# SPEC ACCEL™ ACC Result

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Bull
(Test Sponsor: Technische Universitaet Dresden)

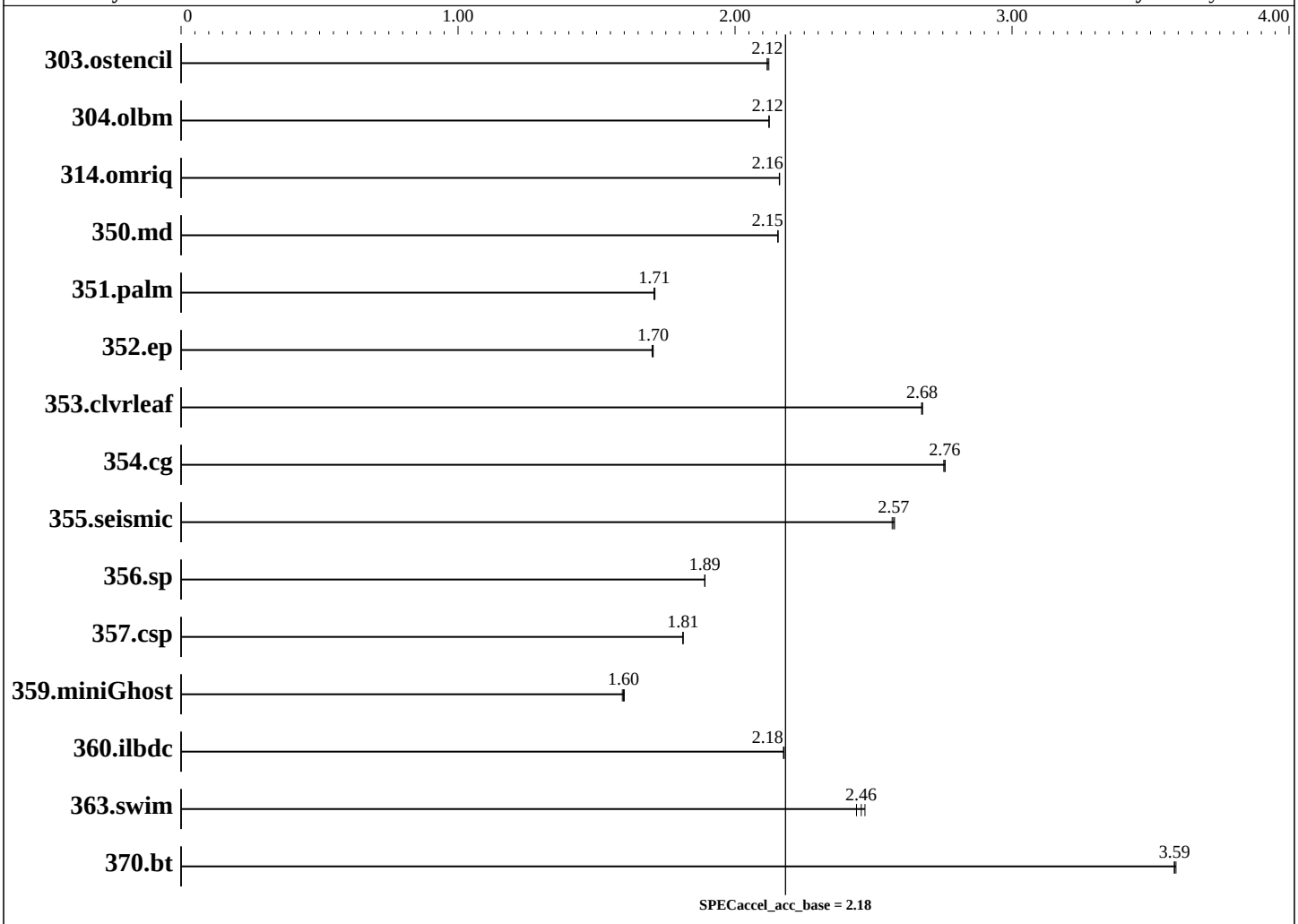
# NVIDIA Tesla K80
# Bull R400

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 2.18

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

**Test date:** Sep-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 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 PC4-2133P-R)
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 15.5
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 | **68.5** | **2.12** | 68.3 | 2.12 | 68.5 | 2.12 | | | | | | |
| 304.olbm | 214 | 2.12 | **214** | **2.12** | 214 | 2.12 | | | | | | |
| 314.omriq | 443 | 2.16 | **442** | **2.16** | 442 | 2.16 | | | | | | |
| 350.md | 117 | 2.15 | **117** | **2.15** | 117 | 2.16 | | | | | | |
| 351.palm | 216 | 1.71 | 217 | 1.71 | **217** | **1.71** | | | | | | |
| 352.ep | 311 | 1.70 | 312 | 1.70 | **311** | **1.70** | | | | | | |
| 353.clvrleaf | **166** | **2.68** | 166 | 2.68 | 166 | 2.67 | | | | | | |
| 354.cg | **148** | **2.76** | 148 | 2.76 | 148 | 2.75 | | | | | | |
| 355.seismic | 144 | 2.58 | **144** | **2.57** | 144 | 2.57 | | | | | | |
| 356.sp | **146** | **1.89** | 146 | 1.89 | 146 | 1.89 | | | | | | |
| 357.csp | 149 | 1.81 | 149 | 1.81 | **149** | **1.81** | | | | | | |
| 359.miniGhost | 231 | 1.60 | 232 | 1.59 | **231** | **1.60** | | | | | | |
| 360.ilbdc | 169 | 2.17 | **169** | **2.18** | 169 | 2.18 | | | | | | |
| 363.swim | 93.2 | 2.47 | **93.7** | **2.46** | 94.3 | 2.44 | | | | | | |
| 370.bt | 62.1 | 3.59 | **62.2** | **3.59** | 62.2 | 3.59 | | | | | | |

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/Docs/sysinfo
 $Rev: 6874 $ $Date:: 2013-11-20 #$ 0953404ef7e75a5f9bbb534c6de3f831
 running on taurusi2058 Mon Sep 14 17:28:10 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 taurusi2058 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 Jul 8 14:37

SPEC is set to: /tmp/spec-accel
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      ext4   62G  2.9G   56G   5% /tmp

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

(End of data from sysinfo program)
```

# Base Compiler Invocation

C benchmarks:
pgcc

Continued on next page

## Base Compiler Invocation (Continued)

Fortran benchmarks:
pgfortran

Benchmarks using both Fortran and C:
pgcc pgfortran

## Base Optimization Flags

C benchmarks:
-V15.5 -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.0
-tp=haswell-64

Fortran benchmarks:
-V15.5 -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda7.0
-tp=haswell-64

Benchmarks using both Fortran and C:

353.clvrleaf: -V15.5 -fast -Mfprelaxed -acc -ta=tesla:cc35
-ta=tesla:cuda7.0 -tp=haswell-64

359.miniGhost: -V15.5 -fast -Mfprelaxed -acc -ta=tesla:cc35
-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.20150930.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/accel/flags/pgi2014_flags.20150930.xml


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

Tested with SPEC ACCEL v1.0.
Report generated on Wed Sep 30 11:16:04 2015 by SPEC ACCEL PS/PDF formatter v1290.
Originally published on 30 September 2015.