SPEC® OMPG2012 Result

Copyright 2012-2020 Standard Performance Evaluation Corporation

Lenovo Global Technology

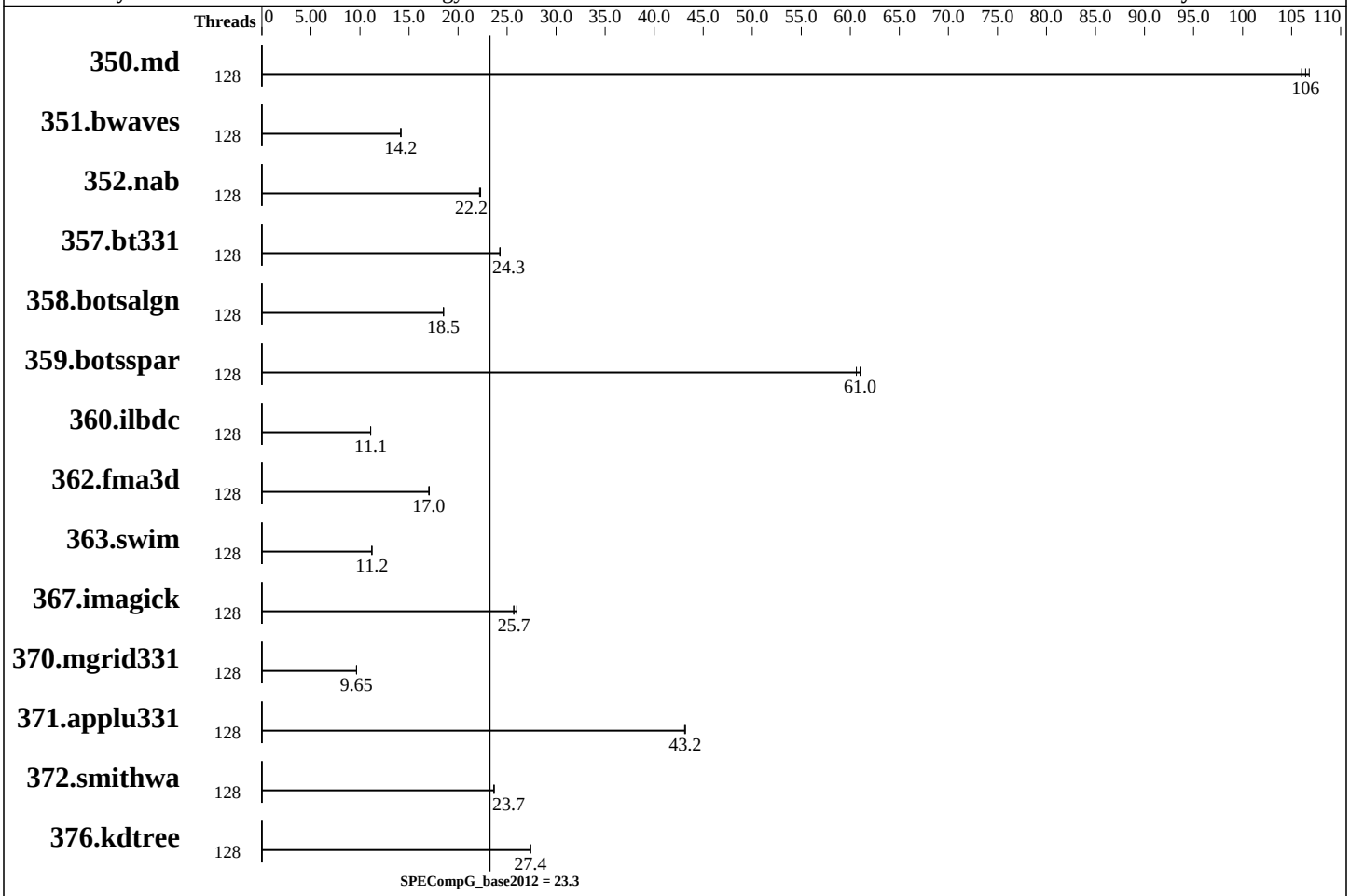
ThinkSystem SR655(AMD EYPC 7H12 CPU, 2.60GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 23.3

OMP2012 license: 9017
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: Feb-2020
Hardware Availability: Jun-2020
Software Availability: Jan-2020



Hardware

CPU Name:	AMD EPYC 7H12 CPU
CPU Characteristics:	None
CPU MHz:	2600
CPU MHz Maximum:	3400
FPU:	Integrated
CPU(s) enabled:	64 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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 7.7 , Kernel 3.10.0-1062.el7.x86_64
Compiler:	C/C++/Fortran: Version 19.4 of PGI Community Edition
Auto Parallel:	No
File System:	xfs
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other Software:	FFTW library for AMD version 2.1, AMD LibM version 3.5.0

SPEC OMPG2012 Result

Copyright 2012-2020 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR655(AMD EYPC 7H12 CPU, 2.60GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 23.3

OMP2012 license:9017
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: Feb-2020
Hardware Availability: Jun-2020
Software Availability: Jan-2020

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

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	128	**43.5**	**106**	43.4	107	43.7	106							
351.bwaves	128	**320**	**14.2**	320	14.2	320	14.2							
352.nab	128	**175**	**22.2**	175	22.2	174	22.3							
357.bt331	128	195	24.3	195	24.3	**195**	**24.3**							
358.botsalgn	128	**235**	**18.5**	235	18.5	235	18.5							
359.botsspar	128	**86.1**	**61.0**	86.6	60.6	86.0	61.0							
360.ilbdc	128	321	11.1	**321**	**11.1**	321	11.1							
362.fma3d	128	**223**	**17.0**	223	17.0	223	17.1							
363.swim	128	**404**	**11.2**	404	11.2	404	11.2							
367.imagick	128	274	25.7	271	26.0	**274**	**25.7**							
370.mgrid331	128	458	9.64	458	9.65	**458**	**9.65**							
371.applu331	128	141	43.1	140	43.2	**140**	**43.2**							
372.smithwa	128	**226**	**23.7**	226	23.7	227	23.7							
376.kdtree	128	164	27.4	**164**	**27.4**	165	27.4							

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 AMD1S2U_7H12 Wed Feb 19 15:58:32 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/omp2012/Docs/config.html#sysinfo

From /proc/cpuinfo
   model name : AMD EPYC 7H12 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
```

Continued on next page

Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       263803936 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.7 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VARIANT="Server"
      VARIANT_ID="server"
      VERSION_ID="7.7"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.7 (Maipo)"
   redhat-release: Red Hat Enterprise Linux Server release 7.7 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.7 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.7:ga:server

uname -a:
   Linux AMD1S2U_7H12 3.10.0-1062.el7.x86_64 #1 SMP Thu Jul 18 20:25:13 UTC 2019
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 18 22:29

SPEC is set to: /home/omp2012
   Filesystem            Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   876G   34G  843G   4% /home

Additional information from dmidecode:
  BIOS Lenovo             CFE111A 12/31/2019
  Memory:
   8x   32 GB
   8x Samsung M393A4K40DB2-CWE 32 kB 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
```

Continued on next page

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:
pgcc

C++ benchmarks:
pgc++

Fortran benchmarks:
pgfortran

Base Portability Flags

350.md: -Mfree
351.bwaves: -Mcray=pointer
357.bt331: -mcmodel=medium
362.fma3d: -Mfree
363.swim: -mcmodel=medium

Base Optimization Flags

C benchmarks:
-O3 -tp=zen -mp -Bstatic_pgi -m64 -fast -lfftw3_omp -Mpre -Mlre
-Masmkeyword -Mnosingle -Mschar

C++ benchmarks:
-O3 -tp=zen -mp -Bstatic_pgi -m64 -fast -lfftw3_omp -Mpre -Mlre
-Mnoasmkeyword

Continued on next page

Base Optimization Flags (Continued)

Fortran benchmarks:
-O3 -tp=zen -mp -Bstatic_pgi -m64 -fast -lfftw3_omp -Mpre -Mlre
-Mallocatable=95 -Mnoupcase -Mnostride0 -Mdefaultunit -Mnoiomutex
-lamdlibm

The flags file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Lenovo-OMP2012-Rome7H12.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Lenovo-OMP2012-Rome7H12.xml

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC OMP2012 v1.0.
Report generated on Mon Mar 16 10:21:58 2020 by SPEC OMP2012 PS/PDF formatter v541.
Originally published on 12 March 2020.