SPEC CPU®2017 Integer Speed Result

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Inspur Electronic Information Industry Co., Ltd.

N5468A7 (AMD EPYC 9534)

$SPECspeed^{®}2017\_int\_base = 13.9$

$SPECspeed^{®}2017\_int\_peak = 14.1$

CPU2017 License: 3358　　　　　　　　　　　　　　**Test Date:** Sep-2023
Test Sponsor: Inspur Electronic Information Industry Co., Ltd.　　**Hardware Availability:** Sep-2023
Tested by: Inspur Electronic Information Industry Co., Ltd.　　**Software Availability:** Nov-2022

Benchmark	Threads	Result
600.perlbench_s	128	8.41
	1	8.44
602.gcc_s	128	14.3
	1	14.3
605.mcf_s	128	20.2
	1	21.0
620.omnetpp_s	128	10.2
	1	10.2
623.xalancbmk_s	128	18.9
	1	20.6
625.x264_s	128	21.3
631.deepsjeng_s	128	7.00
641.leela_s	128	5.84
648.exchange2_s	128	26.0
657.xz_s	128	26.1
	256	26.3

SPECspeed®2017_int_base (13.9) ------ SPECspeed®2017_int_peak (14.1)

Hardware

CPU Name: AMD EPYC 9534
 Max MHz: 3700
 Nominal: 2450
Enabled: 128 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: 256 MB I+D on chip per chip, 32 MB shared / 8 cores
 Other: None
Memory: 768 GB (24 x 32 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 1 TB NVME SSD
Other: None

Software

OS: Red Hat Enterprise Linux release 9 (Plow)
　　5.14.0-70.13.1.el9_0.x86_64
Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
Parallel: Yes
Firmware: Version 01.09.0 released Jul-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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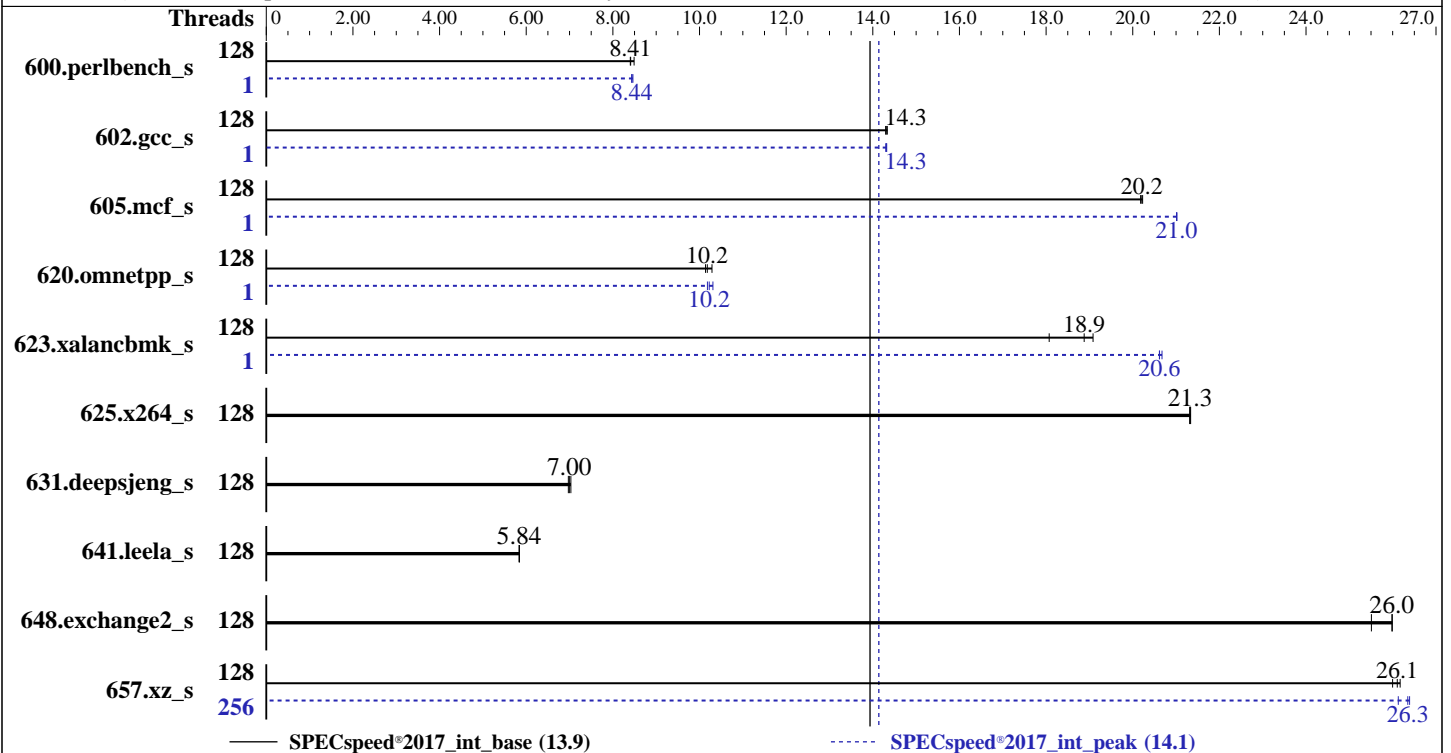
SPECspeed®2017_int_peak = 14.1

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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	128	**211**	**8.41**	209	8.49	211	8.40	1	210	8.46	210	8.43	**210**	**8.44**
602.gcc_s	128	**278**	**14.3**	279	14.3	278	14.3	1	278	14.3	278	14.3	**278**	**14.3**
605.mcf_s	128	**234**	**20.2**	234	20.2	233	20.2	1	225	21.0	225	21.0	**225**	**21.0**
620.omnetpp_s	128	161	10.1	159	10.3	**160**	**10.2**	1	158	10.3	**160**	**10.2**	160	10.2
623.xalancbmk_s	128	74.2	19.1	**75.1**	**18.9**	78.4	18.1	1	68.5	20.7	68.7	20.6	**68.7**	**20.6**
625.x264_s	128	82.8	21.3	82.7	21.3	**82.7**	**21.3**	128	82.8	21.3	82.7	21.3	**82.7**	**21.3**
631.deepsjeng_s	128	206	6.97	**205**	**7.00**	204	7.03	128	206	6.97	**205**	**7.00**	204	7.03
641.leela_s	128	**292**	**5.84**	292	5.84	292	5.84	128	**292**	**5.84**	292	5.84	292	5.84
648.exchange2_s	128	113	26.0	115	25.5	**113**	**26.0**	128	113	26.0	115	25.5	**113**	**26.0**
657.xz_s	128	238	26.0	236	26.2	**237**	**26.1**	256	237	26.1	234	26.4	**235**	**26.3**

SPECspeed®2017_int_base =	**13.9**
SPECspeed®2017_int_peak =	**14.1**

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/enabled' 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 = "0-255"
LD_LIBRARY_PATH = "/home/CPU2017/amd_speed_aocc400_genoa_B_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 = "256"

Environment variables set by runcpu during the 600.perlbench_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 602.gcc_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 620.omnetpp_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 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-255"
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:
 SVM Mode = disable
 DRAM Scrub time = disable
 NUMA nodes per socket = disable
 Determinism Slider = Power
 cTDP = 400
 Package Power Limit = 400

 Sysinfo program /home/CPU2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Sun Sep  3 22:13:45 2023

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

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Platform Notes (Continued)

```
---------------------------------------------------------------
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 250 (250-6.el9_0)
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
22. BIOS
---------------------------------------------------------------


---------------------------------------------------------------
1. uname -a
  Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
  x86_64 x86_64 GNU/Linux


---------------------------------------------------------------
2. w
   22:13:45 up 0 min,  1 user,  load average: 1.75, 0.67, 0.24
  USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1       22:13   17.00s 1.14s  0.18s /bin/bash ./amd_speed_aocc400_genoa_B1.sh


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


---------------------------------------------------------------
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) 3094482
  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) 3094482
  virtual memory              (kbytes, -v) unlimited
```

(Continued on next page)

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Platform Notes (Continued)

```
  file locks                      (-x) unlimited


    --------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 30
 login -- root
 -bash
 python3 ./run_amd_speed_aocc400_genoa_B1.py
 /bin/bash ./amd_speed_aocc400_genoa_B1.sh
 runcpu --config amd_speed_aocc400_genoa_B1.cfg --tune all --reportable --iterations 3 intspeed
 runcpu --configfile amd_speed_aocc400_genoa_B1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode speed --tune base:peak --size test:train:refspeed intspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.028/templogs/preenv.intspeed.028.0.log --lognum 028.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2017


    --------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9534 64-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 25
    model           : 17
    stepping        : 1
    microcode       : 0xa101139
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
    TLB size        : 3584 4K pages
    cpu cores       : 64
    siblings        : 128
    2 physical ids (chips)
    256 processors (hardware threads)
    physical id 0: core ids 0-63
    physical id 1: core ids 0-63
    physical id 0: apicids 0-127
    physical id 1: apicids 128-255
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
  virtualized systems.  Use the above data carefully.


    --------------------------------------------------------------
7. lscpu

From lscpu from util-linux 2.37.4:
  Architecture:           x86_64
  CPU op-mode(s):         32-bit, 64-bit
  Address sizes:          52 bits physical, 57 bits virtual
  Byte Order:             Little Endian
  CPU(s):                 256
  On-line CPU(s) list:    0-255
  Vendor ID:              AuthenticAMD
  BIOS Vendor ID:         Advanced Micro Devices, Inc.
  Model name:             AMD EPYC 9534 64-Core Processor
  BIOS Model name:        AMD EPYC 9534 64-Core Processor
  CPU family:             25
  Model:                  17
  Thread(s) per core:     2
  Core(s) per socket:     64
  Socket(s):              2
  Stepping:               1
  Frequency boost:        enabled
  CPU max MHz:            3718.0659
  CPU min MHz:            1500.0000
```

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Platform Notes (Continued)

```
  BogoMIPS:                    4899.69
  Flags:                       fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
                               clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm
                               constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperfmperf rapl
                               pni pclmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe
                               popcnt aes xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy
                               abm sse4a misalignsse 3dnowprefetch osvw ibs skinit wdt tce topoext
                               perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3
                               invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase bmi1
                               avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
                               avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
                               xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
                               avx512_bf16 clzero irperf xsaveerptr rdpru wbnoinvd amd_ppin arat npt lbrv
                               svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
                               pausefilter pfthreshold avic v_vmsave_vmload vgif v_spec_ctrl avx512vbmi
                               umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                               avx512_vpopcntdq la57 rdpid overflow_recov succor smca fsrm flush_l1d
  Virtualization:              AMD-V
  L1d cache:                   4 MiB (128 instances)
  L1i cache:                   4 MiB (128 instances)
  L2 cache:                    128 MiB (128 instances)
  L3 cache:                    512 MiB (16 instances)
  NUMA node(s):                8
  NUMA node0 CPU(s):           0-15,128-143
  NUMA node1 CPU(s):           16-31,144-159
  NUMA node2 CPU(s):           32-47,160-175
  NUMA node3 CPU(s):           48-63,176-191
  NUMA node4 CPU(s):           64-79,192-207
  NUMA node5 CPU(s):           80-95,208-223
  NUMA node6 CPU(s):           96-111,224-239
  NUMA node7 CPU(s):           112-127,240-255
  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
  Vulnerability Spectre v1:    Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:    Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP always-on, RSB
                               filling
  Vulnerability Srbds:         Not affected
  Vulnerability Tsx async abort: Not affected

  From lscpu --cache:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE         LEVEL  SETS PHY-LINE COHERENCY-SIZE
      L1d       32K       4M    8 Data           1     64        1             64
      L1i       32K       4M    8 Instruction    1     64        1             64
      L2         1M     128M    8 Unified        2   2048        1             64
      L3        32M     512M   16 Unified        3  32768        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: 0-15,128-143
    node 0 size: 96515 MB
    node 0 free: 95937 MB
    node 1 cpus: 16-31,144-159
    node 1 size: 96754 MB
    node 1 free: 95934 MB
    node 2 cpus: 32-47,160-175
```

(Continued on next page)

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Platform Notes (Continued)

```
    node 2 size: 96754 MB
    node 2 free: 96205 MB
    node 3 cpus: 48-63,176-191
    node 3 size: 96754 MB
    node 3 free: 96109 MB
    node 4 cpus: 64-79,192-207
    node 4 size: 96754 MB
    node 4 free: 96166 MB
    node 5 cpus: 80-95,208-223
    node 5 size: 96754 MB
    node 5 free: 95608 MB
    node 6 cpus: 96-111,224-239
    node 6 size: 96754 MB
    node 6 free: 96203 MB
    node 7 cpus: 112-127,240-255
    node 7 size: 96683 MB
    node 7 free: 96122 MB
    node distances:
    node   0   1   2   3   4   5   6   7
      0:  10  12  12  12  32  32  32  32
      1:  12  10  12  12  32  32  32  32
      2:  12  12  10  12  32  32  32  32
      3:  12  12  12  10  32  32  32  32
      4:  32  32  32  32  10  12  12  12
      5:  32  32  32  32  12  10  12  12
      6:  32  32  32  32  12  12  10  12
      7:  32  32  32  32  12  12  12  10


  ------------------------------------------------------------
  9. /proc/meminfo
    MemTotal:       792294592 kB


  ------------------------------------------------------------
  10. who -r
    run-level 3 Sep 3 22:12


  ------------------------------------------------------------
  11. Systemd service manager version: systemd 250 (250-6.el9_0)
    Default Target  Status
    multi-user      running


  ------------------------------------------------------------
  12. Services, from systemctl list-unit-files
    STATE           UNIT FILES
    enabled         NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
                    dbus-broker firewalld getty@ irqbalance kdump lvm2-monitor mdmonitor microcode
                    nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sshd sssd
                    systemd-network-generator udisks2 upower
    enabled-runtime systemd-remount-fs
    disabled        blk-availability canberra-system-bootup canberra-system-shutdown
                    canberra-system-shutdown-reboot chrony-wait console-getty cpupower debug-shell kvm_stat
                    man-db-restart-cache-update nftables rdisc rhsm rhsm-facts rpmdb-rebuild serial-getty@
                    sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysext
    indirect        sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo


  ------------------------------------------------------------
  13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=(hd1,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
    root=/dev/mapper/rhel00-root
    ro
```

(Continued on next page)

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Platform Notes (Continued)

```
   resume=/dev/mapper/rhel00-swap
   rd.lvm.lv=rhel00/root
   rd.lvm.lv=rhel00/swap


  ----------------------------------------------------------
14. cpupower frequency-info
   analyzing CPU 0:
     current policy: frequency should be within 1.50 GHz and 2.45 GHz.
                     The governor "performance" may decide which speed to use
                     within this range.
     boost state support:
       Supported: yes
       Active: yes
       Boost States: 0
       Total States: 3
       Pstate-P0:  2450MHz


  ----------------------------------------------------------
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.extfrag_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
   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     Red Hat Enterprise Linux 9.0 (Plow)
```

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Platform Notes (Continued)

```
   redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
   system-release Red Hat Enterprise Linux release 9.0 (Plow)


  ----------------------------------------------------------------
  19. Disk information
  SPEC is set to: /home/CPU2017
    Filesystem              Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel00-home xfs   819G   18G  801G   3% /home


  ----------------------------------------------------------------
  20. /sys/devices/virtual/dmi/id
      Vendor:         Inspur
      Product:        NF5468-A7-A0-R0-00
      Product Family: Not specified
      Serial:         000000000


  ----------------------------------------------------------------
  21. dmidecode
    Additional information from dmidecode 3.3 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:
      24x Samsung M321R4GA3BB6-CQKEG 32 GB 2 rank 4800



  ----------------------------------------------------------------
  22. BIOS
  (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:      American Megatrends International, LLC.
    BIOS Version:     01.09.00
    BIOS Date:        07/07/2023
```

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#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin
----------------------------------------------------------------------------------------------


==============================================================================================
C++     | 620.omnetpp_s(base, peak) 623.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#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin
----------------------------------------------------------------------------------------------


==============================================================================================
Fortran | 648.exchange2_s(base, peak)
----------------------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
```

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Inspur Electronic Information Industry Co., Ltd.

N5468A7 (AMD EPYC 9534)

SPECspeed®2017_int_base = 13.9

SPECspeed®2017_int_peak = 14.1

CPU2017 License: 3358   **Test Date:** Sep-2023
Test Sponsor: Inspur Electronic Information Industry Co., Ltd.   **Hardware Availability:** Sep-2023
Tested by: Inspur Electronic Information Industry Co., Ltd.   **Software Availability:** Nov-2022

Compiler Version Notes (Continued)

```
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin
--------------------------------------------------------------------------------
```

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 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-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
```

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SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd.

N5468A7 (AMD EPYC 9534)

SPECspeed®2017_int_base = 13.9

SPECspeed®2017_int_peak = 14.1

CPU2017 License: 3358   **Test Date:** Sep-2023
Test Sponsor: Inspur Electronic Information Industry Co., Ltd.   **Hardware Availability:** Sep-2023
Tested by: Inspur Electronic Information Industry Co., Ltd.   **Software Availability:** Nov-2022

Base Optimization Flags (Continued)

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

Fortran benchmarks:
```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -mllvm -optimize-strided-mem-cost
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc
```

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
```

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

Inspur Electronic Information Industry Co., Ltd.

N5468A7 (AMD EPYC 9534)

SPECspeed®2017_int_base = 13.9

SPECspeed®2017_int_peak = 14.1

CPU2017 License: 3358
Test Sponsor: Inspur Electronic Information Industry Co., Ltd.
Tested by: Inspur Electronic Information Industry Co., Ltd.

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

Peak Portability Flags

Same as Base Portability Flags

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 -lflang
```

```
602.gcc_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -z muldefs -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 -lflang
```

605.mcf_s: Same as 600.perlbench_s

625.x264_s: basepeak = yes

657.xz_s: Same as 600.perlbench_s

C++ benchmarks:

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

```
623.xalancbmk_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
```

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SPEC CPU®2017 Integer Speed Result

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Inspur Electronic Information Industry Co., Ltd.

N5468A7 (AMD EPYC 9534)

SPECspeed®2017_int_base = 13.9

SPECspeed®2017_int_peak = 14.1

CPU2017 License: 3358
Test Sponsor: Inspur Electronic Information Industry Co., Ltd.
Tested by: Inspur Electronic Information Industry Co., Ltd.

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

Peak Optimization Flags (Continued)

623.xalancbmk_s (continued):
```
-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 -lflang
```

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

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/aocc400-flags.html
http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-amd-V3.0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc400-flags.xml
http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-amd-V3.0.xml

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