SPEC® OMPG2012 Result

Copyright 2012-2020 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR665(AMD EYPC 7H12, 2.60GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 41.4
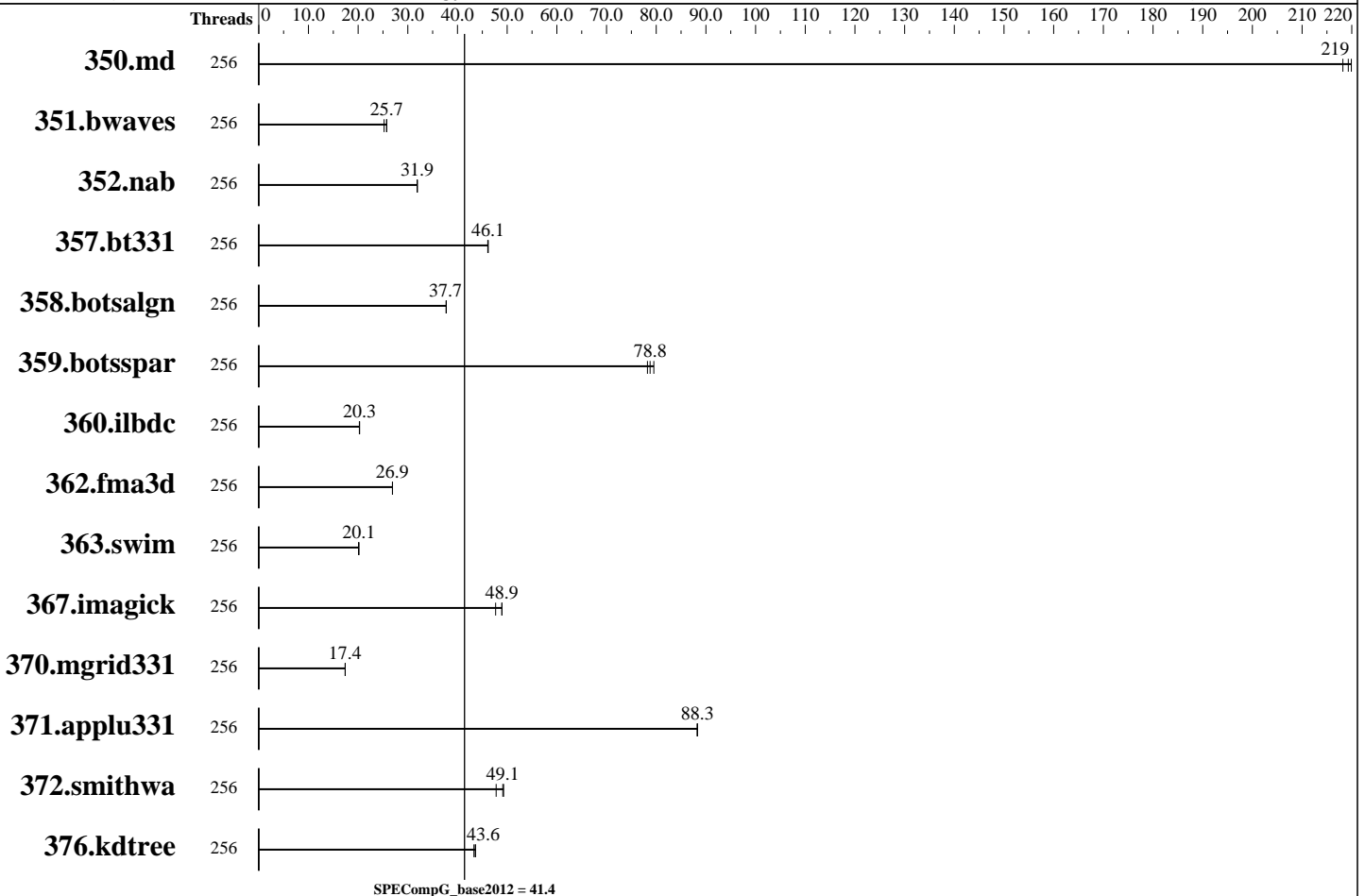
OMP2012 license: 28
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: Apr-2020
Hardware Availability: Jun-2020
Software Availability: Jun-2020

Benchmark	Threads	Score
350.md	256	219
351.bwaves	256	25.7
352.nab	256	31.9
357.bt331	256	46.1
358.botsalgn	256	37.7
359.botsspar	256	78.8
360.ilbdc	256	20.3
362.fma3d	256	26.9
363.swim	256	20.1
367.imagick	256	48.9
370.mgrid331	256	17.4
371.applu331	256	88.3
372.smithwa	256	49.1
376.kdtree	256	43.6

SPECompG_base2012 = 41.4

Hardware

CPU Name:	AMD EYPC 7H12
CPU Characteristics:	Turbo up to 3.3 GHz
CPU MHz:	2600
CPU MHz Maximum:	3300
FPU:	Integrated
CPU(s) enabled:	256 cores, 2 chips, 64 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 Chips
Primary Cache:	32 KB I+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
Other Cache:	None
Memory:	1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R)
Disk Subsystem:	1 x 1 TB SATA Hard Drive
Other Hardware:	None
Base Threads Run:	256
Minimum Peak Threads:	--

Software

Operating System:	SUSE Linux Enterprise Server 15 SP1 (x86_64), Kernel 4.12.14-195-default
Compiler:	C/C++/Fortran: Version 19.10 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:	None

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Maximum Peak Threads:	--

Results Table

Benchmark	Threads	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Threads	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
350.md	256	21.2	218	21.1	220	**21.1**	**219**							
351.bwaves	256	180	25.2	**176**	**25.7**	176	25.7							
352.nab	256	122	31.9	122	31.9	**122**	**31.9**							
357.bt331	256	103	46.1	103	46.2	**103**	**46.1**							
358.botsalgn	256	**115**	**37.7**	115	37.7	115	37.7							
359.botsspar	256	66.0	79.5	**66.7**	**78.8**	67.1	78.2							
360.ilbdc	256	**176**	**20.3**	175	20.3	176	20.2							
362.fma3d	256	141	26.9	**141**	**26.9**	141	26.9							
363.swim	256	225	20.1	**225**	**20.1**	226	20.1							
367.imagick	256	147	47.7	144	48.9	**144**	**48.9**							
370.mgrid331	256	254	17.4	254	17.4	**254**	**17.4**							
371.applu331	256	68.7	88.2	**68.6**	**88.3**	68.6	88.3							
372.smithwa	256	109	49.3	112	47.8	**109**	**49.1**							
376.kdtree	256	103	43.6	**103**	**43.6**	104	43.3							

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

Platform Notes

```
    Sysinfo program /home/omp2012-1.1/Docs/sysinfo
    Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
    running on linux-x8nq Wed Apr 22 08:59:18 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
         2 "physical id"s (chips)
         256 "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
         physical 1: 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
```

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Platform Notes (Continued)

```
        cache size : 512 KB

  From /proc/meminfo
     MemTotal:        1056658876 kB
     HugePages_Total:         0
     Hugepagesize:         2048 kB

  From /etc/*release* /etc/*version*
     os-release:
         NAME="SLES"
         VERSION="15-SP1"
         VERSION_ID="15.1"
         PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
         ID="sles"
         ID_LIKE="suse"
         ANSI_COLOR="0;32"
         CPE_NAME="cpe:/o:suse:sles:15:sp1"

  uname -a:
     Linux linux-x8nq 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019
     (8fba516) x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Apr 22 07:18

  SPEC is set to: /home/omp2012-1.1
     Filesystem      Type    Size  Used Avail Use% Mounted on
     /dev/sda4       btrfs   444G  151G  292G  35% /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 D8E105F-1.00 03/19/2020
     Memory:
     16x Samsung M393A8G40AB2-CWE 64 kB 2 rank 3200 MT/s
     16x 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,
  124-127,128-131,132-135,136-139,140-143,144-147,148-151,152-155,156-159,160-163,
  164-167,168-171,172-175,176-179,180-183,184-187,188-191,192-195,196-199,200-203,
  204-207,208-211,212-215,216-219,220-223,224-227,228-231,232-235,236-239,240-243,
```

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General Notes (Continued)

```
244-247,248-251,252-255],explicit

ENV_KMP_STACKSIZE    = 256M
ENV_KMP_BLOCKTIME    = infinite
ENV_KMP_LIBRARY      = turnaround
ENV_OMP_DYNAMIC      = FALSE
ENV_OMP_NESTED       = FALSE
ENV_OMP_SCHEDULE     = staic
   ENV_OMP_THREADS     = 256
========================================
BIOS Setting notes:
  Choose Operating Mode set to Maximum Performance
  NUMA nodes per socket set as NPS1
  ACPI SRAT L3 Cache as NUMA Domain set as Enabled

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.
===============================================
OS tunning:
ulimit -s unlimited
```

Base Compiler Invocation

C benchmarks:
    pgcc

C++ benchmarks:
    pgc++

Fortran benchmarks:
    pgfortran

Base Portability Flags

    350.md: -Mfree
  357.bt331: -mcmodel=medium
  362.fma3d: -Mfree
   363.swim: -mcmodel=medium

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Base Optimization Flags

C benchmarks:

```
-fast -O3 -tp=zen -mp -m64 -Mlre -fastsse -Mipa -Mpre -Mmovnt
-Mnontemporal -Mkeepasm -Masmkeyword -Mnosingle -Mschar -Mnom128
```

C++ benchmarks:

```
-fast -O3 -tp=zen -mp -m64 -Mlre -fastsse -Mipa -Mpre -Mmovnt
-Mnontemporal -Mkeepasm -Mnoasmkeyword -Minline=levels:10
--no_exceptions --zc_eh
```

Fortran benchmarks:

```
-fast -O3 -tp=zen -mp -m64 -Mlre -fastsse -Mipa -Mpre -Mmovnt
-Mnontemporal -Mkeepasm -Mallocatable=95 -Mnoupcase -Mnostride0
-Mdefaultunit -Mnoiomutex -Mcray=pointer
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Lenovo-OMP2012-Rome7H12.20200506.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Lenovo-OMP2012-Rome7H12.20200506.xml

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

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