



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd.
TS860G7 (Intel Xeon Platinum 8490H)

SPECrate®2017_int_base = 3940
SPECrate®2017_int_peak = Not Run

CPU2017 License: 3358

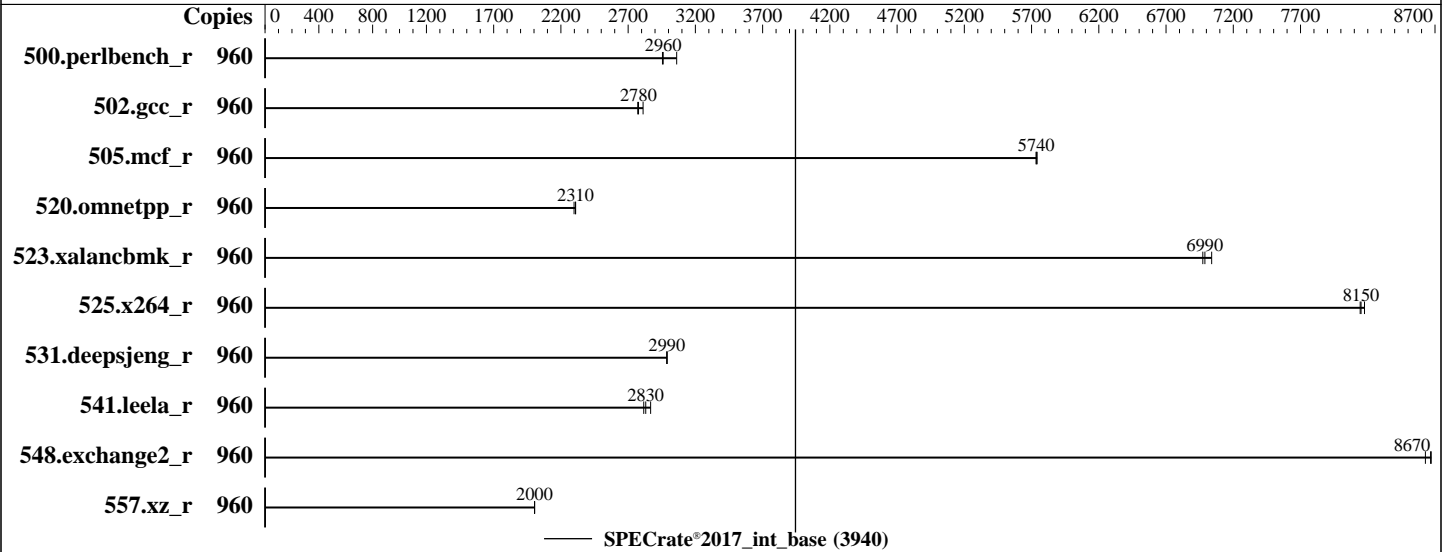
Test Sponsor: Inspur Electronic Information Industry Co., Ltd.

Tested by: Inspur Electronic Information Industry Co., Ltd.

Test Date: Jun-2023

Hardware Availability: Jul-2023

Software Availability: Dec-2022



Hardware

CPU Name: Intel Xeon Platinum 8490H
 Max MHz: 3500
 Nominal: 1900
 Enabled: 480 cores, 8 chips, 2 threads/core
 Orderable: 2,4,8 chips
 Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 112.5 MB I+D on chip per chip
 Other: None
 Memory: 2 TB (64 x 32 GB 2Rx4 PC5-4800B-R)
 Storage: 1 x 3.2 TB NVME SSD
 Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
 5.14.0-70.22.1.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 05.00.00 released Apr-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.



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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	960	516	2960	499	3060	517	2960									
502.gcc_r	960	484	2810	489	2780	490	2770									
505.mcf_r	960	271	5730	270	5740	270	5740									
520.omnetpp_r	960	545	2310	548	2300	545	2310									
523.xalancbmk_r	960	145	6970	145	6990	144	7040									
525.x264_r	960	206	8150	206	8140	206	8180									
531.deepsjeng_r	960	368	2990	368	2990	368	2990									
541.leela_r	960	562	2830	565	2820	554	2870									
548.exchange2_r	960	290	8670	290	8670	291	8630									
557.xz_r	960	517	2000	517	2000	517	2000									

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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/19cpu2017/lib/intel64:/home/19cpu2017/lib/ia32:/home/19cpu2017/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.

Platform Notes

BIOS configuration:
ENERGY_PERF_BIAS_CFG mode set to Performance
Hardware Prefetch set to Disable
VT Support set to Disable
Sub NUMA Cluster (SNC) set to SNC4

Sysinfo program /home/l9cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Thu Aug 3 15:30:41 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)
12. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. tuned-adm active
17. sysctl
18. /sys/kernel/mm/transparent_hugepage
19. /sys/kernel/mm/transparent_hugepage/khugepaged
20. OS release
21. Disk information
22. /sys/devices/virtual/dmi/id
23. dmidecode
24. BIOS

(Continued on next page)



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Platform Notes (Continued)

```
-----
1. uname -a
Linux localhost.localdomain 5.14.0-70.22.1.el9_0.x86_64 #1 SMP PREEMPT Tue Aug 2 10:02:12 EDT 2022 x86_64
x86_64 x86_64 GNU/Linux
-----
```

```
-----
2. w
15:30:41 up 3 min, 1 user, load average: 24.22, 23.47, 9.94
USER      TTY      LOGIN@   IDLE   JCPU   PCPU   WHAT
root      tty1     11:27    9.00s  1.34s  0.03s  -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) 8254452
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) 8254452
virtual memory                (kbytes, -v) unlimited
file locks                    (-x) unlimited
-----
```

```
-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 28
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=960 -c
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=480 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base -o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=960 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=480 --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/CPU2017.021/templogs/preenv.intrate.021.0.log --lognum 021.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/19cpu2017
-----
```

```
-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Platinum 8490H
vendor_id      : GenuineIntel
cpu family      : 6
model           : 143
stepping       : 6
-----
```

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Platform Notes (Continued)

```

microcode      : 0x2b0001b0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 60
siblings       : 120
8 physical ids (chips)
960 processors (hardware threads)
physical id 0: core ids 0-59
physical id 1: core ids 0-59
physical id 2: core ids 0-59
physical id 3: core ids 0-59
physical id 4: core ids 0-59
physical id 5: core ids 0-59
physical id 6: core ids 0-59
physical id 7: core ids 0-59
physical id 0: apicids 0-119
physical id 1: apicids 128-247
physical id 2: apicids 256-375
physical id 3: apicids 384-503
physical id 4: apicids 512-631
physical id 5: apicids 640-759
physical id 6: apicids 768-887
physical id 7: apicids 896-1015

```

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:         52 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                960
On-line CPU(s) list:  0-959
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Platinum 8490H
BIOS Model name:      Intel(R) Xeon(R) Platinum 8490H
CPU family:            6
Model:                 143
Thread(s) per core:   2
Core(s) per socket:   60
Socket(s):             8
Stepping:              6
CPU max MHz:          3500.0000
CPU min MHz:          800.0000
BogoMIPS:              3800.00
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
                      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 fsgsbase
                      tsc_adjust bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq
                      rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni
                      avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc
                      cqm_mbm_total cqm_mbm_local split_lock_detect avx_vnni avx512_bf16

```

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Platform Notes (Continued)

wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req
avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes vpcmlulqdg
avx512_vnni avx512_bitalg tme avx512_vpoptndq la57 rdpid bus_lock_detect
cldemote movdiri movdir64b enqcmd fsrm md_clear serialize tsxldtrk pconfig
arch_lbr avx512_fp16 amx_tile flush_llid arch_capabilities

L1d cache: 22.5 MiB (480 instances)

L1i cache: 15 MiB (480 instances)

L2 cache: 960 MiB (480 instances)

L3 cache: 900 MiB (8 instances)

NUMA node(s): 32

NUMA node0 CPU(s): 0-14,480-494

NUMA node1 CPU(s): 15-29,495-509

NUMA node2 CPU(s): 30-44,510-524

NUMA node3 CPU(s): 45-59,525-539

NUMA node4 CPU(s): 60-74,540-554

NUMA node5 CPU(s): 75-89,555-569

NUMA node6 CPU(s): 90-104,570-584

NUMA node7 CPU(s): 105-119,585-599

NUMA node8 CPU(s): 120-134,600-614

NUMA node9 CPU(s): 135-149,615-629

NUMA node10 CPU(s): 150-164,630-644

NUMA node11 CPU(s): 165-179,645-659

NUMA node12 CPU(s): 180-194,660-674

NUMA node13 CPU(s): 195-209,675-689

NUMA node14 CPU(s): 210-224,690-704

NUMA node15 CPU(s): 225-239,705-719

NUMA node16 CPU(s): 240-254,720-734

NUMA node17 CPU(s): 255-269,735-749

NUMA node18 CPU(s): 270-284,750-764

NUMA node19 CPU(s): 285-299,765-779

NUMA node20 CPU(s): 300-314,780-794

NUMA node21 CPU(s): 315-329,795-809

NUMA node22 CPU(s): 330-344,810-824

NUMA node23 CPU(s): 345-359,825-839

NUMA node24 CPU(s): 360-374,840-854

NUMA node25 CPU(s): 375-389,855-869

NUMA node26 CPU(s): 390-404,870-884

NUMA node27 CPU(s): 405-419,885-899

NUMA node28 CPU(s): 420-434,900-914

NUMA node29 CPU(s): 435-449,915-929

NUMA node30 CPU(s): 450-464,930-944

NUMA node31 CPU(s): 465-479,945-959

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/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	22.5M	12	Data	1	64	1	64
L1i	32K	15M	8	Instruction	1	64	1	64
L2	2M	960M	16	Unified	2	2048	1	64
L3	112.5M	900M	15	Unified	3	122880	1	64

(Continued on next page)



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Platform Notes (Continued)

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```

available: 32 nodes (0-31)
node 0 cpus: 0-14,480-494
node 0 size: 64063 MB
node 0 free: 63681 MB
node 1 cpus: 15-29,495-509
node 1 size: 64505 MB
node 1 free: 64234 MB
node 2 cpus: 30-44,510-524
node 2 size: 64505 MB
node 2 free: 64228 MB
node 3 cpus: 45-59,525-539
node 3 size: 64505 MB
node 3 free: 64258 MB
node 4 cpus: 60-74,540-554
node 4 size: 64505 MB
node 4 free: 64247 MB
node 5 cpus: 75-89,555-569
node 5 size: 64505 MB
node 5 free: 64243 MB
node 6 cpus: 90-104,570-584
node 6 size: 64505 MB
node 6 free: 64236 MB
node 7 cpus: 105-119,585-599
node 7 size: 64505 MB
node 7 free: 64256 MB
node 8 cpus: 120-134,600-614
node 8 size: 64505 MB
node 8 free: 64249 MB
node 9 cpus: 135-149,615-629
node 9 size: 64505 MB
node 9 free: 64259 MB
node 10 cpus: 150-164,630-644
node 10 size: 64469 MB
node 10 free: 64212 MB
node 11 cpus: 165-179,645-659
node 11 size: 64505 MB
node 11 free: 64225 MB
node 12 cpus: 180-194,660-674
node 12 size: 64505 MB
node 12 free: 64193 MB
node 13 cpus: 195-209,675-689
node 13 size: 64505 MB
node 13 free: 63667 MB
node 14 cpus: 210-224,690-704
node 14 size: 64505 MB
node 14 free: 63309 MB
node 15 cpus: 225-239,705-719
node 15 size: 64505 MB
node 15 free: 64178 MB
node 16 cpus: 240-254,720-734
node 16 size: 64505 MB
node 16 free: 64245 MB
node 17 cpus: 255-269,735-749
node 17 size: 64505 MB
node 17 free: 64201 MB
node 18 cpus: 270-284,750-764
node 18 size: 64505 MB
node 18 free: 64249 MB

```

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Platform Notes (Continued)

```

node 19 cpus: 285-299,765-779
node 19 size: 64505 MB
node 19 free: 64255 MB
node 20 cpus: 300-314,780-794
node 20 size: 64505 MB
node 20 free: 64194 MB
node 21 cpus: 315-329,795-809
node 21 size: 64505 MB
node 21 free: 64222 MB
node 22 cpus: 330-344,810-824
node 22 size: 64505 MB
node 22 free: 64121 MB
node 23 cpus: 345-359,825-839
node 23 size: 64505 MB
node 23 free: 64221 MB
node 24 cpus: 360-374,840-854
node 24 size: 64505 MB
node 24 free: 64242 MB
node 25 cpus: 375-389,855-869
node 25 size: 64505 MB
node 25 free: 64260 MB
node 26 cpus: 390-404,870-884
node 26 size: 64505 MB
node 26 free: 64238 MB
node 27 cpus: 405-419,885-899
node 27 size: 64505 MB
node 27 free: 64215 MB
node 28 cpus: 420-434,900-914
node 28 size: 64505 MB
node 28 free: 63193 MB
node 29 cpus: 435-449,915-929
node 29 size: 64505 MB
node 29 free: 64234 MB
node 30 cpus: 450-464,930-944
node 30 size: 64505 MB
node 30 free: 64242 MB
node 31 cpus: 465-479,945-959
node 31 size: 64458 MB
node 31 free: 63252 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31
0: 10 12 12 12 12 21 21 21 21 21 21 21 31 31 31 31 31 31 31 31 21 21 21 21 21
21 21 21 31 31 31 31
1: 12 10 12 12 21 21 21 21 21 21 21 31 31 31 31 31 31 31 31 21 21 21 21 21
21 21 21 31 31 31 31
2: 12 12 10 12 21 21 21 21 21 21 21 31 31 31 31 31 31 31 31 21 21 21 21 21
21 21 21 31 31 31 31
3: 12 12 12 10 21 21 21 21 21 21 21 31 31 31 31 31 31 31 31 21 21 21 21 21
21 21 21 31 31 31 31
4: 21 21 21 21 21 10 12 12 12 31 31 31 31 21 21 21 21 21 21 21 31 31 31 31 31
31 31 31 21 21 21 21
5: 21 21 21 21 21 12 10 12 12 31 31 31 31 21 21 21 21 21 21 21 31 31 31 31 31
31 31 31 21 21 21 21
6: 21 21 21 21 21 12 12 10 12 31 31 31 31 21 21 21 21 21 21 21 31 31 31 31 31
31 31 31 21 21 21 21
7: 21 21 21 21 21 12 12 12 10 31 31 31 31 21 21 21 21 21 21 21 31 31 31 31 31
31 31 31 21 21 21 21
8: 21 21 21 21 31 31 31 31 10 12 12 12 21 21 21 21 21 21 21 31 31 31 31 31
31 31 31 21 21 21 21

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(Continued on next page)



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Platform Notes (Continued)

```

9:  21  21  21  21  31  31  31  31  12  10  12  12  21  21  21  21  21  21  21  31  31  31  31  31
31  31  31  21  21  21  21
10: 21  21  21  21  21  31  31  31  31  12  12  10  12  21  21  21  21  21  21  21  31  31  31  31  31
31  31  31  21  21  21  21
11: 21  21  21  21  31  31  31  31  12  12  12  10  21  21  21  21  21  21  21  31  31  31  31  31
31  31  31  21  21  21  21
12: 31  31  31  31  31  21  21  21  21  21  21  21  10  12  12  12  31  31  31  31  21  21  21  21  21
21  21  21  31  31  31  31
13: 31  31  31  31  31  21  21  21  21  21  21  21  12  10  12  12  31  31  31  31  21  21  21  21  21
21  21  21  31  31  31  31
14: 31  31  31  31  31  21  21  21  21  21  21  21  12  12  10  12  31  31  31  31  21  21  21  21  21
21  21  21  31  31  31  31
15: 31  31  31  31  31  21  21  21  21  21  21  12  12  12  10  31  31  31  31  21  21  21  21  21
21  21  21  31  31  31  31
16: 31  31  31  31  21  21  21  21  21  21  21  31  31  31  31  10  12  12  12  21  21  21  21  21
21  21  21  31  31  31  31
17: 31  31  31  31  31  21  21  21  21  21  21  31  31  31  31  12  10  12  12  21  21  21  21  21
21  21  21  31  31  31  31
18: 31  31  31  31  21  21  21  21  21  21  31  31  31  31  12  12  10  12  21  21  21  21  21
21  21  21  31  31  31  31
19: 31  31  31  31  31  21  21  21  21  21  31  31  31  31  12  12  12  10  21  21  21  21  21
21  21  21  31  31  31  31
20: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  10  12  12  12  31
31  31  31  21  21  21  21
21: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  12  10  12  12  31
31  31  31  21  21  21  21
22: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  12  12  10  12  31
31  31  31  21  21  21  21
23: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  12  12  12  10  31
31  31  31  21  21  21  21
24: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  10
12  12  12  21  21  21  21
25: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12
10  12  12  21  21  21  21
26: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12
12  10  12  21  21  21  21
27: 21  21  21  21  31  31  31  31  31  31  21  21  21  21  21  21  21  21  31  31  31  31  12
12  12  10  21  21  21  21
28: 31  31  31  31  21  21  21  21  21  21  31  31  31  31  31  31  31  31  31  21  21  21  21  21
21  21  21  10  12  12  12
29: 31  31  31  31  21  21  21  21  21  21  31  31  31  31  31  31  31  31  31  21  21  21  21  21
21  21  21  12  10  12  12
30: 31  31  31  31  21  21  21  21  21  21  31  31  31  31  31  31  31  31  31  21  21  21  21  21
21  21  21  12  12  10  12
31: 31  31  31  31  21  21  21  21  21  21  31  31  31  31  31  31  31  31  21  21  21  21  21
21  21  21  12  12  12  10

```

```

-----
9. /proc/meminfo
   MemTotal:      2113180368 kB

```

```

-----
10. who -r
    run-level 3 Aug 3 11:27

```

```

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

```

(Continued on next page)



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TS860G7 (Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = Not Run

CPU2017 License: 3358

Test Date: Jun-2023

Test Sponsor: Inspur Electronic Information Industry Co., Ltd.

Hardware Availability: Jul-2023

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Software Availability: Dec-2022

Platform Notes (Continued)

12. Failed units, from systemctl list-units --state=failed

UNIT	LOAD	ACTIVE	SUB	DESCRIPTION
* NetworkManager-wait-online.service	loaded	failed	failed	Network Manager Wait Online

13. Services, from systemctl list-unit-files

STATE	UNIT	FILES
enabled	NetworkManager	NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond dbus-broker firewalld getty@ kdump lvm2-monitor mdmonitor microcode nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sshd sssd systemd-network-generator tuned udisks2 upower
enabled-runtime	systemd-remount-fs	
disabled	blk-availability canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot chrony-wait console-getty cpupower debug-shell irqbalance 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 sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo	
indirect		

14. Linux kernel boot-time arguments, from /proc/cmdline

BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.22.1.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

15. cpupower frequency-info

analyzing CPU 0:
current policy: frequency should be within 800 MHz and 3.50 GHz.
The governor "performance" may decide which speed to use
within this range.
boost state support:
Supported: yes
Active: yes

16. tuned-adm active

Current active profile: throughput-performance

17. sysctl

kernel.numa_balancing	1
kernel.randomize_va_space	2
vm.compaction_proactiveness	20
vm.dirty_background_bytes	0
vm.dirty_background_ratio	10
vm.dirty_bytes	0
vm.dirty_expire_centisecs	3000
vm.dirty_ratio	40
vm.dirty_writeback_centisecs	500
vm.dirtytime_expire_seconds	43200
vm.extfrag_threshold	500
vm.min_unmapped_ratio	1
vm.nr_hugepages	0
vm.nr_hugepages_mempolicy	0
vm.nr_overcommit_hugepages	0
vm.swappiness	10

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Platform Notes (Continued)

```

vm.watermark_boost_factor      15000
vm.watermark_scale_factor      10
vm.zone_reclaim_mode           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

```

```

-----
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/19cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   2.9T  598G  2.3T  21% /home

```

```

-----
22. /sys/devices/virtual/dmi/id
Vendor:          IEI
Product:         TS860G7
Product Family: Not specified
Serial:          000000000

```

```

-----
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:
  64x Samsung M321R4GA3BB6-CQKEG 32 GB 2 rank 4800

```

```

-----
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      American Megatrends International, LLC.
BIOS Version:     05.00.00
BIOS Date:        04/07/2023

```



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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
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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

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



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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
```

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/Inspur-Platform-Settings-intel-V3.2.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/Inspur-Platform-Settings-intel-V3.2.xml>

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