SPEC CPU®2017 Integer Rate Result

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Kaytus Systems Pte. Ltd.
KR1280V3 (Intel Xeon 6766E)

$SPECrate®2017\_int\_base = 1310$

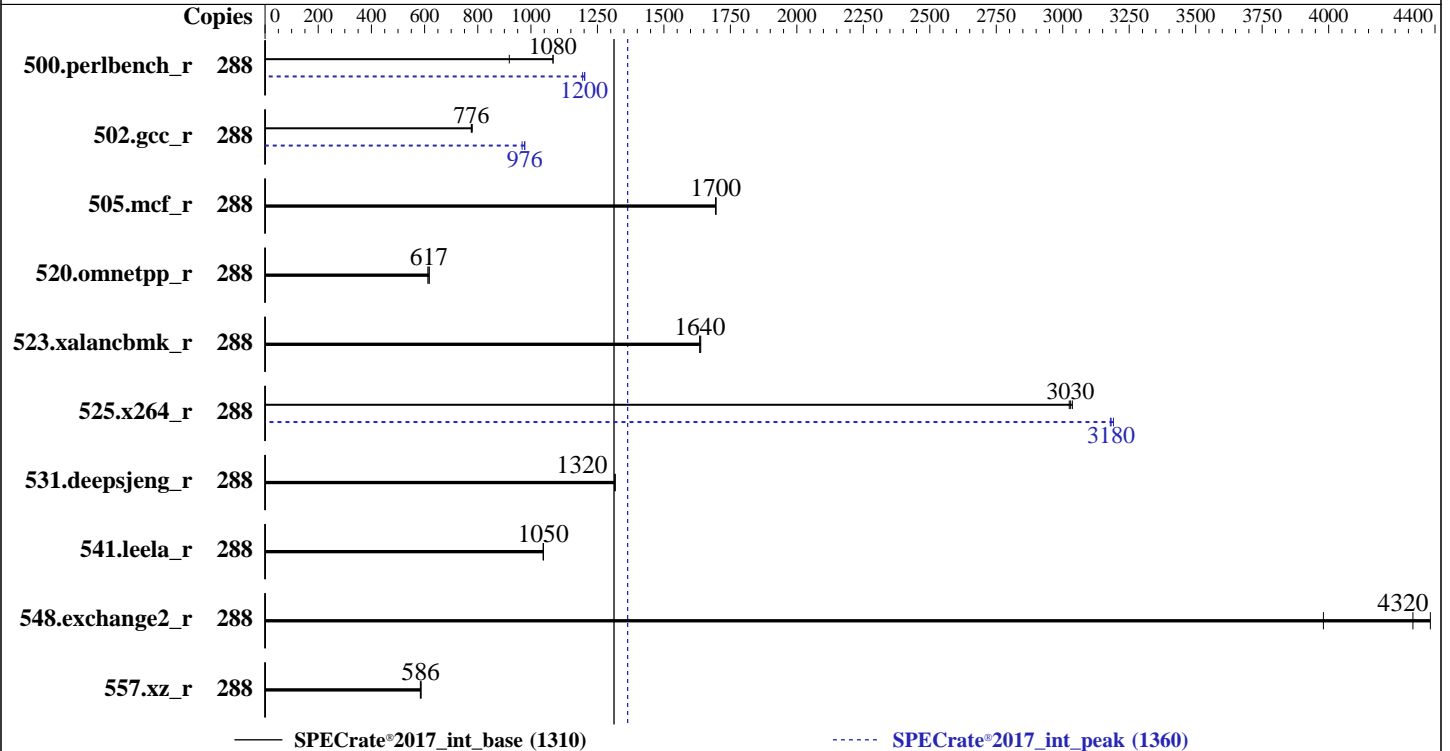$SPECrate®2017\_int\_peak = 1360$

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

Test Date: Sep-2024
Hardware Availability: Oct-2024
Software Availability: Jun-2024

Benchmark	Copies	Base	Peak
500.perlbench_r	288	1080	1200
502.gcc_r	288	776	976
505.mcf_r	288	1700	
520.omnetpp_r	288	617	
523.xalancbmk_r	288	1640	
525.x264_r	288	3030	3180
531.deepsjeng_r	288	1320	
541.leela_r	288	1050	
548.exchange2_r	288	4320	
557.xz_r	288	586	

SPECrate®2017_int_base (1310) SPECrate®2017_int_peak (1360)

Hardware

CPU Name: Intel Xeon 6766E
 Max MHz: 2700
 Nominal: 1900
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 00.14.04 released Jul-2024
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS set to prefer performance at the cost of additional power usage.

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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SPECrate®2017_int_base = 1310

SPECrate®2017_int_peak = 1360

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	288	423	1080	499	919	**423**	**1080**	288	381	1200	384	1190	**381**	**1200**
502.gcc_r	288	526	776	523	779	**525**	**776**	288	418	977	422	967	**418**	**976**
505.mcf_r	288	274	1700	275	1690	**274**	**1700**	288	274	1700	275	1690	**274**	**1700**
520.omnetpp_r	288	612	617	**613**	**617**	617	612	288	612	617	**613**	**617**	617	612
523.xalancbmk_r	288	**186**	**1640**	186	1630	186	1640	288	**186**	**1640**	186	1630	186	1640
525.x264_r	288	**166**	**3030**	166	3040	167	3020	288	158	3190	159	3180	**158**	**3180**
531.deepsjeng_r	288	**251**	**1320**	251	1320	251	1320	288	**251**	**1320**	251	1320	251	1320
541.leela_r	288	455	1050	**456**	**1050**	456	1050	288	455	1050	**456**	**1050**	456	1050
548.exchange2_r	288	190	3980	**175**	**4320**	172	4380	288	190	3980	**175**	**4320**	172	4380
557.xz_r	288	**531**	**586**	530	587	533	584	288	**531**	**586**	530	587	533	584
SPECrate®2017_int_base =	**1310**													
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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 = "/home/CPU2017/lib/intel64:/home/CPU2017/lib/ia32:/home/CPU2017/je5.0.1-32"
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)
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)
```

(Continued on next page)

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General Notes (Continued)

```
is mitigated in the system as tested and documented.


jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS configuration:
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 Fri Sep  6 10:59:07 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
   10:59:07 up 1 min,  1 user,  load average: 0.48, 0.18, 0.07
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                10:58   11.00s  1.83s  0.05s sh
  reportable-ic2024.1-lin-sierraforest-rate-20240308.sh

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

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Platform Notes (Continued)

```
  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) 4124139
    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) 4124139
    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-20231213.cfg --define smt-on --define cores=288 --define physicalfirst
     --define invoke_with_interleave --define drop_caches --reportable --tune base,peak -o all intrate
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=288 --configfile
     ic2024.1-lin-sierraforest-rate-20231213.cfg --define smt-on --define cores=288 --define physicalfirst
     --define invoke_with_interleave --define drop_caches --reportable --tune base,peak --output_format all
     --nopower --runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
     $SPEC/tmp/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
  $SPEC = /home/CPU2017


    -----------------------------------------------------------
  6. /proc/cpuinfo
     model name        : Intel(R) Xeon(R) 6766E
     vendor_id         : GenuineIntel
     cpu family        : 6
     model             : 175
     stepping          : 3
     microcode         : 0x3000190
     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
     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
   ,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118,120,122,124,126,128,130,1
   32,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,180,182,18
   4,186,188,190,192,194,196,198,200,202,204,206,208,210,212,214,216,218,220,222,224,226,228,230,232,234,236
   ,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
```

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Platform Notes (Continued)

```
     physical id 1: apicids
     512,514,516,518,520,522,524,526,528,530,532,534,536,538,540,542,544,546,548,550,552,554,556,558,560,562,5
     64,566,568,570,572,574,576,578,580,582,584,586,588,590,592,594,596,598,600,602,604,606,608,610,612,614,61
     6,618,620,622,624,626,628,630,632,634,636,638,640,642,644,646,648,650,652,654,656,658,660,662,664,666,668
     ,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,
     722,724,726,728,730,732,734,736,738,740,742,744,746,748,750,752,754,756,758,760,762,764,766,768,770,772,7
     74,776,778,780,782,784,786,788,790,792,794,796,798
   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) 6766E
     BIOS Model name:            Intel(R) Xeon(R) 6766E  CPU @ 1.9GHz
     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:         43%
     CPU max MHz:                1901.0000
     CPU min MHz:                800.0000
     BogoMIPS:                   3800.00
     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
                                 xsavec 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:                  9 MiB (288 instances)
     L1i cache:                  18 MiB (288 instances)
     L2 cache:                   288 MiB (72 instances)
     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
```

(Continued on next page)

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Platform Notes (Continued)

```
  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/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       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: 515452 MB
  node 0 free: 514011 MB
  node 1 cpus: 144-287
  node 1 size: 515608 MB
  node 1 free: 514268 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10


  --------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1055806628 kB


  --------------------------------------------------------------
10. who -r
   run-level 3 Sep 6 10:58


  --------------------------------------------------------------
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 nvmefc-boot-connections nvmf-autoconnect postfix purge-kernels rollback rsyslog
                   smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
   enabled-runtime systemd-remount-fs
   disabled        autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                   chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info fsidd
                   gpm grub2-once haveged ipmi ipmievd issue-add-ssh-keys kexec-load lunmask man-db-create
```

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Platform Notes (Continued)

```
                   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 119:
     current policy: frequency should be within 800 MHz and 1.90 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

     ---------------------------------------------------------------
17. /sys/kernel/mm/transparent_hugepage/khugepaged
  alloc_sleep_millisecs   60000
  defrag                  1
  max_ptes_none           511
```

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Platform Notes (Continued)

```
    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  180G  712G  21% /

    ------------------------------------------------------------
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:     00.14.04
    BIOS Date:        07/29/2024
```

Compiler Version Notes

```
==============================================================================================
C      | 502.gcc_r(peak)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


==============================================================================================
C      | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
       | 557.xz_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      | 502.gcc_r(peak)
```

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CPU2017 License: 3358
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Tested by: Kaytus Systems Pte. Ltd.

Test Date: Sep-2024
Hardware Availability: Oct-2024
Software Availability: Jun-2024

Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.1.0 Build 20240308
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------------------------------------------------------------------------------


==============================================================================
C        | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
         | 557.xz_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++      | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
         | 541.leela_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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------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------
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------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-DSPEC_LP64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`

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Kaytus Systems Pte. Ltd.

KR1280V3 (Intel Xeon 6766E)

SPECrate®2017_int_base = 1310

SPECrate®2017_int_peak = 1360

CPU2017 License: 3358   **Test Date:** Sep-2024
Test Sponsor: Kaytus Systems Pte. Ltd.   **Hardware Availability:** Oct-2024
Tested by: Kaytus Systems Pte. Ltd.   **Software Availability:** Jun-2024

Base Portability Flags (Continued)

541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
```
-w -std=c11 -m64 -Wl,-z,muldefs -xsierraforest -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

C++ benchmarks:
```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsierraforest -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -xsierraforest -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

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

Fortran benchmarks:
```
ifx
```

Peak Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-D_FILE_OFFSET_BITS=64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`

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Kaytus Systems Pte. Ltd.
KR1280V3 (Intel Xeon 6766E)

SPECrate®2017_int_base = 1310

SPECrate®2017_int_peak = 1360

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

Test Date: Sep-2024
Hardware Availability: Oct-2024
Software Availability: Jun-2024

Peak Portability Flags (Continued)

523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Peak Optimization Flags

C benchmarks:

500.perlbench_r: `-w -std=c11 -m64 -Wl,-z,muldefs`
`-fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2 -flto`
`-Ofast -ffast-math -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -fno-strict-overflow`
`-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc`

502.gcc_r: `-m32 -L/opt/intel/oneapi/compiler/2024.1/lib32 -std=gnu89`
`-Wl,-z,muldefs -fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2 -flto`
`-Ofast -ffast-math -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -L/usr/local/jemalloc32-5.0.1/lib`
`-ljemalloc`

505.mcf_r: `basepeak = yes`

525.x264_r: `-w -std=c11 -m64 -Wl,-z,muldefs -xsierraforest -Ofast`
`-ffast-math -flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -fno-alias`
`-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc`

557.xz_r: `basepeak = yes`

C++ benchmarks:

520.omnetpp_r: `basepeak = yes`

523.xalancbmk_r: `basepeak = yes`

531.deepsjeng_r: `basepeak = yes`

541.leela_r: `basepeak = yes`

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Peak Optimization Flags (Continued)

Fortran benchmarks:

548.exchange2_r: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html
http://www.spec.org/cpu2017/flags/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

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

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