



SPEC ACCEL™ OMP Result

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Supermicro
(Test Sponsor: NVIDIA Corporation)

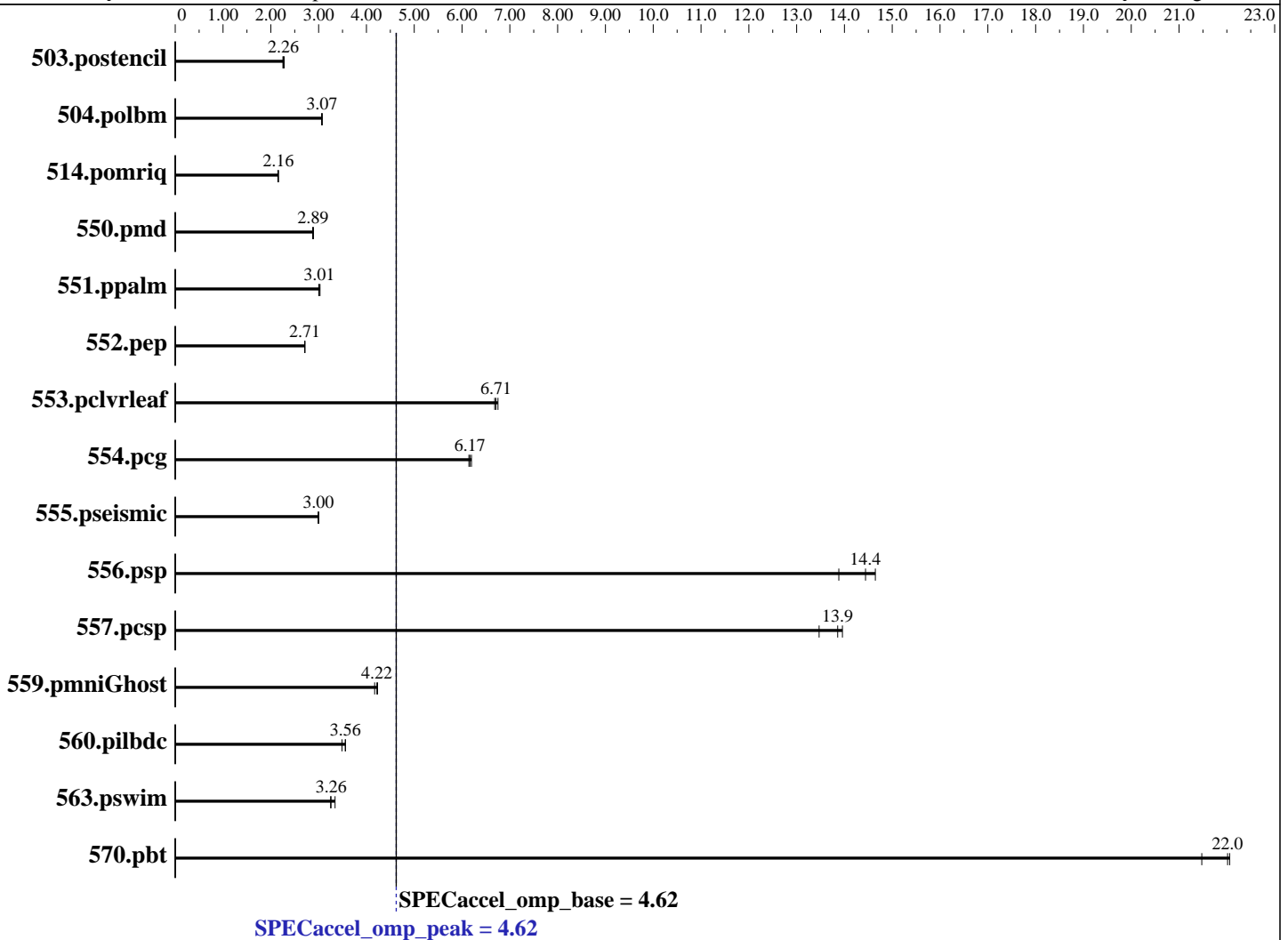
Xeon Gold 6148 SuperServer 1029GQ-TRT

SPECaccel_omp_peak = 4.62

SPECaccel_omp_base = 4.62

ACCEL license: 019
Test sponsor: NVIDIA Corporation
Tested by: NVIDIA Corporation

Test date: Jul-2018
Hardware Availability: Nov-2017
Software Availability: Aug-2018



Hardware

CPU Name: Intel Xeon Gold 6148
 CPU Characteristics:
 CPU MHz: 2400
 CPU MHz Maximum: 3700
 FPU: Integrated
 CPU(s) enabled: 40 cores, 2 chips, 20 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: 1 MB I+D on chip per core
 L3 Cache: 28160 KB I+D on chip per chip
 Other Cache: None

Accelerator

Accel Model Name: Intel Xeon CPU Gold 6148
 Accel Vendor: Intel Corporation
 Accel Name: Xeon Gold 6148
 Type of Accel: CPU
 Accel Connection: Not applicable
 Does Accel Use ECC: Yes
 Accel Description: Intel Xeon CPU Gold 6148
 Accel Driver: Not applicable

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Hardware (Continued)

Memory: 384 GB (12 x 32 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 512GB Samsung 960 PRO M.2 PCIe 3.0 x4 NVMe Solid State Drive
Other Hardware: None

Software

Operating System: CentOS Linux release 7.4.1708 (Core) 3.10.0-693.17.1.el7.x86_64
Compiler: PGI Professional Edition, Release 18.7 LLVM
File System: xfs
System State: Run level 3 (multi-user)
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.postencil	<u>48.2</u>	<u>2.26</u>	48.4	2.25	47.8	2.28	<u>48.2</u>	<u>2.26</u>	48.4	2.25	47.8	2.28
504.polbm	39.7	3.08	39.8	3.06	<u>39.7</u>	<u>3.07</u>	39.7	3.08	39.8	3.06	<u>39.7</u>	<u>3.07</u>
514.pomriq	<u>288</u>	<u>2.16</u>	288	2.16	289	2.15	<u>288</u>	<u>2.16</u>	288	2.16	289	2.15
550.pmd	83.4	2.89	<u>83.5</u>	<u>2.89</u>	83.8	2.87	83.4	2.89	<u>83.5</u>	<u>2.89</u>	83.8	2.87
551.ppalm	<u>181</u>	<u>3.01</u>	181	3.00	180	3.03	<u>181</u>	<u>3.01</u>	181	3.00	180	3.03
552.pep	85.2	2.71	85.2	2.71	<u>85.2</u>	<u>2.71</u>	85.2	2.71	85.2	2.71	<u>85.2</u>	<u>2.71</u>
553.pclvrleaf	171	6.68	170	6.75	<u>171</u>	<u>6.71</u>	171	6.68	170	6.75	<u>171</u>	<u>6.71</u>
554.pcg	54.2	6.14	53.7	6.20	<u>54.0</u>	<u>6.17</u>	54.2	6.14	53.7	6.20	<u>54.0</u>	<u>6.17</u>
555.pseismic	<u>94.1</u>	<u>3.00</u>	94.3	2.99	93.9	3.00	<u>94.1</u>	<u>3.00</u>	94.3	2.99	93.9	3.00
556.psp	58.9	13.9	55.8	14.6	<u>56.6</u>	<u>14.4</u>	58.9	13.9	55.8	14.6	<u>56.6</u>	<u>14.4</u>
557.pcsp	<u>62.0</u>	<u>13.9</u>	61.5	14.0	63.8	13.5	<u>62.0</u>	<u>13.9</u>	61.5	14.0	63.8	13.5
559.pmniGhost	95.2	4.17	93.8	4.23	<u>94.1</u>	<u>4.22</u>	95.2	4.17	93.8	4.23	<u>94.1</u>	<u>4.22</u>
560.pilbdc	<u>184</u>	<u>3.56</u>	183	3.56	187	3.49	<u>184</u>	<u>3.56</u>	183	3.56	187	3.49
563.pswim	<u>48.8</u>	<u>3.26</u>	47.6	3.34	48.9	3.25	<u>48.8</u>	<u>3.26</u>	47.6	3.34	48.9	3.25
570.pbt	35.4	22.1	<u>35.4</u>	<u>22.0</u>	36.3	21.5	35.4	22.1	<u>35.4</u>	<u>22.0</u>	36.3	21.5

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Platform Notes

```
Sysinfo program /local/home/aglobus/spec-accel/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on perf-sky2.pgi.net Thu Jul 26 15:28:54 2018
```

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page



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Platform Notes (Continued)

<http://www.spec.org/accel/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
model name      : Intel(R) Xeon(R) Gold 6148 CPU @ 2.40GHz
 2 "physical id"s (chips)
 80 "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    : 20
  siblings     : 40
  physical 0   : cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
  physical 1   : cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
cache size     : 28160 KB

```

```

From /proc/meminfo
MemTotal:      394873648 kB
HugePages_Total:      20
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
CentOS Linux release 7.4.1708 (Core)

```

```

From /etc/*release* /etc/*version*
centos-release: CentOS Linux release 7.4.1708 (Core)
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.4 (Source)
os-release:
  NAME="CentOS Linux"
  VERSION="7 (Core)"
  ID="centos"
  ID_LIKE="rhel fedora"
  VERSION_ID="7"
  PRETTY_NAME="CentOS Linux 7 (Core)"
  ANSI_COLOR="0;31"
  CPE_NAME="cpe:/o:centos:centos:7"
redhat-release: CentOS Linux release 7.4.1708 (Core)
system-release: CentOS Linux release 7.4.1708 (Core)
system-release-cpe: cpe:/o:centos:centos:7

```

```

uname -a:
Linux perf-sky2.pgi.net 3.10.0-693.17.1.el7.x86_64 #1 SMP Thu Jan 25 20:13:58
UTC 2018 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Mar 29 15:36

```

SPEC is set to: /local/home/aglobus/spec-accel
Filesystem      Type Size Used Avail Use% Mounted on
/dev/mapper/centos_sky2-root xfs 472G 60G 413G 13% /

```

Additional information from dmidecode:

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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.

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

```
ACC_NUM_CORES = "80"
HUGETLB_PATH = "/mnt/hugetlb"
KMP_AFFINITY = "granularity=fine,compact,1,0"
OMP_PLACES = "{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},{64},{65},{66},{67},{68},{69},{70},
{71},{72},{73},{74},{75},{76},{77},{78},{79}"
OMP_PROC_BIND = "true"
```

551.ppalm (base): "advec_ws_private" src.alt was used.

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:
pgcc

Fortran benchmarks:
pgfortran

Benchmarks using both Fortran and C:
pgcc pgfortran



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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
551.ppalm: -DSPEC_USE_INNER_SIMD
552.pcp: -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
560.pilbdc: -DSPEC_USE_INNER_SIMD
563.pswim: -DSPEC_USE_INNER_SIMD
570.pbt: -DSPEC_USE_INNER_SIMD

Base Optimization Flags

C benchmarks:
-V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb

Fortran benchmarks:
-V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb

Benchmarks using both Fortran and C:

553.pclvrleaf: -V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb

559.pmniGhost: -V18.7 -Mllvm -fast -mp -Mnouniform -Mhugetlb -Mnomain

Peak Optimization Flags

C benchmarks:

503.postencil: basepeak = yes

504.polbm: basepeak = yes

514.pomriq: basepeak = yes

552.pcp: basepeak = yes

554.pcg: basepeak = yes

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Peak Optimization Flags (Continued)

557.pcsp: basepeak = yes

570.pbt: basepeak = yes

Fortran benchmarks:

550.pmd: basepeak = yes

551.ppalm: basepeak = yes

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

The flags files that were used to format this result can be browsed at

<https://www.spec.org/accel/flags/PGI-Platform-Multicore-OMP.html>
https://www.spec.org/accel/flags/pgi2018_flags.html

You can also download the XML flags sources by saving the following links:

<https://www.spec.org/accel/flags/PGI-Platform-Multicore-OMP.xml>
https://www.spec.org/accel/flags/pgi2018_flags.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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