## Lenovo Global Technology

ThinkSystem SR650 V3 (2.20 GHz, Intel Xeon Platinum 8460H)

### SPECrate®2017_int_base = 703

### SPECrate®2017_int_peak = Not Run

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>9017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Lenovo Global Technology</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Lenovo Global Technology</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Feb-2023</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Jun-2022</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spec CPU®2017 Integer Rate Result</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenovo Global Technology</td>
<td></td>
</tr>
<tr>
<td>ThinkSystem SR650 V3</td>
<td></td>
</tr>
<tr>
<td>(2.20 GHz, Intel Xeon Platinum 8460H)</td>
<td></td>
</tr>
<tr>
<td>SPECrate®2017_int_base</td>
<td>703</td>
</tr>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

### Copies

<table>
<thead>
<tr>
<th>Spec CPU®2017 Integer Rate Result</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenovo Global Technology</td>
<td></td>
</tr>
<tr>
<td>ThinkSystem SR650 V3</td>
<td></td>
</tr>
<tr>
<td>(2.20 GHz, Intel Xeon Platinum 8460H)</td>
<td></td>
</tr>
<tr>
<td>SPECrate®2017_int_base</td>
<td>703</td>
</tr>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

### Hardware

**CPU Name:** Intel Xeon Platinum 8460H

Max MHz: 3800

Nominal: 2200

Enabled: 80 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: 105 MB I+D on chip per chip

Other: None

Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)

Storage: 1 x 480 GB SATA SSD

Other: None

### Software

**OS:** SUSE Linux Enterprise Server 15 SP4 (x86_64)

Kernel 5.14.21-150400.22-default

Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;

Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;

Parallel: No

Firmware: Lenovo BIOS Version ESE109L 1.10 released Jan-2023

File System: xfs

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: Not Applicable

Other: None

Power Management: BIOS and OS set to prefer performance at the cost of additional power usage
SPECCPU®2017 Integer Rate Result

Lenovo Global Technology
ThinkSystem SR650 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

Test Sponsor:
Lenovo Global Technology

Test Date:
Jan-2023

Hardware Availability:
Feb-2023

Tested by:
Lenovo Global Technology

Software Availability:
Jun-2022

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th></th>
<th></th>
<th>Ratio</th>
<th></th>
<th></th>
<th></th>
<th>Ratio</th>
<th></th>
<th></th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copies</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
</tr>
<tr>
<td>500.perlbench_r</td>
<td>160</td>
<td>517</td>
<td>493</td>
<td>505</td>
<td>504</td>
<td>506</td>
<td>504</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>160</td>
<td>403</td>
<td>563</td>
<td>399</td>
<td>567</td>
<td>399</td>
<td>569</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>160</td>
<td>240</td>
<td>1080</td>
<td>238</td>
<td>1090</td>
<td>238</td>
<td>1090</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>160</td>
<td>472</td>
<td>445</td>
<td>473</td>
<td>444</td>
<td>472</td>
<td>445</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>160</td>
<td>131</td>
<td>1290</td>
<td>131</td>
<td>1290</td>
<td>131</td>
<td>1290</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
<td>160</td>
<td>197</td>
<td>1420</td>
<td>197</td>
<td>1420</td>
<td>197</td>
<td>1420</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>160</td>
<td>350</td>
<td>524</td>
<td>350</td>
<td>524</td>
<td>350</td>
<td>524</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td>160</td>
<td>537</td>
<td>493</td>
<td>536</td>
<td>494</td>
<td>536</td>
<td>494</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>160</td>
<td>324</td>
<td>1290</td>
<td>322</td>
<td>1300</td>
<td>322</td>
<td>1300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>557.xz_r</td>
<td>160</td>
<td>498</td>
<td>347</td>
<td>498</td>
<td>347</td>
<td>498</td>
<td>347</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SPECrate®2017_int_base = 703
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.xalanchmk_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-ic2022.1/lib/intel64:/home/cpu2017-1.1.9-ic2022.1/lib/ia32:/home/cpu2017-1.1.9-ic2022.1/jre5.0.1-32"
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
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:
Operating Mode set to Maximum Performance and then set it to Custom Mode
MONITOR/MWAIT set to Enabled
SNC set to SNC4
LLC Prefetch set to Disabled
UPI Link Disable set to Disabled 1 Link
Sysinfo program /home/cpu2017-1.1.9-ic2022.1/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Mon Jan 30 03:12:34 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 249 (249.11+suse.124.g2bc0b2c447)
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/klugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR650 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

SPEC CPU®2017 Integer Rate Result

SPECrade®2017_int_base = 703
SPECrade®2017_int_peak = Not Run

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology
Hardware Availability: Feb-2023
Software Availability: Jun-2022

Test Date: Jan-2023
Test Date: Jan-2023
Test Sponsor: Lenovo Global Technology
Hardware Availability: Feb-2023
Software Availability: Jun-2022

Platform Notes (Continued)

Linux localhost 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18 UTC 2022 (49db222)
x86_64 x86_64 x86_64 GNU/Linux

2. w
03:12:34 up 9:05, 1 user, load average: 38.00, 119.30, 144.29
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root tty1 - 18:10 3:13m 1.17s 0.01s -bash

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) 2062455
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) 2062455
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-runcpu --nobuild --action validate --define default-platform-flags --define numcopies=160 -c
ic2022.1-lin-core-avx2-rate-20220316.cfg --define smt-on --define cores=80 --define physicalfirst --define
invoke_with_interleave --define drop_caches --tune base -o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=160 --configfile
ic2022.1-lin-core-avx2-rate-20220316.cfg --define smt-on --define cores=80 --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/CPU2017.002/templogs/preenv.intrate.002.0.log --lognum 002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-ic2022.1

6. /proc/cpuinfo
model name : Intel(R) Xeon(R) Platinum 8460H
vendor_id : GenuineIntel
cpu family : 6
model : 183
stepping : 8
microcode : 0x2b000161
bugs : spectre_v1 spectre_v2 spec_store_bypass swaps

(Continued on next page)
Platform Notes (Continued)

siblings : 80
2 physical ids (chips)
160 processors (hardware threads)
physical id 0: core ids 0-39
physical id 1: core ids 0-39
physical id 0: apicids 0-79
physical id 1: apicids 128-207
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): 160
On-line CPU(s) list: 0-159
Vendor ID: GenuineIntel
Model name: Intel(R) Xeon(R) Platinum 8460H
CPU family: 6
Model: 143
Thread(s) per core: 2
Core(s) per socket: 40
Socket(s): 2
Stepping: 8
BogoMIPS: 4400.00

Flags:
fpu vme de pse tsc msr pae mce cmov pat pse36
clflush dtc acpi mmx fxsr asse sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1
sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand
lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cd pcpuid
invpcid_single intel_pinn cdq ldle ibpb ibrs ibrs_enabled
conditional_tsc intel_pstate pni pclmulqdq dtes64 mce lm tpr_shadow
mcek tsc_deadline_timer cpuid_fault fmarq mcm_act
	lm pne cmov pbe pdcm tsc_deadline_timer invpcid_single intel_pinn
	cpu倏 cdq ldle ibpb ibrs ibrs_enabled conditional_tsc intel_pstate

time pti intel_pni mcm_act																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

Virtualization: VT-x

L1d cache: 3.8 MiB (80 instances)
L1i cache: 2.5 MiB (80 instances)
L2 cache: 160 MiB (80 instances)
L3 cache: 210 MiB (2 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-9,80-89
NUMA node1 CPU(s): 10-19,90-99
NUMA node2 CPU(s): 20-29,100-109
NUMA node3 CPU(s): 30-39,110-119
NUMA node4 CPU(s): 40-49,120-129
NUMA node5 CPU(s): 50-59,130-139
NUMA node6 CPU(s): 60-69,140-149
NUMA node7 CPU(s): 70-79,150-159

(Continued on next page)
Platform Notes (Continued)

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/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:

<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>3.8M</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>2.5M</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>160M</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>105M</td>
<td>210M</td>
<td>15</td>
<td>Unified</td>
<td>3</td>
<td>114688</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: 8 nodes (0-7)
node 0 cpus: 0-9,80-89
node 0 size: 64170 MB
node 0 free: 54031 MB
node 1 cpus: 10-19,90-99
node 1 size: 64506 MB
node 1 free: 60088 MB
node 2 cpus: 20-29,100-109
node 2 size: 64472 MB
node 2 free: 60080 MB
node 3 cpus: 30-39,110-119
node 3 size: 64506 MB
node 3 free: 59999 MB
node 4 cpus: 40-49,120-129
node 4 size: 64506 MB
node 4 free: 60025 MB
node 5 cpus: 50-59,130-139
node 5 size: 64506 MB
node 5 free: 60107 MB
node 6 cpus: 60-69,140-149
node 6 size: 64506 MB
node 6 free: 60129 MB
node 7 cpus: 70-79,150-159
node 7 size: 64460 MB
node 7 free: 60076 MB

node distances:

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
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: 528012984 kB

(Continued on next page)
Platform Notes (Continued)

10. who -r
   run-level 3 Jan 29 18:07

11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
   Default Target Status
       multi-user running

12. Services, from systemctl list-unit-files
   STATE        UNIT FILES
   enabled      YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron getty@ haveged irqbalance iscsi
                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 autouast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
                firewall gpm grub2-once haveged-switch-root ipmi ipmiengd iscsi-init iscsiid iscsiio
                issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap nmb rdisc
                rcpbind rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts smb snmpd snmptrapd
                systemd-boot-check-no-failures systemd-network-generator systemd-sysext
                systemd-time-wait-sync systemd-timesyncd udisks2
   indirect     wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
    root=UUID=cf0c8526-2665-4565-b656-0513c168d1bb
    splash=silent
    mitigations=auto
    quiet
    security=apparmor

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_proactive_bytes     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

(Continued on next page)
Lenovo Global Technology

ThinkSystem SR650 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

SpecCPU®2017 Integer Rate Result

SPECrade®2017_int_base = 703
SPECrade®2017_int_peak = Not Run

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

Test Date: Jan-2023
Hardware Availability: Feb-2023
Software Availability: Jun-2022

Platform Notes (Continued)

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/hugepaged
   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-ic2022.1
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      xfs   446G   68G  379G  16% /

20. /sys/devices/virtual/dmi/id
   Vendor: Lenovo
   Product: ThinkSystem SR650 V3 MB,EGS,DDR5,SH,2U
   Product Family: ThinkSystem
   Serial: 1234567890

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:
   9x Samsung M321R4GA3BB0-CQKEG 32 GB 2 rank 4800
   7x Samsung M321R4GA3BB0-CQKVG 32 GB 2 rank 4800

22. BIOS
   (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor: Lenovo
   BIOS Version: ESE109L-1.10
   BIOS Date: 01/07/2023
   BIOS Revision: 1.10
   Firmware Revision: 1.0
Lenovo Global Technology
ThinkSystem SR650 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

SPECraten®2017_int_base = 703
SPECraten®2017_int_peak = Not Run

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

Test Date: Jan-2023
Hardware Availability: Feb-2023
Software Availability: Jun-2022

Compiler Version Notes

<table>
<thead>
<tr>
<th>C</th>
<th>500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316 Copyright (C) 1985-2022 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C++</th>
<th>520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316 Copyright (C) 1985-2022 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fortran</th>
<th>548.exchange2_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316 Copyright (C) 1985-2022 Intel Corporation. All rights reserved.</td>
</tr>
</tbody>
</table>

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
**Lenovo Global Technology**

ThinkSystem SR650 V3  
(2.20 GHz, Intel Xeon Platinum 8460H)  

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>703</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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

**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/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin`
- `-lqkmalloc`

C++ benchmarks:

- `-w -m64 -Wl,-z,muldefs -xCORE-AVX2 -O3 -ffast-math -flto`
- `-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
- `-L/usr/local/intel/compiler/2022.1.0/linux/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/usr/local/intel/compiler/2022.1.0/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-N.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-N.xml  

---

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 2023-01-29 14:12:33-0500.  
Report generated on 2024-01-29 17:23:30 by CPU2017 PDF formatter v6716.  
Originally published on 2023-02-28.