



# SPEC CPU®2017 Floating Point Rate Result

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## Dell Inc.

### SPECrate®2017\_fp\_base = 712

### PowerEdge XR8720t (Intel Xeon 6776P-B)

### SPECrate®2017\_fp\_peak = 745

CPU2017 License: 6573

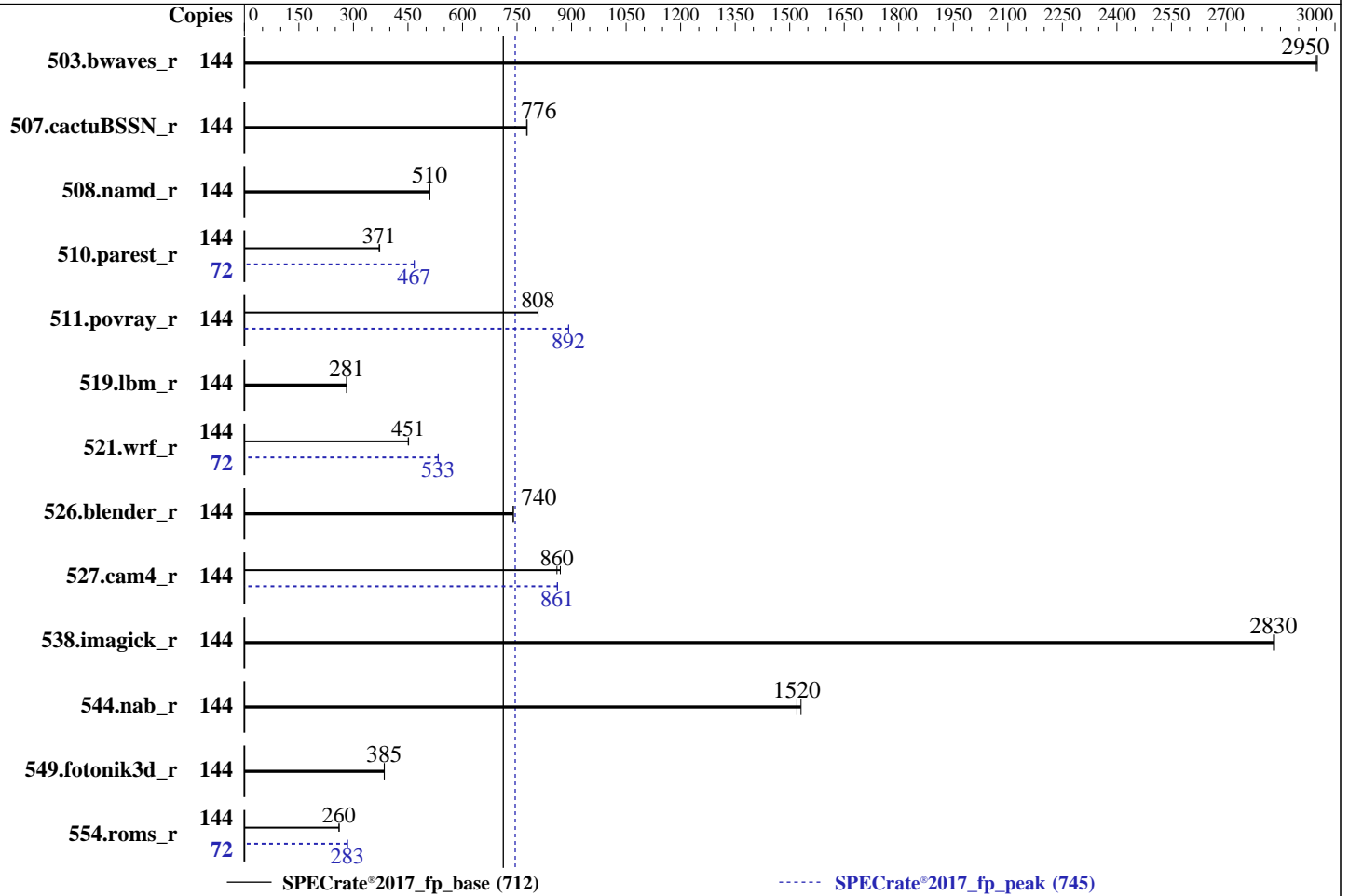
Test Date: Mar-2026

Test Sponsor: Dell Inc.

Hardware Availability: Mar-2026

Tested by: Dell Inc.

Software Availability: Jun-2025



### Hardware

CPU Name: Intel Xeon 6776P-B  
 Max MHz: 3500  
 Nominal: 2300  
 Enabled: 72 cores, 1 chip, 2 threads/core  
 Orderable: 1 chip  
 Cache L1: 64 KB I + 48 KB D on chip per core  
 L2: 2 MB I+D on chip per core  
 L3: 288 MB I+D on chip per chip  
 Other: None  
 Memory: 256 GB (8 x 32 GB 2Rx8 PC5-6400B-R)  
 Storage: 90 GB on tmpfs  
 Other: CPU Cooling: Air

### Software

OS: Red Hat Enterprise Linux 10.0 (Coughlan)  
 6.12.0-55.9.1.el10\_0.x86\_64  
 Compiler: C/C++: Version 2025.2 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2025.2 of Intel Fortran Compiler for Linux;  
 Parallel: No  
 Firmware: Version 1.1.3 released Feb-2026  
 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 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
503.bwaves_r	144	489	2950	<u>490</u>	<u>2950</u>			144	489	2950	<u>490</u>	<u>2950</u>		
507.cactuBSSN_r	144	234	778	<u>235</u>	<u>776</u>			144	234	778	<u>235</u>	<u>776</u>		
508.namd_r	144	268	510	<u>268</u>	<u>510</u>			144	268	510	<u>268</u>	<u>510</u>		
510.parest_r	144	<u>1017</u>	<u>371</u>	1012	372			72	<u>403</u>	<u>467</u>	403	467		
511.povray_r	144	416	808	<u>416</u>	<u>808</u>			144	377	892	<u>377</u>	<u>892</u>		
519.lbm_r	144	539	282	<u>539</u>	<u>281</u>			144	539	282	<u>539</u>	<u>281</u>		
521.wrf_r	144	<u>716</u>	<u>451</u>	714	452			72	<u>303</u>	<u>533</u>	302	533		
526.blender_r	144	<u>297</u>	<u>740</u>	297	740			144	<u>297</u>	<u>740</u>	297	740		
527.cam4_r	144	290	869	<u>293</u>	<u>860</u>			144	<u>293</u>	<u>861</u>	292	861		
538.imagick_r	144	<u>127</u>	<u>2830</u>	126	2830			144	<u>127</u>	<u>2830</u>	126	2830		
544.nab_r	144	<u>159</u>	<u>1520</u>	158	1530			144	<u>159</u>	<u>1520</u>	158	1530		
549.fotonik3d_r	144	1457	385	<u>1459</u>	<u>385</u>			144	1457	385	<u>1459</u>	<u>385</u>		
554.roms_r	144	<u>879</u>	<u>260</u>	878	261			72	<u>404</u>	<u>283</u>	404	283		

SPECrate®2017\_fp\_base = **712**

SPECrate®2017\_fp\_peak = **745**

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-ic2025.2/lib/intel64:/mnt/ramdisk/cpu2017-1.1.9-ic2025.2/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

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## 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>  
Benchmark run from a 90 GB ramdisk created with the cmd: "mount -t tmpfs -o size=90G tmpfs /mnt/ramdisk"

## Platform Notes

### BIOS Settings:

Sub NUMA Cluster : Enabled  
AMP Prefetch : Enabled

System Profile : Custom  
CPU Power Management : Maximum Performance

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2025.2/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on P404206-XR8720t Mon Mar 23 20:15:08 2026

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 257 (257-9.el10\_0.1-g8cd5633)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
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 P404206-XR8720t 6.12.0-55.9.1.el10_0.x86_64 #1 SMP PREEMPT_DYNAMIC Tue Mar 25 09:14:09 EDT 2025
x86_64 GNU/Linux

```

```

2. w
20:15:08 up 2 min, 0 user, load average: 0.29, 0.28, 0.12
USER      TTY      LOGIN@  IDLE   JCPU   PCPU   WHAT

```

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## Platform Notes (Continued)

### 3. Username

From environment variable \$USER: root

### 4. ulimit -a

```

real-time non-blocking time (microseconds, -R) unlimited
core file size (blocks, -c) unlimited
data seg size (kbytes, -d) unlimited
scheduling priority (-e) 0
file size (blocks, -f) unlimited
pending signals (-i) 1027416
max locked memory (kbytes, -l) 8192
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) 1027416
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

```

### 5. sysinfo process ancestry

```

/usr/lib/systemd/systemd --switched-root --system --deserialize=47 rhgb
/usr/sbin/crond -n
/usr/sbin/CROND -n
/bin/bash /home/DellFiles/bin/dell-crontab-run.sh dell-batch.sh
/bin/bash /home/DellFiles/bin/dell-crontab-run.sh dell-batch.sh
/bin/bash /home/DellFiles/bin/dell-batch.sh
/bin/bash /home/DellFiles/bin/dell-batch.sh
/bin/bash /home/DellFiles/bin/dell-batch.sh
/bin/bash /home/DellFiles/bin/CPU_rate.sh fp
/bin/bash /home/DellFiles/bin/cpu-run-main.sh rate fp
/bin/bash /home/DellFiles/bin/cpu-run-main.sh rate fp
/bin/bash /home/DellFiles/bin/Intel/cpu-run-speccpu.sh rate_fp --define DL-VERS=7.0_T07 --output_format
html,pdf,txt
/bin/bash /home/DellFiles/bin/Intel/cpu-run-speccpu.sh rate_fp --define DL-VERS=7.0_T07 --output_format
html,pdf,txt
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=144 -c
ic2025.2-linux64-graniterapids-rate-20250605.cfg --define smt-on --define cores=72 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak -o all --iterations 2 --define
DL-VERS=7.0_T07 --output_format html,pdf,txt fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=144 --configfile
ic2025.2-linux64-graniterapids-rate-20250605.cfg --define smt-on --define cores=72 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --iterations 2
--define DL-VERS=7.0_T07 --output_format html,pdf,txt --nopower --runmode rate --tune base:peak --size
refrate fprate --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.001/templogs/preenv.fprate.001.0.log
--lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-ic2025.2

```

### 6. /proc/cpuinfo

```

model name      : INTEL(R) XEON(R) 6776P-B
vendor_id      : GenuineIntel
cpu family      : 6
model          : 174
stepping       : 1
microcode      : 0x1000303

```

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## Platform Notes (Continued)

bugs : spectre\_v1 spectre\_v2 spec\_store\_bypass swappgs bhi  
cpu cores : 72  
siblings : 144  
1 physical ids (chips)  
144 processors (hardware threads)  
physical id 0: core ids 0-35,64-99  
physical id 0: apicids 0-71,128-199

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 2.40.2:

```
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): 144
On-line CPU(s) list: 0-143
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel
Model name: INTEL(R) XEON(R) 6776P-B
BIOS Model name: INTEL(R) XEON(R) 6776P-B CPU @ 2.3GHz
BIOS CPU family: 179
CPU family: 6
Model: 174
Thread(s) per core: 2
Core(s) per socket: 72
Socket(s): 1
Stepping: 1
BogoMIPS: 4600.00
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 intel_ppin cdp_l2
ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept
vpid ept_ad fsgsbase tsc_adjust bml 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 user_shstk avx_vnni avx512_bf16 wbnoinvd dtherm ida
arat pln pts vnmi avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni
vaes vpclmulqdq avx512_vnni avx512_bitalg avx512_vpopcntdq la57 rdpid
bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear
serialize tsxldtrk pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile
amx_int8 flush_lld arch_capabilities

Virtualization: VT-x
L1d cache: 3.4 MiB (72 instances)
L1i cache: 4.5 MiB (72 instances)
L2 cache: 144 MiB (72 instances)
L3 cache: 288 MiB (1 instance)
NUMA node(s): 2
NUMA node0 CPU(s): 0-35,72-107
NUMA node1 CPU(s): 36-71,108-143
Vulnerability Gather data sampling: Not affected
```

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## Platform Notes (Continued)

Vulnerability Itlb multihit: Not affected  
 Vulnerability Lltf: Not affected  
 Vulnerability Mds: Not affected  
 Vulnerability Meltdown: Not affected  
 Vulnerability Mmio stale data: Not affected  
 Vulnerability Reg file data sampling: Not affected  
 Vulnerability Retbleed: Not affected  
 Vulnerability Spec rstack overflow: Not affected  
 Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl  
 Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and \_\_user pointer sanitization  
 Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling; PBRSE-eIBRS Not affected; BHI BHI\_DIS\_S  
 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	3.4M	12	Data	1	64	1	64
L1i	64K	4.5M	16	Instruction	1	64	1	64
L2	2M	144M	16	Unified	2	2048	1	64
L3	288M	288M	16	Unified	3	294912	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: 0-35,72-107  
 node 0 size: 128135 MB  
 node 0 free: 114392 MB  
 node 1 cpus: 36-71,108-143  
 node 1 size: 128942 MB  
 node 1 free: 128018 MB  
 node distances:  
 node 0 1  
 0: 10 12  
 1: 12 10

9. /proc/meminfo

MemTotal: 263247472 kB

10. who -r

run-level 3 Mar 23 20:13

11. Systemd service manager version: systemd 257 (257-9.el10\_0.1-g8cd5633)

Default Target	Status
multi-user	running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon atd audit-rules auditd avahi-daemon bluetooth chronyd crond cups dbus-broker fips-crypto-policy-overlay firewalld gdm getty@ insights-client-boot irqbalance iscsi-onboot iscsi-starter kdump libstoragemgmt lvm2-monitor mcelog mdmonitor multipathd nvme-fc-boot-connections qemu-guest-agent rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control systemd-confext systemd-network-generator systemd-pstore systemd-sysext tuned tuned-ppd udisks2 upower

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## Platform Notes (Continued)

```

vgauthd vmttoolsd
enabled-runtime systemd-remount-fs
disabled arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
canberra-system-shutdown-reboot chrony-wait chronyd-restricted console-getty cups-browsed
dbus-daemon debug-shell dnf-system-upgrade dnsmasq gnome-remote-desktop
gnome-remote-desktop-configuration hypervfcopyd iscsi-init iscsid iscsiuiio kpatch kvm_stat
ledmon low-memory-monitor lvm-devices-import man-db-restart-cache-update microcode
netavark-dhcp-proxy netavark-firewalld-reload nftables nis-domainname nvmmf-autoconnect
podman podman-auto-update podman-clean-transient podman-kube@ podman-restart psacct
ras-mc-ctl rasdaemon rhsm rhsm-facts rpmbd-migrate rpmbd-rebuild
selinux-check-proper-disable serial-getty@ speech-dispatcherd ssh-host-keys-migration
sshd-keygen@ systemd-boot-check-no-failures systemd-boot-update
systemd-PCRlock-file-system systemd-PCRlock-firmware-code systemd-PCRlock-firmware-config
systemd-PCRlock-machine-id systemd-PCRlock-make-policy
systemd-PCRlock-secureboot-authority systemd-PCRlock-secureboot-policy
systemd-udev-load-credentials wpa_supplicant wsdd yggdrasil yggdrasil@
indirect iscsi pcsd spice-vdagentd sshd@ sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh
sssd-sudo systemd-sysupdate systemd-sysupdate-reboot systemd-userdbd

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-6.12.0-55.9.1.el10_0.x86_64
root=/dev/mapper/rhel-root
ro
crashkernel=2G-64G:256M,64G-:512M
resume=UUID=94aa4dd4-b04d-42c5-9ac2-da9c96f84f4e
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
rhgb
quiet

```

```

-----
14. cpupower frequency-info
analyzing CPU 122:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes

```

```

-----
15. tuned-adm active
No current active profile.

```

```

-----
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

```

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### Platform Notes (Continued)

```
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+madvice [madvice] never
enabled         [always] madvice 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      Red Hat Enterprise Linux 10.0 (Coughlan)
redhat-release  Red Hat Enterprise Linux release 10.0 (Coughlan)
system-release  Red Hat Enterprise Linux release 10.0 (Coughlan)
```

```
-----
20. Disk information
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-ic2025.2
Filesystem      Type  Size  Used Avail Use% Mounted on
tmpfs            tmpfs 90G   5.8G  85G   7% /mnt/ramdisk
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor:         Dell Inc.
Product:        PowerEdge XR8720t
Product Family: PowerEdge
Serial:         P404206
```

```
-----
22. dmidecode
Additional information from dmidecode 3.6 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:
6x 00AD063200AD HMC888AHBRA286N 32 GB 2 rank 6400
1x 00AD063200AD HMC888AHBRA477N 32 GB 2 rank 6400
1x 00CE063200CE M321R4GA3PB2-CCPKC 32 GB 2 rank 6400
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Dell Inc.
BIOS Version:     1.1.3
BIOS Date:        02/03/2026
```

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## Platform Notes (Continued)

BIOS Revision: 1.1

## 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 2025.2.0 Build 20250605  
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=====  
C++ | 508.namd\_r(base, peak) 510.parest\_r(base, peak)  
=====

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=====  
C++, C | 511.povray\_r(base, peak) 526.blender\_r(base, peak)  
=====

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=====  
C++, C, Fortran | 507.cactuBSSN\_r(base, peak)  
=====

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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605  
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=====  
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 2025.2.0 Build 20250605  
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=====  
Fortran, C | 521.wrf\_r(base, peak) 527.cam4\_r(base, peak)  
=====

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# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 712

PowerEdge XR8720t (Intel Xeon 6776P-B)

SPECrate®2017\_fp\_peak = 745

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2026

Hardware Availability: Mar-2026

Software Availability: Jun-2025

## 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
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 -xgraniterapids -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

```

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## Base Optimization Flags (Continued)

C++ benchmarks:

```
-w -std=c++14 -m64 -Wl,-z,muldefs -xgraniterapids -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 -xgraniterapids -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 -xgraniterapids -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 -xgraniterapids -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 -xgraniterapids -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
```

## Peak Compiler Invocation

C benchmarks:

```
icx
```

C++ benchmarks:

```
icpx
```

Fortran benchmarks:

```
ifx
```

Benchmarks using both Fortran and C:

```
ifx icx
```

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CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2026

Hardware Availability: Mar-2026

Software Availability: Jun-2025

## Peak Compiler Invocation (Continued)

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:

508.namd\_r: basepeak = yes

510.parest\_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xgraniterapids -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 -xgraniterapids -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

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## Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xgraniterapids -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++:

```
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++:

507.cactuBSSN\_r: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/Intel-ic2025-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.19.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2025-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.19.xml>

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