Supermicro
(Test Sponsor: NVIDIA Corporation)

Xeon Gold 6148
SuperServer 1029GQ-TRT

SPECaccel_omp_peak = 4.62
SPECaccel_omp_base = 4.62

ACCEL license: 019
Tested by: NVIDIA Corporation

Test sponsor: NVIDIA Corporation
Test date: Jul-2018
Hardware Availability: Nov-2017
Software Availability: Aug-2018

Hardware
CPU Name: Intel Xeon Gold 6148
CPU Characteristics:
CPU MHz: 2400
CPU MHz Maximum: 3700
FPU: Integrated
CPU(s) enabled: 40 cores, 2 chips, 20 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 28160 KB I+D on chip per chip
Other Cache: None

Accelerator
Accel Model Name: Intel Xeon CPU Gold 6148
Accel Vendor: Intel Corporation
Accel Name: Xeon Gold 6148
Type of Accel: CPU
Accel Connection: Not applicable
Does Accel Use ECC: Yes
Accel Description: Intel Xeon CPU Gold 6148
Accel Driver: Not applicable
## SPEC ACCEL OMP Result

### Supermicro
(Test Sponsor: NVIDIA Corporation)

**Xeon Gold 6148**  
**SuperServer 1029GQ-TRT**

**SPECaccel_omp_peak = 4.62**

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**Software Availability:** Aug-2018

### Hardware (Continued)

- **Memory:** 384 GB (12 x 32 GB 2Rx8 PC4-2666V-R)  
- **Disk Subsystem:** 512GB Samsung 960 PRO M.2 PCIe 3.0 x4 NVMe Solid State Drive  
- **Other Hardware:** None

### Software

- **Operating System:** CentOS Linux release 7.4.1708 (Core) 3.10.0-693.17.1.el7.x86_64  
- **Compiler:** PGI Professional Edition, Release 18.7 LLVM  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Other Software:** None

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>21.5</td>
</tr>
</tbody>
</table>

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

### Platform Notes

Sysinfo program /local/home/aglobus/spec-accel/Docs/sysinfo  
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1d68447e8a35  
running on perf-sky2.pgi.net Thu Jul 26 15:28:54 2018

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page
Supermicro
(Test Sponsor: NVIDIA Corporation)
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SPECaccel_omp_peak = 4.62
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Platform Notes (Continued)

http://www.spec.org/accel/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Gold 6148 CPU @ 2.40GHz
2 "physical id"s (chips)
80 "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 : 40
physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 1: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
cache size : 28160 KB

From /proc/meminfo
MemTotal: 394873648 kB
HugePages_Total: 20
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
CentOS Linux release 7.4.1708 (Core)

From /etc/*release*/etc/*version*
centos-release: CentOS Linux release 7.4.1708 (Core)
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.4 (Source)
os-release:
NAME="CentOS Linux"
VERSION="7 (Core)"
ID="centos"
ID_LIKE="rhel fedora"
VERSION_ID="7"
PRETTY_NAME="CentOS Linux 7 (Core)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:centos:centos:7"
redhat-release: CentOS Linux release 7.4.1708 (Core)
system-release: CentOS Linux release 7.4.1708 (Core)
system-release-cpe: cpe:/o:centos:centos:7

uname -a:
Linux perf-sky2.pgi.net 3.10.0-693.17.1.el7.x86_64 #1 SMP Thu Jan 25 20:13:58
UTC 2018 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 29 15:36

SPEC is set to: /local/home/aglobus/spec-accel
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/centos_sky2-root xfs 472G 60G 413G 13% /
Additional information from dmidecode:
Continued on next page
SPEC ACCEL OMP Result

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Platform Notes (Continued)

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.

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
ACC_NUM_CORES = "80"
HUGETLB_PATH = "/mnt/hugetlb"
KMP_AFFINITY = "granularity=fine,compact,1,0"
OMP_PLACES = "\{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\},\{40\},\{41\},\{42\},\{43\},\{44\},\{45\},\{46\},\{47\},\{48\},\{49\},\{50\},\{51\},\{52\},\{53\},\{54\},\{55\},\{56\},\{57\},\{58\},\{59\},\{60\},\{61\},\{62\},\{63\},\{64\},\{65\},\{66\},\{67\},\{68\},\{69\},\{70\},\{71\},\{72\},\{73\},\{74\},\{75\},\{76\},\{77\},\{78\},\{79\}"
OMP_PROC_BIND = "true"

551.ppalm (base): "advec_ws_private" src.alt was used.

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.

Base Compiler Invocation

C benchmarks:
pgcc

Fortran benchmarks:
pgfortran

Benchmarks using both Fortran and C:
pgcc pgfortran
Supermicro
(Test Sponsor: NVIDIA Corporation)
Xeon Gold 6148
SuperServer 1029GQ-TRT

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**SPECaccel_omp_base = 4.62**

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<td>NVIDIA Corporation</td>
<td>Nov-2017</td>
<td>NVIDIA Corporation</td>
<td>Aug-2018</td>
</tr>
</tbody>
</table>

**Base Portability Flags**

- 503.postencil: -DSPEC_USE_INNER_SIMD
- 504.polbm: -DSPEC_USE_INNER_SIMD
- 514.pomriq: -DSPEC_USE_INNER_SIMD
- 550.pmd: -DSPEC_USE_INNER_SIMD
- 551.ppslm: -DSPEC_USE_INNER_SIMD
- 552.pep: -DSPEC_USE_INNER_SIMD
- 553.pclvrleaf: -DSPEC_USE_INNER_SIMD
- 554.pcg: -DSPEC_USE_INNER_SIMD
- 555.pseismic: -DSPEC_USE_INNER_SIMD
- 556.psp: -DSPEC_USE_INNER_SIMD
- 557.pcsps: -DSPEC_USE_INNER_SIMD
- 559.pmniGhost: -DSPEC_USE_INNER_SIMD
- 560.pilbdc: -DSPEC_USE_INNER_SIMD
- 563.pswim: -DSPEC_USE_INNER_SIMD
- 570.pbt: -DSPEC_USE_INNER_SIMD

**Base Optimization Flags**

C benchmarks:
- V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb

Fortran benchmarks:
- V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb

Benchmarks using both Fortran and C:
- 553.pclvrleaf: V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb
- 559.pmniGhost: V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb -Mnomain

**Peak Optimization Flags**

C benchmarks:
- 503.postencil: basepeak = yes
- 504.polbm: basepeak = yes
- 514.pomriq: basepeak = yes
- 552.pep: basepeak = yes
- 554.pcg: basepeak = yes

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Peak Optimization Flags (Continued)

557.pcsp: basepeak = yes
570.pbt: basepeak = yes

Fortran benchmarks:
550.pmd: basepeak = yes
551.ppalm: basepeak = yes
555.pseismic: basepeak = yes
556.psp: basepeak = yes
560.pilbdc: basepeak = yes
563.pswim: basepeak = yes

Benchmarks using both Fortran and C:
553 pclvrleaf: basepeak = yes
559.pmnghost: basepeak = yes

The flags files that were used to format this result can be browsed at
https://www.spec.org/accel/flags/PGI-Platform-Multicore-OMP.html
https://www.spec.org/accel/flags/pgi2018_flags.html

You can also download the XML flags sources by saving the following links:
https://www.spec.org/accel/flags/PGI-Platform-Multicore-OMP.xml
https://www.spec.org/accel/flags/pgi2018_flags.xml

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

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