### Hardware

- **CPU Name:** Intel Xeon Platinum 8380  
- **Max MHz:** 3400  
- **Nominal:** 2300  
- **Enabled:** 80 cores, 2 chips, 2 threads/core  
- **Orderable:** 1.2 chips  
- **Cache L1:** 32 KB I + 48 KB D on chip per core  
- **L2:** 1.25 MB I+D on chip per core  
- **L3:** 60 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R)  
- **Storage:** 2 x 480 GB SATA SSD, RAID1  
- **Other:** None

### Software

- **OS:** Red Hat Enterprise Linux release 8.3 (Ootpa)  
- **Compiler:**  
  - C/C++: Version 2021.1 of Intel oneAPI DPC++/C++  
  - Fortran: Version 2021.1 of Intel Fortran Compiler  
  - Classic Build 20201122 for Linux  
- **Parallel:** No  
- **Firmware:** Version 00.00.0001 released May-2021  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** Not Applicable  
- **Other:** None  
- **Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage

---

### Test Details

- **CPU2017 License:** 9061  
- **Test Sponsor:** ZTE Corporation  
- **Hardware Availability:** Apr-2021  
- **Test Date:** May-2021  
- **Tested by:** ZTE Corporation  
- **Software Availability:** Dec-2020

### SPECrate

<table>
<thead>
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<th>Test Program</th>
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<tr>
<td>SPECrate®2017_int_base =</td>
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### Test Results

<table>
<thead>
<tr>
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<td>541.leela_r</td>
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<td>557.xz_r</td>
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ZTE Corporation
ZTE R5300G4X Server System
(2.30 GHz, Intel Xeon Platinum 8380)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

SPECrate®2017_int_base = 576
SPECrate®2017_int_peak = Not Run

Results Table

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<tr>
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</table>

SPECrate®2017_int_base = 576
SPECrate®2017_int_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"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:

LD_LIBRARY_PATH =
"/home/speccpu2017/lib/intel64:/home/speccpu2017/lib/ia32:/home/speccpu2017/lib/ia32人生/je5.0.1-32"
MALLOC_CONF = "retain:true"

General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Red Hat Enterprise Linux 8.1
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

(Continued on next page)
General Notes (Continued)

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) is mitigated in the system as tested and documented.

Platform Notes

BIOS Configuration:
Intel VT for Directed I/O (VT-d) = Disabled
Patrol Scrub = Disabled
ENERGY_PERF_BIAS_CFG mode = performance
SNC = Enabled
LLC dead line alloc = Disabled

Sysinfo program /home/speccpu2017/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on localhost.localdomain Thu May 20 15:50:11 2021

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see
https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Platinum 8380 CPU @ 2.30GHz
  2 "physical id"s (chips)
  160 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores : 40
  siblings : 80
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
  25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
  25 26 27 28 29 30 31 32 33 34 35 36 37 38 39

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 160
On-line CPU(s) list: 0-159
Thread(s) per core: 2

(Continued on next page)
ZTE Corporation

ZTE R5300G4X Server System
(2.30 GHz, Intel Xeon Platinum 8380)

SPECrate®2017_int_base = 576
SPECrate®2017_int_peak = Not Run

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

Test Date: May-2021
Hardware Availability: Apr-2021
Software Availability: Dec-2020

Platform Notes (Continued)

Core(s) per socket: 40
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8380 CPU @ 2.30GHz
Stepping: 6
CPU MHz: 3000.066
CPU max MHz: 2301.0000
CPU min MHz: 800.0000
BogoMIPS: 4600.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 61440K
NUMA node0 CPU(s): 0-19,80-99
NUMA node1 CPU(s): 20-39,100-119
NUMA node2 CPU(s): 40-59,120-139
NUMA node3 CPU(s): 60-79,140-159

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 arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperffperf pni pclmulqdq dtes64 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xti pr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3nowprefetch cpuid_fault epb cat_13 cdp_13 invpcid_single ssbd mba ibrs ibpb stibp ibrs-enhanced fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a avx512ifv avx512dq rdsedd adx smap avx512ifm clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsaves xsavec cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect wbeni vdat dtherm ida arat pln pts avx512vBMI umip pkpu ospke avx512_vmbmi2 gfnia vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_lid
arch_capabilities

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.

node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 80 81 82 83 84 85 86 87
node 0 size: 124431 MB
node 0 free: 118722 MB
node 1 cpus: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 100 101 102
103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119

(Continued on next page)
## Platform Notes (Continued)

- node 1 size: 125441 MB
- node 1 free: 121153 MB
- node 2 cpus: 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 120 121 122
- node 2 size: 125271 MB
- node 2 free: 121039 MB
- node 3 cpus: 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 140 141 142
- node 3 size: 125260 MB
- node 3 free: 121316 MB
- node distances:

<table>
<thead>
<tr>
<th>node</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:</td>
<td>11</td>
<td>10</td>
<td>20</td>
<td>20</td>
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<tr>
<td>1:</td>
<td>11</td>
<td>10</td>
<td>20</td>
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<tr>
<td>2:</td>
<td>20</td>
<td>20</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>3:</td>
<td>20</td>
<td>20</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

From /proc/meminfo
- MemTotal: 527651520 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/sbin/tuned-adm active
- Current active profile: throughput-performance

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

From /etc/*release* /etc/*version*
- redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
- system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)

uname -a:
- Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020 x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

(Continued on next page)
## Platform Notes (Continued)

CVE-2018-12207 (iTLB Multihit): Not affected  
CVE-2018-3620 (L1 Terminal Fault): Not affected  
Microarchitectural Data Sampling: Not affected  
CVE-2017-5754 (Meltdown): Mitigation: Speculative Store Bypass disabled via prct1 and seccomp  
CVE-2018-3639 (Speculative Store Bypass): Mitigation: usercopy/swaps barriers and __user pointer sanitization  
CVE-2017-5753 (Spectre variant 1): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling  
CVE-2017-5715 (Spectre variant 2):  
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected  
CVE-2019-11135 (TSX Asynchronous Abort): Not affected  

run-level 3 May 20 14:10

SPEC is set to: /home/speccpu2017  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/mapper/rhel-home xfs 372G 164G 209G 44% /home

From /sys/devices/virtual/dmi/id  
Vendor: ZTE  
Product: R5300 G4X  
Product Family: Server  
Serial: 201234567890

Additional information from dmidecode 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 Hynix HMA84GR7DJR4N-XN 32 GB 2 rank 3200  
16x NO DIMM NO DIMM

BIOS:  
BIOS Vendor: ZTE  
BIOS Version: 00.00.0001  
BIOS Date: 2021/05/15  
BIOS Revision: 0.0

(End of data from sysinfo program)
**Compiler Version Notes**

C

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<th>500.perlbench_r(base)</th>
<th>502.gcc_r(base)</th>
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
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C++

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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
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-------------------------------------------------------------------------------

Fortran

| 548.exchange2_r(base) |

______________________________

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
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Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifort

**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

(Continued on next page)
# SPEC CPU®2017 Integer Rate Result

**ZTE Corporation**  
ZTE R5300G4X Server System  
(2.30 GHz, Intel Xeon Platinum 8380)  

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

**Test Date:** May-2021  
**Hardware Availability:** Apr-2021  
**Software Availability:** Dec-2020

## Base 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

## Base Optimization Flags

**C benchmarks:**
- `-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math`  
- `-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`  
- `-mbranches-within-32B-boundaries`  
- `-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin -lqkmalloc`

**C++ benchmarks:**
- `-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto`  
- `-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`  
- `-mbranches-within-32B-boundaries`  
- `-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin -lqkmalloc`

**Fortran benchmarks:**
- `-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div`  
- `-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte`  
- `-auto -mbranches-within-32B-boundaries`  
- `-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin -lqkmalloc`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/ZTE-Platform-Settings-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml  
http://www.spec.org/cpu2017/flags/ZTE-Platform-Settings-V1.2.xml
### SPEC CPU®2017 Integer Rate Result

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- **Tested by:** ZTE Corporation  
- **Test Date:** May-2021  
- **Hardware Availability:** Apr-2021  
- **Software Availability:** Dec-2020

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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 v1.1.5 on 2021-05-20 15:50:10-0400.  
Report generated on 2021-06-08 19:50:51 by CPU2017 PDF formatter v6442.  
Originally published on 2021-06-08.