SPEC ACCEL™ ACC Result

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Cray

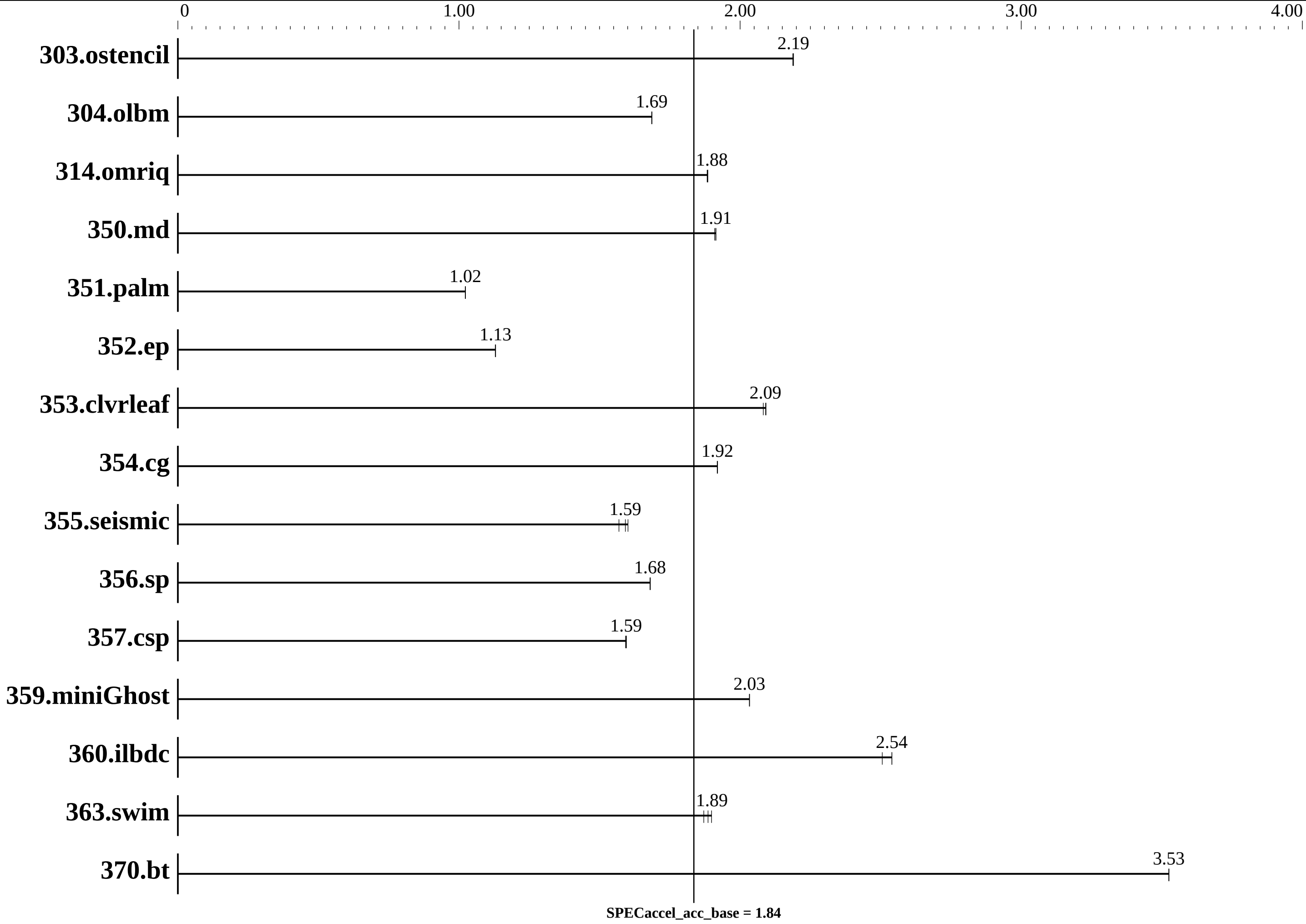
(Test Sponsor: Indiana University)

NVIDIA Tesla K20
Cray XK7

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 1.84

ACCEL license:	3440A	**Test date:**	Mar-2015
Test sponsor:	Indiana University	**Hardware Availability:**	Apr-2013
Tested by:	Indiana University	**Software Availability:**	Feb-2015



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, 706MHz, 5 GB GDDR5 RAM
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 319.82

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 4.2 SUSE Linux Enterprise Server 11 (x86_64) 2.6.32.59-0.7.1_1.0402.7496-cray_gem_c
Compiler:	PGI Accelerator Fortran/C/C++ Server, Release 15.3
File System:	NFSv3 (IBM N5500 NAS) over Gb ethernet
System State:	Multi-user, run level 3
Other Software:	NVIDIA CUDA 5.5.20

Results Table

	Base						Peak					
Benchmark	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	66.2	2.19	66.3	2.19	**66.2**	**2.19**						
304.olbm	**270**	**1.69**	270	1.69	270	1.69						
314.omriq	**507**	**1.88**	508	1.88	507	1.88						
350.md	132	1.91	**132**	**1.91**	132	1.91						
351.palm	362	1.02	362	1.02	**362**	**1.02**						
352.ep	469	1.13	469	1.13	**469**	**1.13**						
353.clvrleaf	214	2.08	**213**	**2.09**	213	2.09						
354.cg	213	1.92	213	1.92	**213**	**1.92**						
355.seismic	236	1.57	**232**	**1.59**	231	1.60						
356.sp	164	1.68	164	1.68	**164**	**1.68**						
357.csp	170	1.59	**169**	**1.59**	169	1.60						
359.miniGhost	181	2.03	181	2.03	**181**	**2.03**						
360.ilbdc	146	2.51	**145**	**2.54**	144	2.54						
363.swim	123	1.87	**122**	**1.89**	121	1.90						
370.bt	63.3	3.52	**63.3**	**3.53**	63.3	3.53						

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 nid00352 Fri Mar 27 18:02:53 2015

This section contains SUT (System Under Test) info as seen by
```

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Platform Notes (Continued)

```
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
   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 nid00352 2.6.32.59-0.7.1_1.0402.7496-cray_gem_c #1 SMP Thu Jul 10
   19:17:02 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   599T  104T  495T  18% /N/soft

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

(End of data from sysinfo program)
```

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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:cuda5.5`

Fortran benchmarks:
`-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda5.5`

Benchmarks using both Fortran and C:

353.clvrleaf: `-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda5.5`

359.miniGhost: `-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda5.5 -Mnomain`

The flags file that was used to format this result can be browsed at
http://www.spec.org/accel/flags/pgi2014_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/accel/flags/pgi2014_flags.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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