SPEC ACCEL™ OMP Result

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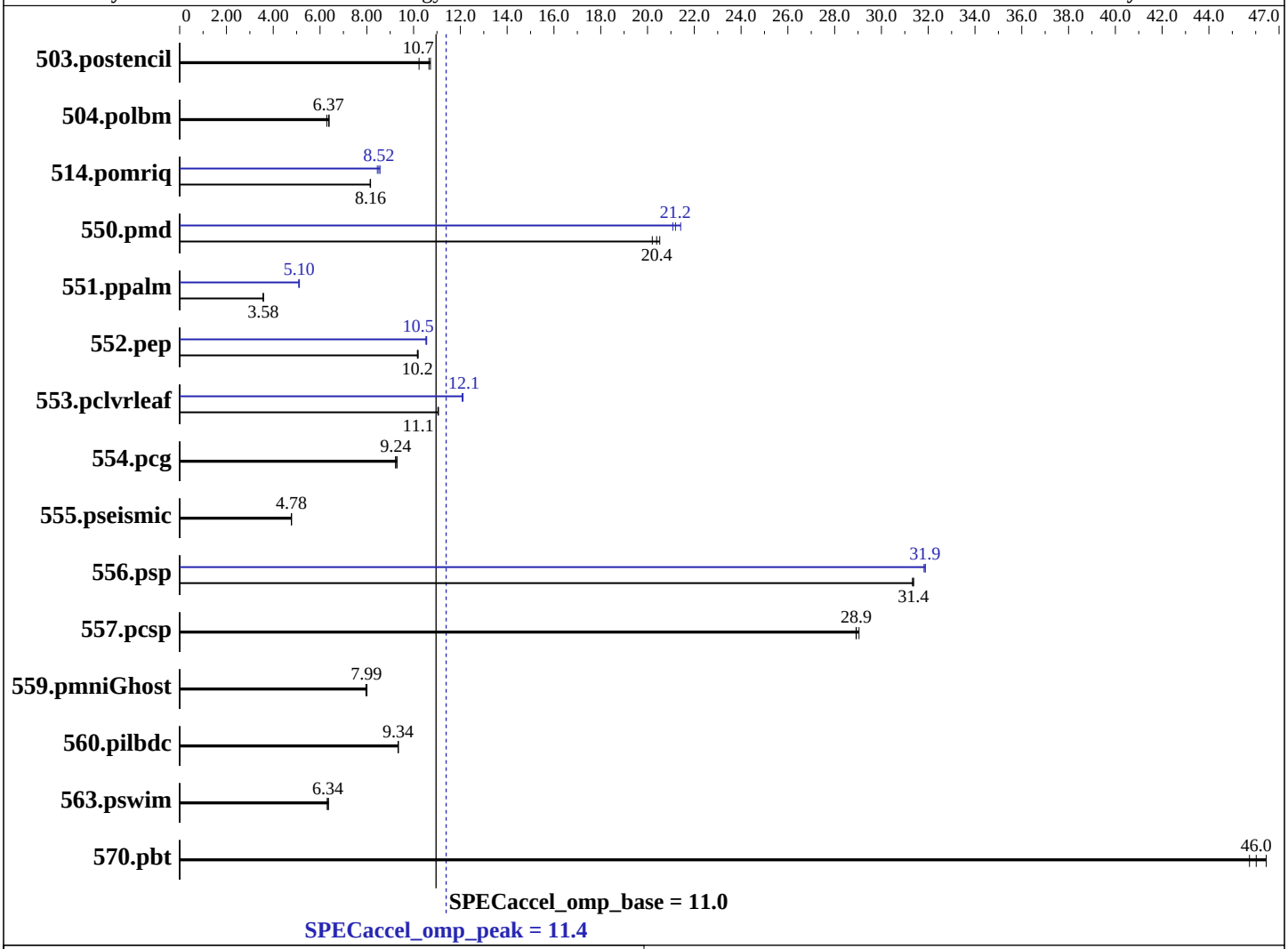
Lenovo Global Technology
Intel Xeon Platinum 8380H
ThinkSystem SR860 V2

SPECaccel_omp_peak = 11.4

SPECaccel_omp_base = 11.0

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

Test date: Oct-2020
Hardware Availability: Oct-2020
Software Availability: Oct-2020



Hardware

CPU Name:	Intel Xeon Platinum 8380H
CPU Characteristics:	Intel Turbo Boost Technology up to 4.3 GHz
CPU MHz:	2900
CPU MHz Maximum:	4300
FPU:	Integrated
CPU(s) enabled:	112 cores, 4 chips, 28 cores/chip, 2 threads/core
CPU(s) orderable:	2,4 Chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	39424 KB I+D on chip per chip
Other Cache:	None

Continued on next page

Accelerator

Accel Model Name:	Intel Xeon Platinum 8380H
Accel Vendor:	Intel
Accel Name:	Intel Xeon Platinum 8380H
Type of Accel:	CPU
Accel Connection:	Not applicable
Does Accel Use ECC:	yes
Accel Description:	4 x Intel Xeon Platinum 8380H
Accel Driver:	None

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Hardware (Continued)

Memory: 1536 GB (48 x 32 GB 2Rx8 PC4-3200AA-R)
Disk Subsystem: 1 x 1TB SATA 2.5" SSD
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 8.2, kernel 4.18.0-193.el8.x86_64
Compiler: Intel Parallel Studio 20 Update 1 for Linux Version 19.1.1.217 Build 20200306
File System: xfs
System State: Default
Other Software: FFTW 3.3.8

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.postencil	**10.2**	**10.7**	10.7	10.2	10.2	10.7	**10.2**	**10.7**	10.7	10.2	10.2	10.7
504.polbm	19.1	6.39	19.4	6.29	**19.2**	**6.37**	19.1	6.39	19.4	6.29	**19.2**	**6.37**
514.pomriq	76.3	8.14	76.1	8.16	**76.1**	**8.16**	73.5	8.45	72.5	8.57	**72.9**	**8.52**
550.pmd	11.7	20.5	**11.8**	**20.4**	11.9	20.2	11.4	21.1	11.3	21.4	**11.4**	**21.2**
551.ppalm	152	3.58	**152**	**3.58**	152	3.57	**107**	**5.10**	107	5.09	106	5.12
552.pep	**22.7**	**10.2**	22.7	10.2	22.7	10.2	21.9	10.6	**21.9**	**10.5**	21.9	10.5
553.pclvrleaf	**104**	**11.1**	104	11.0	104	11.1	94.8	12.1	94.5	12.1	**94.7**	**12.1**
554.pcg	35.8	9.30	**36.0**	**9.24**	36.1	9.23	35.8	9.30	**36.0**	**9.24**	36.1	9.23
555.pseismic	59.0	4.78	**59.0**	**4.78**	59.0	4.78	59.0	4.78	**59.0**	**4.78**	59.0	4.78
556.psp	**26.1**	**31.4**	26.1	31.3	26.1	31.4	25.7	31.8	25.7	31.9	**25.7**	**31.9**
557.pcsp	29.6	29.0	29.7	28.9	**29.7**	**28.9**	29.6	29.0	29.7	28.9	**29.7**	**28.9**
559.pmniGhost	**49.7**	**7.99**	49.9	7.96	49.6	8.01	**49.7**	**7.99**	49.9	7.96	49.6	8.01
560.pilbdc	70.0	9.34	69.8	9.35	**69.9**	**9.34**	70.0	9.34	69.8	9.35	**69.9**	**9.34**
563.pswim	25.0	6.36	25.2	6.31	**25.1**	**6.34**	25.0	6.36	25.2	6.31	**25.1**	**6.34**
570.pbt	**16.9**	**46.0**	17.1	45.7	16.8	46.4	**16.9**	**46.0**	17.1	45.7	16.8	46.4

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 narvi1rh82 Thu Aug 13 02:57:42 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 : Intel(R) Xeon(R) Platinum 8380H CPU @ 2.90GHz
      4 "physical id"s (chips)
      224 "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 : 28
      siblings  : 56
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
   cache size : 39424 KB

From /proc/meminfo
   MemTotal:       1584725580 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="8.2 (Ootpa)"
      ID="rhel"
      ID_LIKE="fedora"
      VARIANT="Server"
      VARIANT_ID="server"
      VERSION_ID="8.2"
      PRETTY_NAME="Red Hat Enterprise Linux Server 8.2 (Ootpa)"
   redhat-release: Red Hat Enterprise Linux Server release 8.2 (Ootpa)
   system-release: Red Hat Enterprise Linux Server release 8.2 (Ootpa)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:8.2:ga:server

uname -a:
   Linux narvi1rh82 4.18.0-193.el8.x86_64 #1 SMP Tue Feb 18 16:39:12 EST 2020
   x86_64 x86_64 x86_64 GNU/Linux
```

Continued on next page

Platform Notes (Continued)

```
 run-level 3 Aug 12 04:25

 SPEC is set to: /home/ACCEL1.3
    Filesystem            Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-home xfs   390G  130G  261G  34% /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 M5E103H-1.00 06/24/2020
   Memory:
    48x Samsung M393A4G43AB3-CWE 32 GB 2 rank 3200 MT/s

 (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

Continued on next page

Base Portability Flags (Continued)

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
560.pilbdc: -DSPEC_USE_INNER_SIMD
563.pswim: -DSPEC_USE_INNER_SIMD
570.pbt: -DSPEC_USE_INNER_SIMD

Base Optimization Flags

C benchmarks:
-O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host

Fortran benchmarks:
-O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host

Benchmarks using both Fortran and C:
-O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host

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

Continued on next page

Peak Portability Flags (Continued)

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: basepeak = yes

514.pomriq: -O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host
-qopt-streaming-stores always -ipo

552.pep: -O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host
-qopt-streaming-stores always

554.pcg: basepeak = yes

557.pcsp: basepeak = yes

570.pbt: basepeak = yes

Fortran benchmarks:

550.pmd: -O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host
-fimf-precision=low

551.ppalm: -O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host
-I/usr/local/include -L/usr/local/lib

555.pseismic: basepeak = yes

556.psp: -O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host -ipo

Continued on next page

Peak Optimization Flags (Continued)

560.pilbdc: `basepeak = yes`

563.pswim: `basepeak = yes`

Benchmarks using both Fortran and C:

553.pclvrleaf: `-O3 -xCOMMON-AVX512 -qopenmp -qopenmp-offload=host -qopt-streaming-stores always`

559.pmniGhost: `basepeak = yes`

Peak Other Flags

Fortran benchmarks:

551.ppalm: `-lfftw3`

The flags files that were used to format this result can be browsed at
`https://www.spec.org/accel/flags/Intel-compiler-linux64.html`
`https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.20190321.html`

You can also download the XML flags sources by saving the following links:
`https://www.spec.org/accel/flags/Intel-compiler-linux64.xml`
`https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.20190321.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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