Lenovo Global Technology  
NVIDIA Tesla V100-PCIE-16GB  
ThinkSystem SR650  

**SPECaccel_acc_peak = Not Run**  
**SPECaccel_acc_base = 12.2**

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>Lenovo Global Technology</th>
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</thead>
<tbody>
<tr>
<td>Tested by</td>
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</tr>
<tr>
<td>ACCEL license</td>
<td>28</td>
</tr>
<tr>
<td>Test date</td>
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</tr>
<tr>
<td>Hardware Availability</td>
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<tr>
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</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 6240</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td></td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2600</td>
</tr>
<tr>
<td>CPU MHz Maximum</td>
<td>3900</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>36 cores, 2 chips, 18 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1,2 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>22 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
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</tbody>
</table>

### Accelerator

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accel Model Name</td>
<td>Tesla V100</td>
</tr>
<tr>
<td>Accel Vendor</td>
<td>NVIDIA Corporation</td>
</tr>
<tr>
<td>Accel Name</td>
<td>NVIDIA Tesla V100-PCIE-16GB</td>
</tr>
<tr>
<td>Type of Accel</td>
<td>GPU</td>
</tr>
<tr>
<td>Accel Connection</td>
<td>PCIe 3.0 x16</td>
</tr>
<tr>
<td>Does Accel Use ECC</td>
<td>Yes</td>
</tr>
<tr>
<td>Accel Description</td>
<td>NVIDIA V100-PCIE-16GB</td>
</tr>
<tr>
<td>Accel Driver</td>
<td>NVIDIA UNIX x86_64 Kernel Module 396.26</td>
</tr>
</tbody>
</table>
Lenovo Global Technology  
NVIDIA Tesla V100-PCIE-16GB  
ThinkSystem SR650

**SPECaccel_acc_peak = Not Run**

**SPECaccel_acc_base = 12.2**

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<th>Test date: Mar-2019</th>
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<td>Software Availability: Apr-2019</td>
</tr>
</tbody>
</table>

### Hardware (Continued)

- Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R)
- Disk Subsystem: 1 X Lenovo 1 TB SAS 2.5" HDD (JBOD)
- Other Hardware: None

### Software

- Operating System: Red Hat Enterprise Linux Server release 7.6 (Maipo) 3.10.0-957.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>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Ratio</th>
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<tbody>
<tr>
<td>303.ostencil</td>
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<td>314.omriq</td>
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<td>350.md</td>
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<td>24.5</td>
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<td>351.palm</td>
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<td>353.clrleaf</td>
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<td>26.5</td>
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</tr>
</tbody>
</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
NVIDIA Tesla V100-PCIE-16GB
ThinkSystem SR650

SPECaccel_acc_peak = Not Run
SPECaccel_acc_base = 12.2

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

Platform Notes

Sysinfo program /home/ACCEL1.2/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on cy01rh76 Wed Mar 09 02:46:29 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 6240 CPU @ 2.60GHz
- 2 "physical id"s (chips)
- 36 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
- cpu cores : 18
- siblings : 18
- physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
- physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
- cache size : 25344 KB

From /proc/meminfo
- MemTotal: 792031344 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
- Red Hat Enterprise Linux Server release 7.6 (Maipo)

From /etc/*release* /etc/*version*
- os-release:
  - NAME="Red Hat Enterprise Linux Server"
  - VERSION="7.6 (Maipo)"
  - ID="rhel"
  - ID_LIKE="fedora"
  - VARIANT="Server"
  - VARIANT_ID="server"
  - VERSION_ID="7.6"
  - PRETTY_NAME="Red Hat Enterprise Linux Server 7.6 (Maipo)"
  - redhat-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
  - system-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)

uname -a:
Linux cy01rh76 3.10.0-957.el7.x86_64 #1 SMP Thu Oct 4 20:48:51 UTC 2018
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 09 02:45
Lenovo Global Technology
NVIDIA Tesla V100-PCIE-16GB
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Platform Notes (Continued)

SPEC is set to: /home/ACCEL1.2
Filesystem            Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   477G   81G  396G  17% /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 -[IVE135S-2.10]- 03/08/2019
Memory:
24x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933 MT/s

(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.
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
Fortran benchmarks:
-fast -Mfprelaxed -acc -ta=tesla:cc70
Lenovo Global Technology
NVIDIA Tesla V100-PCIE-16GB
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Base Optimization Flags (Continued)

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.20190327.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.20190327.xml
https://www.spec.org/accel/flags/pgi2017_flags.20190321.xml

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

Tested with SPEC ACCEL v1.2.
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