SPEC ACCEL™ ACC Result

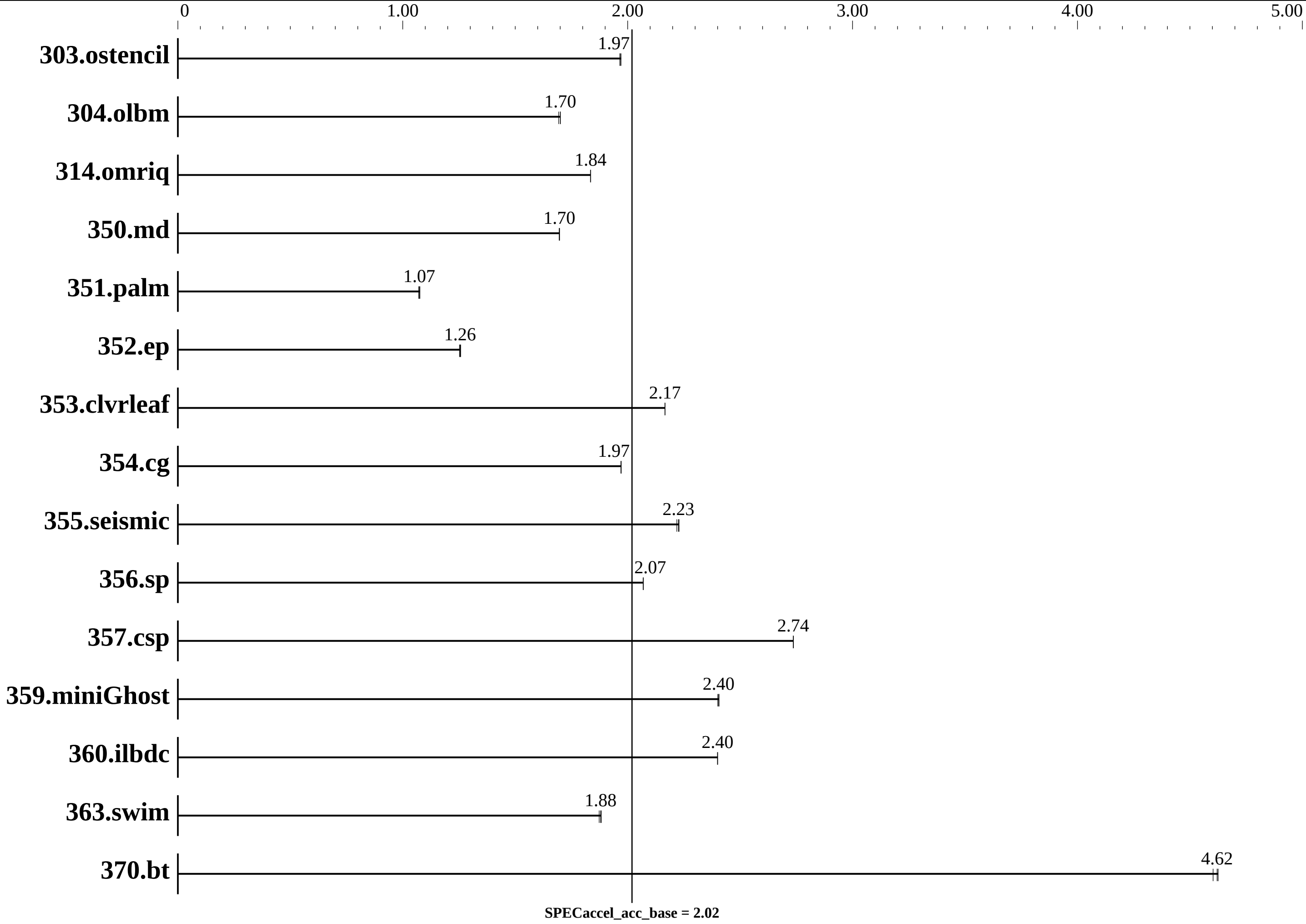
Cray
(Test Sponsor: Indiana University)

NVIDIA Tesla K20
Cray XK7

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 2.02

ACCEL license:	3440A	**Test date:**	Mar-2017
Test sponsor:	Indiana University	**Hardware Availability:**	Apr-2013
Tested by:	Indiana University	**Software Availability:**	Jan-2017



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

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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, 706 MHz, 5 GB GDDR5 RAM
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 352.68

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Hardware (Continued)

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 5.2 3.0.101-0.46.1_1.0502.8871-cray_gem_c
Compiler:	PGI Accelerator Fortran/C/C++ Server, Release 17.1
File System:	NFSv3 (DDN SFA12KE) over 10GB Ethernet
System State:	Run level 3 (Multi-user)
Other Software:	NVIDIA CUDA 7.5.18

Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
303.ostencil	**73.7**	**1.97**	73.6	1.97	73.8	1.97						
304.olbm	269	1.69	**268**	**1.70**	268	1.70						
314.omriq	**521**	**1.84**	521	1.84	521	1.84						
350.md	149	1.70	**149**	**1.70**	148	1.70						
351.palm	344	1.08	**345**	**1.07**	345	1.07						
352.ep	421	1.26	**422**	**1.26**	423	1.25						
353.clvrleaf	205	2.17	**205**	**2.17**	205	2.17						
354.cg	207	1.97	207	1.97	**207**	**1.97**						
355.seismic	167	2.22	166	2.23	**166**	**2.23**						
356.sp	**133**	**2.07**	133	2.07	133	2.07						
357.csp	98.7	2.74	**98.7**	**2.74**	98.7	2.74						
359.miniGhost	154	2.40	153	2.41	**153**	**2.40**						
360.ilbdc	**153**	**2.40**	153	2.40	153	2.40						
363.swim	122	1.88	**122**	**1.88**	123	1.87						
370.bt	48.4	4.60	**48.3**	**4.62**	48.2	4.63						

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

Platform Notes

```
Sysinfo program
/N/dc2/projects/hpc/lijunj/SPEC/accel-1.1-run/bigred2/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on nid00406 Thu Mar  2 16:30:25 2017
```

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Platform Notes (Continued)

```
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 : 8
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7
   cache size : 2048 KB

From /proc/meminfo
   MemTotal:       33083764 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 = 3

uname -a:
   Linux nid00406 3.0.101-0.46.1_1.0502.8871-cray_gem_c #1 SMP Sat Oct 22
   15:26:43 UTC 2016 x86_64 x86_64 x86_64 GNU/Linux


SPEC is set to: /N/dc2/projects/hpc/lijunj/SPEC/accel-1.1-run/bigred2
   Filesystem            Type    Size  Used Avail Use% Mounted on
   10.10.0.171@o2ib:/dc2 lustre  5.3P  5.1P  194T  97% /N/dc2

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

(End of data from sysinfo program)

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```

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Base Compiler Invocation

C benchmarks:
`pgcc`

Fortran benchmarks:
`pgfortran`

Benchmarks using both Fortran and C:
`pgcc pgfortran`

Base Optimization Flags

C benchmarks:
`-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5`

Fortran benchmarks:
`-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5`

Benchmarks using both Fortran and C:

353.clvrleaf: `-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5`

359.miniGhost: `-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5 -Mnomain`

The flags file that was used to format this result can be browsed at
http://www.spec.org/accel/flags/pgi2017_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/accel/flags/pgi2017_flags.xml

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

Tested with SPEC ACCEL v1.1.
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