## CPU2017 Integer Rate Result

**Fujitsu**  
PRIMERGY TX1330 M4, Intel Xeon E-2136, 3.30GHz  

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<td>12</td>
<td>30.9</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon E-2136  
- **Max MHz.:** 4500  
- **Nominal:** 3300  
- **Enabled:** 6 cores, 1 chip, 2 threads/core  
- **Orderable:** 1 chip  
- **Cache L1:** 32 KB I + 32 KB D on chip per core  
- **L2:** 256 KB I+D on chip per core  
- **L3:** 12 MB I+D on chip per chip  
- **Memory:** 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)  
- **Storage:** 1 x SATA HDD, 1TB, 7200RPM  
- **Other:** None

### Software

- **OS:** SUSE Linux Enterprise Server 15  
- **Compiler:** C/C++: Version 19.0.0.117 of Intel C/C++ Compiler for Linux; Fortran: Version 19.0.0.117 of Intel Fortran Compiler for Linux  
- **Parallel:** No  
- **Firmware:** Fujitsu BIOS Version V5.0.0.13 R1.4.0 for D3673-A1x. Released Nov-2018 tested as V5.0.0.13 R1.0.0 for D3673-A1x Sep-2018  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 32/64-bit  
- **Other:** jemalloc memory allocator library V5.0.1
**SPEC CPU2017 Integer Rate Result**

**Fujitsu**

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<td>420</td>
<td>30.9</td>
<td>420</td>
</tr>
</tbody>
</table>

**Submit Notes**

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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"

Process tuning settings:

```
echo 500000 > /proc/sys/kernel/sched_cfs_bandwidth_slice_us
```

**General Notes**

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

```
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-ic19-20181011/icc19-lib/ia32"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2017-ic19-20181011/icc19-lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2017-ic19-20181011/je5.0.1-32"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2017-ic19-20181011/je5.0.1-64"
```

Binaries compiled on a system with 2x Intel Xeon Silver 4108 CPU + 384GB RAM memory using SUSE Linux Enterprise Server 12 SP2

Transparent Huge Pages enabled by default

Prior to runcpu invocation

Files system page cache synced and cleared with:

```
sync; echo 3 > /proc/sys/vm/drop_caches
```

jemalloc: configured and built at default for 32bit (i686) and 64bit (x86_64) targets;

jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5;

jemalloc: sources available via jemalloc.net;
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PRIMERGY TX1330 M4, Intel Xeon E-2136, 3.30GHz

SPECrate2017_int_base = 42.8
SPECrate2017_int_peak = 46.0

General Notes (Continued)

Yes: 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:
Hardware Prefetcher = Disabled
Adjacent Cache Line Prefetch = Disabled
VT-d = Disabled
Fan Control = Full
Race To Halt (RTH) = Disabled
DMI Link ASPM Control = L0s
REFRESH_2X_MODE = 2- Enabled HOT only
Sysinfo program /home/Benchmark/speccpu2017-ic19-20181011/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on TX1330M4 Wed Oct 24 12:45:39 2018

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-2136 CPU @ 3.30GHz
  1 "physical id"s (chips)
  12 "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 : 6
  siblings : 12
  physical 0: cores 0 1 2 3 4 5

From lscpu:

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 12
On-line CPU(s) list: 0-11
Thread(s) per core: 2
Core(s) per socket: 6
Socket(s): 1
NUMA node(s): 1

(Continued on next page)
SPEC CPU2017 Integer Rate Result

Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2136, 3.30GHz

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CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Platform Notes (Continued)

Vendor ID:          GenuineIntel
CPU family:        6
Model:             158
Model name:       Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
Stepping:           10
CPU MHz:             3300.000
CPU max MHz:        4500.0000
CPU min MHz:         800.0000
BogoMIPS:            6624.00
Virtualization:     VT-x
L1d cache:          32K
L1i cache:          32K
L2 cache:           256K
L3 cache:          12288K
NUMA node0 CPU(s): 0-11
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 rep_good nopl xapic msr pae mce cx8 apic
aperfmpref perf_counter pni pclmulqdq dtes64 monitor nonstop_tsc cpuid
bogomips aperf mtrr pge mca cmovPAT pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
lm constant_tsc art arch_perfmon pebs rep_good nopl xapic msr pae mce cx8 apic
aperfmpref perf_counter pni pclmulqdq dtes64 monitor nonstop_tsc cpuid
bogomips aperf mtrr pge mca cmov

/proc/cpuinfo cache data
cache size : 12288 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 1 nodes (0)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11
node 0 size: 63914 MB
node 0 free: 63340 MB
node distances:
node 0
0: 10

From /proc/meminfo
MemTotal:        65448452 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="SLES"

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PRIMERGY TX1330 M4, Intel Xeon E-2136, 3.30GHz

SPEC CPU2017 Integer Rate Result

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3.30GHz
PRIMERGY TX1330 M4, Intel Xeon E-2136,

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CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Oct-2018
Hardware Availability: Nov-2018
Software Availability: Sep-2018

Platform Notes (Continued)

VERSION="15"
VERSION_ID="15"
PRETTY_NAME="SUSE Linux Enterprise Server 15"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"

uname -a:
Linux TX1330M4 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b) x86_64
x86_64 x86_64 GNU/Linux

run-level 3 Oct 24 12:36
SPEC is set to: /home/Benchmark/speccpu2017-ic19-20181011
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 828G 102G 726G 13% /home

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.
BIOS FUJITSU // American Megatrends Inc. V5.0.0.13 R1.0.0 for D3673-A1x
09/14/2018
Memory:
4x Samsung M391A2K43BB1-CTD 16 GB 2 rank 2667

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
CC  500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
  525.x264_r(base, peak) 557.xz_r(base, peak)
==============================================================================
icc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================

==============================================================================
CC  500.perlbench_r(peak) 502.gcc_r(peak)
==============================================================================
icc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================

(Continued on next page)
**SPEC CPU2017 Integer Rate Result**

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu

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**Compiler Version Notes (Continued)**

CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leetcode_r(base)  

---

**Base Compiler Invocation**

C benchmarks:  
```
icc -m64 -std=c11
```

C++ benchmarks:  
```
icpc -m64
```

Fortran benchmarks:  
```
ifort -m64
```

---

**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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**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test Date:** Oct-2018  
**Hardware Availability:** Nov-2018  
**Software Availability:** Sep-2018

### Base Portability Flags (Continued)

- leela_r: -DSPEC_LP64
- exchange2_r: -DSPEC_LP64
- xz_r: -DSPEC_LP64

### Base Optimization Flags

**C benchmarks:**
- \(-\text{Wl, } -z, \text{muldefs } -xCORE-AVX2\)
- \(-\text{ipo } -O3\)
- \(-\text{no-prec-div}\)
- \(-\text{qopt-mem-layout-trans=3}\)
- \(-\text{L/usr/local/je5.0.1-64/lib } -ljemalloc\)

**C++ benchmarks:**
- \(-\text{Wl, } -z, \text{muldefs } -xCORE-AVX2\)
- \(-\text{ipo } -O3\)
- \(-\text{no-prec-div}\)
- \(-\text{qopt-mem-layout-trans=3}\)
- \(-\text{L/usr/local/je5.0.1-64/lib } -ljemalloc\)

**Fortran benchmarks:**
- \(-\text{Wl, } -z, \text{muldefs } -xCORE-AVX2\)
- \(-\text{ipo } -O3\)
- \(-\text{no-prec-div}\)
- \(-\text{qopt-mem-layout-trans=3}\)
- \(-\text{nostandard-realloc-lhs } -\text{align array32byte}\)
- \(-\text{L/usr/local/je5.0.1-64/lib } -ljemalloc\)

### Peak Compiler Invocation

**C benchmarks (except as noted below):**
- icc -m64 -std=c11
- gcc_r: icc -m32 -std=c11 -L/opt/intel/compilers_and_libraries_2019/linux/lib/ia32

**C++ benchmarks (except as noted below):**
- icpc -m64
- xalancbmk_r: icpc -m32 -L/opt/intel/compilers_and_libraries_2019/linux/lib/ia32

**Fortran benchmarks:**
- ifort -m64

### Peak Portability Flags

- perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
- gcc_r: -D_FILE_OFFSET_BITS=64
- mcf_r: -DSPEC_LP64

(Continued on next page)
Fujitsu

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SPECrate2017_int_base = 42.8
SPECrate2017_int_peak = 46.0

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Peak Portability Flags (Continued)

520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -D_FILE_OFFSET_BITS=64 -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: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-fno-strict-overflow -L/usr/local/je5.0.1-64/lib
-ljemalloc

502.gcc_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-L/usr/local/je5.0.1-32/lib -ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -fno-alias
-L/usr/local/je5.0.1-64/lib -ljemalloc

557.xz_r: basepeak = yes

C++ benchmarks:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-L/usr/local/je5.0.1-32/lib -ljemalloc

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

Fortran benchmarks:

(Continued on next page)
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| SPECrate2017_int_base | 42.8 |
| SPECrate2017_int_peak | 46.0 |

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Oct-2018
Hardware Availability: Nov-2018
Software Availability: Sep-2018

---

**Peak Optimization Flags (Continued)**

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/Fujitsu-Platform-Settings-V1.0.2-CFL-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevA.xml

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

Tested with SPEC CPU2017 v1.0.2 on 2018-10-23 23:45:38-0400.