



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

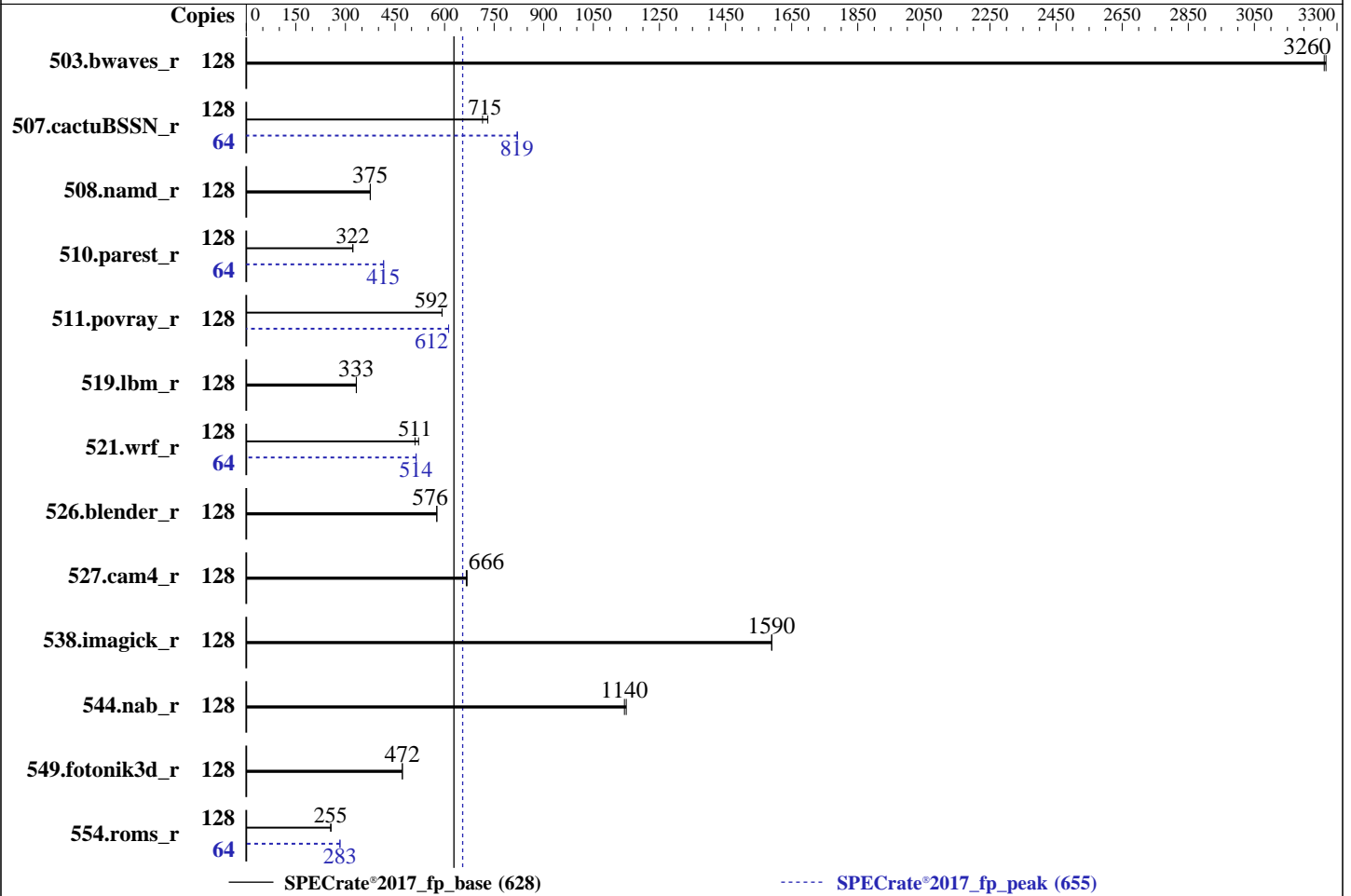
Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Dec-2022



Hardware

CPU Name: Intel Xeon Gold 6430
 Max MHz: 3400
 Nominal: 2100
 Enabled: 64 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: 60 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R, running at 4400)
 Storage: 80 GB on tmpfs
 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 1.3.2 released Mar-2023
 File System: tmpfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 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.



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	128	393	3270	394	3260			128	393	3270	394	3260		
507.cactuBSSN_r	128	227	715	222	731			64	98.7	821	98.9	819		
508.namd_r	128	324	375	324	375			128	324	375	324	375		
510.parest_r	128	1037	323	1040	322			64	403	416	403	415		
511.povray_r	128	505	592	504	592			128	488	612	488	612		
519.lbm_r	128	405	333	405	333			128	405	333	405	333		
521.wrf_r	128	550	521	562	511			64	279	514	279	514		
526.blender_r	128	338	577	338	576			128	338	577	338	576		
527.cam4_r	128	336	666	335	668			128	336	666	335	668		
538.imagick_r	128	200	1590	200	1590			128	200	1590	200	1590		
544.nab_r	128	187	1150	188	1140			128	187	1150	188	1140		
549.fotonik3d_r	128	1056	472	1056	472			128	1056	472	1056	472		
554.roms_r	128	793	257	798	255			64	359	283	359	284		

SPECrate®2017_fp_base = **628**

SPECrate®2017_fp_peak = **655**

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 =  
    "/mnt/ramdisk/cpu2017-1.1.9-ic2023.0/lib/intel64:/mnt/ramdisk/cpu2017-1.1.9-ic2023.0/je5.0.1-64"  
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>
jemalloc, a general purpose malloc implementation

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Dec-2022

General Notes (Continued)

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>

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.

Benchmark run from a 80 GB ramdisk created with the cmd: "mount -t tmpfs -o size=80G tmpfs /mnt/ramdisk"

Platform Notes

BIOS settings:

```

      ADDDC Setting : Disabled
      DIMM Self Healing on
Uncorrectable Memory Error : Disabled
Virtualization Technology : Disabled
      DCU Streamer Prefetcher : Disabled
      Sub NUMA Cluster : 4-way Clustering
      LLC Prefetch : Disabled
      Dead Line LLC Alloc : Disabled
      Optimizer Mode : Enabled

      System Profile : Custom
      CPU Power Management : Maximum Performance
      C1E : Disabled
      C States : Autonomous
      Memory Patrol Scrub : Disabled
      Energy Efficiency Policy : Performance
      PCI ASPM L1 Link
      Power Management : Disabled

```

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2023.0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Mon May 15 06:41:37 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. tuned-adm active

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Dec-2022

Platform Notes (Continued)

- 16. sysctl
- 17. /sys/kernel/mm/transparent_hugepage
- 18. /sys/kernel/mm/transparent_hugepage/khugepaged
- 19. OS release
- 20. Disk information
- 21. /sys/devices/virtual/dmi/id
- 22. dmidecode
- 23. BIOS

```
1. uname -a
Linux localhost 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
06:41:37 up 4:52, 1 user, load average: 82.05, 116.72, 123.22
USER      TTY      FROM          LOGIN@      IDLE        JCPU   PCPU   WHAT
root      tty1    -             02:06       4:35m      1.63s   0.00s /bin/bash ./dell-run-speccpu.sh rate
--define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define
DL-BIOS-SNC=4 --output_format csv,html,pdf,txt
```

```
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) 4124485
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) 4124485
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

```
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 29
login -- root
-bash
/bin/bash ./DELL_rate.sh
/bin/bash ./dell-run-main.sh rate
/bin/bash ./dell-run-main.sh rate
/bin/bash ./dell-run-speccpu.sh rate --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-adddcD=1
--define DL-BIOS-VirtD=1 --define DL-BIOS-SNC=4 --output_format csv,html,pdf,txt
/bin/bash ./dell-run-speccpu.sh rate --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-adddcD=1
--define DL-BIOS-VirtD=1 --define DL-BIOS-SNC=4 --output_format csv,html,pdf,txt
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 -c
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=64 --define physicalfirst
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Dec-2022

Platform Notes (Continued)

```
--define invoke_with_interleave --define drop_caches --tune base,peak -o all --iterations 2 --define
DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-BIOS-SNC=4
--output_format csv,html,pdf,txt fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=64 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --iterations 2
--define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define
DL-BIOS-SNC=4 --output_format csv,html,pdf,txt --nopower --runmode rate --tune base:peak --size refrate
fprate --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.002/templogs/preenv.fprate.002.0.log --lognum
002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-ic2023.0
```

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) Gold 6430
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode     : 0x2b0001b0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 32
siblings       : 64
2 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids 0-31
physical id 1: core ids 0-31
physical id 0: apicids 0-63
physical id 1: apicids 128-191
```

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):            128
On-line CPU(s) list: 0-127
Vendor ID:         GenuineIntel
Model name:        Intel(R) Xeon(R) Gold 6430
CPU family:        6
Model:             143
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s):         2
Stepping:          8
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 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_13 cat_12 cdp_13 invpcid_single
cdp_12 ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase tsc_adjust bmi1 hle
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Platform Notes (Continued)

```
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_lld arch_capabilities
```

```
L1d cache: 3 MiB (64 instances)
L1i cache: 2 MiB (64 instances)
L2 cache: 128 MiB (64 instances)
L3 cache: 120 MiB (2 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,64,68,72,76,80,84,88,92
NUMA node1 CPU(s): 32,36,40,44,48,52,56,60,96,100,104,108,112,116,120,124
NUMA node2 CPU(s): 2,6,10,14,18,22,26,30,66,70,74,78,82,86,90,94
NUMA node3 CPU(s): 34,38,42,46,50,54,58,62,98,102,106,110,114,118,122,126
NUMA node4 CPU(s): 1,5,9,13,17,21,25,29,65,69,73,77,81,85,89,93
NUMA node5 CPU(s): 33,37,41,45,49,53,57,61,97,101,105,109,113,117,121,125
NUMA node6 CPU(s): 3,7,11,15,19,23,27,31,67,71,75,79,83,87,91,95
NUMA node7 CPU(s): 35,39,43,47,51,55,59,63,99,103,107,111,115,119,123,127
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/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 3M 12 Data 1 64 1 64
L1i 32K 2M 8 Instruction 1 64 1 64
L2 2M 128M 16 Unified 2 2048 1 64
L3 60M 120M 15 Unified 3 65536 1 64
```

```
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
available: 8 nodes (0-7)
node 0 cpus: 0,4,8,12,16,20,24,28,64,68,72,76,80,84,88,92
node 0 size: 128399 MB
node 0 free: 127076 MB
node 1 cpus: 32,36,40,44,48,52,56,60,96,100,104,108,112,116,120,124
node 1 size: 128985 MB
node 1 free: 119610 MB
node 2 cpus: 2,6,10,14,18,22,26,30,66,70,74,78,82,86,90,94
node 2 size: 129019 MB
node 2 free: 128376 MB
node 3 cpus: 34,38,42,46,50,54,58,62,98,102,106,110,114,118,122,126
node 3 size: 129019 MB
node 3 free: 128419 MB
node 4 cpus: 1,5,9,13,17,21,25,29,65,69,73,77,81,85,89,93
node 4 size: 129019 MB
node 4 free: 128434 MB
node 5 cpus: 33,37,41,45,49,53,57,61,97,101,105,109,113,117,121,125
node 5 size: 129019 MB
node 5 free: 128435 MB
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Platform Notes (Continued)

```

node 6 cpus: 3,7,11,15,19,23,27,31,67,71,75,79,83,87,91,95
node 6 size: 129019 MB
node 6 free: 128433 MB
node 7 cpus: 35,39,43,47,51,55,59,63,99,103,107,111,115,119,123,127
node 7 size: 128658 MB
node 7 free: 128000 MB
node distances:
node  0  1  2  3  4  5  6  7
0:  10 12 12 12 21 21 21 21
1:  12 10 12 12 21 21 21 21
2:  12 12 10 12 21 21 21 21
3:  12 12 12 10 21 21 21 21
4:  21 21 21 21 10 12 12 12
5:  21 21 21 21 12 10 12 12
6:  21 21 21 21 12 12 10 12
7:  21 21 21 21 12 12 12 10

```

```

9. /proc/meminfo
MemTotal: 1055890828 kB

```

```

10. who -r
run-level 3 May 15 01:49

```

```

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 apparmor auditd cron firewalld getty@ haveged irqbalance issue-generator kbdsettings kdump
kdump-early lvm2-monitor postfix purge-kernels rollback sshd wicked wickedd-auto4
wicked-dhcp4 wicked-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs
disabled blk-availability boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell
eatables grub2-once haveged-switch-root issue-add-ssh-keys kexec-load lunmask nfs
nfs-blkmap rpcbind rpmconfigcheck rsyncd serial-getty@ systemd-boot-check-no-failures
systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd tuned
indirect wickedd

```

```

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
root=UUID=4068cb7a-41a3-4eea-ab49-bc6f15bea24c
splash=silent
mitigations=auto
quiet
security=apparmor
crashkernel=314M,high
crashkernel=72M,low

```

```

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

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Dec-2022

Platform Notes (Continued)

Active: yes

15. tuned-adm active

It seems that tuned daemon is not running, preset profile is not activated.
Preset profile: throughput-performance

16. sysctl

kernel.numa_balancing	1
kernel.randomize_va_space	2
vm.compaction_proactiveness	20
vm.dirty_background_bytes	0
vm.dirty_background_ratio	10
vm.dirty_bytes	0
vm.dirty_expire_centisecs	3000
vm.dirty_ratio	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

17. /sys/kernel/mm/transparent_hugepage

defrag	always	defer	defer+madvise	[madvise]	never
enabled	[always]	madvise	never		
hpage_pmd_size	2097152				
shmem_enabled	always	within_size	advise	[never]	deny force

18. /sys/kernel/mm/transparent_hugepage/khugepaged

alloc_sleep_millisecs	60000
defrag	1
max_ptes_none	511
max_ptes_shared	256
max_ptes_swap	64
pages_to_scan	4096
scan_sleep_millisecs	10000

19. OS release

From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP4

20. Disk information

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-ic2023.0
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 80G 4.2G 76G 6% /mnt/ramdisk

21. /sys/devices/virtual/dmi/id

Vendor: Dell Inc.

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Platform Notes (Continued)

Product: PowerEdge MX760c
Product Family: PowerEdge
Serial: SMX7608

22. 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:

12x 002C00B3002C MTC40F2046S1RC48BA1 64 GB 2 rank 4800, configured at 4400
1x 002C0632002C MTC40F2046S1RC48BA1 64 GB 2 rank 4800, configured at 4400
3x 002C069D002C MTC40F2046S1RC48BA1 64 GB 2 rank 4800, configured at 4400

23. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: Dell Inc.
BIOS Version: 1.3.2
BIOS Date: 03/28/2023
BIOS Revision: 1.3

Compiler Version Notes

C | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_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++ | 508.namd_r(base, peak) 510.parest_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++, C | 511.povray_r(base, peak) 526.blender_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.

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++, C, Fortran | 507.cactuBSSN_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.

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.

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.

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Feb-2023

Software Availability: Dec-2022

Compiler Version Notes (Continued)

Fortran | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_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.

Fortran, C | 521.wrf_r(base, peak) 527.cam4_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.
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.

Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Dec-2022

Base Portability Flags (Continued)

```
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64
```

Base Optimization Flags

C benchmarks:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xsaphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

C++ benchmarks:

```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsaphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xsaphirerapids -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both Fortran and C:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xsaphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both C and C++:

```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xsaphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsaphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Feb-2023

Software Availability: Dec-2022

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):

-L/usr/local/jemalloc64-5.0.1/lib

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

519.lbm_r: basepeak = yes

538.imagick_r: basepeak = yes

544.nab_r: basepeak = yes

C++ benchmarks:

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Feb-2023

Software Availability: Dec-2022

Peak Optimization Flags (Continued)

508.namd_r: basepeak = yes

```
510.parest_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

```
554.roms_r: -w -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both Fortran and C:

```
521.wrf_r: -w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

```
511.povray_r: -w -std=c++14 -m64 -std=c11 -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 -Wno-implicit-int
-mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 628

PowerEdge MX760c (Intel Xeon Gold 6430)

SPECrate®2017_fp_peak = 655

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Dec-2022

Peak Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):

```
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

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/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.5.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/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.5.xml>

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.9 on 2023-05-15 06:41:36-0400.

Report generated on 2023-07-19 16:24:06 by CPU2017 PDF formatter v6716.

Originally published on 2023-07-19.