



SPEC ACCEL™ OMP Result

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Lenovo Global Technology EPYC 7H12 CPU ThinkSystem SR655

SPECaccel_omp_peak = Not Run

SPECaccel_omp_base = 6.39

ACCEL license: 16

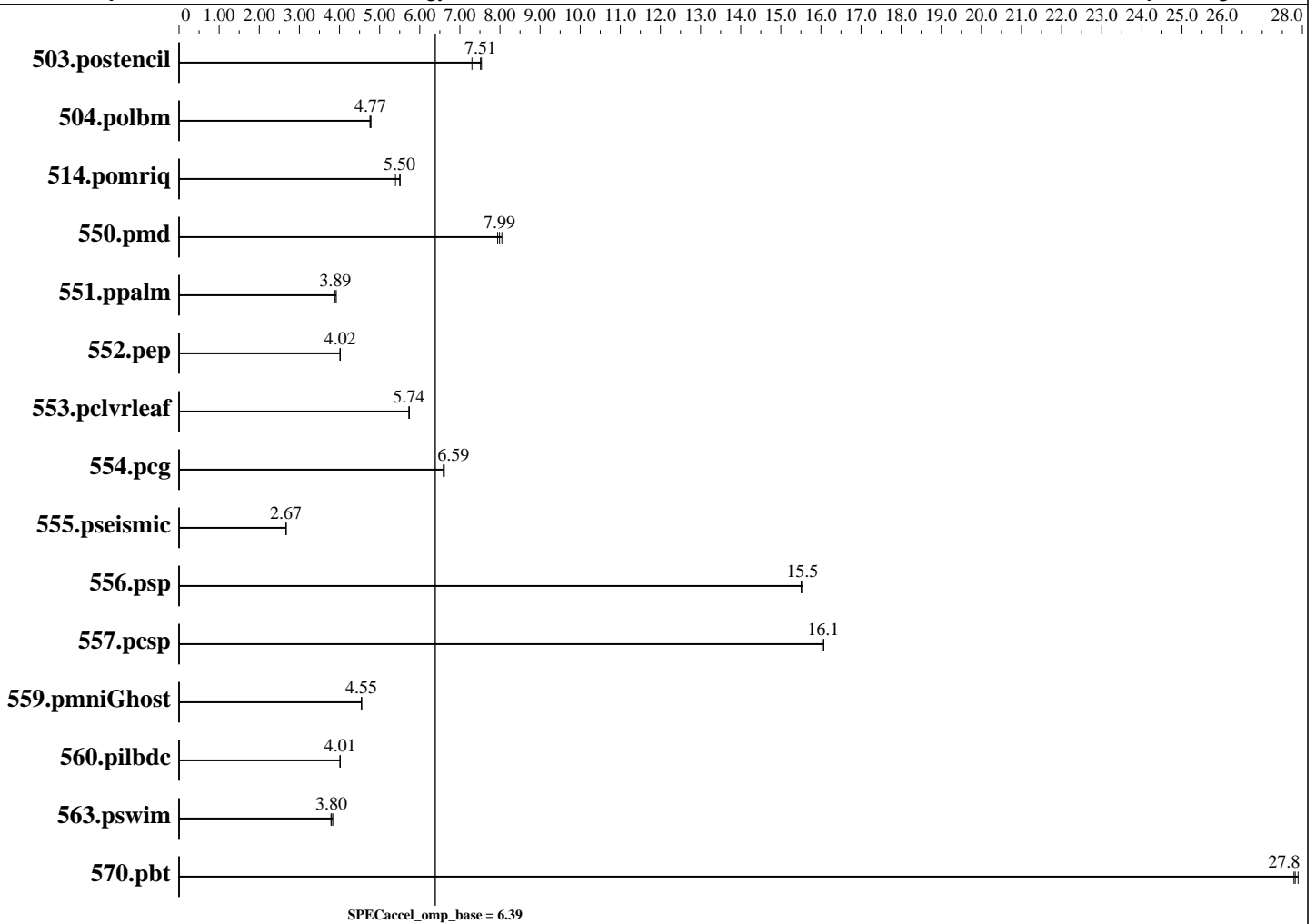
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Jan-2020

Hardware Availability: Jun-2020

Software Availability: Aug-2019



Hardware

CPU Name: AMD EPYC 7H12 CPU
 CPU Characteristics: Turbo up to 3.3 GHz
 CPU MHz: 2600
 CPU MHz Maximum: 3300
 FPU: Integrated
 CPU(s) enabled: 64 cores, 1 chip, 64 cores/chip, 2 threads/core
 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
 16 MB shared / 4 cores

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Accelerator

Accel Model Name: EPYC 7H12 CPU
 Accel Vendor: AMD
 Accel Name: EPYC 7H12 CPU
 Type of Accel: CPU
 Accel Connection: Not applicable
 Does Accel Use ECC: yes
 Accel Description: 1 x AMD EPYC 7H12 CPU
 Accel Driver: Not applicable



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| | |
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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 SATA 2.5" SSD
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 15 SP1,
kernel 4.12.14-195-default
Compiler: Intel C/C++/Fortran 19.0 Update 4 for Linux
Version 19.0.4 Build 20190416
File System: btrfs
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 |
| 503.postencil | 14.5 | 7.54 | 14.9 | 7.30 | <u>14.5</u> | <u>7.51</u> | | | | | | |
| 504.polbm | 25.6 | 4.76 | 25.5 | 4.78 | <u>25.6</u> | <u>4.77</u> | | | | | | |
| 514.pomriq | 113 | 5.51 | 115 | 5.40 | <u>113</u> | <u>5.50</u> | | | | | | |
| 550.pmd | 29.9 | 8.05 | 30.3 | 7.94 | <u>30.2</u> | <u>7.99</u> | | | | | | |
| 551.ppalm | <u>140</u> | <u>3.89</u> | 139 | 3.92 | 140 | 3.88 | | | | | | |
| 552.pep | 57.6 | 4.01 | <u>57.5</u> | <u>4.02</u> | 57.5 | 4.02 | | | | | | |
| 553.pclvrleaf | 200 | 5.73 | 200 | 5.74 | <u>200</u> | <u>5.74</u> | | | | | | |
| 554.pcg | 50.4 | 6.61 | 50.5 | 6.59 | <u>50.5</u> | <u>6.59</u> | | | | | | |
| 555.pseismic | 106 | 2.67 | 106 | 2.67 | <u>106</u> | <u>2.67</u> | | | | | | |
| 556.psp | 52.8 | 15.5 | 52.6 | 15.5 | <u>52.6</u> | <u>15.5</u> | | | | | | |
| 557.pcsp | <u>53.5</u> | <u>16.1</u> | 53.4 | 16.1 | 53.6 | 16.0 | | | | | | |
| 559.pmniGhost | 87.3 | 4.55 | <u>87.3</u> | <u>4.55</u> | 87.2 | 4.55 | | | | | | |
| 560.pilbdc | 163 | 4.01 | 163 | 4.02 | <u>163</u> | <u>4.01</u> | | | | | | |
| 563.pswim | 42.0 | 3.79 | <u>41.8</u> | <u>3.80</u> | 41.5 | 3.83 | | | | | | |
| 570.pbt | 28.0 | 27.9 | 28.1 | 27.8 | <u>28.0</u> | <u>27.8</u> | | | | | | |

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:: 2020-01-20 #\$ c05a7f14b1b1765e3feldf68447e8a35
running on linux-x8nq Thu Jan 20 10:55:08 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>

```
From /proc/cpuinfo
model name : AMD EPYC 7H12 64-Core Processor
 1 "physical id"s (chips)
128 "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  : 128
  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:      263971608 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="SLES"
VERSION="15-SP1"
VERSION_ID="15.1"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp1"
```

```
uname -a:
Linux linux-x8nq 4.12.14-195-default #1 SMP Mon Jan 20 10:55:11 UTC 2020
(8fba516) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jan 20 10:55
```

```
SPEC is set to: /home/ACCEL1.3
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda4        btrfs    444G  144G  301G  33% /home
Additional information from dmidecode:
```

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Platform Notes (Continued)

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 CFE111A 12/31/2019
Memory:
8x Samsung M393A4K40DB2-CWE 32 kB 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.
BIOS Setting notes:
Operating Mode set to Maximum Performance

Base Compiler Invocation

C benchmarks:
icc
Fortran benchmarks:
ifort
Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

503.postencil: -DSPEC_USE_INNER_SIMD
504.polbm: -DSPEC_USE_INNER_SIMD
514.pomriq: -DSPEC_USE_INNER_SIMD
550.pmd: -DSPEC_USE_INNER_SIMD -80
551.ppalp: -DSPEC_USE_INNER_SIMD
552.pep: -DSPEC_USE_INNER_SIMD
553.pclvrleaf: -DSPEC_USE_INNER_SIMD

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Base Portability Flags (Continued)

```
554.pcg: -DSPEC_USE_INNER_SIMD
555.pseismic: -DSPEC_USE_INNER_SIMD
556.psp: -DSPEC_USE_INNER_SIMD
557.pcsp: -DSPEC_USE_INNER_SIMD
559.pmniGhost: -DSPEC_USE_INNER_SIMD -nofor-main
560.pilbdc: -DSPEC_USE_INNER_SIMD
563.pswim: -DSPEC_USE_INNER_SIMD
570.pbt: -DSPEC_USE_INNER_SIMD
```

Base Optimization Flags

C benchmarks:

```
-O3 -march=core-avx2 -qopenmp -qopenmp-offload=host -no-prec-div
-no-prec-sqrt -ansi-alias -ipo -fp-model fast=2
```

Fortran benchmarks:

```
-O3 -march=core-avx2 -qopenmp -qopenmp-offload=host -no-prec-div
-no-prec-sqrt -ansi-alias -ipo -fp-model fast=2
```

Benchmarks using both Fortran and C:

```
-O3 -march=core-avx2 -qopenmp -qopenmp-offload=host -no-prec-div
-no-prec-sqrt -ansi-alias -ipo -fp-model fast=2
```

The flags file that was used to format this result can be browsed at

<https://www.spec.org/accel/flags/Intel-icc17.0-linux64.20200316.html>

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

<https://www.spec.org/accel/flags/Intel-icc17.0-linux64.20200316.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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