## Lenovo Global Technology

**ThinkSystem SR675 V3**  
(2.50 GHz, AMD EPYC 9224)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base = 13.1</th>
<th>SPECspeed®2017_int_peak = 13.3</th>
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<tr>
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<td>Test Date: Nov-2023</td>
<td>Hardware Availability: Jul-2023</td>
</tr>
<tr>
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<td>Software Availability: Nov-2022</td>
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</tbody>
</table>

### Hardware

- **CPU Name**: AMD EPYC 9224  
- **Max MHz**: 3700  
- **Nominal**: 2500  
- **Enabled**: 48 cores, 2 chips, 2 threads/core  
- **Orderable**: 1.2 chips  
- **Cache L1**: 32 KB I + 32 KB D on chip per core  
- **L2**: 1 MB I+D on chip per core  
- **L3**: 64 MB I+D on chip per chip, 16 MB shared / 6 cores  
- **Other**: None  
- **Memory**: 768 GB (24 x 32 GB 2Rx8 PC5-4800B-R)  
- **Storage**: 1 x 960 GB M.2 NVME SSD  
- **Other**: None

### Software

- **OS**: SUSE Linux Enterprise Server 15 SP4  
  - Kernel 5.14.21-150400.22-default  
- **Compiler**: C/C++/Fortran: Version 4.0.0 of AOCC  
- **Parallel**: Yes  
- **Firmware**: Lenovo BIOS Version QGE115J 3.11 released Oct-2023  
- **File System**: xfs  
- **System State**: Run level 3 (multi-user)  
- **Base Pointers**: 64-bit  
- **Peak Pointers**: 64-bit  
- **Other**: None  
- **Power Management**: BIOS and OS set to prefer performance at the cost of additional power usage

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### SPEC CPU®2017 Integer Speed Result

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
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<tr>
<td>gcc</td>
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<td>mcf</td>
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<td>xalancbmk</td>
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<td>exchange2</td>
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**Threads**

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Results Table

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</tr>
</tbody>
</table>

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

Compiler Notes

The AMD64 AOCC Compiler Suite is available at http://developer.amd.com/amd-aocc/

Submit Notes

The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.

Operating System Notes

'ulimit -s unlimited' was used to set environment stack size limit
'ulimit -l 2097152' was used to set environment locked pages in memory limit
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run variability, 'sysctl -w kernel.randomize_va_space=0' run as root.

To enable Transparent Hugepages (THP) for all allocations,
'echo always > /sys/kernel/mm/transparent_hugepage/enable' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
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**Environment Variables Notes**

Environment variables set by runcpu before the start of the run:

- `GOMP_CPU_AFFINITY = "0-95"
- `LD_LIBRARY_PATH = "/home/cpu2017-1.1.9-amd-aocc400-znver4-A1.2/amd_speed_aocc400_znver4_A_lib/lib:"`
- `LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
- `MALLOC_CONF = "oversize_threshold:0,retain:true"`
- `OMP_DYNAMIC = "false"
- `OMP_SCHEDULE = "static"
- `OMP_STACKSIZE = "128M"
- `OMP_THREAD_LIMIT = "96"

Environment variables set by runcpu during the 600.perlbench_s peak run:

- `GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 605.mcf_s peak run:

- `GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 623.xalancbmk_s peak run:

- `GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 625.x264_s peak run:

- `GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 657.xz_s peak run:

- `GOMP_CPU_AFFINITY = "0-95"
- `LIBOMP_NUM_HIDDEN_HELPER_THREADS = "8"

---

**General Notes**

Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

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

NUMA Nodes per Socket set to NPS4

Sysinfo program `/home/cpu2017-1.1.9-amd-aocc400-znver4-A1.2/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89bb7ed536ae2c92cc097bec197
running on localhost Wed Nov 29 13:00:46 2023

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

---

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- 1. uname --a
- 2. w
- 3. Username
- 4. ulimit --a

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Platform Notes (Continued)

5. sysinfo process ancestry
6. /proc/cpuinfo
7. lsdev
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/klhugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

1. uname -a
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
13:00:46 up 1:51, 1 user, load average: 1.87, 4.59, 3.17
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root tty1 - 29Apr22 14.00s 1.20s 0.09s /bin/bash ./amd_speed_aocc400_znver4_A1.sh

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) 3094027
 max locked memory (kbytes, -l) 2097152
 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) 3094027
 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
/bin/bash ./Run035-compliant-amd-speedint.sh

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Platform Notes (Continued)

python3 ./run_amd_speed_aocc400_znver4_A1.py
/bin/bash ./amd_speed_aocc400_znver4_A1.sh
runcpu --config amd_speed_aocc400_znver4_A1.cfg --tune all --reportable --iterations 3 intspeed
runcpu --configfile amd_speed_aocc400_znver4_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode speed --tune base:peak --size test:train:refspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.114/templogs/preenv.intspeed.114.0.log --lognum 114.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-amd-aocc400-znver4-A1.2

6. /proc/cpuinfo

model name : AMD EPYC 9224 24-Core Processor
vendor_id : AuthenticAMD
cpu family : 25
model : 17
stepping : 1
microcode : 0xa10113b
bugs : sysret_ss_atts spectre_v1 spectre_v2 spec_store_bypass
TLB size : 3584 4K pages
cpu cores : 24
siblings : 48
2 physical ids (chips)
96 processors (hardware threads)
physical id 0: core ids 0-5,8-13,16-21,24-29
physical id 1: core ids 0-5,8-13,16-21,24-29
physical id 0: apicids 0-11,16-27,32-43,48-59
physical id 1: apicids 64-75,80-91,96-107,112-123
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: 52 bits physical, 57 bits virtual
Byte Order: Little Endian
CPU(s): 96
On-line CPU(s) list: 0-95
Vendor ID: AuthenticAMD
Model name: AMD EPYC 9224 24-Core Processor
CPU family: 25
Model: 17
Thread(s) per core: 2
Core(s) per socket: 24
Socket(s): 2
Stepping: 1
Frequency boost: enabled
CPU max MHz: 3706.054
CPU min MHz: 1500.000
BogoMIPS: 4992.25
Flags:

(Continued on next page)
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Platform Notes (Continued)

avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb avx512cd sha_ni avx512bw xsaveopt
xsavec xgetbv1 xsaves cqm_llc cqm Occup llc cqm_mbm_total cqm_mbm_local
avx512_bf16 clzero irperf xsaveerpr rdpru wbnoinvd amd_pini arat npt lbiv
svm_lock nrp_save tsc_scale vmcb_clean flushbyasid decodeassist
pausefilter pfnthreshold avic v_vmsave_vmload vgif v_spec_ctrl avx512v bmi
umip pku ospe akav512_vbmi2 gfin vaes vpcm mul pqd avx512_vnmi avx512_bitalg
avx512_vpopcntdq ia57 rdpid flowver_recof succe smca frrm flush_lid

Virtualization: AMD-V
L1d cache: 1.5 MiB (48 instances)
L1i cache: 1.5 MiB (48 instances)
L2 cache: 48 MiB (48 instances)
L3 cache: 128 MiB (8 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-5,48-53
NUMA node1 CPU(s): 6-11,54-59
NUMA node2 CPU(s): 12-17,60-65
NUMA node3 CPU(s): 18-23,66-71
NUMA node4 CPU(s): 24-29,72-77
NUMA node5 CPU(s): 30-35,78-83
NUMA node6 CPU(s): 36-41,84-89
NUMA node7 CPU(s): 42-47,90-95
Vulnerability Itlb multihit: Not affected
Vulnerability L1f: Not affected
Vulnerability Mdts: 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; Retpolines, IBPB conditional, IBRS_FW, STIBP always-on, RSB
filing
Vulnerability Srbds: Not affected
Vulnerability Tsk async abort: Not affected

From lscpu --cache:
NAME ONE-SIZE ALL-SIZE WAYS TYPE LEVEL SETS PHY-LINE COHERENCY-SIZE
L1d 32K 1.5M 8 Data 1 64 1 64
L1i 32K 1.5M 8 Instruction 1 64 1 64
L2 1M 48M 8 Unified 2 2048 1 64
L3 16M 128M 16 Unified 3 16384 1 64

8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
available: 8 nodes (0-7)
node 0 cpus: 0-5,48-53
node 0 size: 96455 MB
node 0 free: 95154 MB
node 1 cpus: 6-11,54-59
node 1 size: 96752 MB
node 1 free: 96383 MB
node 2 cpus: 12-17,60-65
node 2 size: 96717 MB
node 2 free: 96426 MB
node 3 cpus: 18-23,66-71
node 3 size: 96752 MB
node 3 free: 96468 MB
node 4 cpus: 24-29,72-77
node 4 size: 96752 MB
node 4 free: 96341 MB
node 5 cpus: 30-35,78-83

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Platform Notes (Continued)

node 5 size: 96752 MB
node 5 free: 96461 MB
node 6 cpus: 36-41,84-89
node 6 size: 96752 MB
node 6 free: 96592 MB
node 7 cpus: 42-47,90-95
node 7 size: 96557 MB
node 7 free: 96364 MB

node distances:

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<tr>
<th>node</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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</tbody>
</table>

9. /proc/meminfo

MemTotal: 792095592 kB

10. who -r

run-level 3 Apr 29 20:00

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@ havgged irqbalance iscsi
issue-generator kbdsettings klog lvm2-monitor nscd nvmefc-boot-connections postfix
purge-kernels rollback rsyslog smartd sshd wicked wickedd-auto4 wickedd-dhcp4
wicked-dhcp5 wickedd-nanny

enabled-runtime systemd-remount-fs

disabled autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
firewalld gpm grub2-once havgged-switch-root hwloc-dump-hwdata ipmi ipmielidi iscsi-init
iscsid iscsiuiq issue-add-shh-keys kexec-load ksm kvm_stat lunmask man-db-create
multipathd nfs nfs-blkmap nmb ntp-wait ntpd nvmf-autoconnect rdiscc rpolc rpolc
rsyncd serial-getty@ smartd_generate_opts smb snmptrapd svserve
systemd-boot-check-no-failures systemd-network-generator systemd-sysex
systemd-time-wait-sync systemd-timesyncd udisks2

indirect wicked

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

BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
root=UUID=8e96e494-2560-4de0-bb42-3bec875936bb
splash=silent
mitigations=auto
quiet
security=apparmor

(Continued on next page)
14. cpupower frequency-info
   analyzing CPU 0:
   current policy: frequency should be within 1.50 GHz and 2.50 GHz.
   The governor "performance" may decide which speed to use
   within this range.
   boost state support:
   Supported: yes
   Active: yes

15. sysctl
   kernel.numa_balancing               1
   kernel.randomize_va_space           0
   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                     8
   vm.dirty_writeback_centisecs       500
   vm.dirtytime_expire_seconds        43200
   vm.extr frag_threshold              500
   vm.min_unmapped_ratio              1
   vm.nr_hugepages                    0
   vm.nr_hugepages_mempolicy          0
   vm.nr_overcommit_hugepages         0
   vm.swappiness                      1
   vm.watermark_boost_factor          15000
   vm.watermark_scale_factor          10
   vm.zone_reclaim_mode               1

16. /sys/kernel/mm/transparent_hugepage
   defrag [always] defer defer+madvise madvise never
   enabled [always] madvise never
   hpaged_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-amd-aocc400-znver4-A1.2
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/nvme0nlp2 xfs 893G 27G 867G 3% /

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR675 V3
(2.50 GHz, AMD EPYC 9224)

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

SPECspeed®2017_int_base = 13.1
SPECspeed®2017_int_peak = 13.3

Test Date: Nov-2023
Hardware Availability: Jul-2023
Software Availability: Nov-2022

Platform Notes (Continued)

20. /sys/devices/virtual/dmi/id
    Vendor: Lenovo
    Product: ThinkSystem SR675 V3 System Board
    Product Family: ThinkSystem
    Serial: None

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 SMIOS" standard.
    Memory:
    4x Samsung M321R4GA3BB0-CQKEG 32 GB 2 rank 4800
    8x Samsung M321R4GA3BB0-CQKMG 32 GB 2 rank 4800
    12x Samsung M321R4GA3BB0-CQKV Q 32 GB 2 rank 4800

22. BIOS
    (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor: Lenovo
    BIOS Version: QGE1153-3.11
    BIOS Date: 10/16/2023
    BIOS Revision: 3.11
    Firmware Revision: 3.10

Compiler Version Notes

C
| 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
| 657.xz_s(base, peak)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirro.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

C++
| 620.omnetpp_s(base, peak) 621.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
| 641.leela_s(base, peak)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirro.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

Fortran
| 648.exchange2_s(base, peak)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirro.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin
**SPEC CPU®2017 Integer Speed Result**

Lenovo Global Technology
ThinkSystem SR675 V3
(2.50 GHz, AMD EPYC 9224)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
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<td>SPECspeed®2017_int_peak</td>
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</table>

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

**Test Date:** Nov-2023
**Hardware Availability:** Jul-2023
**Software Availability:** Nov-2022

---

**Base Compiler Invocation**

C benchmarks:
- clang

C++ benchmarks:
- clang++

Fortran benchmarks:
- flang

---

**Base Portability Flags**

600.perlbench_s: -DSPEC_LINUX_X64 -DSPEC_LP64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LINUX -DSPEC_LP64
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

---

**Base Optimization Flags**

C benchmarks:
- -m64 -W1, -mllvm -W1, -align-all-nofallthru-blocks=6
- -W1, -mllvm -W1, -reduce-array-computations=3
- -W1, -allow-multiple-definition -O3 -march=znver4 -fveclib=AMDLIBM
- -ffast-math -fopenmp -flto -fstruct-layout=7
- -mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
- -fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
- -DSPEC_OPENMP -zopt -fopenmp=libomp -lomp -lamdlibm -lflang
- -lamdalloc

C++ benchmarks:
- -m64 -W1, -mllvm -W1, -align-all-nofallthru-blocks=6
- -W1, -mllvm -W1, -reduce-array-computations=3 -O3 -march=znver4
- -fveclib=AMDLIBM -ffast-math -fopenmp -flto
- -mllvm -unroll-threshold=100 -finline-aggressive
- -mllvm -loop-unswhch-threshold=200000
- -mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
- -fvirtual-function-elimination -fvisibility=hidden -fopenmp=libomp

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR675 V3
(2.50 GHz, AMD EPYC 9224)

SPECspeed®2017_int_base = 13.1
SPECspeed®2017_int_peak = 13.3

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
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Hardware Availability: Jul-2023
Software Availability: Nov-2022

Base Optimization Flags (Continued)

C++ benchmarks (continued):
- lomp -lamdlibm -lflang -lamdalloc-ext

Fortran benchmarks:
-m64 -W1, -mllvm -W1, -align-all-nofallthru-blocks=6
-W1, -mllvm -W1, -reduce-array-computations=3
-W1, -mllvm -W1, -inline-recursion=4  -W1, -mllvm -W1, -lsr-in-nested-loop
-W1, -mllvm -W1, -enable-iv-split -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -mllvm -Wl,-mllvm -lomp -lintra-parallelism=4
-ffast-math -fopenmp -flto -mllvm -Wl,-mllvm -lomp -lflang -lflang -lflang -lflang -lflang

Base Other Flags

C benchmarks:
-Wno-return-type -Wno-unused-command-line-argument

C++ benchmarks:
-Wno-unused-command-line-argument

Fortran benchmarks:
-Wno-unused-command-line-argument

Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Peak Portability Flags

Same as Base Portability Flags
Lenovo Global Technology
ThinkSystem SR675 V3
(2.50 GHz, AMD EPYC 9224)

SPECspeed®2017_int_base = 13.1
SPECspeed®2017_int_peak = 13.3

Peak Optimization Flags

C benchmarks:
600.perlbench_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Ofast -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-fstruct-layout=9 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -liflang

602.gcc_s: basepeak = yes

605.mcf_s: Same as 600.perlbench_s

625.x264_s: Same as 600.perlbench_s

657.xz_s: Same as 600.perlbench_s

C++ benchmarks:
620.omnetpp_s: basepeak = yes

623.xalancbmk_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-do-block-reorder=aggressive -Ofast
-march=znver4 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -finline-aggressive -mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-fopenmp=libomp -lomp -lamdlibm -lamdalloc-ext -liflang

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:
648.exchange2_s: basepeak = yes
Lenovo Global Technology
ThinkSystem SR675 V3
(2.50 GHz, AMD EPYC 9224)

SPECspeed®2017_int_base = 13.1
SPECspeed®2017_int_peak = 13.3

Peak Other Flags

C benchmarks:
-Wno-return-type -Wno-unused-command-line-argument

C++ benchmarks:
-Wno-unused-command-line-argument

Fortran benchmarks:
-Wno-unused-command-line-argument

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-Genoa-T.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-Genoa-T.xml