SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Supermicro
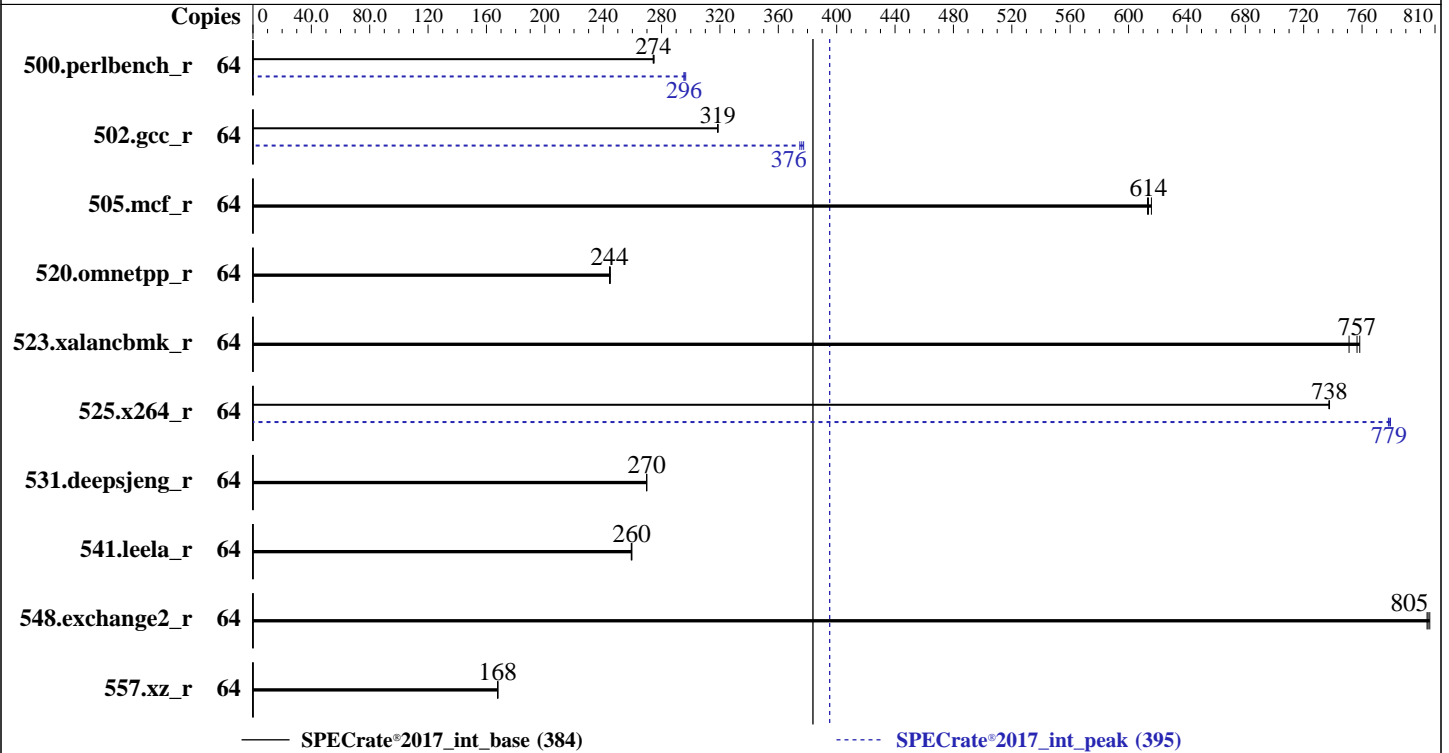
SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

$SPECrate^{®}2017\_int\_base = 384$

$SPECrate^{®}2017\_int\_peak = 395$

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

Test Date: Apr-2023
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Benchmark	Copies	Result
500.perlbench_r	64	274 / 296
502.gcc_r	64	319 / 376
505.mcf_r	64	614
520.omnetpp_r	64	244
523.xalancbmk_r	64	757
525.x264_r	64	738 / 779
531.deepsjeng_r	64	270
541.leela_r	64	260
548.exchange2_r	64	805
557.xz_r	64	168

SPECrate®2017_int_base (384)   SPECrate®2017_int_peak (395)

Hardware

CPU Name: Intel Xeon Gold 6444Y
 Max MHz: 4000
 Nominal: 3600
Enabled: 32 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: 45 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 1.0 TB SATA 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: Version 1.1 released Feb-2023
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 set to prefer performance at the cost of
 additional power usage.

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

CPU2017 License: 001176	**Test Date:** Apr-2023
Test Sponsor: Supermicro	**Hardware Availability:** Feb-2023
Tested by: Supermicro	**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	64	371	274	371	275	**371**	**274**	64	345	295	344	297	**345**	**296**
502.gcc_r	64	**284**	**319**	285	318	284	319	64	**241**	**376**	240	377	242	375
505.mcf_r	64	169	613	**169**	**614**	168	616	64	169	613	**169**	**614**	168	616
520.omnetpp_r	64	343	245	**344**	**244**	344	244	64	343	245	**344**	**244**	344	244
523.xalancbmk_r	64	89.1	758	**89.3**	**757**	90.0	751	64	89.1	758	**89.3**	**757**	90.0	751
525.x264_r	64	152	737	**152**	**738**	152	738	64	**144**	**779**	144	778	144	780
531.deepsjeng_r	64	**272**	**270**	272	270	272	270	64	**272**	**270**	272	270	272	270
541.leela_r	64	**408**	**260**	408	260	409	259	64	**408**	**260**	408	260	409	259
548.exchange2_r	64	208	805	**208**	**805**	208	806	64	208	805	**208**	**805**	208	806
557.xz_r	64	**412**	**168**	412	168	412	168	64	**412**	**168**	412	168	412	168

SPECrate®2017_int_base =	**384**
SPECrate®2017_int_peak =	**395**

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

Compiler Notes

```
SPEC has ruled that the compiler used for this result was performing a compilation
that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_s
benchmarks using a priori knowledge of the SPEC code and dataset to perform a
transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4
https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer
publish results using this optimization.

This result is left in the SPEC results database for historical reference.
```

Submit Notes

```
  The numactl mechanism was used to bind copies to processors. The config file option 'submit'
  was used to generate numactl commands to bind each copy to a specific processor.
  For details, please see the config file.
```

Operating System Notes

```
  Stack size set to unlimited using "ulimit -s unlimited"
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/lib/ia32:/home/cpu2017/je5.0.1-32"
MALLOC_CONF = "retain:true"
```

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

CPU2017 License: 001176　　　　　　　　　　　　　　　**Test Date:** Apr-2023
Test Sponsor: Supermicro　　　　　　　　　　　　　　**Hardware Availability:** Feb-2023
Tested by: Supermicro　　　　　　　　　　　　　　　　**Software Availability:** Dec-2022

General Notes

```
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3>        /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

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

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on 134-16 Mon Apr 24 10:57:47 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 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. 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
```

(Continued on next page)

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

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

Test Date: Apr-2023
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
  22. BIOS
  ------------------------------------------------------------

  ------------------------------------------------------------
  1. uname -a
    Linux 134-16 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
    10:57:47 up 0 min,  1 user,  load average: 0.65, 0.21, 0.07
    USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
    root     tty1     -                10:57   10.00s  0.93s  0.03s -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) 4125345
    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) 4125345
    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=64 -c
     ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=32 --define physicalfirst
     --define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=64 --configfile
     ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=32 --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/CPU2017.003/templogs/preenv.intrate.003.0.log --lognum 003.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
   $SPEC = /home/cpu2017

  ------------------------------------------------------------
  6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Gold 6444Y
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
```

(Continued on next page)

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Apr-2023

Hardware Availability: Feb-2023

Software Availability: Dec-2022

Platform Notes (Continued)

```
    stepping        : 7
    microcode       : 0x2b000161
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 16
    siblings        : 32
    2 physical ids (chips)
    64 processors (hardware threads)
    physical id 0: core ids 0-15
    physical id 1: core ids 0-15
    physical id 0: apicids 0-31
    physical id 1: apicids 128-159
  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:            46 bits physical, 57 bits virtual
    Byte Order:               Little Endian
    CPU(s):                   64
    On-line CPU(s) list:      0-63
    Vendor ID:                GenuineIntel
    Model name:               Intel(R) Xeon(R) Gold 6444Y
    CPU family:               6
    Model:                    143
    Thread(s) per core:       2
    Core(s) per socket:       16
    Socket(s):                2
    Stepping:                 7
    Frequency boost:          enabled
    CPU max MHz:              3601.0000
    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 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 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:                1.5 MiB (32 instances)
    L1i cache:                1 MiB (32 instances)
    L2 cache:                 64 MiB (32 instances)
    L3 cache:                 90 MiB (2 instances)
    NUMA node(s):             4
    NUMA node0 CPU(s):        0-7,32-39
```

(Continued on next page)

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

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

Test Date: Apr-2023
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
  NUMA node1 CPU(s):           8-15,40-47
  NUMA node2 CPU(s):           16-23,48-55
  NUMA node3 CPU(s):           24-31,56-63
  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     1.5M   12 Data          1    64       1            64
    L1i      32K      1M     8 Instruction   1    64       1            64
    L2        2M      64M    16 Unified      2  2048       1            64
    L3       45M      90M    15 Unified      3 49152       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: 0-7,32-39
  node 0 size: 257612 MB
  node 0 free: 256573 MB
  node 1 cpus: 8-15,40-47
  node 1 size: 258009 MB
  node 1 free: 257311 MB
  node 2 cpus: 16-23,48-55
  node 2 size: 258043 MB
  node 2 free: 257708 MB
  node 3 cpus: 24-31,56-63
  node 3 size: 257694 MB
  node 3 free: 257347 MB
  node distances:
  node   0   1   2   3
    0:  10  12  21  21
    1:  12  10  21  21
    2:  21  21  10  12
    3:  21  21  12  10


-------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056113004 kB


-------------------------------------------------------------
10. who -r
   run-level 3 Apr 24 10:57


-------------------------------------------------------------
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         YaST2-Firstboot YaST2-Second-Stage apparmor auditd bluetooth cron display-manager
```

(Continued on next page)

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

CPU2017 License: 001176	**Test Date:** Apr-2023
Test Sponsor: Supermicro	**Hardware Availability:** Feb-2023
Tested by: Supermicro	**Software Availability:** Dec-2022

Platform Notes (Continued)

```
                      firewalld getty@ haveged irqbalance iscsi issue-generator kbdsettings kdump kdump-early
                      klog lvm2-monitor nscd postfix purge-kernels rollback rsyslog smartd sshd wicked
                      wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
   enabled-runtime    systemd-remount-fs
   disabled           accounts-daemon appstream-sync-cache 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-switch-root
                      ipmi ipmievd iscsi-init iscsid iscsiuio issue-add-ssh-keys kexec-load lunmask
                      man-db-create multipathd nfs nfs-blkmap nmb ostree-remount rdisc rpcbind rpmconfigcheck
                      rsyncd rtkit-daemon serial-getty@ 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 upower
   indirect           wickedd

  ----------------------------------------------------------
  13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
    root=UUID=3cac3dd9-2d97-4eee-9b89-6679bbf9808b
    splash=silent
    mitigations=auto
    quiet
    security=apparmor
    crashkernel=320M,high
    crashkernel=72M,low

  ----------------------------------------------------------
  14. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 800 MHz and 3.60 GHz.
                      The governor "ondemand" 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
```

(Continued on next page)

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

CPU2017 License:	001176	**Test Date:**	Apr-2023
Test Sponsor:	Supermicro	**Hardware Availability:**	Feb-2023
Tested by:	Supermicro	**Software Availability:**	Dec-2022

Platform Notes (Continued)

```
  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
  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 SP4


  ----------------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu2017
  Filesystem     Type   Size  Used Avail Use% Mounted on
  /dev/sda2      btrfs  930G   22G  907G   3% /home


  ----------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
     Vendor:         Supermicro
     Product:        Super Server
     Product Family: Family
     Serial:         0123456789


  ----------------------------------------------------------------
21. 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:
    16x Micron Technology MTC40F2046S1RC48BA1 64 GB 2 rank 4800



  ----------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      1.1
   BIOS Date:         02/02/2023
   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.
--------------------------------------------------------------------------------
```

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

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

Test Date: Apr-2023
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Compiler Version Notes (Continued)

```
==================================================================================================
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
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------


==================================================================================================
C        | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
         | 557.xz_r(base, peak)
--------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------


==================================================================================================
C++      | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
         | 541.leela_r(base, peak)
--------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------


==================================================================================================
Fortran | 548.exchange2_r(base, peak)
--------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

SPEC CPU®2017 Integer Rate Result

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

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

Test Date: Apr-2023
Hardware Availability: Feb-2023
Software Availability: Dec-2022

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
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

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

Fortran benchmarks:
```
ifx
```

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

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

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

Test Date: Apr-2023
Hardware Availability: Feb-2023
Software Availability: Dec-2022

Peak Portability Flags

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

Peak Optimization Flags

C benchmarks:

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

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

505.mcf_r: `basepeak = yes`

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

557.xz_r: `basepeak = yes`

C++ benchmarks:

(Continued on next page)

Supermicro

SuperServer SYS-621C-TN12R
(X13DDW-A , Intel Xeon Gold 6444Y)

SPECrate®2017_int_base = 384

SPECrate®2017_int_peak = 395

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Apr-2023

Hardware Availability: Feb-2023

Software Availability: Dec-2022

Peak Optimization Flags (Continued)

520.omnetpp_r: `basepeak = yes`

523.xalancbmk_r: `basepeak = yes`

531.deepsjeng_r: `basepeak = yes`

541.leela_r: `basepeak = yes`

Fortran benchmarks:

548.exchange2_r: `basepeak = yes`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SPR-revC.2023-05-23.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SPR-revC.2023-05-23.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 2023-04-24 13:57:47-0400.
Report generated on 2024-01-29 17:42:47 by CPU2017 PDF formatter v6716.
Originally published on 2023-05-23.