



SPEC[®] ACCEL_ACC Result

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Cray

(Test Sponsor: Indiana University)

NVIDIA Tesla K20

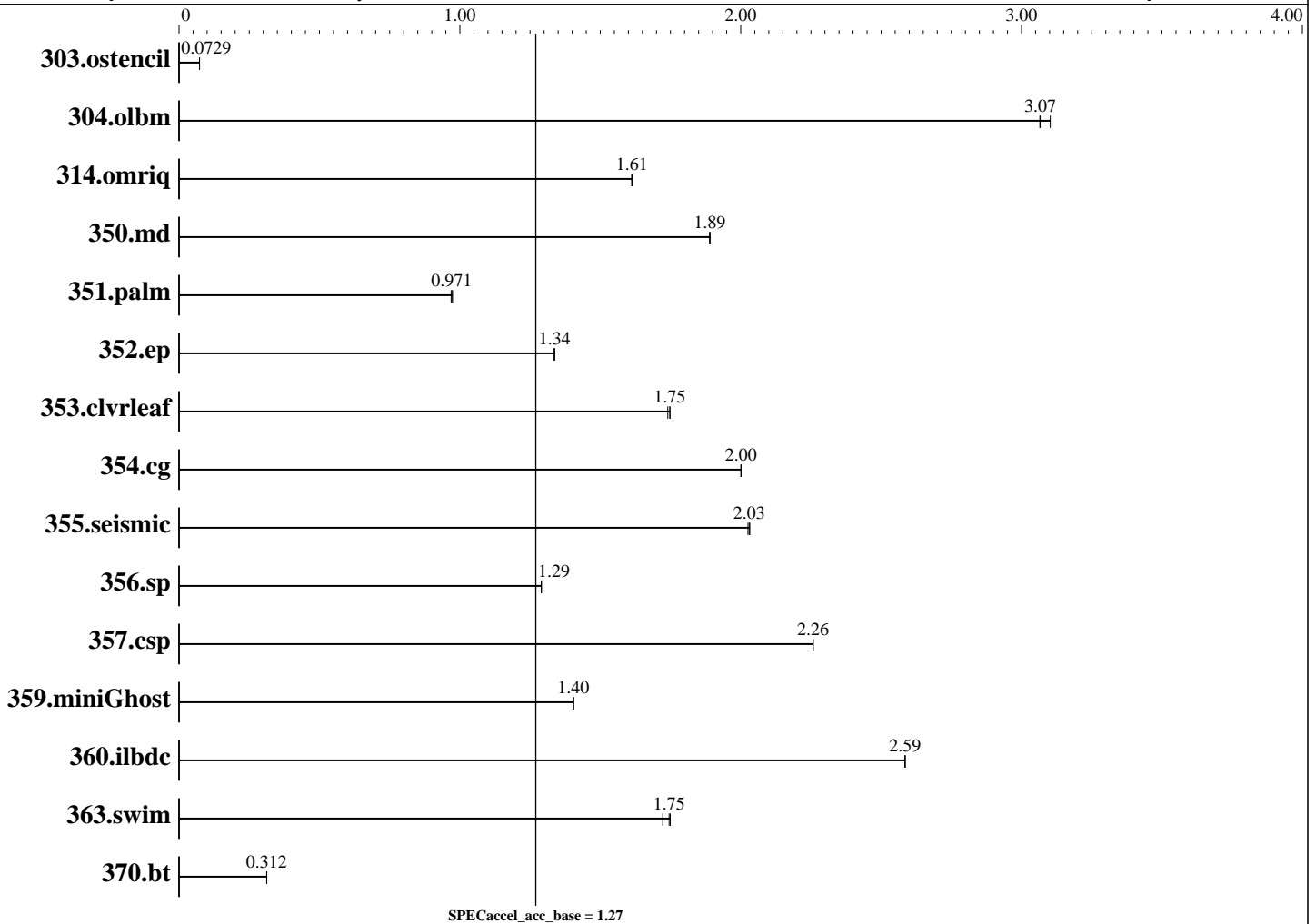
Cray XK7

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 1.27

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

Test date: Mar-2014
Hardware Availability: Apr-2013
Software Availability: Oct-2013



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 319.60



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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 4.1
SUSE Linux Enterprise Server 11 (x86_64) 2.6.32.59-0.7.1_1.0401.6845-cray_gem_c
Compiler: Cray Compiling Environment 8.2.1
File System: NFSv3 (IBM N5500 NAS) over Gb ethernet
System State: Multi-user, run level 3
Other Software: NVIDIA CUDA 5.0.35



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	1988	0.0729	1988	0.0729	1988	0.0729						
304.olbm	148	3.07	147	3.10	148	3.07						
314.omriq	593	1.61	593	1.61	593	1.61						
350.md	133	1.89	133	1.89	133	1.89						
351.palm	380	0.974	382	0.969	381	0.971						
352.ep	396	1.34	396	1.34	397	1.34						
353.clvrlleaf	255	1.75	256	1.74	255	1.75						
354.cg	204	2.00	204	2.00	204	2.00						
355.seismic	182	2.03	182	2.03	183	2.03						
356.sp	214	1.29	214	1.29	214	1.29						
357.csp	120	2.26	120	2.26	120	2.26						
359.miniGhost	263	1.40	263	1.40	263	1.40						
360.ilbdc	142	2.59	142	2.59	142	2.59						
363.swim	134	1.72	131	1.75	132	1.75						
370.bt	714	0.312	714	0.312	714	0.312						

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

Platform Notes

```
Sysinfo program /N/soft/mason/specaccelv1-039/Docs/sysinfo
$Rev: 6874 $ $Date:: 2013-11-20 #$ 0953404ef7e75a5f9bbb534c6de3f831
running on nid00016 Sat Mar 1 13:05:37 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: 33084660 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 nid00016 2.6.32.59-0.7.1_1.0401.6845-cray_gem_c #1 SMP Thu Nov 15
00:24:59 UTC 2012 x86_64 x86_64 x86_64 GNU/Linux
```

```
SPEC is set to: /N/soft/mason/specaccelv1-039
Filesystem Type Size Used Avail Use% Mounted on
/N/soft dvs 1.7T 1.5T 104G 94% /N/soft
```

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

(End of data from sysinfo program)

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



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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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