## SPEC® ACCEL_ACC Result

### Cray
(Test Sponsor: Indiana University)

### NVIDIA Tesla K20

#### Cray XK7

<table>
<thead>
<tr>
<th>SPECaccel_acc_base</th>
<th>1.27</th>
</tr>
</thead>
</table>

**SPECaccel_acc_peak = Not Run**

**ACCEL license:** 3440A

**Test date:** Mar-2014

**Test sponsor:** Indiana University

**Hardware Availability:** Apr-2013

**Tested by:** Indiana University

**Software Availability:** Oct-2013

**ACCEL by:** Indiana University

### SPECaccel_acc_base = 1.27

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>303.ostencil</td>
<td>0.0729</td>
</tr>
<tr>
<td>304.olbm</td>
<td>3.07</td>
</tr>
<tr>
<td>314.omriq</td>
<td>1.61</td>
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<tr>
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<td>351.palm</td>
<td>0.971</td>
</tr>
<tr>
<td>352.ep</td>
<td>1.34</td>
</tr>
<tr>
<td>353.clvrleaf</td>
<td>1.75</td>
</tr>
<tr>
<td>354.cg</td>
<td>2.00</td>
</tr>
<tr>
<td>355.seismic</td>
<td>2.03</td>
</tr>
<tr>
<td>356.sp</td>
<td>1.29</td>
</tr>
<tr>
<td>357.csp</td>
<td>2.26</td>
</tr>
<tr>
<td>359.miniGhost</td>
<td>1.40</td>
</tr>
<tr>
<td>360.ilbdc</td>
<td>2.59</td>
</tr>
<tr>
<td>363.swim</td>
<td>1.75</td>
</tr>
<tr>
<td>370.bt</td>
<td>0.312</td>
</tr>
</tbody>
</table>

**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

**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, 2.496 CUDA cores, 706MHz, 5 GB GDDR5 RAM
- **Accel Driver:** NVIDIA UNIX x86_64 Kernel Module 319.60
**SPEC ACCEL_ACC Result**

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- **ACCEL license:** 3440A
- **Test sponsor:** Indiana University
- **Tested by:** Indiana University
- **Other Cache:** None
- **Memory:** 32 GB (4 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
- **Disk Subsystem:** NONE
- **Other Hardware:** None

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

**Software**

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>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</th>
</tr>
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<tr>
<td>Compiler:</td>
<td>Cray Compiling Environment 8.2.1</td>
</tr>
<tr>
<td>File System:</td>
<td>NFSv3 (IBM N5500 NAS) over Gb ethernet</td>
</tr>
<tr>
<td>System State:</td>
<td>Multi-user, run level 3</td>
</tr>
<tr>
<td>Other Software:</td>
<td>NVIDIA CUDA 5.0.35</td>
</tr>
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**Test date:** Mar-2014

**Hardware Availability:** Apr-2013

**Software Availability:** Oct-2013

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<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
<th>Seconds Peak</th>
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</tr>
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<tbody>
<tr>
<td>303.ostencil</td>
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<td>255</td>
<td>1.75</td>
<td>256</td>
<td>1.74</td>
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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 $ $Date:: 2013-11-20 #$ 0953404ef7e7a5f9bbb534c6d3f831
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

Continued on next page
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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-crystal-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](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](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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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/