SPEC ACCEL™ OMP Result

Copyright 2015-2021 Standard Performance Evaluation Corporation

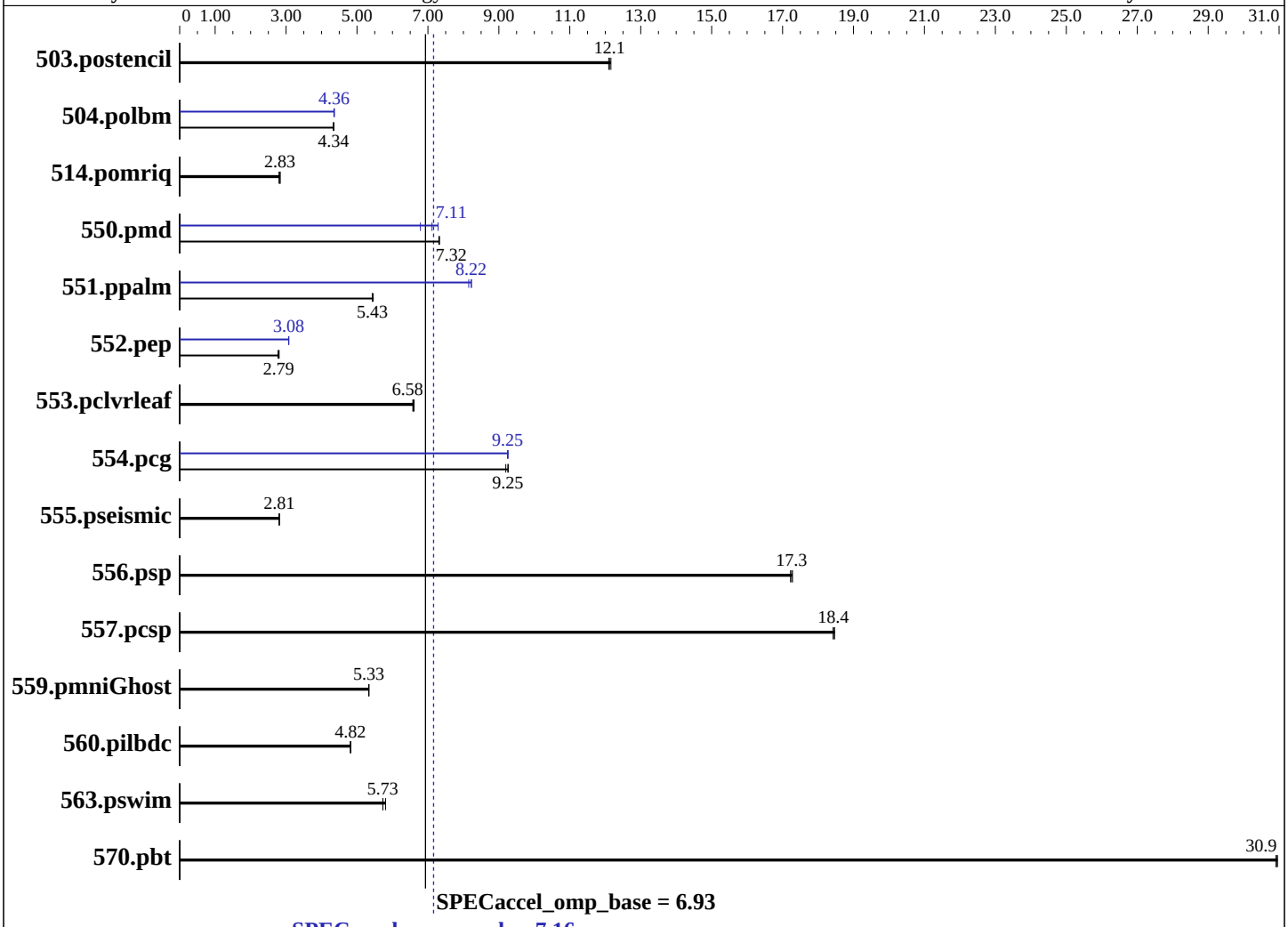
Lenovo Global Technology
AMD EPYC 7763 CPU
ThinkSystem SR655

SPECaccel_omp_peak = 7.16

SPECaccel_omp_base = 6.93

ACCEL license: 28
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: May-2021
Hardware Availability: Jun-2021
Software Availability: Jun-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, 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 32 MB shared / 8 cores

Continued on next page

Accelerator

Accel Model Name:	AMD EPYC 7763 CPU
Accel Vendor:	AMD
Accel Name:	AMD 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

SPEC ACCEL OMP Result

Copyright 2015-2021 Standard Performance Evaluation Corporation

Lenovo Global Technology
AMD EPYC 7763 CPU
ThinkSystem SR655

SPECaccel_omp_peak = 7.16

SPECaccel_omp_base = 6.93

ACCEL license: 28
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: May-2021
Hardware Availability: Jun-2021
Software Availability: Jun-2021

Hardware (Continued)

Other Cache: None
Memory: 256 GB (8 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 20.4 for Linux
Version 19.1.3.304 Build 20200925
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	**8.99**	**12.1**	8.96	12.2	9.01	12.1	**8.99**	**12.1**	8.96	12.2	9.01	12.1
504.polbm	28.2	4.33	28.1	4.34	**28.1**	**4.34**	**28.0**	**4.36**	28.0	4.36	28.1	4.35
514.pomriq	**219**	**2.83**	222	2.80	219	2.83	**219**	**2.83**	222	2.80	219	2.83
550.pmd	32.9	7.33	**32.9**	**7.32**	33.0	7.31	35.5	6.79	33.1	7.29	**33.9**	**7.11**
551.ppalm	100	5.43	99.7	5.46	**100**	**5.43**	**66.2**	**8.22**	66.7	8.15	66.1	8.23
552.pep	83.3	2.77	**82.7**	**2.79**	82.4	2.80	75.2	3.07	75.1	3.08	**75.1**	**3.08**
553.pclvrleaf	173	6.61	**174**	**6.58**	174	6.58	173	6.61	**174**	**6.58**	174	6.58
554.pcg	36.2	9.20	35.9	9.26	**36.0**	**9.25**	36.0	9.24	**36.0**	**9.25**	36.0	9.26
555.pseismic	101	2.81	**100**	**2.81**	100	2.81	101	2.81	**100**	**2.81**	100	2.81
556.psp	47.5	17.2	47.3	17.3	**47.4**	**17.3**	47.5	17.2	47.3	17.3	**47.4**	**17.3**
557.pcsp	**46.6**	**18.4**	46.6	18.4	46.5	18.5	**46.6**	**18.4**	46.6	18.4	46.5	18.5
559.pmniGhost	74.4	5.34	74.5	5.33	**74.4**	**5.33**	74.4	5.34	74.5	5.33	**74.4**	**5.33**
560.pilbdc	135	4.82	**136**	**4.82**	136	4.82	135	4.82	**136**	**4.82**	136	4.82
563.pswim	27.4	5.81	27.8	5.73	**27.8**	**5.73**	27.4	5.81	27.8	5.73	**27.8**	**5.73**
570.pbt	25.2	30.9	25.2	31.0	**25.2**	**30.9**	25.2	30.9	25.2	31.0	**25.2**	**30.9**

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.
```

Platform Notes

```
Sysinfo program /home/ACCEL1.3/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on amd2srh833 Wed May 12 03:41:38 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)
      128 "proceł  s 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:       263696564 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 May 12 03:33

SPEC is set to: /home/ACCEL1.3
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      xfs   419G   81G  338G  20% /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
```

Continued on next page

Platform Notes (Continued)

```
     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:
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.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.pcsp: -DSPEC_USE_INNER_SIMD
559.pmniGhost: -DSPEC_USE_INNER_SIMD -nofor-main

Continued on next page

Base Portability Flags (Continued)

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
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

Continued on next page

Peak Portability Flags (Continued)

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`

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`

Continued on next page

Peak Optimization Flags (Continued)

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-compiler.html`

You can also download the XML flags source by saving the following link:
`https://www.spec.org/accel/flags/Intel-compiler.xml`

SPEC ACCEL is a trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC ACCEL v1.3.
Report generated on Tue Jun 8 09:58:10 2021 by SPEC ACCEL PS/PDF formatter v1290.
Originally published on 8 June 2021.