SPEC® OMPG2012 Result

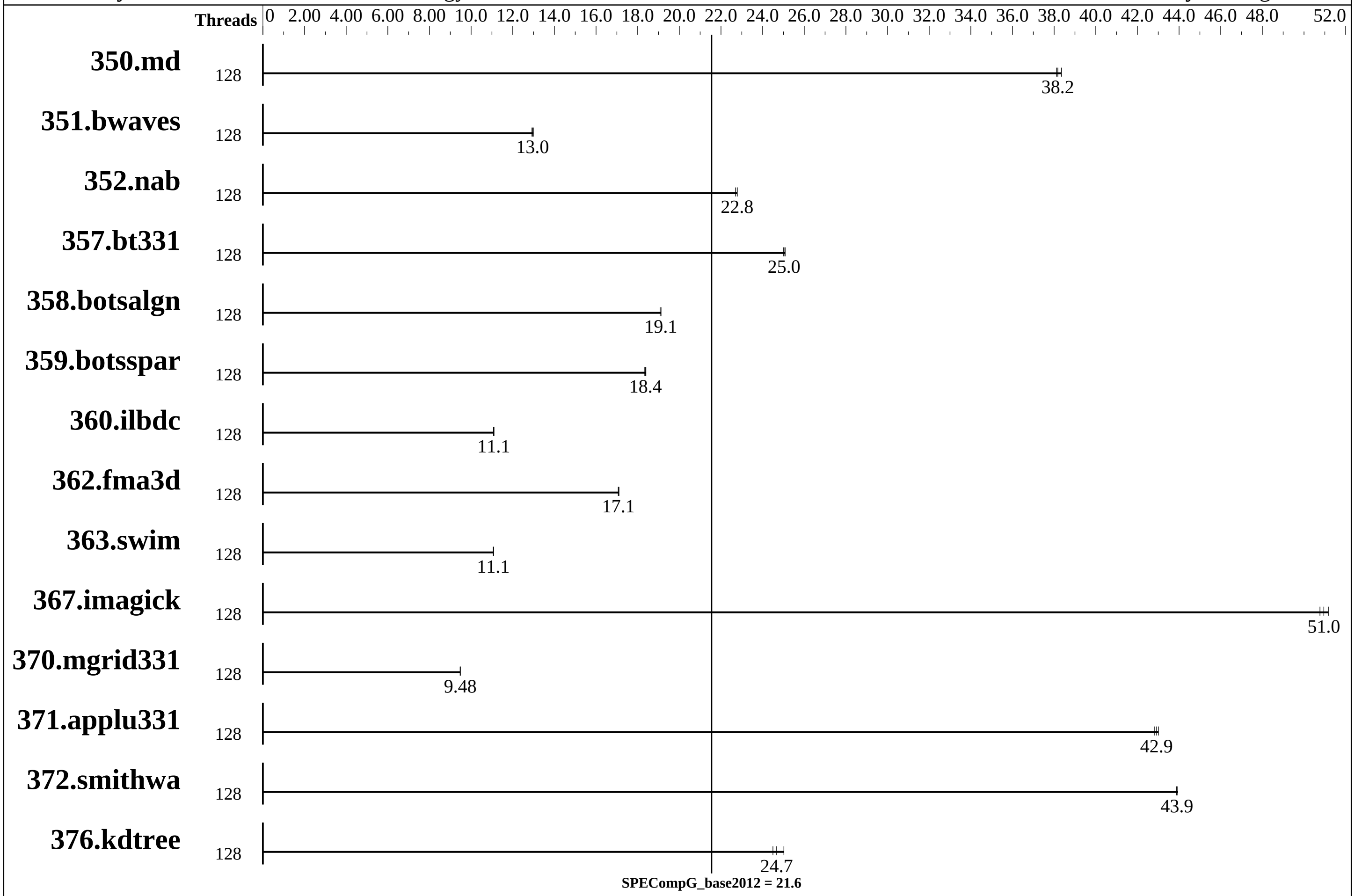
Lenovo Global Technology

ThinkSystem SR655(AMD EYPC 7742 CPU, 2.25GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 21.6

OMP2012 license:	9017	**Test date:**	Jul-2019
Test sponsor:	Lenovo Global Technology	**Hardware Availability:**	Aug-2019
Tested by:	Lenovo Global Technology	**Software Availability:**	Aug-2019



Hardware

CPU Name:	AMD EPYC 7742 CPU
CPU Characteristics:	Turbo up to 3.4 GHz
CPU MHz:	2250
CPU MHz Maximum:	3400
FPU:	Integrated
CPU(s) enabled:	128 cores, 1 chip, 64 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	256 MB I+D on chip per chip, 16 MB shared / 4 cores
Other Cache:	None
Memory:	256 GB (8 x 32 GB 2Rx4 PC4-3200AA-R)
Disk Subsystem:	1 x 1 TB SATA Hard Drive
Other Hardware:	None
Base Threads Run:	128

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Software

Operating System:	Red Hat Enterprise Linux Server release 7.6 , Kernel 3.10.0-957.el7.x86_64
Compiler:	C/C++/Fortran: Version 19.0.3.199 of Intel Parallel Studio XE for Linux 64 Build 20190206
Auto Parallel:	No
File System:	xfs
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other Software:	None

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Minimum Peak Threads: --
Maximum Peak Threads: --

Results Table

	Base							Peak						
Benchmark	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	128	121	38.3	121	38.1	**121**	**38.2**							
351.bwaves	128	351	12.9	349	13.0	**350**	**13.0**							
352.nab	128	171	22.7	171	22.8	**171**	**22.8**							
357.bt331	128	189	25.1	190	25.0	**189**	**25.0**							
358.botsalgn	128	227	19.1	**228**	**19.1**	228	19.1							
359.botsspar	128	285	18.4	**286**	**18.4**	286	18.3							
360.ilbdc	128	**321**	**11.1**	321	11.1	321	11.1							
362.fma3d	128	**223**	**17.1**	223	17.1	222	17.1							
363.swim	128	409	11.1	**409**	**11.1**	409	11.1							
367.imagick	128	137	51.2	138	50.8	**138**	**51.0**							
370.mgrid331	128	467	9.47	466	9.49	**466**	**9.48**							
371.applu331	128	141	43.0	142	42.8	**141**	**42.9**							
372.smithwa	128	122	43.9	**122**	**43.9**	122	43.9							
376.kdtree	128	**182**	**24.7**	180	25.0	184	24.5							

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

Platform Notes

```
Sysinfo program /home/omp2012/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647
running on AMD2U Tue Jul 16 18:39:06 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/omp2012/Docs/config.html#sysinfo

From /proc/cpuinfo
   model name : AMD EPYC 7742 64-Core Processor
      1 "physical id"s (chips)
      128 "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 : 64
      siblings  : 128
      physical 0: cores 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
   cache size : 512 KB
```

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Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       263788332 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.6 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VARIANT="Server"
      VARIANT_ID="server"
      VERSION_ID="7.6"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.6 (Maipo)"
   redhat-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.6:ga:server

uname -a:
   Linux AMD2U 3.10.0-957.el7.x86_64 #1 SMP Thu Oct 4 20:48:51 UTC 2018 x86_64
   x86_64 x86_64 GNU/Linux

run-level 3 Jul 17 02:34

SPEC is set to: /home/omp2012
   Filesystem            Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   876G   42G  834G   5% /home

Additional information from dmidecode:
  BIOS Lenovo CFE103A 07/04/2019
  Memory:
   8x   32 GB
   8x Samsung M393A4K40DB2-CWE 32 GB 3200 MT/s 2 rank
   8x Unknown Unknown

(End of data from sysinfo program)
```

General Notes

```
 ==============================================
 General OMP Library Settings
 ENV_KMP_AFFINITY    = granularity=fine,proclist=[0-3,4-7,8-11,
                         12-15,16-19,20-23,24-27,28-31,32-35,36-39,
                         40-43,44-47,48-51,52-55,56-59,60-63,64-67,
                         68-71,72-75,76-79,80-83,84-87,88-91,92-95,
                         96-99,100-103,104-107,108-111,112-115,
                         116-119,120-123,124-127],explicit
 ENV_KMP_STACKSIZE   = 292M
 ENV_KMP_BLOCKTIME   = infinite
 ENV_KMP_LIBRARY     = turnaround
```

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General Notes (Continued)

```
 ENV_OMP_DYNAMIC      = FALSE
 ENV_OMP_NESTED       = FALSE
 ENV_OMP_SCHEDULE     = staic
==============================================
 BIOS Setting notes:
   Choose Operating Mode set to Maximum Performance
   NUMA nodes per socket set as NPS4
   LLC as NUMA node set as Enabled
   EfficiencyModeEn set as Auto
   SVM Mode set as Disabled
   IOMMU set as Disabled

 Yes: The test sponsor attests, as of date of publication, the CVE-2017-5754 (Meltdown)
 is mitigated in the system as tested and documented.
 Yes: The test sponsor attests, as of date of publication, the 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-2017-5754 (Spectre variant 2)
 is mitigated in the system as tested and documented.
```

Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

Base Portability Flags

350.md: `-FR`
357.bt331: `-mcmodel=medium`
363.swim: `-mcmodel=medium`
367.imagick: `-std=c99`

Base Optimization Flags

C benchmarks:
`-O3 -qopenmp -march=core-avx2 -no-prec-div`
`-qopt-streaming-stores=auto -unroll-aggressive -ansi-alias`

C++ benchmarks:
`-O3 -qopenmp -march=core-avx2 -no-prec-div`
`-qopt-streaming-stores=auto -unroll-aggressive -ansi-alias`

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Base Optimization Flags (Continued)

Fortran benchmarks:

```
-O3 -qopenmp -march=core-avx2 -no-prec-div
-qopt-streaming-stores=auto -unroll-aggressive -align array64byte
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Lenovo-OMP2012-Rome7742.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Lenovo-OMP2012-Rome7742.xml

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

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