# SPEC CPU®2017 Integer Speed Result

**Fujitsu**

PRIMERGY TX1330 M5, Intel Xeon E-2314, 2.80GHz

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>12.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_int_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test Date:** Feb-2022  
**Hardware Availability:** Mar-2022  
**Software Availability:** Jun-2021

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed®2017_int_base (12.7)</th>
</tr>
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<tbody>
<tr>
<td>4</td>
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<tr>
<td>24</td>
<td></td>
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<tr>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon E-2314  
- **Max MHz:** 4500  
- **Nominal:** 2800  
- **Enabled:** 4 cores, 1 chip  
- **Orderable:** 1 chip  
- **Cache L1:** 32 KB I + 48 KB D on chip per core  
- **Cache L2:** 512 KB I+D on chip per core  
- **Cache L3:** 8 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 32 GB (2 x 16 GB 2Rx8 PC4-3200AA-E, running at 2933)  
- **Storage:** 1 x SATA M.2 SSD, 240GB  
- **Other:** None

**Software**

- **OS:** SUSE Linux Enterprise Server 15 SP3  
  5.3.18-57-default  
- **Compiler:** C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux; Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux;  
- **Parallel:** Yes  
- **Firmware:** Fujitsu BIOS Version V5.0.0.22 R1.31.0 for D3931-A1x. Released Mar-2022 tested as V5.0.0.22 R1.20.0 for D3931-A1x Jan-2022  
- **File System:** xfs  
- **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 set to prefer performance at the cost of additional power usage

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https://www.spec.org/
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## Results Table

<table>
<thead>
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<th>Seconds</th>
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</table>

### SPECspeed®2017_int_base = 12.7
### SPECspeed®2017_int_peak = Not Run

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

---

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
cpupower -c all frequency-set -g performance

---

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:
- KMP_AFFINITY = "granularity=fine,scatter"
- LD_LIBRARY_PATH = 
  
  
  
  
  
  
  
  
  
  "/home/Benchmark/speccpu/lib/intel64:/home/Benchmark/speccpu/je5.0.1-64"
- MALLOC_CONF = "retain:true"
- OMP_STACKSIZE = "192M"

---

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Redhat Enterprise Linux 8.0
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
```
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.

(Continued on next page)
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Test Sponsor: Fujitsu
CPU2017 License: 19
Tested by: Fujitsu

General Notes (Continued)
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

Platform Notes

BIOS configuration:
Energy Efficient Turbo = Disabled
FAN Control = Full
SA GV High Gear = Gear1

Sysinfo program /home/Benchmark/speccpu/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aaca64d
running on localhost Tue Feb 8 14:37:27 2022

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) E-2314 CPU @ 2.80GHz
 1 "physical id" (chips)
 4 "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: 4
siblings: 4
physical 0: cores 0 1 2 3

From lscpu from util-linux 2.36.2:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 39 bits physical, 48 bits virtual
CPU(s): 4
On-line CPU(s) list: 0-3
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 167
Model name: Intel(R) Xeon(R) E-2314 CPU @ 2.80GHz
Stepping: 1
CPU MHz: 3751.180

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CPU max MHz: 4500.0000
CPU min MHz: 800.0000
BogoMIPS: 5616.00
Virtualization: VT-x
L1d cache: 192 KiB
L1i cache: 128 KiB
L2 cache: 2 MiB
L3 cache: 8 MiB
NUMA node0 CPU(s): 0-3
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: 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
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbd: Not affected
Vulnerability Tsx async abort: Not affected
Flags:
fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mpx fpxsr ss sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault ebp invpcid_single ssbd ibrs ibpb stibp ibrs_enabled tpr_shadow vmmxinflexible ept vpid fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid mxp avx512f avx512dq rdseed adx smap avx512ifma clflushopt intel_pti avx512bw avx512vl xsaveopt xsaves dtherm ida arat pln pts hwp hwp_notify hwp_act_window hwp_epp hwp_pkgsel hwrt km pku ospke avx512_vbmi2 gfn vaes vpclmulqdq avx512_vnni avx512_vbitalg avx512_vpopcntdq rdpid fsgs md_clear flush_l1d arch_capabilities

From lscpu --cache:
NAME ONE-SIZE ALL-SIZE WAYS TYPE LEVEL SETS PHY-LINE COHERENCY-SIZE
L1d 48K 192K 12 Data 1 64 1 64
L1i 32K 128K 8 Instruction 1 64 1 64
L2 512K 2M 8 Unified 2 1024 1 64
L3 8M 8M 16 Unified 3 8192 1 64

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

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SPECsbench
data = 12.7
SPECsbench_int_peak = Not Run

Test Date: Feb-2022
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Platform Notes (Continued)

available: 1 nodes (0)
node 0 cpus: 0 1 2 3	node 0 size: 31584 MB
node 0 free: 31166 MB
node distances:
node 0 0: 10

From /proc/meminfo
MemTotal: 32342948 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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

From /etc/*release* /etc/*version*
NAME="SLES"
VERSION="15-SP3"
VERSION_ID="15.3"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP3"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp3"
uname -a:
Linux localhost 5.3.18-57-default #1 SMP Wed Apr 28 10:54:41 UTC 2021
(ba3c2e9/1p-5d9e8aa) x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

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

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Platform Notes (Continued)

run-level 3 Feb 8 14:36
SPEC is set to: /home/Benchmark/speccpu
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda4      xfs   180G   44G  137G  24% /home

From /sys/devices/virtual/dmi/id
Vendor: FUJITSU
Product: PRIMERGY TX1330 M5
Product Family: SERVER
Serial: EWBUxxxxxx

Additional information from dmidecode 3.2 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 SMI BIOS" standard.
Memory:
  2x Samsung M391A2K43DB1-CWE 16 GB 2 rank 3200, configured at 2933

BIOS:
  BIOS Vendor: FUJITSU // American Megatrends International, LLC.
  BIOS Version: V5.0.0.22 R1.20.0 for D3931-A1x
  BIOS Date: 01/11/2022
  BIOS Revision: 1.20

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C       | 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base)
       | 625.x264_s(base) 657.xz_s(base)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

==============================================================================
C++     | 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
       | 641.leela_s(base)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

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Compiler Version Notes (Continued)

Fortran | 648.exchange2_s(base)

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifort

Base Portability Flags

C benchmarks:

-DSPEC_OPENMP -std=c11 -m64 -flnopenmp -Wl,-z,muldefs -xCORE-AVX2
-03 -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

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### Base Optimization Flags (Continued)

C++ benchmarks:
- `-DSPEC_OPENMP`  
- `-m64`  
- `-Wl,-z,muldefs`  
- `-xCORE-AVX2`  
- `-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:
- `-m64`  
- `-xCORE-AVX2`  
- `-O3`  
- `-ipo`  
- `-no-prec-div`  
- `-qopt-mem-layout-trans=4`

- `-nostandard-realloc-lhs`  
- `-align array32byte`  
- `-auto`

- `-mbranches-within-32B-boundaries`

The flags files that were used to format this result can be browsed at:


You can also download the XML flags sources by saving the following links:


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Tested with SPEC CPU®2017 v1.1.8 on 2022-02-08 00:37:27-0500.  
Report generated on 2022-03-16 13:58:54 by CPU2017 PDF formatter v6442.  
Originally published on 2022-03-16.