SPEC CPU®2017 Integer Rate Result

Nettrix

R620 G50 (Intel Xeon Platinum 8468, 2.10 GHz)

$SPECrate®2017\_int\_base = 875$

$SPECrate®2017\_int\_peak = 905$

CPU2017 License: 6138
Test Sponsor: Nettrix
Tested by: Nettrix

Test Date: Mar-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Benchmark	Copies	base	peak
500.perlbench_r	192	675	724
502.gcc_r	192	666	826
505.mcf_r	192	1300	
520.omnetpp_r	192	504	
523.xalancbmk_r	192	1650	
525.x264_r	192	1760	1850
531.deepsjeng_r	192	649	
541.leela_r	192	605	
548.exchange2_r	192	1880	
557.xz_r	192	414	

SPECrate®2017_int_base (875)   SPECrate®2017_int_peak (905)

Hardware

CPU Name: Intel Xeon Platinum 8468
 Max MHz: 3800
 Nominal: 2100
Enabled: 96 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: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 960 GB NVME SSD
Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP4
5.14.21-150400.22-default
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: Nettrix BIOS Version NNH1041018-U00-1 released Nov-2022
File System: btrfs
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

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https://www.spec.org/

SPEC CPU®2017 Integer Rate Result

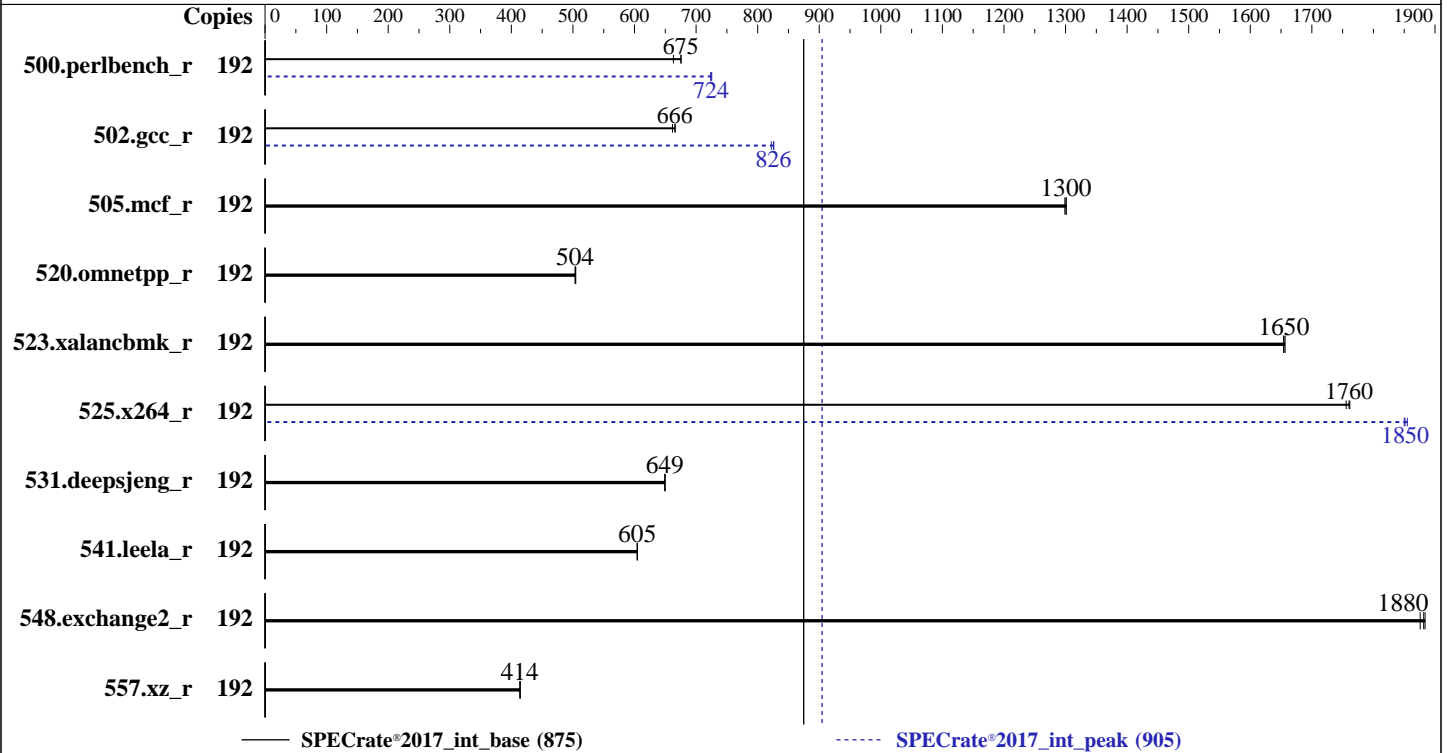Copyright 2017-2024 Standard Performance Evaluation Corporation

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	192	461	663	**453**	**675**	452	676	192	422	724	**422**	**724**	421	725
502.gcc_r	192	408	666	**408**	**666**	411	662	192	329	826	**329**	**826**	331	822
505.mcf_r	192	238	1300	239	1300	**239**	**1300**	192	238	1300	239	1300	**239**	**1300**
520.omnetpp_r	192	499	505	**500**	**504**	500	504	192	499	505	**500**	**504**	500	504
523.xalancbmk_r	192	**123**	**1650**	123	1650	122	1660	192	**123**	**1650**	123	1650	122	1660
525.x264_r	192	191	1760	**191**	**1760**	191	1760	192	181	1860	182	1850	**182**	**1850**
531.deepsjeng_r	192	339	649	339	649	**339**	**649**	192	339	649	339	649	**339**	**649**
541.leela_r	192	**526**	**605**	526	604	526	605	192	**526**	**605**	526	604	526	605
548.exchange2_r	192	**267**	**1880**	267	1880	268	1880	192	**267**	**1880**	267	1880	268	1880
557.xz_r	192	**501**	**414**	501	414	500	414	192	**501**	**414**	501	414	500	414
SPECrate®2017_int_base =			**875**											
SPECrate®2017_int_peak =			**905**											

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

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General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Red Hat Enterprise Linux 8.4
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.
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>
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:
  SNC (Sub NUMA) set to Enable SNC4 (4-clusters)
  Patrol Scrub set to Disabled
  LLC dead line alloc set to Disabled
  DCU Streamer Prefetcher set to Disabled
  Hardware P-States set to Native Mode

Sysinfo program /home/lijq/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Fri Apr 29 20:26:29 2022

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. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

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Platform Notes (Continued)

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

          --------------------------------------------------------------
          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
             20:26:29 up 26 min,  2 users,  load average: 0.04, 0.01, 0.00
            USER     TTY        FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
            root     tty1       -                20:25   45.00s  1.02s  0.01s -bash
            root     pts/0      10.0.144.192     20:23    1:41   0.06s  0.06s -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                 (-i) 4125039
            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) 4125039
            virtual memory          (kbytes, -v) unlimited
            file locks                      (-x) unlimited

          --------------------------------------------------------------
          5. sysinfo process ancestry
           /usr/lib/systemd/systemd --switched-root --system --deserialize 29
           login -- root
           -bash
           -bash
           runcpu --nobuild --reportable --iterations 3 --define default-platform-flags --define numcopies=192 -c
             ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=96 --define physicalfirst
             --define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
           runcpu --nobuild --reportable --iterations 3 --define default-platform-flags --define numcopies=192
             --configfile ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=96 --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/CPU2017.090/templogs/preenv.intrate.090.0.log --lognum 090.0 --from_runcpu 2
           specperl $SPEC/bin/sysinfo
          $SPEC = /home/lijq

          --------------------------------------------------------------
          6. /proc/cpuinfo
              model name      : Intel(R) Xeon(R) Platinum 8468
              vendor_id       : GenuineIntel
              cpu family      : 6
              model           : 143
```

(Continued on next page)

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Platform Notes (Continued)

```
      stepping        : 8
      microcode       : 0x2b000111
      bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
      cpu cores       : 48
      siblings        : 96
      2 physical ids (chips)
      192 processors (hardware threads)
      physical id 0: core ids 0-47
      physical id 1: core ids 0-47
      physical id 0: apicids 0-95
      physical id 1: apicids 128-223
   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):                  192
     On-line CPU(s) list:     0-191
     Vendor ID:               GenuineIntel
     Model name:              Intel(R) Xeon(R) Platinum 8468
     CPU family:              6
     Model:                   143
     Thread(s) per core:      2
     Core(s) per socket:      48
     Socket(s):               2
     Stepping:                8
     CPU max MHz:             3800.0000
     CPU min MHz:             800.0000
     BogoMIPS:                4200.00
     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
                              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 cdp_l3 invpcid_single
                              intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi
                              flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2
                              erms invpcid rtm 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
     Virtualization:          VT-x
     L1d cache:               4.5 MiB (96 instances)
     L1i cache:               3 MiB (96 instances)
     L2 cache:                192 MiB (96 instances)
     L3 cache:                210 MiB (2 instances)
     NUMA node(s):            8
     NUMA node0 CPU(s):       0-11,96-107
```

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Platform Notes (Continued)

```
  NUMA node1 CPU(s):           12-23,108-119
  NUMA node2 CPU(s):           24-35,120-131
  NUMA node3 CPU(s):           36-47,132-143
  NUMA node4 CPU(s):           48-59,144-155
  NUMA node5 CPU(s):           60-71,156-167
  NUMA node6 CPU(s):           72-83,168-179
  NUMA node7 CPU(s):           84-95,180-191
  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:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL    SETS PHY-LINE COHERENCY-SIZE
      L1d      48K     4.5M  12 Data            1      64       1             64
      L1i      32K       3M   8 Instruction     1      64       1             64
      L2        2M     192M  16 Unified         2    2048       1             64
      L3      105M     210M  15 Unified         3  114688       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: 0-11,96-107
  node 0 size: 128538 MB
  node 0 free: 127179 MB
  node 1 cpus: 12-23,108-119
  node 1 size: 129017 MB
  node 1 free: 128690 MB
  node 2 cpus: 24-35,120-131
  node 2 size: 129017 MB
  node 2 free: 128678 MB
  node 3 cpus: 36-47,132-143
  node 3 size: 129017 MB
  node 3 free: 128705 MB
  node 4 cpus: 48-59,144-155
  node 4 size: 129017 MB
  node 4 free: 128773 MB
  node 5 cpus: 60-71,156-167
  node 5 size: 129017 MB
  node 5 free: 127903 MB
  node 6 cpus: 72-83,168-179
  node 6 size: 128983 MB
  node 6 free: 128626 MB
  node 7 cpus: 84-95,180-191
  node 7 size: 128670 MB
  node 7 free: 128309 MB
  node distances:
  node   0   1   2   3   4   5   6   7
    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
```

(Continued on next page)

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Platform Notes (Continued)

```
    6:  21  21  21  21  12  12  10  12
    7:  21  21  21  21  12  12  12  10


------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056032512 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         apparmor auditd cron getty@ haveged irqbalance issue-generator kbdsettings kdump
                   kdump-early nvmefc-boot-connections postfix purge-kernels rollback sshd wicked
                   wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
   enabled-runtime systemd-remount-fs
   disabled        boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell
                   exchange-bmc-os-info grub2-once haveged-switch-root ipmievd issue-add-ssh-keys kexec-load
                   nfs nfs-blkmap nvmf-autoconnect rpcbind rpmconfigcheck serial-getty@
                   systemd-boot-check-no-failures systemd-network-generator systemd-sysext
                   systemd-time-wait-sync systemd-timesyncd tuned
   indirect        wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
   root=UUID=9e7d079b-be10-4779-89e1-79f870e2ca09
   splash=silent
   mitigations=auto
   quiet
   security=apparmor
   crashkernel=300M,high
   crashkernel=72M,low

------------------------------------------------------------
14. cpupower frequency-info
   analyzing CPU 0:
     current policy: frequency should be within 800 MHz and 3.80 GHz.
                     The governor "performance" may decide which speed to use
                     within this range.
     boost state support:
       Supported: yes
       Active: yes


------------------------------------------------------------
15. tuned-adm active
   It seems that tuned daemon is not running, preset profile is not activated.
   Preset profile: throughput-performance


------------------------------------------------------------
16. sysctl
   kernel.numa_balancing            1
   kernel.randomize_va_space        2
```

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Platform Notes (Continued)

```
   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


   ---------------------------------------------------------------
17. /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


   ---------------------------------------------------------------
18. /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


   ---------------------------------------------------------------
19. OS release
   From /etc/*-release /etc/*-version
   os-release SUSE Linux Enterprise Server 15 SP4


   ---------------------------------------------------------------
20. Disk information
SPEC is set to: /home/lijq
   Filesystem      Type   Size  Used Avail Use% Mounted on
   /dev/nvme0n1p3 btrfs  854G  230G  624G  27% /home


   ---------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
     Vendor:         Nettrix
     Product:        R620 G50
     Product Family: Rack
     Serial:         6101810603447822


   ---------------------------------------------------------------
22. 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:
```

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Platform Notes (Continued)

```
    16x Samsung M321R8GA0BB0-CQKVG 64 GB 2 rank 4800


   ------------------------------------------------------------
   23. BIOS
   (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:       American Megatrends International, LLC.
     BIOS Version:      NNH1041018-U00-1
     BIOS Date:         11/01/2022
     BIOS Revision:     5.29
```

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)
------------------------------------------------------------------------------
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
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------------------------------------------------------------------------------


==============================================================================
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
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------------------------------------------------------------------------------


==============================================================================
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
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------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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------------------------------------------------------------------------------
```

SPEC CPU®2017 Integer Rate Result

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Nettrix

R620 G50 (Intel Xeon Platinum 8468, 2.10 GHz)

$SPECrate®2017\_int\_base = 875$

$SPECrate®2017\_int\_peak = 905$

CPU2017 License: 6138
Test Sponsor: Nettrix
Tested by: Nettrix

Test Date: Mar-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

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`

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
```

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

SPEC CPU®2017 Integer Rate Result

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Nettrix

R620 G50 (Intel Xeon Platinum 8468, 2.10 GHz)

SPECrate®2017_int_base = 875

SPECrate®2017_int_peak = 905

CPU2017 License: 6138
Test Sponsor: Nettrix
Tested by: Nettrix

Test Date: Mar-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Peak Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

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`

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Nettrix

R620 G50 (Intel Xeon Platinum 8468, 2.10 GHz)

SPECrate®2017_int_base = 875

SPECrate®2017_int_peak = 905

CPU2017 License:	6138	**Test Date:**	Mar-2023
Test Sponsor:	Nettrix	**Hardware Availability:**	Jan-2023
Tested by:	Nettrix	**Software Availability:**	Dec-2022

Peak Optimization Flags (Continued)

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:

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/Nettrix-Platform-Settings-V1.3-SPR-revA.html

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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/Nettrix-Platform-Settings-V1.3-SPR-revA.xml

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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