SPEC CPU®2017 Floating Point Rate Result

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Sichuan Huakun Zhenyu Intelligent Technology Co., Ltd.

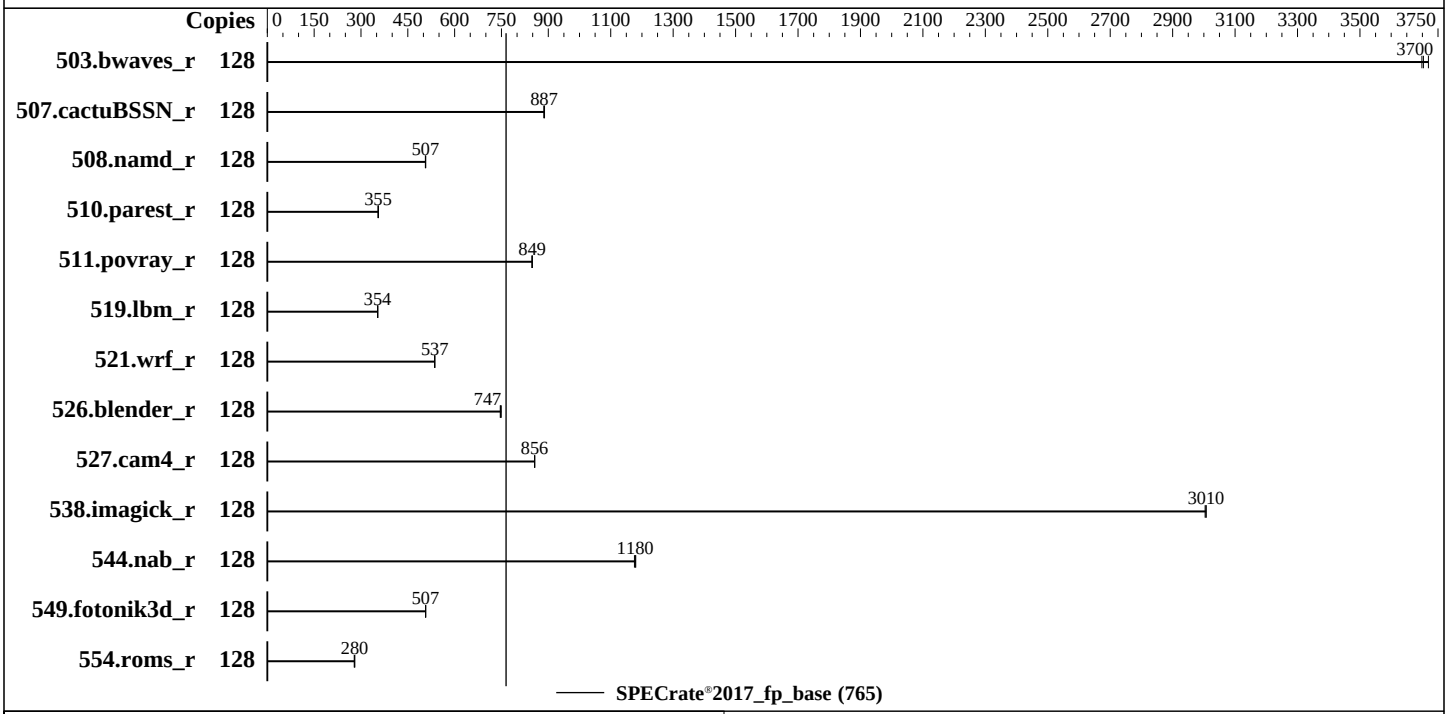
Huakun TG225 X5
(3.00GHz, Intel Xeon Gold 6459C)

SPECrate®2017_fp_base = 765

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 6271
Test Sponsor: Sichuan Huakun Zhenyu Intelligent Technology Co., Ltd.
Tested by: Sichuan Huakun Zhenyu Intelligent Technology Co., Ltd.

Test Date: Jun-2026
Hardware Availability: Nov-2026
Software Availability: May-2026



Hardware

CPU Name:	Intel Xeon Gold 6459C
Max MHz:	3900
Nominal:	3000
Enabled:	64 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 PC5-5600B-R, running at 4800)
Storage:	1 x 480 GB SATA SSD
Other:	CPU Cooling: Air

Software

OS:	Red Hat Enterprise Linux 10.1 (Coughlan) (x86_64) Kernel 6.12.0-124.8.1
Compiler:	C/C++: Version 2026.0 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2026.0 of Intel Fortran Compiler for Linux;
Parallel:	No
Firmware:	BIOS Version 00.04.06 released Mar-2026
File System:	xfs
System State:	Run level 5 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other:	jemalloc memory allocator V5.3.0
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	128	345	3720	**347**	**3700**	347	3700							
507.cactuBSSN_r	128	183	886	182	888	**183**	**887**							
508.namd_r	128	240	508	**240**	**507**	240	506							
510.parest_r	128	**942**	**355**	945	355	940	356							
511.povray_r	128	353	848	**352**	**849**	352	849							
519.lbm_r	128	381	354	**382**	**354**	382	353							
521.wrf_r	128	**534**	**537**	535	536	534	537							
526.blender_r	128	260	749	261	746	**261**	**747**							
527.cam4_r	128	261	857	261	856	**261**	**856**							
538.imagick_r	128	**106**	**3010**	106	3000	106	3010							
544.nab_r	128	183	1180	**183**	**1180**	183	1180							
549.fotonik3d_r	128	984	507	982	508	**984**	**507**							
554.roms_r	128	**727**	**280**	727	280	731	278							

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SPECrate®2017_fp_peak = Not Run

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

Compiler Notes

```
Binaries were built using Intel oneAPI 2026.0 compilers.
```

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/speccpu2017/lib/intel64"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries compiled on a system with 2x Intel Xeon processors + 1 TB RAM
memory using Red Hat Enterprise Linux 10.1
```

(Continued on next page)

General Notes (Continued)

```
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.
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 with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
jemalloc, a general purpose malloc implementation
Built with the Red Hat Enterprise Linux 10.1 (Coughlan), and Intel oneAPI 2026.0 icx/icpx compiler.
Sources available from jemalloc.net orhttps://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS configuration:
Performance Profile set to High Performance Compute
Intel VT for Directed I/O set to Disabled
SNC set to Enable SNC2
KTI Prefetch set to Enabled
L2 RFO Prefetch Disable set to Enabled

Sysinfo program /home/speccpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Sun Jun 28 17:34:46 2026

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 257 (257-13.el10-g833aa52)
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
```

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Platform Notes (Continued)

```
 22. dmidecode
 23. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -a
  Linux localhost.localdomain 6.12.0-124.8.1.el10_1.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Oct 17 13:03:58 EDT
  2025 x86_64 GNU/Linux

------------------------------------------------------------
2. w
   17:34:46 up  2:52,  5 users,  load average: 35.11, 98.36, 116.45
  USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
  gdm      tty1      14:43    2:51m  7.72s  0.01s /usr/libexec/gsd-printer
  gdm               14:43    1:27m  0.00s  0.16s /usr/lib/systemd/systemd --user
  root              14:44    1:27m  0.00s  0.01s sshd-session: root [priv]
  root              14:44    1:27m  0.00s  0.18s /usr/lib/systemd/systemd --user
  root              16:20    1:27m  0.00s  0.02s sshd-session: root [priv]

------------------------------------------------------------
3. Username
  From environment variable $USER:  root

------------------------------------------------------------
4. ulimit -a
  real-time non-blocking time  (microseconds, -R) unlimited
  core file size              (blocks, -c) unlimited
  data seg size               (kbytes, -d) unlimited
  scheduling priority                 (-e) 0
  file size                   (blocks, -f) unlimited
  pending signals                     (-i) 4123732
  max locked memory           (kbytes, -l) unlimited
  max memory size             (kbytes, -m) unlimited
  open files                          (-n) 1048576
  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) 1048576
  virtual memory              (kbytes, -v) unlimited
  file locks                          (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=43 rhgb
 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
 sshd-session: root [priv]
 sshd-session: root@pts/0
 -bash
 bash test_on_x86.sh
 runcpu -c test_062601_fp.cfg -T base -n 3 --reportable --copies=128 -o all fprate
 runcpu --configfile test_062601_fp.cfg --tune base --iterations 3 --reportable --copies 128 --output_format
   all --nopower --runmode rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.002/templogs/preenv.fprate.002.0.log --lognum 002.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/speccpu2017
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Gold 6459C
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b0005c0
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi spectre_v2_user
    cpu cores       : 32
    siblings        : 64
    2 physical ids (chips)
    128 processors (hardware threads)
    physical id 0: core ids 0-31
    physical id 1: core ids 0-31
    physical id 0: apicids 0-63
    physical id 1: apicids 128-191
  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 2.40.2:
  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) Gold 6459C
  BIOS Model name:                         Intel(R) Xeon(R) Gold 6459C  CPU @ 3.0GHz
  BIOS CPU family:                         179
  CPU family:                              6
  Model:                                   143
  Thread(s) per core:                      2
  Core(s) per socket:                      32
  Socket(s):                               2
  Stepping:                                8
  CPU(s) scaling MHz:                      99%
  CPU max MHz:                             3900.0000
  CPU min MHz:                             800.0000
  BogoMIPS:                                6000.00
  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 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 intel_ppin
                                           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
```

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Platform Notes (Continued)

```
                                     avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc
                                     cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect
                                     user_shstk avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts
                                     hfi avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes
                                     vpclmulqdq avx512_vnni avx512_bitalg 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:                         3 MiB (64 instances)
  L1i cache:                         2 MiB (64 instances)
  L2 cache:                          128 MiB (64 instances)
  L3 cache:                          120 MiB (2 instances)
  NUMA node(s):                      4
  NUMA node0 CPU(s):                 0-15,64-79
  NUMA node1 CPU(s):                 16-31,80-95
  NUMA node2 CPU(s):                 32-47,96-111
  NUMA node3 CPU(s):                 48-63,112-127
  Vulnerability Gather data sampling: Not affected
  Vulnerability Indirect target selection: 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 Reg file data sampling: Not affected
  Vulnerability Retbleed:            Not affected
  Vulnerability Spec rstack overflow: 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 / Automatic IBRS; IBPB conditional;
                                     PBRSB-eIBRS SW sequence; BHI BHI_DIS_S
  Vulnerability Srbds:               Not affected
  Vulnerability Tsa:                 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       3M   12 Data            1    64        1             64
     L1i       32K       2M    8 Instruction     1    64        1             64
     L2         2M     128M   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: 0-15,64-79
  node 0 size: 257047 MB
  node 0 free: 255793 MB
  node 1 cpus: 16-31,80-95
  node 1 size: 258039 MB
  node 1 free: 256724 MB
  node 2 cpus: 32-47,96-111
  node 2 size: 258039 MB
  node 2 free: 256874 MB
  node 3 cpus: 48-63,112-127
```

(Continued on next page)

Platform Notes (Continued)

```
  node 3 size: 258033 MB
  node 3 free: 256792 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:       1055909252 kB

------------------------------------------------------------
10. who -r
  run-level 5 Jun 28 14:43

------------------------------------------------------------
11. Systemd service manager version: systemd 257 (257-13.el10-g833aa52)
  Default Target  Status
  graphical       running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
                   accounts-daemon atd audit-rules auditd avahi-daemon bluetooth chronyd crond cups
                   dbus-broker fips-crypto-policy-overlay gdm getty@ insights-client-boot irqbalance
                   iscsi-onboot iscsi-starter kdump libstoragemgmt lm_sensors lvm2-monitor mcelog mdmonitor
                   multipathd nvmefc-boot-connections pmcd pmie pmlogger qemu-guest-agent rhsmcertd rsyslog
                   rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control sysstat
                   systemd-confext systemd-network-generator systemd-pstore systemd-sysext tuned tuned-ppd
                   udisks2 upower vgauthd virtqemud vmtoolsd
  enabled-runtime  systemd-remount-fs
  disabled         arp-ethers autofs blk-availability brltty canberra-system-bootup canberra-system-shutdown
                   canberra-system-shutdown-reboot chrony-wait chronyd-restricted console-getty cups-browsed
                   dbus-daemon debug-shell dhcpcd dhcpcd@ dnf-system-upgrade dnsmasq dovecot fancontrol fcoe
                   firewalld fsidd gnome-headless-session@ gnome-remote-desktop
                   gnome-remote-desktop-configuration grafana-server gssproxy htcacheclean httpd httpd@
                   hypervfcopyd ibacm ipsec iscsi-init iscsid iscsiuio kpatch kvm_stat ledmon libvirt-guests
                   libvirtd lldpad low-memory-monitor lvm-devices-import man-db-restart-cache-update
                   microcode named named-chroot netavark-dhcp-proxy netavark-firewalld-reload nfs-blkmap
                   nfs-server nftables nis-domainname nmb numad nvmf-autoconnect pesign pmfind pmie_farm
                   pmlogger_farm pmproxy podman podman-auto-update podman-clean-transient podman-kube@
                   podman-restart postfix powertop psacct ras-mc-ctl rasdaemon rhsm rhsm-facts rpcbind
                   rpmdb-migrate rpmdb-rebuild rrdcached samba-bgqd saslauthd selinux-check-proper-disable
                   serial-getty@ smb snmpd snmptrapd speech-dispatcherd srp_daemon srp_daemon_port@
                   ssh-host-keys-migration sshd-keygen@ systemd-boot-check-no-failures systemd-boot-update
                   systemd-nspawn@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code
                   systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy
                   systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy
                   systemd-udev-load-credentials target targetclid tmux@ tog-pegasus trace-cmd virtinterfaced
                   virtlockd virtlogd virtnetworkd virtnodedevd virtnwfilterd virtproxyd virtsecretd
                   virtstoraged vsftpd wpa_supplicant wsdd yggdrasil yggdrasil@
  indirect         iscsi pcscd spice-vdagentd sshd@ sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh
                   sssd-sudo systemd-sysupdate systemd-sysupdate-reboot systemd-userdbd vsftpd@
```

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Platform Notes (Continued)

```
------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=(hd0,gpt2)/vmlinuz-6.12.0-124.8.1.el10_1.x86_64
  root=/dev/mapper/rhel-root
  ro
  crashkernel=2G-64G:256M,64G-:512M
  resume=UUID=e0783db6-2c9d-4f28-82de-b7559d8ff5e5
  rd.lvm.lv=rhel/root
  rd.lvm.lv=rhel/swap
  rhgb
  quiet
  mitigations=auto

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 118:
    current policy: frequency should be within 800 MHz and 3.90 GHz.
                    The governor "userspace" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. tuned-adm active
  Current active profile: balanced

------------------------------------------------------------
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
  defrag          always defer defer+madvise [madvise] never
  enabled         [always] madvise 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 10.1 (Coughlan)
  redhat-release Red Hat Enterprise Linux release 10.1 (Coughlan)
  system-release Red Hat Enterprise Linux release 10.1 (Coughlan)

------------------------------------------------------------
20. Disk information
SPEC is set to: /home/speccpu2017
  Filesystem            Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   343G   71G  272G  21% /home

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         HUAKUN
    Product:        HuaKun TG225 X5
    Product Family: Not specified
    Serial:         S2063S001

------------------------------------------------------------
22. dmidecode
  Additional information from dmidecode 3.6 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 HMCG94AGBRA181N 64 GB 2 rank 5600, configured at 4800


------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      00.04.06
   BIOS Date:         03/26/2026
```

Compiler Version Notes

```
==============================================================================================================
C               | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler 2026.0.0 (2026.0.0.20260331)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2026.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2026.0/bin/compiler/../icx.cfg
```

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Compiler Version Notes (Continued)

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

==============================================================================================================================
C++             | 508.namd_r(base) 510.parest_r(base)
------------------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler 2026.0.0 (2026.0.0.20260331)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2026.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2026.0/bin/compiler/../icpx.cfg
------------------------------------------------------------------------------------------------------------------------

==============================================================================================================================
C++, C          | 511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler 2026.0.0 (2026.0.0.20260331)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2026.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2026.0/bin/compiler/../icpx.cfg
Intel(R) oneAPI DPC++/C++ Compiler 2026.0.0 (2026.0.0.20260331)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2026.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2026.0/bin/compiler/../icx.cfg
------------------------------------------------------------------------------------------------------------------------

==============================================================================================================================
C++, C, Fortran | 507.cactuBSSN_r(base)
------------------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler 2026.0.0 (2026.0.0.20260331)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2026.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2026.0/bin/compiler/../icpx.cfg
Intel(R) oneAPI DPC++/C++ Compiler 2026.0.0 (2026.0.0.20260331)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2026.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2026.0/bin/compiler/../icx.cfg
ifx (IFX) 2026.0.0 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------------------------------------------------

==============================================================================================================================
Fortran         | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
------------------------------------------------------------------------------------------------------------------------
ifx (IFX) 2026.0.0 20260331
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------------------------------------------------------------------------------------------------------------------------

==============================================================================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base)
------------------------------------------------------------------------------------------------------------------------
ifx (IFX) 2026.0.0 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler 2026.0.0 (2026.0.0.20260331)
```

(Continued on next page)

Compiler Version Notes (Continued)

```
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2026.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2026.0/bin/compiler/../icx.cfg
------------------------------------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Benchmarks using both Fortran and C:
ifx icx

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-AVX2 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -ljemalloc -L/usr/local/jemalloc-5.3.0/lib
```

C++ benchmarks:
```
-w -std=c++14 -m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc-5.3.0/lib
```

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc
-L/usr/local/jemalloc-5.3.0/lib
```

Benchmarks using both Fortran and C:
```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -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/jemalloc-5.3.0/lib
```

Benchmarks using both C and C++:
```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -ljemalloc
-L/usr/local/jemalloc-5.3.0/lib
```

Benchmarks using Fortran, C, and C++:
```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -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/jemalloc-5.3.0/lib
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic2026-official-linux64.html
http://www.spec.org/cpu2017/flags/HuaKun-Platform-Settings-ICX-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2026-official-linux64.xml
http://www.spec.org/cpu2017/flags/HuaKun-Platform-Settings-ICX-V1.2.xml

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