SPEC CPU®2017 Floating Point Rate Result

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xFusion

xFusion 5288 V6 (Intel Xeon Platinum 8352V)

$SPECrate^{®}2017\_fp\_base =$ 494

$SPECrate^{®}2017\_fp\_peak =$ Not Run

CPU2017 License: 6488	**Test Date:** Mar-2023
Test Sponsor: xFusion	**Hardware Availability:** Apr-2021
Tested by: xFusion	**Software Availability:** May-2022

Copies

- **503.bwaves_r** 144 — 2510
- **507.cactuBSSN_r** 144 — 611
- **508.namd_r** 144 — 332
- **510.parest_r** 144 — 205
- **511.povray_r** 144 — 504
- **519.lbm_r** 144 — 265
- **521.wrf_r** 144 — 350
- **526.blender_r** 144 — 547
- **527.cam4_r** 144 — 509
- **538.imagick_r** 144 — 1300
- **544.nab_r** 144 — 951
- **549.fotonik3d_r** 144 — 357
- **554.roms_r** 144 — 173

SPECrate®2017_fp_base (494)

Hardware

CPU Name: Intel Xeon Platinum 8352V
 Max MHz: 3500
 Nominal: 2100
Enabled: 72 cores, 2 chips, 2 threads/core
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 1.25 MB I+D on chip per core
 L3: 54 MB I+D on chip per chip
 Other: None
Memory: 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R, running at 2933)
Storage: 1 x 960 GB SATA SSD
Other: None

Software

OS: Red Hat Enterprise Linux 8.4 (Ootpa)
4.18.0-305.el8.x86_64
Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 1.35 Released Feb-2023
File System: xfs
System State: Run level 3 (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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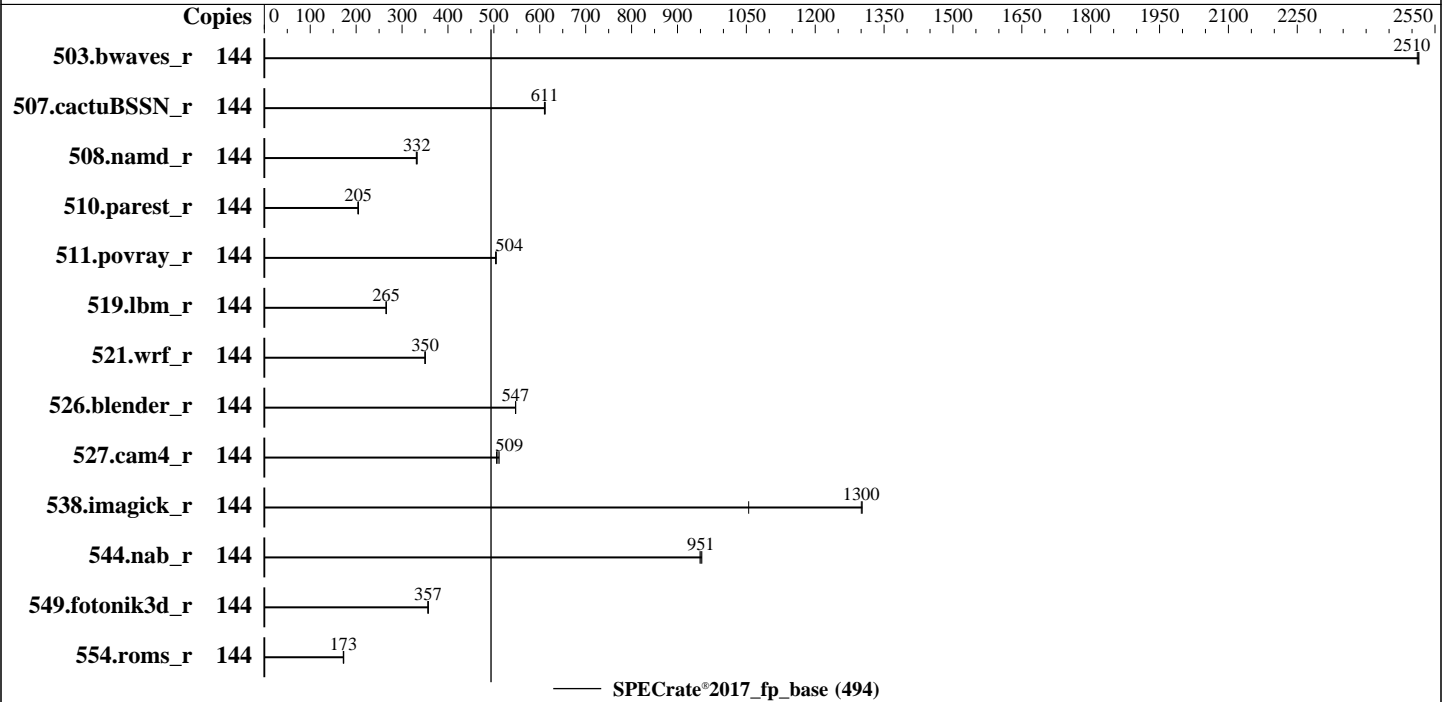SPECrate®2017_fp_peak = Not Run

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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	**574**	**2510**	575	2510	574	2520							
507.cactuBSSN_r	144	298	612	299	610	**298**	**611**							
508.namd_r	144	413	331	411	333	**412**	**332**							
510.parest_r	144	1837	205	**1839**	**205**	1849	204							
511.povray_r	144	667	504	**667**	**504**	666	505							
519.lbm_r	144	572	265	571	266	**572**	**265**							
521.wrf_r	144	920	351	**921**	**350**	922	350							
526.blender_r	144	**401**	**547**	401	548	401	547							
527.cam4_r	144	492	511	**495**	**509**	498	506							
538.imagick_r	144	275	1300	**275**	**1300**	339	1060							
544.nab_r	144	**255**	**951**	255	949	254	953							
549.fotonik3d_r	144	1574	356	**1573**	**357**	1571	357							
554.roms_r	144	1323	173	**1326**	**173**	1331	172							

SPECrate®2017_fp_base =   494

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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 = "/spec2017_1.19/lib/intel64:/spec2017_1.19/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:

(Continued on next page)

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General Notes (Continued)

```
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)
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 Enabled SNC2 (2-clusters)

Sysinfo program /spec2017_1.19/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Fri Mar 10 10:52:03 2023

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 239 (239-45.el8)
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
```

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xfusion

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Platform Notes (Continued)

```
 19. OS release
 20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
 21. Disk information
 22. /sys/devices/virtual/dmi/id
 23. dmidecode
 24. BIOS
   ------------------------------------------------------------


   ------------------------------------------------------------
 1. uname -a
   Linux localhost.localdomain 4.18.0-305.el8.x86_64 #1 SMP Thu Apr 29 08:54:30 EDT 2021 x86_64 x86_64 x86_64
   GNU/Linux


   ------------------------------------------------------------
 2. w
    10:52:03 up  4:16,  1 user,  load average: 98.49, 132.49, 138.35
    USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
    root     tty1     -                06:37    4:14m  1.99s  0.07s -bash


   ------------------------------------------------------------
 3. Username
   From environment variable $USER:  root


   ------------------------------------------------------------
 4. ulimit -a
   core file size          (blocks, -c) 0
   data seg size           (kbytes, -d) unlimited
   scheduling priority             (-e) 0
   file size               (blocks, -f) unlimited
   pending signals                 (-i) 2059989
   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) 2059989
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited


   ------------------------------------------------------------
 5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize 18
   login -- root
   -bash
```

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Platform Notes (Continued)

```
 -bash
 runcpu --define default-platform-flags --copies 144 -c ic2022.1-lin-core-avx512-rate-20220316.cfg --define
   smt-on --define cores=72 --define physicalfirst --define invoke_with_interleave --define drop_caches
    --tune base -o all fprate
 runcpu --define default-platform-flags --copies 144 --configfile ic2022.1-lin-core-avx512-rate-20220316.cfg
   --define smt-on --define cores=72 --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/CPU2017.017/templogs/preenv.fprate.017.0.log --lognum 017.0
     --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /spec2017_1.19


 ----------------------------------------------------------
 6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8352V CPU @ 2.10GHz
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 106
    stepping        : 6
    microcode       : 0xd000363
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 36
    siblings        : 72
    2 physical ids (chips)
    144 processors (hardware threads)
    physical id 0: core ids 0-35
    physical id 1: core ids 0-35
    physical id 0: apicids 0-71
    physical id 1: apicids 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 2.32.1:
   Architecture:        x86_64
   CPU op-mode(s):      32-bit, 64-bit
   Byte Order:          Little Endian
   CPU(s):              144
   On-line CPU(s) list: 0-143
   Thread(s) per core:  2
   Core(s) per socket:  36
   Socket(s):           2
   NUMA node(s):        4
   Vendor ID:           GenuineIntel
   BIOS Vendor ID:      Intel(R) Corporation
```

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Platform Notes (Continued)

```
    CPU family:           6
    Model:                106
    Model name:           Intel(R) Xeon(R) Platinum 8352V CPU @ 2.10GHz
    BIOS Model name:      Intel(R) Xeon(R) Platinum 8352V CPU @ 2.10GHz
    Stepping:             6
    CPU MHz:              2500.002
    BogoMIPS:             4200.00
    Virtualization:       VT-x
    L1d cache:            48K
    L1i cache:            32K
    L2 cache:             1280K
    L3 cache:             55296K
    NUMA node0 CPU(s):    0-17,72-89
    NUMA node1 CPU(s):    18-35,90-107
    NUMA node2 CPU(s):    36-53,108-125
    NUMA node3 CPU(s):    54-71,126-143
  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 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 invpcid_single ssbd mba ibrs ibpb stibp
                          ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1
                          hle 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 wbnoinvd
                          dtherm ida arat pln pts hwp_epp avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes
                          vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid fsrm md_clear
                          pconfig flush_l1d arch_capabilities

  ------------------------------------------------------------
  8. numactl --hardware
  NOTE: a numactl 'node' might or might not correspond to a physical chip.
    available: 4 nodes (0-3)
    node 0 cpus: 0-17,72-89
    node 0 size: 128027 MB
    node 0 free: 118465 MB
    node 1 cpus: 18-35,90-107
    node 1 size: 129016 MB
    node 1 free: 121682 MB
    node 2 cpus: 36-53,108-125
    node 2 size: 129016 MB
    node 2 free: 121643 MB
    node 3 cpus: 54-71,126-143
    node 3 size: 128974 MB
    node 3 free: 121695 MB
    node distances:
```

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Platform Notes (Continued)

```
   node   0   1   2   3
     0:  10  11  20  20
     1:  11  10  20  20
     2:  20  20  10  11
     3:  20  20  11  10


  --------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       527394876 kB


  --------------------------------------------------------------
10. who -r
   run-level 3 Mar 10 06:36


  --------------------------------------------------------------
11. Systemd service manager version: systemd 239 (239-45.el8)
   Default Target  Status
   multi-user      running


  --------------------------------------------------------------
12. Services, from systemctl list-unit-files
   STATE        UNIT FILES
  enabled     NetworkManager NetworkManager-dispatcher NetworkManager-wait-online atd auditd autovt@ chronyd
               crond firewalld getty@ import-state irqbalance iscsi iscsi-onboot kdump libstoragemgmt
                loadmodules lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
               nvmefc-boot-connections rhsmcertd rsyslog selinux-autorelabel-mark smartd sshd sssd syslog
                 sysstat timedatex tuned udisks2 vdo
  disabled    arp-ethers blk-availability chrony-wait console-getty cpupower debug-shell ebtables httpd httpd@
               iprdump iprinit iprupdate ipsec iscsid iscsiuio kpatch kvm_stat ledmon nftables nvmf-autoconnect
                oddjobd phoromatic-client phoromatic-server phoronix-result-server php-fpm pmcd pmfind pmie
                pmie_check pmlogger pmlogger_check pmproxy psacct rdisc rhcd rhsm rhsm-facts serial-getty@ snmpd
                 snmptrapd sshd-keygen@ systemd-resolved tcsd
  generated   SystemTap compile-server gcc-toolset-10-stap-server gcc-toolset-10-systemtap
               gcc-toolset-9-stap-server gcc-toolset-9-systemtap mst scripts startup
  indirect    sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
  masked      systemd-timedated


  --------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=(hd0,gpt3)/boot/vmlinuz-4.18.0-305.el8.x86_64
   root=UUID=9304e5cd-2e1d-48f6-9359-484ddf980c8a
   ro
   crashkernel=auto
   resume=UUID=aff4e6f4-0757-4e74-b0fd-4e11814d5ccb
   rhgb
   quiet
   idle=poll
```

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Platform Notes (Continued)

```
   intel_idle.max_cstate=0


   ----------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
     Unable to determine current policy
     boost state support:
       Supported: yes
       Active: yes


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


   ----------------------------------------------------------
16. sysctl
  kernel.numa_balancing               1
  kernel.randomize_va_space           2
  vm.compaction_proactiveness         0
  vm.dirty_background_bytes           0
  vm.dirty_background_ratio          10
  vm.dirty_bytes                      0
  vm.dirty_expire_centisecs        3000
  vm.dirty_ratio                     40
  vm.dirty_writeback_centisecs      500
  vm.dirtytime_expire_seconds     43200
  vm.extfrag_threshold              500
  vm.min_unmapped_ratio               1
  vm.nr_hugepages                     0
  vm.nr_hugepages_mempolicy           0
  vm.nr_overcommit_hugepages          0
  vm.swappiness                      10
  vm.watermark_boost_factor       15000
  vm.watermark_scale_factor          10
  vm.zone_reclaim_mode                0


   ----------------------------------------------------------
17. /sys/kernel/mm/transparent_hugepage
  defrag          always defer defer+madvise [madvise] never
  enabled         [always] madvise never
  hpage_pmd_size  2097152
  shmem_enabled   always within_size advise [never] deny force


   ----------------------------------------------------------
18. /sys/kernel/mm/transparent_hugepage/khugepaged
  alloc_sleep_millisecs   60000
  defrag                      1
```

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Platform Notes (Continued)

```
    max_ptes_none             511
    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 8.4 (Ootpa)
    redhat-release Red Hat Enterprise Linux release 8.4 (Ootpa)
    system-release Red Hat Enterprise Linux release 8.4 (Ootpa)


  ------------------------------------------------------------
  20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
    itlb_multihit         Not affected
    l1tf                  Not affected
    mds                   Not affected
    meltdown              Not affected
    spec_store_bypass     Mitigation: Speculative Store Bypass disabled via prctl and seccomp
    spectre_v1            Mitigation: usercopy/swapgs barriers and __user pointer sanitization
    spectre_v2            Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
    srbds                 Not affected
    tsx_async_abort       Not affected
  For more information, see the Linux documentation on hardware vulnerabilities, for example
       https://www.kernel.org/doc/html/latest/admin-guide/hw-vuln/index.html


  ------------------------------------------------------------
  21. Disk information
  SPEC is set to: /spec2017_1.19
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda3       xfs   859G  144G  716G  17% /


  ------------------------------------------------------------
  22. /sys/devices/virtual/dmi/id
      Vendor:         XFUSION
      Product:        5288 V6
      Product Family: Whitley
      Serial:         Serial


  ------------------------------------------------------------
  23. dmidecode
    Additional information from dmidecode 3.2 follows.  WARNING: Use caution when you interpret this section.
    The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately
    determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the
    "DMTF SMBIOS" standard.
    Memory:
      16x Samsung M393A4K40DB3-CWE 32 GB 2 rank 3200, configured at 2933
```

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Platform Notes (Continued)

```
  -----------------------------------------------------------
  24. BIOS
  (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:        XFUSION
     BIOS Version:       1.35
     BIOS Date:          02/14/2023
     BIOS Revision:      1.35
```

Compiler Version Notes

```
==============================================================================
C                  | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++                | 508.namd_r(base) 510.parest_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++, C             | 511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++, C, Fortran | 507.cactuBSSN_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
```

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Compiler Version Notes (Continued)

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


==============================================================================
Fortran       | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------


==============================================================================
Fortran, C    | 521.wrf_r(base) 527.cam4_r(base)
------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

Fortran benchmarks:
```
ifx
```

Benchmarks using both Fortran and C:
```
ifx icx
```

Benchmarks using both C and C++:
```
icpx icx
```

Benchmarks using Fortran, C, and C++:
```
icpx icx ifx
```

xFusion

xFusion 5288 V6 (Intel Xeon Platinum 8352V)

SPECrate®2017_fp_base = 494

SPECrate®2017_fp_peak = Not Run

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

Test Date: Mar-2023
Hardware Availability: Apr-2021
Software Availability: May-2022

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 -xCORE-AVX512 -Ofast -ffast-math`
`-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

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

Fortran benchmarks:
`-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-nostandard-realloc-lhs -align array32byte -auto -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

Benchmarks using both Fortran and C:
`-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math`
`-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-nostandard-realloc-lhs -align array32byte -auto -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

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

(Continued on next page)

xFusion

xFusion 5288 V6 (Intel Xeon Platinum 8352V)

SPECrate®2017_fp_base = 494

SPECrate®2017_fp_peak = Not Run

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

Test Date: Mar-2023
Hardware Availability: Apr-2021
Software Availability: May-2022

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-ICX-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-ICX-V1.2.xml

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

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