SPEC® ACCEL_ACC Result

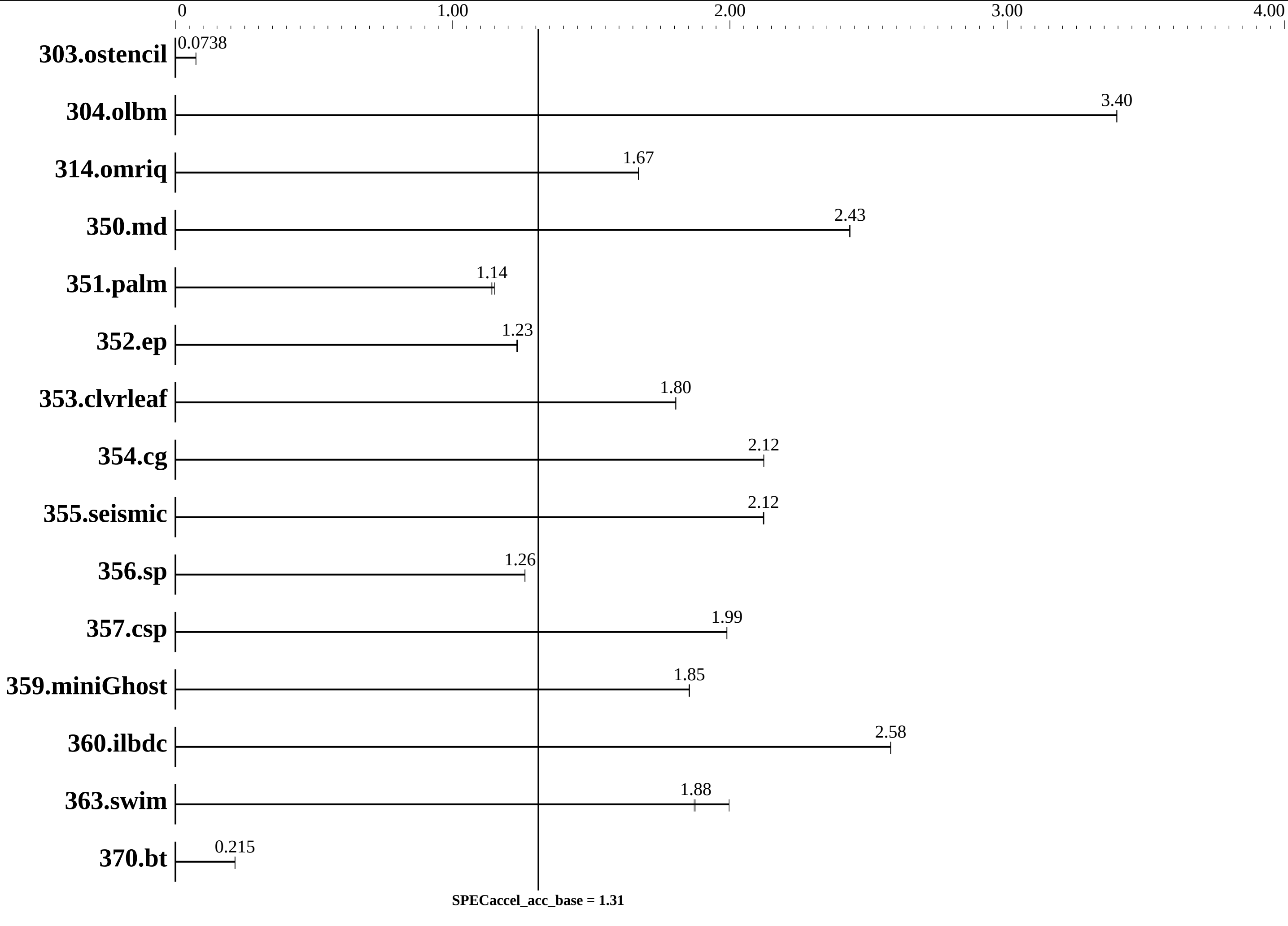
Cray
(Test Sponsor: Indiana University)

NVIDIA Tesla K20 Cray XK7

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 1.31

ACCEL license:	3440A	**Test date:**	Aug-2014
Test sponsor:	Indiana University	**Hardware Availability:**	Apr-2013
Tested by:	Indiana University	**Software Availability:**	Jul-2014



Hardware

CPU Name:	AMD Opteron 6276
CPU Characteristics:	AMD Turbo CORE Technology up to 3.2GHz, Turbo CORE off
CPU MHz:	2300
CPU MHz Maximum:	3200
FPU:	Integrated
CPU(s) enabled:	16 cores, 1 chip, 16 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 16 KB D on chip per core
Secondary Cache:	16 MB I+D on chip per chip, 2 MB shared / 2 cores
L3 Cache:	16 MB I+D on chip per chip, 8 MB shared / 8 cores

Continued on next page

Accelerator

Accel Model Name:	Tesla K20
Accel Vendor:	NVIDIA
Accel Name:	NVIDIA Tesla K20
Type of Accel:	GPU
Accel Connection:	PCIe 2.0 16x
Does Accel Use ECC:	yes
Accel Description:	NVIDIA Tesla K20m GPU, 2496 CUDA cores, 706MHz, 5 GB GDDR5 RAM
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 319.82

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Other Cache:	None
Memory:	32 GB (4 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	None
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Cray Linux Environment 4.2 SUSE Linux Enterprise Server 11 (x86_64) 2.6.32.59-0.7.1_1.0402.7496-cray_gem_c
Compiler:	Cray Compiling Environment 8.3.1
File System:	NFSv3 (IBM N5500 NAS) over Gb ethernet
System State:	Multi-user, run level 3
Other Software:	NVIDIA CUDA 5.5.20

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Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
303.ostencil	1964	0.0738	1963	0.0739	**1964**	**0.0738**						
304.olbm	**134**	**3.40**	134	3.40	134	3.39						
314.omriq	**572**	**1.67**	572	1.67	572	1.67						
350.md	104	2.43	**104**	**2.43**	104	2.43						
351.palm	324	1.14	322	1.15	**324**	**1.14**						
352.ep	429	1.23	**430**	**1.23**	430	1.23						
353.clvrleaf	247	1.80	**247**	**1.80**	246	1.81						
354.cg	192	2.12	192	2.12	**192**	**2.12**						
355.seismic	174	2.12	175	2.12	**174**	**2.12**						
356.sp	**219**	**1.26**	219	1.26	219	1.26						
357.csp	136	1.99	136	1.99	**136**	**1.99**						
359.miniGhost	199	1.85	199	1.85	**199**	**1.85**						
360.ilbdc	142	2.58	**142**	**2.58**	142	2.58						
363.swim	**123**	**1.88**	115	2.00	123	1.87						
370.bt	1038	0.215	1040	0.215	**1038**	**0.215**						

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

Platform Notes

```
Sysinfo program /N/soft/mason/specaccel-1.0/Docs/sysinfo
$Rev: 6874 $ $Date:: 2013-11-20 #$ 0953404ef7e75a5f9bbb534c6de3f831
running on nid00456 Tue Aug 12 17:37:45 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 : AMD Opteron(TM) Processor 6276
      1 "physical id"s (chips)
      16 "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 : 16
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7
   cache size : 2048 KB

From /proc/meminfo
```

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Platform Notes (Continued)

```
   MemTotal:       33084584 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 11 (x86_64)
      VERSION = 11
      PATCHLEVEL = 1
   mazama-release:
      Mazama Wed Aug 28 02:06:30 CDT 2013 on hssbld0 by bwdev
      lsb-cray-mazama-7.1.0

uname -a:
   Linux nid00456 2.6.32.59-0.7.1_1.0402.7496-cray_gem_c #1 SMP Wed Feb 26
   05:58:57 UTC 2014 x86_64 x86_64 x86_64 GNU/Linux


SPEC is set to: /N/soft/mason/specaccel-1.0
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /N/soft        dvs   1.9T  1.6T  258G  87% /N/soft

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

(End of data from sysinfo program)
```

General Notes

```
Baseline   C: gcc
     Fortran: f90 -64 -mp -O2
```

Base Compiler Invocation

C benchmarks:
    cc

Fortran benchmarks:
    ftn

Benchmarks using both Fortran and C:
    cc ftn

Base Portability Flags

314.omriq: `-DSPEC_NO_INLINE`
352.ep: `-DSPEC_NO_INLINE`

Base Optimization Flags

C benchmarks:
`-O2 -h pragma=acc -h nopragma=omp -fpic -dynamic`

Fortran benchmarks:
`-O2 -h acc,noomp -em -fpic -dynamic`

Benchmarks using both Fortran and C:
`-O2 -h pragma=acc -h nopragma=omp -fpic -dynamic -h acc,noomp -em`

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

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