**SPEC® CPU2017 Integer Rate Result**

Supermicro
SuperServer 5019C-L (X11SCL-IF, Intel Core i3-8100)

**SPECrate2017_int_base = 21.1**

**SPECrate2017_int_peak = 22.5**

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**Hardware**

- **CPU Name:** Intel Core i3-8100
- **Max MHz.:** 3600
- **Nominal:** 3600
- **Enabled:** 4 cores, 1 chip
- **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:** 6 MB I+D on chip per chip
- **Other:** None
- **Memory:** 32 GB (2 x 16 GB 2Rx8 PC4-2666V-E, running at 2400)
- **Storage:** 1 x 512 GB NVMe SSD
- **Other:** None

---

**Software**

- **OS:** SUSE Linux Enterprise Server 12 SP3 (x86_64)
- **Kernel:** 4.4.114-94.11-default
- **Compiler:** C/C++: Version 18.0.2.199 of Intel C/C++
- **Compiler for Linux:** Fortran: Version 18.0.2.199 of Intel Fortran
- **Compiler for Linux:**
- **Parallel:** No
- **Firmware:** Supermicro BIOS version 1.0 released 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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SPECrat2017_int_base = 21.1
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Results Table

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<td>11.5</td>
<td>375</td>
<td>11.5</td>
</tr>
</tbody>
</table>

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"

General Notes
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"

Binaries compiled on a system with 1x Intel Core i7-6700K CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5
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

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.
SPEC CPU2017 Integer Rate Result

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SPECrerate2017_int_base = 21.1
SPECrerate2017_int_peak = 22.5

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
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f29999c33d61f64985e45859ea9
running on linux-01gl Tue Nov 13 01:34:55 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) Core(TM) i3-8100 CPU @ 3.60GHz
        1 "physical id"s (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:
    Architecture:          x86_64
    CPU op-mode(s):        32-bit, 64-bit
    Byte Order:            Little Endian
    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:                 158
    Model name:            Intel(R) Core(TM) i3-8100 CPU @ 3.60GHz
    Stepping:              10
    CPU MHz:               3600.084
    CPU max MHz:           3600.000
    CPU min MHz:           800.0000
    BogoMIPS:              7199.99
    Virtualization:        VT-x
    L1d cache:             32K
    L1i cache:             32K

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

**Supermicro**

SuperServer 5019C-L (X11SCL-IF, Intel Core i3-8100)

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**CPU2017 License:** 001176  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro  
**Test Date:** Nov-2018  
**Hardware Availability:** Nov-2018  
**Software Availability:** Mar-2018

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#### Platform Notes (Continued)

- **L2 cache:** 256K
- **L3 cache:** 6144K
- **NUMA node0 CPU(s):** 0-3

**Flags:**
- fpu vme de pse tsc msr pae 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 bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx 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 arat epb invpcid_single pln pts dtherm hwp_notify hwp_act_window hwp_epp intel_pt rsb_ctxsw spec_ctrl retpoline kaiser tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid mxv rdseed adx smap clflushopt xsaveopt xsavec xsaves xsaveopt

/procd/cpuinfo cache data
- **cache size:** 6144 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
- **node 0 size:** 32089 MB
- **node 0 free:** 31676 MB
- **node distances:**
  - **node 0**

From `/proc/meminfo`

- **MemTotal:** 32860044 kB
- **HugePages_Total:** 0
- **Hugepagesize:** 2048 kB

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

**SuSE-release**:

- **SUSE Linux Enterprise Server 12 (x86_64)**
- **VERSION = 12**
- **PATCHLEVEL = 3**

# This file is deprecated and will be removed in a future service pack or release.  
# Please check /etc/os-release for details about this release.

**os-release**:

- **NAME="SLES"**
- **VERSION="12-SP3"**
- **VERSION_ID="12.3"**
- **PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"**
- **ID="sles"**
- **ANSI_COLOR="0;32"**
- **CPE_NAME="cpe:/o:suse:sles:12:sp3"**

(Continued on next page)
Platform Notes (Continued)

uname -a:
   Linux linux-0lg1 4.4.114-94.11-default #1 SMP Thu Feb 1 19:28:26 UTC 2018 (4309ff9)
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2017-5754 (Meltdown): Mitigation: PTI
CVE-2017-5753 (Spectre variant 1): Mitigation: Barriers
CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS+IBPB

run-level 3 Nov 13 01:34

SPEC is set to: /home/cpu2017
Filesystem  Type  Size  Used Avail  Use% Mounted on
/dev/nvme0n1p4  xfs   435G   35G  400G   8% /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 American Megatrends Inc. 1.0 09/14/2018
   Memory: 2x Micron 18ADF2G72AZ-2G6H1R 16 GB 2 rank 2667, configured at 2400

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
CC  500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base)
   557.xz_r(base)
==============================================================================
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
CC  500.perlbench_r(peak) 502.gcc_r(peak) 505.mcf_r(peak) 525.x264_r(peak)
   557.xz_r(peak)
==============================================================================
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
Compiler Version Notes (Continued)

541.leela_r(base)

icpc (ICC) 18.0.2 20180210
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) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

FC 548.exchange2_r(base)

ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

FC 548.exchange2_r(peak)

ifort (IFORT) 18.0.2 20180210
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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

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Test Sponsor: Supermicro
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Test Date: Nov-2018
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Base Portability Flags (Continued)

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

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
-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/home/prasad/specdev/IC18u2_Internal/lin_18_0_20180210/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):
icpc -m64

523.xalancbmk_r: icpc -m32 -L/home/prasad/specdev/IC18u2_Internal/lin_18_0_20180210/compiler/lib/ia32_lin

Fortran benchmarks:
ifort -m64
## SPEC CPU2017 Integer Rate Result

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| SPECrate2017_int_peak | 22.5 |

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**Hardware Availability:** Nov-2018  
**Software Availability:** Mar-2018

### 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`

### 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`

- `520.x264_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`

- `525.x264_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`: `-Wl,-z,-muldefs` `-prof-gen(pass 1)` `-prof-use(pass 2)` `-ipo`  
  `-xCORE-AVX2` `-O3` `-no-prec-div` `-qopt-mem-layout-trans=3`
## SPEC CPU2017 Integer Rate Result

| Supermicro SuperServer 5019C-L (X11SCL-IF, Intel Core i3-8100) | SPECrate2017_int_base = 21.1 |
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### Peak Optimization Flags (Continued)

541.leela_r (continued):
-L/usr/local/je5.0.1-64/lib -ljemalloc

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/Intel-ic18.0-official-linux64.2017-12-21.xml
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SKL-revD.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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