Lenovo Global Technology
Tesla V100-PCIE-16GB
ThinkSystem SR670

**SPECaccel_acc_peak = Not Run**

**SPECaccel_acc_base = 12.0**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
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<tbody>
<tr>
<td>303.ostencil</td>
<td>16.3</td>
</tr>
<tr>
<td>304.olbm</td>
<td>12.2</td>
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<tr>
<td>314.omriq</td>
<td>20.3</td>
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<tr>
<td>350.md</td>
<td>23.6</td>
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<td>351.palm</td>
<td>3.14</td>
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<tr>
<td>352.ep</td>
<td>10.4</td>
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<tr>
<td>353.clvrleaf</td>
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<td>354.cg</td>
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<tr>
<td>355.seismic</td>
<td>14.3</td>
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<td>356.sp</td>
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<td>357.csp</td>
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<tr>
<td>359.miniGhost</td>
<td>9.80</td>
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<tr>
<td>360.ilbdc</td>
<td>12.5</td>
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<tr>
<td>363.swim</td>
<td>3.89</td>
</tr>
<tr>
<td>370.bt</td>
<td>26.4</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon Gold 6142
- **CPU Characteristics:**
  - CPU MHz: 2600
  - CPU MHz Maximum: 3700
  - FPU: Integrated
  - CPU(s) enabled: 32 cores, 2 chips, 16 cores/chip
  - CPU(s) orderable: 2 chips
  - Primary Cache: 32 KB I + 32 KB D on chip per core
  - Secondary Cache: 1 MB I+D on chip per core
  - L3 Cache: 22 MB I+D on chip per chip
  - Other Cache: None

**Accelerator**

- **Accel Model Name:** Tesla V100
- **Accel Vendor:** NVIDIA Corporation
- **Accel Name:** Tesla V100-PCIE-16GB
- **Type of Accel:** GPU
- **Accel Connection:** PCIe
- **Does Accel Use ECC:** Yes
- **Accel Description:** Tesla V100-PCIE-16GB
- **Accel Driver:** NVIDIA UNIX x86_64 Kernel Module 396.26

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Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Lenovo Global Technology
Tesla V100-PCIE-16GB
ThinkSystem SR670

SPECCaccel_acc_peak = Not Run
SPECCaccel_acc_base = 12.0

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

Hardware (Continued)
Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2666)
Disk Subsystem: Micron 480 GB 6 Gbps SATA 2.5" SSD (4X87A10153)
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 7.5 (Maipo) 3.10.0-862.el7.x86_64
Compiler: PGI Professional Edition, Release 18.7 LLVM
File System: xfs
System State: Run level 3 (Multi-User)
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Base Seconds</th>
<th>Ratio</th>
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</table>

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

Submit Notes
The config file option 'submit' was used.
Lenovo Global Technology
Tesla V100-PCIE-16GB
ThinkSystem SR670

SPECaccel_acc_peak = Not Run
SPECaccel_acc_base = 12.0

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

Platform Notes
Sysinfo program /home/ACCEL1.2/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on bannerrh75 Fri Feb 22 14:01:56 2019

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) Gold 6142 CPU @ 2.60GHz
  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 : 16
siblings : 16
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 : 22528 KB

From /proc/meminfo
MemTotal: 792040060 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 7.5 (Maipo)

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.5 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.5"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.5 (Maipo)"
redhat-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.5:ga:server

uname -a:
Linux bannerrh75 3.10.0-862.el7.x86_64 #1 SMP Wed Mar 21 18:14:51 EDT 2018
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 22 05:06

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Platform Notes (Continued)

SPEC is set to: /home/ACCEL1.2
/dev/mapper/rhel-home xfs 192G 71G 121G 37% /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 -[G1E105G-1.10]- 12/07/2018
Memory:
24x Micron 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666 MHz

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.
Run nvidia-smi -pm 1 to enable persistence mode.

Base Compiler Invocation

C benchmarks:
pgcc-llvm
Fortran benchmarks:
pgfortran-llvm
Benchmarks using both Fortran and C:
pgcc-llvm pgfortran-llvm

Base Optimization Flags

C benchmarks:
-fast -Mfprelaxed -acc -ta=tesla:cc70

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### Lenovo Global Technology

**ThinkSystem SR670**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<td><strong>SPECaccel_acc_base</strong></td>
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#### Base Optimization Flags (Continued)

For Fortran benchmarks:

- `-fast -Mfprelaxed -acc -ta=tesla:cc70`

For benchmarks using both Fortran and C:

- `353.clvrleaf: -fast -Mfprelaxed -acc -ta=tesla:cc70`
- `359.miniGhost: -fast -Mfprelaxed -acc -ta=tesla:cc70 -Mnomain`

The flags files that were used to format this result can be browsed at:

- [https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.html](https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.html)
- [https://www.spec.org/accel/flags/pgi2017_flags.20190321.html](https://www.spec.org/accel/flags/pgi2017_flags.20190321.html)

You can also download the XML flags sources by saving the following links:

- [https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.xml](https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.xml)
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