SPEC ACCEL™ ACC Result

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Bull
(Test Sponsor: Technische Universitaet Dresden)

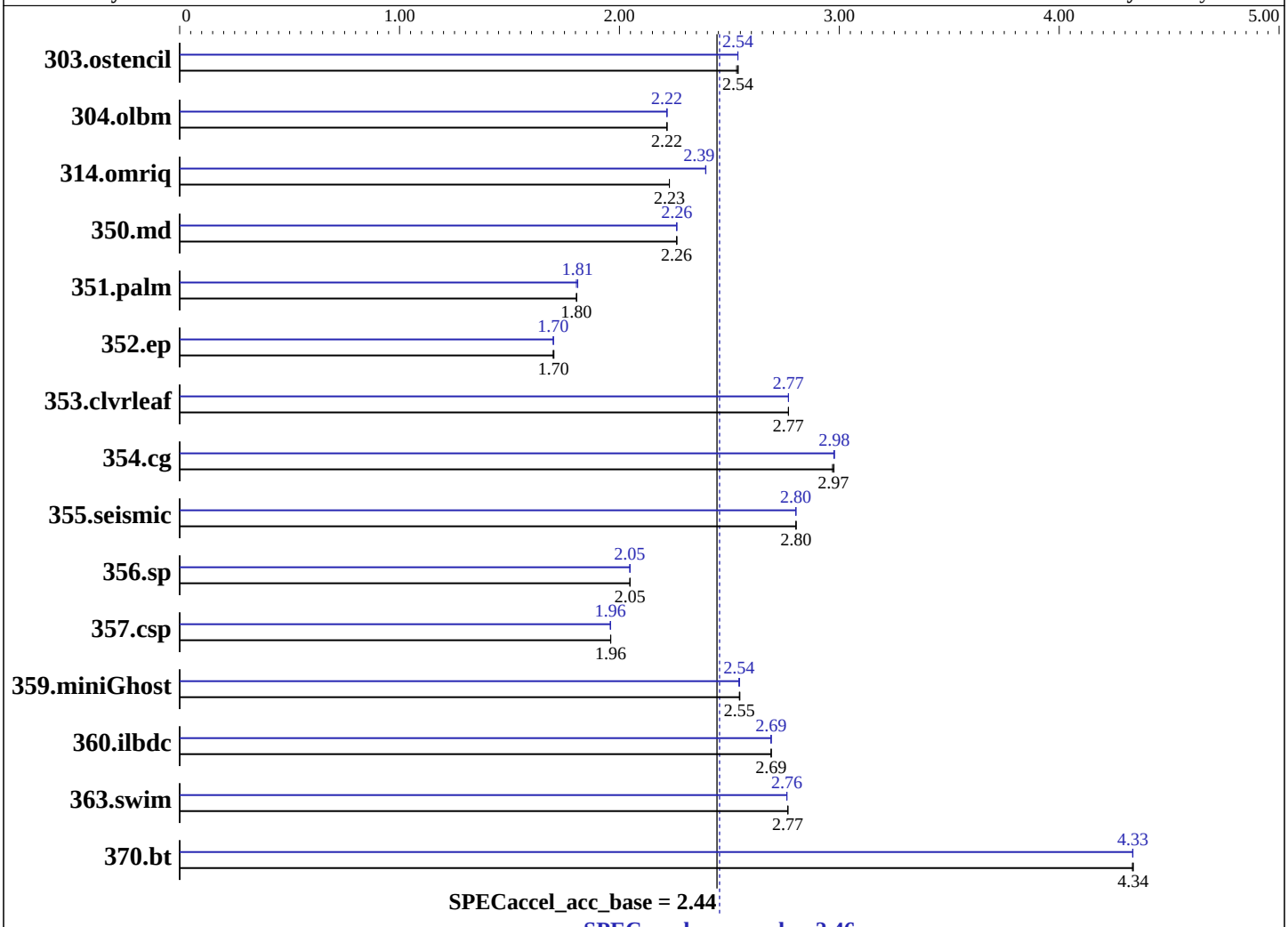
NVIDIA Tesla K80
Bull R400

SPECaccel_acc_peak = 2.46

SPECaccel_acc_base = 2.44

ACCEL license: 37A
Test sponsor: Technische Universitaet Dresden
Tested by: Technische Universitaet Dresden

Test date: Nov-2015
Hardware Availability: Jan-2015
Software Availability: May-2015



Hardware

CPU Name:	Intel Xeon E5-2680 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2500
CPU MHz Maximum:	3300
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 cores/chip
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
Other Cache:	None

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Accelerator

Accel Model Name:	Tesla K80
Accel Vendor:	NVIDIA
Accel Name:	NVIDIA Tesla K80
Type of Accel:	GPU
Accel Connection:	PCIe 2.0 16x
Does Accel Use ECC:	yes
Accel Description:	NVIDIA Tesla K80, Kepler GK210, 2496 CUDA cores, 875 MHz 12 GB GDDR5 RAM (Kepler Generation)
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 346.46

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Hardware (Continued)

Memory: 64 GB (8 x 8 GB 2Rx8 PC4-2133R-10)
Disk Subsystem: 62 GB SSD
Other Hardware: --

Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
2.6.32-504.12.2.el6.x86_64
Compiler: PGI Accelerator Server Complete, Release 15.7
File System: ext4
System State: Run Level 3 (Multi-User)
Other Software: NVIDIA Cuda SDK 7.0, driver version 346.46

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	57.2	2.53	**57.1**	**2.54**	57.1	2.54	**57.1**	**2.54**	57.1	2.54	57.1	2.54
304.olbm	205	2.22	205	2.22	**205**	**2.22**	205	2.22	**205**	**2.22**	205	2.22
314.omriq	429	2.23	**429**	**2.23**	429	2.23	**400**	**2.39**	400	2.39	399	2.39
350.md	112	2.26	**111**	**2.26**	111	2.26	111	2.26	**111**	**2.26**	111	2.26
351.palm	205	1.80	205	1.81	**205**	**1.80**	205	1.80	**204**	**1.81**	204	1.81
352.ep	312	1.70	**312**	**1.70**	311	1.70	312	1.70	**312**	**1.70**	312	1.70
353.clvrleaf	161	2.77	161	2.77	**161**	**2.77**	161	2.77	161	2.77	**161**	**2.77**
354.cg	137	2.97	137	2.98	**137**	**2.97**	**137**	**2.98**	137	2.97	137	2.98
355.seismic	132	2.80	**132**	**2.80**	132	2.80	**132**	**2.80**	132	2.80	132	2.80
356.sp	135	2.05	135	2.05	**135**	**2.05**	135	2.05	**135**	**2.05**	135	2.05
357.csp	**138**	**1.96**	138	1.96	138	1.96	138	1.96	138	1.96	**138**	**1.96**
359.miniGhost	145	2.55	**145**	**2.55**	145	2.55	**145**	**2.54**	145	2.55	145	2.54
360.ilbdc	**136**	**2.69**	136	2.69	136	2.69	**136**	**2.69**	136	2.69	136	2.69
363.swim	83.2	2.76	83.1	2.77	**83.1**	**2.77**	83.3	2.76	83.3	2.76	**83.3**	**2.76**
370.bt	**51.4**	**4.34**	51.4	4.34	51.5	4.33	**51.4**	**4.33**	51.5	4.33	51.4	4.34

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

Platform Notes

```
MultiThreading disabled in BIOS
Sysinfo program /tmp/spec-accel/1.1/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on taurusi2072 Mon Nov  2 20:21:25 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 : Intel(R) Xeon(R) CPU E5-2680 v3 @ 2.50GHz
      2 "physical id"s (chips)
      24 "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  : 12
      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:       65868116 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)
   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 taurusi2072 2.6.32-504.12.2.el6.x86_64 #1 SMP Sun Feb 1 12:14:02 EST
   2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 30 16:57

SPEC is set to: /tmp/spec-accel/1.1
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      ext4   62G  4.8G   54G   9% /tmp

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

(End of data from sysinfo program)
```

Base Compiler Invocation

C benchmarks:
pgcc

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Base Compiler Invocation (Continued)

Fortran benchmarks:
pgfortran

Benchmarks using both Fortran and C:
pgcc pgfortran

Base Optimization Flags

C benchmarks:
-V15.7 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0 -tp=haswell-64

Fortran benchmarks:
-V15.7 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0 -tp=haswell-64

Benchmarks using both Fortran and C:

353.clvrleaf: -V15.7 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0 -tp=haswell-64

359.miniGhost: -V15.7 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0 -tp=haswell-64 -Mnomain

Peak Compiler Invocation

C benchmarks:
pgcc

Fortran benchmarks:
pgfortran

Benchmarks using both Fortran and C:
pgcc pgfortran

Peak Optimization Flags

C benchmarks:
-V15.7 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0 -tp=haswell-64

Fortran benchmarks:
-V15.7 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0 -tp=haswell-64

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

353.clvrleaf: `-V15.7 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0 -tp=haswell-64`

359.miniGhost: `-V15.7 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0 -tp=haswell-64 -Mnomain`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/accel/flags/pgi2014_flags.20151201.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/accel/flags/pgi2014_flags.20151201.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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