SPEC® OMPG2012 Result
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Lenovo Global Technology
ThinkSystem SR860 V2

SPECompG_peak2012 = Not Run

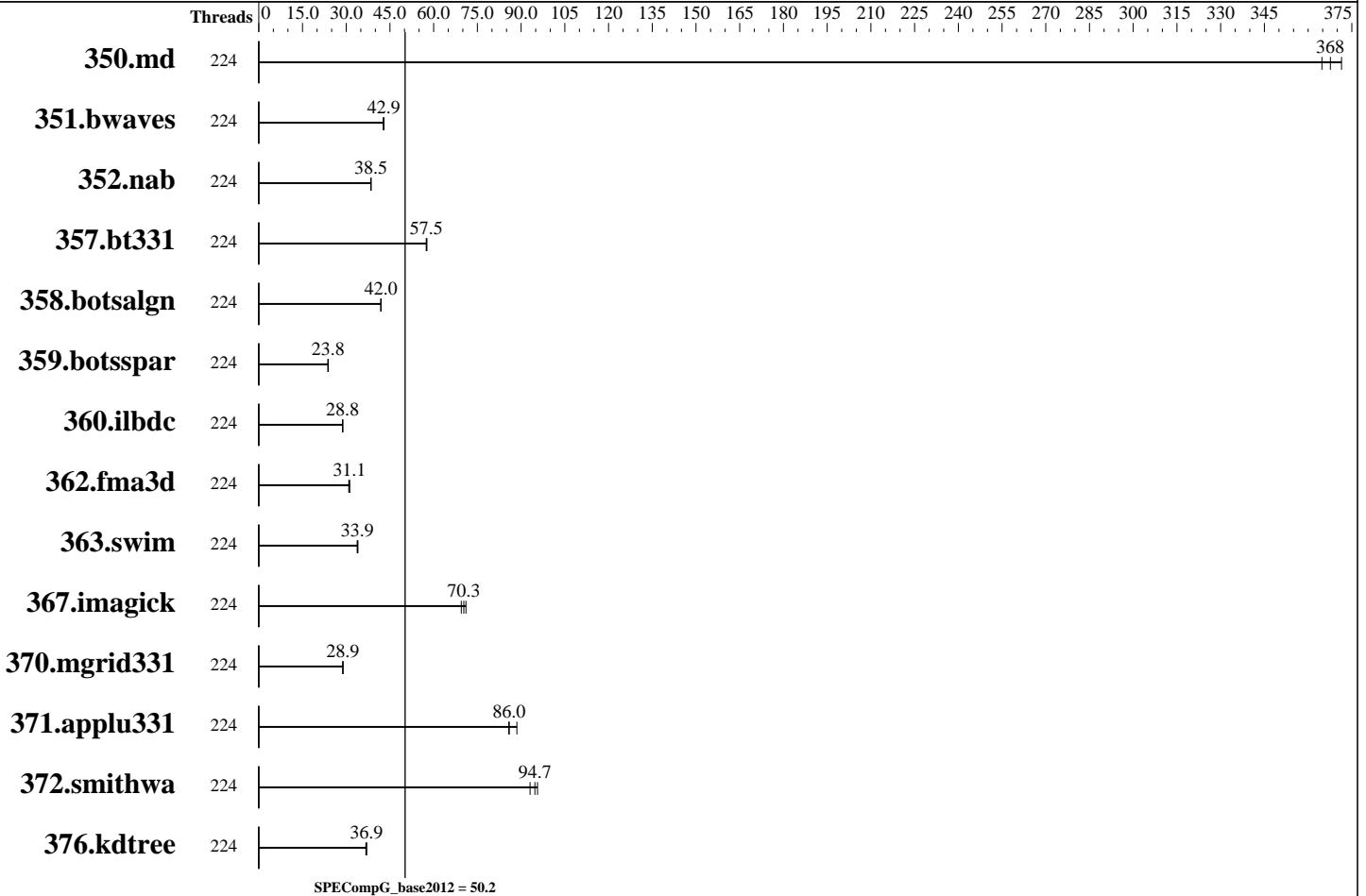SPECompG_base2012 =   50.2

OMP2012 license: 28
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test date: Aug-2020
Hardware Availability: Oct-2020
Software Availability: Oct-2020

Benchmark	Threads	Result
350.md	224	368
351.bwaves	224	42.9
352.nab	224	38.5
357.bt331	224	57.5
358.botsalgn	224	42.0
359.botsspar	224	23.8
360.ilbdc	224	28.8
362.fma3d	224	31.1
363.swim	224	33.9
367.imagick	224	70.3
370.mgrid331	224	28.9
371.applu331	224	86.0
372.smithwa	224	94.7
376.kdtree	224	36.9

SPECompG_base2012 = 50.2

Hardware

CPU Name: Intel Xeon Platinum 8380H
CPU Characteristics: Intel Turbo Boost Technology up to 4.30 GHz
CPU MHz: 2900
CPU MHz Maximum: 4300
FPU: Integrated
CPU(s) enabled: 112 cores, 4 chips, 28 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 38.5 MB I+D on chip per chip
Other Cache: None
Memory: 1536 GB (48 x 32 GB 2Rx8 PC4-3200AA-R)
Disk Subsystem: 1 x 1 TB SATA Hard Drive
Other Hardware: None
Base Threads Run: 224
Minimum Peak Threads: --

Software

Operating System: Red Hat Enterprise Linux Server release 8.2 , Kernel 4.18.0-193.el8.x86_74
Compiler: C/C++/Fortran: Version 19.1.2.254 of Intel Parallel Studio for Linux
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	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	224	12.5	371	12.7	365	**12.6**	**368**							
351.bwaves	224	105	43.0	106	42.7	**106**	**42.9**							
352.nab	224	101	38.5	101	38.4	**101**	**38.5**							
357.bt331	224	82.5	57.5	**82.4**	**57.5**	82.2	57.7							
358.botsalgn	224	104	42.0	**104**	**42.0**	104	41.8							
359.botsspar	224	**221**	**23.8**	220	23.9	221	23.7							
360.ilbdc	224	124	28.7	123	28.8	**124**	**28.8**							
362.fma3d	224	123	30.9	**122**	**31.1**	122	31.2							
363.swim	224	134	33.8	**134**	**33.9**	133	34.0							
367.imagick	224	98.9	71.1	101	69.5	**99.9**	**70.3**							
370.mgrid331	224	153	28.9	**153**	**28.9**	153	28.8							
371.applu331	224	70.7	85.8	68.4	88.6	**70.5**	**86.0**							
372.smithwa	224	57.6	93.1	56.0	95.6	**56.6**	**94.7**							
376.kdtree	224	**122**	**36.9**	122	37.0	122	36.7							

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
    Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
    running on Narvi-SIT Thu Aug 13 22:51:30 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 : Intel(R) Xeon(R) Platinum 8380H CPU @ 2.90GHz
          4 "physical id"s (chips)
          224 "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 : 28
          siblings  : 56
          physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
          25 26 27 28 29 30
          physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
          25 26 27 28 29 30
          physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
          25 26 27 28 29 30
```

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Platform Notes (Continued)

```
      physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
        25 26 27 28 29 30
     cache size : 39424 KB

 From /proc/meminfo
    MemTotal:       1584435456 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    os-release:
        NAME="Red Hat Enterprise Linux"
        VERSION="8.2 (Ootpa)"
        ID="rhel"
        ID_LIKE="fedora"
        VERSION_ID="8.2"
        PLATFORM_ID="platform:el8"
        PRETTY_NAME="Red Hat Enterprise Linux 8.2 (Ootpa)"
        ANSI_COLOR="0;31"
    redhat-release: Red Hat Enterprise Linux release 8.2 (Ootpa)
    system-release: Red Hat Enterprise Linux release 8.2 (Ootpa)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:8.2:ga

 uname -a:
    Linux Narvi-SIT 4.18.0-193.el8.x86_64 #1 SMP Fri Mar 27 14:35:58 UTC 2020
    x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Aug 13 21:14

 SPEC is set to: /home/omp2012
    Filesystem            Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-home xfs   178G   40G  138G  23% /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 M5E103H-1.00 06/24/2020
  Memory:
   48x Samsung M393A4G43AB3-CWE 32 GB 2 rank 3200 MT/s

 (End of data from sysinfo program)
```

General Notes

```
==================================================
General OMP Library Settings
ENV_KMP_AFFINITY        = granularity=fine,compact,1,0
ENV_KMP_BLOCKTIME       = infinite
```

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General Notes (Continued)

```
   ENV_KMP_LIBRARY          = turnaround
   ENV_KMP_DETERMINISTIC_REDUCTION = TRUE
   ENV_KMP_STACKSIZE        = 256M
   ENV_OMP_MAX_ACTIVE_LEVELS  = 1
   ENV_OMP_THREADS    = 224
   ENV_OMP_WAIT_POLICY     = PASSIVE
   ENV_OMP_SCHEDULE         = staic
   ENV_OMP_DYNAMIC         = FALSE
   ENV_OMP_PROC_BIND    = master


   ===============================================
   BIOS Setting notes:
     Choose Operating Mode set to Maximum Performance
     SNC = 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.
```

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
```

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Base Optimization Flags

C benchmarks:

```
-O3 -qopenmp -xCORE-AVX512 -ipo  -fp-model fast=2 -no-prec-div
-no-prec-sqrt -qopt-zmm-usage=high -qopt-malloc-options=0
-fomit-frame-pointer -ansi-alias -shared-intel
```

C++ benchmarks:

```
-O3 -qopenmp -xCORE-AVX512 -ipo  -fp-model fast=2 -no-prec-div
-no-prec-sqrt -qopt-zmm-usage=high -qopt-malloc-options=0
-fomit-frame-pointer -ansi-alias -shared-intel
```

Fortran benchmarks:

```
-O3 -qopenmp -xCORE-AVX512 -ipo  -fp-model fast=2 -no-prec-div
-no-prec-sqrt -qopt-zmm-usage=high -qopt-malloc-options=0
-fomit-frame-pointer -align array64byte
```

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

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

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For other inquiries, please contact webmaster@spec.org.

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