Supermicro
SuperServer SYS-620U-TNR
(X12DPU-6 , Intel Xeon Platinum 8380)

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

SPECratenew_int_base = 557
SPECratenew_int_peak = 580

Test Date: May-2021
Hardware Availability: Apr-2021

Software
OS: Red Hat Enterprise Linux release 8.3 (Ootpa) 4.18.0-240.el8.x86_64
Compiler: C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux;
Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux;
C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux
Parallel: No
Firmware: Version 1.1 released Apr-2021
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.

Hardware
CPU Name: Intel Xeon Platinum 8380
Max MHz: 3400
Nominal: 2300
Enabled: 80 cores, 2 chips, 2 threads/core
Orderable: 1,2 Chips
Cache L1: 32 KB I+ 48 KB D on chip per core
L2: 1.25 MB I+D on chip per core
L3: 60 MB I+D on chip per chip
Other: None
Memory: 1 TB
(32 x 32 GB 2Rx4 PC4-3200AA-R)
Storage: 1 x 500 GB SATA III SSD
Other: None

500.perlbench_r 160
502.gcc_r 160
505.mcf_r 160
520.omnetpp_r 160
523.xalancbmk_r 160
525.x264_r 160
531.deepsjeng_r 160
541.leela_r 160
548.exchange2_r 160
557.xz_r 160

SPECrate®2017_int_base (557) --- SPECrate®2017_int_peak (580)
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>160</td>
<td>636</td>
<td>401</td>
<td>636</td>
<td>400</td>
<td>635</td>
<td>401</td>
<td>160</td>
<td>544</td>
<td>468</td>
<td>543</td>
<td>469</td>
<td>544</td>
<td>468</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>160</td>
<td>554</td>
<td>409</td>
<td>554</td>
<td>409</td>
<td>555</td>
<td>408</td>
<td>160</td>
<td>450</td>
<td>504</td>
<td>444</td>
<td>510</td>
<td>445</td>
<td>510</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>160</td>
<td>292</td>
<td>885</td>
<td>293</td>
<td>883</td>
<td>293</td>
<td>881</td>
<td>160</td>
<td>292</td>
<td>885</td>
<td>293</td>
<td>883</td>
<td>293</td>
<td>881</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>160</td>
<td>689</td>
<td>305</td>
<td>691</td>
<td>304</td>
<td>690</td>
<td>304</td>
<td>160</td>
<td>689</td>
<td>305</td>
<td>691</td>
<td>304</td>
<td>690</td>
<td>304</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>160</td>
<td>239</td>
<td>706</td>
<td>240</td>
<td>705</td>
<td>240</td>
<td>704</td>
<td>160</td>
<td>239</td>
<td>706</td>
<td>240</td>
<td>705</td>
<td>240</td>
<td>704</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>160</td>
<td>228</td>
<td>1230</td>
<td>229</td>
<td>1220</td>
<td>229</td>
<td>1220</td>
<td>160</td>
<td>218</td>
<td>1280</td>
<td>218</td>
<td>1280</td>
<td>219</td>
<td>1280</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>160</td>
<td>409</td>
<td>448</td>
<td>409</td>
<td>448</td>
<td>409</td>
<td>448</td>
<td>160</td>
<td>409</td>
<td>448</td>
<td>409</td>
<td>448</td>
<td>409</td>
<td>448</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>160</td>
<td>604</td>
<td>439</td>
<td>604</td>
<td>439</td>
<td>603</td>
<td>439</td>
<td>160</td>
<td>604</td>
<td>439</td>
<td>604</td>
<td>439</td>
<td>603</td>
<td>439</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>160</td>
<td>346</td>
<td>1210</td>
<td>346</td>
<td>1210</td>
<td>348</td>
<td>1200</td>
<td>160</td>
<td>346</td>
<td>1210</td>
<td>346</td>
<td>1210</td>
<td>348</td>
<td>1200</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>160</td>
<td>544</td>
<td>318</td>
<td>544</td>
<td>317</td>
<td>544</td>
<td>317</td>
<td>160</td>
<td>558</td>
<td>310</td>
<td>555</td>
<td>311</td>
<td>555</td>
<td>311</td>
</tr>
</tbody>
</table>

SPECrate®2017_int_base = 557
SPECrate®2017_int_peak = 580

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

### Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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"

### Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
"/root/cpu2017-1.1.7/lib/intel64:/root/cpu2017-1.1.7/lib/ia32:/root/cpu2017-1.1.7/je5.0.1-32"
MALLOC_CONF = "retain:true"

### General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM
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
runcpu command invoked through numactl i.e.:
**General Notes (Continued)**

```
numactl --interleave=all runcpu <etc>
```

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.

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.

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.


**Platform Notes**

BIOS Settings:
- Power Technology = Custom
- Power Performance Tuning = BIOS Controls EPB
- ENERGY_PERF_BIAS_CFG mode = Extreme Performance
- SNC (Sub NUMA) = Enable
- KTI Prefetch = Enable
- LLC Dead Line Alloc = Disable
- Hyper-Threading = Enabled

Sysinfo program /root/cpu2017-1.1.7/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c running on 153-77.pnet Sun May 2 14:27:45 2021

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) Platinum 8380 CPU @ 2.30GHz
  2 "physical id"s (chips)
  160 "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 : 40
siblings : 80
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
```

From lscpu:

(Continued on next page)
Supermicro
SuperServer SYS-620U-TNR
(X12DPU-6 , Intel Xeon Platinum 8380)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

SPECrate®2017_int_base = 557
SPECrate®2017_int_peak = 580

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

Test Date: May-2021
Hardware Availability: Apr-2021
Software Availability: Dec-2020

Platform Notes (Continued)

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 160
On-line CPU(s) list: 0-159
Thread(s) per core: 2
Core(s) per socket: 40
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8380 CPU @ 2.30GHz
Stepping: 6
CPU MHz: 3000.000
BogoMIPS: 6000.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 61440K
NUMA node0 CPU(s): 0-19,80-99
NUMA node1 CPU(s): 20-39,100-119
NUMA node2 CPU(s): 40-59,120-139
NUMA node3 CPU(s): 60-79,140-159

Flags: fpu vme de pse tsc msr pae mce 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 xptr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 invpcid_single intel_perp ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vmmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erva invpcid cmqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsaveopt xsaves xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mmb_total cqm_mmb_local split_lock_detect wboinvd dtherm ida arat pfn pts avx512vbmi umip pku ospke avx512_vbmi2 gfn vaes xcpumulqdq avx512_vni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d arch_capabilities

/proc/cpuinfo cache data
cache size : 61440 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.
available: 4 nodes (0-3)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

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

Copyright 2017-2021 Standard Performance Evaluation Corporation

Supermicro
SuperServer SYS-620U-TNR
(X12DPU-6 , Intel Xeon Platinum 8380)

SPECrate®2017_int_base = 557
SPECrate®2017_int_peak = 580

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

Test Date: May-2021
Hardware Availability: Apr-2021
Software Availability: Dec-2020

Platform Notes (Continued)

node 0 size: 250353 MB
node 0 free: 257070 MB
node 1 cpus: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119
node 1 size: 251188 MB
node 1 free: 257612 MB
node 2 cpus: 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139
node 2 size: 251094 MB
node 2 free: 257713 MB
node 3 cpus: 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159
node 3 size: 250822 MB
node 3 free: 257115 MB
node distances:

node   0   1   2   3
0:  10  11  20  20
1:  11  10  20  20
2:  20  20  10  11
3:  20  20  11  10

From /proc/meminfo
MemTotal:       1056422108 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

/sbin/tuned-adm active
Current active profile: throughput-performance

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.3"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
Linux 153-77.pnet 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020 x86_64
x86_64 x86_64 GNU/Linux

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

**Supermicro**

SuperServer SYS-620U-TNR  
(X12DPU-6, Intel Xeon Platinum 8380)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 557</th>
<th>SPECrate®2017_int_peak = 580</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date:        May-2021</td>
<td>Hardware Availability: Apr-2021</td>
</tr>
<tr>
<td>CPU2017 License: 001176</td>
<td>Software Availability: Dec-2020</td>
</tr>
<tr>
<td>Test Sponsor:     Supermicro</td>
<td></td>
</tr>
<tr>
<td>Tested by:       Supermicro</td>
<td></td>
</tr>
</tbody>
</table>

### Platform Notes (Continued)

**Kernel self-reported vulnerability status:**

- **CVE-2018-12207 (iTLB Multihit):** Not affected
- **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: usercopy/swapgs barriers and __user pointer sanitization
- **CVE-2017-5715 (Spectre variant 2):** Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
- **CVE-2020-0543 (Special Register Buffer Data Sampling):** Not affected
- **CVE-2019-11135 (TSX Asynchronous Abort):** Not affected

run-level 3 May 2 13:10

SPEC is set to: /root/cpu2017-1.1.7  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda4 xfs 442G 111G 332G 25% /

From /sys/devices/virtual/dmi/id  
Vendor: Supermicro  
Product: SYS-620U-TNR  
Product Family: Ultra  
Serial: 0123456789

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:**  
32x SK Hynix HMA84GR7DJR4N-XN 32 GB 2 rank 3200

**BIOS:**  
BIOS Vendor: American Megatrends International, LLC.  
BIOS Version: 1.1  
BIOS Date: 04/21/2021  
BIOS Revision: 5.22

(End of data from sysinfo program)
Supermicro
SuperServer SYS-620U-TNR (X12DPU-6, Intel Xeon Platinum 8380)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

SPECRate®2017_int_base = 557
SPECRate®2017_int_peak = 580

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

Test Date: May-2021
Hardware Availability: Apr-2021
Software Availability: Dec-2020

Compiler Version Notes

==============================================================================
C       | 500.perlbench_r(peak) 557.xz_r(peak)
==============================================================================
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
       64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C       | 502.gcc_r(peak)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version
       2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
       | 525.x264_r(base, peak) 557.xz_r(base)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
       Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C       | 500.perlbench_r(peak) 557.xz_r(peak)
==============================================================================
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
       64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C       | 502.gcc_r(peak)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version
       2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
       | 525.x264_r(base, peak) 557.xz_r(base)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
       Version 2021.1 Build 20201113

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

**Supermicro**

SuperServer SYS-620U-TNR  
(X12DPU-6 , Intel Xeon Platinum 8380)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 557</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak = 580</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>001176</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date:</td>
<td>May-2021</td>
</tr>
<tr>
<td>Test Sponsor:</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Supermicro</td>
</tr>
</tbody>
</table>

#### Compiler Version Notes (Continued)

```
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

---

```
| C      | 500.perlbench_r(peak) 557.xz_r(peak) |
---
| Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000 |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

---

```
| C      | 502.gcc_r(peak) |
---
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113 |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

---

```
| C      | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base) |
---
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113 |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

---

```
| C++    | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak) 541.leela_r(base, peak) |
---
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113 |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

---

```
| Fortran | 548.exchange2_r(base, peak) |
---
| Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000 |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved. |

---

```
```
Supermicro
SuperServer SYS-620U-TNR (X12DPU-6, Intel Xeon Platinum 8380)

SPECrack®2017_int_base = 557
SPECrack®2017_int_peak = 580

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

Test Date: May-2021
Hardware Availability: Apr-2021
Software Availability: Dec-2020

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifort

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

Base Optimization Flags

C benchmarks:
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

C++ benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc

Fortran benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-auto -mbranches-within-32B-boundaries

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

Supermicro
SuperServer SYS-620U-TNR (X12DPU-6, Intel Xeon Platinum 8380)

| SPECrate®2017_int_base = 557 |
| SPECrate®2017_int_peak = 580 |

- CPU2017 License: 001176
- Test Sponsor: Supermicro
- Tested by: Supermicro
- Test Date: May-2021
- Hardware Availability: Apr-2021
- Software Availability: Dec-2020

Base Optimization Flags (Continued)

Fortran benchmarks (continued):
- `-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin`
- `-lqkmalloc`

Peak Compiler Invocation

C benchmarks (except as noted below):
- `icx`
- `500.perlbench_r: icc`
- `557.xz_r: icc`

C++ benchmarks:
- `icpx`

Fortran benchmarks:
- `ifort`

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: -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`

Peak Optimization Flags

C benchmarks:
- `500.perlbench_r: -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`

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

Copyright 2017-2021 Standard Performance Evaluation Corporation

Supermicro
SuperServer SYS-620U-TNR (X12DPU-6, Intel Xeon Platinum 8380)

SPECrate®2017_int_base = 557
SPECrate®2017_int_peak = 580

CPU2017 License: 001176
Test Sponsor: Supermicro
Test Date: May-2021
Tested by: Supermicro
Hardware Availability: Apr-2021
Software Availability: Dec-2020

Peak Optimization Flags (Continued)

500.perlbench_r (continued):
- L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
- lqkmalloc

502.gcc_r: -m32
- L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/ia32_lin
- std=gnu89 -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
- mbranches-within-32B-boundaries
- L/usr/local/jemalloc32-5.0.1/lib -ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
- O3 -ffast-math -qopt-mem-layout-trans=4 -fno-alias
- mbranches-within-32B-boundaries
- L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
- lqkmalloc

557.xz_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
- qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
- L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
- lqkmalloc

C++ benchmarks:

520.omnetpp_r: basepeak = yes
523.xalancbmk_r: basepeak = yes
531.deepsjeng_r: basepeak = yes
541.leela_r: basepeak = yes

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-ic2021-official-linux64_revA.xml
<table>
<thead>
<tr>
<th>Supermicro</th>
<th>SPECrate®2017_int_base = 557</th>
</tr>
</thead>
<tbody>
<tr>
<td>SuperServer SYS-620U-TNR (X12DPU-6, Intel Xeon Platinum 8380)</td>
<td>SPECrate®2017_int_peak = 580</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2017 License: 001176</th>
<th>Test Date: May-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Supermicro</td>
<td>Hardware Availability: Apr-2021</td>
</tr>
<tr>
<td>Tested by: Supermicro</td>
<td>Software Availability: Dec-2020</td>
</tr>
</tbody>
</table>

SPEC CPU and SPECrate are registered trademarks 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 CPU®2017 v1.1.7 on 2021-05-02 17:27:44-0400.
Report generated on 2021-06-08 19:51:01 by CPU2017 PDF formatter v6442.
Originally published on 2021-06-08.