



SPEC® ACCEL_OCL Result

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SGI NVIDIA Tesla K40m

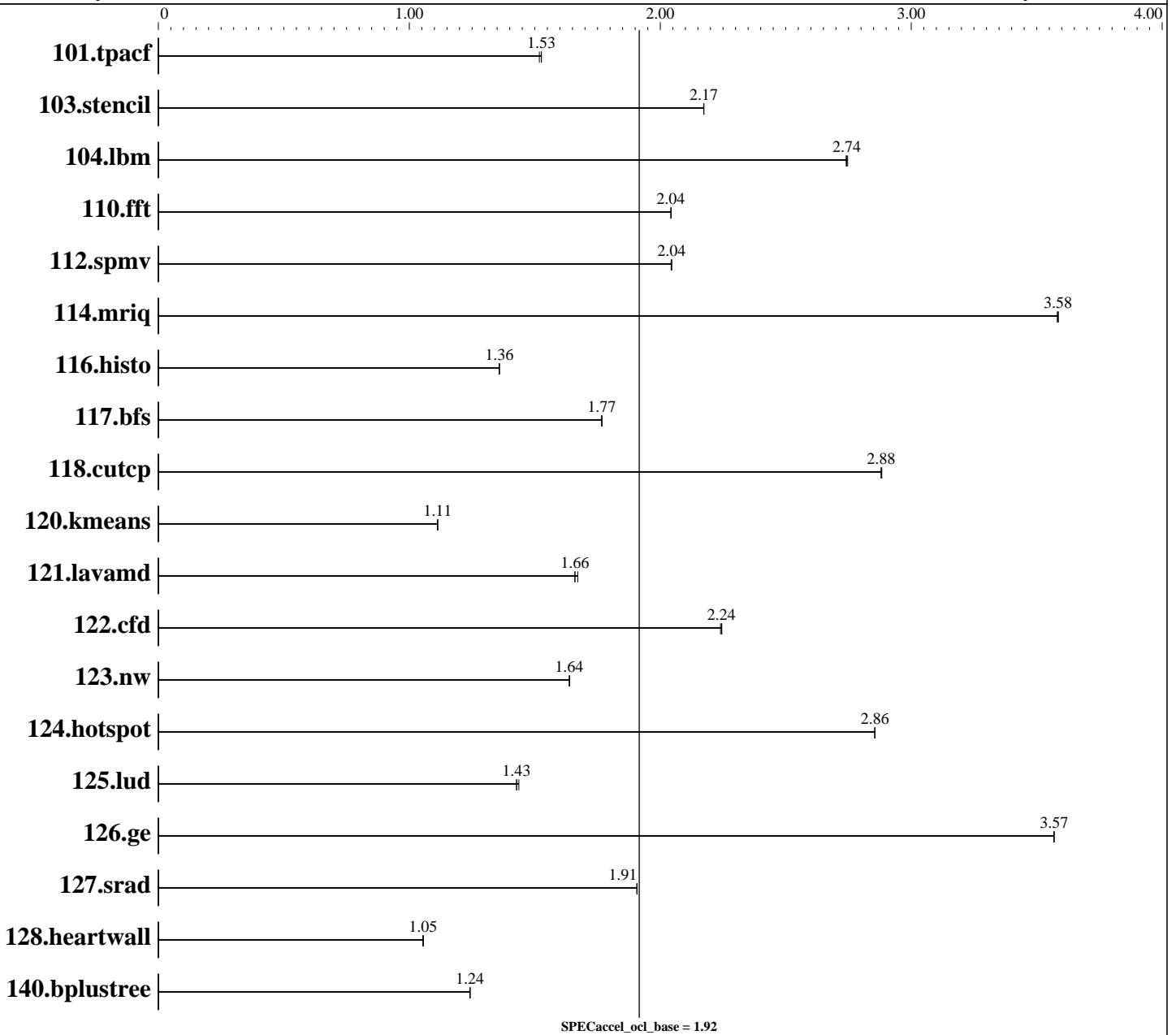
SGI Rackable C2110G-RP5 (Intel Xeon E5-2697 v2, 2.70 GHz)

SPECaccel_ocl_peak = Not Run

SPECaccel_ocl_base = 1.92

ACCEL license: 14
Test sponsor: SGI
Tested by: SGI

Test date: Feb-2014
Hardware Availability: Nov-2013
Software Availability: Nov-2013





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Hardware

CPU Name: Intel Xeon E5-2697 v2
CPU Characteristics: Twelve Core, 2.7 GHz, 8.0 GT/s QPI
CPU MHz: 2700
CPU MHz Maximum: 3500
FPU: Integrated
CPU(s) enabled: 24 cores, 2 chips, 12 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: 256 KB I+D on chip per core
L3 Cache: 30 MB I+D on chip per chip, 30 MB shared / 12 cores
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 15 TB 3x 6+2 RAID6, 24 x 900 GB SAS (Western Digital WD9001BKHG02D22, 10K RPM)
Other Hardware: None

Accelerator

Accel Model Name: Tesla K40m
Accel Vendor: NVIDIA
Accel Name: NVIDIA Tesla K40m
Type of Accel: GPU
Accel Connection: PCIe 3.0 16x
Does Accel Use ECC: Yes
Accel Description: Nvidia Tesla K40m, 12GB GDDR5 RAM, 745MHz, 2880 CUDA Cores.
Accel Driver: NVIDIA UNIX x86_64 Kernel Module 331.20

Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
Kernel 2.6.32-358.el6.x86_64
Compiler: Intel c/c++/Fortran Compiler XE, Version 14.0.1.106
File System: NFSv3 IPoIB
System State: Run level 5 (Multi-users)
Other Software: CUDA 5.5



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
101.tpacf	70.5	1.52	<u>70.1</u>	<u>1.53</u>	70.1	1.53						
103.stencil	57.5	2.17	57.5	2.17	<u>57.5</u>	<u>2.17</u>						
104.lbm	40.8	2.75	<u>40.8</u>	<u>2.74</u>	40.9	2.74						
110.fft	54.3	2.04	54.3	2.04	<u>54.3</u>	<u>2.04</u>						
112.spmv	71.9	2.04	<u>71.9</u>	<u>2.04</u>	71.9	2.05						
114.mriq	<u>30.4</u>	<u>3.58</u>	30.4	3.58	30.4	3.59						
116.histo	83.9	1.36	<u>83.9</u>	<u>1.36</u>	83.9	1.36						
117.bfs	66.2	1.77	66.2	1.77	<u>66.2</u>	<u>1.77</u>						
118.cutcp	<u>34.4</u>	<u>2.88</u>	34.4	2.88	34.3	2.88						
120.kmeans	89.8	1.11	<u>89.9</u>	<u>1.11</u>	89.9	1.11						
121.lavamd	65.2	1.67	<u>65.7</u>	<u>1.66</u>	65.7	1.66						
122.cfd	56.2	2.24	56.1	2.25	<u>56.1</u>	<u>2.24</u>						
123.nw	70.2	1.64	<u>70.2</u>	<u>1.64</u>	70.2	1.64						
124.hotspot	39.9	2.85	<u>39.9</u>	<u>2.86</u>	39.9	2.86						
125.lud	82.8	1.44	83.4	1.43	<u>83.4</u>	<u>1.43</u>						
126.ge	43.4	3.57	43.4	3.57	<u>43.4</u>	<u>3.57</u>						
127.srad	59.8	1.91	<u>59.8</u>	<u>1.91</u>	59.8	1.91						
128.heartwall	100	1.06	101	1.05	<u>100</u>	<u>1.05</u>						
140.bplustree	86.9	1.24	<u>86.9</u>	<u>1.24</u>	87.0	1.24						

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

Operating System Notes

Transparent Hugepage: disabled
Transparent Hugepage is disabled by
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Platform Notes

Sysinfo program /store/hfeng/Accel/kit-39/Docs/sysinfo
\$Rev: 6874 \$ \$Date:: 2013-11-20 #\$ 0953404ef7e75a5f9bbb534c6de3f831
running on n009 Thu Feb 27 20:17:18 2014

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>

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Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2697 v2 @ 2.70GHz
 2 "physical id"s (chips)
 48 "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 : 12
  siblings  : 24
  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:      132131352 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)
sgi-accelerate-release: SGI Accelerate 1.6, Build 708r13.rhel6-1304102350
sgi-foundation-release: SGI Foundation Software 2.8, Build
708r13.rhel6-1304102350
sgi-mpi-release: SGI MPI 1.6, Build 708r13.rhel6-1304102350
sgi-release: SGI Performance Suite 1.6, Build 708r13.rhel6-1304102350
sgi-upc-release: SGI UPC 1.6, Build 708r13.rhel6-1304102350
sgi-xfs_xvm-release: SGI XFS-XVM 3.0, Build 707rp29.rhel6-1306102001
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 n009 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013 x86_64
x86_64 x86_64 GNU/Linux

run-level 5 Feb 18 14:36

SPEC is set to: /store/hfeng/Accel/kit-39
Filesystem      Type      Size  Used Avail Use% Mounted on
servicel-ib:/nas
                nfs       15T   1.3T  14T   9% /nas

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

(End of data from sysinfo program)

```



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Base Runtime Environment

C benchmarks:

OpenCL Platform: NVIDIA CUDA, OpenCL 1.1 CUDA 6.0.1

OpenCL Device #0: Tesla K40m, v 331.20

C++ benchmarks:

OpenCL Platform: NVIDIA CUDA, OpenCL 1.1 CUDA 6.0.1

OpenCL Device #0: Tesla K40m, v 331.20

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Base Optimization Flags

C benchmarks:

-O3

C++ benchmarks:

-O3

Base Other Flags

C benchmarks:

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

C++ benchmarks:

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

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

<http://www.spec.org/accel/flags/SGI-Accel-OpenCL.html>

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

<http://www.spec.org/accel/flags/SGI-Accel-OpenCL.xml>



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For other inquiries, please contact webmaster@spec.org.

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