



SPEC ACCEL™ ACC Result

Copyright 2015-2017 Standard Performance Evaluation Corporation

Cray

(Test Sponsor: Oak Ridge National Laboratory)

NVIDIA Tesla K20X

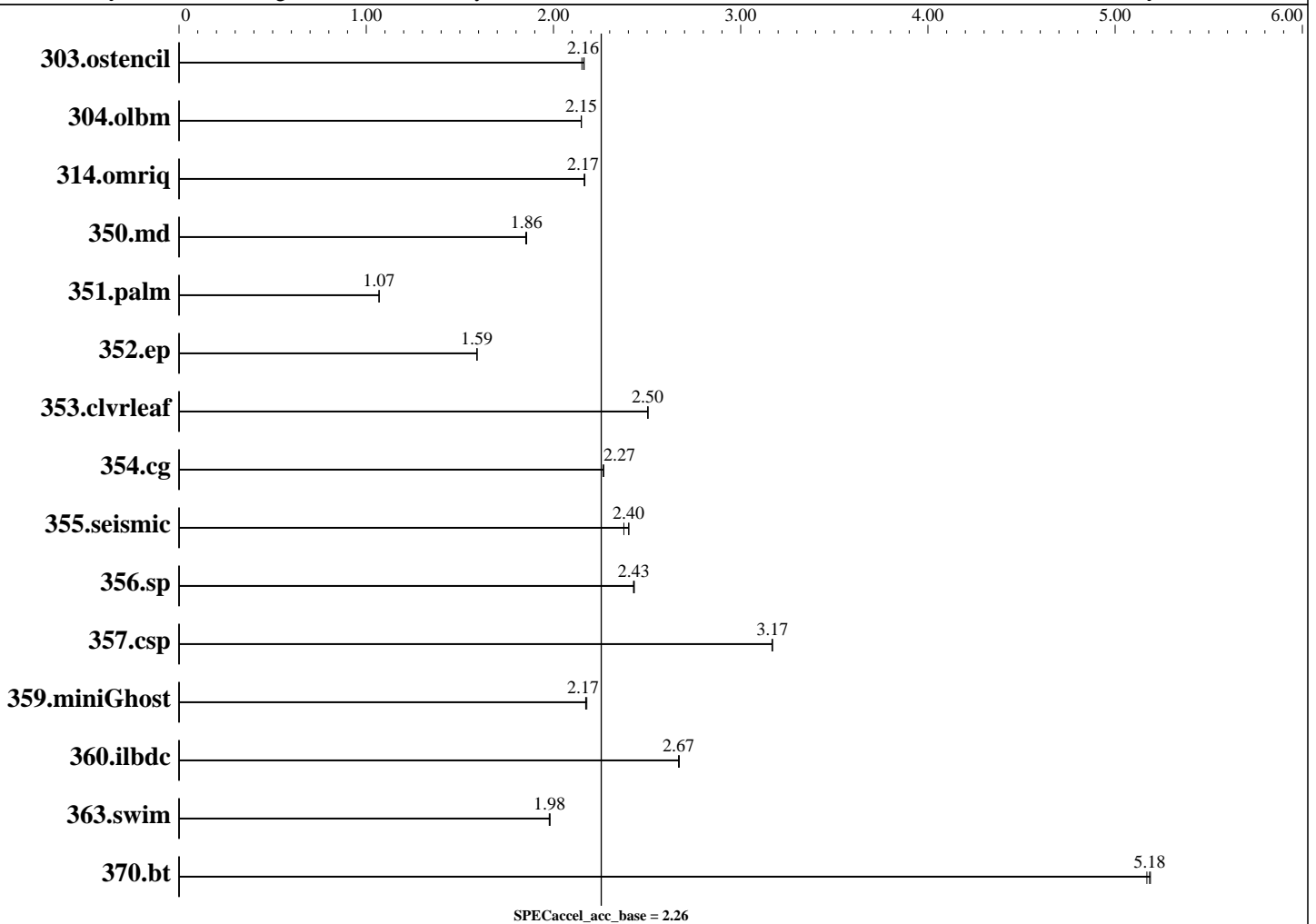
Cray XK7 system

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 2.26

ACCEL license: 054A
Test sponsor: Oak Ridge National Laboratory
Tested by: Oak Ridge National Laboratory

Test date: May-2017
Hardware Availability: Apr-2013
Software Availability: Mar-2017



Hardware

CPU Name: AMD Opteron 6274
 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: 64 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

Continued on next page

Accelerator

Accel Model Name: Tesla K20X
 Accel Vendor: NVIDIA
 Accel Name: NVIDIA Tesla K20X
 Type of Accel: GPU
 Accel Connection: PCIe 2.0 16x
 Does Accel Use ECC: yes
 Accel Description: NVIDIA Tesla K20X GPU, 2688 CUDA cores, 732MHz, 6 GB GDDR5 RAM
 Accel Driver: NVIDIA UNIX x86_64 Kernel Module 352.101



SPEC ACCEL ACC Result

Copyright 2015-2017 Standard Performance Evaluation Corporation

Cray

(Test Sponsor: Oak Ridge National Laboratory)

NVIDIA Tesla K20X

Cray XK7 system

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 2.26

ACCEL license: 054A
Test sponsor: Oak Ridge National Laboratory
Tested by: Oak Ridge National Laboratory

Test date: May-2017
Hardware Availability: Apr-2013
Software Availability: Mar-2017

Hardware (Continued)

Other Cache: None
Memory: 32 GB (4 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem: 14P Lustre parallel file system
Other Hardware: N/A

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64)
3.0.101-0.46.1_1.0502.8871-cray_gem_c
Compiler: PGI Premier Edition, Release 17.3
File System: lustre
System State: Run level 3 (multi-user, non-graphical)
Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|-------|---------|-------|---------|-------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 303.ostencil | 67.4 | 2.15 | 67.0 | 2.16 | 67.1 | 2.16 | | | | | | |
| 304.olbm | 212 | 2.15 | 212 | 2.15 | 212 | 2.15 | | | | | | |
| 314.omriq | 442 | 2.17 | 442 | 2.16 | 441 | 2.17 | | | | | | |
| 350.md | 136 | 1.85 | 136 | 1.86 | 136 | 1.86 | | | | | | |
| 351.palm | 346 | 1.07 | 346 | 1.07 | 346 | 1.07 | | | | | | |
| 352.ep | 333 | 1.59 | 333 | 1.59 | 333 | 1.59 | | | | | | |
| 353.clvrleaf | 178 | 2.50 | 178 | 2.50 | 178 | 2.51 | | | | | | |
| 354.cg | 180 | 2.27 | 180 | 2.27 | 180 | 2.27 | | | | | | |
| 355.seismic | 156 | 2.38 | 154 | 2.40 | 154 | 2.40 | | | | | | |
| 356.sp | 114 | 2.43 | 114 | 2.43 | 113 | 2.43 | | | | | | |
| 357.csp | 85.2 | 3.17 | 85.2 | 3.17 | 85.3 | 3.17 | | | | | | |
| 359.miniGhost | 170 | 2.17 | 170 | 2.17 | 169 | 2.18 | | | | | | |
| 360.ilbdc | 138 | 2.67 | 138 | 2.67 | 137 | 2.67 | | | | | | |
| 363.swim | 116 | 1.98 | 116 | 1.98 | 116 | 1.98 | | | | | | |
| 370.bt | 43.1 | 5.17 | 43.0 | 5.18 | 43.0 | 5.19 | | | | | | |

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

Submit Notes

The config file option 'submit' was used.



SPEC ACCEL ACC Result

Copyright 2015-2017 Standard Performance Evaluation Corporation

Cray

(Test Sponsor: Oak Ridge National Laboratory)

NVIDIA Tesla K20X

Cray XK7 system

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 2.26

ACCEL license: 054A
Test sponsor: Oak Ridge National Laboratory
Tested by: Oak Ridge National Laboratory

Test date: May-2017
Hardware Availability: Apr-2013
Software Availability: Mar-2017

Platform Notes

```
Sysinfo program /var//opt/cray/alps/spool/14533706/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3feldf68447e8a35
running on nid03790 Mon Jun 5 16:59:06 2017
```

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 6274
 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 : 8
  siblings  : 16
  physical 0: cores 0 1 2 3 4 5 6 7
cache size : 2048 KB
```

```
From /proc/meminfo
MemTotal:      33083764 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 = 3
```

```
uname -a:
Linux nid03790 3.0.101-0.46.1_1.0502.8871-cray_gem_c #1 SMP Sat Oct 22
15:26:43 UTC 2016 x86_64 x86_64 x86_64 GNU/Linux
```

```
SPEC is set to: /lustre/atlas2/stf006/scratch/vgv/spec/accel/kit75chester
Filesystem      Type      Size  Used Avail Use% Mounted on
10.36.226.77@o2ib200:/atlas2 lustre    14P   7.4P  5.8P  56% /lustre/atlas2
```

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

(End of data from sysinfo program)



SPEC ACCEL ACC Result

Copyright 2015-2017 Standard Performance Evaluation Corporation

Cray

(Test Sponsor: Oak Ridge National Laboratory)

NVIDIA Tesla K20X

Cray XK7 system

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 2.26

ACCEL license: 054A
Test sponsor: Oak Ridge National Laboratory
Tested by: Oak Ridge National Laboratory

Test date: May-2017
Hardware Availability: Apr-2013
Software Availability: Mar-2017

General Notes

Hardware no longer GA. Result shown for historical purposes.

Base Compiler Invocation

C benchmarks:
cc

Fortran benchmarks:
ftn

Benchmarks using both Fortran and C:
cc ftn

Base Optimization Flags

C benchmarks:
-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5

Fortran benchmarks:
-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5

Benchmarks using both Fortran and C:

353.cvlrleaf: -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5
359.miniGhost: -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.5
-Mnomain

The flags file that was used to format this result can be browsed at
https://www.spec.org/accel/flags/pgi2017_flags.20170621.00.html

You can also download the XML flags source by saving the following link:
https://www.spec.org/accel/flags/pgi2017_flags.20170621.00.xml

SPEC ACCEL is a trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC ACCEL v75.
Report generated on Wed Jun 21 17:15:27 2017 by SPEC ACCEL PS/PDF formatter v1290.
Originally published on 21 June 2017.