### SPEC® ACCEL ACC Result

**Bull**

**(Test Sponsor: RWTH Aachen University)**

**NVIDIA Tesla K20Xm**

**bullx R421-E3**

- **SPECaccel_acc_peak = Not Run**
- **SPECaccel_acc_base = 2.00**

| Test Sponsor: | RWTH Aachen University |
| Test date: | Mar-2014 |
| Hardware Availability: | Jun-2013 |
| Software Availability: | Feb-2014 |

#### ACCEL license: 055A

**Bullx R421-E3**

#### Hardware

- **CPU Name:** Intel Xeon E5-2680
- **CPU Characteristics:**
  - CPU MHz: 2700
  - CPU MHz Maximum: 2700
  - FPU: Integrated
  - CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
  - 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: 20 MB I+D on chip per chip
  - Other Cache: None

#### Accelerator

- **Accel Model Name:** Tesla K20Xm
- **Accel Vendor:** NVIDIA
- **Accel Name:** NVIDIA Tesla K20Xm
- **Type of Accel:** GPU
- **Accel Connection:** PCIe 3.0 16x
- **Does Accel Use ECC:** Yes
- **Accel Driver:** NVIDIA UNIX x86.64 Kernel Module 331.49
- **Accel Description:** NVIDIA Tesla K20Xm, 2688 CUDA cores, 732 MHz, 6 GB GDDR5 RAM (Kepler Generation)

<table>
<thead>
<tr>
<th>Specmark</th>
<th>303.ostencil</th>
<th>304.olbm</th>
<th>314.omriq</th>
<th>350.md</th>
<th>351.palm</th>
<th>352.ep</th>
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**SPEC ACCEL_ACC Result**

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| Memory: | 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC) |
| Disk Subsystem: | 80 TB Netapp 6280 RAID 6 mixed 2 TB SATA disks |
| Other Hardware: | None |

**Software**

| Operating System: | Scientific Linux release 6.4 (Carbon) 2.6.32-358.23.2.el6.x86_64 |
| Compiler: | PGI Accelerator Server Complete, Release 14.2 |
| File System: | NFSv3 over Gb ethernet |
| System State: | Run level 5 (GPU driver loaded, no X11-Desktop running) |
| Other Software: | NVIDIA CUDA 5.5, driver 331.49 |
SPEC ACCEL_ACC Result

Bull
(Test Sponsor: RWTH Aachen University)
NVIDIA Tesla K20Xm
bullx R421-E3

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Results Table

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<tr>
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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 /work/fr356676/ACCEL_39/Docs/sysinfo
$Rev: 6874 $ $Date:: 2013-11-20 #$ 0953404ef7e75a5f9bb534c6de3f831
running on linuxnvc02.rz.RWTH-Aachen.DE Wed Mar 5 14:14:53 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 : Intel(R) Xeon(R) CPU E5-2680 0 @ 2.70GHz
2 "physical id"s (chips)
32 "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
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

Continued on next page
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**Platform Notes (Continued)**

From /proc/meminfo

```
MemTotal:       65937832 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

/usr/bin/lsb_release -d

```
Scientific Linux release 6.4 (Carbon)
```

From /etc/*release* /etc/*version*

```
redhat-release: Scientific Linux release 6.4 (Carbon)
system-release: Scientific Linux release 6.4 (Carbon)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6.4:ga
```

uname -a:

```
Linux linuxnvc02.rz.RWTH-Aachen.DE 2.6.32-358.23.2.el6.x86_64 #1 SMP Wed Oct 16 11:13:47 CDT 2013 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Nov 26 13:39

SPEC is set to: /work/fr356676/ACCEL_39

Filesystem          Type Size  Used Avail Use% Mounted on
na6280-5.rz.RWTH-Aachen.DE:/vol/work3 nfs 500G 471G  28G  94% /work3

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

(End of data from sysinfo program)

---

**Base Compiler Invocation**

C benchmarks:

- pgcc

Fortran benchmarks:

- pgfortran

Benchmarks using both Fortran and C:

- pgcc pgfortran

---

**Base Optimization Flags**

C benchmarks:

- -fast
- -Mfprelaxed
- -acc
- -ta=tesla:cc35
- -ta=tesla:cuda5.5

Continued on next page
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#### Base Optimization Flags (Continued)

**Fortran benchmarks:**
- `-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda5.5`

**Benchmarks using both Fortran and C:**
- `353.clvrleaf: -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda5.5`
- `359.miniGhost: -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda5.5 -Mnomain`

The flags file that was used to format this result can be browsed at


You can also download the XML flags source by saving the following link:

http://www.spec.org/accel/flags/pgi2014_flags.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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