

# SPEC ACCEL™ ACC Result

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Supermicro  
(Test Sponsor: NVIDIA Corporation)

NVIDIA Tesla V100-PCIE-16GB  
SuperServer 1029Q-TRT

SPECaccel\_acc\_peak = Not Run

SPECaccel\_acc\_base = 12.8

ACCEL license: 019

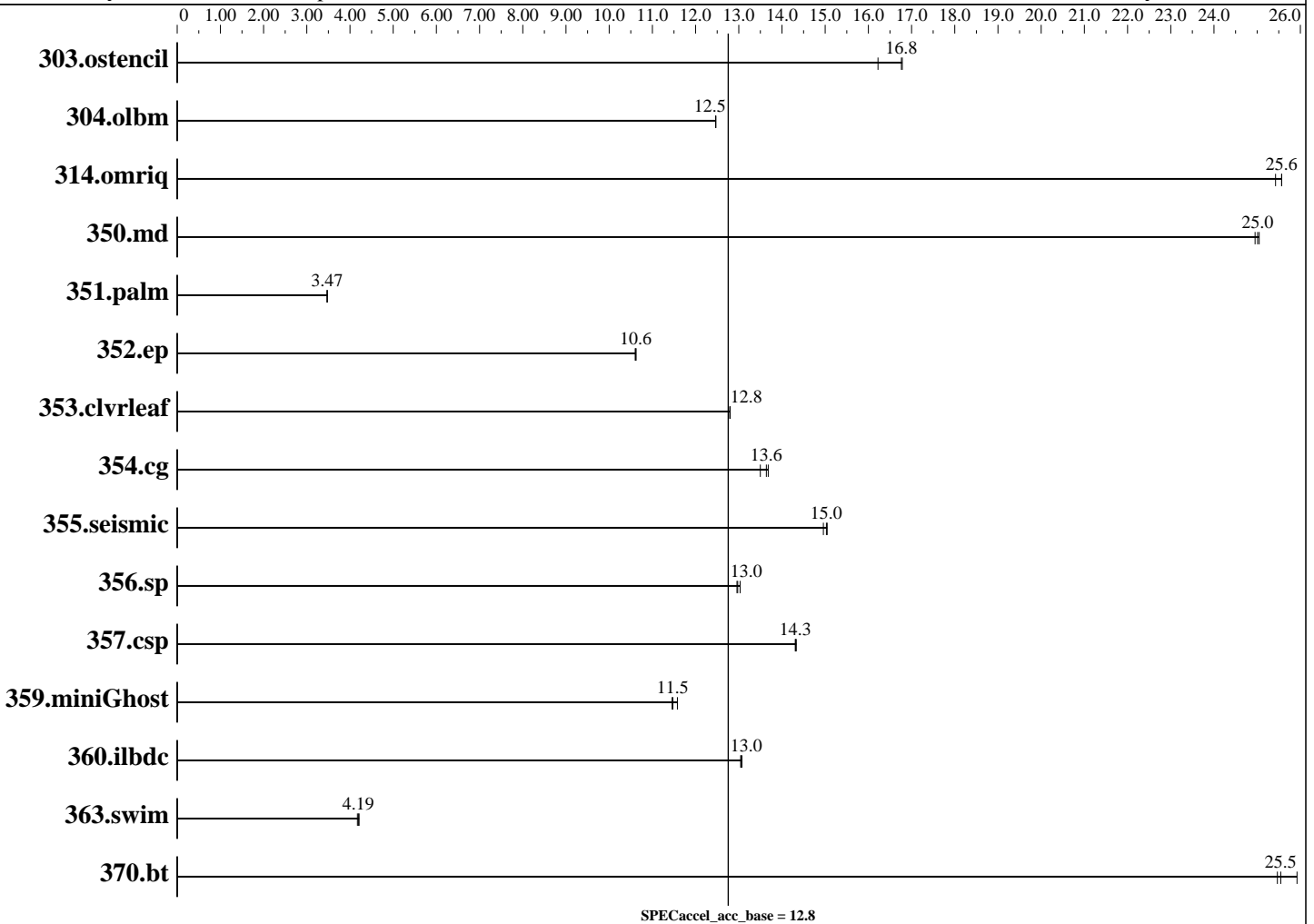
Test sponsor: NVIDIA Corporation

Tested by: NVIDIA Corporation

Test date: Nov-2019

Hardware Availability: Jul-2017

Software Availability: Nov-2019



## Hardware

CPU Name: Intel Xeon Gold 6148  
CPU Characteristics:  
CPU MHz: 2400  
CPU MHz Maximum: 3700  
FPU: --  
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

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## Accelerator

Accel Model Name: Tesla V100  
Accel Vendor: NVIDIA  
Accel Name: NVIDIA Tesla V100-PCIE-16GB  
Type of Accel: GPU  
Accel Connection: PCIe  
Does Accel Use ECC: Yes  
Accel Description: --  
Accel Driver: NVIDIA UNIX x86\_64 Kernel Module 418.87.00

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## Hardware (Continued)

Memory: 384 GB  
376.577 GB fixme: If using DDR3, format is:  
'N GB (M x N GB nRxN PCn-nnnnnR-n, ECC)'  
Disk Subsystem: 443 GB add more disk info here  
Other Hardware: None

## Software

Operating System: CentOS Linux release 7.6.1810 (Core)  
CentOS Linux release 7.6.1810 (Core)  
3.10.0-957.1.3.el7.x86\_64  
Compiler: C/C++/Fortran : Version 19.10 of PGI Professional  
Edition  
File System: xfs  
System State: Run level 3 (add definition here)  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	8.94	16.2	8.64	16.8	<b>8.65</b>	<b>16.8</b>						
304.olbm	36.5	12.5	<b>36.5</b>	<b>12.5</b>	36.5	12.5						
314.omriq	<b>37.4</b>	<b>25.6</b>	37.4	25.6	37.6	25.4						
350.md	10.1	25.0	10.1	25.0	<b>10.1</b>	<b>25.0</b>						
351.palm	107	3.47	<b>107</b>	<b>3.47</b>	106	3.48						
352.ep	50.0	10.6	<b>49.9</b>	<b>10.6</b>	49.9	10.6						
353.civrleaf	34.8	12.8	34.8	12.8	<b>34.8</b>	<b>12.8</b>						
354.cg	<b>29.9</b>	<b>13.6</b>	30.2	13.5	29.8	13.7						
355.seismic	<b>24.6</b>	<b>15.0</b>	24.6	15.0	24.7	15.0						
356.sp	<b>21.3</b>	<b>13.0</b>	21.3	13.0	21.2	13.0						
357.csp	<b>18.9</b>	<b>14.3</b>	18.9	14.3	18.8	14.3						
359.miniGhost	32.2	11.5	31.9	11.6	<b>32.2</b>	<b>11.5</b>						
360.ilbdc	<b>28.1</b>	<b>13.0</b>	28.1	13.0	28.1	13.1						
363.swim	55.1	4.17	<b>54.8</b>	<b>4.19</b>	54.6	4.21						
370.bt	8.76	25.5	<b>8.73</b>	<b>25.5</b>	8.60	25.9						

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

## Submit Notes

The config file option 'submit' was used.

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## Platform Notes

```
Sysinfo program /local/home/cparrott/SPEC/ACCEL-1.3/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3feldf68447e8a35
running on perf-sky6 Wed Nov 13 17:32:09 2019
```

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) 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:      394870008 kB
HugePages_Total:       20
Hugepagesize:    2048 kB
```

```
/usr/bin/lsc_release -d
CentOS Linux release 7.6.1810 (Core)
```

```
From /etc/*release* /etc/*version*
centos-release: CentOS Linux release 7.6.1810 (Core)
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.6 (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 7.6.1810 (Core)
system-release: CentOS Linux release 7.6.1810 (Core)
system-release-cpe: cpe:/o:centos:centos:7
```

```
uname -a:
Linux perf-sky6 3.10.0-957.1.3.el7.x86_64 #1 SMP Thu Nov 29 14:49:43 UTC 2018
x86_64 x86_64 x86_64 GNU/Linux
```

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## Platform Notes (Continued)

run-level 3 Oct 6 17:57

SPEC is set to: /local/home/cparrott/SPEC/ACCEL-1.3

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/centos_perf--sky6-root	xfs	443G	67G	376G	16%	/

Additional information from dmidecode:

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:  
HUGETLB\_PATH = "/mnt/hugetlb"

## Base Compiler Invocation

C benchmarks:  
pgcc

Fortran benchmarks:  
pgfortran

Benchmarks using both Fortran and C:  
pgcc pgfortran

## Base Optimization Flags

C benchmarks:  
-fast -Mfprelaxed -Mhugetlb -Mnouniform -acc -ta=tesla

Fortran benchmarks:  
-fast -Mfprelaxed -Mhugetlb -Mnouniform -acc -ta=tesla

Benchmarks using both Fortran and C:  
353.cvrleaf: -fast -Mfprelaxed -Mhugetlb -Mnouniform -acc -ta=tesla

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## Base Optimization Flags (Continued)

359.miniGhost: -fast -Mfprelaxed -Mhugetlb -Mnouniform -acc -ta=tesla  
-Mnomain

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC ACCEL v1.3.  
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