## Lenovo Global Technology

**ThinkSystem SR250 V3**  
(3.20 GHz, Intel Xeon E-2488)

### SPEC CPU®2017 Integer Rate Result

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>94.3</td>
<td>98.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Test Sponsor:</strong></th>
<th>Lenovo Global Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Date:</strong></td>
<td>Dec-2023</td>
</tr>
<tr>
<td><strong>Hardware Availability:</strong></td>
<td>Feb-2024</td>
</tr>
<tr>
<td><strong>Software Availability:</strong></td>
<td>Dec-2023</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>500.perlbench_r</th>
<th>16</th>
<th>Copies</th>
<th>SPECrate®2017_int_base (94.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>502.gcc_r</td>
<td>16</td>
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<td>74.5</td>
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<tr>
<td>505.mcf_r</td>
<td>16</td>
<td></td>
<td>81.1</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>16</td>
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<td>76.8</td>
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<tr>
<td>523.xalancbmk_r</td>
<td>16</td>
<td></td>
<td>140</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>16</td>
<td></td>
<td>156</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>16</td>
<td></td>
<td>197</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>16</td>
<td></td>
<td>214</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>16</td>
<td></td>
<td>214</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>16</td>
<td></td>
<td>214</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th><strong>OS:</strong></th>
<th>Red Hat Enterprise Linux 9.3 (Plow)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kernel:</strong></td>
<td>5.14.0-362.8.1.el9_3.x86_64</td>
</tr>
<tr>
<td><strong>Compiler:</strong></td>
<td>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;</td>
</tr>
<tr>
<td><strong>Parallel:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Firmware:</strong></td>
<td>Lenovo BIOS Version CTE101X 1.10 released Dec-2023</td>
</tr>
<tr>
<td><strong>File System:</strong></td>
<td>xfs</td>
</tr>
<tr>
<td><strong>System State:</strong></td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td><strong>Base Pointers:</strong></td>
<td>64-bit</td>
</tr>
<tr>
<td><strong>Peak Pointers:</strong></td>
<td>32/64-bit</td>
</tr>
<tr>
<td><strong>Other:</strong></td>
<td>jemalloc memory allocator V5.0.1</td>
</tr>
<tr>
<td><strong>Power Management:</strong></td>
<td>BIOS and OS set to prefer performance at the cost of additional power usage</td>
</tr>
</tbody>
</table>

### CPU2017 License:

9017

### Tested by:

Lenovo Global Technology

### Test Sponsor:

Lenovo Global Technology

### Hardware:

- **CPU Name:** Intel Xeon E-2488
- **Max MHz:** 5600
- **Nominal:** 3200
- **Enabled:** 8 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:** 24 MB I+D on chip per chip
- **Other:** None
- **Memory:** 64 GB (2 x 32 GB 2Rx8 PC5-4800B-E, running at 4400)
- **Storage:** 480 GB SATA SSD
- **Other:** None

### Test Date:

Dec-2023
Lenovo Global Technology
ThinkSystem SR250 V3
(3.20 GHz, Intel Xeon E-2488)

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tbody>
<tr>
<td>500.perlbench_r</td>
<td>16</td>
<td>342</td>
<td>74.5</td>
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<td>74.6</td>
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<td>81.1</td>
<td>314</td>
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<tr>
<td>502.gcc_r</td>
<td>16</td>
<td>295</td>
<td>76.8</td>
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<td>76.2</td>
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<td>76.9</td>
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<td>505.mcf_r</td>
<td>16</td>
<td>166</td>
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<td>384</td>
<td>44.7</td>
<td>384</td>
<td>44.7</td>
</tr>
</tbody>
</table>

The 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
Files are cached 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

**Platform Notes**

**BIOS configuration:**
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode
Turbo Limit for 95W CPU set to Disabled

Sysinfo program /home/cpu2017-1.1.9-lc2023.2.3/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097b5c197
running on localhost.localdomain Tue Dec 26 09:52:47 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. lsmpu
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
   09:52:47 up 1 min,  1 user, load average: 0.00, 0.00, 0.00
   USER  TTY     LOGIN@   IDLE   JCPU   PCPU WHAT
   root tty1     09:52  7.00s  0.58s  0.00s -bash
```

3. Username
   From environment variable $USER: root
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) 256633
   max locked memory  (kbytes, -l) 64
   max memory size  (kbytes, -m) unlimited
   open files     (-o) 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) 256633
   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=16 -c
   ic2023.2.3-lin-core-avx2-rate-20231121.cfg --define smt-on --define cores=8 --define physicallogical
   --define no-nuna --tune base,peak -o all --define drop_caches intrate
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=16 --configfile
   ic2023.2.3-lin-core-avx2-rate-20231121.cfg --define smt-on --define cores=8 --define physicallogical
   --define no-nuna --tune base,peak --output_format all --define drop_caches --nopower --runmode rate --tune
   base:peak --size refrate intrate --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.034/templogs/preenv.intrate.034.0.log --lognum 034.0 --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-2488
   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 : 8
   siblings : 16
   1 physical ids (chips)
   16 processors (hardware threads)
   physical id 0: core ids 0-7
   physical id 0: apicids 0-15
   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:
   x86_64
   32-bit, 64-bit

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Lenovo Global Technology
ThinkSystem SR250 V3
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SPECRate®2017_int_base = 94.3
SPECRate®2017_int_peak = 98.3

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

Platform Notes (Continued)

Address sizes: 42 bits physical, 48 bits virtual
Byte Order: Little Endian
CPU(s): 16
On-line CPU(s) list: 0-15
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel(R) Corporation
Model name: Intel(R) Xeon(R) E E-2488
BIOS Model name: Intel(R) Xeon(R) E E-2488
CPU family: 6
Model: 183
Thread(s) per core: 2
Core(s) per socket: 8
Stepping: 1
BogoMIPS: 6374.40

Flags:
  fpu vme de pse tsc msr pae mce cmov pat pse36
  ccf flush 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 tcpcpu uid perfmon 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 3nowprefetch cpuid_fault eb p s bsd ibrs ibti stibp
  ibrs enhanced tpr_shadow flexpriority ept vpid ept_ad fsgsbase
  ltd_adjust bm1 avx2 smep bmi2 erms invpcid rdseed d s a m ap cp y
  fma clflushopt cldemad tpm sse2 sravnx8 ext xsave xstate xtrnah tsc
  data tsc tsc_adjust sha vni dtherm dha arat pln ps hfi vni umip pku os p
  osk wrap kgf ni vaes wpclmulqdq tme rdpid movdir r64b fras md_clear serialize
  pcinfo arch lbr ibt flush ld arch capabilities

Virtualization: VT-x
L1d cache: 384 KiB (8 instances)
L1i cache: 256 KiB (8 instances)
L2 cache: 16 MiB (8 instances)
L3 cache: 24 MiB (1 instance)
NUMA node(s): 1
NUMA node0 CPU(s): 0-15
Vulnerability Gathers data sampling: Not affected
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio steal 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, RB filling, PBRSE-eIBRS SW sequence
Vulnerability Srbds: Not affected
Vulnerability Tlx async abort: Not affected

From lscpu --cache:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
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<tbody>
<tr>
<td>L1d</td>
<td>48K</td>
<td>384K</td>
<td>12</td>
<td>Data</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L1i</td>
<td>32K</td>
<td>256K</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L2</td>
<td>2M</td>
<td>16M</td>
<td>16</td>
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<td>2048</td>
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<td>64</td>
</tr>
<tr>
<td>L3</td>
<td>24M</td>
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<td>Unified</td>
<td>3</td>
<td>32768</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

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

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

(Continued on next page)
**Lenovo Global Technology**

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**SPEC CPU®2017 Integer Rate Result**

**SPECraté®2017_int_base = 94.3**

**SPECraté®2017_int_peak = 98.3**

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

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**Platform Notes (Continued)**

- node 0 cpus: 0-15  
  node 0 size: 64201 MB  
  node 0 free: 63507 MB

- node distances:
  - node 0
    - 0: 10

- **/proc/meminfo**
  - MemTotal: 65742072 kB

- **who -r**
  - run-level 3 Dec 26 09:51

- **Systemd service manager version:** systemd 252 (252-18.el9)
  - Default Target: Status
    - multi-user: running

- **Services, from systemctl list-unit-files**
  - **STATE**
    - **UNIT FILES**
      - enabled: NetworkManager NetworkManager-dispatcher NetworkManager-wait-online atd auditd bluetooth cron cron dbus-broker firewalld getty@ insights-client boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt low-memory-monitor lvm2-monitor mce log mdmonitor microcode multipathd nis-domainname nvme-fc-boot-connections rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd ssd systemd-boot-update systemd-network-generator tuned udisks2 upower
      - enabled-runtime: systemd-remount-fs
      - indirect

- **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

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

- **tuned-adm active**

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SPEC CPU®2017 Integer Rate Result

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SPECrate®2017_int_base = 94.3
SPECrate®2017_int_peak = 98.3

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
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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

Compiler Version Notes

C
\[ \text{502.gcc_r(peak)} \]
\[ \text{Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x} \]
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C
\[ \text{500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base, peak)} \]
\[ \text{Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x} \]
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C
\[ \text{502.gcc_r(peak)} \]
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C
\[ \text{500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base, peak)} \]
\[ \text{Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x} \]
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C++
\[ \text{520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)} \]
\[ \text{Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x} \]
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Lenovo Global Technology
ThinkSystem SR250 V3
(3.20 GHz, Intel Xeon E-2488)

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

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

SPECrate®2017_int_base = 94.3
SPECrate®2017_int_peak = 98.3

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 -gopt-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)
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SPECrate®2017_int_base = 94.3
SPECrate®2017_int_peak = 98.3

Test Date: Dec-2023
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Software Availability: Dec-2023

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
- 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

(Continued on next page)
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/Intel-ic2023p2-official-linux64.html
## SPEC CPU®2017 Integer Rate Result

**Lenovo Global Technology**

ThinkSystem SR250 V3  
(3.20 GHz, Intel Xeon E-2488)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>94.3</th>
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<tbody>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>98.3</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Test Date:** Dec-2023  
**Tested by:** Lenovo Global Technology  
**Hardware Availability:** Feb-2024  
**Software Availability:** Dec-2023

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

- 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.

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