



# SPEC ACCEL™ ACC Result

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Supermicro  
(Test Sponsor: NVIDIA Corporation)

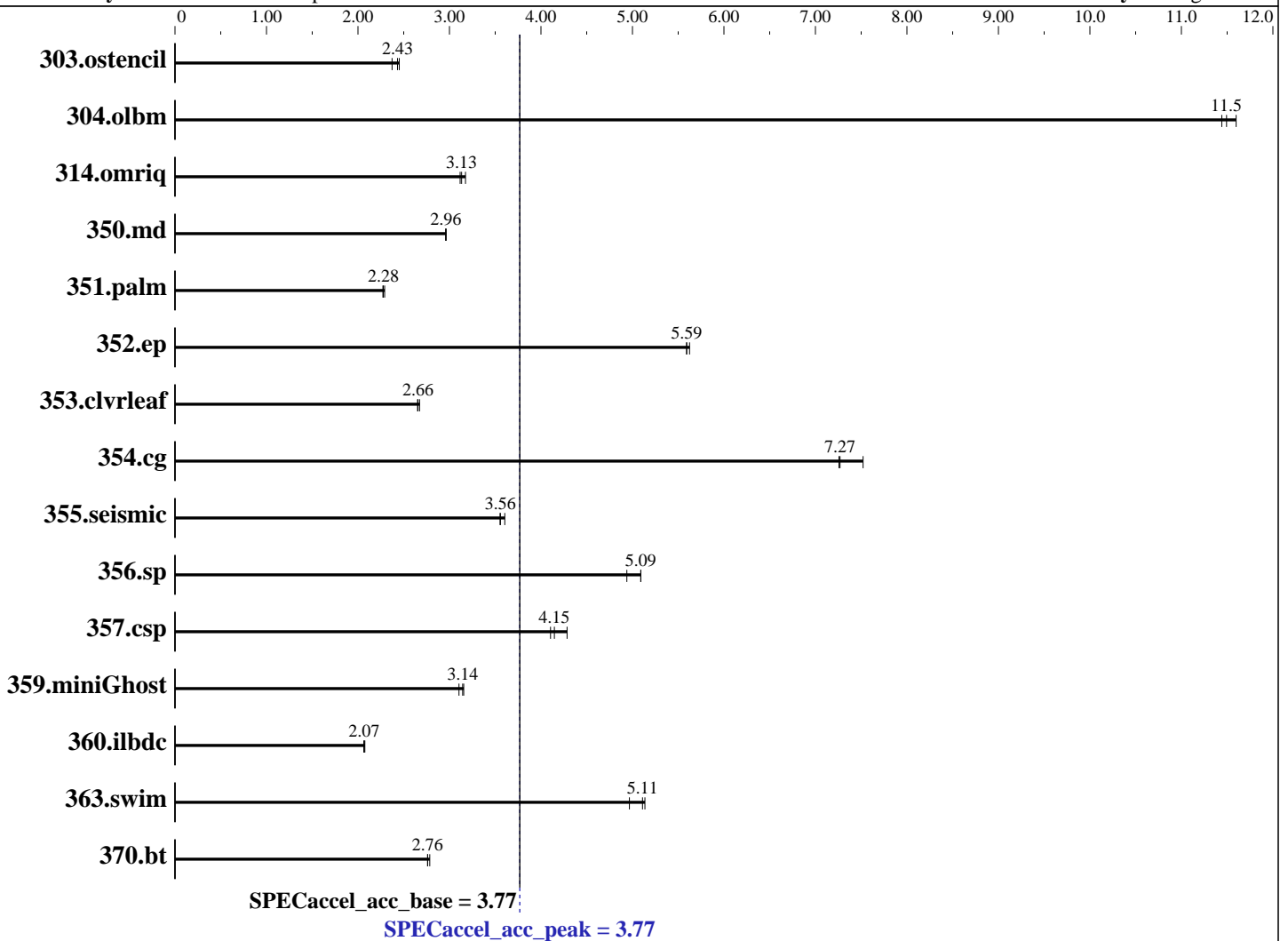
## Xeon Gold 6148 SuperServer 1029GQ-TRT

SPECaccel\_acc\_peak = 3.77

SPECaccel\_acc\_base = 3.77

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

Test date: Aug-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

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### 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
303.ostencil	61.1	2.37	59.1	2.45	<b><u>59.6</u></b>	<b><u>2.43</u></b>	61.1	2.37	59.1	2.45	<b><u>59.6</u></b>	<b><u>2.43</u></b>
304.olbm	39.8	11.4	<b><u>39.6</u></b>	<b><u>11.5</u></b>	39.2	11.6	39.8	11.4	<b><u>39.6</u></b>	<b><u>11.5</u></b>	39.2	11.6
314.omriq	307	3.12	301	3.18	<b><u>305</u></b>	<b><u>3.13</u></b>	307	3.12	301	3.18	<b><u>305</u></b>	<b><u>3.13</u></b>
350.md	<b><u>85.1</u></b>	<b><u>2.96</u></b>	85.2	2.96	85.0	2.96	<b><u>85.1</u></b>	<b><u>2.96</u></b>	85.2	2.96	85.0	2.96
351.palm	<b><u>163</u></b>	<b><u>2.28</u></b>	163	2.27	161	2.29	<b><u>163</u></b>	<b><u>2.28</u></b>	163	2.27	161	2.29
352.ep	<b><u>94.8</u></b>	<b><u>5.59</u></b>	94.2	5.62	94.8	5.59	<b><u>94.8</u></b>	<b><u>5.59</u></b>	94.2	5.62	94.8	5.59
353.clvleaf	168	2.65	166	2.67	<b><u>168</u></b>	<b><u>2.66</u></b>	168	2.65	166	2.67	<b><u>168</u></b>	<b><u>2.66</u></b>
354.cg	<b><u>56.1</u></b>	<b><u>7.27</u></b>	56.2	7.26	54.2	7.52	<b><u>56.1</u></b>	<b><u>7.27</u></b>	56.2	7.26	54.2	7.52
355.seismic	103	3.60	<b><u>104</u></b>	<b><u>3.56</u></b>	104	3.55	103	3.60	<b><u>104</u></b>	<b><u>3.56</u></b>	104	3.55
356.sp	55.9	4.94	54.2	5.09	<b><u>54.2</u></b>	<b><u>5.09</u></b>	55.9	4.94	54.2	5.09	<b><u>54.2</u></b>	<b><u>5.09</u></b>
357.csp	65.8	4.10	63.0	4.29	<b><u>65.1</u></b>	<b><u>4.15</u></b>	65.8	4.10	63.0	4.29	<b><u>65.1</u></b>	<b><u>4.15</u></b>
359.miniGhost	117	3.16	119	3.10	<b><u>117</u></b>	<b><u>3.14</u></b>	117	3.16	119	3.10	<b><u>117</u></b>	<b><u>3.14</u></b>
360.ilbdc	177	2.08	178	2.06	<b><u>177</u></b>	<b><u>2.07</u></b>	177	2.08	178	2.06	<b><u>177</u></b>	<b><u>2.07</u></b>
363.swim	46.3	4.97	<b><u>45.0</u></b>	<b><u>5.11</u></b>	44.8	5.14	46.3	4.97	<b><u>45.0</u></b>	<b><u>5.11</u></b>	44.8	5.14
370.bt	80.8	2.76	<b><u>80.8</u></b>	<b><u>2.76</u></b>	80.1	2.78	80.8	2.76	<b><u>80.8</u></b>	<b><u>2.76</u></b>	80.1	2.78

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 Wed Aug 1 16:46:35 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  59G  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"
OMP_PROC_BIND = "true"
```

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

## Base Optimization Flags

C benchmarks:  
-fast -Mnouniform -Mhugetlb -acc -ta=multicore

Fortran benchmarks:  
-fast -Mnouniform -Mhugetlb -acc -ta=multicore

Benchmarks using both Fortran and C:

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## Base Optimization Flags (Continued)

353.cvrleaf: -fast -Mnouniform -Mhugetlb -acc -ta=multicore

359.miniGhost: -fast -Mnouniform -Mhugetlb -acc -ta=multicore -Mnomain

## Peak Optimization Flags

C benchmarks:

303.ostencil: basepeak = yes

304.olbm: basepeak = yes

314.omriq: basepeak = yes

352.ep: basepeak = yes

354.cg: basepeak = yes

357.csp: basepeak = yes

370.bt: basepeak = yes

Fortran benchmarks:

350.md: basepeak = yes

351.palm: basepeak = yes

355.seismic: basepeak = yes

356.sp: basepeak = yes

360.ilbdc: basepeak = yes

363.swim: basepeak = yes

Benchmarks using both Fortran and C:

353.cvrleaf: basepeak = yes

359.miniGhost: basepeak = yes



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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](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](https://www.spec.org/accel/flags/pgi2018_flags.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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