 1470 | 220 | 1470 | | | | | | | | | |
| 508.namd_r | 256 | 244 | 997 | 244 | 998 | | | | | | | | | |
| 510.parest_r | 256 | 917 | 730 | 921 | 727 | | | | | | | | | |
| 511.povray_r | 256 | 377 | 1580 | 378 | 1580 | | | | | | | | | |
| 519.lbm_r | 256 | 504 | 536 | 504 | 536 | | | | | | | | | |
| 521.wrf_r | 256 | 652 | 880 | 651 | 881 | | | | | | | | | |
| 526.blender_r | 256 | 270 | 1450 | 271 | 1440 | | | | | | | | | |
| 527.cam4_r | 256 | 267 | 1680 | 267 | 1670 | | | | | | | | | |
| 538.imagick_r | 256 | 120 | 5300 | 120 | 5290 | | | | | | | | | |
| 544.nab_r | 256 | 175 | 2460 | 175 | 2460 | | | | | | | | | |
| 549.fotonik3d_r | 256 | 1275 | 783 | 1276 | 782 | | | | | | | | | |
| 554.roms_r | 256 | 786 | 517 | 787 | 517 | | | | | | | | | |

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/speccpu/lib/intel64:/home/speccpu/je5.0.1-64"
MALLOC_CONF = "retain:true"

General Notes

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

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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.

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 = Enabled

Package C State = C0/C1 state

BMC Settings:

Fan mode = powerful mode

Sysinfo program /home/speccpu/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost.localdomain Sat Nov 30 10:51:58 2024

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

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18. /sys/kernel/mm/transparent_hugepage/khugepaged
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21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

1. uname -a
Linux localhost.localdomain 5.14.0-427.13.1.el9_4.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 10 10:29:16 EDT 2024 x86_64 x86_64 x86_64 GNU/Linux

2. w
10:51:58 up 4 min, 1 user, load average: 0.05, 0.12, 0.06
USER TTY LOGIN@ IDLE JCPU PCPU WHAT

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Platform Notes (Continued)

```
root      tty1      10:49      6.00s  1.66s  0.01s  sh
reportable-ic2024.1-lin-core-avx512-rate-smt-on-20240308.sh
```

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) 3091876
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) 3091876
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
sh reportable-ic2024.1-lin-core-avx512-rate-smt-on-20240308.sh
runccpu --nobuild --action validate --define default-platform-flags --define numcopies=256 -c
ic2024.1-lin-core-avx512-rate-20240308.cfg --define smt-on --define cores=128 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base -o all fprate -n 2
runccpu --nobuild --action validate --define default-platform-flags --define numcopies=256 --configfile
ic2024.1-lin-core-avx512-rate-20240308.cfg --define smt-on --define cores=128 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base --output_format all --iterations 2
--nopower --runmode rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.040/templogs/preenv.fprate.040.0.log --lognum 040.0 --from_runccpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/speccpu
```

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6980P
vendor_id       : GenuineIntel
cpu family      : 6
model           : 173
stepping        : 1
microcode       : 0x810002e0
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores       : 128
siblings        : 256
1 physical ids (chips)
256 processors (hardware threads)
physical id 0: core ids 0-41,64-106,128-170
physical id 0: apicids 0-83,128-213,256-341
Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
```

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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:         52 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                256
On-line CPU(s) list:   0-255
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) 6980P
BIOS Model name:      Intel(R) Xeon(R) 6980P
CPU family:            6
Model:                 173
Thread(s) per core:    2
Core(s) per socket:    128
Socket(s):             1
Stepping:              1
CPU max MHz:           3900.0000
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 ds_cpl 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 cdp_l2
                        ssbd mba ibrs ibpb stibp ibrs_enhanced 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 ibt amx_bf16 avx512_fp16 amx_tile amx_int8 flush_l1d
                        arch_capabilities
L1d cache:             6 MiB (128 instances)
L1i cache:             8 MiB (128 instances)
L2 cache:              256 MiB (128 instances)
L3 cache:              504 MiB (1 instance)
NUMA node(s):         3
NUMA node0 CPU(s):    0-41,128-169
NUMA node1 CPU(s):    42-84,170-212
NUMA node2 CPU(s):    85-127,213-255
Vulnerability Gather data sampling: Not affected
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 rstack overflow: Not affected
Vulnerability Spec store bypass:   Mitigation; Speculative Store Bypass disabled via prctl

```

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Platform Notes (Continued)

Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
 Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS, IBPB conditional, RSB filling, PBRSE-eIBRS Not affected
 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 | 64K | 8M | 16 | Instruction | 1 | 64 | 1 | 64 |
| L2 | 2M | 256M | 16 | Unified | 2 | 2048 | 1 | 64 |
| L3 | 504M | 504M | 16 | Unified | 3 | 516096 | 1 | 64 |

8. numactl --hardware

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

```
available: 3 nodes (0-2)
node 0 cpus: 0-41,128-169
node 0 size: 256976 MB
node 0 free: 256022 MB
node 1 cpus: 42-84,170-212
node 1 size: 258026 MB
node 1 free: 256975 MB
node 2 cpus: 85-127,213-255
node 2 size: 258009 MB
node 2 free: 256939 MB
node distances:
node  0  1  2
 0:  10  12  12
 1:  12  10  12
 2:  12  12  10
```

9. /proc/meminfo

MemTotal: 791564144 kB

10. who -r

run-level 3 Nov 30 10:48

11. Systemd service manager version: systemd 252 (252-32.el9_4)

```
Default Target Status
multi-user      running
```

12. Services, from systemctl list-unit-files

```
STATE UNIT FILES
enabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online atd auditd bluetooth
chronyd crond dbus-broker firewalld getty@ insights-client-boot irqbalance iscsi-onboot
iscsi-starter kdump libstoragemgmt lm_sensors low-memory-monitor lvm2-monitor mcelog
mdmonitor microcode multipathd nis-domainname nvme-fc-boot-connections rhsmcertd rsyslog
rtkit-daemon selinux-autorelabel-mark smartd sshd sssd sysstat systemd-boot-update
systemd-network-generator tuned udisks2 upower
enabled-runtime systemd-remount-fs
disabled arp-ethers blk-availability canberra-system-bootup canberra-system-shutdown
canberra-system-shutdown-reboot chrony-wait chronyd-restricted console-getty cpupower
debug-shell dnf-system-upgrade fancontrol ipmi iprdump iprinit iprupdate ipsec iscsi-init
iscsid iscsiuiop kpatch kvm_stat ledmon man-db-restart-cache-update nftables
nvme-autoconnect pesign psacct rdisc rhcd rhsm rhsm-facts rpmdb-rebuild
```

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Platform Notes (Continued)

```

indirect
selinux-check-proper-disable serial-getty@ sshd-keygen@ systemd-boot-check-no-failures
systemd-pstore systemd-sysex
iscsi sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo systemd-sysupdate
systemd-sysupdate-reboot

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-427.13.1.el9_4.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 218:
current policy: frequency should be within 800 MHz and 3.90 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

```

```

-----
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

```

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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 Red Hat Enterprise Linux 9.4 (Plow)
redhat-release Red Hat Enterprise Linux release 9.4 (Plow)
system-release Red Hat Enterprise Linux release 9.4 (Plow)

```

```

20. Disk information
SPEC is set to: /home/speccpu
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 3.5T 188G 3.3T 6% /home

```

```

21. /sys/devices/virtual/dmi/id
Vendor: New H3C Technologies Co., Ltd.
Product: H3C UniServer R3900 G7
Serial: 210235A526H249000010

```

```

22. dmidecode
Additional information from dmidecode 3.5 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:
12x Hynix HMC98BDJHA381N 64 GB 4 rank 12800, configured at 8800

```

```

23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 7.10.04
BIOS Date: 10/18/2024
BIOS Revision: 5.35
Firmware Revision: 1.16

```

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)
=====

```

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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
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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

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New H3C Technologies Co., Ltd.

SPECrate®2017_fp_base = 1370

H3C UniServer R3900 G7 (Intel Xeon 6980P)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Nov-2024

Hardware Availability: Jan-2025

Software Availability: Apr-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 -xCORE-AVX512 -Ofast -ffast-math
 -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
 -Wno-implicit-int -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
 -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
 -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -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

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-Wno-implicit-int -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 -xCORE-AVX512 -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -Wno-implicit-int -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:

```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -Wno-implicit-int -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-Intel-BHS-RevA.html

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

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml>

http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-Intel-BHS-RevA.xml

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

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