Lenovo Global Technology
AMD EPYC 7763 CPU
ThinkSystem SR655

**SPECaccel_omp_peak** = 7.16

**SPECaccel_omp_base** = 6.93

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<th>Test sponsor: Lenovo Global Technology</th>
<th>Test date: May-2021</th>
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<td>Software Availability: Jun-2021</td>
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**503.postencil**

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<th>551.ppalm</th>
<th>552.pep</th>
<th>553.pclvrleaf</th>
<th>554.pcg</th>
<th>555.pseismic</th>
<th>556.psp</th>
<th>557.pcs</th>
<th>559.pmniGhost</th>
<th>560.pilbdc</th>
<th>563.pswim</th>
<th>570.pbt</th>
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<td>4.36</td>
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<td>6.58</td>
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<td>2.81</td>
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Hardware

<table>
<thead>
<tr>
<th>CPU Name: AMD EPYC 7763</th>
<th>Accel Model Name: AMD EPYC 7763 CPU</th>
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<tbody>
<tr>
<td>CPU Characteristics:   Turbo up to 3.5 GHz</td>
<td>Accel Vendor: AMD</td>
</tr>
<tr>
<td>CPU MHz: 2450</td>
<td>Accel Name: AMD EPYC 7763 CPU</td>
</tr>
<tr>
<td>CPU MHz Maximum: 3500</td>
<td>Type of Accel: CPU</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>Accel Connection: Not applicable</td>
</tr>
<tr>
<td>CPU(s) enabled: 64 cores, 1 chip, 64 cores/chip, 2 threads/core</td>
<td>Does Accel Use ECC: yes</td>
</tr>
<tr>
<td>CPU(s) orderable: 1 Chips</td>
<td>Accel Description: 1 x AMD EPYC 7763 CPU</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Accel Driver: Not applicable</td>
</tr>
<tr>
<td>Secondary Cache: 512 KB I+D on chip per core</td>
<td></td>
</tr>
<tr>
<td>L3 Cache: 256 MB I+D on chip per chip</td>
<td></td>
</tr>
<tr>
<td>32 MB shared / 8 cores</td>
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</tbody>
</table>

Accelerator

Continued on next page
### Lenovo Global Technology
### AMD EPYC 7763 CPU
### ThinkSystem SR655

**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

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<th>Seconds</th>
<th>Ratio</th>
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</tr>
</tbody>
</table>

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.

Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
LENNOVO GLOBAL TECHNOLOGY
AMD EPYC 7763 CPU
THINKSYSTEM SR655

SPECACCEL OMP RESULT

SPECACCEL_OMP_PEAK = 7.16
SPECACCEL_OMP_BASE = 6.93

ACCEL LICENSE: 28
TEST SPONSOR: LENNOVO GLOBAL TECHNOLOGY
TESTED BY: LENNOVO GLOBAL TECHNOLOGY
TEST DATE: MAY-2021
HARDWARE AVAILABILITY: JUN-2021
SOFTWARE AVAILABILITY: JUN-2021

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 "processes" 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*
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
Lenovo Global Technology
AMD EPYC 7763 CPU
ThinkSystem SR655

SPECaccel_omp_peak = 7.16
SPECaccel_omp_base = 6.93

ACCEL license: 28  Test date: May-2021
Test sponsor: Lenovo Global Technology  Hardware Availability: Jun-2021
Tested by: Lenovo Global Technology  Software Availability: Jun-2021

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 -80
550.pmd: -DSPEC_USE_INNER_SIMD
551.pplam: -DSPEC_USE_INNER_SIMD
552.ppep: -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.pcs: -DSPEC_USE_INNER_SIMD
559.pmniGhost: -DSPEC_USE_INNER_SIMD -nofor-main

Continued on next page


## Lenovo Global Technology

### AMD EPYC 7763 CPU

**ThinkSystem SR655**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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### ACCEL license

- **28**

### Test sponsors

- **Lenovo Global Technology**

### Tested by

- **Lenovo Global Technology**

### Test date

- **May-2021**

### Hardware Availability

- **Jun-2021**

### Software Availability

- **Jun-2021**

### 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_HOST_FFTW3`
- 551.ppalm: `-DSPEC_USE_INNER_SIMD`
- 552.pep: `-DSPEC_USE_INNER_SIMD`
- 555.pclvleaf: `-DSPEC_USE_INNER_SIMD`
- 554.pcg: `-DSPEC_USE_INNER_SIMD`
- 555.pseismic: `-DSPEC_USE_INNER_SIMD`
- 556.psp: `-DSPEC_USE_INNER_SIMD`

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Continued on next page
# SPEC ACCEL OMP Result

## Lenovo Global Technology

### AMD EPYC 7763 CPU

**ThinkSystem SR655**

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### ACCEL license: 28

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<tbody>
<tr>
<td>Software Availability:</td>
<td>Jun-2021</td>
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</table>

### Peak Portability Flags (Continued)

- 557.pcs: `-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`

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

- 504.polbm: `basepeak = yes`

  ```
  -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
  ```

- 514.pomriq: `basepeak = yes`

  ```
  -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.pcs: `basepeak = yes`

- 570.pbt: `basepeak = yes`

#### Fortran benchmarks:

- 550.pmd: `basepeak = yes`

  ```
  -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: `basepeak = yes`

  ```
  -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`
Lenovo Global Technology
AMD EPYC 7763 CPU
ThinkSystem SR655

SPECaccel_omp_peak = 7.16
SPECaccel_omp_base = 6.93

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Peak Optimization Flags (Continued)

563.pswim: basepeak = yes

Benchmarks using both Fortran and C:

553.pclvleaf: basepeak = yes
559.pmnignGhost: 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

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

Tested with SPEC ACCEL v1.3.
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