SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

NF5180M7 (Intel Xeon Gold 5415+)

$SPECrate®2017\_int\_base = 179$

$SPECrate®2017\_int\_peak = 184$

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

Test Date: Mar-2023
Hardware Availability: Apr-2023
Software Availability: Feb-2023

Benchmark	Copies	base	peak
500.perlbench_r	32	127	136
502.gcc_r	32	149	175
505.mcf_r	32	289	
520.omnetpp_r	32	120	
523.xalancbmk_r	32	353	
525.x264_r	32	341	360
531.deepsjeng_r	32	125	
541.leela_r	32	116	
548.exchange2_r	32	364	
557.xz_r	32	78.8	

SPECrate®2017_int_base (179)   SPECrate®2017_int_peak (184)

Hardware

CPU Name: Intel Xeon Gold 5415+
 Max MHz: 4100
 Nominal: 2900
Enabled: 16 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: 22.5 MB I+D on chip per chip
 Other: None
Memory: 512 GB (16 x 32 GB 2Rx4 PC5-4800B-R, running at 4400)
Storage: 1 x 1 TB NVME SSD
Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
5.14.0-70.22.1.el9_0.x86_64
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 03.01.00 released Dec-2022
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

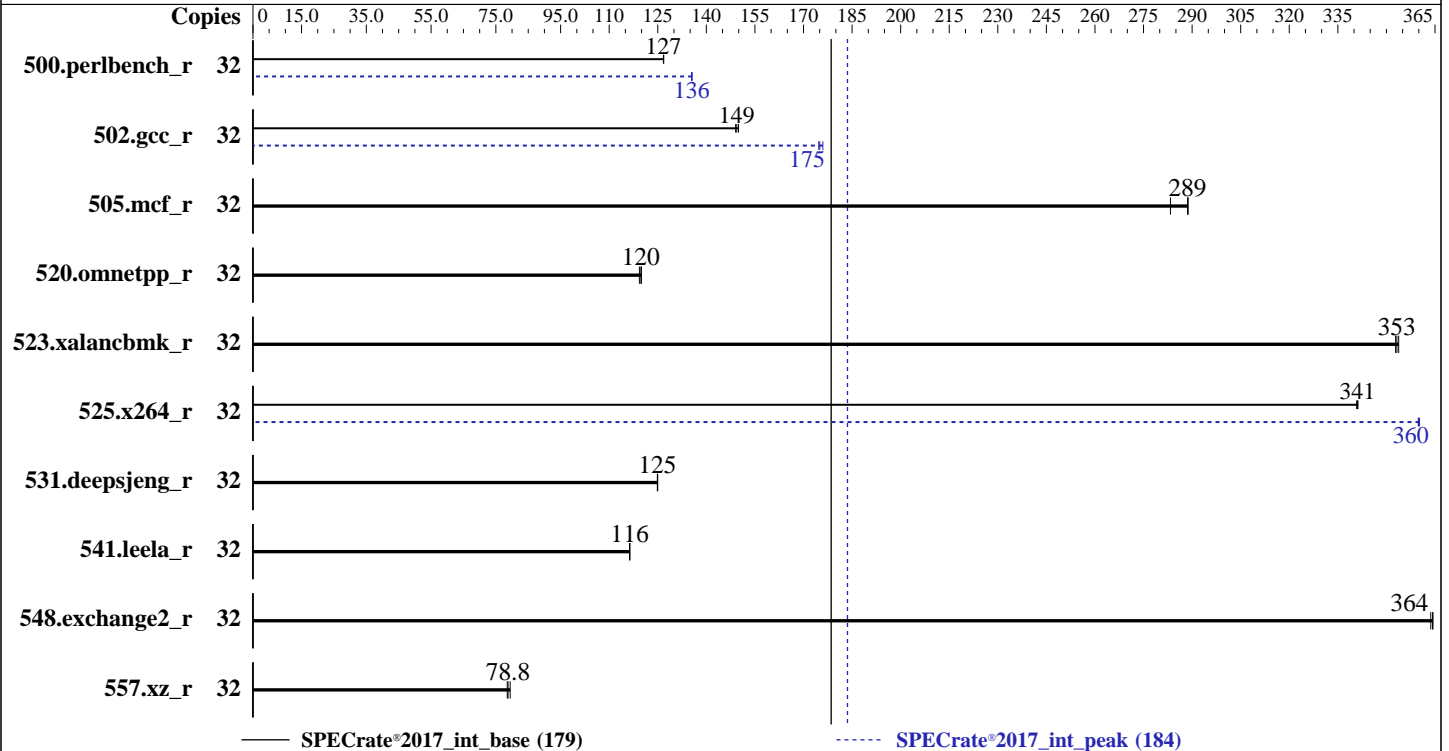|	
Inspur Electronic Information Industry Co., Ltd. (IEI)	SPECrate®2017_int_base = 179
NF5180M7 (Intel Xeon Gold 5415+)	SPECrate®2017_int_peak = 184

CPU2017 License: 3358　　　　　　　　　　　　　　　　　　　　　　**Test Date:** Mar-2023
Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)　　**Hardware Availability:** Apr-2023
Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)　　**Software Availability:** Feb-2023

Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
500.perlbench_r	32	**402**	**127**	402	127	402	127	32	376	136	**376**	**136**	376	135
502.gcc_r	32	304	149	302	150	**303**	**149**	32	258	176	259	175	**259**	**175**
505.mcf_r	32	179	289	**179**	**289**	183	283	32	179	289	**179**	**289**	183	283
520.omnetpp_r	32	352	119	**351**	**120**	350	120	32	352	119	**351**	**120**	350	120
523.xalancbmk_r	32	95.8	353	**95.7**	**353**	95.5	354	32	95.8	353	**95.7**	**353**	95.5	354
525.x264_r	32	**164**	**341**	164	341	164	341	32	156	360	156	360	**156**	**360**
531.deepsjeng_r	32	294	125	293	125	**293**	**125**	32	294	125	293	125	**293**	**125**
541.leela_r	32	**455**	**116**	455	116	456	116	32	**455**	**116**	455	116	456	116
548.exchange2_r	32	230	364	231	364	**230**	**364**	32	230	364	231	364	**230**	**364**
557.xz_r	32	**439**	**78.8**	435	79.4	440	78.5	32	**439**	**78.8**	435	79.4	440	78.5
SPECrate®2017_int_base =		**179**												
SPECrate®2017_int_peak =								**184**						

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/lib/intel64:/home/CPU2017/lib/ia32:/home/CPU2017/je5.0.1-32"
MALLOC_CONF = "retain:true"
```

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

SPECrate®2017_int_base = 179

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_peak = 184

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

Test Date: Mar-2023
Hardware Availability: Apr-2023
Software Availability: Feb-2023

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.

jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS configuration:
ENERGY_PERF_BIAS_CFG mode set to Performance
Hardware Prefetch set to Disable
VT Support set to Disable
Sub NUMA Cluster (SNC) set to SNC4

Sysinfo program /home/CPU2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Wed Mar 29 14:09:06 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 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
```

(Continued on next page)

Inspur Electronic Information Industry Co., Ltd. (IEI)

SPECrate®2017_int_base = 179

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_peak = 184

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

Test Date: Mar-2023
Hardware Availability: Apr-2023
Software Availability: Feb-2023

Platform Notes (Continued)

```
      ----------------------------------------------------------

      ----------------------------------------------------------
      1. uname -a
        Linux localhost.localdomain 5.14.0-70.22.1.el9_0.x86_64 #1 SMP PREEMPT Tue Aug 2 10:02:12 EDT 2022 x86_64
        x86_64 x86_64 GNU/Linux

      ----------------------------------------------------------
      2. w
         14:09:06 up 3 min,  1 user,  load average: 0.07, 0.26, 0.14
        USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
        root     tty1       14:06    9.00s  1.01s  0.02s -bash

      ----------------------------------------------------------
      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) 2062265
        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) 2062265
        virtual memory              (kbytes, -v) unlimited
        file locks                       (-x) unlimited

      ----------------------------------------------------------
      5. sysinfo process ancestry
       /usr/lib/systemd/systemd --switched-root --system --deserialize 28
       login -- root
       -bash
       -bash
       runcpu --nobuild --action validate --define default-platform-flags --define numcopies=32 -c
         ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=16 --define physicalfirst
         --define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
       runcpu --nobuild --action validate --define default-platform-flags --define numcopies=32 --configfile
         ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=16 --define physicalfirst
         --define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
         --runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
         $SPEC/tmp/CPU2017.020/templogs/preenv.intrate.020.0.log --lognum 020.0 --from_runcpu 2
       specperl $SPEC/bin/sysinfo
      $SPEC = /home/CPU2017

      ----------------------------------------------------------
      6. /proc/cpuinfo
          model name      : Intel(R) Xeon(R) Gold 5415+
          vendor_id       : GenuineIntel
          cpu family      : 6
          model           : 143
```

(Continued on next page)

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

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_base = 179

SPECrate®2017_int_peak = 184

CPU2017 License: 3358

Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)

Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)

Test Date: Mar-2023

Hardware Availability: Apr-2023

Software Availability: Feb-2023

Platform Notes (Continued)

```
      stepping        : 8
      microcode       : 0x2b000130
      bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
      cpu cores       : 8
      siblings        : 16
      2 physical ids (chips)
      32 processors (hardware threads)
      physical id 0: core ids 0-7
      physical id 1: core ids 0-7
      physical id 0: apicids 0-15
      physical id 1: apicids 128-143
   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):                 32
      On-line CPU(s) list:    0-31
      Vendor ID:              GenuineIntel
      BIOS Vendor ID:         Intel(R) Corporation
      Model name:             Intel(R) Xeon(R) Gold 5415+
      BIOS Model name:        Intel(R) Xeon(R) Gold 5415+
      CPU family:             6
      Model:                  143
      Thread(s) per core:     2
      Core(s) per socket:     8
      Socket(s):              2
      Stepping:               8
      CPU max MHz:            4100.0000
      CPU min MHz:            800.0000
      BogoMIPS:              5800.00
      Flags:                  fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
                              clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
                              lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
                              nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 ds_cpl
                              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 cdp_l3 invpcid_single
                              intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase
                              tsc_adjust bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq
                              rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni
                              avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc
                              cqm_mbm_total cqm_mbm_local split_lock_detect avx_vnni avx512_bf16
                              wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req
                              avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq
                              avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid bus_lock_detect
                              cldemote movdiri movdir64b enqcmd fsrm md_clear serialize tsxldtrk pconfig
                              arch_lbr avx512_fp16 amx_tile flush_l1d arch_capabilities
      L1d cache:              768 KiB (16 instances)
      L1i cache:              512 KiB (16 instances)
      L2 cache:               32 MiB (16 instances)
      L3 cache:               45 MiB (2 instances)
      NUMA node(s):           4
      NUMA node0 CPU(s):      0-3,16-19
```

(Continued on next page)

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

SPECrate®2017_int_base = 179

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_peak = 184

CPU2017 License: 3358   **Test Date:** Mar-2023
Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)   **Hardware Availability:** Apr-2023
Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)   **Software Availability:** Feb-2023

Platform Notes (Continued)

```
  NUMA node1 CPU(s):             4-7,20-23
  NUMA node2 CPU(s):             8-11,24-27
  NUMA node3 CPU(s):             12-15,28-31
  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; Enhanced IBRS, IBPB conditional, 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      48K     768K   12 Data          1    64      1           64
      L1i      32K     512K    8 Instruction   1    64      1           64
      L2        2M      32M   16 Unified       2  2048      1           64
      L3     22.5M      45M   15 Unified       3 24576      1           64


  ------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0-3,16-19
  node 0 size: 128587 MB
  node 0 free: 128339 MB
  node 1 cpus: 4-7,20-23
  node 1 size: 129022 MB
  node 1 free: 128779 MB
  node 2 cpus: 8-11,24-27
  node 2 size: 128985 MB
  node 2 free: 128572 MB
  node 3 cpus: 12-15,28-31
  node 3 size: 129011 MB
  node 3 free: 128609 MB
  node distances:
  node   0   1   2   3
    0:  10  12  21  21
    1:  12  10  21  21
    2:  21  21  10  12
    3:  21  21  12  10


  ------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       527981012 kB


  ------------------------------------------------------------
10. who -r
   run-level 3 Mar 29 14:05


  ------------------------------------------------------------
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
```

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

SPECrate®2017_int_base = 179

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_peak = 184

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

Test Date: Mar-2023
Hardware Availability: Apr-2023
Software Availability: Feb-2023

Platform Notes (Continued)

```
                    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        arp-ethers blk-availability canberra-system-bootup canberra-system-shutdown
                    canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower debug-shell
                    kvm_stat man-db-restart-cache-update nftables podman podman-auto-update podman-restart
                    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=(hd0,gpt2)/vmlinuz-5.14.0-70.22.1.el9_0.x86_64
    root=/dev/mapper/rhel-root
    ro
    resume=/dev/mapper/rhel-swap
    rd.lvm.lv=rhel/root
    rd.lvm.lv=rhel/swap


  ----------------------------------------------------------------
  14. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 800 MHz and 4.10 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      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.extfrag_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

  ----------------------------------------------------------------
```

(Continued on next page)

Inspur Electronic Information Industry Co., Ltd. (IEI)

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_base = 179

SPECrate®2017_int_peak = 184

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

Test Date: Mar-2023
Hardware Availability: Apr-2023
Software Availability: Feb-2023

Platform Notes (Continued)

```
  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)
    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/rhel-home xfs   819G  190G  630G  24% /home


    ----------------------------------------------------------
  20. /sys/devices/virtual/dmi/id
      Vendor:         IEI
      Product:        NF5180M7
      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:
      16x Samsung M321R4GA3BB6-CQKVG 32 GB 2 rank 4800, configured at 4400


    ----------------------------------------------------------
  22. BIOS
  (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       American Megatrends International, LLC.
    BIOS Version:      03.01.00
    BIOS Date:         12/29/2022
```

Compiler Version Notes

```
==============================================================================================
C       | 502.gcc_r(peak)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(base, peak)
----------------------------------------------------------------------------------------------
```

(Continued on next page)

Inspur Electronic Information Industry Co., Ltd. (IEI)

SPECrate®2017_int_base = 179

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_peak = 184

CPU2017 License: 3358   **Test Date:**   Mar-2023
Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)   **Hardware Availability:** Apr-2023
Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)   **Software Availability:** Feb-2023

Compiler Version Notes (Continued)

```
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       | 502.gcc_r(peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------------------------------------


==============================================================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(base, peak)
--------------------------------------------------------------------------------------------------------------
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, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
        | 541.leela_r(base, peak)
--------------------------------------------------------------------------------------------------------------
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, peak)
--------------------------------------------------------------------------------------------------------------
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`

Fortran benchmarks:
`ifx`

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-DSPEC_LP64`
505.mcf_r: `-DSPEC_LP64`

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_base = 179

SPECrate®2017_int_peak = 184

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

Test Date: Mar-2023
Hardware Availability: Apr-2023
Software Availability: Feb-2023

Base Portability Flags (Continued)

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=c++14 -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
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

Fortran benchmarks:
```
ifx
```

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

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_base = 179

SPECrate®2017_int_peak = 184

CPU2017 License: 3358 **Test Date:** Mar-2023
Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI) **Hardware Availability:** Apr-2023
Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI) **Software Availability:** Feb-2023

Peak Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-D_FILE_OFFSET_BITS=64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Peak Optimization Flags

C benchmarks:

500.perlbench_r: `-w -std=c11 -m64 -Wl,-z,muldefs`
`-fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4`
`-fno-strict-overflow`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

502.gcc_r: `-m32`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/ia32_lin`
`-std=gnu89 -Wl,-z,muldefs -fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc`

505.mcf_r: basepeak = yes

525.x264_r: `-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast`
`-ffast-math -flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -fno-alias`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

557.xz_r: basepeak = yes

C++ benchmarks:

(Continued on next page)

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

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd. (IEI)

SPECrate®2017_int_base = 179

NF5180M7 (Intel Xeon Gold 5415+)

SPECrate®2017_int_peak = 184

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

Test Date: Mar-2023
Hardware Availability: Apr-2023
Software Availability: Feb-2023

Peak Optimization Flags (Continued)

520.omnetpp_r: `basepeak = yes`

523.xalancbmk_r: `basepeak = yes`

531.deepsjeng_r: `basepeak = yes`

541.leela_r: `basepeak = yes`

Fortran benchmarks:

548.exchange2_r: `basepeak = yes`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html`
`http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-intel-V3.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-intel-V3.xml`

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 2023-03-29 14:09:06-0400.
Report generated on 2024-01-29 17:41:29 by CPU2017 PDF formatter v6716.
Originally published on 2023-05-09.