



SPEC CPU®2017 Floating Point Speed Result

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xFusion

FusionServer 2288H V7 (Intel Xeon Gold 6430)

SPECSpeed®2017_fp_base = 201

SPECSpeed®2017_fp_peak = 202

CPU2017 License: 6488

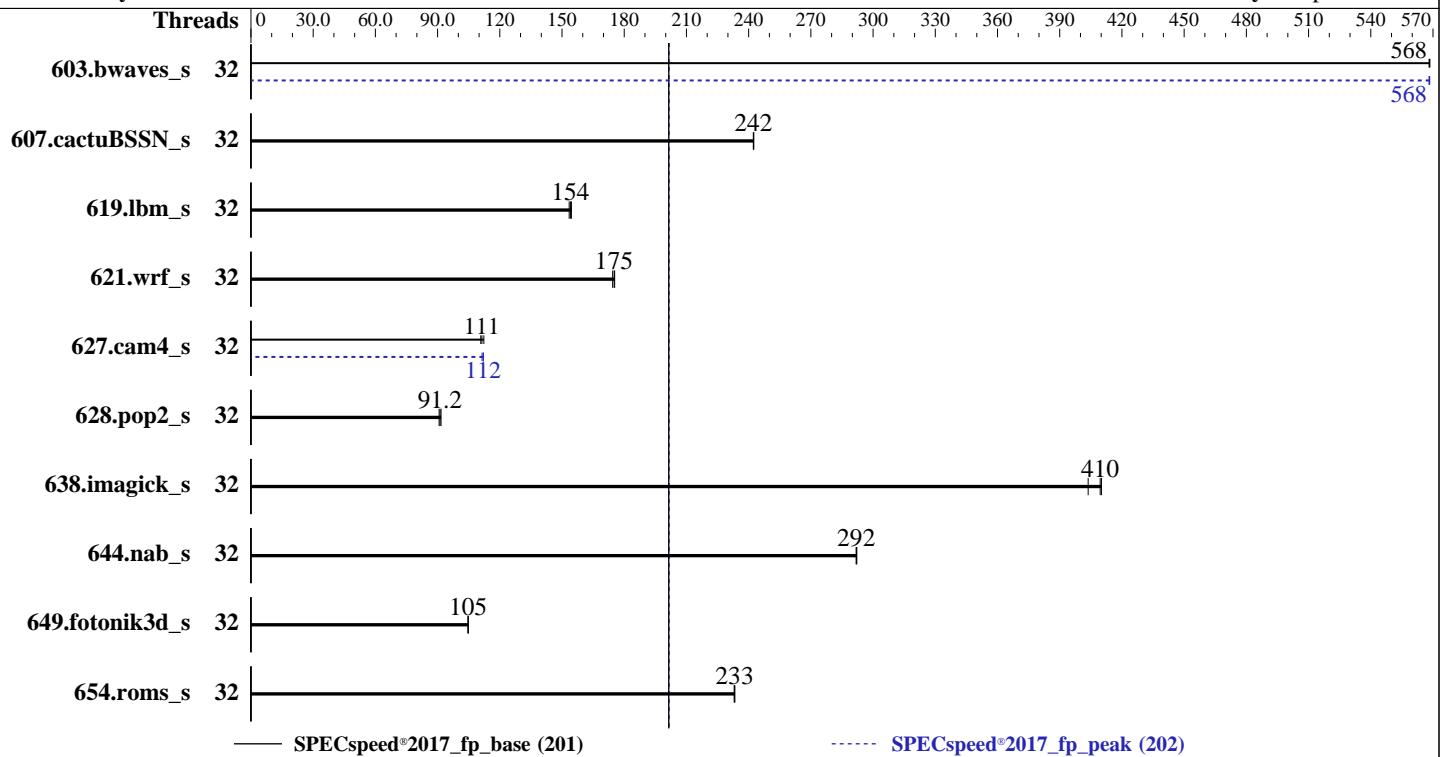
Test Date: Mar-2025

Test Sponsor: xFusion

Hardware Availability: Dec-2023

Tested by: xFusion

Software Availability: Apr-2024



Hardware		Software	
CPU Name:	Intel Xeon Gold 6430	OS:	Red Hat Enterprise Linux 9.4 (Plow)
Max MHz:	3400	Compiler:	5.14.0-427.13.1.el9_4.x86_64
Nominal:	2100	Parallel:	C/C++: Version 2024.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
Enabled:	32 cores, 1 chip	Firmware:	Fortran: Version 2024.1 of Intel Fortran Compiler for Linux;
Orderable:	1 chips	File System:	Yes
Cache L1:	32 KB I + 48 KB D on chip per core	System State:	Version 01.01.06.08 Released Jan-2025
L2:	2 MB I+D on chip per core	Base Pointers:	xfs
L3:	60 MB I+D on chip per chip	Peak Pointers:	Run level 3 (multi-user)
Other:	None	Other:	64-bit
Memory:	256 GB (8 x 32 GB 2Rx8 PC5-4800B-R, running at 4400)	Power Management:	64-bit
Storage:	1 x 960 GB SATA SSD		jemalloc memory allocator V5.0.1
Other:	CPU Cooling: Air		BIOS and OS set to prefer performance at the cost of additional power usage



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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	32	104	568	104	568	104	568	32	104	568	104	568	104	568
607.cactuBSSN_s	32	68.8	242	68.8	242	68.8	242	32	68.8	242	68.8	242	68.8	242
619.lbm_s	32	34.0	154	33.9	155	34.1	153	32	34.0	154	33.9	155	34.1	153
621.wrf_s	32	75.8	174	75.4	175	75.5	175	32	75.8	174	75.4	175	75.5	175
627.cam4_s	32	80.0	111	78.9	112	79.6	111	32	79.5	111	79.1	112	79.1	112
628.pop2_s	32	130	91.7	130	91.2	131	90.7	32	130	91.7	130	91.2	131	90.7
638.imagick_s	32	35.2	410	35.2	410	35.7	404	32	35.2	410	35.2	410	35.7	404
644.nab_s	32	59.8	292	59.9	292	59.9	292	32	59.8	292	59.9	292	59.9	292
649.fotonik3d_s	32	87.1	105	87.0	105	87.1	105	32	87.1	105	87.0	105	87.1	105
654.roms_s	32	67.5	233	67.5	233	67.6	233	32	67.5	233	67.5	233	67.6	233

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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:

```
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

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.

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)

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General Notes (Continued)

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 Load Balance
Enable LP [Global] Set to Single LP

```
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Mon Mar 24 10:00:43 2025
```

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 252 (252-32.el9_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. cpupower frequency-info
16. tuned-adm active
17. sysctl
18. /sys/kernel/mm/transparent_hugepage
19. /sys/kernel/mm/transparent_hugepage/khugepaged
20. OS release
21. Disk information
22. /sys/devices/virtual/dmi/id
23. dmidecode
24. BIOS

1. uname -a
Linux localhost.localdomain 5.14.0-427.13.1.el9_4.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 10 10:29:16 EDT
2024 x86_64 x86_64 x86_64 GNU/Linux

2. w
10:00:43 up 6:15, 4 users, load average: 5.70, 5.67, 3.37
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
root tty1 06:14 3:42m 1.11s 0.01s -bash
root pts/0 08:59 52:51 0.06s 0.06s -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) 1027181
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) 1027181
virtual memory            (kbytes, -v) unlimited
file locks               (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize 31
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=32 --tune base,peak -o all --define
    drop_caches fpsspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=32 --tune base,peak --output_format all
  --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpsspeed --nopreenv
  --note-preenv --logfile $SPEC/tmp/CPU2017.039/templogs/preenv.fpsspeed.039.0.log --lognum 039.0
  --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) Gold 6430
vendor_id       : GenuineIntel
cpu family     : 6
model          : 143
stepping        : 8
microcode       : 0x2b000603
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibr_s_pbrsb
cpu cores       : 32
siblings         : 32
1 physical ids (chips)
32 processors (hardware threads)
physical id 0: core ids 0-31
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
```

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

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Platform Notes (Continued)

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):	32
On-line CPU(s) list:	0-31
Vendor ID:	GenuineIntel
BIOS Vendor ID:	Intel(R) Corporation
Model name:	Intel(R) Xeon(R) Gold 6430
BIOS Model name:	Intel(R) Xeon(R) Gold 6430
CPU family:	6
Model:	143
Thread(s) per core:	1
Core(s) per socket:	32
Socket(s):	1
Stepping:	8
CPU(s) scaling MHz:	100%
CPU max MHz:	3400.0000
CPU min MHz:	800.0000
BogoMIPS:	4200.00
Flags:	fpu vme de pse tsc msr pae mce cx8 apic sep mttr 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 aperfmpf 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_13 cat_12 cdp_13 intel_ppin cdp_12 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmil avx2 smep bmi2 erms invpcid cqmq rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavexc xgetbv1 xsaves cqmq_llc cqmq_occur_llc cqmq_mbm_total cqmq_mbm_local split_lock_detect 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 tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdir64b enqcmd fsrm md_clear serialize tsxlptrk pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile amx_int8 flush_lld arch_capabilities
Virtualization:	VT-x
L1d cache:	1.5 MiB (32 instances)
L1i cache:	1 MiB (32 instances)
L2 cache:	64 MiB (32 instances)
L3 cache:	60 MiB (1 instance)
NUMA node(s):	1
NUMA node0 CPU(s):	0-31
Vulnerability Gather data sampling:	Not affected
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 rstack overflow:	Not affected
Vulnerability Spec store bypass:	Mitigation: Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1:	Mitigation: usercopy/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2:	Mitigation: Enhanced / Automatic IBRS, IBPB conditional, RSB filling, PBRSB-eIBRS SW sequence

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Platform Notes (Continued)

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	1.5M	12	Data	1	64	1	64
L1i	32K	1M	8	Instruction	1	64	1	64
L2	2M	64M	16	Unified	2	2048	1	64
L3	60M	60M	15	Unified	3	65536	1	64

8. numactl --hardware

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

available: 1 nodes (0)
node 0 cpus: 0-31
node 0 size: 256859 MB
node 0 free: 248492 MB
node distances:
node 0
0: 10

9. /proc/meminfo

MemTotal: 263024000 kB

10. who -r
run-level 3 Mar 24 06:14 last=5

11. Systemd service manager version: systemd 252 (252-32.el9_4)

Default Target Status
graphical degraded

12. Failed units, from systemctl list-units --state=failed

UNIT	LOAD	ACTIVE	SUB	DESCRIPTION
* sep5.service	loaded	failed	failed	systemd script to load sep5 driver at boot time

13. Services, from systemctl list-unit-files

STATE	UNIT	FILES
enabled	ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon atd auditd avahi-daemon bluetooth chrony cron cups dbus-broker firewalld gdm getty@ insights-client-boot irqbalance iscsi-onboot iscsi-starter kdump libstoragemgmt low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname nvmeffc-boot-connections ostree-remount power-profiles-daemon qemu-guest-agent rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark sep5 smartd sshd sssd switcheroo-control sysstat systemd-boot-update systemd-network-generator tuned udisks2 upower vgaauthd vmtoolsd	
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 cni-dhcp console-getty cpupower cups-browsed dbus-daemon debug-shell dnf-system-upgrade dnsmasq iprdump iprinting iprule update iscsi-init iscsid iscsiuio kpatch kvm_stat ledmon man-db-restart-cache-update netavark-dhcp-proxy netavark-firewalld-reload nftables numad nvmf-autoconnect ostree-readonly-sysroot-migration ostree-state-overlay@ pesign podman podman-auto-update podman-clean-transient podman-kube@ podman-restart psacct ras-mc-ctl rasdaemon rdisc rhcd rhsm rhsm-facts rpmdb-rebuild selinux-check-proper-disable serial-getty@ speech-dispatcherd sshd-keygen@ systemd-boot-check-no-failures systemd-pstore	

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Platform Notes (Continued)

```
systemd-sysext wpa_supplicant
indirect      iscsi spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
               systemd-sysupdate systemd-sysupdate-reboot

-----
14. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-427.13.1.el9_4.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
    nohz_full=1-31

-----
15. cpupower frequency-info
analyzing CPU 17:
    current policy: frequency should be within 3.40 GHz and 3.40 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
        Supported: yes
        Active: yes

-----
16. tuned-adm active
Current active profile: throughput-performance

-----
17. sysctl
kernel.numa_balancing          0
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

-----
18. /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

-----
19. /sys/kernel/mm/transparent_hugepage/khugepaged
```

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Platform Notes (Continued)

```
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
```

```
-----  
20. OS release
From /etc/*-release /etc/*-version
os-release      Red Hat Enterprise Linux 9.4 (Plow)
redhat-release Red Hat Enterprise Linux release 9.4 (Plow)
system-release Red Hat Enterprise Linux release 9.4 (Plow)
```

```
-----  
21. Disk information
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   791G   34G  758G   5% /home
```

```
-----  
22. /sys/devices/virtual/dmi/id
Vendor:          XFUSION
Product:         2288H V7
Product Family: Eagle Stream
```

```
-----  
23. dmidecode
Additional information from dmidecode 3.5 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 Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800, configured at 4400
```

```
-----  
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      XFUSION
BIOS Version:     01.01.06.08
BIOS Date:        01/03/2025
BIOS Revision:    6.8
```

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 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
```

```
=====  
C++, C, Fortran | 607.cactusBSSN_s(base, peak)
```

```
=====  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
```

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Compiler Version Notes (Continued)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

=====
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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

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

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Test Date: Mar-2025

Hardware Availability: Dec-2023

Software Availability: Apr-2024

Base Portability Flags (Continued)

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
```

Peak Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

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xFusion

SPECSpeed®2017_fp_base = 201

FusionServer 2288H V7 (Intel Xeon Gold 6430)

SPECSpeed®2017_fp_peak = 202

CPU2017 License: 6488

Test Date: Mar-2025

Test Sponsor: xFusion

Hardware Availability: Dec-2023

Tested by: xFusion

Software Availability: Apr-2024

Peak Compiler Invocation (Continued)

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 -fsto -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

627.cam4_s: -w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -fsto -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

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Peak Optimization Flags (Continued)

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/xFusion-Platform-Settings-EMR-V1.1.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-EMR-V1.1.xml>

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