SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Technologies India Ltd)

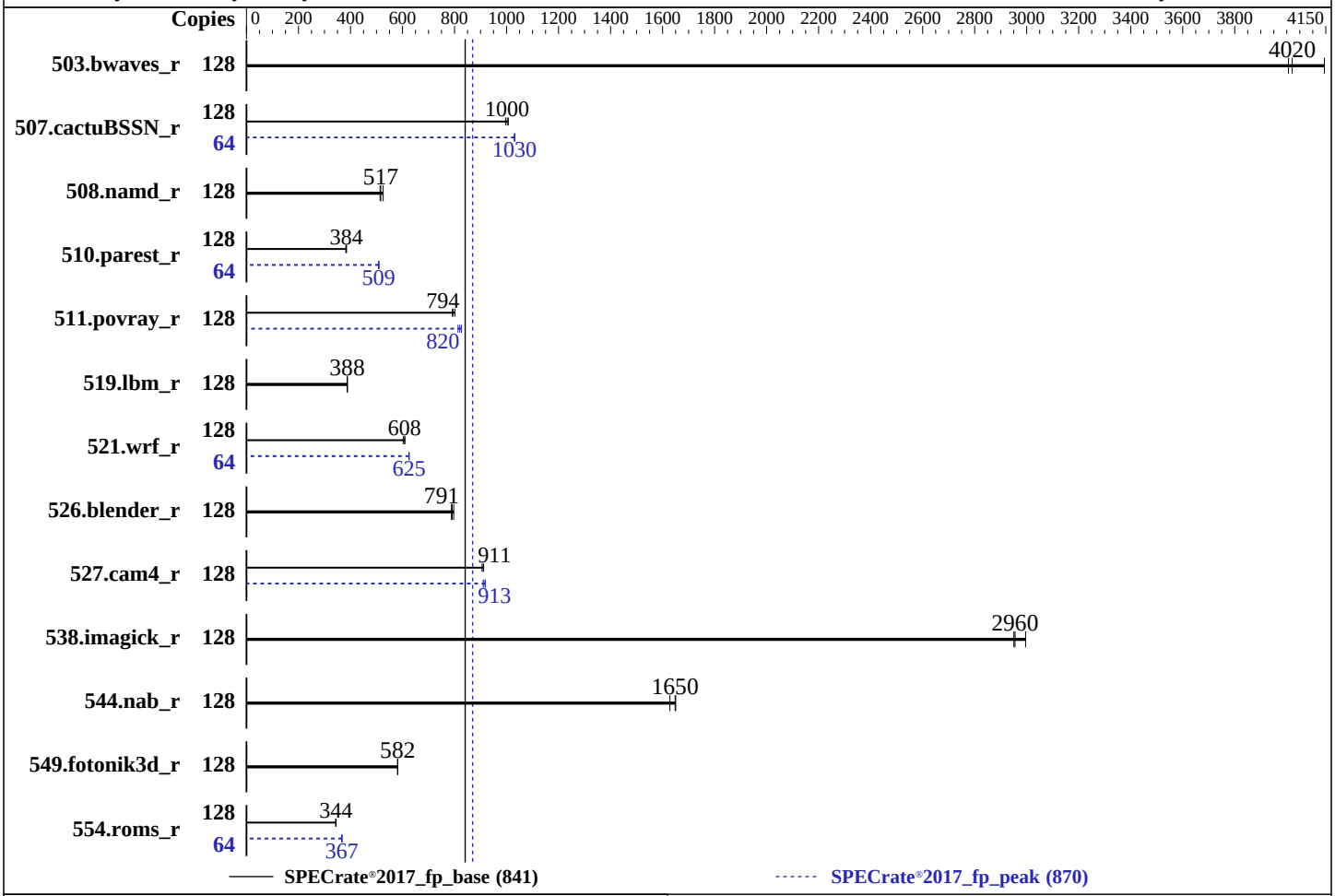
Tyrone Camarero SDI200A2N-224
(2.8 GHz,Intel Xeon Platinum 8562Y+)

SPECrate®2017_fp_base = 841

SPECrate®2017_fp_peak = 870

CPU2017 License: 006802
Test Sponsor: Netweb Technologies India Ltd
Tested by: Tyrone Systems

Test Date: Jul-2025
Hardware Availability: Jan-2024
Software Availability: Jun-2025



Hardware

CPU Name:	Intel Xeon Platinum 8562Y+
Max MHz:	4100
Nominal:	2800
Enabled:	64 cores, 2 chips, 2 threads/core
Orderable:	1,2 chips
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	2 MB I+D on chip per core
L3:	60 MB I+D on chip per chip
Other:	None
Memory:	1 TB (16 x 64 GB 2Rx4 PC5-5600B-R)
Storage:	1 x 480 GB NVMe
Other:	CPU Cooling: Air

Software

OS:	Ubuntu 22.04.1 LTS 5.15.0-143-generic
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 2.6 released May-2025
File System:	ext4
System State:	Run level 3 (Multi-user)
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other:	jemalloc memory allocator V5.0.1
Power Management:	BIOS and set to prefer performance at cost of additional power.

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Technologies India Ltd)
Tyrone Camarero SDI200A2N-224
(2.8 GHz,Intel Xeon Platinum 8562Y+)

SPECrate®2017_fp_base = 841

SPECrate®2017_fp_peak = 870

CPU2017 License: 006802
Test Sponsor: Netweb Technologies India Ltd
Tested by: Tyrone Systems

Test Date: Jul-2025
Hardware Availability: Jan-2024
Software Availability: Jun-2025

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	128	310	4140	**319**	**4020**	320	4010	128	310	4140	**319**	**4020**	320	4010
507.cactuBSSN_r	128	**162**	**1000**	161	1010	163	996	64	78.6	1030	**78.6**	**1030**	78.5	1030
508.namd_r	128	231	526	**235**	**517**	237	514	128	231	526	**235**	**517**	237	514
510.parest_r	128	876	382	**872**	**384**	871	384	64	**329**	**509**	329	509	330	508
511.povray_r	128	373	802	**376**	**794**	377	792	128	367	813	**364**	**820**	362	826
519.lbm_r	128	348	388	**348**	**388**	348	387	128	348	388	**348**	**388**	348	387
521.wrf_r	128	**471**	**608**	471	609	476	603	64	**229**	**625**	229	626	230	625
526.blender_r	128	245	797	247	788	**247**	**791**	128	245	797	247	788	**247**	**791**
527.cam4_r	128	245	912	247	906	**246**	**911**	128	246	910	**245**	**913**	244	919
538.imagick_r	128	106	3000	108	2950	**108**	**2960**	128	106	3000	108	2950	**108**	**2960**
544.nab_r	128	**131**	**1650**	132	1630	131	1650	128	**131**	**1650**	132	1630	131	1650
549.fotonik3d_r	128	858	582	858	581	**858**	**582**	128	858	582	858	581	**858**	**582**
554.roms_r	128	593	343	**591**	**344**	590	345	64	277	366	**277**	**367**	277	367

SPECrate®2017_fp_base = 841

SPECrate®2017_fp_peak = 870

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>
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.
```

(Continued on next page)

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.
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) 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 Settings:
Power Technology = Custom
ENERGY_PERF_BIAS_CFG mode = Maximum Performance
KTI Prefetch = Enable
LLC Dead Line Alloc = Disable
SNC = Enable SNC2 (2-clusters)

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on intelbenchmark Sat Jul 19 11:15:46 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 249 (249.11-0ubuntu3.16)
 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. sysctl
 16. /sys/kernel/mm/transparent_hugepage
 17. /sys/kernel/mm/transparent_hugepage/khugepaged
 18. OS release
 19. Disk information
 20. /sys/devices/virtual/dmi/id
 21. dmidecode
 22. BIOS
 ------------------------------------------------------------

 ------------------------------------------------------------
 1. uname -a
   Linux intelbenchmark 5.15.0-143-generic #153-Ubuntu SMP Fri Jun 13 19:10:45 UTC 2025 x86_64 x86_64 x86_64
   GNU/Linux

 ------------------------------------------------------------
 2. w
    11:15:46 up  5:07,  1 user,  load average: 77.07, 114.98, 122.38
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
```

(Continued on next page)

Platform Notes (Continued)

```
  intel    tty1     -               06:10    5:02m  0.89s  0.01s -bash

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

------------------------------------------------------------
4. ulimit -a
  time(seconds)        unlimited
  file(blocks)         unlimited
  data(kbytes)         unlimited
  stack(kbytes)        unlimited
  coredump(blocks)     0
  memory(kbytes)       unlimited
  locked memory(kbytes) 132062872
  process              4126512
  nofiles              1024
  vmemory(kbytes)      unlimited
  locks                unlimited
  rtprio               0

------------------------------------------------------------
5. sysinfo process ancestry
 /sbin/init
 /bin/login -p --
 -bash
 su
 bash
 bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 -c
   ic2024.0.2-lin-sapphirerapids-rate-20231213.cfg --define smt-on --define cores=64 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak -o all fprate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 --configfile
   ic2024.0.2-lin-sapphirerapids-rate-20231213.cfg --define smt-on --define cores=64 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
   --runmode rate --tune base:peak --size refrate fprate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.005/templogs/preenv.fprate.005.0.log --lognum 005.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : INTEL(R) XEON(R) PLATINUM 8562Y+
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 207
    stepping        : 2
    microcode       : 0x210002a9
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
    cpu cores       : 32
    siblings        : 64
    2 physical ids (chips)
    128 processors (hardware threads)
    physical id 0: core ids 0-31
    physical id 1: core ids 0-31
    physical id 0: apicids 0-63
    physical id 1: apicids 128-191
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
  virtualized systems.  Use the above data carefully.
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
7. lscpu

From lscpu from util-linux 2.37.2:
  Architecture:                         x86_64
  CPU op-mode(s):                       32-bit, 64-bit
  Address sizes:                        46 bits physical, 57 bits virtual
  Byte Order:                           Little Endian
  CPU(s):                               128
  On-line CPU(s) list:                  0-127
  Vendor ID:                            GenuineIntel
  Model name:                           INTEL(R) XEON(R) PLATINUM 8562Y+
  CPU family:                           6
  Model:                                207
  Thread(s) per core:                   2
  Core(s) per socket:                   32
  Socket(s):                            2
  Stepping:                             2
  BogoMIPS:                             5600.00
  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 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 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 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 amx_bf16 avx512_fp16 amx_tile
                                        amx_int8 flush_l1d arch_capabilities
  L1d cache:                            3 MiB (64 instances)
  L1i cache:                            2 MiB (64 instances)
  L2 cache:                             128 MiB (64 instances)
  L3 cache:                             120 MiB (2 instances)
  NUMA node(s):                         4
  NUMA node0 CPU(s):                    0-15,64-79
  NUMA node1 CPU(s):                    16-31,80-95
  NUMA node2 CPU(s):                    32-47,96-111
  NUMA node3 CPU(s):                    48-63,112-127
  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 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 and seccomp
  Vulnerability Spectre v1:             Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:             Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling;
                                        PBRSB-eIBRS SW sequence; BHI BHI_DIS_S
  Vulnerability Srbds:                  Not affected
```

(Continued on next page)

Platform Notes (Continued)

```
  Vulnerability Tsx async abort:        Not affected

From lscpu --cache:
     NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
     L1d       48K       3M   12 Data            1    64        1             64
     L1i       32K       2M    8 Instruction     1    64        1             64
     L2         2M     128M   16 Unified         2  2048        1             64
     L3        60M     120M   15 Unified         3 65536        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0-15,64-79
  node 0 size: 257676 MB
  node 0 free: 238402 MB
  node 1 cpus: 16-31,80-95
  node 1 size: 258039 MB
  node 1 free: 243874 MB
  node 2 cpus: 32-47,96-111
  node 2 size: 258039 MB
  node 2 free: 244434 MB
  node 3 cpus: 48-63,112-127
  node 3 size: 257985 MB
  node 3 free: 244344 MB
  node distances:
  node   0   1   2   3
    0:  10  12  21  21
    1:  12  10  21  21
    2:  21  21  10  12
    3:  21  21  12  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056502988 kB

------------------------------------------------------------
10. who -r
  run-level 3 Jul 19 06:10

------------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.16)
  Default Target  Status
  multi-user      degraded

------------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
    UNIT                                LOAD   ACTIVE SUB    DESCRIPTION
  * systemd-networkd-wait-online.service loaded failed failed Wait for Network to be Configured

------------------------------------------------------------
13. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          ModemManager apparmor blk-availability cloud-config cloud-final cloud-init
                   cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
                   grub-common grub-initrd-fallback irqbalance keyboard-setup lvm2-monitor lxd-agent
                   multipathd networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog secureboot-db
                   setvtrgb snapd ssh systemd-networkd systemd-networkd-wait-online systemd-pstore
                   systemd-resolved systemd-timesyncd thermald ua-reboot-cmds ubuntu-advantage udisks2 ufw
                   unattended-upgrades vgauth
```

(Continued on next page)

Platform Notes (Continued)

```
  enabled-runtime  netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
  disabled         console-getty debug-shell ipmievd iscsid nftables rsync serial-getty@
                   systemd-boot-check-no-failures systemd-network-generator systemd-sysext
                   systemd-time-wait-sync upower
  generated        apport openipmi
  indirect         uuidd
  masked           cryptdisks cryptdisks-early hwclock lvm2 multipath-tools-boot rc rcS screen-cleanup sudo
                   x11-common

------------------------------------------------------------
14. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/vmlinuz-5.15.0-143-generic
  root=UUID=9aebdeef-10e6-4d72-afd3-0a1b298270ed
  ro

------------------------------------------------------------
15. 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

------------------------------------------------------------
16. /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

------------------------------------------------------------
17. /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

------------------------------------------------------------
18. OS release
  From /etc/*-release /etc/*-version
  os-release Ubuntu 22.04.1 LTS

------------------------------------------------------------
```

(Continued on next page)

Platform Notes (Continued)

```
19. Disk information
SPEC is set to: /home/cpu2017
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p5 ext4  380G  126G  235G  35% /home

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:          Tyrone Systems
    Product:         SDI200A3N-212
    Product Family: Family
    Serial:          A495115X4412722

------------------------------------------------------------
21. 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:
    16x NO DIMM NO DIMM
    16x Samsung M321R8GA0PB0-CWMCJ 64 GB 2 rank 5600


------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      2.6
   BIOS Date:         05/15/2025
   BIOS Revision:     5.32
```

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 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C++             | 508.namd_r(base, peak) 510.parest_r(base, peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C++, C          | 511.povray_r(base, peak) 526.blender_r(base, peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

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

(Continued on next page)

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.
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, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base, peak)
------------------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------------------------------------

==============================================================================================================
Fortran, C      | 521.wrf_r(base, peak) 527.cam4_r(base, peak)
------------------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

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

(Continued on next page)

Base Portability Flags (Continued)

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 -xsapphirerapids -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 -xsapphirerapids -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 -xsapphirerapids -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 -xsapphirerapids -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 -xsapphirerapids -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

(Continued on next page)

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:
`-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsapphirerapids -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`

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`

(Continued on next page)

Peak Optimization Flags (Continued)

544.nab_r: basepeak = yes

C++ benchmarks:

508.namd_r: basepeak = yes

510.parest_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids
-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 -xsapphirerapids -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 -xsapphirerapids -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.profdata(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++:
-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsapphirerapids -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

(Continued on next page)

Peak Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):
`-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/Tyrone-Platform-Settings-V1.2-SPR-revC.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/Tyrone-Platform-Settings-V1.2-SPR-revC.xml`

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.9 on 2025-07-19 07:15:46-0400.
Report generated on 2025-08-12 15:48:13 by CPU2017 PS formatter v6716.
Originally published on 2025-08-12.