SPEC CPU®2017 Integer Rate Result

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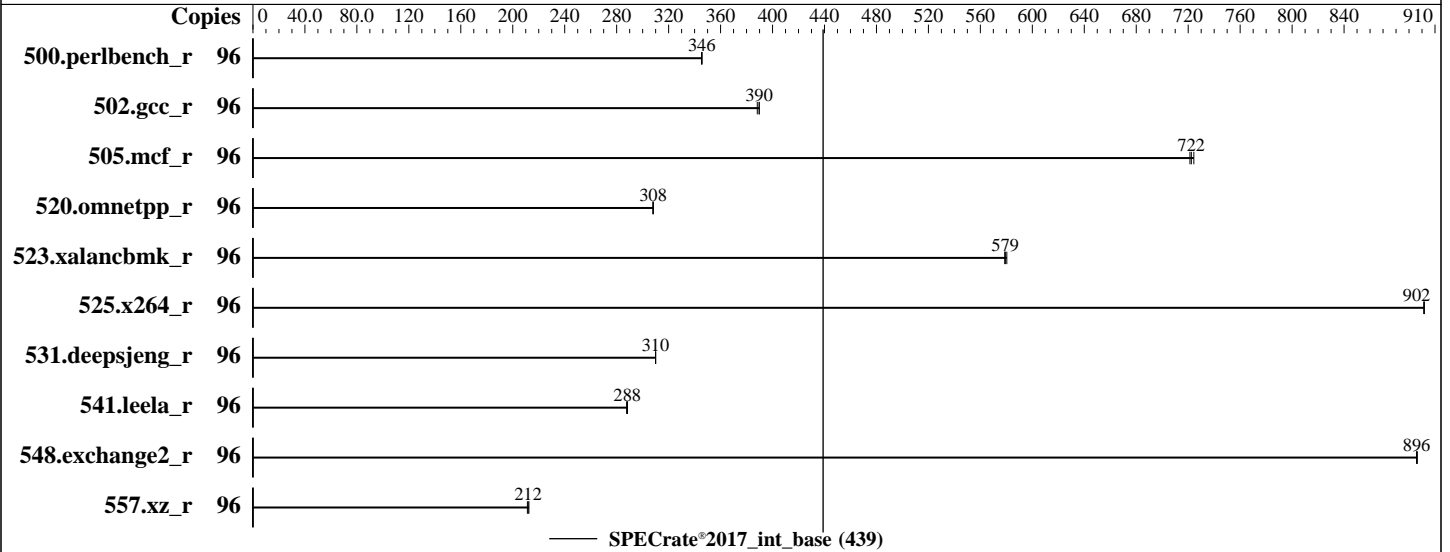
New H3C Technologies Co., Ltd.

SPECrate®2017_int_base =   439

H3C UniServer R4900 G6 Ultra (Intel Xeon Silver 4516Y+)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Aug-2024

Hardware Availability: Oct-2023

Software Availability: Mar-2024

Copies	Value
500.perlbench_r 96	346
502.gcc_r 96	390
505.mcf_r 96	722
520.omnetpp_r 96	308
523.xalancbmk_r 96	579
525.x264_r 96	902
531.deepsjeng_r 96	310
541.leela_r 96	288
548.exchange2_r 96	896
557.xz_r 96	212

Scale: 0 40.0 80.0 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 800 840 910

SPECrate®2017_int_base (439)

Hardware

CPU Name: Intel Xeon Silver 4516Y+

Max MHz: 3700

Nominal: 2200

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: 45 MB I+D on chip per chip

Other: None

Memory: 1 TB (16 x 64 GB 2Rx4 PC5-5600B-R, running at 4400)

Storage: 1 x 6.4 TB NVME SSD

Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 9.2 (Plow)
5.14.0-284.11.1.el9_2.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 6.10.43 released Jul-2024 BIOS

File System: xfs

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: Not Applicable

Other: None

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
500.perlbench_r	96	**442**	**346**	443	345	442	346							
502.gcc_r	96	349	390	350	388	**349**	**390**							
505.mcf_r	96	214	724	**215**	**722**	215	721							
520.omnetpp_r	96	409	308	**409**	**308**	409	308							
523.xalancbmk_r	96	175	580	**175**	**579**	175	579							
525.x264_r	96	**186**	**902**	186	901	186	902							
531.deepsjeng_r	96	355	310	355	310	**355**	**310**							
541.leela_r	96	551	288	553	288	**552**	**288**							
548.exchange2_r	96	**281**	**896**	281	896	281	896							
557.xz_r	96	488	212	491	211	**489**	**212**							
SPECrate®2017_int_base =		**439**												
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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/lib/ia32:/home/speccpu/je5.0.1-32"
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.
 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.
```

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

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Platform Notes

```
 BIOS Settings:
 SNC = Enable SNC2 (2-clusters)
 Power Performance Tuning = BIOS Controls EPB
 ENERGY_PERF_BIAS_CFG mode = Performance

 Sysinfo program /home/speccpu/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Mon Aug 12 09:18:52 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. Systemd service manager version: systemd 252 (252-13.el9_2)
 11. Services, from systemctl list-unit-files
 12. Linux kernel boot-time arguments, from /proc/cmdline
 13. cpupower frequency-info
 14. tuned-adm active
 15. sysctl
 16. /sys/kernel/mm/transparent_hugepage
 17. /sys/kernel/mm/transparent_hugepage/khugepaged
 18. OS release
 19. Disk information
 20. /sys/devices/virtual/dmi/id
 21. dmidecode
 22. BIOS
 -----------------------------------------------------------


 -----------------------------------------------------------
 1. uname -a
   Linux localhost.localdomain 5.14.0-284.11.1.el9_2.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 12 10:45:03 EDT
   2023 x86_64 x86_64 x86_64 GNU/Linux


 -----------------------------------------------------------
 2. w
   09:18:52 up 8 min,  2 users,  load average: 3.49, 25.35, 15.94
   USER     TTY          LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1         09:16   12.00s  0.86s  0.01s sh intrate.sh
   root     pts/0        09:11   20.00s  0.07s  0.00s sh 4516Y+.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
```

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Platform Notes (Continued)

```
  file size                 (blocks, -f) unlimited
  pending signals                   (-i) 4126558
  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) 4126558
  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 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 intrate
   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 intrate --nopreenv --note-preenv --logfile
     $SPEC/tmp/CPU2017.010/templogs/preenv.intrate.010.0.log --lognum 010.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
  $SPEC = /home/speccpu


  ----------------------------------------------------------
  6. /proc/cpuinfo
     model name         : INTEL(R) XEON(R) SILVER 4516Y+
     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
    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):                    96
```

(Continued on next page)

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Platform Notes (Continued)

```
On-line CPU(s) list:          0-95
Vendor ID:                    GenuineIntel
BIOS Vendor ID:               Intel(R) Corporation
Model name:                   INTEL(R) XEON(R) SILVER 4516Y+
BIOS Model name:              INTEL(R) XEON(R) SILVER 4516Y+
CPU family:                   6
Model:                        207
Thread(s) per core:           2
Core(s) per socket:           24
Socket(s):                    2
Stepping:                     2
CPU max MHz:                  3700.0000
CPU min MHz:                  800.0000
BogoMIPS:                     4400.00
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
                              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 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 ibt amx_bf16 avx512_fp16 amx_tile amx_int8
                              flush_l1d 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:                     90 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
Vulnerability Spectre v1:     Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2:     Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSB-eIBRS SW
                              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
```

(Continued on next page)

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Platform Notes (Continued)

```
    L3        45M      90M    15 Unified         3 49152        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: 257579 MB
  node 0 free: 256614 MB
  node 1 cpus: 12-23,60-71
  node 1 size: 258042 MB
  node 1 free: 257178 MB
  node 2 cpus: 24-35,72-83
  node 2 size: 258042 MB
  node 2 free: 257042 MB
  node 3 cpus: 36-47,84-95
  node 3 size: 258037 MB
  node 3 free: 257239 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:       1056463288 kB

'who -r' did not return a run level


  ---------------------------------------------------------------
10. Systemd service manager version: systemd 252 (252-13.el9_2)
  Default Target  Status
  multi-user      starting


  ---------------------------------------------------------------
11. 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
                   lm_sensors low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd
                   nis-domainname nvmefc-boot-connections ostree-remount pmcd pmie pmlogger
                   power-profiles-daemon qemu-guest-agent rhsmcertd rpcbind rsyslog rtkit-daemon
                   selinux-autorelabel-mark smartd sshd sssd switcheroo-control sysstat systemd-boot-update
                   systemd-network-generator tuned udisks2 upower vgauthd vmtoolsd
  enabled-runtime  systemd-remount-fs
  disabled         arp-ethers autofs blk-availability brltty canberra-system-bootup canberra-system-shutdown
                   canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed
                   dbus-daemon debug-shell dnf-system-upgrade dnsmasq fancontrol fcoe grafana-server gssproxy
                   httpd httpd@ ibacm iprdump iprinit iprupdate ipsec iscsid iscsiuio kpatch kvm_stat ledmon
                   lldpad man-db-restart-cache-update nfs-blkmap nfs-server nftables nmb nvmf-autoconnect
                   ostree-readonly-sysroot-migration 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 rdisc rhcd rhsm rhsm-facts rpmdb-rebuild rrdcached saslauthd
                   selinux-check-proper-disable serial-getty@ smb snmpd snmptrapd speech-dispatcherd
                   srp_daemon srp_daemon_port@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore
                   systemd-sysext target targetclid tog-pegasus trace-cmd vsftpd wpa_supplicant
  indirect         pcscd spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
```

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Platform Notes (Continued)

```
                        systemd-sysupdate systemd-sysupdate-reboot vsftpd@

    ----------------------------------------------------------
    12. Linux kernel boot-time arguments, from /proc/cmdline
      BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-284.11.1.el9_2.x86_64
      root=/dev/mapper/rhel-root
      ro
      resume=/dev/mapper/rhel-swap
      rd.lvm.lv=rhel/root
      rd.lvm.lv=rhel/swap
      rhgb
      quiet
      nohz_full=1-143
      rcu_nocbs=1-143
      console=tty0


    ----------------------------------------------------------
    13. cpupower frequency-info
      analyzing CPU 0:
        current policy: frequency should be within 800 MHz and 3.70 GHz.
                        The governor "performance" may decide which speed to use
                        within this range.
        boost state support:
          Supported: yes
          Active: yes


    ----------------------------------------------------------
    14. tuned-adm active
      Current active profile: throughput-performance


    ----------------------------------------------------------
    15. 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


    ----------------------------------------------------------
    16. /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)

```
17. /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


 ---------------------------------------------------------------
18. OS release
  From /etc/*-release /etc/*-version
  os-release      Red Hat Enterprise Linux 9.2 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.2 (Plow)
  system-release Red Hat Enterprise Linux release 9.2 (Plow)


 ---------------------------------------------------------------
19. Disk information
SPEC is set to: /home/speccpu
  Filesystem            Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   5.8T  154G  5.6T   3% /home


 ---------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         New H3C Technologies Co., Ltd.
    Product:        H3C UniServer R4900 G6 Ultra
    Product Family: Rack
    Serial:         210235A4CHH244000003


 ---------------------------------------------------------------
21. 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:
    16x Hynix HMCG94AGBRA179N 64 GB 2 rank 5600, configured at 4400



 ---------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
  BIOS Vendor:      American Megatrends International, LLC.
  BIOS Version:     6.10.43
  BIOS Date:        07/27/2024
  BIOS Revision:    5.32
```

Compiler Version Notes

```
==============================================================================
C        | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_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++      | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_r(base)
------------------------------------------------------------------------------
```

(Continued on next page)

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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.
------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_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.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-DSPEC_LP64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
`-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math`
`-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc`

C++ benchmarks:
`-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math`

(Continued on next page)

New H3C Technologies Co., Ltd.

H3C UniServer R4900 G6 Ultra (Intel Xeon Silver 4516Y+)

SPECrate®2017_int_base = 439

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9066		**Test Date:**	Aug-2024
Test Sponsor:	New H3C Technologies Co., Ltd.	**Hardware Availability:**	Oct-2023
Tested by:	New H3C Technologies Co., Ltd.	**Software Availability:**	Mar-2024

Base Optimization Flags (Continued)

C++ benchmarks (continued):
```
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

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-RevE.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-RevE.xml

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

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