Supermicro
(Test Sponsor: NVIDIA Corporation)

Xeon Gold 6148
SuperServer 1029GQ-TRT

SPECaccel_acc_peak = 3.77
SPECaccel_acc_base = 3.77

ACCEL license: 019
Test sponsor: NVIDIA Corporation
Tested by: NVIDIA Corporation

Test date: Aug-2018
Hardware Availability: Nov-2017
Software Availability: Aug-2018

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>303.ostencil</td>
<td>2.43</td>
</tr>
<tr>
<td>304.olbm</td>
<td>11.5</td>
</tr>
<tr>
<td>314.omriq</td>
<td>3.13</td>
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<tr>
<td>350.md</td>
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<td>351.palm</td>
<td>2.28</td>
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<tr>
<td>352.ep</td>
<td>5.59</td>
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<tr>
<td>353.clvrleaf</td>
<td>2.66</td>
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<td>354.cg</td>
<td>7.27</td>
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<td>355.seismic</td>
<td>3.56</td>
</tr>
<tr>
<td>356.sp</td>
<td>5.09</td>
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<tr>
<td>357.sp</td>
<td>4.15</td>
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<tr>
<td>359.miniGhost</td>
<td>3.14</td>
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<tr>
<td>360.ilbdc</td>
<td>2.07</td>
</tr>
<tr>
<td>363.swim</td>
<td>5.11</td>
</tr>
<tr>
<td>370.bt</td>
<td>2.76</td>
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SPECaccel_acc_base = 3.77
SPECaccel_acc_peak = 3.77

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
Accelerator Model Name: Intel Xeon CPU Gold 6148
Accelerator Vendor: Intel Corporation
Accelerator Name: Xeon Gold 6148
Type of Acceler: CPU
Acceler Connection: Not applicable
Does Acceler Use ECC: Yes
Acceler Description: Intel Xeon CPU Gold 6148
Acceler Driver: Not applicable
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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 Base</th>
<th>Ratio Base</th>
<th>Seconds Peak</th>
<th>Ratio Peak</th>
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<tbody>
<tr>
<td>303.ostencil</td>
<td>61.1 2.37</td>
<td>59.6 2.43</td>
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<td>59.6 2.43</td>
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<td>304.olbm</td>
<td>39.8 11.4</td>
<td>39.6 11.5</td>
<td>39.2 11.6</td>
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<td>354.cg</td>
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<td>56.2 7.26</td>
<td>54.2 7.52</td>
<td>56.1 7.27</td>
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<td>355.seismic</td>
<td>103 3.60</td>
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<tr>
<td>357.esp</td>
<td>65.8 4.10</td>
<td>65.1 4.15</td>
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<td>177 2.08</td>
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<td>46.3 4.97</td>
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<td>44.8 5.14</td>
<td>46.3 4.97</td>
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<td>370.bt</td>
<td>80.8 2.76</td>
<td>80.8 2.76</td>
<td>80.1 2.78</td>
<td>80.8 2.76</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 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on perf-sky2.pgi.net Wed Aug 1 16:46:35 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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Software Availability: Aug-2018

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
cautions.)
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

/users/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 59G 413G 13% /

Additional information from dmidecode:

Continued on next page
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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"
OMP_PROC_BIND = "true"

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

Base Optimization Flags

C benchmarks:
-fast -Mnouniform -Mhugetlb -acc -ta=multicore

Fortran benchmarks:
-fast -Mnouniform -Mhugetlb -acc -ta=multicore

Benchmarks using both Fortran and C:
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</table>

Test sponsor: NVIDIA Corporation
Tested by: NVIDIA Corporation

Base Optimization Flags (Continued)

- `353.clvrleaf`: `-fast -Mnouniform -Mhugetlb -acc -ta=multicore`
- `359.miniGhost`: `-fast -Mnouniform -Mhugetlb -acc -ta=multicore -Mnomain`

Peak Optimization Flags

C benchmarks:

- `303.ostencil`: `basepeak = yes`
- `304.olbm`: `basepeak = yes`
- `314.omriq`: `basepeak = yes`
- `352.ep`: `basepeak = yes`
- `354.cg`: `basepeak = yes`
- `357.csp`: `basepeak = yes`
- `370.bt`: `basepeak = yes`

Fortran benchmarks:

- `350.md`: `basepeak = yes`
- `351.palm`: `basepeak = yes`
- `355.seismic`: `basepeak = yes`
- `356.sp`: `basepeak = yes`
- `360.ilbdc`: `basepeak = yes`
- `363.swim`: `basepeak = yes`

Benchmarks using both Fortran and C:

- `353.clvrleaf`: `basepeak = yes`
- `359.miniGhost`: `basepeak = yes`
## SPEC ACCEL ACC Result

**Supermicro**  
(Test Sponsor: NVIDIA Corporation)  
**Xeon Gold 6148**  
**SuperServer 1029GQ-TRT**  

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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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