## Lenovo Global Technology

**NVIDIA Tesla V100-PCIE-16GB**

**ThinkSystem SR655**

**SPECaccel_acc_peak = Not Run**

**SPECaccel_acc_base = 13.2**

### 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

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

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

### 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

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### 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

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### Results Table

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<th>Benchmark</th>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
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**Platform Notes (Continued)**

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

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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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SPEC ACCEL ACC Result

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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

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

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC ACCEL v1.2.
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