



SPEC CPU®2017 Floating Point Rate Result

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xFusion

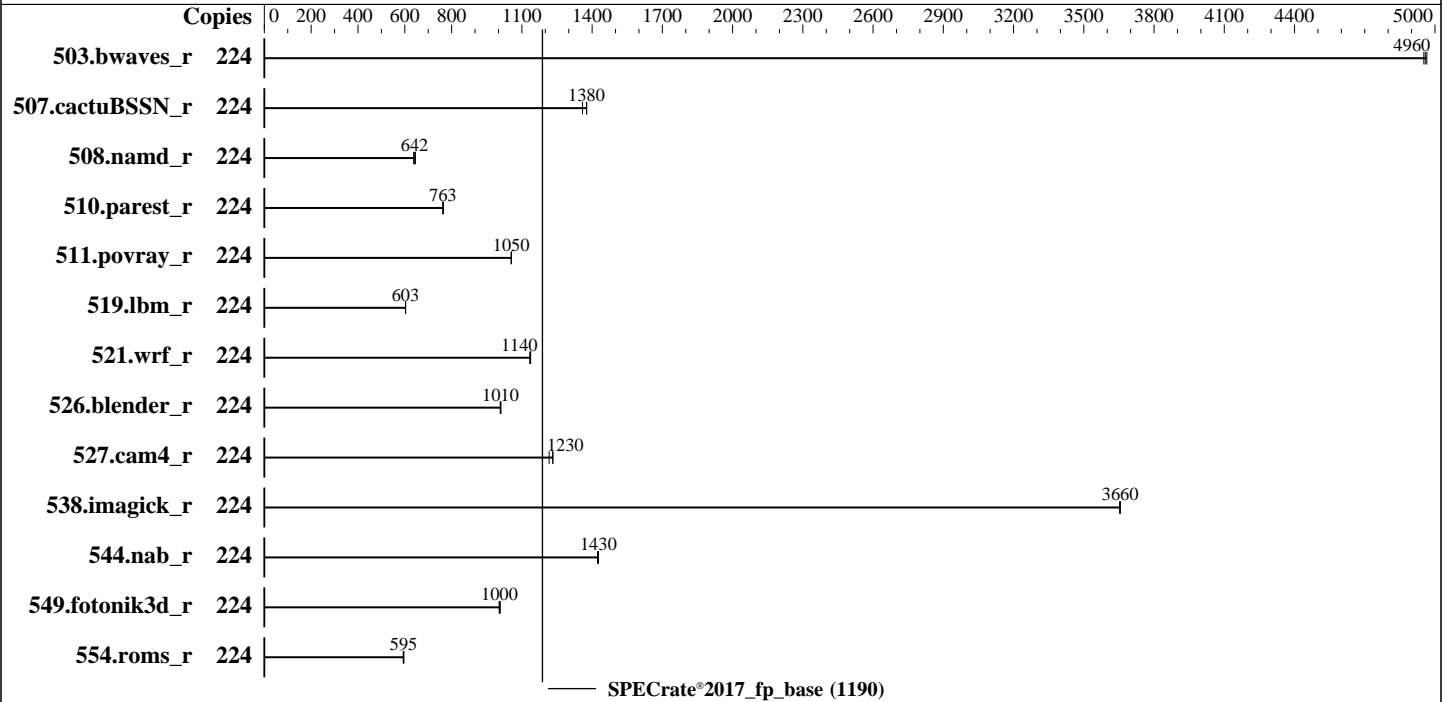
SPECrate®2017_fp_base = 1190

FusionServer 2488H V7 (Intel Xeon Platinum 8450H)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2025
Hardware Availability: May-2023
Software Availability: Dec-2023



Hardware

CPU Name: Intel Xeon Platinum 8450H
Max MHz: 3500
Nominal: 2000
Enabled: 112 cores, 4 chips, 2 threads/core
Orderable: 1,2,4 chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 75 MB I+D on chip per chip
Other: None
Memory: 1 TB (32 x 32 GB 2Rx8 PC5-4800B-R)
Storage: 1 x 480 GB SATA SSD
Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
5.14.0-70.13.1.el9_0.x86_64
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: No
Firmware: Version 01.02.03.03 released Nov-2024
File System: xfs
System State: Run level 5 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	224	452	4970	<u>453</u>	<u>4960</u>	454	4950							
507.cactuBSSN_r	224	209	1360	206	1380	<u>206</u>	<u>1380</u>							
508.namd_r	224	<u>331</u>	<u>642</u>	334	638	330	645							
510.parest_r	224	<u>768</u>	<u>763</u>	769	762	767	764							
511.povray_r	224	496	1050	<u>496</u>	<u>1050</u>	496	1060							
519.lbm_r	224	392	603	<u>391</u>	<u>603</u>	391	603							
521.wrf_r	224	442	1130	<u>442</u>	<u>1140</u>	441	1140							
526.blender_r	224	<u>338</u>	<u>1010</u>	339	1010	338	1010							
527.cam4_r	224	<u>318</u>	<u>1230</u>	322	1220	318	1230							
538.imagick_r	224	152	3660	152	3650	<u>152</u>	<u>3660</u>							
544.nab_r	224	264	1430	<u>264</u>	<u>1430</u>	265	1420							
549.fotonik3d_r	224	870	1000	<u>869</u>	<u>1000</u>	866	1010							
554.roms_r	224	598	596	<u>598</u>	<u>595</u>	600	593							

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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 = "/home/cpu2017/lib/intel64:/home/cpu2017/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>
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

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General Notes (Continued)

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

BIOS configuration:
Performance Profile Set to Performance
SNC Set to Enable SNC4 (4-clusters)

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Sat Feb 8 17:34:07 2025

SUT (System Under Test) info as seen by some common utilities.

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18. /sys/kernel/mm/transparent_hugepage/khugepaged
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21. /sys/devices/virtual/dmi/id
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1. uname -a
Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64 x86_64 x86_64 GNU/Linux

2. w
17:34:07 up 4 min, 1 user, load average: 0.23, 1.24, 0.74
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
root pts/0 17:33 31.00s 1.23s 0.01s -bash

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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) 0
data seg size (kbytes, -d) unlimited
scheduling priority (-e) 0
file size (blocks, -f) unlimited
pending signals (-i) 8252144
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) 8252144
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@pts/0
-bash
/bin/sh ./run_rate.sh
runcpu --define default-platform-flags --copies 224 -c ic2024.0.2-lin-sierraforest-rate-20231213.cfg
--define smt-on --define cores=112 --define physicalfirst --define invoke_with_interleave --define
drop_caches --tune base -o all fprate
runcpu --define default-platform-flags --copies 224 --configfile
ic2024.0.2-lin-sierraforest-rate-20231213.cfg --define smt-on --define cores=112 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.074/templots/preenv.fprate.074.0.log --lognum 074.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) Platinum 8450H
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping      : 8
microcode     : 0x2b000603
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapsg
cpu cores     : 28
siblings      : 56
4 physical ids (chips)
224 processors (hardware threads)
physical id 0: core ids 0-27
physical id 1: core ids 0-27
physical id 2: core ids 0-27
physical id 3: core ids 0-27
```

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Platform Notes (Continued)

physical id 0: apicids 0-55
physical id 1: apicids 128-183
physical id 2: apicids 256-311
physical id 3: apicids 384-439

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.4:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          46 bits physical, 57 bits virtual
Byte Order:             Little Endian
CPU(s):                 224
On-line CPU(s) list:   0-223
Vendor ID:              GenuineIntel
BIOS Vendor ID:        Intel(R) Corporation
Model name:             Intel(R) Xeon(R) Platinum 8450H
BIOS Model name:       Intel(R) Xeon(R) Platinum 8450H
CPU family:             6
Model:                  143
Thread(s) per core:    2
Core(s) per socket:    28
Socket(s):              4
Stepping:               8
CPU max MHz:            3500.0000
CPU min MHz:            800.0000
BogoMIPS:               4000.00
Flags:                  fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
                        clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
                        lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
                        nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 ds_cpl
                        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
                        intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi
                        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 hwp hwp_act_window
                        hwp_epp hwp_pkg_req 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_l1d arch_capabilities
Virtualization:         VT-x
L1d cache:              5.3 MiB (112 instances)
L1i cache:              3.5 MiB (112 instances)
L2 cache:               224 MiB (112 instances)
L3 cache:               300 MiB (4 instances)
NUMA node(s):          16
NUMA node0 CPU(s):     0-6,112-118
NUMA node1 CPU(s):     7-13,119-125
NUMA node2 CPU(s):     14-20,126-132
NUMA node3 CPU(s):     21-27,133-139
NUMA node4 CPU(s):     28-34,140-146
NUMA node5 CPU(s):     35-41,147-153
NUMA node6 CPU(s):     42-48,154-160

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Platform Notes (Continued)

```

NUMA node7 CPU(s):          49-55,161-167
NUMA node8 CPU(s):          56-62,168-174
NUMA node9 CPU(s):          63-69,175-181
NUMA node10 CPU(s):         70-76,182-188
NUMA node11 CPU(s):         77-83,189-195
NUMA node12 CPU(s):         84-90,196-202
NUMA node13 CPU(s):         91-97,203-209
NUMA node14 CPU(s):         98-104,210-216
NUMA node15 CPU(s):         105-111,217-223
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:         Not affected
Vulnerability Mds:          Not affected
Vulnerability Meltdown:     Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1:    Mitigation; usercopy/swapgs 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	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	75M	300M	15	Unified	3	81920	1	64

8. numactl --hardware

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

```

available: 16 nodes (0-15)
node 0 cpus: 0-6,112-118
node 0 size: 63741 MB
node 0 free: 62252 MB
node 1 cpus: 7-13,119-125
node 1 size: 64508 MB
node 1 free: 64094 MB
node 2 cpus: 14-20,126-132
node 2 size: 64508 MB
node 2 free: 64118 MB
node 3 cpus: 21-27,133-139
node 3 size: 64508 MB
node 3 free: 64097 MB
node 4 cpus: 28-34,140-146
node 4 size: 64508 MB
node 4 free: 64229 MB
node 5 cpus: 35-41,147-153
node 5 size: 64508 MB
node 5 free: 64263 MB
node 6 cpus: 42-48,154-160
node 6 size: 64508 MB
node 6 free: 64253 MB
node 7 cpus: 49-55,161-167
node 7 size: 64508 MB
node 7 free: 64255 MB
node 8 cpus: 56-62,168-174
node 8 size: 64508 MB
node 8 free: 64239 MB
node 9 cpus: 63-69,175-181
node 9 size: 64508 MB
node 9 free: 64245 MB

```

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Platform Notes (Continued)

```

node 10 cpus: 70-76,182-188
node 10 size: 64508 MB
node 10 free: 64249 MB
node 11 cpus: 77-83,189-195
node 11 size: 64472 MB
node 11 free: 64212 MB
node 12 cpus: 84-90,196-202
node 12 size: 64508 MB
node 12 free: 63936 MB
node 13 cpus: 91-97,203-209
node 13 size: 64508 MB
node 13 free: 64150 MB
node 14 cpus: 98-104,210-216
node 14 size: 64508 MB
node 14 free: 64262 MB
node 15 cpus: 105-111,217-223
node 15 size: 64489 MB
node 15 free: 64286 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
0:  10 12 12 12 21 21 21 21 21 21 21 21 21 21 21 21
1:  12 10 12 12 21 21 21 21 21 21 21 21 21 21 21 21
2:  12 12 10 12 21 21 21 21 21 21 21 21 21 21 21 21
3:  12 12 12 10 21 21 21 21 21 21 21 21 21 21 21 21
4:  21 21 21 21 10 12 12 12 21 21 21 21 21 21 21 21
5:  21 21 21 21 12 10 12 12 21 21 21 21 21 21 21 21
6:  21 21 21 21 12 12 10 12 21 21 21 21 21 21 21 21
7:  21 21 21 21 21 12 12 12 10 21 21 21 21 21 21 21
8:  21 21 21 21 21 21 21 21 10 12 12 12 21 21 21 21
9:  21 21 21 21 21 21 21 21 12 10 12 12 21 21 21 21
10: 21 21 21 21 21 21 21 21 12 12 10 12 21 21 21 21
11: 21 21 21 21 21 21 21 21 12 12 12 10 21 21 21 21
12: 21 21 21 21 21 21 21 21 21 21 21 10 12 12 12 12
13: 21 21 21 21 21 21 21 21 21 21 21 21 12 10 12 12
14: 21 21 21 21 21 21 21 21 21 21 21 21 12 12 10 12
15: 21 21 21 21 21 21 21 21 21 21 21 21 12 12 12 10

```

```

-----
9. /proc/meminfo
MemTotal:      1056070060 kB

```

```

-----
10. who -r
run-level 5 Feb 8 17:29

```

```

-----
11. Systemd service manager version: systemd 250 (250-6.el9_0)
Default Target Status
graphical      running

```

```

-----
12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
accounts-daemon atd auditd avahi-daemon bluetooth crond cups dbus-broker firewallld gdm
getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt
low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
nvme-fc-boot-connections ostree-remount power-profiles-daemon qemu-guest-agent rhsmcertd
rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control
systemd-network-generator tuned udisks2 upower vgauthd vmtoolsd

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```

enabled-runtime  systemd-remount-fs
disabled         arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
                 canberra-system-shutdown-reboot chrony-wait chronyd cni-dhcp console-getty cpupower
                 cups-browsed dbus-daemon debug-shell dnsmasq hwloc-dump-hwdata iprdump iprinit iprupdate
                 iscsid iscsiuiop kpatch kvm_stat ledmon man-db-restart-cache-update nftables
                 nvmmf-autoconnect podman podman-auto-update podman-restart psacct ras-mc-ctl rasdaemon
                 rdisc rhcd rhsm rhsm-facts rpmdb-rebuild serial-getty@ speech-dispatcherd sshd-keygen@
                 systemd-boot-check-no-failures systemd-pstore systemd-sysextr wpa_supplicant
indirect         spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
root=/dev/mapper/rhel-root
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
rhgb
quiet
nohz_full=1-223

```

```

-----
14. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 3.50 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.

  boost state support:
    Supported: yes
    Active: yes

```

```

-----
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

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Platform Notes (Continued)

```

-----
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 9.0 (Plow)
   redhat-release  Red Hat Enterprise Linux release 9.0 (Plow)
   system-release  Red Hat Enterprise Linux release 9.0 (Plow)
-----

```

```

-----
20. Disk information
SPEC is set to: /home/cpu2017
  Filesystem      Type  Size  Used Avail Use% Mounted on
 /dev/mapper/rhel-home xfs   201G   32G  169G  16% /home
-----

```

```

-----
21. /sys/devices/virtual/dmi/id
   Vendor:      XFUSION
   Product:     2488H V7
   Product Family: EagleStream
   Serial:      202412131126
-----

```

```

-----
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:
  32x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800
-----

```

```

-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
  BIOS Vendor:      XFUSION
  BIOS Version:     01.02.03.03
  BIOS Date:        11/11/2024
-----

```

Compiler Version Notes

```

-----
C | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
-----

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

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xFusion

SPECrate®2017_fp_base = 1190

FusionServer 2488H V7 (Intel Xeon Platinum 8450H)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2025
Hardware Availability: May-2023
Software Availability: Dec-2023

Compiler Version Notes (Continued)

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++ | 508.namd_r(base) 510.parest_r(base)
=====

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 | 511.povray_r(base) 526.blender_r(base)
=====

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
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=====
C++, C, Fortran | 507.cactuBSSN_r(base)
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
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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 | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
=====

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 | 521.wrf_r(base) 527.cam4_r(base)
=====

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
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Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

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Test Date: Feb-2025
Hardware Availability: May-2023
Software Availability: Dec-2023

Base Compiler Invocation (Continued)

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 -xsierraforest -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 -xsierraforest -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
```

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Tested by: xFusion

Test Date: Feb-2025
Hardware Availability: May-2023
Software Availability: Dec-2023

Base Optimization Flags (Continued)

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xsierraforest -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 -xsierraforest -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 -xsierraforest -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 -xsierraforest -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
```

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/xFusion-Platform-Settings-SPR-V1.1-revD.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/xFusion-Platform-Settings-SPR-V1.1-revD.xml>

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

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