# SPEC ACCEL™ ACC Result

**Supermicro**  
(Test Sponsor: NVIDIA Corporation)  

### Tesla P100-PCIE-16GB  
SuperServer 1028GR-TR

<table>
<thead>
<tr>
<th>SPECaccel_acc_peak</th>
<th>SPECaccel_acc_base</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.02</td>
<td>8.02</td>
</tr>
</tbody>
</table>

**ACCEL license:** 019  
**Test date:** May-2017  
**Test sponsor:** NVIDIA Corporation  
**Hardware Availability:** Oct-2015  
**Tested by:** NVIDIA Corporation  
**Software Availability:** May-2017

### Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>303.ostencil</td>
<td>8.24</td>
</tr>
<tr>
<td>304.olbm</td>
<td>10.9</td>
</tr>
<tr>
<td>314.omriq</td>
<td>8.05</td>
</tr>
<tr>
<td>350.md</td>
<td>11.2</td>
</tr>
<tr>
<td>351.palm</td>
<td>2.58</td>
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<tr>
<td>352.ep</td>
<td>7.45</td>
</tr>
<tr>
<td>353.clvrleaf</td>
<td>8.54</td>
</tr>
<tr>
<td>354.cg</td>
<td>9.36</td>
</tr>
<tr>
<td>355.seismic</td>
<td>9.31</td>
</tr>
<tr>
<td>356.sp</td>
<td>8.02</td>
</tr>
<tr>
<td>357.sp</td>
<td>8.72</td>
</tr>
<tr>
<td>359.miniGhost</td>
<td>7.28</td>
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<tr>
<td>360.ilbdc</td>
<td>8.51</td>
</tr>
<tr>
<td>363.swim</td>
<td>4.06</td>
</tr>
<tr>
<td>370.bt</td>
<td>17.9</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2698 v3</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td></td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2300</td>
</tr>
<tr>
<td>CPU MHz Maximum:</td>
<td>3600</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>32 cores, 2 chips, 16 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chips</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>40 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Accelerator

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accel Model Name:</td>
<td>Tesla P100</td>
</tr>
<tr>
<td>Accel Vendor:</td>
<td>NVIDIA Corporation</td>
</tr>
<tr>
<td>Accel Name:</td>
<td>Tesla P100-PCIE-16GB</td>
</tr>
<tr>
<td>Type of Accel:</td>
<td>GPU</td>
</tr>
<tr>
<td>Accel Connection:</td>
<td>PCIe</td>
</tr>
<tr>
<td>Does Accel Use ECC:</td>
<td>Yes</td>
</tr>
<tr>
<td>Accel Description:</td>
<td>See Notes</td>
</tr>
<tr>
<td>Accel Driver:</td>
<td>NVIDIA UNIX x86_64 Kernel Module 375.20</td>
</tr>
</tbody>
</table>
## SPEC ACCEL ACC Result

**Supern MICRO**  
(Test Sponsor: NVIDIA Corporation)

**Tesla P100-PCIE-16GB**  
SuperServer 1028GR-TR

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>303.ostencil</td>
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<td>304.olbm</td>
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<td>370.bt</td>
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<td><strong>12.4</strong></td>
<td><strong>17.9</strong></td>
</tr>
</tbody>
</table>

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

## Operating System Notes

Stacksize set to 'unlimited'
SPEC ACCEL ACC Result

Supermicro
(Test Sponsor: NVIDIA Corporation)

Tesla P100-PCIE-16GB
SuperServer 1028GR-TR

Vendors: Tesla P100-PCIE-16GB

SPECaccel_acc_peak = 8.02
SPECaccel_acc_base = 8.02

ACCEL license: 019
Test date: May-2017
Test sponsor: NVIDIA Corporation
Hardware Availability: Oct-2015
Tested by: NVIDIA Corporation
Software Availability: May-2017

Platform Notes

Sysinfo program /local/home/colgrove/SPECACCEL/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on hsw8 Mon May  8 15:08:54 2017

This section contains SUT (System Under Test) info as seen by
some common utilities. To remove or add to this section, see:
http://www.spec.org/accel/Docs/config.html#sysinfo

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E5-2698 v3 @ 2.30GHz
  2 "physical id"s (chips)
  64 "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 : 32
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 40960 KB

From /proc/meminfo

MemTotal: 264038532 kB
HugePages_Total: 32768
Hugepagesize: 2048 kB

From /usr/bin/lsb_release -d
CentOS Linux release 7.2.1511 (Core)

From /etc/*release* /etc/*version*
centos-release: CentOS Linux release 7.2.1511 (Core)
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.2 (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 7.2.1511 (Core)
system-release: CentOS Linux release 7.2.1511 (Core)
system-release-cpe: cpe:/o:centos:centos:7

uname -a:
Linux hsw8 3.10.0-327.22.2.el17.x86_64 #1 SMP Thu Jun 23 17:05:11 UTC 2016
x86_64 x86_64 x86_64 GNU/Linux

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Supermicro
(Test Sponsor: NVIDIA Corporation)

Tesla P100-PCIE-16GB
SuperServer 1028GR-TR

SPECaccel_acc_peak = 8.02
SPECaccel_acc_base = 8.02

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

Platform Notes (Continued)

run-level 3 May 8 13:53

SPEC is set to: /local/home/colgrove/SPECACCEL

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/centos-root xfs 443G 28G 415G 7% /

Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'

(End of data from sysinfo program)

Information from pgaccelinfo

CUDA Driver Version: 8000
NVRM version: NVIDIA UNIX x86_64 Kernel Module 375.20

Device Number: 0
Device Name: Tesla P100-PCIE-16GB
Device Revision Number: 6.0
Global Memory Size: 17100439552
Number of Multiprocessors: 56
Concurrent Copy and Execution: Yes
Total Constant Memory: 65536
Total Shared Memory per Block: 49152
Registers per Block: 65536
Warp Size: 32
Maximum Threads per Block: 1024
Maximum Block Dimensions: 1024, 1024, 64
Maximum Grid Dimensions: 2147483647 x 65535 x 65535
Maximum Memory Pitch: 2147483647B
Texture Alignment: 512B
Clock Rate: 1328 MHz
Execution Timeout: No
Integrated Device: No
Can Map Host Memory: Yes
Compute Mode: default
Concurrent Kernels: Yes
ECC Enabled: Yes
Memory Clock Rate: 715 MHz
Memory Bus Width: 4096 bits
L2 Cache Size: 4194304 bytes
Max Threads Per SMP: 2048
Async Engines: 2
Unified Addressing: Yes
Managed Memory: Yes
PGI Compiler Option: -ta=tesla:cc60
Supermicro
(Test Sponsor: NVIDIA Corporation)
Tesla P100-PCIE-16GB
SuperServer 1028GR-TR

SPECCaccel_acc_peak = 8.02
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ACCEL license: 019
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Base Compiler Invocation

C benchmarks:
  pgcc

Fortran benchmarks:
  pgfortran

Benchmarks using both Fortran and C:
  pgcc pgfortran

Base Optimization Flags

C benchmarks:
  -fast -Mfprelaxed -acc -ta=tesla:cc60 -ta=tesla:cuda8.0

Fortran benchmarks:
  -fast -Mfprelaxed -acc -ta=tesla:cc60 -ta=tesla:cuda8.0

Benchmarks using both Fortran and C:
  353.clvrleaf: -fast -Mfprelaxed -acc -ta=tesla:cc60 -ta=tesla:cuda8.0
  359.miniGhost: -fast -Mfprelaxed -acc -ta=tesla:cc60 -ta=tesla:cuda8.0
  -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:

Continued on next page
Supermicro
(Test Sponsor: NVIDIA Corporation)
Tesla P100-PCIE-16GB
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SPECaccel_acc_peak = 8.02
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ACCEL license: 019
Test sponsor: NVIDIA Corporation
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Test date: May-2017
Hardware Availability: Oct-2015
Software Availability: May-2017

Peak Optimization Flags (Continued)

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

The flags file that was used to format this result can be browsed at
https://www.spec.org/accel/flags/pgi2017_flags.20170621.00.html

You can also download the XML flags source by saving the following link:
https://www.spec.org/accel/flags/pgi2017_flags.20170621.00.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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