SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_base =   975

SPECrate®2017_int_peak = Not Run
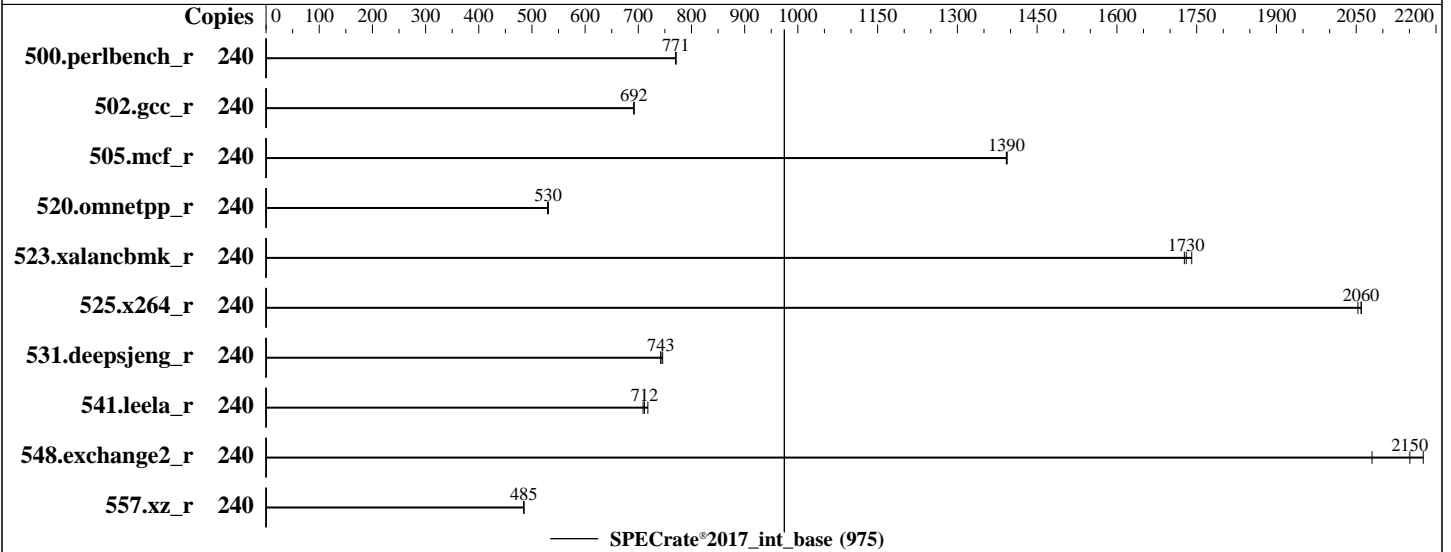
CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Benchmark	Copies	Result
500.perlbench_r	240	771
502.gcc_r	240	692
505.mcf_r	240	1390
520.omnetpp_r	240	530
523.xalancbmk_r	240	1730
525.x264_r	240	2060
531.deepsjeng_r	240	743
541.leela_r	240	712
548.exchange2_r	240	2150
557.xz_r	240	485

SPECrate®2017_int_base (975)

Hardware

CPU Name: Intel Xeon Platinum 8490H
  Max MHz: 3500
  Nominal: 1900
Enabled: 120 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: 112.5 MB I+D on chip per chip
  Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 3.84 TB SATA SSD
Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
    Kernel 5.14.0-70.13.1.el9_0.x86_64
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++
    Compiler for Linux;
    Fortran: Version 2023.0 of Intel Fortran Compiler
    for Linux;
Parallel: No
Firmware: Lenovo BIOS Version T8E120T 0.36 released Feb-2023
File System: xfs
System State: Run level 5 (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

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_base = 975

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	240	**496**	**771**	496	770	496	771							
502.gcc_r	240	**491**	**692**	491	692	491	692							
505.mcf_r	240	**279**	**1390**	279	1390	278	1390							
520.omnetpp_r	240	593	531	595	530	**594**	**530**							
523.xalancbmk_r	240	147	1730	**146**	**1730**	146	1740							
525.x264_r	240	**204**	**2060**	204	2060	205	2050							
531.deepsjeng_r	240	**370**	**743**	371	742	369	746							
541.leela_r	240	**559**	**712**	561	709	554	718							
548.exchange2_r	240	289	2180	302	2080	**292**	**2150**							
557.xz_r	240	535	485	**535**	**485**	535	485							
SPECrate®2017_int_base =	**975**													
SPECrate®2017_int_peak =	**Not Run**													

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

Compiler Notes

```
SPEC has ruled that the compiler used for this result was performing a compilation
that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_s
benchmarks using a priori knowledge of the SPEC code and dataset to perform a
transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4
https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer
publish results using this optimization.

This result is left in the SPEC results database for historical reference.
```

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/cpu_report/lib/intel64:/home/cpu_report/lib/ia32:/home/cpu_report/je5.0.1-32"
MALLOC_CONF = "retain:true"
```

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrate®2017_int_base =   975

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

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.
```

Platform Notes

```
BIOS configuration:
Power Mode set to Custom
SNC set to Enable SNC4 (4-clusters)
LLC Prefetch set to Enabled
DCU Streamer Prefetcher set to Disabled
C1 Enhanced Mode set to Disabled
Patrol Scrub set to Disabled
Intel Virtualization Technology set to Disabled
Package C State set to C0/C1 state

Sysinfo program /home/cpu_report/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Mon Apr 17 22:01:41 2023

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

-----------------------------------------------------------
Table of contents
-----------------------------------------------------------
 1. uname -a
 2. w
 3. Username
 4. ulimit -a
 5. sysinfo process ancestry
 6. /proc/cpuinfo
 7. lscpu
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 250 (250-6.el9_0)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
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
-----------------------------------------------------------
```

(Continued on next page)

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

Lenovo Global Technology

SPECrate®2017_int_base =   975

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
-----------------------------------------------------------
1. uname -a
   Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
   x86_64 x86_64 GNU/Linux

-----------------------------------------------------------
2. w
    22:01:41 up  7:01,  1 user,  load average: 0.00, 0.00, 0.00
   USER     TTY         LOGIN@   IDLE   JCPU   PCPU WHAT
   root     :1          15:09    ?xdm?  28:49   0.00s /usr/libexec/gdm-x-session --register-session --run-script
   gnome-session

-----------------------------------------------------------
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) 4124555
   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) 4124555
   virtual memory              (kbytes, -v) unlimited
   file locks                      (-x) unlimited

-----------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
 /usr/lib/systemd/systemd --user
 /usr/libexec/gnome-terminal-server
 bash
 bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=240 -c
   ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=120 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base -o all intrate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=240 --configfile
   ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=120 --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/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu_report

-----------------------------------------------------------
6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) Platinum 8490H
   vendor_id       : GenuineIntel
   cpu family      : 6
```

(Continued on next page)

Lenovo Global Technology

SPECrate®2017_int_base = 975

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
      model           : 143
      stepping        : 6
      microcode       : 0x2b000161
      bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
      cpu cores       : 60
      siblings        : 120
      2 physical ids (chips)
      240 processors (hardware threads)
      physical id 0: core ids 0-59
      physical id 1: core ids 0-59
      physical id 0: apicids 0-119
      physical id 1: apicids 128-247
    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:             46 bits physical, 57 bits virtual
      Byte Order:                Little Endian
      CPU(s):                    240
      On-line CPU(s) list:       0-239
      Vendor ID:                 GenuineIntel
      BIOS Vendor ID:            Intel(R) Corporation
      Model name:                Intel(R) Xeon(R) Platinum 8490H
      BIOS Model name:           Intel(R) Xeon(R) Platinum 8490H
      CPU family:                6
      Model:                     143
      Thread(s) per core:        2
      Core(s) per socket:        60
      Socket(s):                 2
      Stepping:                  6
      CPU max MHz:               3500.0000
      CPU min MHz:               800.0000
      BogoMIPS:                  3800.00
      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 xsave avx f16c rdrand lahf_lm abm
                                 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3 invpcid_single
                                 intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced 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 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_l1d arch_capabilities
      L1d cache:                 5.6 MiB (120 instances)
      L1i cache:                 3.8 MiB (120 instances)
      L2 cache:                  240 MiB (120 instances)
      L3 cache:                  225 MiB (2 instances)
      NUMA node(s):              8
```

(Continued on next page)

Lenovo Global Technology

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_base =   975

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Apr-2023

Hardware Availability: Jan-2023

Software Availability: Dec-2022

Platform Notes (Continued)

```
  NUMA node0 CPU(s):              0-14,120-134
  NUMA node1 CPU(s):              15-29,135-149
  NUMA node2 CPU(s):              30-44,150-164
  NUMA node3 CPU(s):              45-59,165-179
  NUMA node4 CPU(s):              60-74,180-194
  NUMA node5 CPU(s):              75-89,195-209
  NUMA node6 CPU(s):              90-104,210-224
  NUMA node7 CPU(s):              105-119,225-239
  Vulnerability Itlb multihit:    Not affected
  Vulnerability L1tf:             Not affected
  Vulnerability Mds:              Not affected
  Vulnerability Meltdown:         Not affected
  Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
  Vulnerability Spectre v1:       Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:       Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
  Vulnerability Srbds:            Not affected
  Vulnerability Tsx async abort:  Not affected

  From lscpu --cache:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE          LEVEL   SETS PHY-LINE COHERENCY-SIZE
      L1d      48K     5.6M   12 Data             1     64       1             64
      L1i      32K     3.8M    8 Instruction      1     64       1             64
      L2        2M     240M   16 Unified          2   2048       1             64
      L3    112.5M     225M   15 Unified          3 122880       1             64

  ------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 8 nodes (0-7)
  node 0 cpus: 0-14,120-134
  node 0 size: 128131 MB
  node 0 free: 117847 MB
  node 1 cpus: 15-29,135-149
  node 1 size: 129017 MB
  node 1 free: 120552 MB
  node 2 cpus: 30-44,150-164
  node 2 size: 129017 MB
  node 2 free: 120634 MB
  node 3 cpus: 45-59,165-179
  node 3 size: 129017 MB
  node 3 free: 120591 MB
  node 4 cpus: 60-74,180-194
  node 4 size: 129017 MB
  node 4 free: 120392 MB
  node 5 cpus: 75-89,195-209
  node 5 size: 128981 MB
  node 5 free: 119242 MB
  node 6 cpus: 90-104,210-224
  node 6 size: 129017 MB
  node 6 free: 120607 MB
  node 7 cpus: 105-119,225-239
  node 7 size: 128997 MB
  node 7 free: 120290 MB
  node distances:
  node   0   1   2   3   4   5   6   7
    0:  10  12  12  12  21  21  21  21
    1:  12  10  12  12  21  21  21  21
    2:  12  12  10  12  21  21  21  21
    3:  12  12  12  10  21  21  21  21
    4:  21  21  21  21  10  12  12  12
```

(Continued on next page)

Lenovo Global Technology

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_base =   975

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
     5:  21  21  21  21  12  10  12  12
     6:  21  21  21  21  12  12  10  12
     7:  21  21  21  21  12  12  12  10


  ------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1055946492 kB


  ------------------------------------------------------------
10. who -r
  run-level 5 Apr 17 15:00


  ------------------------------------------------------------
11. Systemd service manager version: systemd 250 (250-6.el9_0)
  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 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-network-generator 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 cni-dhcp console-getty cpupower cups-browsed
                   dbus-daemon debug-shell dnsmasq dovecot fancontrol fcoe grafana-server gssproxy httpd
                   httpd@ ibacm iprdump iprinit iprupdate ipsec iscsid iscsiuio kpatch kvm_stat ledmon
                   libvirt-guests libvirtd lldpad man-db-restart-cache-update named named-chroot nfs-blkmap
                   nfs-server nftables nmb numad nvmf-autoconnect pmfind pmie_farm pmlogger_farm pmproxy
                   podman podman-auto-update podman-restart postfix powertop psacct ras-mc-ctl rasdaemon
                   rdisc rhcd rhsm rhsm-facts rpmdb-rebuild rrdcached saslauthd serial-getty@ smb snmpd
                   snmptrapd spamassassin speech-dispatcherd srp_daemon srp_daemon_port@ sshd-keygen@
                   systemd-boot-check-no-failures systemd-nspawn@ systemd-pstore systemd-sysext target
                   targetclid tog-pegasus trace-cmd virtinterfaced virtnetworkd virtnodedevd virtnwfilterd
                   virtproxyd virtsecretd virtstoraged vsftpd wpa_supplicant
  indirect         pcscd spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
                   virtlockd virtlogd vsftpd@


  ------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=(hd0,gpt6)/boot/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
  root=UUID=0fcc2b80-3b7a-487a-8bd6-e3cddec3d533
  ro
  crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
  resume=UUID=d8abe978-c0ca-4381-ac68-dadfc58fd1c9
  rhgb
  quiet


  ------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 3.50 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
```

(Continued on next page)

Lenovo Global Technology

SPECrate®2017_int_base = 975

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
    boost state support:
      Supported: yes
      Active: yes


    ----------------------------------------------------------
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                   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


    ----------------------------------------------------------
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


    ----------------------------------------------------------
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 9.0 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
  system-release Red Hat Enterprise Linux release 9.0 (Plow)


    ----------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu_report
  Filesystem    Type  Size  Used Avail Use% Mounted on
  /dev/sda6     xfs   954G  156G  798G  17% /


    ----------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         Lenovo
    Product:        Lenovo WenTian GB5520 V3
```

(Continued on next page)

Lenovo Global Technology

SPECrate®2017_int_base = 975

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
      Product Family: Lenovo
      Serial:         J80007RK


   ------------------------------------------------------------
  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:
     2x Samsung M321R8GA0BB0-CQKEG 64 GB 2 rank 4800
     13x Samsung M321R8GA0BB0-CQKMG 64 GB 2 rank 4800
     1x Samsung M321R8GA0BB0-CQKVG 64 GB 2 rank 4800


   ------------------------------------------------------------
  22. BIOS
  (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:       LENOVO
     BIOS Version:      T8E120T-0.36
     BIOS Date:         02/13/2023
     BIOS Revision:     5.29
```

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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
C++     | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_r(base)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran | 548.exchange2_r(base)
----------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

(Continued on next page)

Lenovo Global Technology

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_base =   975

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Base Compiler Invocation (Continued)

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/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

C++ benchmarks:
```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-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/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Eaglestream-WR5220-G3-R.html
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html

SPEC CPU®2017 Integer Rate Result

Lenovo Global Technology

Wentian WR5220 G3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_base =   975

SPECrate®2017_int_peak = Not Run

CPU2017 License: 9017	**Test Date:** Apr-2023
Test Sponsor: Lenovo Global Technology	**Hardware Availability:** Jan-2023
Tested by: Lenovo Global Technology	**Software Availability:** Dec-2022

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Eaglestream-WR5220-G3-R.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml

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

Tested with SPEC CPU®2017 v1.1.9 on 2023-04-17 10:01:41-0400.
Report generated on 2024-01-29 17:44:50 by CPU2017 PDF formatter v6716.
Originally published on 2023-05-23.