SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)
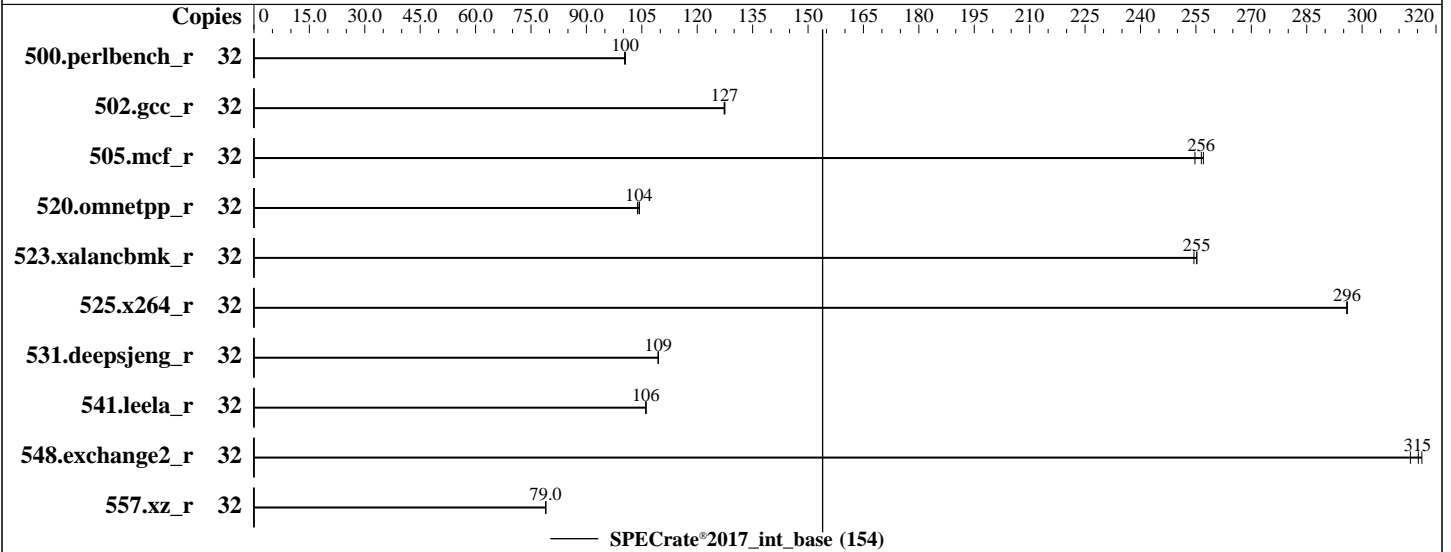
$SPECrate^{®}2017\_int\_base =$ 154

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

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

CPU2017 License: 3	**Test Date:** May-2023
Test Sponsor: HPE	**Hardware Availability:** May-2023
Tested by: HPE	**Software Availability:** Dec-2022

Copies | 0 15.0 30.0 45.0 60.0 75.0 90.0 105 120 135 150 165 180 195 210 225 240 255 270 285 300 320

- **500.perlbench_r** 32 — 100
- **502.gcc_r** 32 — 127
- **505.mcf_r** 32 — 256
- **520.omnetpp_r** 32 — 104
- **523.xalancbmk_r** 32 — 255
- **525.x264_r** 32 — 296
- **531.deepsjeng_r** 32 — 109
- **541.leela_r** 32 — 106
- **548.exchange2_r** 32 — 315
- **557.xz_r** 32 — 79.0

—— **SPECrate®2017_int_base (154)**

Hardware

CPU Name: Intel Xeon Gold 6334
 Max MHz: 3700
 Nominal: 3600
Enabled: 16 cores, 2 chips, 2 threads/core
Orderable: 1, 2 chip(s)
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 1.25 MB I+D on chip per core
 L3: 18 MB I+D on chip per chip
 Other: None
Memory: 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R)
Storage: 1 x 800 GB SAS SSD, RAID 0
Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
  Kernel 5.14.0-70.13.1.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: HPE BIOS Version v1.76 04/20/2023 released May-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

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

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

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	32	508	100	**507**	**100**	507	101							
502.gcc_r	32	**356**	**127**	355	127	356	127							
505.mcf_r	32	**202**	**256**	203	255	201	257							
520.omnetpp_r	32	404	104	**403**	**104**	402	104							
523.xalancbmk_r	32	**132**	**255**	132	255	133	254							
525.x264_r	32	189	296	189	296	**189**	**296**							
531.deepsjeng_r	32	335	109	335	109	**335**	**109**							
541.leela_r	32	**499**	**106**	500	106	499	106							
548.exchange2_r	32	268	313	265	316	**266**	**315**							
557.xz_r	32	437	79.0	438	79.0	**438**	**79.0**							
SPECrate®2017_int_base =	**154**													
SPECrate®2017_int_peak =	**Not Run**													

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"
 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>
```

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

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

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 Redhat Enterprise Linux 8.0
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

```
The system ROM used for this result contains Intel microcode version 0xd000390 for
the Intel Xeon Gold 6334 processor.
BIOS Configuration:
 Workload Profile set to General Throughput Compute
 Memory Patrol Scrubbing is set to Disabled
 Advanced Memory Protection set to Advanced ECC
 XPT Remote Prefetcher set to Enabled
 Last Level Cache (LLC) Dead Line Allocation set to Disabled
 Enhanced Processor Performance set to Enabled
 Enhanced Processor Performance Profile set to Aggressive
 Thermal Configuration set to Maximum Cooling
 Intel UPI Link Frequency set to Min UPI Speed
 Intel UPI Link Enablement set to Single Link
 D2K set to Disabled
 Workload Profile set to Custom
 DCU Stream Prefetcher set to Disabled
 Energy Efficient Turbo set to Enabled
 Adjacent Sector Prefetch set to Disabled
 Intel UPI Link Power Management set to Enabled

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Thu May 18 13:19:42 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)
```

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

$SPECrate®2017\_int\_base = \quad 154$

$SPECrate®2017\_int\_peak = Not\ Run$

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
  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
     13:19:42 up 10 min,  2 users,  load average: 0.00, 0.00, 0.00
    USER     TTY         LOGIN@   IDLE   JCPU   PCPU WHAT
    root     tty1        13:09   10:08   0.00s  0.00s -bash
    root     pts/0       13:09   14.00s  1.02s  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) 2062508
    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) 2062508
    virtual memory              (kbytes, -v) unlimited
    file locks                      (-x) unlimited

  -------------------------------------------------------------
  5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize 30
  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=32 -c
    ic2023.0-lin-core-avx512-rate-20221201.cfg --define smt-on --define cores=16 --define physicalfirst
```

(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 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3	**Test Date:** May-2023
Test Sponsor: HPE	**Hardware Availability:** May-2023
Tested by: HPE	**Software Availability:** Dec-2022

Platform Notes (Continued)

```
    --define invoke_with_interleave --define drop_caches --tune base -o all intrate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=32 --configfile
   ic2023.0-lin-core-avx512-rate-20221201.cfg --define smt-on --define cores=16 --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 6334 CPU @ 3.60GHz
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 106
   stepping        : 6
   microcode       : 0xd000390
   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 64-79
 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):                   32
 On-line CPU(s) list:      0-31
 Vendor ID:                GenuineIntel
 BIOS Vendor ID:           Intel(R) Corporation
 Model name:               Intel(R) Xeon(R) Gold 6334 CPU @ 3.60GHz
 BIOS Model name:          Intel(R) Xeon(R) Gold 6334 CPU @ 3.60GHz
 CPU family:               6
 Model:                    106
 Thread(s) per core:       2
 Core(s) per socket:       8
 Socket(s):                2
 Stepping:                 6
 CPU max MHz:              3700.0000
 CPU min MHz:              800.0000
 BogoMIPS:                 7200.00
 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 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 invpcid_single ssbd mba ibrs ibpb
                           stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase
```

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
                         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 wbnoinvd dtherm ida arat pln
                         pts avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
                         avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid fsrm md_clear
                         pconfig flush_l1d arch_capabilities
  Virtualization:        VT-x
  L1d cache:             768 KiB (16 instances)
  L1i cache:             512 KiB (16 instances)
  L2 cache:              20 MiB (16 instances)
  L3 cache:              36 MiB (2 instances)
  NUMA node(s):          4
  NUMA node0 CPU(s):     0-3,16-19
  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      1.3M     20M   20 Unified        2  1024       1            64
    L3      18M      36M   12 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: 128648 MB
  node 0 free: 128036 MB
  node 1 cpus: 4-7,20-23
  node 1 size: 129022 MB
  node 1 free: 128593 MB
  node 2 cpus: 8-11,24-27
  node 2 size: 128985 MB
  node 2 free: 128625 MB
  node 3 cpus: 12-15,28-31
  node 3 size: 129011 MB
  node 3 free: 128637 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:       528043296 kB
```

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
    ----------------------------------------------------------
    10. who -r
      run-level 3 May 18 13:08


    ----------------------------------------------------------
    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 tuned udisks2
      enabled-runtime    systemd-remount-fs
      disabled           blk-availability chrony-wait console-getty cpupower debug-shell kvm_stat
                         man-db-restart-cache-update nftables powertop 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/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 3.70 GHz and 3.70 GHz.
                        The governor "performance" may decide which speed to use
                        within this range.
      boost state support:
        Supported: yes
        Active: yes


    ----------------------------------------------------------
    15. tuned-adm active
      Current active profile: throughput-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
```

(Continued on next page)

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
  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
  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   670G   21G  649G   4% /home


  ----------------------------------------------------------
  21. /sys/devices/virtual/dmi/id
      Vendor:         HPE
      Product:        ProLiant DL380 Gen10 Plus
      Product Family: ProLiant
      Serial:         CN70110BZJ


  ----------------------------------------------------------
  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:
      16x Hynix HMA84GR7DJR4N-XN 32 GB 2 rank 3200


  ----------------------------------------------------------
  23. BIOS
  (This section combines info from /sys/devices and dmidecode.)
      BIOS Vendor:      HPE
      BIOS Version:     U46
```

(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 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
    BIOS Date:       04/20/2023
    BIOS Revision:    1.76
    Firmware Revision: 2.40
```

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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_r(base)
------------------------------------------------------------------------------
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`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`

(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

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10 Plus
(3.6 GHz, Intel Xeon Gold 6334)

SPECrate®2017_int_base =   154

SPECrate®2017_int_peak = Not Run

CPU2017 License:	3	**Test Date:**	May-2023
Test Sponsor:	HPE	**Hardware Availability:**	May-2023
Tested by:	HPE	**Software Availability:**	Dec-2022

Base Portability Flags (Continued)

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 -xCORE-AVX512 -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 -xCORE-AVX512 -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 -xCORE-AVX512 -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
```

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-ICX-revJ.html
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-ICX-revJ.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.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 2023-05-18 03:49:41-0400.
Report generated on 2024-01-29 17:50:40 by CPU2017 PDF formatter v6716.
Originally published on 2023-06-20.