SPEC ACCEL™ OCL Result

Copyright 2015-2020 Standard Performance Evaluation Corporation

Lenovo Global Technology

NVIDIA Tesla V100S-PCIE-32GB

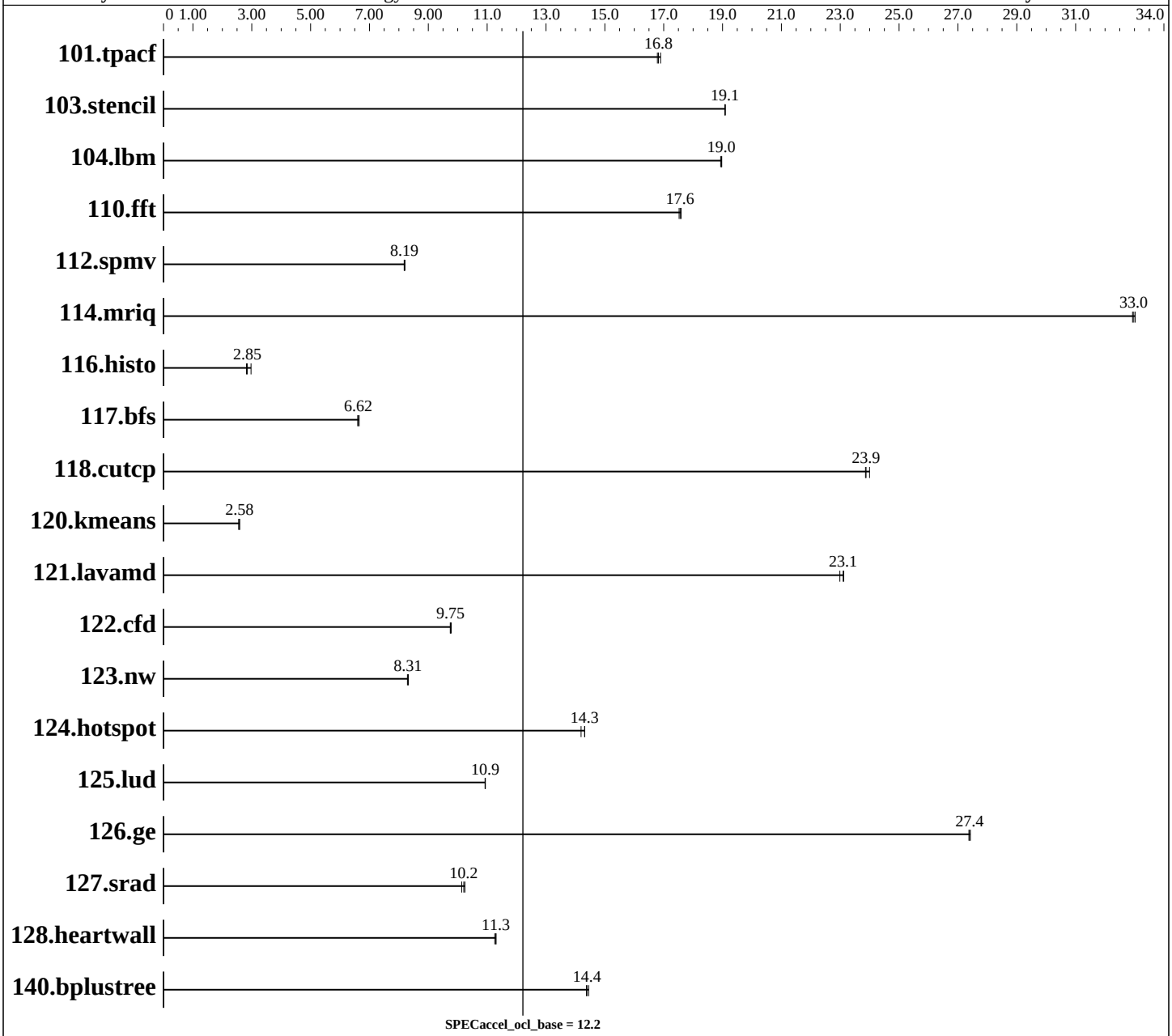
ThinkSystem SR665

SPECaccel_ocl_peak = Not Run

SPECaccel_ocl_base = 12.2

ACCEL license: 28
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: May-2020
Hardware Availability: Jun-2020
Software Availability: Jun-2020



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Hardware

CPU Name:	AMD EPYC 7H12
CPU Characteristics:	Turbo up to 3.3 GHz
CPU MHz:	2600
CPU MHz Maximum:	3300
FPU:	Integrated
CPU(s) enabled:	64 cores, 1 chip, 64 cores/chip, 2 threads/core
CPU(s) orderable:	1-2 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	256 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (8 x 32 GB 2Rx8 PC4-3200AA-R)
Disk Subsystem:	1x 480 GB 2.5" SSD
Other Hardware:	None

Accelerator

Accel Model Name:	Tesla V100S
Accel Vendor:	NVIDIA Corporation
Accel Name:	NVIDIA Tesla V100S-PCIE-32GB
Type of Accel:	GPU
Accel Connection:	PCIe 3.0 16x
Does Accel Use ECC:	Yes
Accel Description:	NVIDIA Tesla V100S-PCIE-32GB
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 418.87

Software

Operating System:	SUSE Linux Enterprise Server 15 SP1 4.12.14-195-default
Compiler:	PGI Professional Edition Release 19.10
File System:	btrfs
System State:	Run level 3
Other Software:	CUDA 10.1 SDK

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
101.tpacf	6.37	16.8	6.33	16.9	**6.36**	**16.8**						
103.stencil	6.55	19.1	6.55	19.1	**6.55**	**19.1**						
104.lbm	**5.91**	**19.0**	5.91	18.9	5.90	19.0						
110.fft	**6.32**	**17.6**	6.33	17.5	6.31	17.6						
112.spmv	17.9	8.21	**18.0**	**8.19**	18.0	8.18						
114.mriq	3.30	33.0	3.31	32.9	**3.31**	**33.0**						
116.histo	38.3	2.97	40.4	2.82	**40.0**	**2.85**						
117.bfs	17.7	6.60	17.6	6.65	**17.7**	**6.62**						
118.cutcp	4.13	24.0	4.15	23.9	**4.15**	**23.9**						
120.kmeans	38.7	2.59	39.2	2.55	**38.7**	**2.58**						
121.lavamd	4.74	23.0	4.71	23.1	**4.72**	**23.1**						
122.cfd	**12.9**	**9.75**	12.9	9.78	12.9	9.75						
123.nw	**13.8**	**8.31**	13.8	8.32	13.9	8.29						
124.hotspot	8.03	14.2	**7.97**	**14.3**	7.96	14.3						
125.lud	10.9	10.9	**10.9**	**10.9**	10.9	10.9						
126.ge	**5.66**	**27.4**	5.65	27.4	5.66	27.4						
127.srad	**11.2**	**10.2**	11.1	10.2	11.2	10.1						
128.heartwall	**9.38**	**11.3**	9.42	11.3	9.38	11.3						
140.bplustree	7.51	14.4	7.47	14.5	**7.50**	**14.4**						

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.
```

Platform Notes

```
Sysinfo program /home/ACCEL1.3/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on linux-x8nq Tue May  5 15:55:21 2020

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 : AMD EPYC 7H12 64-Core Processor
```

Continued on next page

Platform Notes (Continued)

```
      1 "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 : 64
      siblings  : 64
      physical 0: cores 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
   cache size : 512 KB

From /proc/meminfo
   MemTotal:       263982560 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="SLES"
      VERSION="15-SP1"
      VERSION_ID="15.1"
      PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
      ID="sles"
      ID_LIKE="suse"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:15:sp1"

uname -a:
   Linux linux-x8nq 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019
   (8fba516) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 5 15:43

SPEC is set to: /home/ACCEL1.3
   Filesystem     Type   Size  Used Avail Use% Mounted on
   /dev/sda4      btrfs  444G  156G  287G  36% /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.

  BIOS Lenovo D8E105F-1.00 03/19/2020
  Memory:
   8x Samsung M393A4G43AB3-CWE 32 kB 2 rank 3200 MT/s
   8x Unknown Unknown
```

Continued on next page

Platform Notes (Continued)

```
(End of data from sysinfo program)
```

Base Runtime Environment

C benchmarks:

```
OpenCL Platform: NVIDIA CUDA, OpenCL 1.2 CUDA 10.1.236
OpenCL Device #0: Graphics Device, v 418.87.00
```

C++ benchmarks:

```
OpenCL Platform: NVIDIA CUDA, OpenCL 1.2 CUDA 10.1.236
OpenCL Device #0: Graphics Device, v 418.87.00
```

Base Compiler Invocation

C benchmarks:

```
pgcc
```

C++ benchmarks:

```
pgc++
```

Base Portability Flags

116.histo: `-DSPEC_LOCAL_MEMORY_HEADROOM=1`
118.cutcp: `-D__GNUC__`

Base Optimization Flags

C benchmarks:

```
-fast -Mfprelaxed
```

C++ benchmarks:

```
-fast -Mfprelaxed
```

Base Other Flags

C benchmarks:

```
-I/usr/local/cuda-10.1/targets/x86_64-linux/include
-L/usr/local/cuda-10.1/lib64 -lOpenCL
```

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Base Other Flags (Continued)

C++ benchmarks:
```
-I/usr/local/cuda-10.1/targets/x86_64-linux/include
-L/usr/local/cuda-10.1/lib64 -lOpenCL
```

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

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