



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_fp\_base = 345

## PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

CPU2017 License: 6573

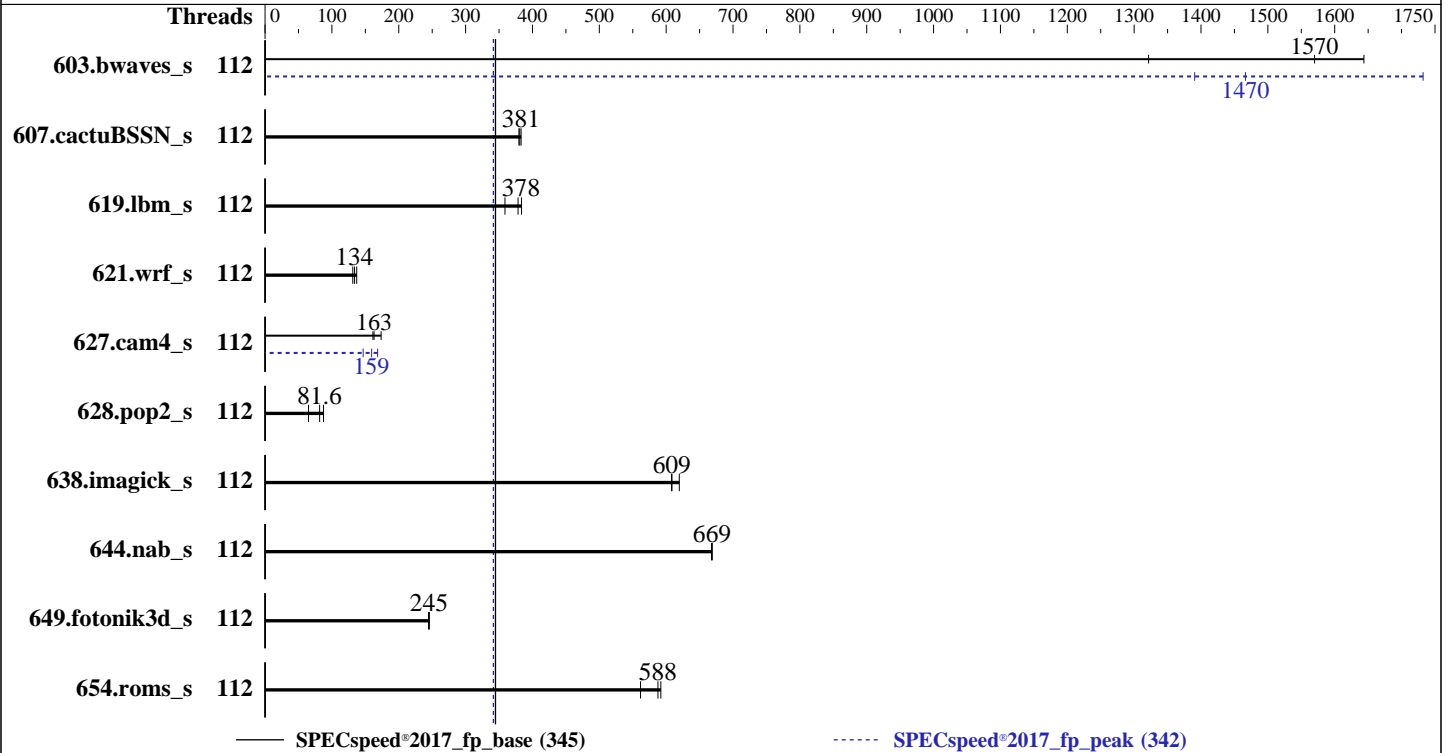
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2024

Hardware Availability: May-2023

Software Availability: Dec-2023



### Hardware

CPU Name: Intel Xeon Max 9480  
 Max MHz: 3500  
 Nominal: 1900  
 Enabled: 112 cores, 2 chips  
 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: 112.5 MB I+D on chip per chip  
 Other: None  
 Memory: 128 GB (8 x 16 GB HBM)  
 Storage: 240 GB SATA SSD  
 Other: CPU Cooling: DLC

### Software

OS: SUSE Linux Enterprise Server 15 SP4  
 5.14.21-150400.24.81-default  
 Compiler: C/C++: Version 2024.0.2 of Intel oneAPI DPC++/C++  
 Compiler for Linux;  
 Fortran: Version 2024.0.2 of Intel Fortran  
 Compiler for Linux;  
 Parallel: Yes  
 Firmware: Version 2.1.5 released Mar-2024  
 File System: btrfs  
 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 Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECSpeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECSpeed®2017\_fp\_peak = 342

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

Test Date: May-2024  
Hardware Availability: May-2023  
Software Availability: Dec-2023

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	112	35.9	1640	<u>37.6</u>	<u>1570</u>	44.6	1320	112	34.1	1730	<u>40.2</u>	<u>1470</u>	42.4	1390
607.cactuBSSN_s	112	43.5	383	<u>43.8</u>	<u>381</u>	43.9	380	112	43.5	383	<u>43.8</u>	<u>381</u>	43.9	380
619.lbm_s	112	13.7	384	<u>13.8</u>	<u>378</u>	14.6	359	112	13.7	384	<u>13.8</u>	<u>378</u>	14.6	359
621.wrf_s	112	96.5	137	<u>98.8</u>	<u>134</u>	101	131	112	96.5	137	<u>98.8</u>	<u>134</u>	101	131
627.cam4_s	112	54.9	161	51.1	174	<u>54.4</u>	<u>163</u>	112	60.4	147	52.6	168	<u>55.6</u>	<u>159</u>
628.pop2_s	112	136	87.4	<u>145</u>	<u>81.6</u>	183	65.0	112	136	87.4	<u>145</u>	<u>81.6</u>	183	65.0
638.imagick_s	112	<u>23.7</u>	<u>609</u>	23.3	620	23.7	608	112	<u>23.7</u>	<u>609</u>	23.3	620	23.7	608
644.nab_s	112	26.2	668	26.1	669	<u>26.1</u>	<u>669</u>	112	26.2	668	26.1	669	<u>26.1</u>	<u>669</u>
649.fotonik3d_s	112	37.3	244	37.1	246	<u>37.2</u>	<u>245</u>	112	37.3	244	37.1	246	<u>37.2</u>	<u>245</u>
654.roms_s	112	26.6	592	<u>26.8</u>	<u>588</u>	28.0	562	112	26.6	592	<u>26.8</u>	<u>588</u>	28.0	562

SPECSpeed®2017\_fp\_base = 345

SPECSpeed®2017\_fp\_peak = 342

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

## 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:  
KMP\_AFFINITY = "granularity=fine,compact"  
LD\_LIBRARY\_PATH = "/home/cpu2017-1.1.9-ic2024.0.2/lib/intel64:/home/cpu2017-1.1.9-ic2024.0.2/je5.0.1-64"  
MALLOCONF = "retain:true"  
OMP\_STACKSIZE = "192M"

## General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM  
memory using Redhat Enterprise Linux 8.0  
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  
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>

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 settings:

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECSpeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECSpeed®2017\_fp\_peak = 342

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2024

Hardware Availability: May-2023

Software Availability: Dec-2023

## Platform Notes (Continued)

ADDC Setting : Disabled  
DIMM Self Healing on  
Uncorrectable Memory Error : Disabled

Logical Processor : Disabled  
Virtualization Technology : Disabled  
DCU Streamer Prefetcher : Disabled  
Optimizer Mode : Enabled

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

Sysinfo program /home/cpu2017-1.1.9-ic2024.0.2/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on sut Fri May 3 00:11:49 2024

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 (249.16+suse.195.gb473c02cc0)
  - 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. 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 sut 5.14.21-150400.24.81-default #1 SMP PREEMPT\_DYNAMIC Tue Aug 8 14:10:43 UTC 2023 (90a74a8) x86\_64 x86\_64 GNU/Linux
- 
- 2. w  
00:11:49 up 3:44, 1 user, load average: 3.69, 5.60, 3.54

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

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

Test Date: May-2024  
Hardware Availability: May-2023  
Software Availability: Dec-2023

## Platform Notes (Continued)

USER	TTY	FROM	LOGIN@	IDLE	JCPU	PCPU	WHAT
root	tty1	-	20:29	3:41m	1.06s	0.00s	-bash

### 3. Username

From environment variable \$USER: root

### 4. ulimit -a

```

core file size          (blocks, -c) unlimited
data seg size          (kbytes, -d) unlimited
scheduling priority    (-e) 0
file size              (blocks, -f) unlimited
pending signals        (-i) 513373
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) 513373
virtual memory         (kbytes, -v) unlimited
file locks             (-x) unlimited

```

### 5. sysinfo process ancestry

```

/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2024.0.2-lin-sapphirerapids-speed-20231213.cfg --define cores=112 --tune base,peak -o all --define
  drop_caches fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2024.0.2-lin-sapphirerapids-speed-20231213.cfg --define cores=112 --tune base,peak --output_format all
  --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed --nopreenv
  --note-preenv --logfile $SPEC/tmp/CPU2017.004/templogs/preenv.fpspeed.004.0.log --lognum 004.0
  --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-ic2024.0.2

```

### 6. /proc/cpuinfo

```

model name      : Intel (R) Xeon (R) CPU Max 9480
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping      : 8
microcode     : 0x2c000351
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
cpu cores     : 56
siblings      : 56
2 physical ids (chips)
112 processors (hardware threads)
physical id 0: core ids 0-55
physical id 1: core ids 0-55
physical id 0: apicids
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

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

Test Date: May-2024  
Hardware Availability: May-2023  
Software Availability: Dec-2023

## Platform Notes (Continued)

,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110  
physical id 1: apicids  
128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,180,182,184,186,188,190,192,194,196,198,200,202,204,206,208,210,212,214,216,218,220,222,224,226,228,230,232,234,236,238

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):                112
On-line CPU(s) list:   0-111
Vendor ID:             GenuineIntel
Model name:            Intel(R) Xeon(R) CPU Max 9480
CPU family:            6
Model:                 143
Thread(s) per core:    1
Core(s) per socket:    56
Socket(s):              2
Stepping:              8
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
                        dtcs64 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_l3 cat_l2
                        cdp_l3 invpcid_single cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced
                        fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm rdt_a
                        avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt
                        avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves
                        cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect
                        avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts avx512vbmi umip
                        pku ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni
                        avx512_bitalg tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote
                        movdiri movdir64b enqcmd fsrm md_clear serialize tsxldtrk pconfig
                        arch_lbr avx512_fp16 amx_tile flush_lld arch_capabilities
L1d cache:             5.3 MiB (112 instances)
L1i cache:             3.5 MiB (112 instances)
L2 cache:              224 MiB (112 instances)
L3 cache:              225 MiB (2 instances)
NUMA node(s):         2
NUMA node0 CPU(s):    0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110
NUMA node1 CPU(s):    1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:       Not affected
Vulnerability L1tf:                 Not affected
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

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

Test Date: May-2024  
Hardware Availability: May-2023  
Software Availability: Dec-2023

## Platform Notes (Continued)

Vulnerability Mds:	Not affected
Vulnerability Meltdown:	Not affected
Vulnerability Mmio stale data:	Not affected
Vulnerability Retbleed:	Not affected
Vulnerability Spec rstack overflow:	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, PBRBS-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	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	112.5M	225M	15	Unified	3	122880	1	64

8. numactl --hardware

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

available: 2 nodes (0-1)

node 0 cpus:

0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110

node 0 size: 63950 MB

node 0 free: 56977 MB

node 1 cpus:

1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55,57,59,61,63,65,67,69,71,73,75,77,79,81,83,85,87,89,91,93,95,97,99,101,103,105,107,109,111

node 1 size: 64422 MB

node 1 free: 62623 MB

node distances:

node 0 1

0: 10 23

1: 23 10

9. /proc/meminfo

MemTotal: 131453444 kB

10. who -r

run-level 3 May 2 20:28

11. Systemd service manager version: systemd 249 (249.16+suse.195.gb473c02cc0)

Default Target	Status
multi-user	degraded

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
* postfix.service	loaded	failed	failed	Postfix Mail Transport Agent
* smartd.service	loaded	failed	failed	Self Monitoring and Reporting Technology (SMART) Daemon

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

CPU2017 License: 6573

Test Date: May-2024

Test Sponsor: Dell Inc.

Hardware Availability: May-2023

Tested by: Dell Inc.

Software Availability: Dec-2023

## Platform Notes (Continued)

```

13. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
YaST2-Firstboot YaST2-Second-Stage auditd bluetooth cron display-manager getty@ haveged
irqbalance iscsi issue-generator kbdsettings klog lvm2-monitor nscd postfix purge-kernels
rollback rsyslog smartd sshd systemd-pstore wpa_supplicant
enabled-runtime systemd-remount-fs
disabled accounts-daemon apparmor apptstream-sync-cache autofs autoyast-initscripts blk-availability
bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd console-getty cups
cups-browsed debug-shell dmraid-activation dnsmasq ebttables exchange-bmc-os-info
fancontrol firewalld gpm grub2-once haveged-switch-root hwloc-dump-hwdata ipmi ipmievd
iscsi-init iscsid iscsiui issue-add-ssh-keys kexec-load lm_sensors lunmask man-db-create
multipathd ndctl-monitor nfs nfs-blkmap nfs-server nfsserver nm-cloud-setup nmb
ostree-remount power-profiles-daemon rdisc rpcbind rpmconfigcheck rsyncd rtkit-daemon
serial-getty@ smartd_generate_opts smb snmpd snmptrapd speech-dispatcherd svnservice
systemd-boot-check-no-failures systemd-network-generator systemd-sysext
systemd-time-wait-sync systemd-timesyncd udisks2 upower wicked wickedd-auto4 wickedd-dhcp4
wickedd-dhcp6 wickedd-nanny wpa_supplicant@

indirect pcsd wickedd

```

```

-----
14. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.24.81-default
root=UUID=1370a640-700c-4b25-a152-2c5f9290f614
splash=silent
mitigations=auto
quiet
security=apparmorpcie_aspm=force
pcie_aspm.policy=powersave
intel_pstate=passive

```

```

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

```

```

-----
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

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2024

Hardware Availability: May-2023

Software Availability: Dec-2023

## Platform Notes (Continued)

```
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: /home/cpu2017-1.1.9-ic2024.0.2
Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/sda3   btrfs 219G 215G 2.5G 99% /home
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor:      Dell Inc.
Product:     PowerEdge R760
Product Family: PowerEdge
Serial:      SLR7604
```

```
-----
22. dmidecode
Additional information from dmidecode 3.4 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:
8x 00CE 43 16 GB 3200
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Dell Inc.
BIOS Version:     2.1.5
BIOS Date:        03/14/2024
BIOS Revision:    2.1
```





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

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

Test Date: May-2024  
Hardware Availability: May-2023  
Software Availability: Dec-2023

## Compiler Version Notes

-----  
C | 619.lbm\_s(base, peak) 638.imagick\_s(base, peak) 644.nab\_s(base, peak)  
-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
-----

-----  
C++, C, Fortran | 607.cactuBSSN\_s(base, peak)  
-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
-----

-----  
Fortran | 603.bwaves\_s(base, peak) 649.fotonik3d\_s(base, peak) 654.roms\_s(base, peak)  
-----

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
-----

-----  
Fortran, C | 621.wrf\_s(base, peak) 627.cam4\_s(base, peak) 628.pop2\_s(base, peak)  
-----

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
-----

## Base Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2024

Hardware Availability: May-2023

Software Availability: Dec-2023

## Base Portability Flags

```
603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64
```

## Base Optimization Flags

### C benchmarks:

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

### Fortran benchmarks:

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

### Benchmarks using both Fortran and C:

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

### Benchmarks using Fortran, C, and C++:

```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte
-auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

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

Test Date: May-2024  
Hardware Availability: May-2023  
Software Availability: Dec-2023

## Peak Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

619.lbm\_s: basepeak = yes

638.imagick\_s: basepeak = yes

644.nab\_s: basepeak = yes

Fortran benchmarks:

603.bwaves\_s: -w -m64 -Wl,-z,muldefs -DSPEC\_OPENMP -xsapphirerapids  
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs  
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib  
-ljemalloc

649.fotonik3d\_s: basepeak = yes

654.roms\_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf\_s: basepeak = yes

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 345

PowerEdge R760 (Intel Xeon Max 9480)

SPECspeed®2017\_fp\_peak = 342

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2024

Hardware Availability: May-2023

Software Availability: Dec-2023

## Peak Optimization Flags (Continued)

```
627.cam4_s: -w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
-Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

628.pop2\_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN\_s: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.9.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.9.xml>

SPEC CPU and SPECspeed 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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2024-05-03 01:11:48-0400.

Report generated on 2024-07-30 19:33:35 by CPU2017 PDF formatter v6716.

Originally published on 2024-07-30.