SPEC ACCEL™ OCL Result

Lenovo Global Technology

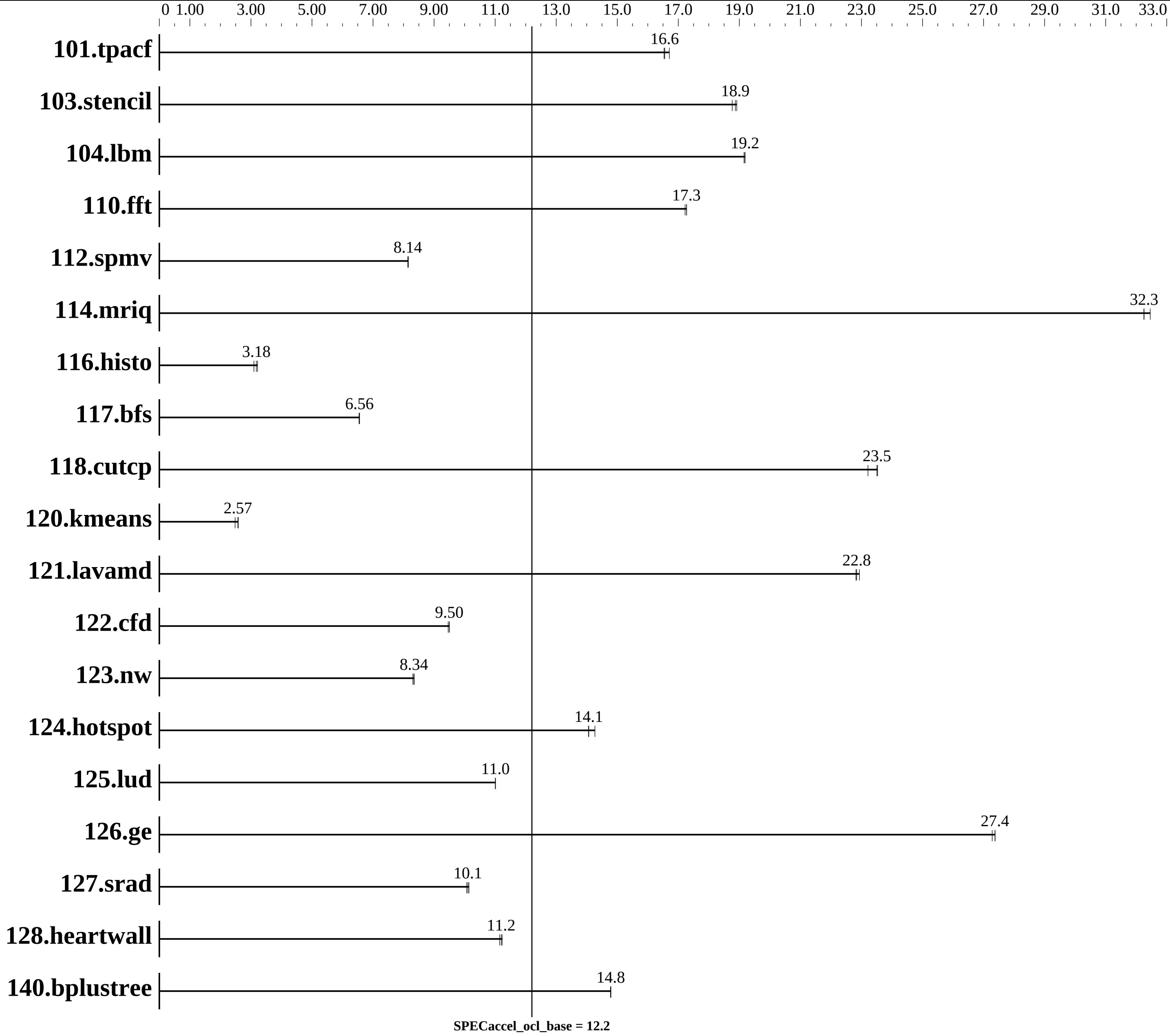
NVIDIA Tesla V100S-PCIE-32GB

ThinkSystem SR665

SPECaccel_ocl_peak = Not Run

SPECaccel_ocl_base = 12.2

ACCEL license:	28	**Test date:**	May-2020
Test sponsor:	Lenovo Global Technology	**Hardware Availability:**	Jun-2020
Tested by:	Lenovo Global Technology	**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:	128 cores, 2 chips, 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:	512 GB (16 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

Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
101.tpacf	6.47	16.5	**6.46**	**16.6**	6.40	16.7						
103.stencil	**6.62**	**18.9**	6.66	18.8	6.61	18.9						
104.lbm	5.84	19.2	5.85	19.2	**5.84**	**19.2**						
110.fft	**6.43**	**17.3**	6.45	17.2	6.43	17.3						
112.spmv	18.1	8.14	**18.1**	**8.14**	18.0	8.16						
114.mriq	**3.38**	**32.3**	3.38	32.3	3.36	32.5						
116.histo	**35.9**	**3.18**	36.8	3.10	35.4	3.22						
117.bfs	**17.8**	**6.56**	17.9	6.54	17.8	6.56						
118.cutcp	**4.21**	**23.5**	4.21	23.5	4.26	23.2						
120.kmeans	**38.9**	**2.57**	38.7	2.59	40.3	2.48						
121.lavamd	4.75	22.9	**4.77**	**22.8**	4.78	22.8						
122.cfd	**13.3**	**9.50**	13.3	9.50	13.3	9.46						
123.nw	13.8	8.30	13.8	8.35	**13.8**	**8.34**						
124.hotspot	8.11	14.1	7.99	14.3	**8.10**	**14.1**						
125.lud	**10.8**	**11.0**	10.8	11.0	10.8	11.0						
126.ge	**5.66**	**27.4**	5.66	27.4	5.68	27.3						
127.srad	11.3	10.1	11.2	10.1	**11.3**	**10.1**						
128.heartwall	9.44	11.2	**9.46**	**11.2**	9.51	11.1						
140.bplustree	7.30	14.8	**7.30**	**14.8**	7.31	14.8						

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 Mon May  4 13:20:04 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
```

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Platform Notes (Continued)

```
         2 "physical id"s (chips)
         128 "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
         physical 1: 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:       528206152 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 4 11:50

   SPEC is set to: /home/ACCEL1.3
      Filesystem     Type   Size  Used Avail Use% Mounted on
      /dev/sda4      btrfs  444G  153G  290G  35% /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:
```

Continued on next page

Platform Notes (Continued)

```
    16x Samsung M393A4G43AB3-CWE 32 kB 2 rank 3200 MT/s
    16x Unknown Unknown

 (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`

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

Tested with SPEC ACCEL v1.3.
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