



SPEC® ACCEL_ACC Result

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Cray

(Test Sponsor: Indiana University)

NVIDIA Tesla K20

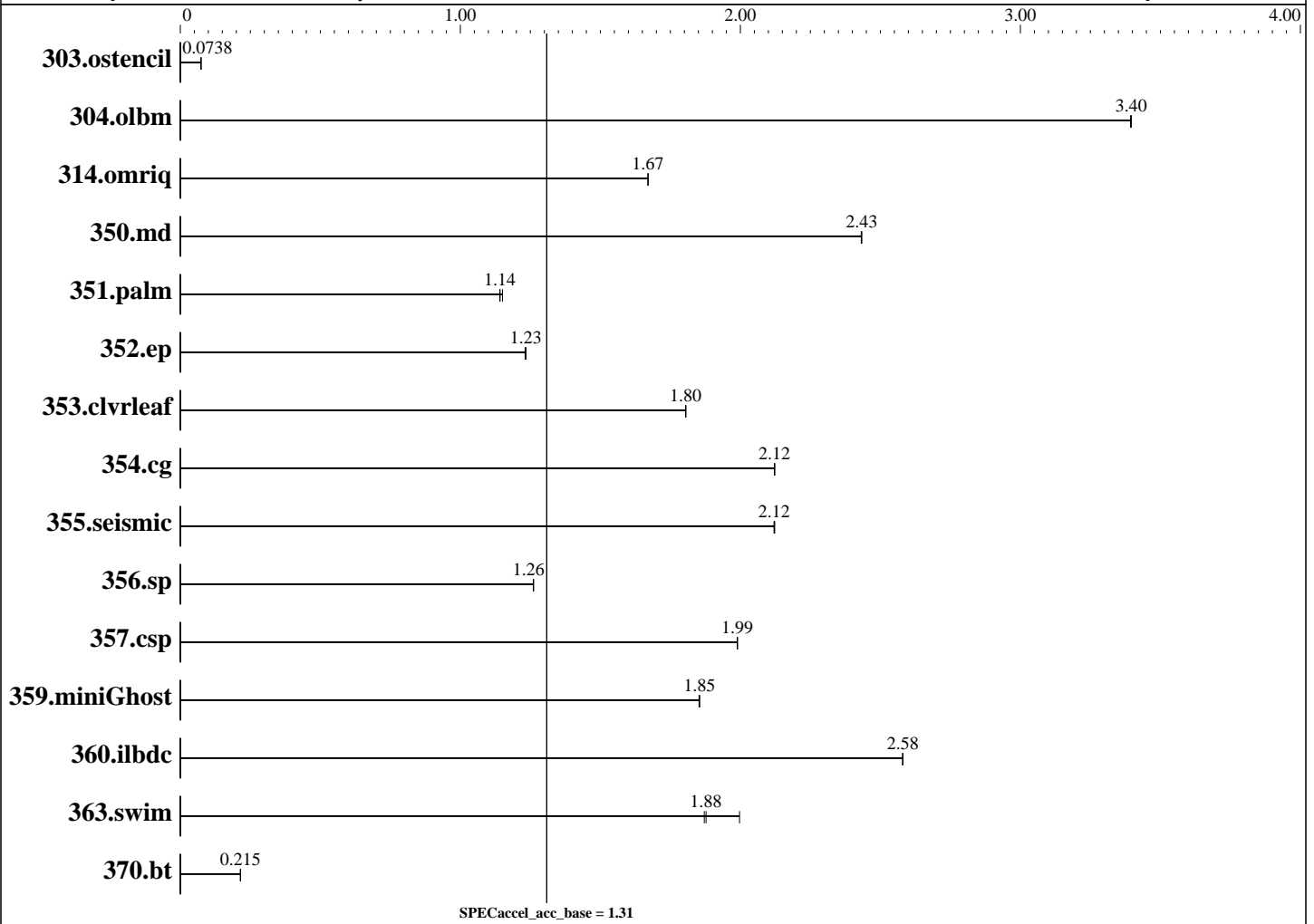
Cray XK7

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 1.31

ACCEL license: 3440A
Test sponsor: Indiana University
Tested by: Indiana University

Test date: Aug-2014
Hardware Availability: Apr-2013
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

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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



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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

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

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



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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>

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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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