



SPEC CPU®2017 Integer Rate Result

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xFusion

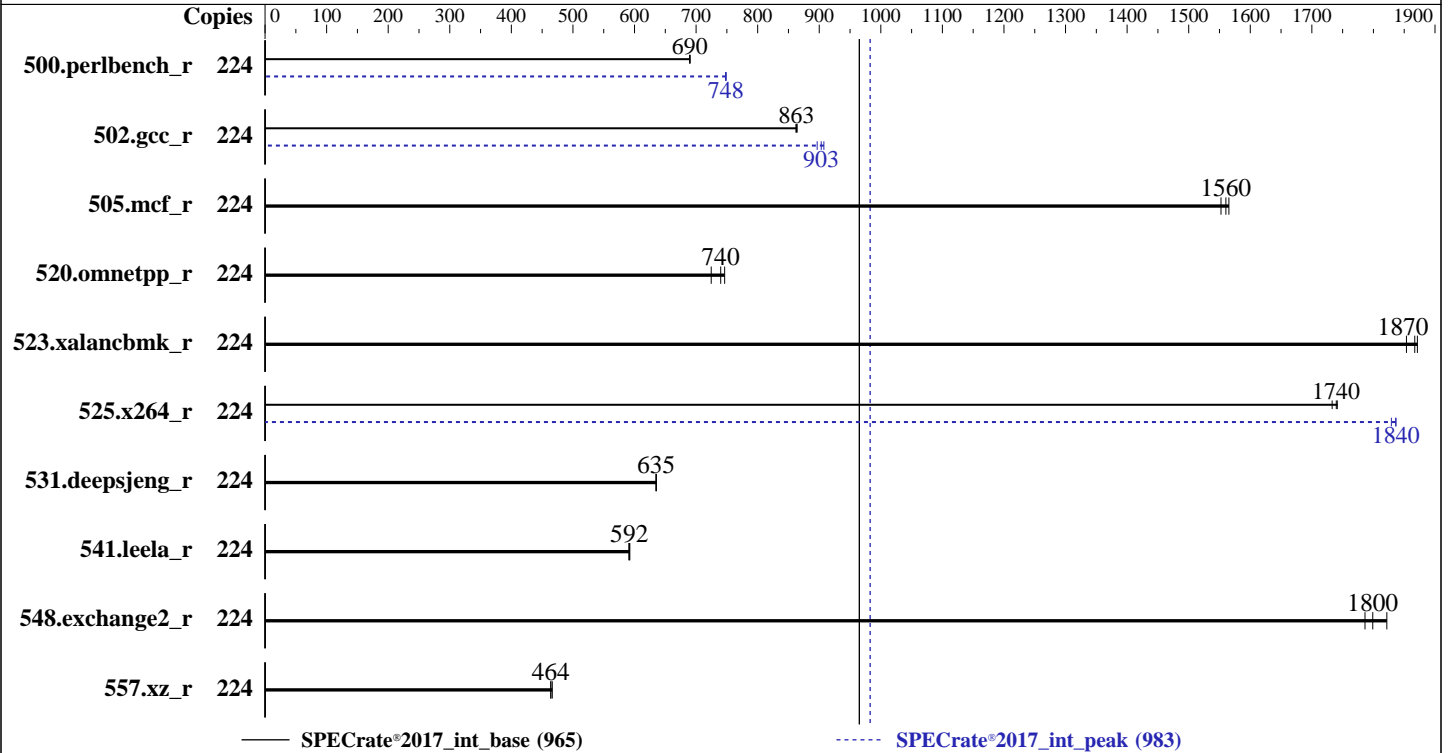
SPECrate®2017_int_base = 965

FusionServer 5885H V7 (Intel Xeon Platinum 8450H)

SPECrate®2017_int_peak = 983

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

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



Hardware

CPU Name: Intel Xeon Platinum 8450H
Max MHz: 3500
Nominal: 2000
Enabled: 112 cores, 4 chips, 2 threads/core
Orderable: 1,2,4 chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 75 MB I+D on chip per chip
Other: None
Memory: 1 TB (32 x 32 GB 2Rx8 PC5-4800B-R)
Storage: 1 x 960 GB SATA SSD
Other: None

Software

OS: Red Hat Enterprise Linux release 9.0 (Plow)
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: Version 2.00.34 Released Apr-2023
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance at the cost
of additional power usage



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Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|-----------------|--------|------------|-------------|------------|-------------|------------|-------------|--------|------------|-------------|------------|-------------|------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 500.perlbench_r | 224 | 517 | 690 | 517 | 689 | 517 | 690 | 224 | 476 | 749 | 477 | 748 | 477 | 748 |
| 502.gcc_r | 224 | 368 | 863 | 368 | 862 | 367 | 864 | 224 | 349 | 908 | 354 | 897 | 351 | 903 |
| 505.mcf_r | 224 | 232 | 1560 | 233 | 1550 | 231 | 1570 | 224 | 232 | 1560 | 233 | 1550 | 231 | 1570 |
| 520.omnetpp_r | 224 | 397 | 740 | 394 | 746 | 406 | 725 | 224 | 397 | 740 | 394 | 746 | 406 | 725 |
| 523.xalancbmk_r | 224 | 128 | 1850 | 127 | 1870 | 126 | 1870 | 224 | 128 | 1850 | 127 | 1870 | 126 | 1870 |
| 525.x264_r | 224 | 226 | 1730 | 225 | 1740 | 225 | 1740 | 224 | 214 | 1840 | 214 | 1830 | 214 | 1840 |
| 531.deepsjeng_r | 224 | 404 | 635 | 404 | 635 | 404 | 635 | 224 | 404 | 635 | 404 | 635 | 404 | 635 |
| 541.leela_r | 224 | 627 | 592 | 628 | 591 | 626 | 592 | 224 | 627 | 592 | 628 | 591 | 626 | 592 |
| 548.exchange2_r | 224 | 322 | 1820 | 326 | 1800 | 329 | 1790 | 224 | 322 | 1820 | 326 | 1800 | 329 | 1790 |
| 557.xz_r | 224 | 519 | 466 | 521 | 464 | 521 | 464 | 224 | 519 | 466 | 521 | 464 | 521 | 464 |

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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/Uniautos/cpu2017/lib/intel64:/home/Uniautos/cpu2017/lib/ia32:/home/Uniautos/cpu2017/je5.0.1-32"

MALLOC_CONF = "retain:true"



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General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
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 configuration:
Performance Profile Set to Performance
SNC Set to Enable SNC4 (4-clusters)

Sysinfo program /home/Uniautos/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Thu Jun 15 20:50:00 2023

SUT (System Under Test) info as seen by some common utilities.

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Platform Notes (Continued)

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`
20:50:00 up 1 min, 0 users, load average: 0.37, 0.20, 0.08
USER TTY LOGIN@ IDLE JCPU PCPU WHAT

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) 4125124
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) 4125124
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

5. `sysinfo process ancestry`
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
/bin/sh ./run_rate.sh
runcpu --define default-platform-flags --copies 224 -c ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=112 --define physicalfirst --define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
runcpu --define default-platform-flags --copies 224 --configfile ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=112 --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/CPU2017.026/templogs/preenv.intrate.026.0.log --lognum 026.0 --from_runcpu 2
specperl \$SPEC/bin/sysinfo
\$SPEC = /home/Uniautos/cpu2017

6. `/proc/cpuinfo`
model name : Intel(R) Xeon(R) Platinum 8450H
vendor_id : GenuineIntel
cpu family : 6
model : 143
stepping : 8
microcode : 0x2b0001b0
bugs : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores : 28
siblings : 56

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Platform Notes (Continued)

4 physical ids (chips)
224 processors (hardware threads)
physical id 0: core ids 0-27
physical id 1: core ids 0-27
physical id 2: core ids 0-27
physical id 3: core ids 0-27
physical id 0: apicids 0-55
physical id 1: apicids 128-183
physical id 2: apicids 256-311
physical id 3: apicids 384-439

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):                224
On-line CPU(s) list:  0-223
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Platinum 8450H
BIOS Model name:      Intel(R) Xeon(R) Platinum 8450H
CPU family:            6
Model:                 143
Thread(s) per core:   2
Core(s) per socket:   28
Socket(s):              4
Stepping:              8
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 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 bmil 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:             5.3 MiB (112 instances)
L1i cache:             3.5 MiB (112 instances)
L2 cache:              224 MiB (112 instances)
L3 cache:              300 MiB (4 instances)
NUMA node(s):         16
NUMA node0 CPU(s):    0-6,112-118
NUMA node1 CPU(s):    7-13,119-125
NUMA node2 CPU(s):    14-20,126-132
```

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Platform Notes (Continued)

```

NUMA node3 CPU(s):          21-27,133-139
NUMA node4 CPU(s):          28-34,140-146
NUMA node5 CPU(s):          35-41,147-153
NUMA node6 CPU(s):          42-48,154-160
NUMA node7 CPU(s):          49-55,161-167
NUMA node8 CPU(s):          56-62,168-174
NUMA node9 CPU(s):          63-69,175-181
NUMA node10 CPU(s):         70-76,182-188
NUMA node11 CPU(s):         77-83,189-195
NUMA node12 CPU(s):         84-90,196-202
NUMA node13 CPU(s):         91-97,203-209
NUMA node14 CPU(s):         98-104,210-216
NUMA node15 CPU(s):         105-111,217-223
Vulnerability Itlb multihit: Not affected
Vulnerability Lltf:         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/swaps 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 | 5.3M | 12 | Data | 1 | 64 | 1 | 64 |
| L1i | 32K | 3.5M | 8 | Instruction | 1 | 64 | 1 | 64 |
| L2 | 2M | 224M | 16 | Unified | 2 | 2048 | 1 | 64 |
| L3 | 75M | 300M | 15 | Unified | 3 | 81920 | 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: 0-6,112-118
node 0 size: 63741 MB
node 0 free: 63063 MB
node 1 cpus: 7-13,119-125
node 1 size: 64508 MB
node 1 free: 63847 MB
node 2 cpus: 14-20,126-132
node 2 size: 64508 MB
node 2 free: 64024 MB
node 3 cpus: 21-27,133-139
node 3 size: 64508 MB
node 3 free: 63503 MB
node 4 cpus: 28-34,140-146
node 4 size: 64508 MB
node 4 free: 64248 MB
node 5 cpus: 35-41,147-153
node 5 size: 64472 MB
node 5 free: 64227 MB
node 6 cpus: 42-48,154-160
node 6 size: 64508 MB
node 6 free: 64250 MB
node 7 cpus: 49-55,161-167
node 7 size: 64508 MB
node 7 free: 64265 MB
node 8 cpus: 56-62,168-174
node 8 size: 64508 MB

```

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Platform Notes (Continued)

```

node 8 free: 64263 MB
node 9 cpus: 63-69,175-181
node 9 size: 64508 MB
node 9 free: 64244 MB
node 10 cpus: 70-76,182-188
node 10 size: 64508 MB
node 10 free: 64261 MB
node 11 cpus: 77-83,189-195
node 11 size: 64508 MB
node 11 free: 64282 MB
node 12 cpus: 84-90,196-202
node 12 size: 64508 MB
node 12 free: 64259 MB
node 13 cpus: 91-97,203-209
node 13 size: 64508 MB
node 13 free: 64281 MB
node 14 cpus: 98-104,210-216
node 14 size: 64508 MB
node 14 free: 64339 MB
node 15 cpus: 105-111,217-223
node 15 size: 64489 MB
node 15 free: 64207 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 12 10 21 21 21 21 21 21 21 21 21 21 21
4:  21 21 21 21 10 12 12 12 12 21 21 21 21 21 21 21
5:  21 21 21 21 12 10 12 12 12 21 21 21 21 21 21 21
6:  21 21 21 21 12 12 10 12 12 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:      1056070020 kB

```

```

-----
10. who -r
run-level 3 Jun 15 20:48

```

```

-----
11. Systemd service manager version: systemd 250 (250-6.el9_0)
Default Target Status
multi-user      degraded

```

```

-----
12. Failed units, from systemctl list-units --state=failed
UNIT          LOAD ACTIVE SUB    DESCRIPTION
* sep5.service loaded failed failed systemd script to load sep5 driver at boot time

```

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Platform Notes (Continued)

13. 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 mdmonitor microcode nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sep5 sshd sssd systemd-network-generator tuned udisks2 |
| enabled-runtime | systemd-remount-fs |
| disabled | chrony-wait console-getty cpupower debug-shell kvm_stat man-db-restart-cache-update nftables 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 |

14. Linux kernel boot-time arguments, from `/proc/cmdline`
 BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
 root=UUID=058bfd1-c62b-4fad-8d41-5c40aa179007
 ro
 crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
 resume=UUID=b47f1685-a5fa-4d39-b2d7-e3f6e95ad499
 nohz_full=1-479

15. `cpupower frequency-info`
 analyzing CPU 0:
 Unable to determine current policy
 boost state support:
 Supported: yes
 Active: yes

16. `tuned-adm active`
 Current active profile: `throughput-performance`

17. `sysctl`

| | |
|---|-------|
| <code>kernel.numa_balancing</code> | 1 |
| <code>kernel.randomize_va_space</code> | 2 |
| <code>vm.compaction_proactiveness</code> | 20 |
| <code>vm.dirty_background_bytes</code> | 0 |
| <code>vm.dirty_background_ratio</code> | 10 |
| <code>vm.dirty_bytes</code> | 0 |
| <code>vm.dirty_expire_centisecs</code> | 3000 |
| <code>vm.dirty_ratio</code> | 40 |
| <code>vm.dirty_writeback_centisecs</code> | 500 |
| <code>vm.dirtytime_expire_seconds</code> | 43200 |
| <code>vm.extfrag_threshold</code> | 500 |
| <code>vm.min_unmapped_ratio</code> | 1 |
| <code>vm.nr_hugepages</code> | 0 |
| <code>vm.nr_hugepages_mempolicy</code> | 0 |
| <code>vm.nr_overcommit_hugepages</code> | 0 |
| <code>vm.swappiness</code> | 10 |
| <code>vm.watermark_boost_factor</code> | 15000 |
| <code>vm.watermark_scale_factor</code> | 10 |
| <code>vm.zone_reclaim_mode</code> | 0 |

18. `/sys/kernel/mm/transparent_hugepage`
`defrag` always defer defer+madvice [madvice] never
`enabled` [always] madvice never
`hpage_pmd_size` 2097152
`shmem_enabled` always within_size advise [never] deny force

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```
-----
19. /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
-----
```

```
-----
20. 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)
-----
```

```
-----
21. Disk information
   SPEC is set to: /home/Uniautos/cpu2017
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda5       xfs   820G 189G 632G  23% /home
-----
```

```
-----
22. /sys/devices/virtual/dmi/id
   Vendor:          XFUSION
   Product:         5885H V7
   Product Family:  EagleStream
-----
```

```
-----
23. 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:
     32x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800
-----
```

```
-----
24. BIOS
   (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:      XFUSION
   BIOS Version:     2.00.34
   BIOS Date:        04/18/2023
-----
```

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
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=====
C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
 | 557.xz_r(base, peak)

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

xFusion

SPECrate®2017_int_base = 965

FusionServer 5885H V7 (Intel Xeon Platinum 8450H)

SPECrate®2017_int_peak = 983

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

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

Compiler Version Notes (Continued)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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=====
C | 502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201
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=====
C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
| 557.xz_r(base, peak)

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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=====
Fortran | 548.exchange2_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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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

(Continued on next page)



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Test Sponsor: xFusion
Tested by: xFusion

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

Base Portability Flags (Continued)

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



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SPECrate®2017_int_peak = 983

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Jun-2023
Hardware Availability: Apr-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.profddata(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.profddata(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)



SPEC CPU®2017 Integer Rate Result

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xFusion

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SPECrate®2017_int_peak = 983

CPU2017 License: 6488

Test Sponsor: xFusion

Tested by: xFusion

Test Date: Jun-2023

Hardware Availability: Apr-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/xFusion-Platform-Settings-SPR-V1.1-revC.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/xFusion-Platform-Settings-SPR-V1.1-revC.xml>

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

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