



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Kaytus Systems Pte. Ltd. KR1280V3 (Intel Xeon 6740E)

### SPECrate®2017\_fp\_base = 938 SPECrate®2017\_fp\_peak = 954

CPU2017 License: 3358

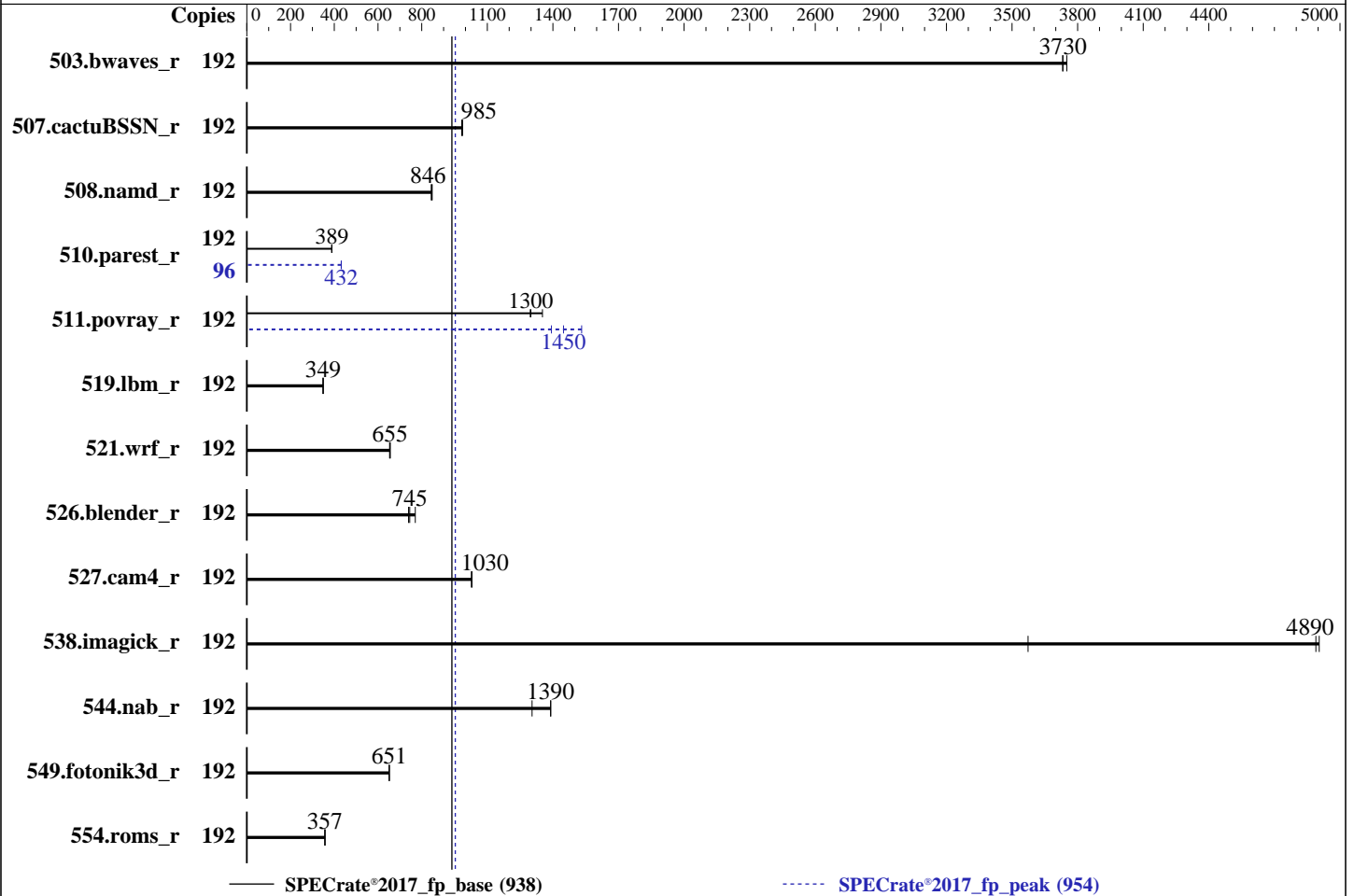
Test Sponsor: Kaytus Systems Pte. Ltd.

Tested by: Kaytus Systems Pte. Ltd.

Test Date: Nov-2024

Hardware Availability: Oct-2024

Software Availability: Jun-2024



### Hardware

CPU Name: Intel Xeon 6740E  
 Max MHz: 3200  
 Nominal: 2400  
 Enabled: 192 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: 96 MB I+D on chip per chip  
 Other: None  
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R)  
 Storage: 1 x 960 GB 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 00.17.03 released Sep-2024  
 File System: xfs  
 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    | 192    | 516         | 3730        | 513        | 3750        | <b>516</b>  | <b>3730</b> | 192    | 516         | 3730        | 513        | 3750        | <b>516</b> | <b>3730</b> |
| 507.cactuBSSN_r | 192    | <b>247</b>  | <b>985</b>  | 246        | 987         | 247         | 983         | 192    | <b>247</b>  | <b>985</b>  | 246        | 987         | 247        | 983         |
| 508.namd_r      | 192    | 215         | 848         | <b>216</b> | <b>846</b>  | 216         | 844         | 192    | 215         | 848         | <b>216</b> | <b>846</b>  | 216        | 844         |
| 510.parest_r    | 192    | 1293        | 388         | 1290       | 389         | <b>1292</b> | <b>389</b>  | 96     | 581         | 432         | <b>581</b> | <b>432</b>  | 582        | 432         |
| 511.povray_r    | 192    | 346         | 1300        | <b>345</b> | <b>1300</b> | 332         | 1350        | 192    | 293         | 1530        | <b>309</b> | <b>1450</b> | 322        | 1390        |
| 519.lbm_r       | 192    | 580         | 349         | 579        | 349         | <b>580</b>  | <b>349</b>  | 192    | 580         | 349         | 579        | 349         | <b>580</b> | <b>349</b>  |
| 521.wrf_r       | 192    | <b>656</b>  | <b>655</b>  | 659        | 653         | 656         | 656         | 192    | <b>656</b>  | <b>655</b>  | 659        | 653         | 656        | 656         |
| 526.blender_r   | 192    | 395         | 740         | <b>392</b> | <b>745</b>  | 379         | 771         | 192    | 395         | 740         | <b>392</b> | <b>745</b>  | 379        | 771         |
| 527.cam4_r      | 192    | 327         | 1030        | 326        | 1030        | <b>327</b>  | <b>1030</b> | 192    | 327         | 1030        | 326        | 1030        | <b>327</b> | <b>1030</b> |
| 538.imagick_r   | 192    | <b>97.7</b> | <b>4890</b> | 97.4       | 4910        | 134         | 3570        | 192    | <b>97.7</b> | <b>4890</b> | 97.4       | 4910        | 134        | 3570        |
| 544.nab_r       | 192    | 232         | 1390        | 248        | 1300        | <b>233</b>  | <b>1390</b> | 192    | 232         | 1390        | 248        | 1300        | <b>233</b> | <b>1390</b> |
| 549.fotonik3d_r | 192    | <b>1149</b> | <b>651</b>  | 1149       | 651         | 1148        | 652         | 192    | <b>1149</b> | <b>651</b>  | 1149       | 651         | 1148       | 652         |
| 554.roms_r      | 192    | 853         | 358         | 855        | 357         | <b>854</b>  | <b>357</b>  | 192    | 853         | 358         | 855        | 357         | <b>854</b> | <b>357</b>  |

SPECrate®2017\_fp\_base = **938**

SPECrate®2017\_fp\_peak = **954**

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)

(Continued on next page)



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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 Wed Nov 13 02:15:06 2024

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 254 (254.10+suse.84.ge8d77af424)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
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 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  
02:15:06 up 5:21, 1 user, load average: 116.24, 172.67, 183.71  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
-----

(Continued on next page)



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### Platform Notes (Continued)

```
root      tty1      -                20:55    5:19m  1.60s  0.03s  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) 4124634
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) 4124634
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=192 -c
  ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define peakfpcopies=96 --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=192 --configfile
  ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define peakfpcopies=96 --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/CPU2017.002/templogs/preenv.fprate.002.0.log --lognum 002.0
  --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2017
```

-----  
6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6740E
vendor_id       : GenuineIntel
cpu family      : 6
model           : 175
stepping        : 3
microcode       : 0x3000190
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores       : 96
siblings        : 96
2 physical ids (chips)
192 processors (hardware threads)
physical id 0:  core ids 0-95
physical id 1:  core ids 0-95
```

(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  
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

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):                192
On-line CPU(s) list:   0-191
Vendor ID:             GenuineIntel
BIOS Vendor ID:        Intel(R) Corporation
Model name:            Intel(R) Xeon(R) 6740E
BIOS Model name:       Intel(R) Xeon(R) 6740E  CPU @ 2.4GHz
BIOS CPU family:       179
CPU family:            6
Model:                 175
Thread(s) per core:    1
Core(s) per socket:    96
Socket(s):              2
Stepping:              3
Frequency boost:       enabled
CPU(s) scaling MHz:    34%
CPU max MHz:           2401.0000
CPU min MHz:           800.0000
BogoMIPS:              4800.00
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
xsavc 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_l1d arch_capabilities

L1d cache:            6 MiB (192 instances)
L1i cache:            12 MiB (192 instances)
L2 cache:              192 MiB (48 instances)
L3 cache:              192 MiB (2 instances)
NUMA node(s):         2
NUMA node0 CPU(s):    0-95
```

(Continued on next page)



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## Platform Notes (Continued)

```

NUMA node1 CPU(s):          96-191
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit: Not affected
Vulnerability Lltf:         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/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2:   Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling;
                             PBRSB-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      | 6M       | 8    | Data        | 1     | 64     | 1        | 64             |
| L1i  | 64K      | 12M      | 8    | Instruction | 1     | 128    | 1        | 64             |
| L2   | 4M       | 192M     | 16   | Unified     | 2     | 4096   | 1        | 64             |
| L3   | 96M      | 192M     | 12   | Unified     | 3     | 131072 | 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: 0-95
node 0 size: 515526 MB
node 0 free: 475387 MB
node 1 cpus: 96-191
node 1 size: 515658 MB
node 1 free: 477967 MB
node distances:
node  0  1
 0:  10  21
 1:  21  10

```

9. /proc/meminfo

MemTotal: 1055933316 kB

10. who -r

run-level 3 Nov 12 20:54

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
nscd nvme-fc-boot-connections nvme-autoconnect postfix purge-kernels rollback rsyslog
smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs

```

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### Platform Notes (Continued)

```

disabled      autofsd autofast-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 hwloc-dump-hwdata ipmi ipmievdt 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@
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=18377317-737e-4218-af3f-1dfefc7f1bec
splash=silent
mitigations=auto
quiet
security=apparmor
crashkernel=371M,high
crashkernel=72M,low

```

-----  
14. cpupower frequency-info

```

analyzing CPU 27:
  current policy: frequency should be within 800 MHz and 2.40 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+madvise [madvise] never
enabled     [always] madvise never
hpage_pmd_size 2097152
shmem_enabled always within_size advise [never] deny force

```

(Continued on next page)





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## Platform Notes (Continued)

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 xfs 892G 218G 675G 25% /

20. /sys/devices/virtual/dmi/id  
Vendor: KAYTUS  
Product: KR1280-X3-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: 00.17.03  
BIOS Date: 09/27/2024

## 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  
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=====

=====  
C++ | 508.namd\_r(base, peak) 510.parest\_r(base, peak)  
=====

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=====

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# SPEC CPU®2017 Floating Point Rate Result

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**Kaytus Systems Pte. Ltd.**  
**KR1280V3 (Intel Xeon 6740E)**

**SPECrate®2017\_fp\_base = 938**  
**SPECrate®2017\_fp\_peak = 954**

**CPU2017 License:** 3358  
**Test Sponsor:** Kaytus Systems Pte. Ltd.  
**Tested by:** Kaytus Systems Pte. Ltd.

**Test Date:** Nov-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Jun-2024

## Compiler Version Notes (Continued)

```

=====
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
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-----

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
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
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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
Copyright (C) 1985-2024 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 2024.1.0 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
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-----

```

## 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

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## Base Compiler Invocation (Continued)

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
```

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
```

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**Test Date:** Nov-2024

**Hardware Availability:** Oct-2024

**Software Availability:** Jun-2024

## Base Optimization Flags (Continued)

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



# SPEC CPU®2017 Floating Point Rate Result

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SPECrate®2017\_fp\_peak = 954

CPU2017 License: 3358

Test Sponsor: Kaytus Systems Pte. Ltd.

Tested by: Kaytus Systems Pte. Ltd.

Test Date: Nov-2024

Hardware Availability: Oct-2024

Software Availability: Jun-2024

## 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.profddata(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



# SPEC CPU®2017 Floating Point Rate Result

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**Test Date:** Nov-2024

**Hardware Availability:** Oct-2024

**Software Availability:** Jun-2024

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/Kaytus-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/Kaytus-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](mailto:info@spec.org).

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