



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_fp_base = 1140

meta brain NF5180G8 (Intel Xeon 6780E)

SPECrate®2017_fp_peak = 1170

CPU2017 License: 3358

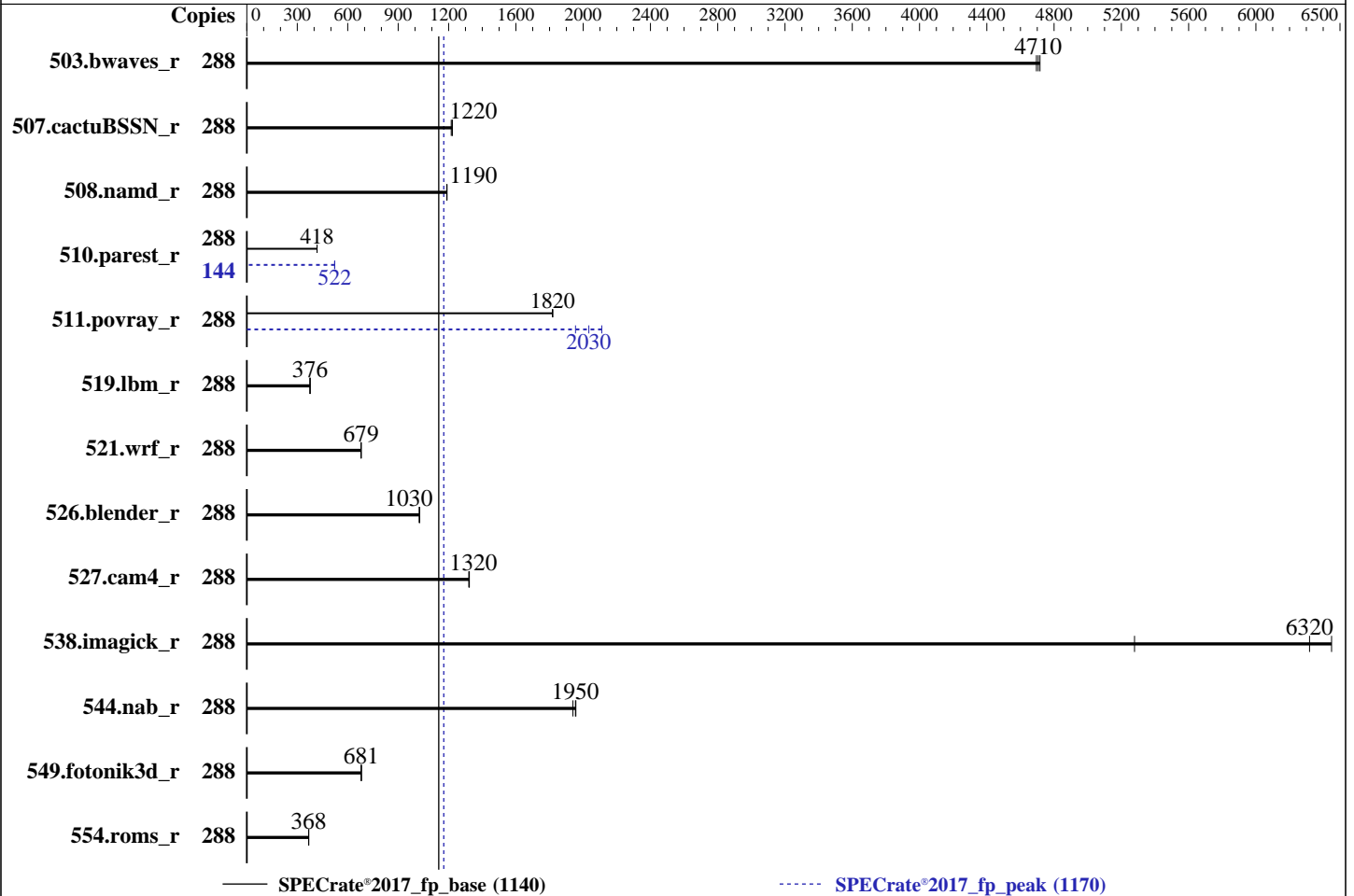
Test Date: Jul-2024

Test Sponsor: IEIT Systems Co., Ltd.

Hardware Availability: Oct-2024

Tested by: IEIT Systems Co., Ltd.

Software Availability: Jun-2024



Hardware

CPU Name: Intel Xeon 6780E
 Max MHz: 3000
 Nominal: 2200
 Enabled: 288 cores, 2 chips
 Orderable: 1,2 chips
 Cache L1: 64 KB I + 32 KB D on chip per core
 L2: 4 MB I+D on chip per core
 L3: 108 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R)
 Storage: 1 x 1.92 TB NVME SSD
 Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP6
 6.4.0-150600.21-default
 Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++
 Compiler for Linux;
 Fortran: Version 2024.1 of Intel Fortran Compiler
 for Linux;
 Parallel: No
 Firmware: Version 00.14.00 released Jun-2024
 File System: btrfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc memory allocator V5.0.1
 Power Management: BIOS set to prefer performance at the cost
 of additional power usage.



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	288	615	4690	614	4710	612	4720	288	615	4690	614	4710	612	4720
507.cactuBSSN_r	288	299	1220	298	1220	300	1220	288	299	1220	298	1220	300	1220
508.namd_r	288	230	1190	230	1190	230	1190	288	230	1190	230	1190	230	1190
510.parest_r	288	1806	417	1804	418	1803	418	144	721	523	721	522	721	522
511.povray_r	288	370	1820	370	1820	370	1820	288	331	2030	344	1950	319	2110
519.lbm_r	288	807	376	807	376	807	376	288	807	376	807	376	807	376
521.wrf_r	288	948	680	949	679	951	678	288	948	680	949	679	951	678
526.blender_r	288	427	1030	428	1020	427	1030	288	427	1030	428	1020	427	1030
527.cam4_r	288	381	1320	382	1320	381	1320	288	381	1320	382	1320	381	1320
538.imagick_r	288	111	6450	113	6320	136	5280	288	111	6450	113	6320	136	5280
544.nab_r	288	250	1940	248	1960	248	1950	288	250	1940	248	1960	248	1950
549.fotonik3d_r	288	1648	681	1648	681	1651	680	288	1648	681	1648	681	1651	680
554.roms_r	288	1245	368	1243	368	1245	368	288	1245	368	1243	368	1245	368

SPECrate®2017_fp_base = **1140**

SPECrate®2017_fp_peak = **1170**

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)

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General Notes (Continued)

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:
ENERGY_PERF_BIAS_CFG mode set to Performance
Hardware Prefetch set to Disable
VT Support set to Disable

Sysinfo program /home/CPU2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Mon Jul 29 05:48:51 2024

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

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1. uname -a
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11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
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17. /sys/kernel/mm/transparent_hugepage/khugepaged
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20. /sys/devices/virtual/dmi/id
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22. BIOS

1. uname -a
Linux localhost 6.4.0-150600.21-default #1 SMP PREEMPT_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)
x86_64 x86_64 x86_64 GNU/Linux

2. w
05:48:51 up 6:00, 1 user, load average: 167.88, 257.93, 276.21
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT

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Platform Notes (Continued)

```
root      tty1      -                23:49    5:58m  1.91s  0.06s  sh
reportable-ic2024.1-lin-sierraforest-rate-20240308.sh
```

3. Username

From environment variable \$USER: root

4. ulimit -a

```
core file size          (blocks, -c) unlimited
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 4124242
max locked memory       (kbytes, -l) 8192
max memory size         (kbytes, -m) unlimited
open files              (-n) 1024
pipe size               (512 bytes, -p) 8
POSIX message queues    (bytes, -q) 819200
real-time priority      (-r) 0
stack size              (kbytes, -s) unlimited
cpu time                (seconds, -t) unlimited
max user processes      (-u) 4124242
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
login -- root
-bash
sh reportable-ic2024.1-lin-sierraforest-rate-20240308.sh
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=288 -c
ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define peakfpcopies=144 --define
physicalfirst --define invoke_with_interleave --define drop_caches --reportable --tune base,peak -o all
fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=288 --configfile
ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define peakfpcopies=144 --define
physicalfirst --define invoke_with_interleave --define drop_caches --reportable --tune base,peak
--output_format all --nopower --runmode rate --tune base:peak --size refrate fprate --nopreenv
--note-preenv --logfile $SPEC/tmp/CPU2017.013/templogs/preenv.fprate.013.0.log --lognum 013.0
--from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2017
```

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6780E
vendor_id      : GenuineIntel
cpu family     : 6
model          : 175
stepping      : 3
microcode     : 0x130001a0
bugs          : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores     : 144
siblings      : 144
2 physical ids (chips)
288 processors (hardware threads)
physical id 0: core ids 0-143
physical id 1: core ids 0-143
```

(Continued on next page)



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Platform Notes (Continued)

physical id 0: apicids

0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118,120,122,124,126,128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,180,182,184,186,188,190,192,194,196,198,200,202,204,206,208,210,212,214,216,218,220,222,224,226,228,230,232,234,236,238,240,242,244,246,248,250,252,254,256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286

physical id 1: apicids

512,514,516,518,520,522,524,526,528,530,532,534,536,538,540,542,544,546,548,550,552,554,556,558,560,562,564,566,568,570,572,574,576,578,580,582,584,586,588,590,592,594,596,598,600,602,604,606,608,610,612,614,616,618,620,622,624,626,628,630,632,634,636,638,640,642,644,646,648,650,652,654,656,658,660,662,664,666,668,670,672,674,676,678,680,682,684,686,688,690,692,694,696,698,700,702,704,706,708,710,712,714,716,718,720,722,724,726,728,730,732,734,736,738,740,742,744,746,748,750,752,754,756,758,760,762,764,766,768,770,772,774,776,778,780,782,784,786,788,790,792,794,796,798

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 2.39.3:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          52 bits physical, 48 bits virtual
Byte Order:             Little Endian
CPU(s):                 288
On-line CPU(s) list:   0-287
Vendor ID:              GenuineIntel
BIOS Vendor ID:        Intel(R) Corporation
Model name:             Intel(R) Xeon(R) 6780E
BIOS Model name:       Intel(R) Xeon(R) 6780E  CPU @ 2.2GHz
BIOS CPU family:       179
CPU family:             6
Model:                  175
Thread(s) per core:    1
Core(s) per socket:    144
Socket(s):              2
Stepping:               3
Frequency boost:        enabled
CPU(s) scaling MHz:    38%
CPU max MHz:           2201.0000
CPU min MHz:           800.0000
BogoMIPS:               4400.00
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 smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm
pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb
cat_l3 cat_l2 cdp_l3 intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp
ibrs_enhanced fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid
cqm rdt_a rdseed adx smap clflushopt clwb intel_pt sha_ni xsaveopt
xsaves xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local split_lock_detect user_shstk avx_vnni lam wbnoinvd
dtherm ida arat pln pts umip pku ospke waitpkg gfni vaes vpclmulqdq
tme rdpid bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm
md_clear serialize pconfig arch_lbr ibt flush_lld arch_capabilities

L1d cache:             9 MiB (288 instances)
L1i cache:             18 MiB (288 instances)
L2 cache:              288 MiB (72 instances)

```

(Continued on next page)



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Platform Notes (Continued)

```

L3 cache:                216 MiB (2 instances)
NUMA node(s):            2
NUMA node0 CPU(s):      0-143
NUMA node1 CPU(s):      144-287
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
Vulnerability Spectre v1:        Mitigation; usercopy/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2:        Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling;
                                   PBRSE-eIBRS Not affected; BHI BHI_DIS_S
Vulnerability Srbds:            Not affected
Vulnerability Tsx async abort:    Not affected

```

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	32K	9M	8	Data	1	64	1	64
L1i	64K	18M	8	Instruction	1	128	1	64
L2	4M	288M	16	Unified	2	4096	1	64
L3	108M	216M	12	Unified	3	147456	1	64

8. numactl --hardware

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

```

available: 2 nodes (0-1)
node 0 cpus: 0-143
node 0 size: 515516 MB
node 0 free: 457749 MB
node 1 cpus: 144-287
node 1 size: 515570 MB
node 1 free: 459582 MB
node distances:
node  0  1
  0:  10  21
  1:  21  10

```

9. /proc/meminfo

MemTotal: 1055832876 kB

10. who -r

run-level 3 Jul 28 23:49

11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)

```

Default Target    Status
multi-user        running

```

12. Services, from systemctl list-unit-files

```

STATE UNIT FILES
enabled YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager firewalld getty@
irqbalance issue-generator kbdsettings kdump kdump-early kdump-notify klog lvm2-monitor

```

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Platform Notes (Continued)

```

enabled-runtime  nscd nvme-fc-boot-connections nvme-autoconnect postfix purge-kernels rollback rsyslog
disabled         smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
                 systemd-remount-fs
                 autofsd autostart-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                 chronyd console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info fsidd
                 gpm grub2-once haveged ipmi ipmievdev issue-add-ssh-keys kexec-load lunmask man-db-create
                 multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd serial-getty@ smartd-generate_opts
                 snmpd snmptrapd systemd-boot-check-no-failures systemd-confext systemd-network-generator
                 systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2 vncserver@
generated        jexec
indirect         systemd-userdbd wickedd

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
root=UUID=a3d53a1f-8f63-48d4-8701-1df82a242eeb
splash=silent
mitigations=auto
quiet
security=apparmor
crashkernel=371M,high
crashkernel=72M,low

```

```

-----
14. cpupower frequency-info
analyzing CPU 35:
  current policy: frequency should be within 800 MHz and 2.20 GHz.
                  The governor "ondemand" may decide which speed to use
                  within this range.

  boost state support:
    Supported: yes
    Active: yes

```

```

-----
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+madvice [madvice] never
enabled        [always] madvice never
hpage_pmd_size 2097152

```

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Platform Notes (Continued)

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 SUSE Linux Enterprise Server 15 SP6
-----

```

```

-----
19. Disk information
SPEC is set to: /home/CPU2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/nvme0n1p2 btrfs 892G 165G 727G 19% /home
-----

```

```

-----
20. /sys/devices/virtual/dmi/id
Vendor: IEIT SYSTEMS
Product: NF5280-M8-A0-R0-00
Product Family: Not specified
Serial: 000000000
-----

```

```

-----
21. dmidecode
Additional information from dmidecode 3.4 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 M321R8GA0PB2-CCPEC 64 GB 2 rank 6400
-----

```

```

-----
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 00.14.00
BIOS Date: 06/21/2024
BIOS Revision: 5.35
-----

```

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

```

```

=====
C++ | 508.namd_r(base, peak) 510.parest_r(base, peak)
-----

```

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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
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=====
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 2024.1.0 Build 20240308
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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 | 507.cactuBSSN_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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=====
Fortran | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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=====
Fortran, C | 521.wrf_r(base, peak) 527.cam4_r(base, peak)

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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

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SPEC CPU®2017 Floating Point Rate Result

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IEIT Systems Co., Ltd.

SPECrate®2017_fp_base = 1140

meta brain NF5180G8 (Intel Xeon 6780E)

SPECrate®2017_fp_peak = 1170

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Jul-2024

Hardware Availability: Oct-2024

Software Availability: Jun-2024

Base Compiler Invocation (Continued)

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 -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 -ljemalloc
 -L/usr/local/jemalloc64-5.0.1/lib

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

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Base Optimization Flags (Continued)

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 -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 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, 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 -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



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Peak Optimization Flags

C benchmarks:

519.lbm_r: basepeak = yes

538.imagick_r: basepeak = yes

544.nab_r: basepeak = yes

C++ benchmarks:

508.namd_r: basepeak = yes

510.parest_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xsierraforest -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -gopt-mem-layout-trans=4 -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

554.roms_r: basepeak = yes

Benchmarks using both Fortran and C:

521.wrf_r: basepeak = yes

527.cam4_r: basepeak = yes

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 -flto -Ofast -ffast-math -mfpmath=sse -funroll-loops -gopt-mem-layout-trans=4 -Wno-implicit-int -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: basepeak = yes



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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/IEIT-Platform-Settings-intel-V1.0.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/IEIT-Platform-Settings-intel-V1.0.xml>

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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 2024-07-29 05:48:51-0400.

Report generated on 2024-08-14 14:07:31 by CPU2017 PDF formatter v6716.

Originally published on 2024-08-13.