Lenovo Global Technology
EPYC 7742 CPU
ThinkSystem SR655

SPECCaccel_omp_peak = Not Run
SPECCaccel_omp_base = 6.18

ACCEL license: 16
Test date: Aug-2019
Test sponsor: Lenovo Global Technology
Hardware Availability: Aug-2019
Tested by: Lenovo Global Technology
Software Availability: Aug-2019

Hardware
- CPU Name: AMD EPYC 7742 CPU
- CPU Characteristics: Turbo up to 3.4 GHz
- CPU MHz: 2250
- CPU MHz Maximum: 3400
- FPU: Integrated
- CPU(s) enabled: 64 cores, 1 chip, 64 cores/chip, 2 threads/core
- CPU(s) orderable: 1 Chips
- Primary Cache: 32 KB L1 + 32 KB D on chip per core
- Secondary Cache: 512 KB L1+D on chip per core
- L3 Cache: 256 MB L1+D on chip per chip
  16 MB shared / 4 cores

Accelerator
- Accel Model Name: EPYC 7742 CPU
- Accel Vendor: AMD
- Accel Name: EPYC 7742 CPU
- Type of Accel: CPU
- Accel Connection: Not applicable
- Does Accel Use ECC: yes
- Accel Description: 1 x AMD EPYC 7742 CPU
- Accel Driver: Not applicable

Continued on next page
Lenovo Global Technology
EPYC 7742 CPU
ThinkSystem SR655

SPECCaccel_omp_peak = Not Run
SPECCaccel_omp_base = 6.18

ACCEL license: 16
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: Aug-2019
Hardware Availability: Aug-2019
Software Availability: Aug-2019

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
Compiler: Intel C/C++/Fortran 19.0 Update 4 for Linux Version 19.0.4 Build 20190416
File System: xfs
System State: Run-level 3
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.postencil</td>
<td>15.4</td>
<td>7.06</td>
<td>15.3</td>
<td>7.14</td>
<td>15.5</td>
<td>7.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>504.polbm</td>
<td>25.8</td>
<td>4.72</td>
<td>25.8</td>
<td>4.73</td>
<td>25.9</td>
<td>4.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>514.pomriq</td>
<td>121</td>
<td>5.12</td>
<td>125</td>
<td>4.99</td>
<td>122</td>
<td>5.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>550.pmd</td>
<td>29.7</td>
<td>8.11</td>
<td>29.7</td>
<td>8.12</td>
<td>29.7</td>
<td>8.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>551.ppalm</td>
<td>153</td>
<td>3.56</td>
<td>153</td>
<td>3.56</td>
<td>155</td>
<td>3.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>552.pep</td>
<td>56.3</td>
<td>4.10</td>
<td>56.2</td>
<td>4.11</td>
<td>56.2</td>
<td>4.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>553.pclvleaf</td>
<td>202</td>
<td>5.67</td>
<td>202</td>
<td>5.66</td>
<td>202</td>
<td>5.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>554.pcg</td>
<td>57.4</td>
<td>5.80</td>
<td>57.4</td>
<td>5.80</td>
<td>57.7</td>
<td>5.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>555.pseismic</td>
<td>108</td>
<td>2.62</td>
<td>108</td>
<td>2.62</td>
<td>108</td>
<td>2.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>556.psp</td>
<td>54.0</td>
<td>15.2</td>
<td>53.9</td>
<td>15.2</td>
<td>53.9</td>
<td>15.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>557.pcsip</td>
<td>54.5</td>
<td>15.8</td>
<td>54.5</td>
<td>15.8</td>
<td>54.6</td>
<td>15.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>559.pnmiGhost</td>
<td>90.1</td>
<td>4.41</td>
<td>90.1</td>
<td>4.41</td>
<td>90.1</td>
<td>4.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>560.pilbdc</td>
<td>165</td>
<td>3.96</td>
<td>165</td>
<td>3.95</td>
<td>165</td>
<td>3.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>563.pswim</td>
<td>42.5</td>
<td>3.74</td>
<td>42.4</td>
<td>3.75</td>
<td>42.5</td>
<td>3.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>570.pbt</td>
<td>28.7</td>
<td>27.2</td>
<td>28.6</td>
<td>27.2</td>
<td>28.7</td>
<td>27.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</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.
Lenovo Global Technology
EPYC 7742 CPU
ThinkSystem SR655

SPECaccel_omp_peak = Not Run
SPECaccel_omp_base = 6.18

ACCEL license: 16
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: Aug-2019
Hardware Availability: Aug-2019
Software Availability: Aug-2019

Platform Notes

Sysinfo program /home/ACCEL1.2/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on linux-x8nq Fri Aug 9 02:38:32 2019

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 7742 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: 263945344 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 Tue May 7 10:55:11 UTC 2019
  (8fba516) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 9 00:15

SPEC is set to: /home/ACCEL1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 btrfs 444G 75G 369G 17% /home

Additional information from dmidecode:

Continued on next page
Lenovo Global Technology
EPYC 7742 CPU
ThinkSystem SR655

SPECaccel_omp_peak =  Not Run
SPECaccel_omp_base =  6.18

ACCEL license:  16
Test sponsor:  Lenovo Global Technology
Tested by:  Lenovo Global Technology

Test date:  Aug-2019
Hardware Availability:  Aug-2019
Software Availability:  Aug-2019

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 CFE103A 07/04/2019
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.

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

Continued on next page
# SPEC ACCEL OMP Result

## Lenovo Global Technology
### EPYC 7742 CPU
#### ThinkSystem SR655

<table>
<thead>
<tr>
<th>SPECaccel_omp_peak</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECaccel_omp_base</td>
<td>6.18</td>
</tr>
</tbody>
</table>

**ACCEL license:** 16  
**Test sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology  
**Test date:** Aug-2019  
**Hardware Availability:** Aug-2019  
**Software Availability:** Aug-2019

### Base Portability Flags (Continued)

<table>
<thead>
<tr>
<th>556.psp</th>
<th>-DSPEC_USE_INNER_SIMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.pcp</td>
<td>-DSPEC_USE_INNER_SIMD</td>
</tr>
<tr>
<td>559.pmnig</td>
<td>-DSPEC_USE_INNER_SIMD -nofor-main</td>
</tr>
<tr>
<td>560.plbdc</td>
<td>-DSPEC_USE_INNER_SIMD</td>
</tr>
<tr>
<td>563.pswim</td>
<td>-DSPEC_USE_INNER_SIMD</td>
</tr>
<tr>
<td>570.pbt</td>
<td>-DSPEC_USE_INNER_SIMD</td>
</tr>
</tbody>
</table>

### 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-linux64.20190828.html](https://www.spec.org/accel/flags/Intel-icc17.0-linux64.20190828.html)

You can also download the XML flags source by saving the following link: [https://www.spec.org/accel/flags/Intel-icc17.0-linux64.20190828.xml](https://www.spec.org/accel/flags/Intel-icc17.0-linux64.20190828.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 v1.2.  
Originally published on 28 August 2019.