



SPEC ACCEL™ ACC Result

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Supermicro
(Test Sponsor: NVIDIA Corporation)

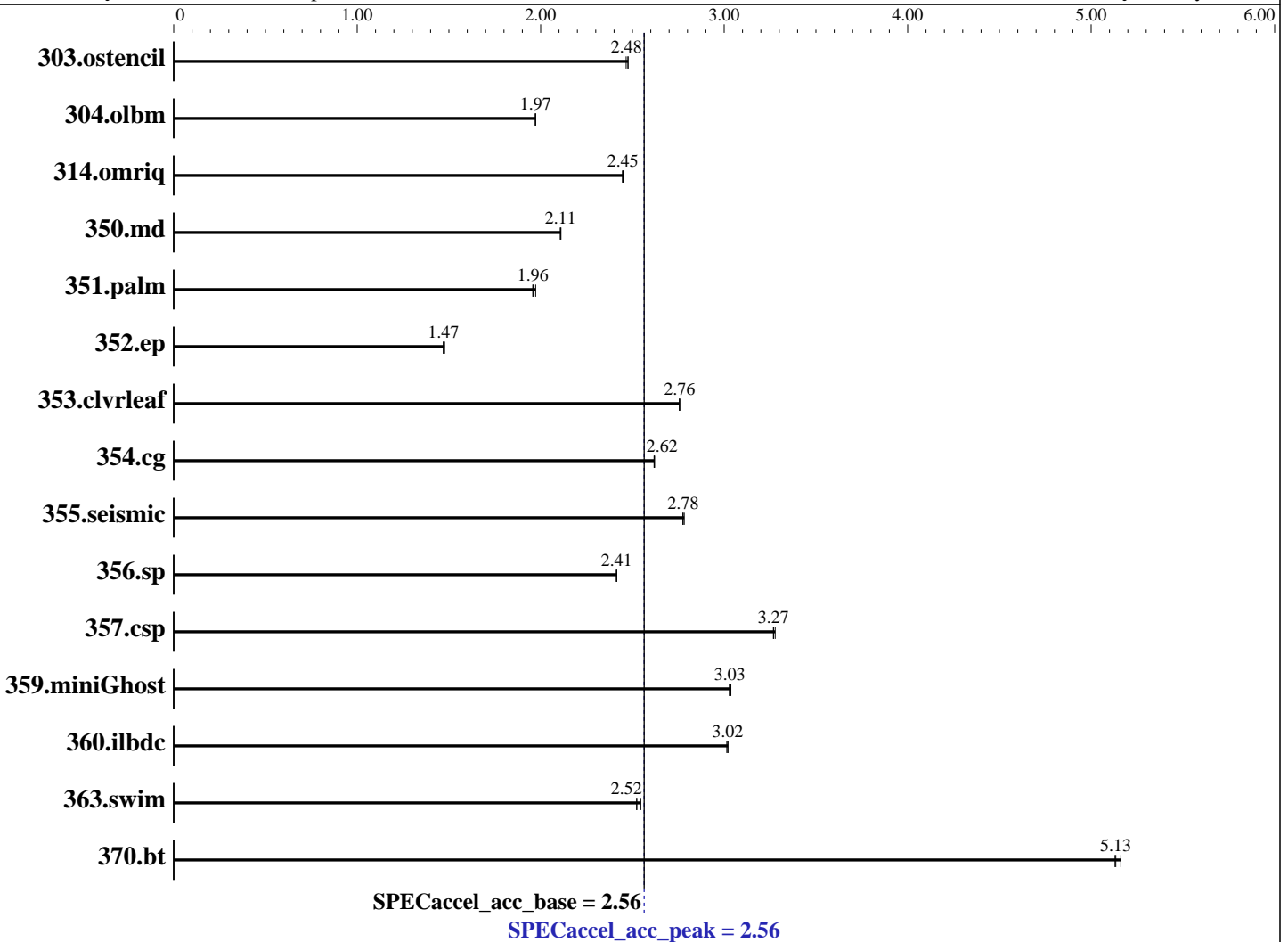
Tesla K40m SuperServer 1028GR-TR

SPECaccel_acc_peak = 2.56

SPECaccel_acc_base = 2.56

ACCEL license: 019
Test sponsor: NVIDIA Corporation
Tested by: NVIDIA Corporation

Test date: May-2017
Hardware Availability: Oct-2015
Software Availability: May-2017



Hardware

CPU Name: Intel Xeon E5-2698 v3
 CPU Characteristics:
 CPU MHz: 2300
 CPU MHz Maximum: 3600
 FPU: Integrated
 CPU(s) enabled: 32 cores, 2 chips, 16 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: 40 MB I+D on chip per chip
 Other Cache: None

Continued on next page

Accelerator

Accel Model Name: Tesla K40
 Accel Vendor: NVIDIA Corporation
 Accel Name: Tesla K40m
 Type of Accel: GPU
 Accel Connection: PCIe
 Does Accel Use ECC: Yes
 Accel Description: See Notes
 Accel Driver: NVIDIA UNIX x86_64 Kernel Module 375.20



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Hardware (Continued)

Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 500 GB Seagate ST9500620NS 7200 RPM SATA
Other Hardware: None

Software

Operating System: CentOS Linux release 7.2.1511 (Core)
3.10.0-327.22.2.el7.x86_64
Compiler: PGI Professional Edition, Release 17.5
File System: xfs
System State: Run level 3 (multi-user)
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	58.8	2.47	58.6	2.48	58.6	2.48	58.8	2.47	58.6	2.48	58.6	2.48
304.olbm	231	1.97	231	1.97	231	1.97	231	1.97	231	1.97	231	1.97
314.omriq	391	2.45	390	2.45	391	2.45	391	2.45	390	2.45	391	2.45
350.md	120	2.11	120	2.11	119	2.11	120	2.11	120	2.11	119	2.11
351.palm	189	1.96	189	1.96	188	1.97	189	1.96	189	1.96	188	1.97
352.ep	360	1.47	359	1.48	361	1.47	360	1.47	359	1.48	361	1.47
353.clvleaf	161	2.76	161	2.76	161	2.76	161	2.76	161	2.76	161	2.76
354.cg	156	2.62	156	2.62	156	2.62	156	2.62	156	2.62	156	2.62
355.seismic	133	2.77	133	2.78	133	2.78	133	2.77	133	2.78	133	2.78
356.sp	114	2.41	114	2.41	114	2.41	114	2.41	114	2.41	114	2.41
357.csp	82.6	3.27	82.4	3.28	82.6	3.27	82.6	3.27	82.4	3.28	82.6	3.27
359.miniGhost	122	3.03	122	3.03	122	3.04	122	3.03	122	3.03	122	3.04
360.ilbdc	122	3.02	122	3.01	122	3.02	122	3.02	122	3.01	122	3.02
363.swim	90.4	2.55	91.1	2.52	91.2	2.52	90.4	2.55	91.1	2.52	91.2	2.52
370.bt	43.4	5.13	43.5	5.13	43.2	5.16	43.4	5.13	43.5	5.13	43.2	5.16

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

Operating System Notes

Stacksize set to 'unlimited'



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Platform Notes

```
Sysinfo program /local/home/colgrove/SPECACCEL/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3feldf68447e8a35
running on hsw8 Wed May 10 13:11:00 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 : Intel(R) Xeon(R) CPU E5-2698 v3 @ 2.30GHz
 2 "physical id"s (chips)
 64 "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  : 32
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 40960 KB
```

```
From /proc/meminfo
MemTotal:      264038532 kB
HugePages_Total:       20
Hugepagesize:   2048 kB
```

```
/usr/bin/lsc_release -d
CentOS Linux release 7.2.1511 (Core)
```

```
From /etc/*release* /etc/*version*
centos-release: CentOS Linux release 7.2.1511 (Core)
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.2 (Source)
os-release:
  NAME="CentOS Linux"
  VERSION="7 (Core)"
  ID="centos"
  ID_LIKE="rhel fedora"
  VERSION_ID="7"
  PRETTY_NAME="CentOS Linux 7 (Core)"
  ANSI_COLOR="0;31"
  CPE_NAME="cpe:/o:centos:centos:7"
redhat-release: CentOS Linux release 7.2.1511 (Core)
system-release: CentOS Linux release 7.2.1511 (Core)
system-release-cpe: cpe:/o:centos:centos:7
```

```
uname -a:
Linux hsw8 3.10.0-327.22.2.el7.x86_64 #1 SMP Thu Jun 23 17:05:11 UTC 2016
x86_64 x86_64 x86_64 GNU/Linux
```

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Platform Notes (Continued)

run-level 3 May 10 10:51

```
SPEC is set to: /local/home/colgrove/SPECACCEL
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/centos-root xfs   443G   29G  414G   7% /
```

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

(End of data from sysinfo program)
Information from pgacceleinfo

CUDA Driver Version: 8000
NVRM version: NVIDIA UNIX x86_64 Kernel Module 375.20 Tue Nov 15 16:49:10 PST 2016

Device Number: 0
Device Name: Tesla K40m
Device Revision Number: 3.5
Global Memory Size: 12029132800
Number of Multiprocessors: 15
Number of SP Cores: 2880
Number of DP Cores: 960
Concurrent Copy and Execution: Yes
Total Constant Memory: 65536
Total Shared Memory per Block: 49152
Registers per Block: 65536
Warp Size: 32
Maximum Threads per Block: 1024
Maximum Block Dimensions: 1024, 1024, 64
Maximum Grid Dimensions: 2147483647 x 65535 x 65535
Maximum Memory Pitch: 2147483647B
Texture Alignment: 512B
Clock Rate: 745 MHz
Execution Timeout: No
Integrated Device: No
Can Map Host Memory: Yes
Compute Mode: default
Concurrent Kernels: Yes
ECC Enabled: Yes
Memory Clock Rate: 3004 MHz
Memory Bus Width: 384 bits
L2 Cache Size: 1572864 bytes
Max Threads Per SMP: 2048
Async Engines: 2
Unified Addressing: Yes
Managed Memory: Yes
PGI Compiler Option: -ta=tesla:cc35



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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:cuda8.0

Fortran benchmarks:
-fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda8.0

Benchmarks using both Fortran and C:

353.clvrfleaf: -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda8.0

359.miniGhost: -fast -Mfprelaxed -acc -ta=tesla:cc35 -ta=tesla:cuda8.0
-Mnomain

Peak Optimization Flags

C benchmarks:

303.ostencil: basepeak = yes

304.olbm: basepeak = yes

314.omriq: basepeak = yes

352.ep: basepeak = yes

354.cg: basepeak = yes

357.csp: basepeak = yes

370.bt: basepeak = yes

Fortran benchmarks:

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Peak Optimization Flags (Continued)

350.md: basepeak = yes

351.palm: basepeak = yes

355.seismic: basepeak = yes

356.sp: basepeak = yes

360.ilbdc: basepeak = yes

363.swim: basepeak = yes

Benchmarks using both Fortran and C:

353.clvleaf: basepeak = yes

359.miniGhost: basepeak = yes

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

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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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