



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

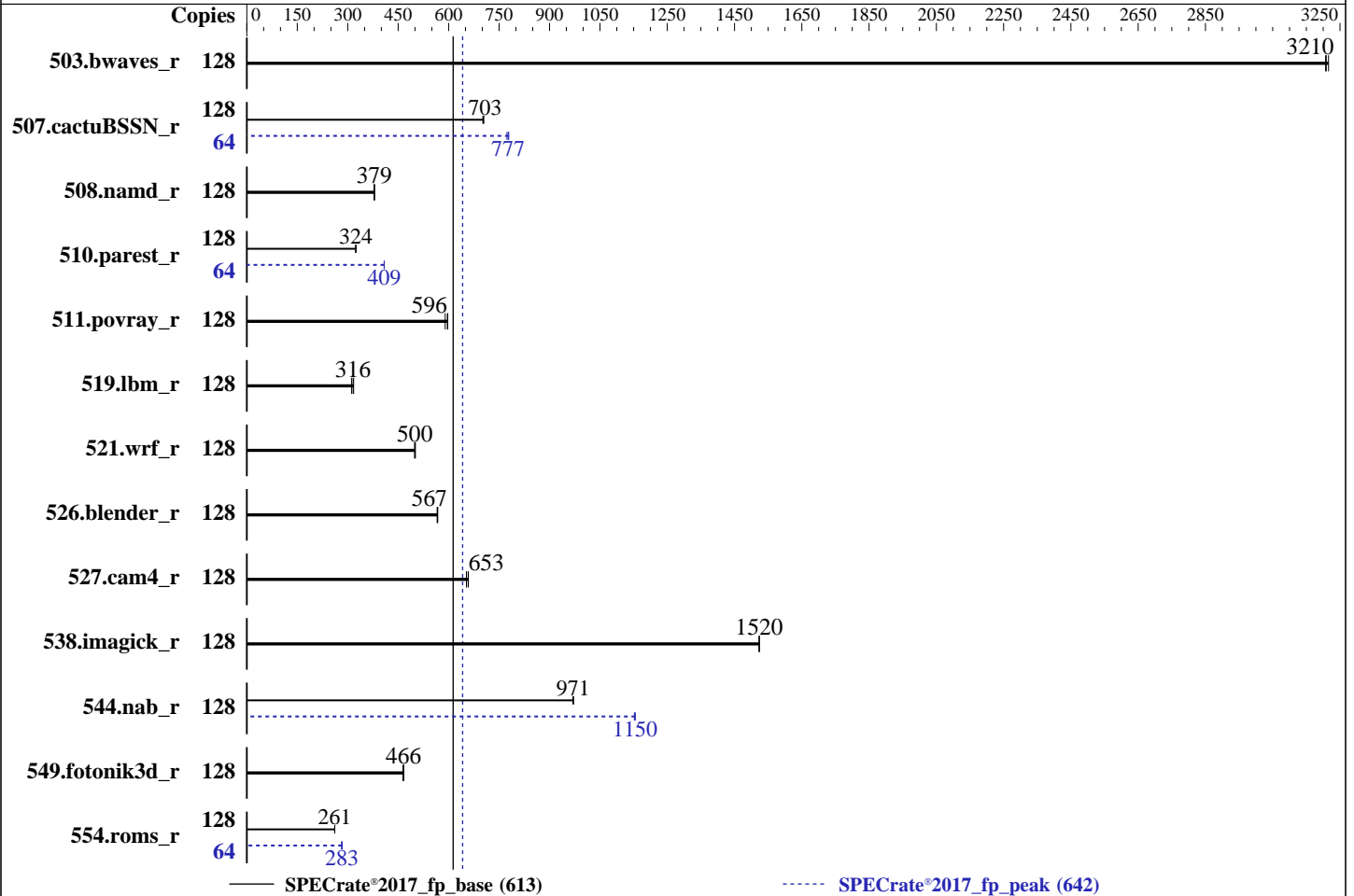
(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: Jan-2023



Hardware

CPU Name: Intel Xeon Gold 6430
 Max MHz: 3400
 Nominal: 2100
 Enabled: 64 cores, 2 chips, 2 threads/core
 Orderable: 1, 2 chip(s)
 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: 1 x 900 GB SATA SSD
 Other: None

Software

OS: Ubuntu 22.04.1 LTS
 Kernel 5.15.0-58-generic
 Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;
 Parallel: No
 Firmware: HPE BIOS Version v1.22 01/18/2023 released Jan-2023
 File System: ext4
 System State: Run level 5 (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

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: Jan-2023

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	128	400	3210	400	3210	399	3220	128	400	3210	400	3210	399	3220
507.cactuBSSN_r	128	231	702	230	703	230	704	64	104	777	104	779	105	773
508.namd_r	128	320	380	321	379	321	378	128	320	380	321	379	321	378
510.parest_r	128	1032	324	1033	324	1034	324	64	410	409	410	409	410	408
511.povray_r	128	501	596	500	597	507	590	128	501	596	500	597	507	590
519.lbm_r	128	433	312	427	316	425	318	128	433	312	427	316	425	318
521.wrf_r	128	575	499	574	500	572	501	128	575	499	574	500	572	501
526.blender_r	128	344	567	344	567	345	566	128	344	567	344	567	345	566
527.cam4_r	128	343	653	343	653	340	658	128	343	653	343	653	340	658
538.imagick_r	128	209	1520	209	1520	209	1520	128	209	1520	209	1520	209	1520
544.nab_r	128	222	971	222	970	222	971	128	187	1150	187	1150	187	1150
549.fotonik3d_r	128	1075	464	1070	466	1070	466	128	1075	464	1070	466	1070	466
554.roms_r	128	779	261	778	262	778	261	64	360	282	360	283	360	283

SPECrate®2017_fp_base = **613**

SPECrate®2017_fp_peak = **642**

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"
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>
IRQ balance service was stopped using "systemctl stop irqbalance.service"
tuned-adm profile was set to Accelerator-Performance using "tuned-adm profile accelerator-performance"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017_19/lib/intel64:/home/cpu2017_19/je5.0.1-64"
MALLOC_CONF = "retain:true"



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4

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

The system ROM used for this result contains Intel microcode version 0x2b000161 for the Intel Xeon Gold 6430 processor.

The reported date by sysinfo is incorrect due to computer clock being not set correctly.

The correct test date is: Feb-2023.

BIOS Configuration:

Workload Profile set to General Throughput Compute

Thermal Configuration set to Maximum Cooling

Enhanced Processor Performance Profile set to Aggressive

Last Level Cache (LLC) Dead Line Allocation set to Disabled

Memory Patrol Scrubbing set to Disabled

Workload Profile set to Custom

DCU Stream Prefetcher set to Disabled

Adjacent Sector Prefetch set to Disabled

Minimum Processor Idle Power Package C-State set to Package C6 (non-retention) State

sysinfo program /home/cpu2017_19/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on admin1 Mon Jun 27 18:48:56 2022

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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

Platform Notes (Continued)

```

9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.4)
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. tuned-adm active
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 admin1 5.15.0-58-generic #64-Ubuntu SMP Thu Jan 5 11:43:13 UTC 2023 x86_64 x86_64 x86_64 GNU/Linux

```

```

-----
2. w
18:48:56 up 20 min, 3 users, load average: 0.00, 0.00, 0.00
USER      TTY      FROM          LOGIN@      IDLE        JCPU      PCPU WHAT
admin1    tty1    -              18:45       3:04        0.02s     0.00s -bash
admin1    pts/0   172.16.0.100  18:47       53.00s     0.01s     0.01s sshd: admin1 [priv]
admin1    pts/1   172.16.0.100  18:48       8.00s      0.95s     0.00s sudo -i

```

```

-----
3. Username
From environment variable $USER:  root
From the command 'logname':      admin1

```

```

-----
4. ulimit -a
time(seconds)      unlimited
file(blocks)       unlimited
data(kbytes)       unlimited
stack(kbytes)      unlimited
coredump(blocks)   0
memory(kbytes)     unlimited
locked memory(kbytes) 132074412
process            4126881
nofiles            1024
vmemory(kbytes)    unlimited
locks              unlimited

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

Platform Notes (Continued)

rtprio 0

5. sysinfo process ancestry

```

/sbin/init
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: admin1 [priv]
sshd: admin1@pts/0
-bash
sudo -i
sudo -i
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 -c
ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=64 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak -o all fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 --configfile
ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=64 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
--runmode rate --tune base:peak --size refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.003/templogs/preenv.fprate.003.0.log --lognum 003.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017_19

```

6. /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) Gold 6430
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 6
microcode      : 0x2b000161
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: Jan-2023

Platform Notes (Continued)

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:              6
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 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
vmni flexpriority ept vpid ept_ad 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 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 amx_bf16 avx512_fp16 amx_tile amx_int8 flush_lld
arch_capabilities

```

```

Virtualization:        VT-x
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):    0-7,64-71
NUMA node1 CPU(s):    8-15,72-79
NUMA node2 CPU(s):    16-23,80-87
NUMA node3 CPU(s):    24-31,88-95
NUMA node4 CPU(s):    32-39,96-103
NUMA node5 CPU(s):    40-47,104-111
NUMA node6 CPU(s):    48-55,112-119

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: Jan-2023

Platform Notes (Continued)

```

NUMA node7 CPU(s):          56-63,120-127
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:         Not affected
Vulnerability Mds:          Not affected
Vulnerability Meltdown:     Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed:     Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1:    Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2:    Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBR SB-eIBRS SW
                             sequence
Vulnerability Srbds:         Not affected
Vulnerability Tsx async abort: Not affected

```

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	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: 0-7,64-71
node 0 size: 128732 MB
node 0 free: 128367 MB
node 1 cpus: 8-15,72-79
node 1 size: 129020 MB
node 1 free: 128729 MB
node 2 cpus: 16-23,80-87
node 2 size: 129020 MB
node 2 free: 128670 MB
node 3 cpus: 24-31,88-95
node 3 size: 129020 MB
node 3 free: 128672 MB
node 4 cpus: 32-39,96-103
node 4 size: 128984 MB
node 4 free: 128718 MB
node 5 cpus: 40-47,104-111
node 5 size: 129020 MB
node 5 free: 128734 MB
node 6 cpus: 48-55,112-119
node 6 size: 129020 MB
node 6 free: 128758 MB
node 7 cpus: 56-63,120-127

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: Jan-2023

Platform Notes (Continued)

```
node 7 size: 129013 MB
node 7 free: 128655 MB
node distances:
node  0  1  2  3  4  5  6  7
  0:  10  20  30  30  30  30  30  30
  1:  20  10  30  30  30  30  30  30
  2:  30  30  10  20  30  30  30  30
  3:  30  30  20  10  30  30  30  30
  4:  30  30  30  30  10  20  30  30
  5:  30  30  30  30  20  10  30  30
  6:  30  30  30  30  30  30  10  20
  7:  30  30  30  30  30  30  20  10
```

```
-----
9. /proc/meminfo
   MemTotal:          1056595300 kB
```

```
-----
10. who -r
    run-level 5 Jun 27 18:30
```

```
-----
11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.4)
    Default Target  Status
    graphical       degraded
```

```
-----
12. Failed units, from systemctl list-units --state=failed
    UNIT                                LOAD  ACTIVE SUB    DESCRIPTION
* systemd-networkd-wait-online.service loaded failed failed Wait for Network to be Configured
```

```
-----
13. Services, from systemctl list-unit-files
    STATE          UNIT FILES
enabled           ModemManager apparmor blk-availability cloud-config cloud-final cloud-init
                  cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
                  grub-common grub-initrd-fallback irqbalance keyboard-setup lvm2-monitor lxd-agent
                  multipathd networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog secureboot-db
                  setvtrgb snapd ssh systemd-networkd systemd-networkd-wait-online systemd-pstore
                  systemd-resolved systemd-timesyncd thermald tuned ua-reboot-cmds ubuntu-advantage udisks2
                  ufw unattended-upgrades vgauth
enabled-runtime   netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled          console-getty debug-shell iscsid nftables powertop rsync serial-getty@
                  systemd-boot-check-no-failures systemd-network-generator systemd-sysext
                  systemd-time-wait-sync upower
generated         apport
indirect          uuid
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

Platform Notes (Continued)

masked cryptdisks cryptdisks-early hwclock lvm2 multipath-tools-boot rc rcS screen-cleanup sudo x11-common

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

```
BOOT_IMAGE=/vmlinuz-5.15.0-58-generic
root=/dev/mapper/ubuntu--vg-ubuntu--lv
ro
```

15. tuned-adm active

Current active profile: accelerator-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 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
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
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

Platform Notes (Continued)

```

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 Ubuntu 22.04.1 LTS

```

20. Disk information

SPEC is set to: /home/cpu2017_19

```

Filesystem              Type  Size  Used Avail Use% Mounted on
/dev/mapper/ubuntu--vg-ubuntu--lv ext4  877G   54G  787G   7% /

```

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

```

Vendor:      HPE
Product:     ProLiant DL380 Gen11
Product Family: ProLiant
Serial:      CNX21000G7

```

22. 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:

```

16x Samsung M321R8GA0BB0-CQKDG 64 GB 2 rank 4800, configured at 4400
16x UNKNOWN NOT AVAILABLE

```

23. BIOS

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

```

BIOS Vendor:      HPE
BIOS Version:     1.22
BIOS Date:        01/18/2023
BIOS Revision:    1.22
Firmware Revision: 1.30

```



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: Jan-2023

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 2022.1.0 Build 20220316
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 2022.1.0 Build 20220316
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 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
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 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
=====

=====
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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

Compiler Version Notes (Continued)

2022.1.0 Build 20220316
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
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

Base Portability Flags (Continued)

```

521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
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 -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

```

C++ benchmarks:

```

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

```

Fortran benchmarks:

```

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -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 -xCORE-AVX512 -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 C and C++:

```

-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

```

Benchmarks using Fortran, C, and C++:

```

-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -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

```



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

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: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -qopt-zmm-usage=high -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:

508.namd_r: basepeak = yes

510.parest_r: -w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -ljemalloc

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

Peak Optimization Flags (Continued)

510.parest_r (continued):

```
-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 -xCORE-AVX512 -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: basepeak = yes

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

511.povray_r: basepeak = yes

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -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
```

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-SPR-rev1.1.html>

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.html

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-SPR-rev1.1.xml>

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen11

(2.10 GHz, Intel Xeon Gold 6430)

SPECrate®2017_fp_base = 613

SPECrate®2017_fp_peak = 642

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2023

Hardware Availability: Jan-2023

Software Availability: Jan-2023

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 2022-06-27 14:48:56-0400.

Report generated on 2023-03-29 18:08:18 by CPU2017 PDF formatter v6442.

Originally published on 2023-03-29.