



SPEC® OMPG2012 Result

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Lenovo Global Technology

SPECompG_peak2012 = Not Run

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

SPECompG_base2012 = 23.3

OMP2012 license:9017

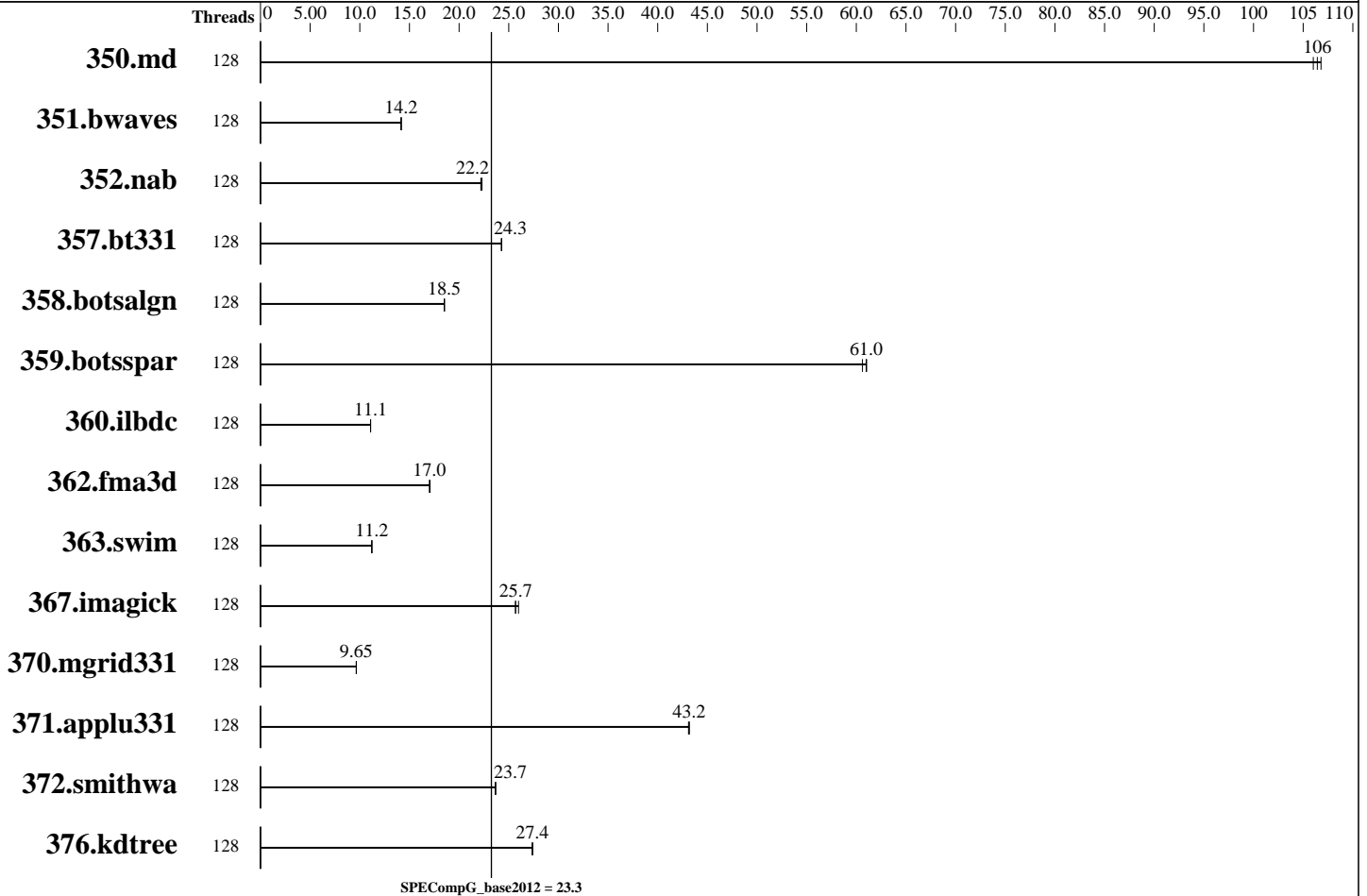
Test sponsor: Lenovo Global Technology

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

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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



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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 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963ale67685e50647
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

```

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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
```

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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:

pgcc

C++ benchmarks:

pgc++

Fortran benchmarks:

pgfortran

Base Portability Flags

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

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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>

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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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