# SPEC ACCEL™ ACC Result

## Lenovo Global Technology
### NVIDIA Tesla A100-PCIE-40GB
#### ThinkSystem SR655

**SPECaccel_acc_peak** = 24.2  
**SPECaccel_acc_base** = 24.1

<table>
<thead>
<tr>
<th>ACCEL license</th>
<th>28</th>
<th>Test date: Jan-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor</td>
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### Hardware
```
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>303.ostencil</td>
<td>28.2</td>
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<tr>
<td>304.olbm</td>
<td>44.1</td>
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<tr>
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<td>27.7</td>
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<td>356.sp</td>
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<td>357.sp</td>
<td>30.2</td>
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<td>359.miniGhost</td>
<td>16.7</td>
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<td>360.ilbdc</td>
<td>24.3</td>
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<td>363.swim</td>
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<td>370.bt</td>
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### Accelerator
```
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</table>
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**SPECaccel_acc_peak** = 24.1

### CPU Characteristics
- **CPU Name:** AMD EPYC 7763  
- **CPU Characteristics:** Turbo up to 3.5 GHz  
- **CPU MHz:** 2450  
- **CPU MHz Maximum:** 3500  
- **FPU:** Integrated  
- **CPU(s) enabled:** 64 cores, 1 chip, 64 cores/chip  
- **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  
- **32 MB shared / 8 cores**

### Accelerator
- **Accel Model Name:** NVIDIA Tesla A100-PCIE-40GB  
- **Accel Vendor:** NVIDIA Corporation  
- **Accel Name:** NVIDIA Tesla A100-PCIE-40GB  
- **Type of Accel:** GPU  
- **Accel Connection:** PCIe 4.0 16x  
- **Does Accel Use ECC:** Yes  
- **Accel Description:** NVIDIA Tesla A100-PCIE-40GB  
- **Accel Driver:** NVIDIA UNIX x86_64 Kernel Module 450.51.05

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Continued on next page
Lenovo Global Technology
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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 2.5" SSD
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux release 8.3 (Ootpa)
Compiler: Nvidia HPC SDK Release 21.3
File System: xfs
System State: Run level 3
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>58.0</td>
<td>3.84</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.
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NVIDIA Tesla A100-PCIE-40GB
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**Platform Notes**

Sysinfo program /home/ACCEL1.3/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on amd2srh833 Tue May 11 20:26:42 2021

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 : AMD EPYC 7763 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:       263708564 kB
- HugePages_Total:       0
- Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*

NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.3"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
- Linux amd2srh833 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 13 11:28

SPEC is set to: /home/ACCEL1.3

Continued on next page
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Platform Notes (Continued)
/dev/sda3 xfs 419G 76G 343G 19% /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 CFE125L 03/26/2021
Memory:
  8x Samsung M393A4G43AB3-CWE 32 GB 2 rank 3200 MT/s
  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:
  nvc
Fortran benchmarks:
  nvfortran
Benchmarks using both Fortran and C:
  nvc nvfortran

Base Optimization Flags
C benchmarks:
  -fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath
Fortran benchmarks:
  -fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath
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### Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

- 353.clvrleaf: `-fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath`
- 359.miniGhost: `-fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath -Mnomain`

### Peak Compiler Invocation

**C benchmarks:**
- `nvc`

**Fortran benchmarks:**
- `nvfortran`

Benchmarks using both Fortran and C:
- `nvc nvfortran`

### Peak Optimization Flags

**C benchmarks:**
- `-fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath`

**Fortran benchmarks:**
- `-fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath`

Benchmarks using both Fortran and C:
- 353.clvrleaf: `-fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath`
- 359.miniGhost: `-fast -Mstack_arrays -Mnouniform -Mfprelaxed -acc -gpu=fastmath -Mnomain`

The flags file that was used to format this result can be browsed at [https://www.spec.org/accel/flags/nvidia_flags.20210608.html](https://www.spec.org/accel/flags/nvidia_flags.20210608.html)

You can also download the XML flags source by saving the following link:
[https://www.spec.org/accel/flags/nvidia_flags.20210608.xml](https://www.spec.org/accel/flags/nvidia_flags.20210608.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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