



SPEC ACCEL™ ACC Result

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Lenovo Global Technology
NVIDIA Tesla V100S-PCIE-16GB
ThinkSystem SR860 V2

SPECaccel_acc_peak = 14.4

SPECaccel_acc_base = 14.4

ACCEL license: 28

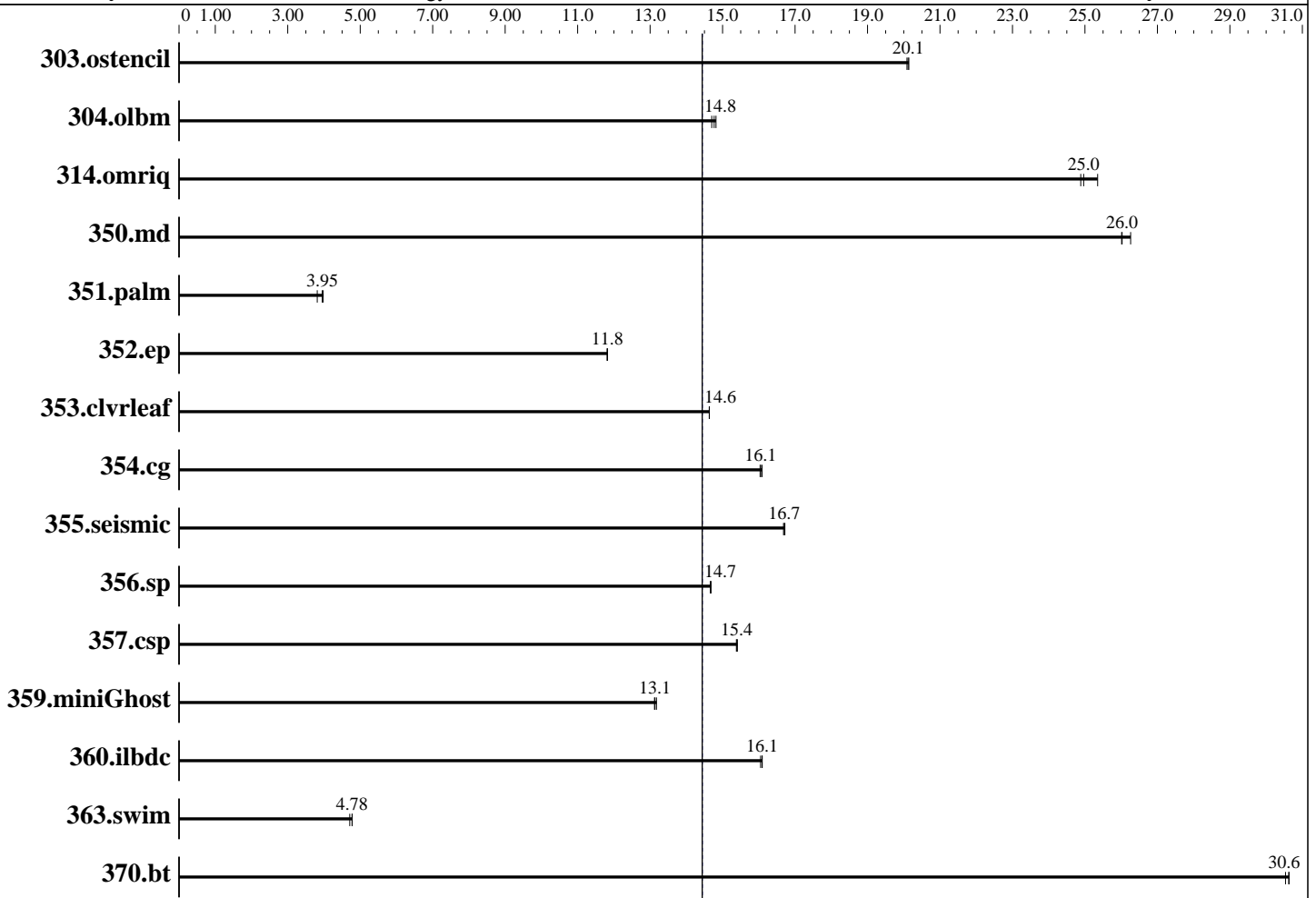
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Aug-2020

Hardware Availability: Oct-2020

Software Availability: Oct-2020



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Hardware

CPU Name: Intel Xeon Platinum 8380H
 CPU Characteristics: Intel Turbo Boost Technology up to 4.3 GHz
 CPU MHz: 2900
 CPU MHz Maximum: 4300
 FPU: Integrated
 CPU(s) enabled: 112 cores, 4 chips, 28 cores/chip
 CPU(s) orderable: 2,4 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: 39424 KB I+D on chip per chip
 Other Cache: None

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Accelerator

Accel Model Name: NVIDIA Tesla V100S-PCIE-16GB
 Accel Vendor: NVIDIA Corporation
 Accel Name: NVIDIA Tesla V100S-PCIE-16GB
 Type of Accel: GPU
 Accel Connection: PCIe 3.0 16x
 Does Accel Use ECC: Yes
 Accel Description: NVIDIA Tesla V100S-PCIE-16GB
 Accel Driver: NVIDIA UNIX x86_64 Kernel Module 450.51.06

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

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Hardware (Continued)

Memory: 1536 GB (48 x 32 GB 2Rx8 PC4-3200AA-R)
Disk Subsystem: 1 x 1TB SATA 2.5" SSD
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 15 SP2
5.3.18-22-default
Compiler: PGI Professional Edition, Release 19.5
File System: xfs
System State: Run level 3
Other Software:

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 303.ostencil | 7.20 | 20.1 | <u>7.21</u> | <u>20.1</u> | 7.22 | 20.1 | 7.20 | 20.1 | <u>7.21</u> | <u>20.1</u> | 7.22 | 20.1 |
| 304.olbm | 30.9 | 14.7 | 30.7 | 14.8 | <u>30.8</u> | <u>14.8</u> | 30.9 | 14.7 | 30.7 | 14.8 | <u>30.8</u> | <u>14.8</u> |
| 314.omriq | 37.7 | 25.4 | <u>38.3</u> | <u>25.0</u> | 38.4 | 24.9 | 37.7 | 25.4 | <u>38.3</u> | <u>25.0</u> | 38.4 | 24.9 |
| 350.md | 9.60 | 26.3 | 9.69 | 26.0 | <u>9.68</u> | <u>26.0</u> | 9.60 | 26.3 | 9.69 | 26.0 | <u>9.68</u> | <u>26.0</u> |
| 351.palm | <u>93.7</u> | <u>3.95</u> | 93.0 | 3.98 | 97.0 | 3.81 | <u>93.7</u> | <u>3.95</u> | 93.0 | 3.98 | 97.0 | 3.81 |
| 352.ep | <u>44.8</u> | <u>11.8</u> | 44.8 | 11.8 | 44.9 | 11.8 | <u>44.8</u> | <u>11.8</u> | 44.8 | 11.8 | 44.9 | 11.8 |
| 353.clvleaf | 30.4 | 14.6 | <u>30.4</u> | <u>14.6</u> | 30.4 | 14.6 | 30.4 | 14.6 | <u>30.4</u> | <u>14.6</u> | 30.4 | 14.6 |
| 354.cg | 25.4 | 16.0 | 25.4 | 16.1 | <u>25.4</u> | <u>16.1</u> | 25.4 | 16.0 | 25.4 | 16.1 | <u>25.4</u> | <u>16.1</u> |
| 355.seismic | 22.2 | 16.7 | 22.1 | 16.7 | <u>22.2</u> | <u>16.7</u> | 22.2 | 16.7 | 22.1 | 16.7 | <u>22.2</u> | <u>16.7</u> |
| 356.sp | 18.8 | 14.7 | <u>18.8</u> | <u>14.7</u> | 18.8 | 14.7 | 18.8 | 14.7 | <u>18.8</u> | <u>14.7</u> | 18.8 | 14.7 |
| 357.csp | <u>17.5</u> | <u>15.4</u> | 17.5 | 15.4 | 17.6 | 15.4 | <u>17.5</u> | <u>15.4</u> | 17.5 | 15.4 | 17.6 | 15.4 |
| 359.miniGhost | <u>28.1</u> | <u>13.1</u> | 28.0 | 13.2 | 28.1 | 13.1 | <u>28.1</u> | <u>13.1</u> | 28.0 | 13.2 | 28.1 | 13.1 |
| 360.ilbdc | 22.9 | 16.0 | <u>22.8</u> | <u>16.1</u> | 22.8 | 16.1 | 22.9 | 16.0 | <u>22.8</u> | <u>16.1</u> | 22.8 | 16.1 |
| 363.swim | 48.2 | 4.78 | 48.8 | 4.71 | <u>48.2</u> | <u>4.78</u> | 48.2 | 4.78 | 48.8 | 4.71 | <u>48.2</u> | <u>4.78</u> |
| 370.bt | 7.28 | 30.6 | 7.30 | 30.5 | <u>7.28</u> | <u>30.6</u> | 7.28 | 30.6 | 7.30 | 30.5 | <u>7.28</u> | <u>30.6</u> |

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

Platform Notes

Sysinfo program /home/ACCEL1.3_pgi19.1_sles151/Docs/sysinfo
\$Rev: 6965 \$ \$Date:: 2015-04-21 #\$ c05a7f14b1b1765e3feldf68447e8a35
running on Narvi152 Thu Aug 20 22:09:15 2020

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>

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Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Platinum 8380H CPU @ 2.90GHz
 4 "physical id"s (chips)
112 "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 : 28
  siblings  : 28
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
  physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
  physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
cache size : 39424 KB

```

```

From /proc/meminfo
MemTotal:      1584972524 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="SLES"
VERSION="15-SP2"
VERSION_ID="15.2"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP2"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp2"

```

```

uname -a:
Linux Narvil52 5.3.18-22-default #1 SMP Wed Jun 3 12:16:43 UTC 2020 (720aeba)
x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Aug 20 21:20

```

SPEC is set to: /home/ACCEL1.3_pgi19.1_sles151
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda4       xfs   490G   66G  424G  14% /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

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Platform Notes (Continued)

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Lenovo M5E103N-1.00 08/07/2020

Memory:

48x Samsung M393A4G43AB3-CWE 32 GB 2 rank 3200 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.

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

Benchmarks using both Fortran and C:

353.cvlrleaf: -fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1

359.miniGhost: -fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1
-Mnomain



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Peak Optimization Flags

C benchmarks:

- 303.ostencil: basepeak = yes
- 304.olbm: basepeak = yes
- 314.omriq: basepeak = yes
- 352.ep: basepeak = yes
- 354.cg: basepeak = yes
- 357.csp: basepeak = yes
- 370.bt: basepeak = yes

Fortran benchmarks:

- 350.md: basepeak = yes
- 351.palm: basepeak = yes
- 355.seismic: basepeak = yes
- 356.sp: basepeak = yes
- 360.ilbdc: basepeak = yes
- 363.swim: basepeak = yes

Benchmarks using both Fortran and C:

- 353.clvrleaf: basepeak = yes
- 359.miniGhost: basepeak = yes

The flags file that was used to format this result can be browsed at
https://www.spec.org/accel/flags/pgi_flags.20200506.html

You can also download the XML flags source by saving the following link:
https://www.spec.org/accel/flags/pgi_flags.20200506.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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