Fujitsu
PRIMERGY TX1330 M3, Intel Xeon E3-1230 v6, 3.50GHz

SPECrate2017_int_base = 27.4
SPECrate2017_int_peak = 29.3

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu
Hardware Availability: May-2017
Software Availability: Sep-2018

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon E3-1230 v6</td>
<td>OS: SUSE Linux Enterprise Server 15</td>
</tr>
<tr>
<td>Max MHz.: 3900</td>
<td>4.12.14-23-default</td>
</tr>
<tr>
<td>Nominal: 3500</td>
<td>Compiler: C/C++: Version 19.0.0.117 of Intel C/C++</td>
</tr>
<tr>
<td>Enabled: 4 cores, 1 chip, 2 threads/core</td>
<td>Compiler for Linux:</td>
</tr>
<tr>
<td>Orderable: 1 chip</td>
<td>Fortran: Version 19.0.0.117 of Intel Fortran</td>
</tr>
<tr>
<td>Cache L1: 32 KB I + 32 KB D on chip per core</td>
<td>Compiler for Linux:</td>
</tr>
<tr>
<td>L2: 256 KB I+D on chip per core</td>
<td>Parallel: No</td>
</tr>
<tr>
<td>L3: 8 MB I+D on chip per chip</td>
<td>Firmware: Fujitsu BIOS Version V5.0.0.11 R1.21.0 for D3373-B1x. Released Nov-2018</td>
</tr>
<tr>
<td>Other: None</td>
<td>File System: xfs</td>
</tr>
<tr>
<td>Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2400T-E)</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Storage: 1 x SATA HDD, 2TB, 7200RPM</td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td>Other: None</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td></td>
<td>Other: jemalloc memory allocator library V5.0.1</td>
</tr>
</tbody>
</table>
## SPEC CPU2017 Integer Rate Result

Fujitsu

PRIMERGY TX1330 M3, Intel Xeon E3-1230 v6, 3.50GHz

**SPECrate2017_int_base = 27.4**

**SPECrate2017_int_peak = 29.3**

### CPU2017 License
19

### Test Sponsor
Fujitsu

### Tested by
Fujitsu

### Test Date
Dec-2018

### Hardware Availability
May-2017

### Software Availability
Sep-2018

### 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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<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tbody>
<tr>
<td>500.perlbench_r</td>
<td>8</td>
<td>569</td>
<td>22.4</td>
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<td>505.mcf_r</td>
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<td>33.1</td>
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<td>33.0</td>
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<td>32.8</td>
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<tr>
<td>520.omnetpp_r</td>
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<td>682</td>
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<td>523.xalanbmk_r</td>
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<tr>
<td>548.exchange2_r</td>
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<td>557.xz_r</td>
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<td>18.3</td>
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<td>8</td>
<td>469</td>
<td>18.4</td>
<td>469</td>
<td>18.4</td>
<td>470</td>
<td>18.4</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"
echo always > /sys/kernel/mm/transparent_hugepage/enabled
echo 1 > /proc/sys/vm/drop_caches
echo 1000000000 > /proc/sys/kernel/sched_min_granularity_ns
echo 1500000000 > /proc/sys/kernel/sched_wakeup_granularity_ns

### 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

(Continued on next page)
Fujitsu
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Test Sponsor: Fujitsu  
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Test Date: Dec-2018  
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Software Availability: Sep-2018

General Notes (Continued)

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

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:
Fan Control = Full  
Sysinfo program /home/Benchmark/speccpu2017-ic19-20181011/bin/sysinfo  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f  
running on TX1330M3 Mon Dec 3 18:39:15 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) CPU E3-1230 v6 @ 3.50GHz  
  1 "physical id"s (chips)  
  8 "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 : 8  
physical 0: cores 0 1 2 3

From lscpu:
  Architecture: x86_64  
  CPU op-mode(s): 32-bit, 64-bit  
  Byte Order: Little Endian  
  CPU(s): 8  
  On-line CPU(s) list: 0-7  
  Thread(s) per core: 2  
  Core(s) per socket: 4  
  Socket(s): 1  
  NUMA node(s): 1  
  Vendor ID: GenuineIntel  
  CPU family: 6  
  Model: 158

(Continued on next page)
SPEC CPU2017 Integer Rate Result

Fujitsu
PRIMERGY TX1330 M3, Intel Xeon E3-1230 v6, 3.50GHz

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Test Sponsor: Fujitsu
Test Date: Dec-2018
Tested by: Fujitsu
Hardware Availability: May-2017
Software Availability: Sep-2018

Platform Notes (Continued)

Model name: Intel(R) Xeon(R) CPU E3-1230 v6 @ 3.50GHz
Stepping: 9
CPU MHz: 3500.000
CPU max MHz: 3900.0000
CPU min MHz: 800.0000
BogoMIPS: 7008.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 8192K
NUMA node0 CPU(s): 0-7
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 rdtsc
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 pclid 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 rtm mpx rsmm adx xsaveopt xsaves ibpb ibrs stibp dtherm ida arat
pin pts hwp hwp_notify hwp_act_window hwp_epp ssbd

/proc/cpuinfo cache data
  cache size : 8192 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
  node 0 size: 64033 MB
  node 0 free: 63548 MB
  node distances:
    node 0
    0: 10

From /proc/meminfo
  MemTotal: 65570528 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
  os-release:
    NAME="SLES"
    VERSION="15"
    VERSION_ID="15"
    PRETTY_NAME="SUSE Linux Enterprise Server 15"

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

```
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"
```

```
uname -a:
Linux TX1330M3 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 Dec 3 18:37
```

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

```
Filesystem     Type  Size  Used  Avail  Use%  Mounted on
/dev/sda4      xfs   1.7T   27G  1.7T    2%  /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. V5.0.0.11 R1.21.0 for D3373-Blx**

11/20/2018

**Memory:**

4x Samsung M391A2K43BB1-CRC 16 GB 2 rank 2400

(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.
```

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

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Fujitsu
PRIMERGY TX1330 M3, Intel Xeon E3-1230 v6, 3.50GHz

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CPU2017 License: 19
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Tested by: Fujitsu

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
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
SPEC CPU2017 Integer Rate Result

Fujitsu
PRIMERGY TX1330 M3, Intel Xeon E3-1230 v6, 3.50GHz

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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
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
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Test Sponsor: Fujitsu
Tested by: Fujitsu

CPU2017 License: 19
Test Date: Dec-2018
Hardware Availability: May-2017
Software Availability: Sep-2018

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

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

The flags files that were used to format this result can be browsed at
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You can also download the XML flags sources by saving the following links:


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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 2018-12-03 04:39:15-0500.


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