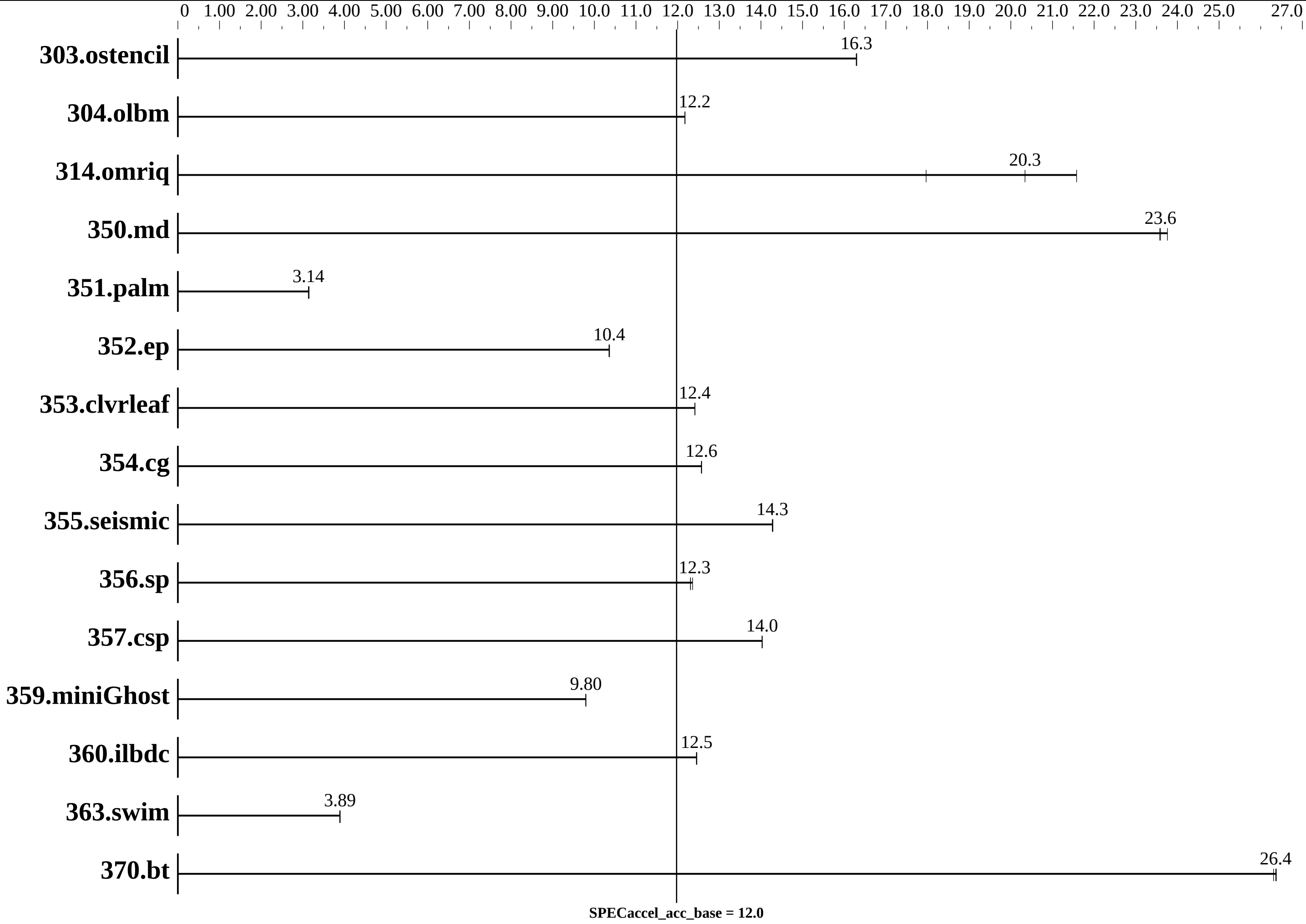
SPEC ACCEL™ ACC Result

Lenovo Global Technology
Tesla V100-PCIE-16GB
ThinkSystem SR670

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 12.0

ACCEL license:	28	**Test date:**	Feb-2019
Test sponsor:	Lenovo Global Technology	**Hardware Availability:**	Feb-2019
Tested by:	Lenovo Global Technology	**Software Availability:**	Feb-2019



Hardware

CPU Name:	Intel Xeon Gold 6142
CPU Characteristics:	
CPU MHz:	2600
CPU MHz Maximum:	3700
FPU:	Integrated
CPU(s) enabled:	32 cores, 2 chips, 16 cores/chip
CPU(s) orderable:	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:	22 MB I+D on chip per chip
Other Cache:	None

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Accelerator

Accel Model Name:	Tesla V100
Accel Vendor:	NVIDIA Corporation
Accel Name:	Tesla V100-PCIE-16GB
Type of Accel:	GPU
Accel Connection:	PCIe
Does Accel Use ECC:	Yes
Accel Description:	Tesla V100-PCIE-16GB
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 396.26

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Hardware (Continued)

Memory:	768 GB (24 x 32 GB 2Rx4 PC4-2666)
Disk Subsystem:	Micron 480 GB 6 Gbps SATA 2.5" SSD (4XB7A10153)
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.5 (Maipo) 3.10.0-862.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

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
303.ostencil	8.90	16.3	8.89	16.3	**8.90**	**16.3**						
304.olbm	**37.4**	**12.2**	37.4	12.2	37.4	12.2						
314.omriq	**47.0**	**20.3**	53.2	18.0	44.3	21.6						
350.md	**10.7**	**23.6**	10.7	23.6	10.6	23.8						
351.palm	117	3.15	118	3.14	**118**	**3.14**						
352.ep	**51.2**	**10.4**	51.1	10.4	51.2	10.4						
353.clvrleaf	35.8	12.4	35.9	12.4	**35.8**	**12.4**						
354.cg	32.5	12.6	32.4	12.6	**32.4**	**12.6**						
355.seismic	25.9	14.3	25.9	14.3	**25.9**	**14.3**						
356.sp	22.3	12.4	**22.4**	**12.3**	22.4	12.3						
357.csp	19.2	14.0	19.3	14.0	**19.2**	**14.0**						
359.miniGhost	37.7	9.80	**37.7**	**9.80**	37.7	9.79						
360.ilbdc	29.5	12.5	**29.5**	**12.5**	29.5	12.4						
363.swim	59.0	3.90	**59.1**	**3.89**	59.2	3.89						
370.bt	8.48	26.3	8.45	26.4	**8.46**	**26.4**						

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/ACCEL1.2/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on bannerrh75 Fri Feb 22 14:01:56 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 : Intel(R) Xeon(R) Gold 6142 CPU @ 2.60GHz
      2 "physical id"s (chips)
      32 "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 : 16
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
      physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
   cache size : 22528 KB

From /proc/meminfo
   MemTotal:       792040060 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 7.5 (Maipo)

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.5 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VARIANT="Server"
      VARIANT_ID="server"
      VERSION_ID="7.5"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.5 (Maipo)"
   redhat-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.5:ga:server

uname -a:
   Linux bannerrh75 3.10.0-862.el7.x86_64 #1 SMP Wed Mar 21 18:14:51 EDT 2018
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 22 05:06
```

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Tested by: Lenovo Global Technology
Test date: Feb-2019
Hardware Availability: Feb-2019
Software Availability: Feb-2019

Platform Notes (Continued)

```
 SPEC is set to: /home/ACCEL1.2
    Filesystem            Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-home xfs   192G   71G  121G  37% /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 -[G1E105G-1.10]- 12/07/2018
   Memory:
    24x Micron 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666 MHz

 (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.
Run nvidia-smi -pm 1 to enable persistence mode.
```

Base Compiler Invocation

C benchmarks:
`pgcc-llvm`

Fortran benchmarks:
`pgfortran-llvm`

Benchmarks using both Fortran and C:
`pgcc-llvm pgfortran-llvm`

Base Optimization Flags

C benchmarks:
`-fast -Mfprelaxed -acc -ta=tesla:cc70`

Continued on next page

Base Optimization Flags (Continued)

Fortran benchmarks:
`-fast -Mfprelaxed -acc -ta=tesla:cc70`

Benchmarks using both Fortran and C:

353.clvrleaf: `-fast -Mfprelaxed -acc -ta=tesla:cc70`

359.miniGhost: `-fast -Mfprelaxed -acc -ta=tesla:cc70 -Mnomain`

The flags files that were used to format this result can be browsed at
https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.html
https://www.spec.org/accel/flags/pgi2017_flags.20190321.html

You can also download the XML flags sources by saving the following links:
https://www.spec.org/accel/flags/Lenovo-SPECACCEL1.2_Platform_Flags.xml
https://www.spec.org/accel/flags/pgi2017_flags.20190321.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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