SPEC ACCEL™ ACC Result

IBM
(Test Sponsor: NVIDIA Corporation)

NVIDIA Tesla V100-SXM2

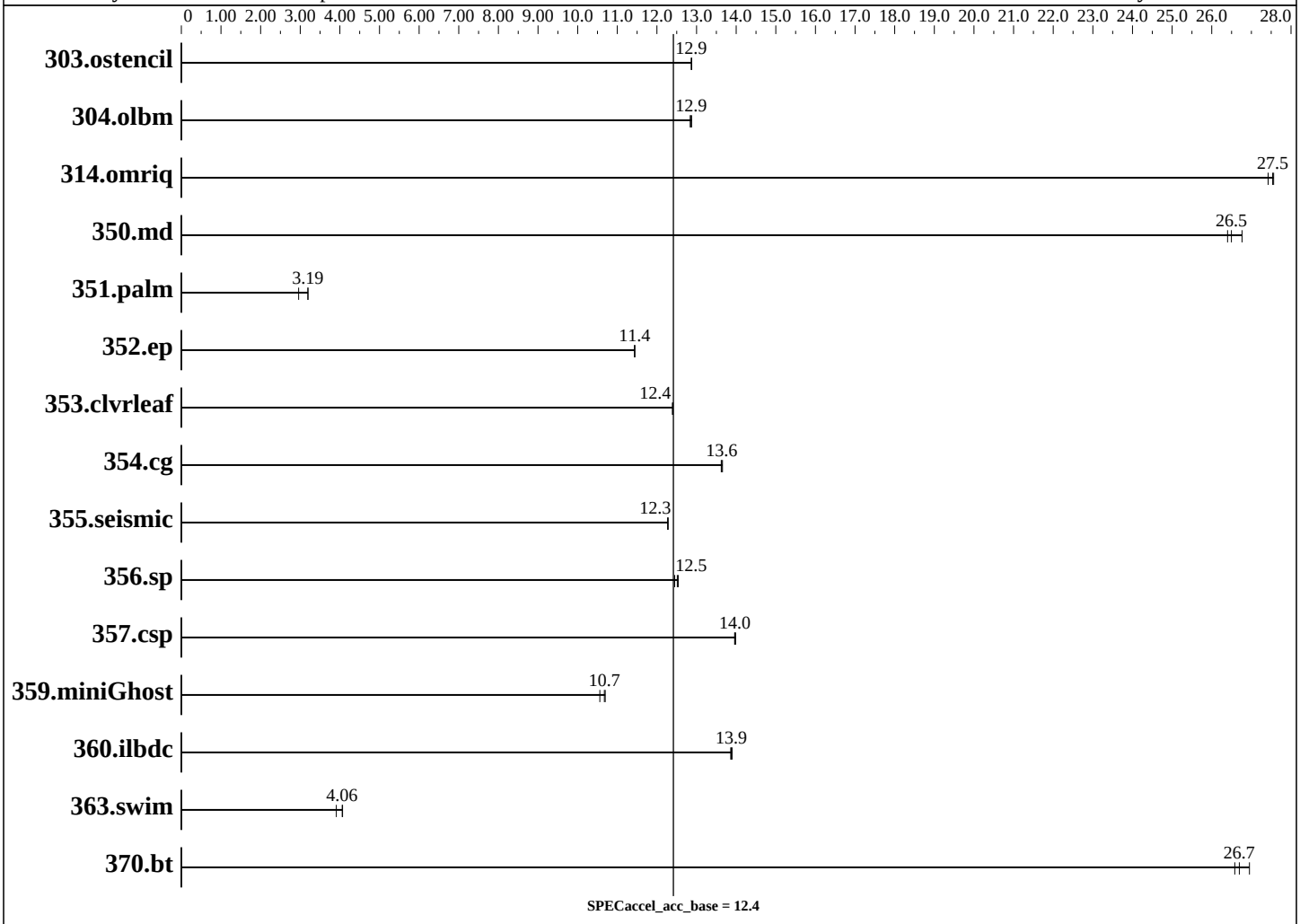
Power Server AC922 (8335-GTC)

SPECaccel_acc_peak = Not Run

SPECaccel_acc_base = 12.4

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

Test date: Nov-2019
Hardware Availability: Dec-2017
Software Availability: Nov-2019



Hardware

CPU Name:	POWER9, altivec supported
CPU Characteristics:	
CPU MHz:	2300
CPU MHz Maximum:	3800
FPU:	--
CPU(s) enabled:	40 cores, could not determine chips, 20 cores/chip, 4 threads/core
CPU(s) orderable:	1-2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	10 MB I+D on chip per chip
Other Cache:	None

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Accelerator

Accel Model Name:	Tesla V100
Accel Vendor:	NVIDIA
Accel Name:	NVIDIA Tesla V100-SXM2
Type of Accel:	GPU
Accel Connection:	PCIe
Does Accel Use ECC:	Yes
Accel Description:	--
Accel Driver:	NVIDIA UNIX x86_64 Kernel Module 418.67

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Hardware (Continued)

Memory: 144 GB
143.291 GB fixme: If using DDR3, format is: 'N GB (M x N GB nRxn PCn-nnnnnR-n, ECC)'
Disk Subsystem: 927 GB add more disk info here
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.5 (Maipo)
Red Hat Enterprise Linux Server release 7.5 (Maipo)
4.14.0-49.8.1.el7a.ibmnvidia.6.1.ppc64le
Compiler: C/C++/Fortran : Version 19.10 of PGI Professional Edition
File System: xfs
System State: Run level 3 (add definition here)
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	**11.3**	**12.9**	11.3	12.9	11.3	12.9						
304.olbm	35.3	12.9	35.4	12.8	**35.4**	**12.9**						
314.omriq	34.7	27.6	**34.7**	**27.5**	34.9	27.4						
350.md	9.42	26.8	9.55	26.4	**9.51**	**26.5**						
351.palm	**116**	**3.19**	125	2.96	116	3.20						
352.ep	**46.3**	**11.4**	46.3	11.4	46.3	11.4						
353.clvrleaf	**35.9**	**12.4**	35.9	12.4	35.9	12.4						
354.cg	**29.9**	**13.6**	29.9	13.7	29.9	13.6						
355.seismic	30.1	12.3	**30.1**	**12.3**	30.1	12.3						
356.sp	**22.1**	**12.5**	22.2	12.4	22.0	12.5						
357.csp	**19.3**	**14.0**	19.3	14.0	19.3	14.0						
359.miniGhost	**34.6**	**10.7**	34.5	10.7	34.9	10.6						
360.ilbdc	26.5	13.9	26.4	13.9	**26.4**	**13.9**						
363.swim	**56.7**	**4.06**	56.5	4.07	58.8	3.91						
370.bt	8.27	27.0	8.39	26.6	**8.35**	**26.7**						

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 /local/home/cparrott/SPEC/ACCEL-1.3/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on perf-wsn1 Thu Nov 14 17:31:48 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
   clock : 3616.000000MHz
   machine : PowerNV 8335-GTC........
   model : 8335-GTC........
   platform : PowerNV
   revision : 2.2 (pvr 004e 1202)
   cpu : POWER9, altivec supported
*
* 0 "physical id" tags found.  Perhaps this is an older system,
* or a virtualized system.  Not attempting to guess how to
* count chips/cores for this system.
*
      160 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
   caution.)

From /proc/meminfo
   MemTotal:       150251584 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)
```

Continued on next page

Platform Notes (Continued)

```
      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 perf-wsn1 4.14.0-49.8.1.el7a.ibmnvidia.6.1.ppc64le #1 SMP Tue Jun 5
      13:56:12 -03 2018 ppc64le ppc64le ppc64le GNU/Linux

   run-level 3 Oct 6 15:08

   SPEC is set to: /local/home/cparrott/SPEC/ACCEL-1.3
      Filesystem                Type  Size  Used Avail Use% Mounted on
      /dev/mapper/rhel_wsn1-root xfs   927G  186G  742G  20% /

   (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
PGI_ACC_POOL_ALLOC_MINSIZE = "64KB"
```

Base Compiler Invocation

C benchmarks:
`pgcc`

Fortran benchmarks:
`pgfortran`

Benchmarks using both Fortran and C:
`pgcc pgfortran`

Base Optimization Flags

C benchmarks:
`-fast -acc -ta=tesla:managed`

Fortran benchmarks:
`-fast -acc -ta=tesla:managed`

Benchmarks using both Fortran and C:

353.clvrleaf: `-fast -acc -ta=tesla:managed`

Continued on next page

Base Optimization Flags (Continued)

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

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

Tested with SPEC ACCEL v1.3.
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