SPEC ACCEL™ OCL Result

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Bull

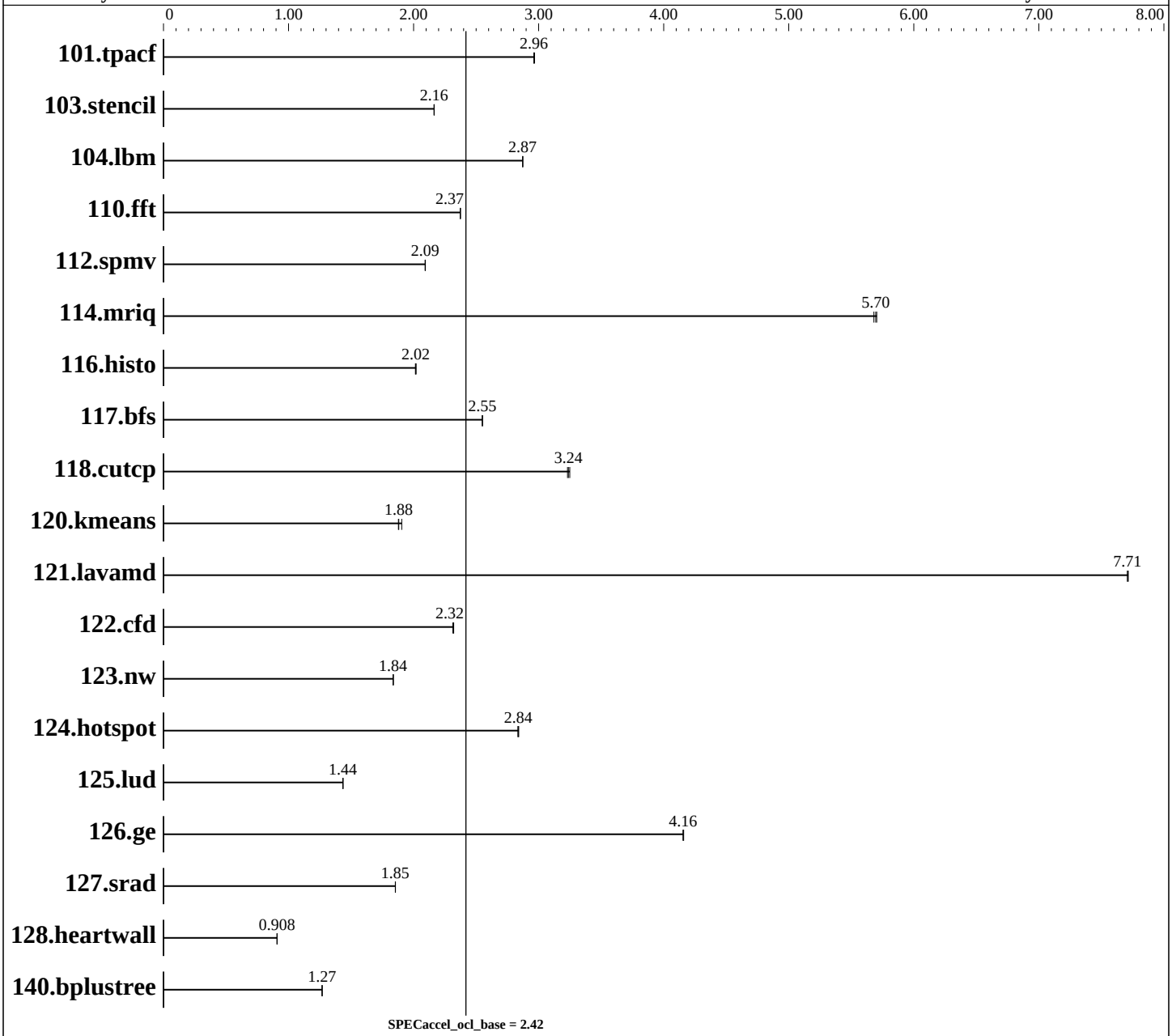
(Test Sponsor: Technische Universitaet Dresden)

NVIDIA Tesla K80
Bull R400

SPECaccel_ocl_peak = Not Run

SPECaccel_ocl_base = 2.42

ACCEL license:	37A	**Test date:**	Sep-2015
Test sponsor:	Technische Universitaet Dresden	**Hardware Availability:**	Jan-2015
Tested by:	Technische Universitaet Dresden	**Software Availability:**	Mar-2015



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Hardware

CPU Name:	Intel Xeon E5-2680 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2500
CPU MHz Maximum:	3300
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx8 PC4-2133P-R)
Disk Subsystem:	29 TB NetApp FAS6280
Other Hardware:	--

Accelerator

Accel Model Name:	Tesla K80
Accel Vendor:	NVIDIA
Accel Name:	NVIDIA Tesla K80
Type of Accel:	GPU
Accel Connection:	PCIe 2.0 16x
Does Accel Use ECC:	yes
Accel Description:	NVIDIA Tesla K80, 2496 CUDA cores, 875 MHz 12 GB GDDR5 RAM (Kepler Generation)
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 346.46

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-504.12.2.el6.x86_64
Compiler:	GNU Compiler C/C++ Version 4.9.1
File System:	nfs
System State:	Run level 3 (Multi-User)
Other Software:	NVIDIA Cuda SDK 7.0, driver version 346.46

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
101.tpacf	36.1	2.97	**36.1**	**2.96**	36.1	2.96						
103.stencil	57.8	2.16	57.7	2.17	**57.8**	**2.16**						
104.lbm	39.0	2.87	39.0	2.87	**39.0**	**2.87**						
110.fft	**46.8**	**2.37**	46.8	2.37	46.8	2.37						
112.spmv	70.3	2.09	**70.2**	**2.09**	70.2	2.09						
114.mriq	19.2	5.68	**19.1**	**5.70**	19.1	5.70						
116.histo	56.6	2.01	**56.5**	**2.02**	56.4	2.02						
117.bfs	45.9	2.55	**45.9**	**2.55**	45.9	2.55						
118.cutcp	**30.6**	**3.24**	30.5	3.25	30.6	3.23						
120.kmeans	**53.1**	**1.88**	52.5	1.91	53.2	1.88						
121.lavamd	14.1	7.71	**14.1**	**7.71**	14.1	7.72						
122.cfd	**54.3**	**2.32**	54.5	2.31	54.3	2.32						
123.nw	62.6	1.84	**62.6**	**1.84**	62.6	1.84						
124.hotspot	40.2	2.83	**40.2**	**2.84**	40.1	2.84						
125.lud	83.0	1.43	**82.9**	**1.44**	82.9	1.44						
126.ge	37.3	4.16	**37.3**	**4.16**	37.3	4.15						
127.srad	61.5	1.85	61.5	1.85	**61.5**	**1.85**						
128.heartwall	117	0.908	117	0.908	**117**	**0.908**						
140.bplustree	85.1	1.27	85.2	1.27	**85.1**	**1.27**						

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

Platform Notes

```
MultiThreading disabled in BIOS
 Sysinfo program /home/s1428123/spec-accel/Docs/sysinfo
 $Rev: 6874 $ $Date:: 2013-11-20 #$ 0953404ef7e75a5f9bbb534c6de3f831
 running on taurusi2045 Sat Sep 12 04:12:09 2015

 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) CPU E5-2680 v3 @ 2.50GHz
       2 "physical id"s (chips)
       24 "processors"
    cores, siblings (Caution: counting these is hw and system dependent.  The
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
```

Continued on next page

Platform Notes (Continued)

```
      caution.)
         cpu cores : 12
         siblings  : 12
         physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
         physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
      cache size : 30720 KB

   From /proc/meminfo
      MemTotal:       65868116 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      Red Hat Enterprise Linux Server release 6.4 (Santiago)

   From /etc/*release* /etc/*version*
      redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
      system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

   uname -a:
      Linux taurusi2045 2.6.32-504.12.2.el6.x86_64 #1 SMP Sun Feb 1 12:14:02 EST
      2015 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Aug 13 12:31

   SPEC is set to: /home/s1428123/spec-accel
      Filesystem           Type  Size  Used Avail Use% Mounted on
      172.26.88.9:/hrsk_userhome
                           nfs    29T   25T  4.4T  85% /home

   Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'

   (End of data from sysinfo program)
```

Base Runtime Environment

C benchmarks:

```
    OpenCL Platform: NVIDIA CUDA, OpenCL 1.1 CUDA 7.0.28
    OpenCL Device #0: Tesla K80, v 346.46
```

C++ benchmarks:

```
    OpenCL Platform: NVIDIA CUDA, OpenCL 1.1 CUDA 7.0.28
    OpenCL Device #0: Tesla K80, v 346.46
```

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Base Compiler Invocation

C benchmarks:
gcc

C++ benchmarks:
g++

Base Optimization Flags

C benchmarks:
-O2 -march=core-avx2 -I/sw/taurus/libraries/cuda/7.0.28/include
-L/sw/taurus/libraries/cuda/7.0.28/lib64 -lcuda -lOpenCL

C++ benchmarks:
-O2 -march=core-avx2 -I/sw/taurus/libraries/cuda/7.0.28/include
-L/sw/taurus/libraries/cuda/7.0.28/lib64 -lcuda -lOpenCL

The flags file that was used to format this result can be browsed at
http://www.spec.org/accel/flags/flags-advanced.20150930.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/accel/flags/flags-advanced.20150930.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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