## Lenovo Global Technology

**ThinkSystem ST650 V3**  
(2.10 GHz, Intel Xeon Gold 5412U)

**SPEC CPU®2017 Integer Rate Result**

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>Lenovo Global Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by</td>
<td>Lenovo Global Technology</td>
</tr>
<tr>
<td>Test Date</td>
<td>Jul-2023</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>May-2023</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Dec-2022</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>CPU Name</th>
<th>Intel Xeon Gold 5412U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max MHz</td>
<td>3900</td>
</tr>
<tr>
<td>Nominal</td>
<td>2100</td>
</tr>
<tr>
<td>Enabled</td>
<td>24 cores, 1 chip, 2 threads/core</td>
</tr>
<tr>
<td>Orderable</td>
<td>1 chip</td>
</tr>
<tr>
<td>Cache L1</td>
<td>32 KB I + 48 KB D on chip per core</td>
</tr>
<tr>
<td>Cache L2</td>
<td>2 MB I+D on chip per core</td>
</tr>
<tr>
<td>Cache L3</td>
<td>45 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>256 GB (8 x 32 GB 2Rx8 PC5-4800B-R, running at 4400)</td>
</tr>
<tr>
<td>Storage</td>
<td>1 x 960 GB SATA SSD</td>
</tr>
<tr>
<td>Other</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>OS</th>
<th>SUSE Linux Enterprise Server 15 SP4 (x86_64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler</td>
<td>C/C++, Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;</td>
</tr>
<tr>
<td>Firmware</td>
<td>Lenovo BIOS Version USE113Y 2.10 released Mar-2023</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Other</td>
<td>None</td>
</tr>
<tr>
<td>Power Management</td>
<td>BIOS and OS set to prefer performance at the cost of additional power usage</td>
</tr>
</tbody>
</table>

### SPECrate®2017 int_base = 220

| SPECrate®2017 int_peak = Not Run |

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECrate®2017 int_base</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_r</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>gcc_r</td>
<td>502</td>
<td></td>
</tr>
<tr>
<td>mcf_r</td>
<td>505</td>
<td></td>
</tr>
<tr>
<td>omnetpp_r</td>
<td>520</td>
<td></td>
</tr>
<tr>
<td>xalancbmk_r</td>
<td>523</td>
<td></td>
</tr>
<tr>
<td>x264_r</td>
<td>525</td>
<td></td>
</tr>
<tr>
<td>deepsjeng_r</td>
<td>531</td>
<td></td>
</tr>
<tr>
<td>leela_r</td>
<td>541</td>
<td></td>
</tr>
<tr>
<td>exchange2_r</td>
<td>548</td>
<td></td>
</tr>
<tr>
<td>xz_r</td>
<td>557</td>
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</tr>
</tbody>
</table>

### Copies

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<td></td>
</tr>
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<td>502</td>
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</tr>
<tr>
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<td>548</td>
<td></td>
</tr>
<tr>
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<td>557</td>
<td></td>
</tr>
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### SPECrate®2017 int_base (220)
Lenovo Global Technology
ThinkSystem ST650 V3
(2.10 GHz, Intel Xeon Gold 5412U)

SPECRate®2017_int_base = 220
SPECRate®2017_int_peak = Not Run

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Copies</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Copies</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
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<tbody>
<tr>
<td>500.perlbench_r</td>
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<td>502.gcc_r</td>
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<td>366</td>
<td>186</td>
<td>370</td>
<td>184</td>
<td>366</td>
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<tr>
<td>505.mcf_r</td>
<td>48</td>
<td>220</td>
<td>353</td>
<td>220</td>
<td>353</td>
<td>220</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>48</td>
<td>412</td>
<td>153</td>
<td>414</td>
<td>152</td>
<td>415</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>48</td>
<td>119</td>
<td>426</td>
<td>119</td>
<td>426</td>
<td>120</td>
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<tr>
<td>525.x264_r</td>
<td>48</td>
<td>202</td>
<td>416</td>
<td>202</td>
<td>416</td>
<td>202</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>48</td>
<td>363</td>
<td>152</td>
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<td>152</td>
<td>363</td>
</tr>
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<td>541.leela_r</td>
<td>48</td>
<td>562</td>
<td>141</td>
<td>563</td>
<td>141</td>
<td>563</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>48</td>
<td>285</td>
<td>442</td>
<td>285</td>
<td>441</td>
<td>285</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>48</td>
<td>507</td>
<td>102</td>
<td>513</td>
<td>101</td>
<td>510</td>
</tr>
</tbody>
</table>

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/cpu2017-1.1.9-ic2023.0/lib/intel64:/home/cpu2017-1.1.9-ic2023.0/lib/ia32:/home/cpu2017-1.1.9-ic2023.0/je5.0.1-32"
MALLOC_CONF = "retain:true"
SPEC CPU®2017 Integer Rate Result

Lenovo Global Technology
ThinkSystem ST650 V3
(2.10 GHz, Intel Xeon Gold 5412U)

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology
Test Date: Jul-2023
Hardware Availability: May-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:
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode
C-States set to Legacy
SNC set to SNC2
LLC Prefetch set to Disabled
UPI Link Disable set to Disabled 1 Link
Sysinfo program /home/cpu2017-1.1.9-ic2023.0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Wed Jul 19 12:41:11 2023

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

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10. who -r
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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
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### Lenovo Global Technology

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

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**Platform Notes (Continued)**

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### 2. `w`

12:41:11 up 2:07, 2 users, load average: 7.87, 33.21, 42.17

#### USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT

root     tty1     -                10:35    7.00s  0.81s  0.00s -bash
root     pts/0    172.30.81.13     12:35    3:27   0.12s  0.03s vim CPU2017.182.fprate.txt

---

### 3. Username

From environment variable $USER: root

---

### 4. ulimit -a

- core file size: (blocks, -c) unlimited
- data seg size: (kbytes, -d) unlimited
- scheduling priority: (-e) 0
- file size: (blocks, -f) unlimited
- pending signals: (-l) 1030494
- 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) 1030494
- virtual memory: (kbytes, -v) unlimited
- file locks: (-x) unlimited

---

### 5. sysinfo process ancestry

```bash
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=48 --c
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=24 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base --o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=48 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=24 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
rate --tune base --size refrain intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.197/templogs/preenv.intrate.197.0.log --lognum 197.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-ic2023.0
```

---

### 6. `/proc/cpuinfo`

```bash
model name : Intel(R) Xeon(R) Gold 5412U
vendor_id : GenuineIntel
cpu family : 6
model : 143
stepping : 8
microcode : 0x2b000190
bugs : spectre_v1 spectre_v2 spec_store_bypass swapsps
cpu cores : 24
```

(Continued on next page)
Platform Notes (Continued)

siblings : 48
1 physical ids (chips)
48 processors (hardware threads)
physical id 0: core ids 0-23
physical id 0: apic ids 0-47
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 2.37.2:
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): 48
On-line CPU(s) list: 0-47
Vendor ID: GenuineIntel
Model name: Intel(R) Xeon(R) Gold 5412U
CPU family: 6
Model: 143
Thread(s) per core: 2
Core(s) per socket: 24
Socket(s): 1
Stepping: 8
BogoMIPS: 4200.00
Flags:
  fpu vme de pse tsc msr pae mca cmov pat pse36
  clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdosp
  lm constant_tsc arch_perfmon pebs bts rep_good nopl x2apic msr pae mce
  cx8 apic mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdosp
  lm constant_tsc arch_perfmon pebs bts rep_good nopl x2apic msr pae mce
  cx8 apic mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdosp
  lm constant_tsc arch_perfmon pebs bts rep_good nopl x2apic msr pae mce
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  lm constant_tsc arch_perfmon pebs bts rep_good nopl x2apic msr pae mce
  cx8 apic mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdosp
  lm constant_tsc arch_perfmon pebs bts rep_good nopl x2apic msr pae mce
  cx8 apic mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdosp
  lm constant_tsc arch_perfmon pebs bts rep_good nopl x2apic msr pae mce
  cx8 apic mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdosp
  lm constant_tsc arch_perfmon pebs bts rep_good nopl x2apic msr pae mce
  cx8 apic mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdosp

Virtualization: VT-x
L1d cache: 1.1 MiB (24 instances)
L1i cache: 768 KiB (24 instances)
L2 cache: 48 MiB (24 instances)
L3 cache: 45 MiB (1 instance)
NUMA node(s): 2
NUMA node0 CPU(s): 0-11,24-35
NUMA node1 CPU(s): 12-23,36-47
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 and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbd: Not affected

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# Lenovo Global Technology

## ThinkSystem ST650 V3

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<tr>
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<tbody>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>Not Run</td>
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### CPU2017 License:
9017

### Test Sponsor:
Lenovo Global Technology

### Tested by:
Lenovo Global Technology

### Test Date:
Jul-2023

### Hardware Availability:
May-2023

### Software Availability:
Dec-2022

---

---

## Platform Notes (Continued)

### Vulnerability Txn 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>
</tr>
</thead>
<tbody>
<tr>
<td>L1d</td>
<td>48K</td>
<td></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>768K</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
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<tr>
<td>L2</td>
<td>2M</td>
<td>48M</td>
<td>16</td>
<td>Unified</td>
<td>2</td>
<td>2048</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L3</td>
<td>45M</td>
<td>45M</td>
<td>15</td>
<td>Unified</td>
<td>3</td>
<td>49152</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: 2 nodes (0-1)
node 0 cpus: 0-11,24-35
node 0 size: 128649 MB
node 0 free: 127581 MB
node 1 cpus: 12-23,36-47
node 1 size: 128998 MB
node 1 free: 128428 MB
node distances:
node   0   1
0: 10 12
1: 12 10

---

### 9. /proc/meminfo

MemTotal: 263830960 kB

---

### 10. who -r

run-level 3 Jul 19 10:34

---

### 11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)

Default Target: multi-user

### 12. Services, from systemctl list-unit-files

#### STATE
- enabled
  - YaST2-Firstboot
  - YaST2-Second-Stage
  - apparmor auditd cron getty@ haveged irqbalance
  - issue-generator kbdsettings klog lvm2-monitor nscd postfix purge-kernels rollback rsyslog
  - smartd sshd wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny

#### enabled-runtime
- systemd-remount-fs

#### disabled
- autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
  - chronyd console-getty cups cups-browse debug-shell ebtables exchange-bmc-os-info
  - firewalld gpm grub2-once haveged-switch-root ipmi ipmielvd issue-add-ash-keys kexec-load
  - lummask man-db-create multipathd nfs nfs-bkmap rdisc rpcbind rpmconfigcheck rsyncd
  - serial-getty@ smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures
  - systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd

#### indirect
- wicked

---

### 13. Linux kernel boot-time arguments, from /proc/cmdline

BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
root=UUID=17904382-c2c1-4de4-88b3-dda5a45ba9e5
splash=silent
mitigations=auto
quiet
security=apparmor

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SPECraté®2017_int_base = 220

CPU2017 License: 9017
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Platform Notes (Continued)

14. cpupower frequency-info
   analyzing CPU 0:
   Unable to determine current policy
   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.extrfrag_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 SUSE Linux Enterprise Server 15 SP4

19. Disk information
    SPEC is set to: /home/cpu2017-1.1.9-ic2023.0
    Filesystem   Type Size Used Avail Use% Mounted on
    /dev/sda2    xfs  894G  82G  812G  10% /

(Continued on next page)
Lenovo Global Technology  
ThinkSystem ST650 V3  
(2.10 GHz, Intel Xeon Gold 5412U)

SPECrater®2017_int_base = 220
SPECrater®2017_int_peak = Not Run

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

Platform Notes (Continued)

20. /sys/devices/virtual/dmi/id
   Vendor: Lenovo
   Product: ThinkSystem ST650 V3 MAIN BOARD
   Serial: MDSN00110D

21. dmidecode
   Additional information from dmidecode 3.2 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: 8x Samsung M321R4GA3BB0-CQKEG 32 GB 2 rank 4800, configured at 4400

22. BIOS
   BIOS Vendor: Lenovo
   BIOS Version: USEI113Y-2.10
   BIOS Date: 03/26/2023
   BIOS Revision: 2.10
   Firmware Revision: 2.10

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
ThinkSystem ST650 V3
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SPEC®2017_int_base = 220
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Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Jul-2023
Hardware Availability: May-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=cpp14 -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
# SPEC CPU®2017 Integer Rate Result

**Lenovo Global Technology**

ThinkSystem ST650 V3  
(2.10 GHz, Intel Xeon Gold 5412U)

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<tr>
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<tr>
<td>SPECrate®2017_int_peak</td>
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<td>Dec-2022</td>
</tr>
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</table>

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-W.html

http://www.spec.org/cpu2017/flags/Intel-ic2023-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-Eaglestream-W.xml

http://www.spec.org/cpu2017/flags/Intel-ic2023-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 2023-07-19 00:41:10-0400.
Report generated on 2024-01-29 18:01:57 by CPU2017 PDF formatter v6716.
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