## Supermicro

SuperStprage 6029P-E1CR24H  
(X11DSC+, Intel Xeon Gold 6242R)

| SPECspeed®2017_int_base = 11.7 |
| SPECspeed®2017_int_peak = 11.9 |

### CPU2017 License
001176

### Test Date
Aug-2020

### Test Sponsor
Supermicro

### Hardware

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<tr>
<td>657.xz_s</td>
<td>24.10</td>
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</table>

### Software

| OS: Red Hat Enterprise Linux release 8.1 |
| Parallel: Yes |
| Firmware: Version 3.2 released Oct-2019 |
| File System: xfs |
| System State: Run level 3 (multi-user) |
| Base Pointers: 64-bit |
| Peak Pointers: 64-bit |
| Other: jemalloc memory allocator V5.0.1 |
| Power Management: BIOS set to prefer performance at the cost of additional power usage |

### CPU Name
Intel Xeon Gold 6242R

### Max MHz
4100

### Nominal
3100

### Enabled
40 cores, 2 chips

### Orderable
1.2 chips

### Cache L1
32 KB I + 32 KB D on chip per core

### L2
1 MB I+D on chip per core

### L3
35.75 MB I+D on chip per chip

### Other
None

### Memory
384 GB (12 x 32 GB 2Rx4 PC4-2933Y-R)

### Storage
1 x 200 GB SATA III SSD

### Other
None
# SPEC CPU®2017 Integer Speed Result

## Supermicro

SuperStrage 6029P-E1CR24H
(X11DSC+, Intel Xeon Gold 6242R)

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

---

### Results Table

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</tbody>
</table>

---

### Compiler Notes

The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler. The correct version of C/C++ compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux. The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux

### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

### Environment Variables Notes

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

- `KMP_AFFINITY = "granularity=fine,scatter"
- `LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
- `MALLOC_CONF = "retain:true"
- `OMP_STACKSIZE = "192M"

### General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Redhat Enterprise Linux 8.0. 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
```

---

**SPECspeed®2017_int_base = 11.7**
**SPECspeed®2017_int_peak = 11.9**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
## SPEC CPU®2017 Integer Speed Result

### Supermicro
SuperStrage 6029P-E1CR24H
(X11DSC+, Intel Xeon Gold 6242R)

<table>
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<td>11.7</td>
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</table>

**CPU2017 License:** 001176  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro  
**Test Date:** Aug-2020  
**Hardware Availability:** Feb-2020  
**Software Availability:** Apr-2020

### General Notes (Continued)

NA: 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.

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

### Platform Notes

**BIOS Settings:**  
Power Technology = Custom  
Power Performance Tuning = BIOS Controls EPB  
ENERGY_PERF_BIAS_CFG mode = Performance  
Hyper-Threading = Disable  
Stale AtoS = Disable  
Patrol Scrub = Disable

Sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r6365 of 2019-08-21 295195f888a3d7ed8b6e6a483a0011  
running on RHEL81-01 Thu Aug 20 01:25:38 2020

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 6242R CPU @ 3.10GHz  
  2 "physical id"s (chips)  
  40 "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 : 20  
  - siblings : 20  
  - physical 0: cores 0 1 2 3 5 6 8 10 12 13 16 17 18 19 20 21 26 27 28 29  
  - physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 21 28 29

From lscpu:

- Architecture: x86_64  
- CPU op-mode(s): 32-bit, 64-bit  
- Byte Order: Little Endian  
- CPU(s): 40  
- On-line CPU(s) list: 0-39  
- Thread(s) per core: 1

(Continued on next page)
SPEC CPU®2017 Integer Speed Result

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Supermicro
SuperStprage 6029P-E1CR24H
(X11DSC+, Intel Xeon Gold 6242R)

SPECspeed®2017_int_base = 11.7
SPECspeed®2017_int_peak = 11.9

CPU2017 License: 001176
Test Date: Aug-2020
Test Sponsor: Supermicro
Hardware Availability: Feb-2020
Tested by: Supermicro
Software Availability: Apr-2020

Platform Notes (Continued)

Core(s) per socket: 20
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6242R CPU @ 3.10GHz
Stepping: 7
CPU MHz: 2441.996
CPU max MHz: 4100.0000
CPU min MHz: 1200.0000
BogoMIPS: 6200.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 36608K
NUMA node0 CPU(s): 0-19
NUMA node1 CPU(s): 20-39
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 arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt p mnemonic tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3 invpcid_single intel_pni ssbd mba ibrs ibpb stibp ibrs_advanced tpr_shadow vmbdi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cmx mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512d avx512bw avx512vl xsaveopt xsaves xsavec xgetbv1 xsave vs cmx llc cqm_occu llc cqm_mb_total cqm_mb_local dtherm ida arat pln pts pku ospke avx512_vnni md_clear flush_lld arch_capabilities

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 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
node 0 size: 192091 MB
node 0 free: 191872 MB
node 1 cpus: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
node 1 size: 193531 MB
node 1 free: 192834 MB
node distances:
node 0 1
0: 10 21

(Continued on next page)
Platform Notes (Continued)

From /proc/meminfo
MemTotal: 394878320 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.1 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.1"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.1 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.1:ga

uname -a:
Linux RHEL81-01 4.18.0-147.el8.x86_64 #1 SMP Thu Sep 26 15:52:44 UTC 2019 x86_64
x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault): Not affected
Microarchitectural Data Sampling: Not affected
CVE-2017-5754 (Meltdown): Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1): Mitigation: usrcopy/swapgs barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

run-level 3 Aug 20 01:23

SPEC is set to: /home/cpu2017

From /sys/devices/virtual/dmi/id
BIOS: American Megatrends Inc. 3.2 10/18/2019
Vendor: pm_2019-10-08_18:11:34
Product: ppm_2019-10-08_18:11:37
Platform Notes (Continued)

Serial: ps_2019-10-08_18:11:38

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.

Memory:
12x NO DIMM NO DIMM
12x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
| C       | 600.perlbench_s(base) 602.gcc_s(base, peak) 605.mcf_s(base, peak)         |
|         | 625.x264_s(base, peak) 657.xz_s(base, peak)                                 |
==============================================================================

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

==============================================================================
| C       | 600.perlbench_s(peak)                                                    |
==============================================================================

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

==============================================================================
| C       | 600.perlbench_s(base) 602.gcc_s(base, peak) 605.mcf_s(base, peak)         |
|         | 625.x264_s(base, peak) 657.xz_s(base, peak)                                 |
==============================================================================

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

==============================================================================
| C       | 600.perlbench_s(peak)                                                    |
==============================================================================

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

(Continued on next page)
Supermicro
SuperStprage 6029P-E1CR24H
(X11DSC+, Intel Xeon Gold 6242R)

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Supermicro
SuperStprage 6029P-E1CR24H
(X11DSC+, Intel Xeon Gold 6242R)

SPEC CPU®2017 Integer Speed Result

 SPECspeed®2017_int_base = 11.7
 SPECspeed®2017_int_peak = 11.9

Compiler Version Notes (Continued)

------------------------------------------------------------------------------
----------------------------------------------------------------==============
C++     | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak)
        | 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-----------------------------------------------------------------------------
-----------------------------------------------------------------------------
Fortran | 648.exchange2_s(base, peak)
-----------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-----------------------------------------------------------------------------

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Base 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: -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
SPEC CPU®2017 Integer Speed Result

Supermicro
SuperStprage 6029P-E1CR24H (X11DSC+, Intel Xeon Gold 6242R)

SPECspeed®2017_int_base = 11.7
SPECspeed®2017_int_peak = 11.9

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Base Optimization Flags

C benchmarks:
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops
-fuse-ld=gold -qopt-mem-layout-trans=4 -fopenmp -DSPEC_OPENMP
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

C++ benchmarks:
-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse
-funroll-loops -fuse-ld=gold -qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin
-lqkmalloc

Fortran benchmarks:
-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -xCORE-AVX512
-O3 -ipo -no-prec-div -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-mbranches-within-32B-boundaries

Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Peak Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64(*) -DSPEC_LP64
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

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

648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

(*) Indicates a portability flag that was found in a non-portability variable.

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2)
-xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -fno-strict-overflow
-mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

602.gcc_s: -m64 -qnextgen -std=c11 -fuse-ld=gold
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -flto
-Ofast(pass 1) -O3 -ffast-math -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

605.mcf_s: basepeak = yes

625.x264_s: -m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -flto -O3 -ffast-math
-fuse-ld=gold -qopt-mem-layout-trans=4 -fno-alias
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_s: basepeak = yes

Fortran benchmarks:

(Continued on next page)
## SPEC CPU®2017 Integer Speed Result

**Supermicro**

SuperStprage 6029P-E1CR24H (X11DSC+, Intel Xeon Gold 6242R)

---

<table>
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<tr>
<td>CPU2017 License: 001176</td>
<td>Test Date: Aug-2020</td>
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<tr>
<td>Test Sponsor: Supermicro</td>
<td>Hardware Availability: Feb-2020</td>
</tr>
<tr>
<td>Tested by: Supermicro</td>
<td>Software Availability: Apr-2020</td>
</tr>
</tbody>
</table>

---

### Peak Optimization Flags (Continued)

648.exchange2_s: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:


---

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

**Tested with SPEC CPU®2017 v1.1.0 on 2020-08-19 13:25:37-0400.**

Report generated on 2020-09-29 15:26:17 by CPU2017 PDF formatter v6255.

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