SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

$SPECrate^{®}2017\_int\_base =$ 461

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

$SPECrate^{®}2017\_int\_peak =$ Not Run

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: May-2024

Hardware Availability: Dec-2023

Software Availability: Dec-2023

Benchmark	Copies	Result
500.perlbench_r	112	346
502.gcc_r	112	394
505.mcf_r	112	783
520.omnetpp_r	112	324
523.xalancbmk_r	112	647
525.x264_r	112	893
531.deepsjeng_r	112	328
541.leela_r	112	312
548.exchange2_r	112	954
557.xz_r	112	222

Scale: 0 45.0 90.0 135 180 225 270 315 360 405 450 495 540 585 630 675 720 765 810 855 900 960

—— SPECrate®2017_int_base (461)

Hardware

CPU Name: Intel Xeon Gold 5420+
 Max MHz: 4100
 Nominal: 2000
Enabled: 56 cores, 2 chips, 2 threads/core
Orderable: 1, 2 chip(s)
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 52.5 MB I+D on chip per chip
 Other: None
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R, running at 4400)
Storage: 1 x 480 GB SATA SSD
Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
 Kernel 5.14.0-70.13.1.el9_0.x86_64
Compiler: C/C++: Version 2024.0.2 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2024.0.2 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: HPE BIOS Version v2.12 12/13/2023 released Dec-2023
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: None
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
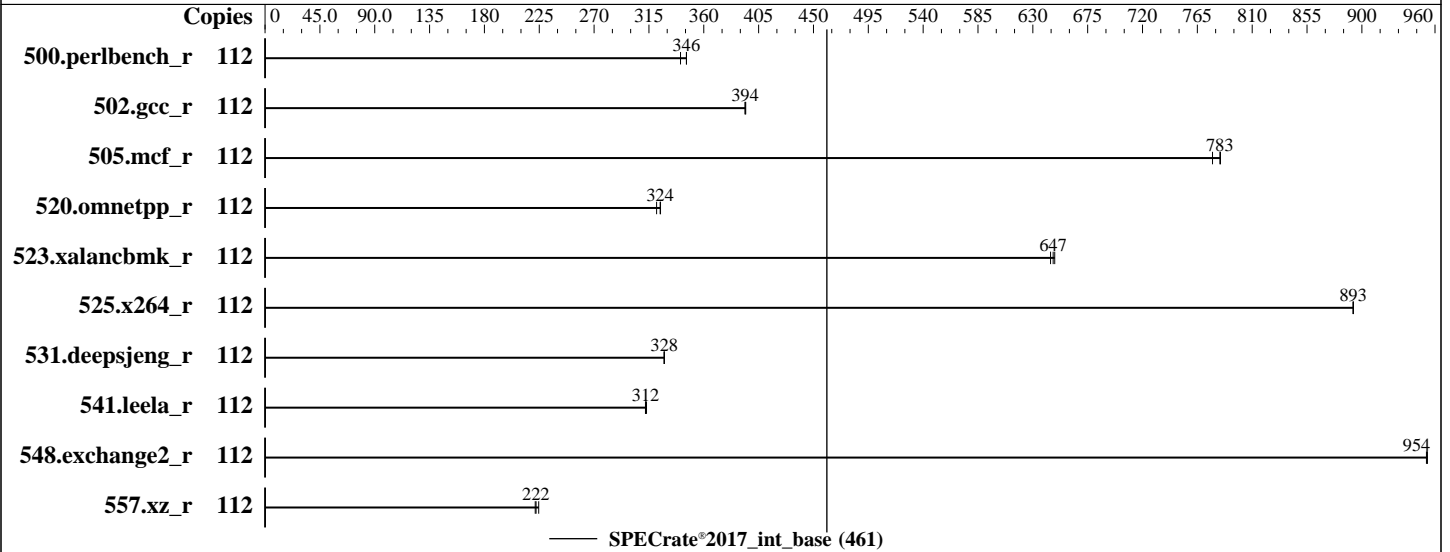(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_base =   461

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3	**Test Date:** May-2024
Test Sponsor: HPE	**Hardware Availability:** Dec-2023
Tested by: HPE	**Software Availability:** Dec-2023

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	112	523	341	516	346	**516**	**346**							
502.gcc_r	112	402	394	403	394	**403**	**394**							
505.mcf_r	112	231	784	233	777	**231**	**783**							
520.omnetpp_r	112	453	325	457	321	**453**	**324**							
523.xalancbmk_r	112	**183**	**647**	183	648	183	645							
525.x264_r	112	**220**	**893**	220	893	220	893							
531.deepsjeng_r	112	392	328	392	327	**392**	**328**							
541.leela_r	112	594	312	593	313	**594**	**312**							
548.exchange2_r	112	**308**	**954**	308	953	308	954							
557.xz_r	112	539	225	**544**	**222**	546	222							
SPECrate®2017_int_base =	**461**													
SPECrate®2017_int_peak =	**Not Run**													

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

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"
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>
IRQ balance service was stopped using "systemctl stop irqbalance.service"
tuned-adm profile was set to accelerator-performance using "tuned-adm profile accelerator-performance"

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"

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.

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

$SPECrate^{®}2017\_int\_base =$ 461

$SPECrate^{®}2017\_int\_peak =$ Not Run

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: May-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

General Notes (Continued)

```
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:
 Workload Profile set to General Throughput Compute
 Thermal Configuration set to Maximum Cooling
 Memory Patrol Scrubbing set to Disabled
 Enhanced Processor Performance Profile set to Aggressive
 Last Level Cache (LLC) Dead Line Allocation set to Disabled
 Intel UPI Link Enablement set to Single Link Operation
 Workload Profile set to Custom
  Adjacent Sector Prefetch set to Disabled
  DCU Stream Prefetcher set to Disabled
  Intel UPI Link Power Management set to Enabled
  Minimum Processor Idle Power Package C-State set to Package C6 (non-retention) State

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Sat May 11 11:18:20 2024

 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. 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
 -----------------------------------------------------------


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

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_base = 461

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: May-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Platform Notes (Continued)

```
   11:18:20 up 12 min,  2 users,  load average: 0.00, 0.07, 0.10
  USER      TTY         LOGIN@   IDLE   JCPU   PCPU WHAT
  root      tty1        16:44     ?     0.00s  0.00s -bash
  root      pts/0       16:44    8.00s  0.83s  0.00s -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) 2062711
   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) 2062711
   virtual memory              (kbytes, -v) unlimited
   file locks                         (-x) unlimited


 -------------------------------------------------------------
 5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize 18
  sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
  sshd: root [priv]
  sshd: root@pts/0
  -bash
  -bash
  runcpu --nobuild --action validate --define default-platform-flags --define numcopies=112 -c
    ic2024.0.2-lin-sapphirerapids-rate-20231213.cfg --define smt-on --define cores=56 --define physicalfirst
    --define invoke_with_interleave --define drop_caches --tune base -o all intrate
  runcpu --nobuild --action validate --define default-platform-flags --define numcopies=112 --configfile
    ic2024.0.2-lin-sapphirerapids-rate-20231213.cfg --define smt-on --define cores=56 --define physicalfirst
    --define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
    rate --tune base --size refrate intrate --nopreenv --note-preenv --logfile
    $SPEC/tmp/CPU2017.002/templogs/preenv.intrate.002.0.log --lognum 002.0 --from_runcpu 2
  specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2017


 -------------------------------------------------------------
 6. /proc/cpuinfo
     model name      : Intel(R) Xeon(R) Gold 5420+
     vendor_id       : GenuineIntel
     cpu family      : 6
     model           : 143
     stepping        : 7
     microcode       : 0x2b000571
     bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
     cpu cores       : 28
     siblings        : 56
     2 physical ids (chips)
```

(Continued on next page)

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_base =   461

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: May-2024

Hardware Availability: Dec-2023

Software Availability: Dec-2023

Platform Notes (Continued)

```
     112 processors (hardware threads)
     physical id 0: core ids 0-27
     physical id 1: core ids 0-27
     physical id 0: apicids 0-55
     physical id 1: apicids 128-183
   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:               46 bits physical, 57 bits virtual
     Byte Order:                  Little Endian
     CPU(s):                      112
     On-line CPU(s) list:         0-111
     Vendor ID:                   GenuineIntel
     BIOS Vendor ID:              Intel(R) Corporation
     Model name:                  Intel(R) Xeon(R) Gold 5420+
     BIOS Model name:             Intel(R) Xeon(R) Gold 5420+
     CPU family:                  6
     Model:                       143
     Thread(s) per core:          2
     Core(s) per socket:          28
     Socket(s):                   2
     Stepping:                    7
     BogoMIPS:                    4000.00
     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 monitor
                                  ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1
                                  sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand
                                  lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
                                  invpcid_single cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
                                  vnmi flexpriority ept vpid ept_ad 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
                                  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:                   2.6 MiB (56 instances)
     L1i cache:                   1.8 MiB (56 instances)
     L2 cache:                    112 MiB (56 instances)
     L3 cache:                    105 MiB (2 instances)
     NUMA node(s):                4
     NUMA node0 CPU(s):           0-13,56-69
     NUMA node1 CPU(s):           14-27,70-83
     NUMA node2 CPU(s):           28-41,84-97
     NUMA node3 CPU(s):           42-55,98-111
     Vulnerability Itlb multihit: Not affected
     Vulnerability L1tf:          Not affected
     Vulnerability Mds:           Not affected
     Vulnerability Meltdown:      Not affected
```

(Continued on next page)

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_base =   461

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: May-2024

Hardware Availability: Dec-2023

Software Availability: Dec-2023

Platform Notes (Continued)

```
   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     2.6M   12 Data            1    64        1             64
     L1i       32K     1.8M    8 Instruction     1    64        1             64
     L2         2M     112M   16 Unified         2  2048        1             64
     L3      52.5M     105M   15 Unified         3 57344        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: 0-13,56-69
   node 0 size: 128674 MB
   node 0 free: 127228 MB
   node 1 cpus: 14-27,70-83
   node 1 size: 129017 MB
   node 1 free: 128536 MB
   node 2 cpus: 28-41,84-97
   node 2 size: 129017 MB
   node 2 free: 128516 MB
   node 3 cpus: 42-55,98-111
   node 3 size: 129007 MB
   node 3 free: 128419 MB
   node distances:
   node   0   1   2   3
     0:  10  20  30  30
     1:  20  10  30  30
     2:  30  30  10  20
     3:  30  30  20  10


 --------------------------------------------------------------
 9. /proc/meminfo
    MemTotal:       528094948 kB


 --------------------------------------------------------------
 10. who -r
   run-level 3 May 11 16:36


 --------------------------------------------------------------
 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 crond
                   dbus-broker firewalld getty@ irqbalance kdump lvm2-monitor mdmonitor microcode
                   nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sshd sssd
                   systemd-network-generator tuned udisks2 upower
   enabled-runtime systemd-remount-fs
   disabled        blk-availability canberra-system-bootup canberra-system-shutdown
                   canberra-system-shutdown-reboot chrony-wait chronyd console-getty cpupower debug-shell
                   hwloc-dump-hwdata kvm_stat man-db-restart-cache-update nftables rdisc rhsm rhsm-facts
```

(Continued on next page)

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_base = 461

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: May-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Platform Notes (Continued)

```
                 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-5.14.0-70.13.1.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:
      Unable to determine current policy
      boost state support:
        Supported: yes
        Active: yes


  --------------------------------------------------------------
  15. tuned-adm active
    Current active profile: accelerator-performance


  --------------------------------------------------------------
  16. 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                   40
    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                    10
    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
```

(Continued on next page)

Hewlett Packard Enterprise

(Test Sponsor: HPE)

SPECrate®2017_int_base =   461

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: May-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Platform Notes (Continued)

```
   max_ptes_swap            64
   pages_to_scan          4096
   scan_sleep_millisecs   10000


  ----------------------------------------------------------
  19. 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)

  ----------------------------------------------------------
  20. Disk information
  SPEC is set to: /home/cpu2017
    Filesystem              Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-home xfs   372G   62G  310G  17% /home

  ----------------------------------------------------------
  21. /sys/devices/virtual/dmi/id
      Vendor:        HPE
      Product:       ProLiant DL380 Gen11
      Product Family: ProLiant
      Serial:        CNX21000G3

  ----------------------------------------------------------
  22. 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:
      2x Hynix HMCG88AEBRA168N 32 GB 2 rank 4800, configured at 4400
      12x Hynix HMCG88MEBRA113N 32 GB 2 rank 4800, configured at 4400
      2x Hynix HMCG88MEBRA115N 32 GB 2 rank 4800, configured at 4400


  ----------------------------------------------------------
  23. BIOS
  (This section combines info from /sys/devices and dmidecode.)
      BIOS Vendor:       HPE
      BIOS Version:      2.12
      BIOS Date:         12/13/2023
      BIOS Revision:     2.12
      Firmware Revision: 1.52
```

Compiler Version Notes

```
==============================================================================
C      | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++    | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
```

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_base = 461

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: May-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Compiler Version Notes (Continued)

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

==============================================================================
Fortran | 548.exchange2_r(base)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 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`
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/opt/intel/oneapi/compiler/2024.0/lib -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`

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen11
(2.00 GHz, Intel Xeon Gold 5420+)

SPECrate®2017_int_base =   461

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3	**Test Date:**	May-2024
Test Sponsor: HPE	**Hardware Availability:**	Dec-2023
Tested by: HPE	**Software Availability:**	Dec-2023

Base Optimization Flags (Continued)

C++ benchmarks (continued):
```
-L/opt/intel/oneapi/compiler/2024.0/lib -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/opt/intel/oneapi/compiler/2024.0/lib -lqkmalloc
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-EMR-rev1.0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-EMR-rev1.0.xml

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

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

Tested with SPEC CPU®2017 v1.1.9 on 2024-05-11 01:48:20-0400.
Report generated on 2024-06-05 10:40:18 by CPU2017 PDF formatter v6716.
Originally published on 2024-06-04.