# SPEC® ACCEL_OCL Result



SuperMicro

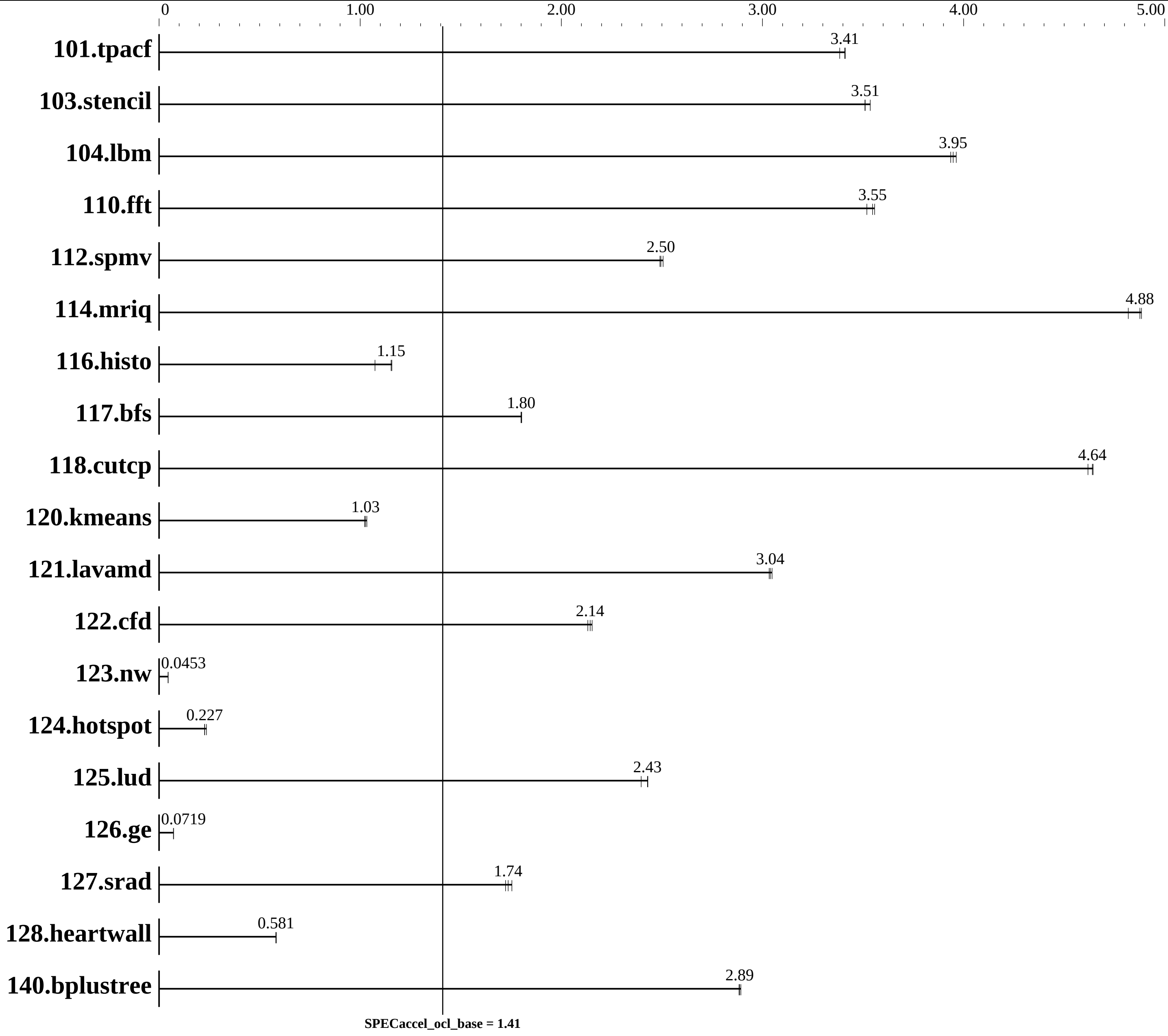
(Test Sponsor: KIT Institute for Data Processing and Electronics)

## AMD Radeon R9 290 7046GT-TRF

SPECaccel_ocl_peak = Not Run

SPECaccel_ocl_base = 1.41

| | | | |
|---|---|---|---|
| **ACCEL license:** | HPG-052A | **Test date:** | Jun-2014 |
| **Test sponsor:** | KIT Institute for Data Processing and Electronics | **Hardware Availability:** | Oct-2013 |
| **Tested by:** | Karlsruhe Institute of Technology (KIT) | **Software Availability:** | Nov-2013 |



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### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5650 |
| CPU Characteristics: | |
| CPU MHz: | 2667 |
| CPU MHz Maximum: | 3060 |
| FPU: | -- |
| CPU(s) enabled: | 12 cores, 2 chips, 6 cores/chip |
| CPU(s) orderable: | 2 |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 12 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 96 GB (12 x 8 GB 2Rx4 PC3-10600R, ECC) |
| Disk Subsystem: | 19 TB<br>GlusterFS network storage<br>2 mirroring nodes with 16 disks hardware RAID6 each |
| Other Hardware: | -- |

### Accelerator

| | |
|---|---|
| Accel Model Name: | Radeon R9 290 |
| Accel Vendor: | AMD |
| Accel Name: | AMD Radeon R9 290 |
| Type of Accel: | GPU |
| Accel Connection: | PCIe 2.0 16x |
| Does Accel Use ECC: | No |
| Accel Description: | AMD Radeon R9 290, 2560 streaming processors, 662 MHz<br>3.0 GiB GDDR5 RAM |
| Accel Driver: | AMDAPP 2.9 |

### Software

| | |
|---|---|
| Operating System: | openSUSE 12.3 (x86_64)<br>Kernel 3.7.10-1.1-desktop |
| Compiler: | Version 4.7.2 of GCC |
| File System: | nfs |
| System State: | Run level 5 (multi-user) |
| Other Software: | AMDAPP 2.9 |

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 101.tpacf | **31.4** | **3.41** | 31.4 | 3.41 | 31.6 | 3.38 | | | | | | |
| 103.stencil | 35.4 | 3.54 | **35.6** | **3.51** | 35.6 | 3.51 | | | | | | |
| 104.lbm | 28.3 | 3.96 | 28.5 | 3.94 | **28.4** | **3.95** | | | | | | |
| 110.fft | 31.2 | 3.56 | **31.3** | **3.55** | 31.5 | 3.52 | | | | | | |
| 112.spmv | **58.9** | **2.50** | 58.7 | 2.51 | 59.0 | 2.49 | | | | | | |
| 114.mriq | 22.6 | 4.82 | **22.4** | **4.88** | 22.3 | 4.88 | | | | | | |
| 116.histo | 98.5 | 1.16 | **98.8** | **1.15** | 106 | 1.07 | | | | | | |
| 117.bfs | 64.9 | 1.80 | **65.0** | **1.80** | 65.0 | 1.80 | | | | | | |
| 118.cutcp | 21.3 | 4.64 | **21.3** | **4.64** | 21.4 | 4.62 | | | | | | |
| 120.kmeans | **97.4** | **1.03** | 96.8 | 1.03 | 97.8 | 1.02 | | | | | | |
| 121.lavamd | 35.9 | 3.03 | 35.8 | 3.05 | **35.9** | **3.04** | | | | | | |
| 122.cfd | 59.1 | 2.13 | 58.5 | 2.15 | **58.8** | **2.14** | | | | | | |
| 123.nw | 2540 | 0.0453 | **2539** | **0.0453** | 2539 | 0.0453 | | | | | | |
| 124.hotspot | 503 | 0.227 | **502** | **0.227** | 484 | 0.236 | | | | | | |
| 125.lud | 49.6 | 2.40 | **49.0** | **2.43** | 49.0 | 2.43 | | | | | | |
| 126.ge | **2157** | **0.0719** | 2156 | 0.0719 | 2161 | 0.0717 | | | | | | |
| 127.srad | **65.7** | **1.74** | 65.0 | 1.75 | 66.2 | 1.72 | | | | | | |
| 128.heartwall | **182** | **0.581** | 183 | 0.581 | 182 | 0.583 | | | | | | |
| 140.bplustree | 37.5 | 2.88 | 37.3 | 2.89 | **37.4** | **2.89** | | | | | | |

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

## Platform Notes

```
Sysinfo program
/pdv/home/student/users/609bc1b89b8a955fb5270ebe25f0c37d/server3/ACCELV1/install/Docs/sysinfo
$Rev: 6874 $ $Date:: 2013-11-20 #$ 0953404ef7e75a5f9bbb534c6de3f831
running on ipepdvcompute3 Wed Jun  4 23:35:33 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

From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU X5650 @ 2.67GHz
      2 "physical id"s (chips)
      12 "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 : 6
         siblings  : 6
         physical 0: cores 0 1 2 8 9 10
         physical 1: cores 0 1 2 8 9 10
      cache size : 12288 KB

   From /proc/meminfo
      MemTotal:       99196156 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      openSUSE 12.3 (x86_64)

   From /etc/*release* /etc/*version*
      SuSE-release:
         openSUSE 12.3 (x86_64)
         VERSION = 12.3
         CODENAME = Dartmouth
      os-release:
         NAME=openSUSE
         VERSION="12.3 (Dartmouth)"
         VERSION_ID="12.3"
         PRETTY_NAME="openSUSE 12.3 (Dartmouth) (x86_64)"
         ID=opensuse
         ANSI_COLOR="0;32"
         CPE_NAME="cpe:/o:opensuse:opensuse:12.3"

   uname -a:
      Linux ipepdvcompute3 3.7.10-1.1-desktop #1 SMP PREEMPT Thu Feb 28 15:06:29
      UTC 2013 (82d3f21) x86_64 x86_64 x86_64 GNU/Linux

   run-level 5 Mar 24 18:40

   SPEC is set to:
   /pdv/home/student/users/609bc1b89b8a955fb5270ebe25f0c37d/server3/ACCELV1/install
      Filesystem              Type  Size  Used Avail Use% Mounted on
      ipepdvcompute1:/storage nfs    19T   16T  3.0T  84% /pdv

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

   (End of data from sysinfo program)
```

## Base Runtime Environment

C benchmarks:
```
OpenCL Platform: AMD Accelerated Parallel Processing, OpenCL 1.2 AMD-APP (1411.4)
OpenCL Device #0: Hawaii, v 1411.4 (VM)
```

C++ benchmarks:
```
OpenCL Platform: AMD Accelerated Parallel Processing, OpenCL 1.2 AMD-APP (1411.4)
OpenCL Device #0: Hawaii, v 1411.4 (VM)
```

## Base Compiler Invocation

C benchmarks:
```
gcc
```

C++ benchmarks:
```
g++
```

## Base Optimization Flags

C benchmarks:
```
-O2 -I/opt/AMDAPP/include -lOpenCL
```

C++ benchmarks:
```
-O2 -I/opt/AMDAPP/include -lOpenCL
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/accel/flags/gcc_flags.20150303.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/accel/flags/gcc_flags.20150303.xml



For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.


Tested with SPEC ACCEL v1.0.
Report generated on Tue Mar 3 14:21:33 2015 by SPEC ACCEL PS/PDF formatter v1212.
Originally published on 20 August 2014.