



SPEC[®] ACCEL_ACC Result

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Bull

(Test Sponsor: RWTH Aachen University)

NVIDIA Tesla K20Xm

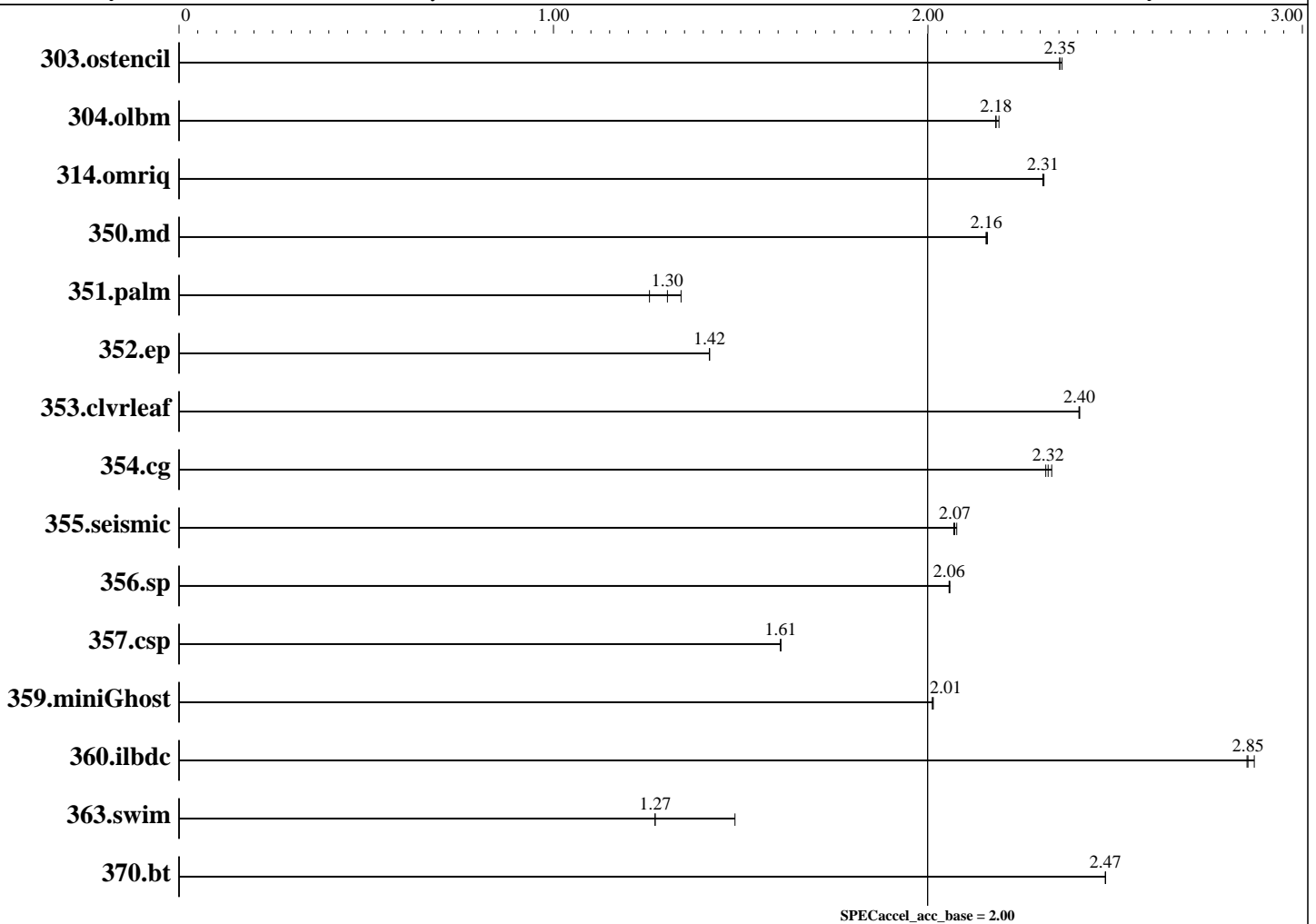
bullx R421-E3

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 2.00

ACCEL license: 055A
Test sponsor: RWTH Aachen University
Tested by: RWTH Aachen University

Test date: Mar-2014
Hardware Availability: Jun-2013
Software Availability: Feb-2014



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

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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 Description: NVIDIA Tesla K20Xm, 2688 CUDA cores, 732 MHz, 6 GB GDDR5 RAM (Kepler Generation)
 Accel Driver: NVIDIA UNIX x86_64 Kernel Module 331.49



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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



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	<u>61.6</u>	<u>2.35</u>	61.5	2.36	61.7	2.35						
304.olbm	<u>209</u>	<u>2.18</u>	208	2.19	209	2.18						
314.omriq	414	2.31	414	2.31	<u>414</u>	<u>2.31</u>						
350.md	<u>117</u>	<u>2.16</u>	117	2.16	117	2.16						
351.palm	<u>284</u>	<u>1.30</u>	294	1.26	276	1.34						
352.ep	<u>374</u>	<u>1.42</u>	374	1.42	374	1.42						
353.clvleaf	185	2.40	185	2.41	<u>185</u>	<u>2.40</u>						
354.cg	176	2.31	<u>176</u>	<u>2.32</u>	175	2.33						
355.seismic	178	2.08	<u>179</u>	<u>2.07</u>	179	2.07						
356.sp	134	2.06	<u>134</u>	<u>2.06</u>	134	2.06						
357.csp	168	1.61	<u>168</u>	<u>1.61</u>	168	1.61						
359.miniGhost	<u>183</u>	<u>2.01</u>	183	2.01	183	2.01						
360.ilbdc	128	2.87	129	2.85	<u>129</u>	<u>2.85</u>						
363.swim	<u>181</u>	<u>1.27</u>	155	1.48	181	1.27						
370.bt	90.1	2.47	<u>90.1</u>	<u>2.47</u>	90.1	2.47						

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 $ $Date:: 2013-11-20 #$ 0953404ef7e75a5f9bbb534c6de3f831
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
```

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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  423G   78G  85%
  /rwthfs/rz/na6280-5/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

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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.civrleaf: -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

http://www.spec.org/accel/flags/pgi2014_flags.20150303.html

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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