



SPEC ACCEL™ ACC Result

Copyright 2015-2021 Standard Performance Evaluation Corporation

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

SPECaccel_acc_peak = 24.2

SPECaccel_acc_base = 24.1

ACCEL license: 28

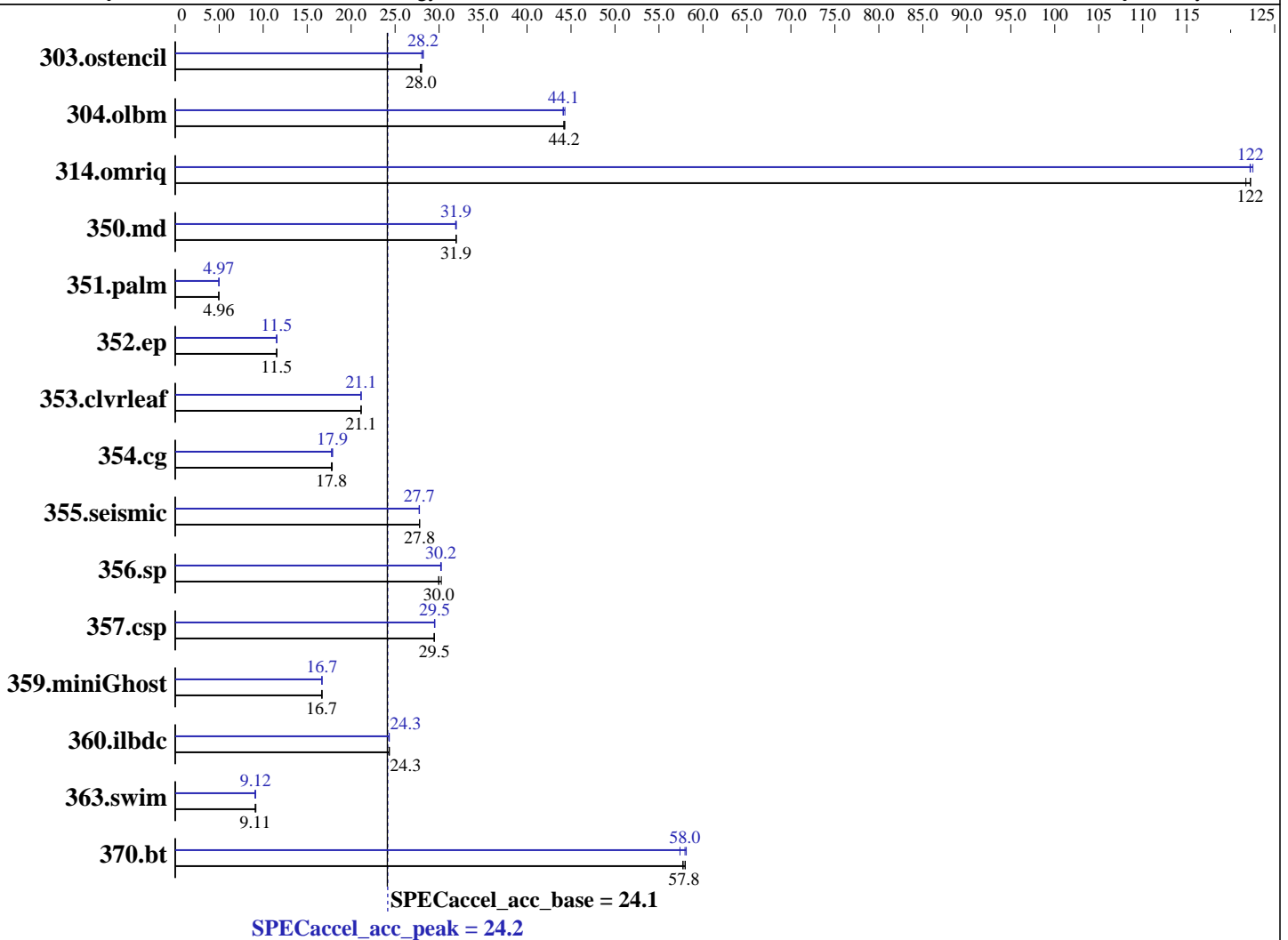
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Jan-2021

Hardware Availability: May-2021

Software Availability: May-2021



Hardware

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

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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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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)
4.18.0-240.el8.x86_64
Compiler: Nvidia HPC SDK Release 21.3
File System: xfs
System State: Run level 3
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	<u>5.19</u>	<u>28.0</u>	5.17	28.0	5.20	27.9	5.14	28.2	<u>5.15</u>	<u>28.2</u>	5.17	28.0
304.olbm	10.3	44.3	10.3	44.2	<u>10.3</u>	<u>44.2</u>	<u>10.3</u>	<u>44.1</u>	10.3	44.3	10.3	44.1
314.omriq	7.85	122	7.82	122	<u>7.82</u>	<u>122</u>	7.82	122	<u>7.82</u>	<u>122</u>	7.80	123
350.md	7.89	31.9	7.88	32.0	<u>7.89</u>	<u>31.9</u>	7.88	32.0	7.91	31.9	<u>7.90</u>	<u>31.9</u>
351.palm	<u>74.7</u>	<u>4.96</u>	74.8	4.95	74.6	4.96	<u>74.4</u>	<u>4.97</u>	74.5	4.96	74.4	4.97
352.ep	<u>46.0</u>	<u>11.5</u>	45.9	11.5	46.0	11.5	45.9	11.6	46.0	11.5	<u>45.9</u>	<u>11.5</u>
353.clvrleaf	21.1	21.1	<u>21.1</u>	<u>21.1</u>	21.1	21.1	21.1	21.1	<u>21.1</u>	<u>21.1</u>	21.1	21.1
354.cg	22.9	17.9	23.0	17.8	<u>23.0</u>	<u>17.8</u>	<u>22.8</u>	<u>17.9</u>	23.0	17.8	22.8	17.9
355.seismic	13.3	27.8	13.3	27.8	<u>13.3</u>	<u>27.8</u>	13.3	27.8	13.3	27.7	<u>13.3</u>	<u>27.7</u>
356.sp	9.12	30.3	<u>9.21</u>	<u>30.0</u>	9.21	30.0	9.12	30.3	<u>9.14</u>	<u>30.2</u>	9.14	30.2
357.csp	9.17	29.5	9.17	29.4	<u>9.17</u>	<u>29.5</u>	9.16	29.5	<u>9.15</u>	<u>29.5</u>	9.15	29.5
359.miniGhost	22.2	16.7	22.1	16.7	<u>22.1</u>	<u>16.7</u>	22.1	16.7	<u>22.1</u>	<u>16.7</u>	22.1	16.7
360.ilbdc	15.1	24.4	15.1	24.3	<u>15.1</u>	<u>24.3</u>	15.1	24.3	<u>15.1</u>	<u>24.3</u>	15.1	24.3
363.swim	25.1	9.17	<u>25.2</u>	<u>9.11</u>	25.3	9.10	25.2	9.14	25.4	9.07	<u>25.2</u>	<u>9.12</u>
370.bt	<u>3.86</u>	<u>57.8</u>	3.84	58.0	3.86	57.7	3.89	57.4	<u>3.85</u>	<u>58.0</u>	3.84	58.1

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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Platform Notes

Sysinfo program /home/ACCEL1.3/Docs/sysinfo
\$Rev: 6965 \$ \$Date:: 2015-04-21 #\$ c05a7f14b1b1765e3felfdf68447e8a35
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*
os-release:
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
Filesystem Type Size Used Avail Use% Mounted on

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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.cvrleaf: -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.cvrleaf: -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

You can also download the XML flags source by saving the following link:
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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