Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2186G, 3.80GHz

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

**SPECrate2017_int_base =** 43.3  
**SPECrate2017_int_peak =** 46.7

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**Hardware**

- **CPU Name:** Intel Xeon E-2186G  
- **Max MHz.:** 4700  
- **Nominal:** 3800  
- **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 core  
- **Other:** None  
- **Memory:** 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)  
- **Storage:** 1 x SATA HDD, 1TB, 7200RPM  
- **Other:** None

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**Software**

- **OS:** SUSE Linux Enterprise Server 15  
- **Compiler:** C/C++: Version 19.0.0.0.117 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 R1.4.0 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

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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>500.perlbench_r</td>
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<td>525</td>
<td>36.4</td>
<td>525</td>
<td>36.4</td>
<td>527</td>
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<td>502.gcc_r</td>
<td>12</td>
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<td>33.8</td>
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<td>505.mcf_r</td>
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<td>405</td>
<td>47.9</td>
<td>406</td>
<td>47.8</td>
<td>407</td>
<td>47.6</td>
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<td>105</td>
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<td>105</td>
<td>202</td>
<td>104</td>
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<tr>
<td>531.deepsjeng_r</td>
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<td>548.exchange2_r</td>
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<td>88.9</td>
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<td>557.xz_r</td>
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<td>414</td>
<td>31.3</td>
</tr>
</tbody>
</table>

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

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
Filesystem 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

(Continued on next page)
Fujitsu
PRIMERYGX TX1330 M4, Intel Xeon E-2186G, 3.80GHz

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CPU2017 License: 19
Test Sponsor: Fujitsu
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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 96c45e4568b54c135fd618b091c0f
running on TX1330M4 Sat Oct 13 00:25:56 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-2186G CPU @ 3.80GHz
  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**

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**Platform Notes (Continued)**

Vendor ID: GenuineIntel

CPU family: 6

Model: 158

Model name: Intel(R) Xeon(R) E-2186G CPU @ 3.80GHz

Stepping: 10

CPU MHz: 3800.000

CPU max MHz: 4700.0000

CPU min MHz: 800.0000

BogoMIPS: 7584.00

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 arch_perfmon pebs bts rep_good nopl pge mce cx8 apic pv savePrefetch cpuid known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sd ram fma cx16 xtrig pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb invpcid_single pti tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rdseed adx smap clflushopt intel_pt xsaveopt xsaveprec xsavevm xsaves ibpb ibrs stibp dtherm ida arat pln pts hwp hwp_notify hwp_act_window hwp_epp ssbd

/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: 63415 MB

node distances:

node 0

0: 10

From /proc/meminfo

MemTotal: 65448552 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

From /etc/*release*/etc/*version*

os-release:

NAME="SLES"

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

## Fujitsu

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### CPU2017 License: 19

**Test Sponsor:** Fujitsu  
**Test Date:** Oct-2018  
**Hardware Availability:** Nov-2018  
**Tested by:** Fujitsu  
**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 13 00:12
```

**SPEC is set to:** /home/Benchmark/speccpu2017-ic19-20181011  
**Filesystem**  

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda3</td>
<td>xfs</td>
<td>828G</td>
<td>102G</td>
<td>726G</td>
<td>13%</td>
<td>/home</td>
</tr>
</tbody>
</table>

**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.
```

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#### Compiler Version Notes (Continued)

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

icpc (ICC) 19.0.0.117 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

---

CXXC 520.omnetpp_r(peak) 523.xalancbmk_r(peak) 531.deepsjeng_r(peak)  
541.leela_r(peak)

icpc (ICC) 19.0.0.117 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

---

FC 548.exchange2_r(base peak)

ifort (IFORT) 19.0.0.117 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

---

#### Base Compiler Invocation

**C benchmarks:**  
`icc -m64 -std=cl1`

**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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Base Portability Flags (Continued)

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

Base Optimization Flags

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

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

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

Peak Compiler Invocation

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

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

Fortran benchmarks:
ifort -m64

Peak Portability Flags

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

(Continued on next page)
Peak Portability Flags (Continued)

520.omnetpp_r: -DSPEC_LP64
523.xalancbk_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: -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib
-ljemalloc

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: -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/je5.0.1-64/lib -ljemalloc

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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:


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

- [http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevA.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.

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