SPEC ACCEL™ OCL Result

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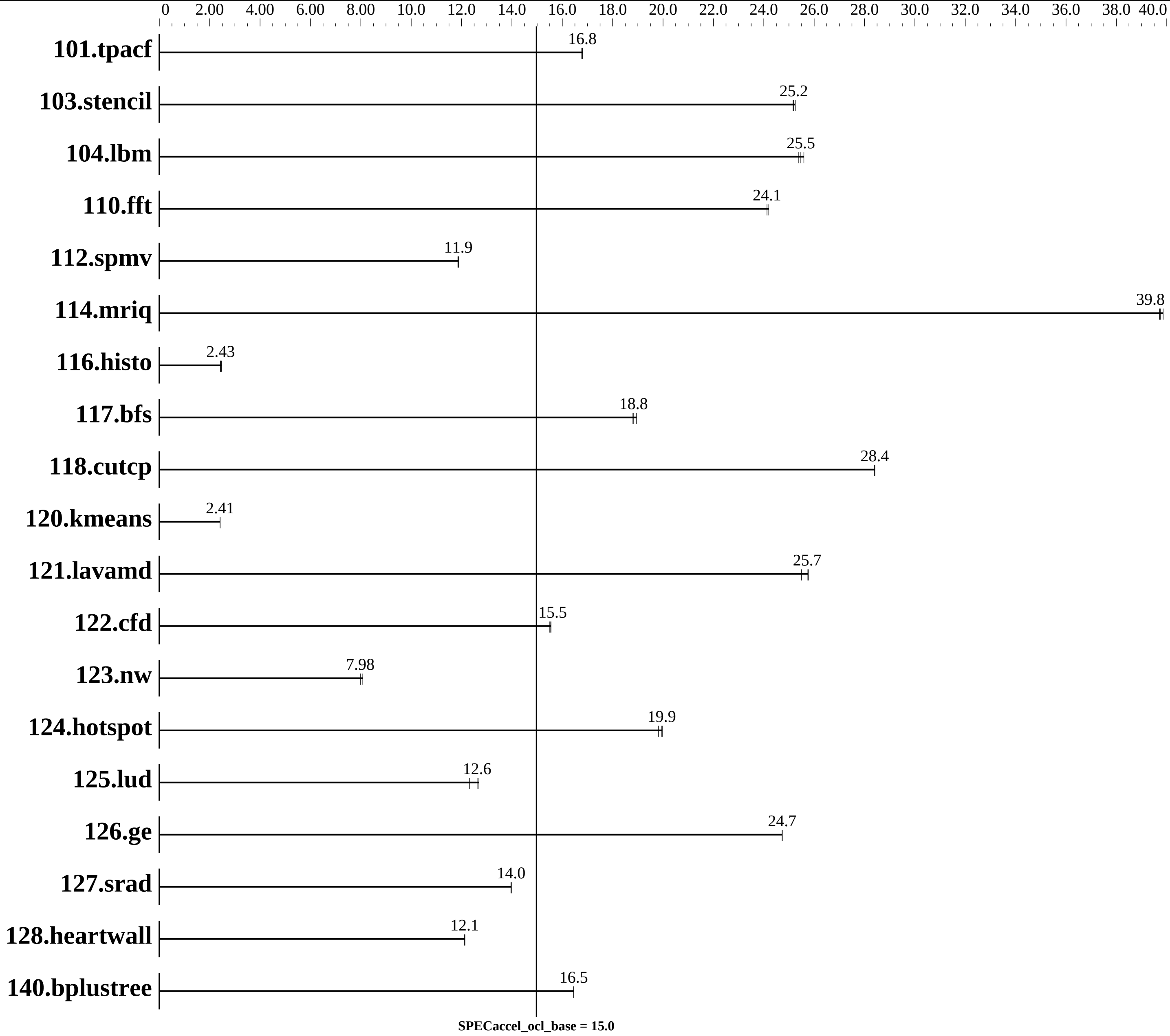
KTNF
(Test Sponsor: Telecommunications Technology Association)

NVIDIA Tesla A100-PCIE-40GB
KR580S2

SPECaccel_ocl_peak = Not Run

SPECaccel_ocl_base = 15.0

ACCEL license:	068A	**Test date:**	Jun-2022
Test sponsor:	Telecommunications Technology Association	**Hardware Availability:**	May 2022
Tested by:	Telecommunications Technology Association	**Software Availability:**	Jul 2021



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Hardware

CPU Name:	Intel Xeon Platinum 8330
CPU Characteristics:	Intel Turbo Boost Technology up to 3.4 GHz
CPU MHz:	2300
CPU MHz Maximum:	3400
FPU:	--
CPU(s) enabled:	80 cores, 2 chips, 40 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:	60 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (8 x 64GB 2Rx4 PC4-3200AA-R)
Disk Subsystem:	2 x Samsung SSD 860 PRO 512GB (RAID 0)
Other Hardware:	LSI MegaRAID SAS-3 3108

Accelerator

Accel Model Name:	Tesla A100-PCIE-40GB
Accel Vendor:	NVIDIA
Accel Name:	NVIDIA Tesla A100-PCIE-40GB
Type of Accel:	GPU
Accel Connection:	PCIe 4.0 16x
Does Accel Use ECC:	Yes
Accel Description:	NVIDIA Tesla A100-PCIE-40GB
Accel Driver:	NVIDIA Driver Version 460.106.00

Software

Operating System:	CentOS Linux release 7.9.2009 (Core) 3.10.0-1160.66.1.el7.x86_64
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

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
101.tpacf	**6.37**	**16.8**	6.39	16.8	6.36	16.8						
103.stencil	4.95	25.3	4.97	25.2	**4.96**	**25.2**						
104.lbm	4.41	25.4	**4.40**	**25.5**	4.38	25.6						
110.fft	4.59	24.2	4.60	24.1	**4.60**	**24.1**						
112.spmv	12.4	11.9	12.4	11.9	**12.4**	**11.9**						
114.mriq	2.74	39.7	2.73	39.9	**2.74**	**39.8**						
116.histo	46.9	2.43	46.1	2.47	**46.8**	**2.43**						
117.bfs	6.22	18.8	**6.21**	**18.8**	6.17	18.9						
118.cutcp	3.48	28.4	3.49	28.4	**3.49**	**28.4**						
120.kmeans	**41.5**	**2.41**	41.5	2.41	41.5	2.41						
121.lavamd	4.23	25.8	**4.24**	**25.7**	4.27	25.5						
122.cfd	8.10	15.6	**8.12**	**15.5**	8.14	15.5						
123.nw	14.4	7.98	**14.4**	**7.98**	14.2	8.08						
124.hotspot	**5.71**	**19.9**	5.71	20.0	5.75	19.8						
125.lud	**9.43**	**12.6**	9.38	12.7	9.67	12.3						
126.ge	**6.27**	**24.7**	6.27	24.7	6.27	24.7						
127.srad	**8.16**	**14.0**	8.15	14.0	8.17	14.0						
128.heartwall	8.74	12.1	8.75	12.1	**8.74**	**12.1**						
140.bplustree	6.56	16.5	**6.56**	**16.5**	6.56	16.5						

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

Platform Notes

```
Sysinfo program /home/tta701/accel-1.4/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on kr580s2 Wed Jun  8 17:20:55 2022

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) Platinum 8380 CPU @ 2.30GHz
      2 "physical id"s (chips)
      160 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
   caution.)
```

Continued on next page

Platform Notes (Continued)

```
      cpu cores : 40
      siblings  : 80
      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
      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
   cache size : 61440 KB

From /proc/meminfo
   MemTotal:       527825800 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   centos-release: CentOS Linux release 7.9.2009 (Core)
   centos-release-upstream: Derived from Red Hat Enterprise Linux 7.8 (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 7.9.2009 (Core)
   system-release: CentOS Linux release 7.9.2009 (Core)
   system-release-cpe: cpe:/o:centos:centos:7

uname -a:
   Linux kr580s2 3.10.0-1160.66.1.el7.x86_64 #1 SMP Wed May 18 16:02:34 UTC 2022
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 16 08:46

SPEC is set to: /home/tta701/accel-1.4
   Filesystem              Type  Size  Used Avail Use% Mounted on
   /dev/mapper/centos-home xfs   898G   24G  875G   3% /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: A100-PCIE-40GB, v 460.106.00
```

C++ benchmarks:
```
OpenCL Platform: NVIDIA CUDA, OpenCL 1.2 CUDA 11.2.162
OpenCL Device #0: A100-PCIE-40GB, v 460.106.00
```

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`

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

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