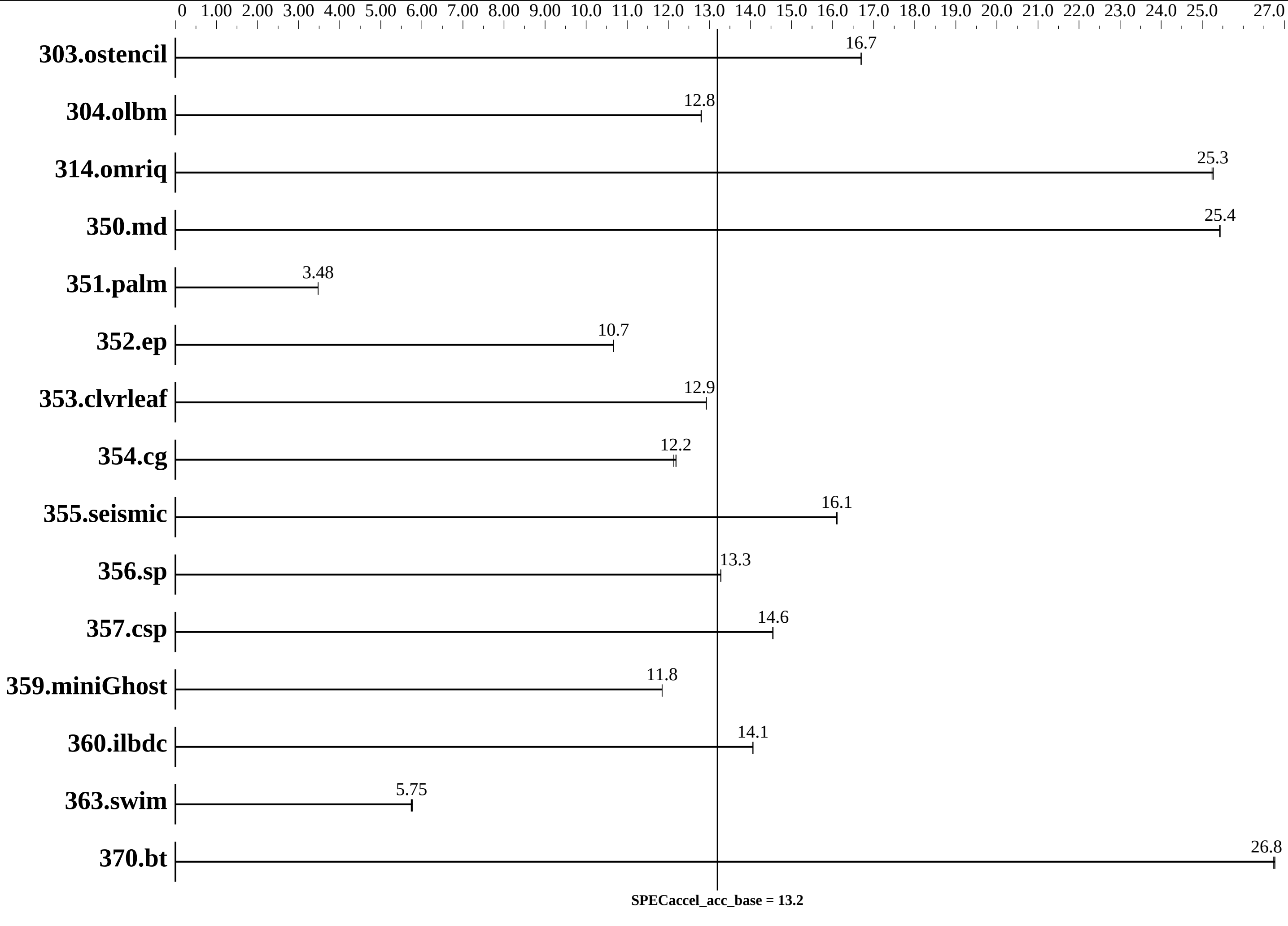
SPEC ACCEL™ ACC Result

Lenovo Global Technology
NVIDIA Tesla V100-PCIE-16GB
ThinkSystem SR655

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 13.2

ACCEL license:	28	**Test date:**	Jul-2019
Test sponsor:	Lenovo Global Technology	**Hardware Availability:**	Aug-2019
Tested by:	Lenovo Global Technology	**Software Availability:**	Aug-2019



Hardware

CPU Name:	AMD EPYC 7742 64-Core
CPU Characteristics:	Turbo up to 3.4 GHz
CPU MHz:	2250
CPU MHz Maximum:	3400
FPU:	Integrated
CPU(s) enabled:	64 cores, 1 chip, 64 cores/chip, 2 threads/core
CPU(s) orderable:	1 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	256 MB I+D on chip per chip 16 MB shared / 4 cores

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Accelerator

Accel Model Name:	Tesla V100
Accel Vendor:	NVIDIA Corporation
Accel Name:	NVIDIA Tesla V100-PCIE-16GB
Type of Accel:	GPU
Accel Connection:	PCIe 3.0 16x
Does Accel Use ECC:	Yes
Accel Description:	NVIDIA Tesla V100-PCIE-16GB
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 418.39

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Hardware (Continued)

Other Cache:	None
Memory:	256 GB (8 x 32 GB 2Rx4 PC4-3200AA-R)
Disk Subsystem:	1 x 480 GB SATA 2.5" SSD
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 12 SP4 4.12.14-94.41-default
Compiler:	PGI Professional Edition, Release 19.5
File System:	xfs
System State:	Multi-user, run level 3
Other Software:	CUDA 10.1 SDK

Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
303.ostencil	8.69	16.7	8.68	16.7	**8.69**	**16.7**						
304.olbm	35.6	12.8	**35.5**	**12.8**	35.5	12.8						
314.omriq	37.8	25.3	37.9	25.2	**37.8**	**25.3**						
350.md	9.91	25.4	**9.91**	**25.4**	9.91	25.4						
351.palm	106	3.48	107	3.47	**106**	**3.48**						
352.ep	49.7	10.7	**49.7**	**10.7**	49.7	10.7						
353.clvrleaf	34.4	12.9	**34.4**	**12.9**	34.4	12.9						
354.cg	33.5	12.2	33.6	12.1	**33.5**	**12.2**						
355.seismic	23.0	16.1	**23.0**	**16.1**	23.0	16.1						
356.sp	20.8	13.3	20.8	13.3	**20.8**	**13.3**						
357.csp	**18.6**	**14.6**	18.6	14.5	18.6	14.6						
359.miniGhost	31.1	11.8	**31.1**	**11.8**	31.1	11.8						
360.ilbdc	26.1	14.1	26.1	14.1	**26.1**	**14.1**						
363.swim	39.9	5.77	40.1	5.74	**40.0**	**5.75**						
370.bt	8.33	26.8	**8.33**	**26.8**	8.34	26.7						

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

Platform Notes

```
Sysinfo program /home/ACCEL1.2/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on bannerrh75 Tue Mar 26 23:45:45 2019

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
```

Continued on next page

Platform Notes (Continued)

```
  http://www.spec.org/accel/Docs/config.html#sysinfo

From /proc/cpuinfo
   model name : AMD EPYC 7742 64-Core Processor
      1 "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 : 64
      siblings  : 64
      physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
      22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
      47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
   cache size : 512 KB

From /proc/meminfo
   MemTotal:       264016424 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 12 SP4

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 4
      # This file is deprecated and will be removed in a future service pack or
      release.
      # Please check /etc/os-release for details about this release.
   os-release:
      NAME="SLES"
      VERSION="12-SP4"
      VERSION_ID="12.4"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP4"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp4"

uname -a:
   Linux bannerrh75 4.12.14-94.41-default #1 SMP Wed Oct 31 12:25:04 UTC 2018
   (3090901) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jul 3 10:26

SPEC is set to: /home/ACCEL1.2
   Filesystem     Type  Size  Used Avail Use% Mounted on
```

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Platform Notes (Continued)

```
    /dev/sda4      xfs   245G   72G  174G  30% /home
 Additional information from dmidecode:

    Warning: Use caution when you interpret this section. The 'dmidecode' program
    reads system data which is "intended to allow hardware to be accurately
    determined", but the intent may not be met, as there are frequent changes to
    hardware, firmware, and the "DMTF SMBIOS" standard.

   BIOS Lenovo CFE101Y 06/22/2019
   Memory:
    8x Samsung M393A4K40DB2-CWE 32 GB 2 rank 3200 MHz
    8x Unknown Unknown

 (End of data from sysinfo program)
```

General Notes

```
Yes: The test sponsor attests, as of date of publication,
that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication,
that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication,
that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.
```

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:cc70 -ta=tesla:cuda10.1

Fortran benchmarks:
 -fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

353.clvrleaf: `-fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1`

359.miniGhost: `-fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1 -Mnomain`

The flags files that were used to format this result can be browsed at
https://www.spec.org/accel/flags/pgi2017_flags.20190807.html
https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.20190807.html

You can also download the XML flags sources by saving the following links:
https://www.spec.org/accel/flags/pgi2017_flags.20190807.xml
https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.20190807.xml

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

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