SPEC CPU®2017 Integer Rate Result

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Supermicro

SuperServer SYS-241H-TNRTTP
(X13QEH+ , Intel Xeon Platinum 8468H)

$SPECrate^{®}2017\_int\_base =$ 1630

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

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Apr-2024

Hardware Availability: Dec-2023

Software Availability: Dec-2023

Copies	Value
500.perlbench_r 384	1270
502.gcc_r 384	1280
505.mcf_r 384	2520
520.omnetpp_r 384	994
523.xalancbmk_r 384	2260
525.x264_r 384	3300
531.deepsjeng_r 384	1230
541.leela_r 384	1190
548.exchange2_r 384	3580
557.xz_r 384	820

SPECrate®2017_int_base (1630)

Hardware

CPU Name: Intel Xeon Platinum 8468H

Max MHz: 3800

Nominal: 2100

Enabled: 192 cores, 4 chips, 2 threads/core

Orderable: 2,4 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: 2 TB (32 x 64 GB 2Rx4 PC5-4800B-R, running at 4400)

Storage: 1 x 960 GB NVMe SSD

Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP5 5.14.21-150500.53-default

Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;

Parallel: No

Firmware: Version 1.5a 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 set to prefer performance at the cost of additional power usage.

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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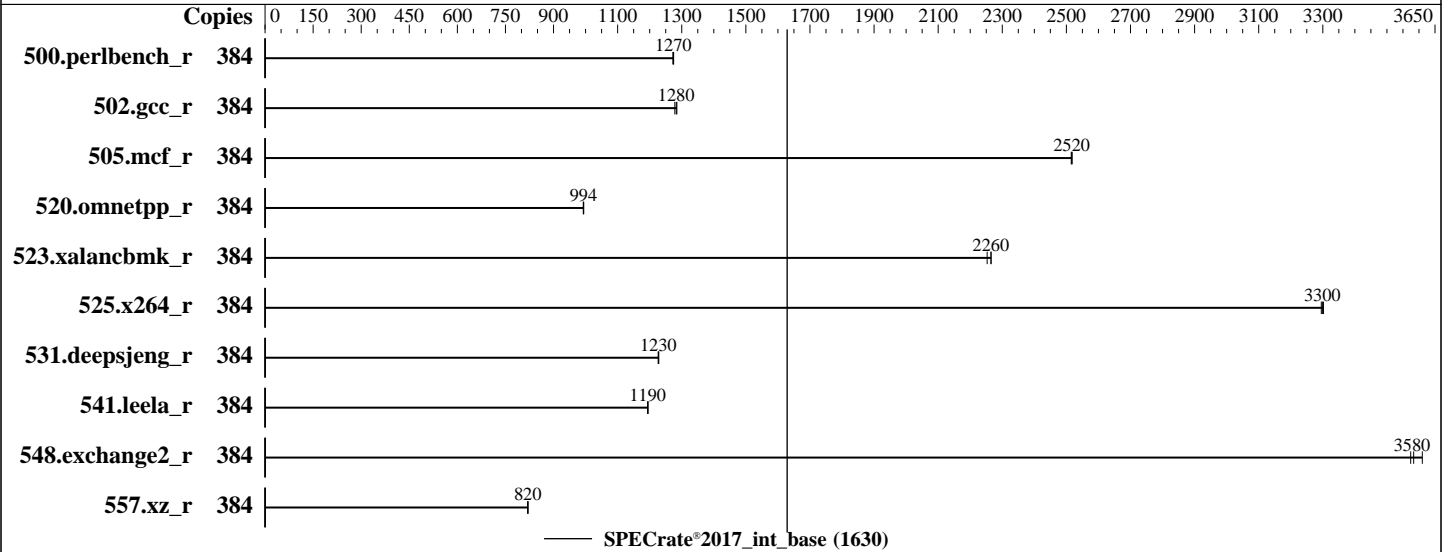Copyright 2017-2024 Standard Performance Evaluation Corporation

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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	384	**480**	**1270**	480	1270	480	1270							
502.gcc_r	384	**424**	**1280**	423	1280	425	1280							
505.mcf_r	384	**247**	**2520**	247	2520	246	2520							
520.omnetpp_r	384	**507**	**994**	507	993	507	994							
523.xalancbmk_r	384	**179**	**2260**	179	2270	180	2250							
525.x264_r	384	204	3300	**204**	**3300**	204	3300							
531.deepsjeng_r	384	359	1230	**359**	**1230**	358	1230							
541.leela_r	384	**533**	**1190**	532	1190	533	1190							
548.exchange2_r	384	281	3570	279	3610	**281**	**3580**							
557.xz_r	384	506	820	506	820	**506**	**820**							
SPECrate®2017_int_base =	**1630**													
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"
```

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
 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)
```

(Continued on next page)

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General Notes (Continued)

is mitigated in the system as tested and documented.

Platform Notes

```
BIOS Settings:
 Power Technology = Custom
 Power Performance Tuning = BIOS Controls EPB
 ENERGY_PERF_BIAS_CFG mode = Extreme Performance
 KTI Prefetch = Enable
 SNC = Enable SNC4 (4-clusters)
 DCU Streamer Prefetcher = Disable
 LLC Dead Line Alloc = Disable
 Fan Mode: Full Speed

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on 196-45 Wed Apr 24 15:20:44 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 249 (249.16+suse.171.gdad0071f15)
 12. Services, from systemctl list-unit-files
 13. Linux kernel boot-time arguments, from /proc/cmdline
 14. cpupower frequency-info
 15. sysctl
 16. /sys/kernel/mm/transparent_hugepage
 17. /sys/kernel/mm/transparent_hugepage/khugepaged
 18. OS release
 19. Disk information
 20. /sys/devices/virtual/dmi/id
 21. dmidecode
 22. BIOS
 ------------------------------------------------------------


 ------------------------------------------------------------
 1. uname -a
   Linux 196-45 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b630043) x86_64
   x86_64 x86_64 GNU/Linux


 ------------------------------------------------------------
 2. w
    15:20:44 up 6 min,  3 users,  load average: 0.05, 0.06, 0.02
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1     -                15:16    2.00s  1.01s  0.02s -bash

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

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Platform Notes (Continued)

```
 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) 8253490
   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) 8253490
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited


   ------------------------------------------------------------
 5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize 30
  login -- root
  -bash
  -bash
  runcpu --nobuild --action validate --define default-platform-flags --define numcopies=384 -c
    ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=192 --define physicalfirst
    --define invoke_with_interleave --define drop_caches --tune base -o all intrate
  runcpu --nobuild --action validate --define default-platform-flags --define numcopies=384 --configfile
    ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=192 --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/CPU2017.005/templogs/preenv.intrate.005.0.log --lognum 005.0 --from_runcpu 2
  specperl $SPEC/bin/sysinfo
  $SPEC = /home/cpu2017


   ------------------------------------------------------------
 6. /proc/cpuinfo
   model name         : Intel(R) Xeon(R) Platinum 8468H
   vendor_id          : GenuineIntel
   cpu family         : 6
   model              : 143
   stepping           : 8
   microcode          : 0x2b0004d0
   bugs               : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
   cpu cores          : 48
   siblings           : 96
   4 physical ids (chips)
   384 processors (hardware threads)
   physical id 0: core ids 0-47
   physical id 1: core ids 0-47
   physical id 2: core ids 0-47
   physical id 3: core ids 0-47
   physical id 0: apicids 0-95
   physical id 1: apicids 128-223
   physical id 2: apicids 256-351
   physical id 3: apicids 384-479
```

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Platform Notes (Continued)

    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):   384
      On-line CPU(s) list: 0-383
      Vendor ID: GenuineIntel
      Model name: Intel(R) Xeon(R) Platinum 8468H
      CPU family: 6
      Model: 143
      Thread(s) per core: 2
      Core(s) per socket: 48
      Socket(s):   4
      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 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 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 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: 9 MiB (192 instances)
      L1i cache: 6 MiB (192 instances)
      L2 cache: 384 MiB (192 instances)
      L3 cache: 420 MiB (4 instances)
      NUMA node(s):   16
      NUMA node0 CPU(s):   0-11,192-203
      NUMA node1 CPU(s):   12-23,204-215
      NUMA node2 CPU(s):   24-35,216-227
      NUMA node3 CPU(s):   36-47,228-239
      NUMA node4 CPU(s):   48-59,240-251
      NUMA node5 CPU(s):   60-71,252-263
      NUMA node6 CPU(s):   72-83,264-275
      NUMA node7 CPU(s):   84-95,276-287
      NUMA node8 CPU(s):   96-107,288-299
      NUMA node9 CPU(s):   108-119,300-311
      NUMA node10 CPU(s):   120-131,312-323
      NUMA node11 CPU(s):   132-143,324-335
      NUMA node12 CPU(s):   144-155,336-347

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Platform Notes (Continued)

```
  NUMA node13 CPU(s):            156-167,348-359
  NUMA node14 CPU(s):            168-179,360-371
  NUMA node15 CPU(s):            180-191,372-383
  Vulnerability Itlb multihit:   Not affected
  Vulnerability L1tf:            Not affected
  Vulnerability Mds:             Not affected
  Vulnerability Meltdown:        Not affected
  Vulnerability Mmio stale data: Not affected
  Vulnerability Retbleed:        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, PBRSB-eIBRS SW
                                 sequence
  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       9M  12 Data            1     64       1             64
      L1i      32K       6M   8 Instruction     1     64       1             64
      L2        2M     384M  16 Unified         2   2048       1             64
      L3      105M     420M  15 Unified         3 114688       1             64

  -----------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 16 nodes (0-15)
  node 0 cpus: 0-11,192-203
  node 0 size: 128583 MB
  node 0 free: 127750 MB
  node 1 cpus: 12-23,204-215
  node 1 size: 129017 MB
  node 1 free: 128703 MB
  node 2 cpus: 24-35,216-227
  node 2 size: 129017 MB
  node 2 free: 128697 MB
  node 3 cpus: 36-47,228-239
  node 3 size: 129017 MB
  node 3 free: 128700 MB
  node 4 cpus: 48-59,240-251
  node 4 size: 129017 MB
  node 4 free: 128568 MB
  node 5 cpus: 60-71,252-263
  node 5 size: 129017 MB
  node 5 free: 128711 MB
  node 6 cpus: 72-83,264-275
  node 6 size: 129017 MB
  node 6 free: 128652 MB
  node 7 cpus: 84-95,276-287
  node 7 size: 128983 MB
  node 7 free: 128609 MB
  node 8 cpus: 96-107,288-299
  node 8 size: 129017 MB
  node 8 free: 128679 MB
  node 9 cpus: 108-119,300-311
  node 9 size: 129017 MB
  node 9 free: 128715 MB
  node 10 cpus: 120-131,312-323
  node 10 size: 129017 MB
  node 10 free: 128680 MB
```

(Continued on next page)

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Platform Notes (Continued)

```
   node 11 cpus: 132-143,324-335
   node 11 size: 129017 MB
   node 11 free: 128290 MB
   node 12 cpus: 144-155,336-347
   node 12 size: 129017 MB
   node 12 free: 128597 MB
   node 13 cpus: 156-167,348-359
   node 13 size: 129017 MB
   node 13 free: 128651 MB
   node 14 cpus: 168-179,360-371
   node 14 size: 129017 MB
   node 14 free: 128635 MB
   node 15 cpus: 180-191,372-383
   node 15 size: 128604 MB
   node 15 free: 128210 MB
   node distances:
   node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
     0:  10  12  12  12  21  21  21  21  21  21  21  21  21  21  21  21
     1:  12  10  12  12  21  21  21  21  21  21  21  21  21  21  21  21
     2:  12  12  10  12  21  21  21  21  21  21  21  21  21  21  21  21
     3:  12  12  12  10  21  21  21  21  21  21  21  21  21  21  21  21
     4:  21  21  21  21  10  12  12  12  21  21  21  21  21  21  21  21
     5:  21  21  21  21  12  10  12  12  21  21  21  21  21  21  21  21
     6:  21  21  21  21  12  12  10  12  21  21  21  21  21  21  21  21
     7:  21  21  21  21  12  12  12  10  21  21  21  21  21  21  21  21
     8:  21  21  21  21  21  21  21  21  10  12  12  12  21  21  21  21
     9:  21  21  21  21  21  21  21  21  12  10  12  12  21  21  21  21
    10:  21  21  21  21  21  21  21  21  12  12  10  12  21  21  21  21
    11:  21  21  21  21  21  21  21  21  12  12  12  10  21  21  21  21
    12:  21  21  21  21  21  21  21  21  21  21  21  21  10  12  12  12
    13:  21  21  21  21  21  21  21  21  21  21  21  21  12  10  12  12
    14:  21  21  21  21  21  21  21  21  21  21  21  21  12  12  10  12
    15:  21  21  21  21  21  21  21  21  21  21  21  21  12  12  12  10

   -----------------------------------------------------------
9. /proc/meminfo
   MemTotal:       2112925724 kB


   -----------------------------------------------------------
10. who -r
   run-level 3 Apr 24 15:15 last=5


   -----------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
   Default Target  Status
   graphical       running


   -----------------------------------------------------------
12. Services, from systemctl list-unit-files
   STATE            UNIT FILES
   enabled          YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd bluetooth cron
                    display-manager firewalld getty@ irqbalance issue-generator kbdsettings kdump kdump-early
                    klog lvm2-monitor nscd nvmefc-boot-connections postfix purge-kernels rollback rsyslog
                    smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
   enabled-runtime  systemd-remount-fs
   disabled         accounts-daemon autofs autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl
                    ca-certificates chrony-wait chronyd console-getty cups cups-browsed debug-shell ebtables
                    exchange-bmc-os-info gpm grub2-once haveged haveged-switch-root ipmi ipmievd
                    issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap nmb
                    nvmf-autoconnect ostree-remount rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@
```

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Platform Notes (Continued)

```
                    smartd_generate_opts smb snmpd snmptrapd speech-dispatcherd systemd-boot-check-no-failures
                    systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2
                    update-system-flatpaks upower vncserver@
  indirect          wickedd

     ----------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
  root=UUID=33f2c3ed-1c3e-4159-b154-b7e883376256
  splash=silent
  resume=/dev/disk/by-uuid/ecef48f6-00cb-4779-a5c9-e8cafbb1ac9e
  mitigations=auto
  quiet
  security=apparmor
  crashkernel=338M,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 "powersave" 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

     ----------------------------------------------------------
17. /sys/kernel/mm/transparent_hugepage/khugepaged
  alloc_sleep_millisecs   60000
  defrag                      1
```

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Platform Notes (Continued)

```
  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 SUSE Linux Enterprise Server 15 SP5

  ----------------------------------------------------------
  19. Disk information
  SPEC is set to: /home/cpu2017
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/nvme0n1p5 xfs   688G  468G  221G  68% /home

  ----------------------------------------------------------
  20. /sys/devices/virtual/dmi/id
      Vendor:         Supermicro
      Product:        Super Server
      Product Family: Family

  ----------------------------------------------------------
  21. dmidecode
    Additional information from dmidecode 3.4 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:
      32x SK Hynix HMCG94MEBRA123N 64 GB 2 rank 4800

  ----------------------------------------------------------
  22. BIOS
  (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:      American Megatrends International, LLC.
    BIOS Version:     1.5a
    BIOS Date:        12/18/2023
    BIOS Revision:    5.32
```

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 2023.2.3 Build x
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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_r(base)
```

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

Supermicro

SuperServer SYS-241H-TNRTTP
(X13QEH+ , Intel Xeon Platinum 8468H)

SPECrate®2017_int_base = 1630

SPECrate®2017_int_peak = Not Run

CPU2017 License: 001176	**Test Date:** Apr-2024
Test Sponsor: Supermicro	**Hardware Availability:** Dec-2023
Tested by: Supermicro	**Software Availability:** Dec-2023

Compiler Version Notes (Continued)

```
--------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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/home/specdev/new_compilers/ic2023.2.3/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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

(Continued on next page)

SPEC CPU®2017 Integer Rate Result

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Supermicro

SuperServer SYS-241H-TNRTTP
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SPECrate®2017_int_base =   1630

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CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

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

Base Optimization Flags (Continued)

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/home/specdev/new_compilers/ic2023.2.3/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/Supermicro-Platform-Settings-V1.2-SPR-revG.html
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SPR-revG.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-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 2024-04-24 18:20:44-0400.
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