



SPEC ACCEL™ OMP Result

Copyright 2015-2018 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: NVIDIA Corporation)

Xeon E5-2698 v4

SuperServer 1028GR-TR

SPECaccel_omp_peak = 3.30

SPECaccel_omp_base = 3.30

ACCEL license: 019

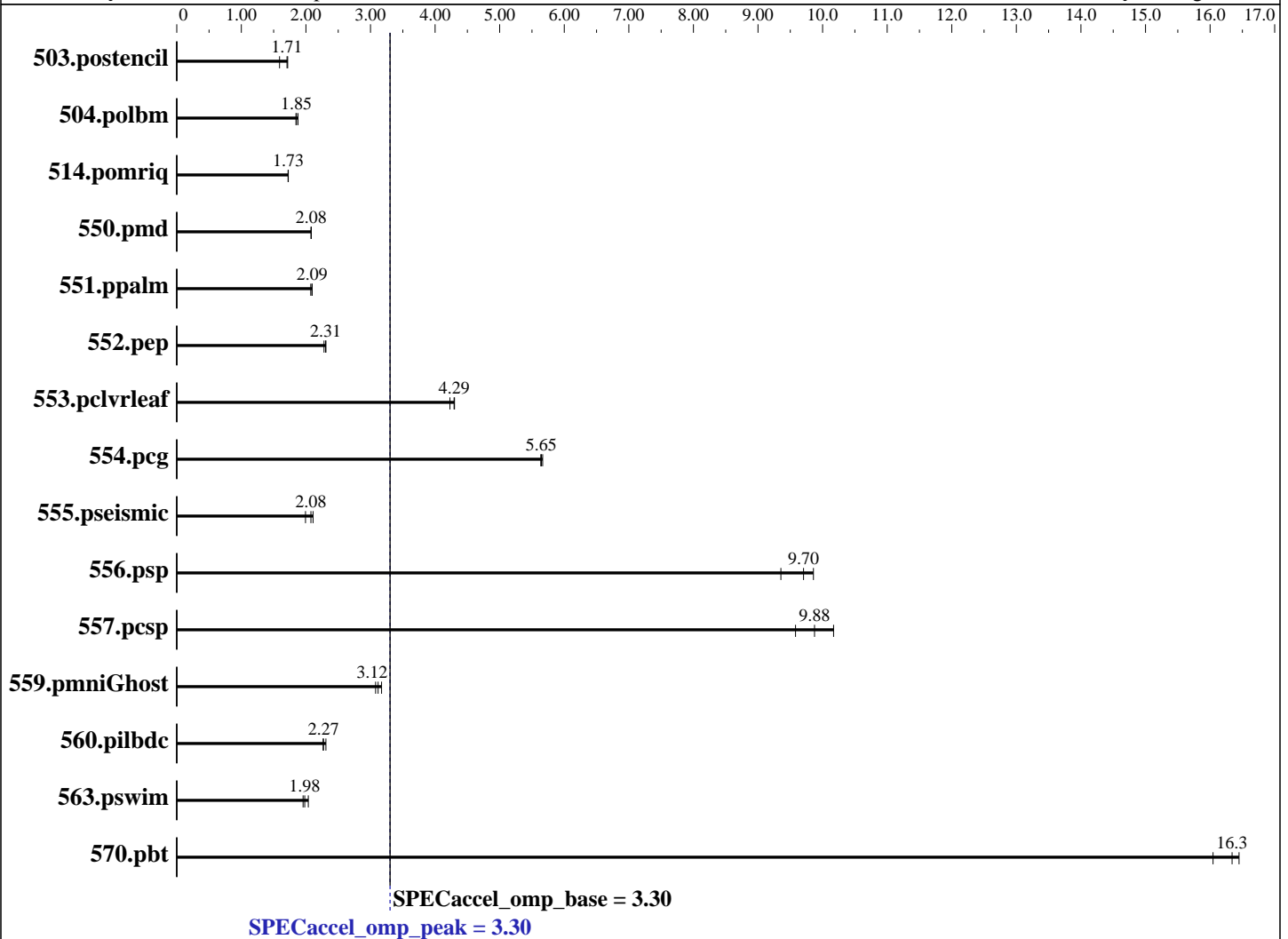
Test sponsor: NVIDIA Corporation

Tested by: NVIDIA Corporation

Test date: Jul-2018

Hardware Availability: Jul-2017

Software Availability: Aug-2018



Hardware

CPU Name: Intel Xeon E5-2698 v4
 CPU Characteristics:
 CPU MHz: 2200
 CPU MHz Maximum: 3600
 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: 256 KB I+D on chip per core
 L3 Cache: 50 MB I+D on chip per chip
 Other Cache: None

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Accelerator

Accel Model Name: Intel Xeon CPU E5-2698 v4
 Accel Vendor: Intel Corporation
 Accel Name: Xeon E5-2698 v4
 Type of Accel: CPU
 Accel Connection: Not Applicable
 Does Accel Use ECC: Yes
 Accel Description: Intel Xeon CPU E5-2698 v4
 Accel Driver: Not applicable



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Hardware (Continued)

Memory: 256 GB (8 x 32 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 480GB Intel SSD DC S3520
Other Hardware: None

Software

Operating System: CentOS Linux release 7.4.1708 (Core)
3.10.0-693.11.6.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	68.5	1.59	63.5	1.72	<u>63.9</u>	<u>1.71</u>	68.5	1.59	63.5	1.72	<u>63.9</u>	<u>1.71</u>
504.polbm	<u>65.8</u>	<u>1.85</u>	65.0	1.88	66.1	1.85	<u>65.8</u>	<u>1.85</u>	65.0	1.88	66.1	1.85
514.pomriq	360	1.72	360	1.73	<u>360</u>	<u>1.73</u>	360	1.72	360	1.73	<u>360</u>	<u>1.73</u>
550.pmd	116	2.08	116	2.08	<u>116</u>	<u>2.08</u>	116	2.08	116	2.08	<u>116</u>	<u>2.08</u>
551.ppalm	262	2.07	260	2.10	<u>260</u>	<u>2.09</u>	262	2.07	260	2.10	<u>260</u>	<u>2.09</u>
552.pep	101	2.28	100	2.31	<u>100</u>	<u>2.31</u>	101	2.28	100	2.31	<u>100</u>	<u>2.31</u>
553.pclvrleaf	271	4.23	266	4.30	<u>267</u>	<u>4.29</u>	271	4.23	266	4.30	<u>267</u>	<u>4.29</u>
554.pcg	59.1	5.64	<u>59.0</u>	<u>5.65</u>	58.8	5.67	59.1	5.64	<u>59.0</u>	<u>5.65</u>	58.8	5.67
555.pseismic	141	1.99	134	2.11	<u>136</u>	<u>2.08</u>	141	1.99	134	2.11	<u>136</u>	<u>2.08</u>
556.psp	<u>84.3</u>	<u>9.70</u>	87.4	9.35	83.0	9.86	<u>84.3</u>	<u>9.70</u>	87.4	9.35	83.0	9.86
557.pcsp	84.5	10.2	<u>87.0</u>	<u>9.88</u>	89.7	9.58	84.5	10.2	<u>87.0</u>	<u>9.88</u>	89.7	9.58
559.pmniGhost	129	3.08	<u>127</u>	<u>3.12</u>	125	3.17	129	3.08	<u>127</u>	<u>3.12</u>	125	3.17
560.pilbdc	283	2.31	288	2.27	<u>287</u>	<u>2.27</u>	283	2.31	288	2.27	<u>287</u>	<u>2.27</u>
563.pswim	78.1	2.04	81.3	1.96	<u>80.2</u>	<u>1.98</u>	78.1	2.04	81.3	1.96	<u>80.2</u>	<u>1.98</u>
570.pbt	47.4	16.4	<u>47.7</u>	<u>16.3</u>	48.6	16.0	47.4	16.4	<u>47.7</u>	<u>16.3</u>	48.6	16.0

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-accel2017/Docs/sysinfo
\$Rev: 6965 \$ \$Date:: 2015-04-21 #\$ c05a7f14b1b1765e3felfdf68447e8a35
running on perf-bdw3 Thu Jul 26 20:20:03 2018

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>

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Platform Notes (Continued)

```

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2698 v4 @ 2.20GHz
    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 : 51200 KB

From /proc/meminfo
  MemTotal:      264034224 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-bdw3 3.10.0-693.11.6.el7.x86_64 #1 SMP Thu Jan 4 01:06:37 UTC 2018
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 21 06:36

SPEC is set to: /local/home/aglobus/spec-accel2017
  Filesystem      Type      Size  Used Avail Use% Mounted on
  /dev/mapper/centos_bdw3-root xfs      443G   58G  386G  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.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
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.pep: basepeak = yes

554.pcg: basepeak = yes

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Peak Optimization Flags (Continued)

557.pbsp: 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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