SPEC CPU®2017 Floating Point Rate Result

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

$SPECrate®2017\_fp\_base = 1230$

$SPECrate®2017\_fp\_peak = Not\ Run$

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Benchmark	Copies	Result
503.bwaves_r	256	4910
507.cactuBSSN_r	256	1270
508.namd_r	256	863
510.parest_r	256	779
511.povray_r	256	1320
519.lbm_r	256	464
521.wrf_r	256	788
526.blender_r	256	1310
527.cam4_r	256	1440
538.imagick_r	256	4860
544.nab_r	256	2610
549.fotonik3d_r	256	647
554.roms_r	256	477

SPECrate®2017_fp_base (1230)

Hardware

CPU Name: Intel Xeon Platinum 8592+
 Max MHz: 3900
 Nominal: 1900
Enabled: 128 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: 320 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-5600B-R)
Storage: 1 x 960 GB SATA SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP5
 5.14.21-150500.53-default
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 04.24.01.10 released Mar-2024
File System: btrfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2024 Standard Performance Evaluation Corporation
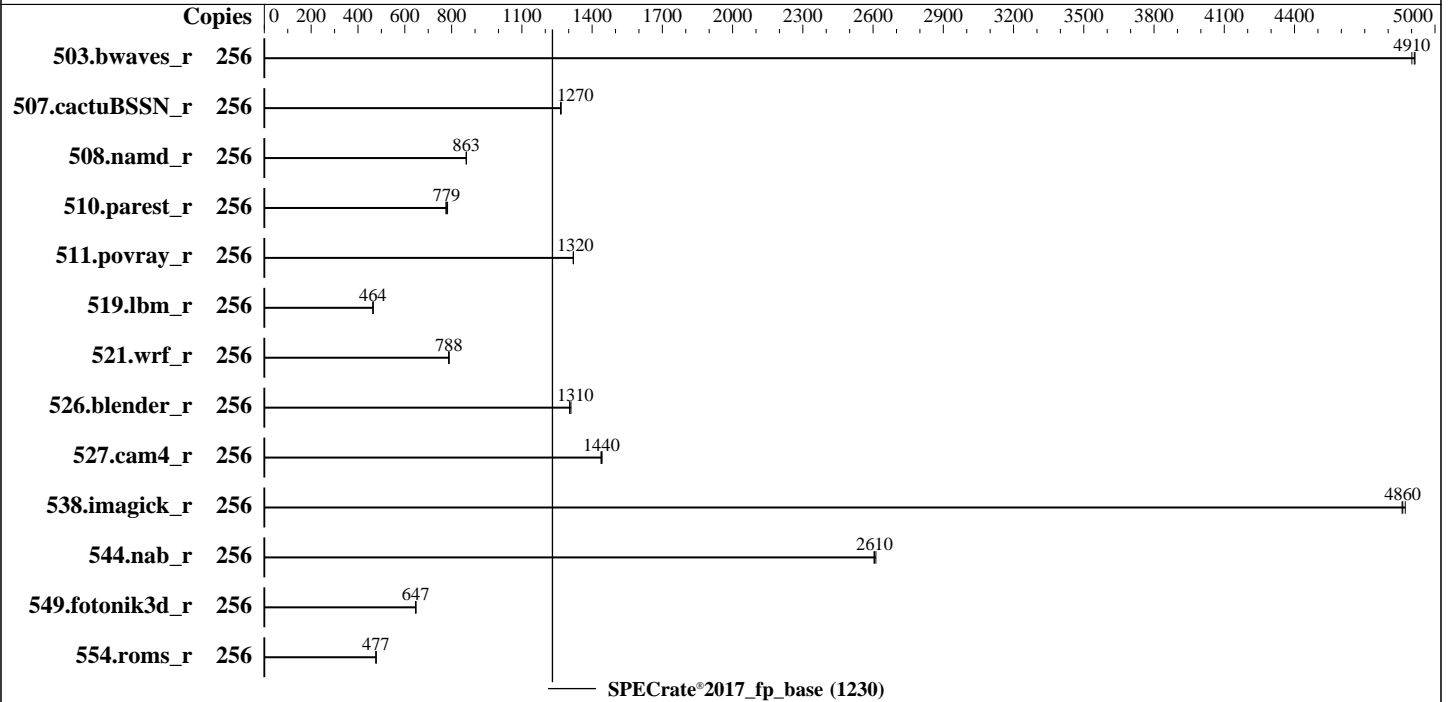
ZTE Corporation
ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base = 1230
SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Results Table

Benchmark	Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
503.bwaves_r	256	522	4910	524	4900	**523**	**4910**							
507.cactuBSSN_r	256	256	1270	**256**	**1270**	256	1270							
508.namd_r	256	282	863	**282**	**863**	282	863							
510.parest_r	256	**860**	**779**	864	775	856	783							
511.povray_r	256	453	1320	**453**	**1320**	453	1320							
519.lbm_r	256	**581**	**464**	581	464	581	464							
521.wrf_r	256	728	788	727	789	**728**	**788**							
526.blender_r	256	298	1310	299	1300	**299**	**1310**							
527.cam4_r	256	**311**	**1440**	311	1440	310	1440							
538.imagick_r	256	131	4870	131	4860	**131**	**4860**							
544.nab_r	256	165	2610	**165**	**2610**	165	2600							
549.fotonik3d_r	256	1541	647	**1542**	**647**	1543	646							
554.roms_r	256	852	478	853	477	**853**	**477**							

SPECrate®2017_fp_base = 1230

SPECrate®2017_fp_peak = Not Run

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"
OS set to performance mode via cpupower frequency-set -g performance
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/spec2017/lib/intel64:/home/spec2017/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)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

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:
Hardware Prefetcher = Disabled
Intel VT for Directed I/O (VT-d) = Disabled
SR-IOV Support = Disabled
Sub NUMA(SNC) = Enable SNC2

Sysinfo program /home/spec2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Fri May 26 07:34:33 2023

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

------------------------------------------------------------
Table of contents
------------------------------------------------------------
 1. uname -a
 2. w
 3. Username
 4. ulimit -a
 5. sysinfo process ancestry
 6. /proc/cpuinfo
 7. lscpu
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
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.localdomain 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023
  (b630043/lp) x86_64 x86_64 x86_64 GNU/Linux


------------------------------------------------------------
2. w
  07:34:33 up  2:00,  2 users,  load average: 0.27, 0.17, 0.06
  USER     TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
```

(Continued on next page)

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
  root     pts/0   198.168.111.123  07:31    9.00s  0.95s  0.00s /bin/sh
 ./reportable-ic2024.0.2-lin-sapphirerapids-rate-smt-on-20231213.sh
 root     pts/1   198.168.111.123  07:33   29.00s  0.01s  0.01s -bash


 ------------------------------------------------------------
 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) 4124375
   max locked memory       (kbytes, -l) 64
   max memory size         (kbytes, -m) unlimited
   open files                      (-n) 1024
   pipe size            (512 bytes, -p) 8
   POSIX message queues     (bytes, -q) 819200
   real-time priority              (-r) 0
   stack size              (kbytes, -s) unlimited
   cpu time               (seconds, -t) unlimited
   max user processes              (-u) 4124375
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited


 ------------------------------------------------------------
 5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 30
 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
 sshd: root@pts/0
 -bash
 /bin/sh ./reportable-ic2024.0.2-lin-sapphirerapids-rate-smt-on-20231213.sh
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=256 -c
   ic2024.0.2-lin-sapphirerapids-rate-20231213.cfg --define smt-on --define cores=128 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base -o all fprate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=256 --configfile
   ic2024.0.2-lin-sapphirerapids-rate-20231213.cfg --define smt-on --define cores=128 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
   rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.005/templogs/preenv.fprate.005.0.log --lognum 005.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/spec2017


 ------------------------------------------------------------
 6. /proc/cpuinfo
   model name        : INTEL(R) XEON(R) PLATINUM 8592+
   vendor_id         : GenuineIntel
   cpu family        : 6
   model             : 207
   stepping          : 2
   microcode         : 0x21000200
   bugs              : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
   cpu cores         : 64
   siblings          : 128
   2 physical ids (chips)
   256 processors (hardware threads)
   physical id 0: core ids 0-63
   physical id 1: core ids 0-63
```

(Continued on next page)

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061

Test Sponsor: ZTE Corporation

Tested by: ZTE Corporation

Test Date: May-2024

Hardware Availability: Feb-2024

Software Availability: Dec-2023

Platform Notes (Continued)

```
       physical id 0: apicids 0-127
       physical id 1: apicids 128-255
     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 2.37.4:
      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):                    256
      On-line CPU(s) list:       0-255
      Vendor ID:                 GenuineIntel
      Model name:                INTEL(R) XEON(R) PLATINUM 8592+
      CPU family:                6
      Model:                     207
      Thread(s) per core:        2
      Core(s) per socket:        64
      Socket(s):                 2
      Stepping:                  2
      CPU max MHz:               3900.0000
      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 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
                                 cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase tsc_adjust bmi1 hle
                                 avx2 smep bmi2 erms invpcid rtm 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 avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts hwp
                                 hwp_act_window hwp_epp hwp_pkg_req 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 avx512_fp16
                                 amx_tile flush_l1d arch_capabilities
      L1d cache:                 6 MiB (128 instances)
      L1i cache:                 4 MiB (128 instances)
      L2 cache:                  256 MiB (128 instances)
      L3 cache:                  640 MiB (2 instances)
      NUMA node(s):              4
      NUMA node0 CPU(s):         0-31,128-159
      NUMA node1 CPU(s):         32-63,160-191
      NUMA node2 CPU(s):         64-95,192-223
      NUMA node3 CPU(s):         96-127,224-255
      Vulnerability Itlb multihit:    Not affected
      Vulnerability L1tf:             Not affected
      Vulnerability Mds:              Not affected
      Vulnerability Meltdown:         Not affected
      Vulnerability Mmio stale data:  Not affected
      Vulnerability Retbleed:         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
```

(Continued on next page)

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
  Vulnerability Spectre v2:       Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSB-eIBRS SW
                                  sequence
  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      48K       6M  12 Data              1     64       1              64
     L1i      32K       4M   8 Instruction       1     64       1              64
     L2        2M     256M  16 Unified           2   2048       1              64
     L3      320M     640M  20 Unified           3 262144       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: 0-31,128-159
  node 0 size: 257542 MB
  node 0 free: 254156 MB
  node 1 cpus: 32-63,160-191
  node 1 size: 258031 MB
  node 1 free: 257084 MB
  node 2 cpus: 64-95,192-223
  node 2 size: 258031 MB
  node 2 free: 257190 MB
  node 3 cpus: 96-127,224-255
  node 3 size: 257518 MB
  node 3 free: 255706 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:       1055872112 kB

--------------------------------------------------------------
10. who -r
   run-level 3 May 26 07:31 last=5

--------------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
   Default Target  Status
   graphical       running

--------------------------------------------------------------
12. Services, from systemctl list-unit-files
   STATE            UNIT FILES
   enabled          ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
                    YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd bluetooth cron
                    display-manager firewalld getty@ irqbalance issue-generator kbdsettings kdump kdump-early
                    klog lvm2-monitor nscd postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore
                    wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny wpa_supplicant
   enabled-runtime  systemd-remount-fs
   disabled         accounts-daemon autofs autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl
                    ca-certificates chrony-wait chronyd console-getty cups cups-browsed debug-shell
                    dmraid-activation dnsmasq ebtables exchange-bmc-os-info gpm grub2-once haveged
```

(Continued on next page)

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
                  haveged-switch-root ipmi ipmievd irqbindall issue-add-ssh-keys kexec-load ksm kvm_stat
                  lunmask man-db-create multipathd nfs nfs-blkmap nmb openvpn@ ostree-remount rpcbind
                  rpmconfigcheck rsyncd rtkit-daemon serial-getty@ set_kthread_prio smartd_generate_opts smb
                  snmpd snmptrapd speech-dispatcherd systemd-boot-check-no-failures
                  systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
                  udisks2 update-system-flatpaks upower vncserver@ wpa_supplicant@
  indirect        pcscd saned@ wickedd


    ----------------------------------------------------------
    13. Linux kernel boot-time arguments, from /proc/cmdline
      BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
      root=UUID=bbf5a946-40b4-45f0-afad-842525060601
      splash=silent
      mitigations=auto
      quiet
      security=apparmor
      crashkernel=404M,high
      crashkernel=72M,low


    ----------------------------------------------------------
    14. cpupower frequency-info
      analyzing CPU 0:
        current policy: frequency should be within 800 MHz and 3.90 GHz.
                        The governor "performance" may decide which speed to use
                        within this range.
        boost state support:
          Supported: yes
          Active: yes


    ----------------------------------------------------------
    15. sysctl
      kernel.numa_balancing               0
      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
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
   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 SP5


   -------------------------------------------------------------
   19. Disk information
   SPEC is set to: /home/spec2017
     Filesystem     Type   Size  Used Avail Use% Mounted on
     /dev/sda2      btrfs  832G  291G  542G  35% /home


   -------------------------------------------------------------
   20. /sys/devices/virtual/dmi/id
       Vendor:         ZTE
       Product:        R5300 G5
       Product Family: Server
       Serial:         219438497039


   -------------------------------------------------------------
   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 M321R8GA0PB0-CWMXH 64 GB 2 rank 5600



   -------------------------------------------------------------
   22. BIOS
   (This section combines info from /sys/devices and dmidecode.)
       BIOS Vendor:       American Megatrends Inc.
       BIOS Version:      04.24.01.10
       BIOS Date:         03/13/2024
       BIOS Revision:     4.24
```

Compiler Version Notes

```
==============================================================================================
C              | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


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

(Continued on next page)

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Compiler Version Notes (Continued)

```
==================================================================================================
C++, C        | 511.povray_r(base) 526.blender_r(base)
--------------------------------------------------------------------------------------------------
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)
--------------------------------------------------------------------------------------------------
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) 549.fotonik3d_r(base) 554.roms_r(base)
--------------------------------------------------------------------------------------------------
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) 527.cam4_r(base)
--------------------------------------------------------------------------------------------------
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`

(Continued on next page)

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base =   1230

SPECrate®2017_fp_peak = **Not Run**

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

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 -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
```

(Continued on next page)

ZTE Corporation

ZTE R5300G5 Server System
(1.90 GHz, Intel Xeon Platinum 8592+)

SPECrate®2017_fp_base = 1230

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 9061
Test Sponsor: ZTE Corporation
Tested by: ZTE Corporation

Test Date: May-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
```
-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
```

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
```

The flags files that were used to format this result can be browsed at
  http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.2024-05-21.html
  http://www.spec.org/cpu2017/flags/ZTE-Platform-Settings-EMR-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-linux64.2024-05-21.xml
  http://www.spec.org/cpu2017/flags/ZTE-Platform-Settings-EMR-V1.0.xml

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 2023-05-25 19:34:33-0400.
Report generated on 2024-05-21 19:22:33 by CPU2017 PDF formatter v6716.
Originally published on 2024-05-21.