Supermicro
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Software Availability: Mar-2018
Test Date: Jun-2018
Hardware Availability: Jul-2017

600.perlbench_s 16 602.gcc_s 16 605.mcf_s 16 620.omnetpp_s 16 623.xalancbmk_s 16 625.x264_s 16 631.deepsjeng_s 16 641.leela_s 16 648.exchange2_s 16 657.xz_s 16

Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>6.93</td>
</tr>
<tr>
<td>gcc</td>
<td>8.49</td>
</tr>
<tr>
<td>mcf</td>
<td>11.2</td>
</tr>
<tr>
<td>omnetpp</td>
<td>4.84</td>
</tr>
<tr>
<td>xalancbmk</td>
<td>9.19</td>
</tr>
<tr>
<td>x264</td>
<td>11.5</td>
</tr>
<tr>
<td>deepsjeng</td>
<td>5.25</td>
</tr>
<tr>
<td>leela</td>
<td>4.35</td>
</tr>
<tr>
<td>exchange2</td>
<td>13.2</td>
</tr>
<tr>
<td>xz</td>
<td>18.0</td>
</tr>
</tbody>
</table>

Hardware
CPU Name: Intel Xeon Gold 6130
Max MHz.: 3700
Nominal: 2100
Enabled: 16 cores, 1 chip
Orderable: 1 chip
Cache L1: 32 KB I + 32 KB D on chip per core
L2: 1 MB I+D on chip per core
L3: 22 MB I+D on chip per chip
Other: None
Memory: 192 GB (6 x 32 GB 2Rx4 PC4-2666V-R)
Storage: 1 x 2 TB SATA III, 7200 RPM
Other: None

Software
OS: SUSE Linux Enterprise Server 12 SP3
Compiler: C/C++: Version 18.0.2.199 of Intel C/C++
Compiler for Linux: Fortran: Version 18.0.2.199 of Intel Fortran
Parallel: Yes
Firmware: Supermicro BIOS version 2.0b released Feb-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 Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

SPECspeed2017_int_base = 8.31
SPECspeed2017_int_peak = 8.52

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"

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"
OMP_STACKSIZE = "192M"

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

jemalloc: jemalloc, a general purpose malloc implementation;
jemalloc: built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5;

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.
Supermicro
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

SPECspeed2017_int_base = 8.31
SPECspeed2017_int_peak = 8.52

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Platform Notes

BIOS Settings:
Hyper-Threading = Disable
LLC prefetch = Enable
Power Technology = Custom
Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Maximum Performance
Hardware P-state = Out of Band Mode
XPT Prefetch = Enable
Stale AtoS = Enable
LLC dead line alloc = Disable
SDDC Plus One = Disable
ADDDC Sparing = Disable
Patrol Scrub = Disable
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on linux-9m9c Thu Jun 28 07:07:37 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) Gold 6130 CPU @ 2.10GHz
  1 "physical id"s (chips)
  16 "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 : 16
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 16
On-line CPU(s) list: 0-15
Thread(s) per core: 1
Core(s) per socket: 16
Socket(s): 1
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz
Stepping: 4
CPU MHz: 2100.001
SPEC CPU2017 Integer Speed Result

Supermicro
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

SPECspeed2017_int_base = 8.31
SPECspeed2017_int_peak = 8.52

Test Date: Jun-2018
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Platform Notes (Continued)

BogoMIPS: 4200.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 22528K
NUMA node0 CPU(s): 0-3,8-11
NUMA node1 CPU(s): 4-7,12-15
Flags: fpu vme de pse tsc msr pae mce cmov pat pse36 cli flush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon pebs bts rep_good ntopl xtopology nonstop_tsc aperf perf_event eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpre pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epb invpcid_single pln pts dtherm hwp_epp intel_pt rsb_ctxsw spec_ctrl retpoline kaiser tpr_shadow vnnmi fpxintercept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 irdt vtdc cqm mpx avx512f avx512dq vppid vvd asid mcf cmov pdcm pcid dca cmp collapsible cpuid reclaim tsc_per_cycle cpuid软件 availability

From /proc/cpuinfo cache data
    cache size : 22528 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.
    available: 2 nodes (0-1)
    node 0 cpus: 0 1 2 3 8 9 10 11
    node 0 size: 95258 MB
    node 0 free: 94892 MB
    node 1 cpus: 4 5 6 7 12 13 14 15
    node 1 size: 96627 MB
    node 1 free: 96267 MB
    node distances:
        node 0 1
        0: 10 11
        1: 11 10

From /proc/meminfo
    MemTotal: 196491296 kB
    HugePages_Total: 0
    Hugepagesize: 2048 kB

/us/bin/lsb_release -d
    SUSE Linux Enterprise Server 12 SP3

From /etc/*release* /etc/*version*
    SuSE-release:
        SUSE Linux Enterprise Server 12 (x86_64)

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

**Supermicro**
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>SPECspeed2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.31</td>
<td>8.52</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 001176  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro  
**Test Date:** Jun-2018  
**Hardware Availability:** Jul-2017  
**Software Availability:** Mar-2018

---

**Platform Notes (Continued)**

```
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"
```

```
uname -a:  
    Linux linux-9m9c 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  
run-level 3 Jun 28 07:03
```

**SPEC is set to:** /home/cpu2017

```
Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/sda4    xfs   1.8T   45G  1.8T   3% /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. 2.0b 02/26/2018**

**Memory:**
- 2x NO DIMM NO DIMM
- 6x Samsung M393A4K40CB2-CTD 32 GB 2 rank 2666

(End of data from sysinfo program)

---

**Compiler Version Notes**

```
CC 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base, peak) 657.xz_s(base)
```

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

```CC 600.perlbench_s(peak) 602.gcc_s(peak) 605.mcf_s(peak) 657.xz_s(peak)
```

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

**Supermicro**  
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_base</td>
<td>8.31</td>
</tr>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>8.52</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 001176  
**Test Sponsor:** Supermicro  
**Test Date:** Jun-2018  
**Hardware Availability:** Jul-2017  
**Tested by:** Supermicro  
**Software Availability:** Mar-2018

#### Compiler Version Notes (Continued)

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

CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
   641.leela_s(base)

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

CXXC 620.omnetpp_s(peak) 623.xalancbmk_s(peak) 631.deepsjeng_s(peak)
   641.leela_s(peak)

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

FC 648.exchange2_s(base, peak)
```

#### Base Compiler Invocation

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

- **C++ benchmarks:**  
  - icpc -m64

- **Fortran benchmarks:**  
  - ifort -m64

#### Base Portability Flags

- 600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
- 602.gcc_s: -DSPEC_LP64

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Supermicro
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

SPECspeed2017_int_base = 8.31
SPECspeed2017_int_peak = 8.52

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro
Test Date: Jun-2018
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Base Portability Flags (Continued)

605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -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-AVX512 -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:
icc -m64 -std=c11

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

623.xalancbmk_s: icpc -m32 -L/home/prasadj/specdev/IC18u2_Internal/lin_18_0_20180210/compiler/lib/ia32_lin

Fortran benchmarks:
ifort -m64
SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

SPECspeed2017_int_base = 8.31
SPECspeed2017_int_peak = 8.52

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Jun-2018
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Peak Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -D_FILE_OFFSET_BITS=64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

(Continued on next page)

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-prefetch -ipo -O3
-qopt-mem-layout-trans=3 -no-prec-div
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-fno-strict-overflow -L/usr/local/je5.0.1-64/lib
-ljemalloc

602.gcc_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-prefetch -ipo -O3
-qopt-mem-layout-trans=3 -no-prec-div
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-xl -L/usr/local/je5.0.1-64/lib -ljemalloc

605.mcf_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

620.omnetpp_s: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-prefetch -qopt-mem-layout-trans=3 -qopenmp
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

625.x264_s: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-prefetch -qopt-mem-layout-trans=3 -qopenmp
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

657.xz_s: Same as 602.gcc_s

C++ benchmarks:

620.omnetpp_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp

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

**Supermicro**
SuperStorage 5049P-E1CR45H (X11SPL-F, Intel Xeon Gold 6130)

<table>
<thead>
<tr>
<th>CPU2017 License: 001176</th>
<th>SPECspeed2017_int_base = 8.31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Supermicro</td>
<td>SPECspeed2017_int_peak = 8.52</td>
</tr>
<tr>
<td>Tested by: Supermicro</td>
<td></td>
</tr>
</tbody>
</table>

**Peak Optimization Flags (Continued)**

620.omnetpp_s (continued):
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

623.xalancbmk_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -L/usr/local/je5.0.1-32/lib -ljemalloc

631.deepsjeng_s: Same as 620.omnetpp_s

641.leela_s: Same as 620.omnetpp_s

Fortran benchmarks:
-W1,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs
-L/usr/local/je5.0.1-64/lib -ljemalloc

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

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 2018-06-28 07:07:36-0400.