



SPEC ACCEL™ OMP Result

Copyright 2015-2021 Standard Performance Evaluation Corporation

Lenovo Global Technology EPYC 7763 CPU ThinkSystem SR665

SPECaccel_omp_peak = 11.3

SPECaccel_omp_base = 10.9

ACCEL license: 28

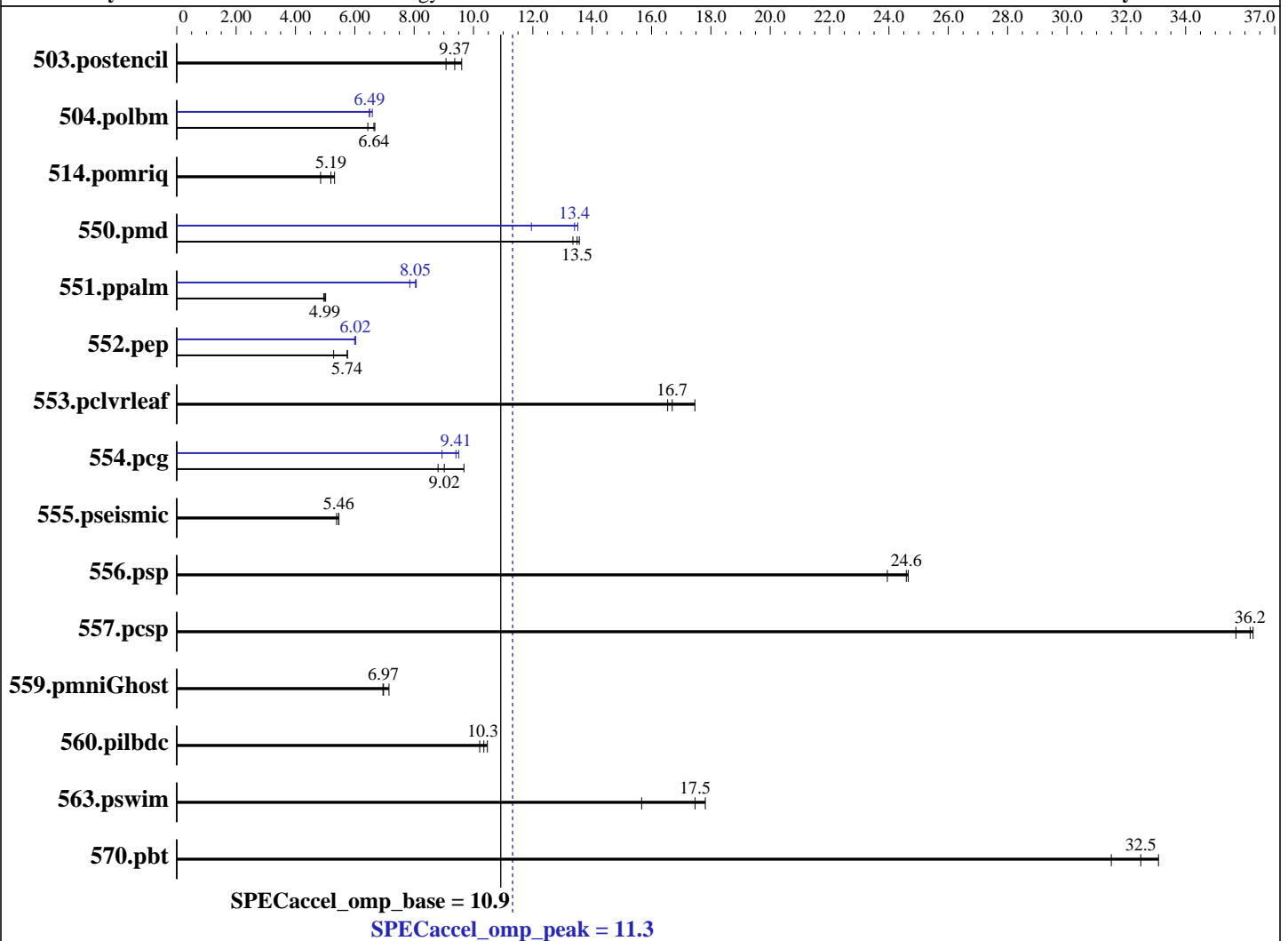
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Mar-2021

Hardware Availability: Mar-2021

Software Availability: Mar-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: 128 cores, 2 chips, 64 cores/chip, 2 threads/core
 CPU(s) orderable: 1-2 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: EPYC 7763 CPU
 Accel Vendor: AMD
 Accel Name: EPYC 7763 CPU
 Type of Accel: CPU
 Accel Connection: Not applicable
 Does Accel Use ECC: yes
 Accel Description: 1 x AMD EPYC 7763 CPU
 Accel Driver: Not applicable



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Hardware (Continued)

Other Cache: None
Memory: 1 TB (32 x 32 GB 2Rx8 PC4-3200AA-R)
Disk Subsystem: 1 x 480 GB 2.5" SSD
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 8.3
kernel 4.18.0-240.el8.x86_64
Compiler: Intel C/C++/Fortran 20.2 for Linux
Version 19.1.2.254 Build 20200623
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
503.postencil	11.4	9.60	<u>11.6</u>	<u>9.37</u>	12.0	9.07	11.4	9.60	<u>11.6</u>	<u>9.37</u>	12.0	9.07
504.polbm	18.9	6.44	18.3	6.68	<u>18.4</u>	<u>6.64</u>	18.8	6.49	<u>18.8</u>	<u>6.49</u>	18.5	6.59
514.pomriq	<u>120</u>	<u>5.19</u>	117	5.32	128	4.85	<u>120</u>	<u>5.19</u>	117	5.32	128	4.85
550.pmd	18.1	13.4	<u>17.9</u>	<u>13.5</u>	17.8	13.6	20.2	12.0	17.8	13.5	<u>18.0</u>	<u>13.4</u>
551.ppalm	108	5.02	<u>109</u>	<u>4.99</u>	110	4.95	67.4	8.07	<u>67.6</u>	<u>8.05</u>	69.3	7.85
552.pep	43.7	5.29	<u>40.2</u>	<u>5.74</u>	40.1	5.75	<u>38.4</u>	<u>6.02</u>	38.5	6.00	38.3	6.03
553.pclvrleaf	69.2	16.5	<u>68.6</u>	<u>16.7</u>	65.6	17.5	69.2	16.5	<u>68.6</u>	<u>16.7</u>	65.6	17.5
554.pcg	34.4	9.68	<u>36.9</u>	<u>9.02</u>	37.8	8.81	<u>35.4</u>	<u>9.41</u>	37.2	8.94	35.0	9.50
555.pseismic	51.6	5.46	<u>51.7</u>	<u>5.46</u>	52.3	5.39	51.6	5.46	<u>51.7</u>	<u>5.46</u>	52.3	5.39
556.psp	33.2	24.7	<u>33.3</u>	<u>24.6</u>	34.2	23.9	33.2	24.7	<u>33.3</u>	<u>24.6</u>	34.2	23.9
557.pcsp	23.7	36.3	24.1	35.7	<u>23.7</u>	<u>36.2</u>	23.7	36.3	24.1	35.7	<u>23.7</u>	<u>36.2</u>
559.pmniGhost	<u>57.0</u>	<u>6.97</u>	57.1	6.95	55.5	7.15	<u>57.0</u>	<u>6.97</u>	57.1	6.95	55.5	7.15
560.pilbdc	62.4	10.5	64.0	10.2	<u>63.1</u>	<u>10.3</u>	62.4	10.5	64.0	10.2	<u>63.1</u>	<u>10.3</u>
563.pswim	<u>9.10</u>	<u>17.5</u>	8.93	17.8	10.1	15.7	<u>9.10</u>	<u>17.5</u>	8.93	17.8	10.1	15.7
570.pbt	<u>24.0</u>	<u>32.5</u>	23.6	33.1	24.8	31.5	<u>24.0</u>	<u>32.5</u>	23.6	33.1	24.8	31.5

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 amd2srh836 Fri Jan 22 19:45:18 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
 2 "physical id"s (chips)
256 "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
  physical 1: 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:      527908832 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 amd2srh836 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 22 19:12
```

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Platform Notes (Continued)

SPEC is set to: /home/ACCEL1.3
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 419G 225G 195G 54% /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 D8E113Y-2.00 01/20/2021
Memory:
16x Samsung M393A4G43AB3-CWE 32 GB 2 rank 3200 MT/s
16x 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:
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

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Base Portability Flags (Continued)

```
550.pmd: -DSPEC_USE_INNER_SIMD -80
551.ppalm: -DSPEC_USE_INNER_SIMD
552.pep: -DSPEC_USE_INNER_SIMD
553.pclvrleaf: -DSPEC_USE_INNER_SIMD
554.pcg: -DSPEC_USE_INNER_SIMD
555.pseismic: -DSPEC_USE_INNER_SIMD
556.psp: -DSPEC_USE_INNER_SIMD
557.pfsp: -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
```

Peak Compiler Invocation

C benchmarks:

```
icc
```

Fortran benchmarks:

```
ifort
```

Benchmarks using both Fortran and C:

```
icc ifort
```

Peak Portability Flags

```
503.postencil: -DSPEC_USE_INNER_SIMD
```

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Peak Portability Flags (Continued)

```
504.polbm: -DSPEC_USE_INNER_SIMD
514.pomriq: -DSPEC_USE_INNER_SIMD
550.pmd: -DSPEC_USE_INNER_SIMD -80
551.ppalm: -DSPEC_USE_INNER_SIMD -DSPEC_HOST_FFTW3
552.pep: -DSPEC_USE_INNER_SIMD
553.pclvrleaf: -DSPEC_USE_INNER_SIMD
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
```

Peak Optimization Flags

C benchmarks:

```
503.postencil: basepeak = yes

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

514.pomriq: basepeak = yes

552.pep: -O3 -march=core-avx2 -qopenmp -qopenmp-offload=host
-no-prec-div -no-prec-sqrt -ansi-alias -ipo
-fp-model fast=2 -qopt-streaming-stores always

554.pcg: -O3 -march=core-avx2 -qopenmp -qopenmp-offload=host
-no-prec-div -no-prec-sqrt -ansi-alias -ipo
-fp-model fast=2 -qopt-prefetch=5

557.pcsp: basepeak = yes

570.pbt: basepeak = yes
```

Fortran benchmarks:

```
550.pmd: -O3 -march=core-avx2 -qopenmp -qopenmp-offload=host
-no-prec-div -no-prec-sqrt -ansi-alias -ipo
-fp-model fast=2 -qopt-prefetch=2
```

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Peak Optimization Flags (Continued)

551.ppalm: -O3 -march=core-avx2 -qopenmp -qopenmp-offload=host
-no-prec-div -no-prec-sqrt -ansi-alias -ipo
-fp-model fast=2 -I/usr/local/include -L/usr/local/lib

555.pseismic: basepeak = yes

556.psp: basepeak = yes

560.pilbdc: basepeak = yes

563.pswim: basepeak = yes

Benchmarks using both Fortran and C:

553.pclvrleaf: basepeak = yes

559.pmniGhost: basepeak = yes

Peak Other Flags

Fortran benchmarks:

551.ppalm: -lfftw3

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

<https://www.spec.org/accel/flags/Intel-ICC-linux64.html>

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

<https://www.spec.org/accel/flags/Intel-ICC-linux64.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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