SPEC CPU®2017 Integer Rate Result

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Lenovo Global Technology

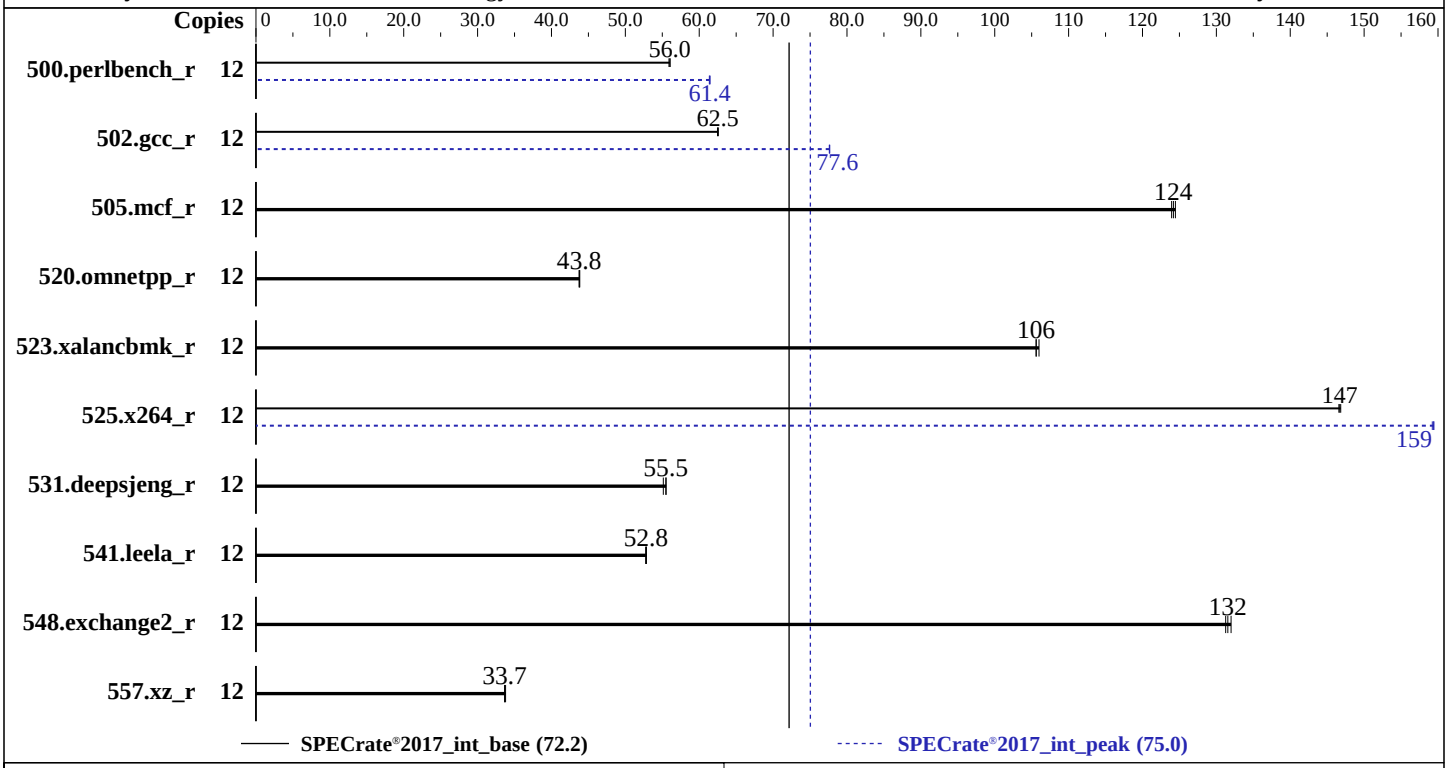
ThinkSystem SR250 V3
(3.30 GHz, Intel Xeon E-2456)

SPECrate®2017_int_base = 72.2

SPECrate®2017_int_peak = 75.0

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

Test Date: Jan-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023



Hardware

CPU Name:	Intel Xeon E-2456
Max MHz:	5100
Nominal:	3300
Enabled:	6 cores, 1 chip, 2 threads/core
Orderable:	1 chip
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	2 MB I+D on chip per core
L3:	18 MB I+D on chip per chip
Other:	None
Memory:	64 GB (2 x 32 GB 2Rx8 PC5-4800B-E, running at 4400)
Storage:	1 x 480 GB SATA SSD
Other:	None

Software

OS:	Red Hat Enterprise Linux 9.3 (Plow) Kernel 5.14.0-362.8.1.el9_3.x86_64
Compiler:	C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;
Parallel:	No
Firmware:	Lenovo BIOS Version CTE101Z 1.10 released Dec-2023
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
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
500.perlbench_r	12	341	56.0	342	55.9	**341**	**56.0**	12	311	61.4	**311**	**61.4**	311	61.5
502.gcc_r	12	272	62.6	272	62.5	**272**	**62.5**	12	**219**	**77.6**	219	77.7	219	77.6
505.mcf_r	12	156	124	156	124	**156**	**124**	12	156	124	156	124	**156**	**124**
520.omnetpp_r	12	360	43.8	**360**	**43.8**	359	43.8	12	360	43.8	**360**	**43.8**	359	43.8
523.xalancbmk_r	12	120	106	120	106	**120**	**106**	12	120	106	120	106	**120**	**106**
525.x264_r	12	143	147	**143**	**147**	143	147	12	132	159	**132**	**159**	132	159
531.deepsjeng_r	12	249	55.1	**248**	**55.5**	248	55.5	12	249	55.1	**248**	**55.5**	248	55.5
541.leela_r	12	**376**	**52.8**	377	52.8	376	52.9	12	**376**	**52.8**	377	52.8	376	52.9
548.exchange2_r	12	**239**	**132**	240	131	238	132	12	**239**	**132**	240	131	238	132
557.xz_r	12	**385**	**33.7**	384	33.8	385	33.7	12	**385**	**33.7**	384	33.8	385	33.7

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SPECrate®2017_int_peak = 75.0

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

Submit Notes

```
The taskset mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate taskset 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/cpu2017-1.1.9-ic2023.2.3/lib/intel64:/home/cpu2017-1.1.9-ic2023.2.3/lib/ia32:/home/cpu2017-1.1.
     9-ic2023.2.3/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
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.
 jemalloc, a general purpose malloc implementation
```

(Continued on next page)

General Notes (Continued)

```
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 configuration:
Choose Operating Mode set to Maximum Performance
Turbo Limit for 95W CPU set to Disabled

 Sysinfo program /home/cpu2017-1.1.9-ic2023.2.3/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Tue Jan 16 17:58:37 2024

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

 ------------------------------------------------------------
 Table of contents
 ------------------------------------------------------------
  1. uname -a
  2. w
  3. Username
  4. ulimit -a
  5. sysinfo process ancestry
  6. /proc/cpuinfo
  7. lscpu
  8. numactl --hardware
  9. /proc/meminfo
 10. who -r
 11. Systemd service manager version: systemd 252 (252-18.el9)
 12. Services, from systemctl list-unit-files
 13. Linux kernel boot-time arguments, from /proc/cmdline
 14. cpupower frequency-info
 15. tuned-adm active
 16. sysctl
 17. /sys/kernel/mm/transparent_hugepage
 18. /sys/kernel/mm/transparent_hugepage/khugepaged
 19. OS release
 20. Disk information
 21. /sys/devices/virtual/dmi/id
 22. dmidecode
 23. BIOS
 ------------------------------------------------------------

 ------------------------------------------------------------
 1. uname -a
   Linux localhost.localdomain 5.14.0-362.8.1.el9_3.x86_64 #1 SMP PREEMPT_DYNAMIC Tue Oct 3 11:12:36 EDT 2023
   x86_64 x86_64 x86_64 GNU/Linux

 ------------------------------------------------------------
 2. w
    17:58:37 up 1 min,  1 user,  load average: 0.30, 0.10, 0.03
   USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1      17:57   13.00s  0.73s  0.00s -bash

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

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

(Continued on next page)

Platform Notes (Continued)

```
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) 256653
  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) 256653
  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
 -bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=12 -c
   ic2023.2.3-lin-core-avx2-rate-20231121.cfg --define smt-on --define cores=6 --define physicallogical
   --define no-numa --tune base,peak -o all --define drop_caches intrate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=12 --configfile
   ic2023.2.3-lin-core-avx2-rate-20231121.cfg --define smt-on --define cores=6 --define physicallogical
   --define no-numa --tune base,peak --output_format all --define drop_caches --nopower --runmode rate --tune
   base:peak --size refrate intrate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.050/templogs/preenv.intrate.050.0.log --lognum 050.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-ic2023.2.3

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) E E-2456
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 183
    stepping        : 1
    microcode       : 0x11f
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    cpu cores       : 6
    siblings        : 12
    1 physical ids (chips)
    12 processors (hardware threads)
    physical id 0: core ids 0-5
    physical id 0: apicids 0-11
  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
```

(Continued on next page)

Platform Notes (Continued)

```
  Address sizes:                       42 bits physical, 48 bits virtual
  Byte Order:                          Little Endian
  CPU(s):                              12
  On-line CPU(s) list:                 0-11
  Vendor ID:                           GenuineIntel
  BIOS Vendor ID:                      Intel(R) Corporation
  Model name:                          Intel(R) Xeon(R) E E-2456
  BIOS Model name:                     Intel(R) Xeon(R) E E-2456
  CPU family:                          6
  Model:                               183
  Thread(s) per core:                  2
  Core(s) per socket:                  6
  Socket(s):                           1
  Stepping:                            1
  BogoMIPS:                            6604.80
  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
                                       sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c
                                       rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb ssbd ibrs ibpb stibp
                                       ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad fsgsbase
                                       tsc_adjust bmi1 avx2 smep bmi2 erms invpcid rdseed adx smap clflushopt
                                       clwb intel_pt sha_ni xsaveopt xsavec xgetbv1 xsaves split_lock_detect
                                       avx_vnni dtherm ida arat pln pts hfi vnmi umip pku ospke waitpkg gfni
                                       vaes vpclmulqdq tme rdpid movdiri movdir64b fsrm md_clear serialize
                                       pconfig arch_lbr ibt flush_l1d arch_capabilities
  Virtualization:                      VT-x
  L1d cache:                           288 KiB (6 instances)
  L1i cache:                           192 KiB (6 instances)
  L2 cache:                            12 MiB (6 instances)
  L3 cache:                            18 MiB (1 instance)
  NUMA node(s):                        1
  NUMA node0 CPU(s):                   0-11
  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 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, 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     288K   12 Data            1    64        1             64
     L1i       32K     192K    8 Instruction     1    64        1             64
     L2         2M      12M   16 Unified         2  2048        1             64
     L3        18M      18M    9 Unified         3 32768        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 1 nodes (0)
```

(Continued on next page)

Platform Notes (Continued)

```
  node 0 cpus: 0-11
  node 0 size: 64206 MB
  node 0 free: 63529 MB
  node distances:
  node   0
    0:  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       65747188 kB

------------------------------------------------------------
10. who -r
  run-level 3 Jan 16 17:57

------------------------------------------------------------
11. Systemd service manager version: systemd 252 (252-18.el9)
  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
                   iscsi-onboot kdump libstoragemgmt low-memory-monitor lvm2-monitor mcelog mdmonitor
                   microcode multipathd nis-domainname nvmefc-boot-connections rhsmcertd rsyslog rtkit-daemon
                   selinux-autorelabel-mark smartd sshd sssd 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 console-getty cpupower debug-shell
                   dnf-system-upgrade iprdump iprinit iprupdate iscsid iscsiuio kpatch kvm_stat ledmon
                   man-db-restart-cache-update nftables nvmf-autoconnect pesign psacct rdisc rhcd rhsm
                   rhsm-facts rpmdb-rebuild selinux-check-proper-disable serial-getty@ sshd-keygen@
                   systemd-boot-check-no-failures systemd-pstore systemd-sysext
  indirect         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-5.14.0-362.8.1.el9_3.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

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    Unable to determine current policy
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. tuned-adm active
```

(Continued on next page)

Platform Notes (Continued)

```
  Current active profile: throughput-performance

------------------------------------------------------------
16. sysctl
  kernel.numa_balancing               0
  kernel.randomize_va_space           2
  vm.compaction_proactiveness        20
  vm.dirty_background_bytes           0
  vm.dirty_background_ratio          10
  vm.dirty_bytes                      0
  vm.dirty_expire_centisecs        3000
  vm.dirty_ratio                     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+madvise [madvise] never
  enabled         [always] madvise never
  hpage_pmd_size  2097152
  shmem_enabled   always within_size advise [never] deny force

------------------------------------------------------------
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 9.3 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.3 (Plow)
  system-release Red Hat Enterprise Linux release 9.3 (Plow)

------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2023.2.3
  Filesystem            Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   344G   14G  331G   5% /home

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         Lenovo
    Product:        ThinkSystem SR250 V3
    Product Family: ThinkSystem
    Serial:         1234567890
```

(Continued on next page)

Platform Notes (Continued)

```
 ------------------------------------------------------------
 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:
     1x Samsung M324R4GA3BB0-CQKOD 32 GB 2 rank 4800, configured at 4400
     1x Samsung M324R4GA3BB0-CQKOL 32 GB 2 rank 4800, configured at 4400


 ------------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       Lenovo
    BIOS Version:      CTE101Z-1.10
    BIOS Date:         12/27/2023
    BIOS Revision:     1.10
    Firmware Revision: 1.10
```

Compiler Version Notes

```
==============================================================================================================
C       | 502.gcc_r(peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(base, peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

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C       | 502.gcc_r(peak)
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--------------------------------------------------------------------------------------------------------------

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C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(base, peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
        | 541.leela_r(base, peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
```

(Continued on next page)

Compiler Version Notes (Continued)

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

==============================================================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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 -xCORE-AVX2 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

C++ benchmarks:
-w -std=c++14 -m64 -Wl,-z,muldefs -xCORE-AVX2 -O3 -ffast-math

(Continued on next page)

Base Optimization Flags (Continued)

C++ benchmarks (continued):
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

Fortran benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX2 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

Peak Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Peak Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
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

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2 -flto
-Ofast -ffast-math -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-strict-overflow
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

502.gcc_r: -m32
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2 -flto
-Ofast -ffast-math -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc32-5.0.1/lib
-ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

557.xz_r: basepeak = yes

C++ benchmarks:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: basepeak = yes

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

Fortran benchmarks:

548.exchange2_r: basepeak = yes

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-Catlow-A.html
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.html

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-Catlow-A.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml

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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 2024-01-16 04:58:37-0500.
Report generated on 2024-02-20 14:11:18 by CPU2017 PS formatter v6716.
Originally published on 2024-02-20.