SPEC ACCEL™ ACC Result

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Lenovo Global Technology

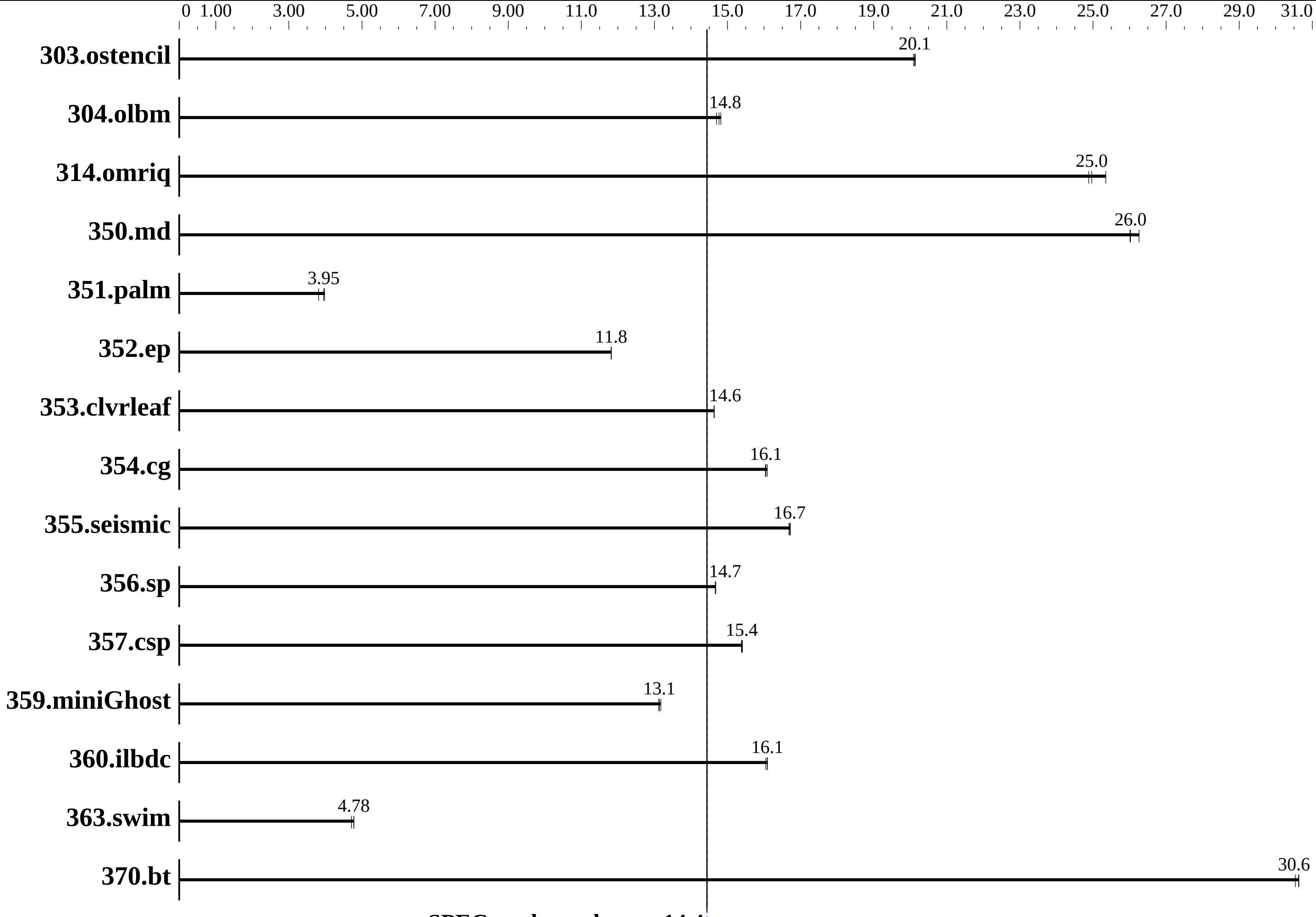
NVIDIA Tesla V100S-PCIE-16GB

ThinkSystem SR860 V2

SPECaccel_acc_peak = 14.4

SPECaccel_acc_base = 14.4

ACCEL license:	28	**Test date:**	Aug-2020
Test sponsor:	Lenovo Global Technology	**Hardware Availability:**	Oct-2020
Tested by:	Lenovo Global Technology	**Software Availability:**	Oct-2020



SPECaccel_acc_base = 14.4

SPECaccel_acc_peak = 14.4

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
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

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Accelerator

Accel Model Name:	NVIDIA Tesla V100S-PCIE-16GB
Accel Vendor:	NVIDIA Corporation
Accel Name:	NVIDIA Tesla V100S-PCIE-16GB
Type of Accel:	GPU
Accel Connection:	PCIe 3.0 16x
Does Accel Use ECC:	Yes
Accel Description:	NVIDIA Tesla V100S-PCIE-16GB
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 450.51.06

Lenovo Global Technology

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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: SUSE Linux Enterprise Server 15 SP2 5.3.18-22-default
Compiler: PGI Professional Edition, Release 19.5
File System: xfs
System State: Run level 3
Other Software:

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
303.ostencil	7.20	20.1	**7.21**	**20.1**	7.22	20.1	7.20	20.1	**7.21**	**20.1**	7.22	20.1
304.olbm	30.9	14.7	30.7	14.8	**30.8**	**14.8**	30.9	14.7	30.7	14.8	**30.8**	**14.8**
314.omriq	37.7	25.4	**38.3**	**25.0**	38.4	24.9	37.7	25.4	**38.3**	**25.0**	38.4	24.9
350.md	9.60	26.3	9.69	26.0	**9.68**	**26.0**	9.60	26.3	9.69	26.0	**9.68**	**26.0**
351.palm	**93.7**	**3.95**	93.0	3.98	97.0	3.81	**93.7**	**3.95**	93.0	3.98	97.0	3.81
352.ep	**44.8**	**11.8**	44.8	11.8	44.9	11.8	**44.8**	**11.8**	44.8	11.8	44.9	11.8
353.clvrleaf	30.4	14.6	**30.4**	**14.6**	30.4	14.6	30.4	14.6	**30.4**	**14.6**	30.4	14.6
354.cg	25.4	16.0	25.4	16.1	**25.4**	**16.1**	25.4	16.0	25.4	16.1	**25.4**	**16.1**
355.seismic	22.2	16.7	22.1	16.7	**22.2**	**16.7**	22.2	16.7	22.1	16.7	**22.2**	**16.7**
356.sp	18.8	14.7	**18.8**	**14.7**	18.8	14.7	18.8	14.7	**18.8**	**14.7**	18.8	14.7
357.csp	**17.5**	**15.4**	17.5	15.4	17.6	15.4	**17.5**	**15.4**	17.5	15.4	17.6	15.4
359.miniGhost	**28.1**	**13.1**	28.0	13.2	28.1	13.1	**28.1**	**13.1**	28.0	13.2	28.1	13.1
360.ilbdc	22.9	16.0	**22.8**	**16.1**	22.8	16.1	22.9	16.0	**22.8**	**16.1**	22.8	16.1
363.swim	48.2	4.78	48.8	4.71	**48.2**	**4.78**	48.2	4.78	48.8	4.71	**48.2**	**4.78**
370.bt	7.28	30.6	7.30	30.5	**7.28**	**30.6**	7.28	30.6	7.30	30.5	**7.28**	**30.6**

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

Platform Notes

```
Sysinfo program /home/ACCEL1.3_pgi19.1_sles151/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on Narvi152 Thu Aug 20 22:09:15 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
```

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Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) Platinum 8380H CPU @ 2.90GHz
      4 "physical id"s (chips)
      112 "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  : 28
      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:       1584972524 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="SLES"
      VERSION="15-SP2"
      VERSION_ID="15.2"
      PRETTY_NAME="SUSE Linux Enterprise Server 15 SP2"
      ID="sles"
      ID_LIKE="suse"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:15:sp2"

uname -a:
   Linux Narvi152 5.3.18-22-default #1 SMP Wed Jun 3 12:16:43 UTC 2020 (720aeba)
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 20 21:20

SPEC is set to: /home/ACCEL1.3_pgi19.1_sles151
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda4      xfs   490G   66G  424G  14% /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
```

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Platform Notes (Continued)

```
    determined", but the intent may not be met, as there are frequent changes to
    hardware, firmware, and the "DMTF SMBIOS" standard.

   BIOS Lenovo M5E103N-1.00 08/07/2020
   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:
`pgcc`

Fortran benchmarks:
`pgfortran`

Benchmarks using both Fortran and C:
`pgcc pgfortran`

Base Optimization Flags

C benchmarks:
`-fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1`

Fortran benchmarks:
`-fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1`

Benchmarks using both Fortran and C:

353.clvrleaf: `-fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1`

359.miniGhost: `-fast -Mfprelaxed -acc -ta=tesla:cc70 -ta=tesla:cuda10.1 -Mnomain`

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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.clvrleaf: `basepeak = yes`

359.miniGhost: `basepeak = yes`

The flags file that was used to format this result can be browsed at
https://www.spec.org/accel/flags/pgi_flags.20200506.html

You can also download the XML flags source by saving the following link:
https://www.spec.org/accel/flags/pgi_flags.20200506.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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