



# SPEC ACCEL™ OCL Result

Copyright 2015-2021 Standard Performance Evaluation Corporation

Uniwide

(Test Sponsor: Telecommunications Technology Association)

NVIDIA Tesla V100-PCIE-16GB  
KN228T

SPECaccel\_ocl\_peak = Not Run

SPECaccel\_ocl\_base = 10.6

ACCEL license: HPG068A

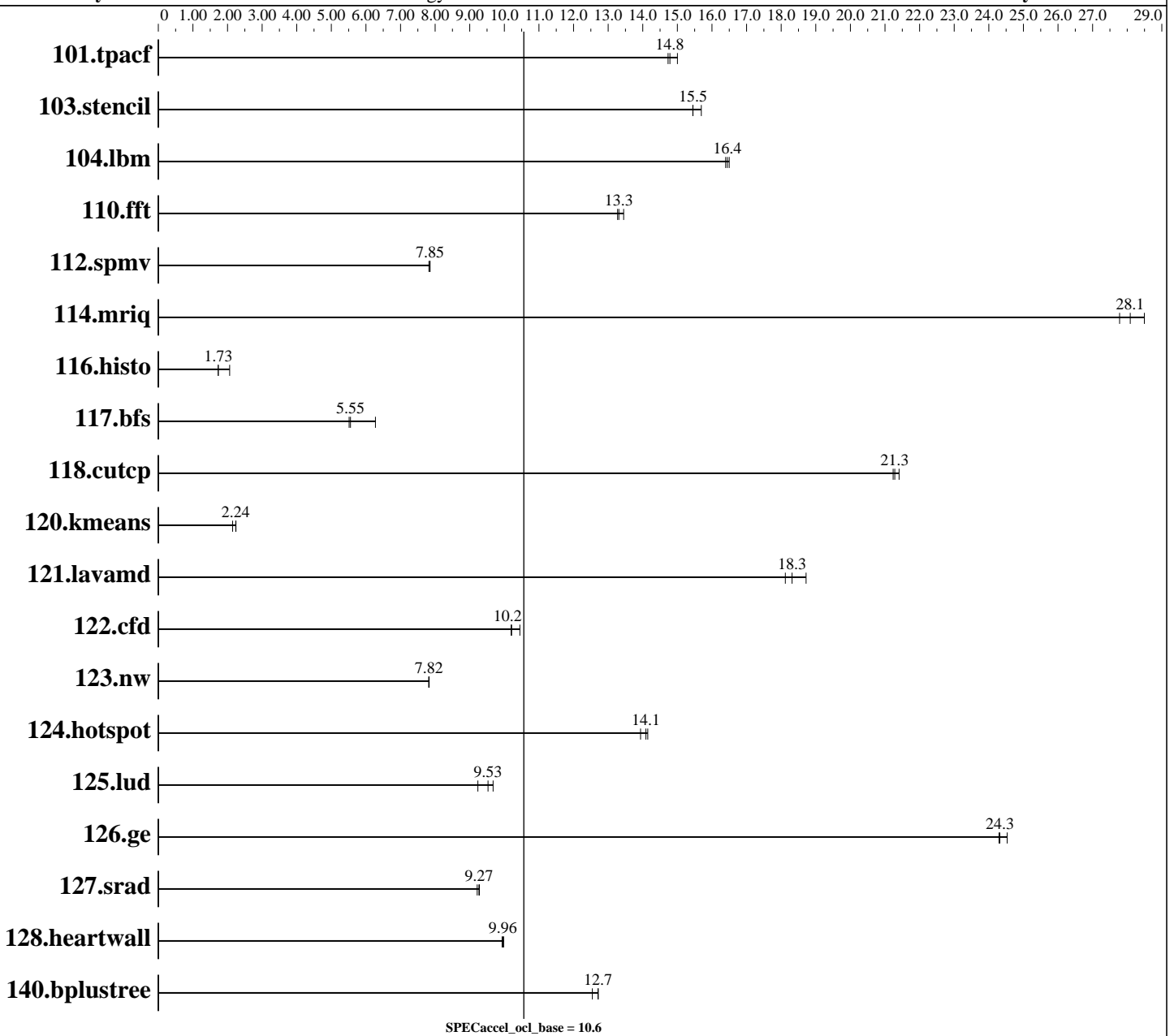
Test sponsor: Telecommunications Technology Association

Tested by: Telecommunications Technology Association

Test date: Sep-2021

Hardware Availability: Oct 2017

Software Availability: Oct 2017





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### Hardware

**CPU Name:** Intel Xeon Gold 6140  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
**CPU MHz:** 2300  
**CPU MHz Maximum:** 3700  
**FPU:** --  
**CPU(s) enabled:** 36 cores, 2 chips, 18 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:** 1024 KB I+D on chip per core  
**L3 Cache:** 24.75 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 512GB (16 x 32 GB 2Rx4 PC4-2666V-R)  
**Disk Subsystem:** 2x 300GB TOSHIBA AL14SEB030N SAS RAID1  
**Other Hardware:** LSI MegaRAID SAS 9361-8i

### Accelerator

**Accel Model Name:** Tesla V100-PCIE-16GB  
**Accel Vendor:** NVIDIA  
**Accel Name:** NVIDIA Tesla V100-PCIE-16GB  
**Type of Accel:** GPU  
**Accel Connection:** PCIe 3.0 16x  
**Does Accel Use ECC:** Yes  
**Accel Description:** NVIDIA Tesla V100-PCIE-16GB  
**Accel Driver:** NVIDIA Driver Version 460.73.01

### Software

**Operating System:** CentOS Linux release 7.6.1810 (Core)  
**Compiler:** GCC version 4.8.5 20150623  
**File System:** xfs  
**System State:** Multi-user, run level 3  
**Other Software:** NVIDIA CUDA 11.2



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
101.tpacf	7.26	14.7	7.13	15.0	<u>7.24</u>	<u>14.8</u>						
103.stencil	8.09	15.4	7.97	15.7	<u>8.09</u>	<u>15.5</u>						
104.lbm	6.83	16.4	6.79	16.5	<u>6.81</u>	<u>16.4</u>						
110.fft	8.25	13.4	<u>8.34</u>	<u>13.3</u>	8.36	13.3						
112.spmv	18.7	7.85	<u>18.7</u>	<u>7.85</u>	18.8	7.82						
114.mriq	3.83	28.5	3.92	27.8	<u>3.88</u>	<u>28.1</u>						
116.histo	65.9	1.73	55.3	2.06	<u>65.8</u>	<u>1.73</u>						
117.bfs	<u>21.1</u>	<u>5.55</u>	18.6	6.27	21.2	5.51						
118.cutcp	4.62	21.4	4.66	21.2	<u>4.65</u>	<u>21.3</u>						
120.kmeans	46.6	2.15	<u>44.7</u>	<u>2.24</u>	44.6	2.24						
121.lavamd	5.82	18.7	6.02	18.1	<u>5.95</u>	<u>18.3</u>						
122.cfd	12.1	10.4	12.4	10.2	<u>12.3</u>	<u>10.2</u>						
123.nw	14.7	7.82	14.7	7.83	<u>14.7</u>	<u>7.82</u>						
124.hotspot	8.06	14.1	8.18	13.9	<u>8.09</u>	<u>14.1</u>						
125.lud	12.9	9.24	<u>12.5</u>	<u>9.53</u>	12.3	9.67						
126.ge	6.32	24.5	6.38	24.3	<u>6.37</u>	<u>24.3</u>						
127.srad	12.3	9.28	12.4	9.21	<u>12.3</u>	<u>9.27</u>						
128.heartwall	10.7	9.93	10.6	9.98	<u>10.6</u>	<u>9.96</u>						
140.bplustree	<u>8.50</u>	<u>12.7</u>	8.61	12.5	8.49	12.7						

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

## Platform Notes

```

Sysinfo program /home/tta101/accel-1.3/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on kn228t Tue Sep 28 14:41:02 2021

```

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 6140 CPU @ 2.30GHz
 2 "physical id"s (chips)
36 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)

```

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## Platform Notes (Continued)

```
cpu cores : 18
siblings  : 18
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 25344 KB
```

```
From /proc/meminfo
MemTotal:      527816812 kB
HugePages_Total:      0
Hugepagesize:   2048 kB
```

```
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 kn228t 3.10.0-957.el7.x86_64 #1 SMP Thu Nov 8 23:39:32 UTC 2018 x86_64
x86_64 x86_64 GNU/Linux
```

```
run-level 3 Sep 28 10:53
```

```
SPEC is set to: /home/tta101/accel-1.3
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/centos-home xfs   224G  22G  203G  10% /home
```

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)



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## General Notes

### Spectre and Meltdown

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 Runtime Environment

### C benchmarks:

OpenCL Platform: NVIDIA CUDA, OpenCL 1.2 CUDA 11.2.162  
OpenCL Device #0: Tesla V100-PCIE-16GB, v 460.73.01

### C++ benchmarks:

OpenCL Platform: NVIDIA CUDA, OpenCL 1.2 CUDA 11.2.162  
OpenCL Device #0: Tesla V100-PCIE-16GB, v 460.73.01

## Base Compiler Invocation

### C benchmarks:

gcc

### C++ benchmarks:

g++

## Base Portability Flags

116.histo: -DSPEC\_LOCAL\_MEMORY\_HEADROOM=2

## Base Optimization Flags

### C benchmarks:

-O2 -I/usr/local/cuda/include -L/usr/local/cuda/lib64 -lOpenCL

### C++ benchmarks:

-O2 -I/usr/local/cuda/include -L/usr/local/cuda/lib64 -lOpenCL



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The flags file that was used to format this result can be browsed at

[https://www.spec.org/accel/flags/gcc\\_flags.20211028.html](https://www.spec.org/accel/flags/gcc_flags.20211028.html)

You can also download the XML flags source by saving the following link:

[https://www.spec.org/accel/flags/gcc\\_flags.20211028.xml](https://www.spec.org/accel/flags/gcc_flags.20211028.xml)

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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).

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