SPEC® OMPG2012 Result

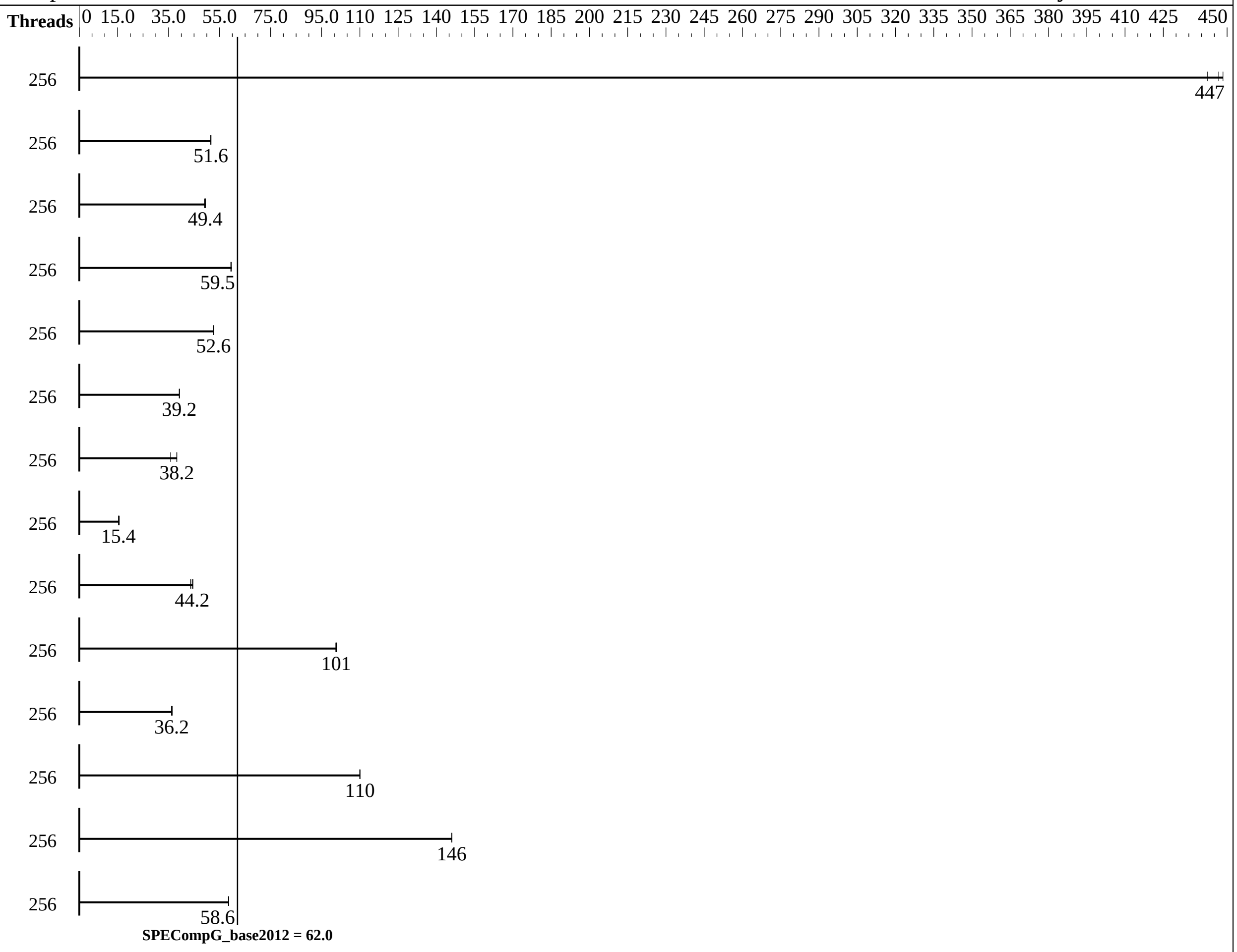
Supermicro

SuperServer SYS-221H-TN24R (INTEL XEON PLATINUM 8592+)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 62.0

OMP2012 license:	001176	**Test date:**	Nov-2023
Test sponsor:	Supermicro	**Hardware Availability:**	Oct-2023
Tested by:	Supermicro	**Software Availability:**	Jul-2023



Hardware

CPU Name:	INTEL XEON PLATINUM 8592+
CPU Characteristics:	Intel Turbo Boost Technology up to 3.90 GHz
CPU MHz:	1900
CPU MHz Maximum:	3900
FPU:	Integrated
CPU(s) enabled:	128 cores, 2 chips, 64 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 48 KB D on chip per core
Secondary Cache:	2 MB I+D on chip per core
L3 Cache:	320 KB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (16 x 64 GB 2Rx4 PC5-5600B-R)
Disk Subsystem:	1 x 960 GB NVMe SSD
Other Hardware:	None
Base Threads Run:	256
Minimum Peak Threads:	--

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Software

Operating System:	SUSE Linux Enterprise High Performance Computing 15 SP5 5.14.21-150500.53-default
Compiler:	C/C++/Fortran: Version 2023.2.0.49440 of Intel oneAPI DPC++/C++
Auto Parallel:	No
File System:	xfs
System State:	May-2023
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other Software:	None

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Maximum Peak Threads: --

Results Table

	Base							Peak						
Benchmark	**Threads**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Threads**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
350.md	256	10.5	442	**10.4**	**447**	10.3	448							
351.bwaves	256	**87.8**	**51.6**	87.7	51.7	88.0	51.5							
352.nab	256	79.2	49.1	78.6	49.5	**78.7**	**49.4**							
357.bt331	256	79.8	59.4	**79.7**	**59.5**	79.4	59.7							
358.botsalgn	256	**82.7**	**52.6**	82.7	52.6	82.7	52.6							
359.botsspar	256	**134**	**39.2**	134	39.3	134	39.2							
360.ilbdc	256	**93.1**	**38.2**	99.4	35.8	93.1	38.2							
362.fma3d	256	**247**	**15.4**	243	15.7	248	15.4							
363.swim	256	102	44.6	**102**	**44.2**	104	43.6							
367.imagick	256	69.7	101	**69.8**	**101**	69.9	101							
370.mgrid331	256	122	36.2	**122**	**36.2**	121	36.4							
371.applu331	256	55.1	110	**55.1**	**110**	55.1	110							
372.smithwa	256	36.7	146	36.7	146	**36.7**	**146**							
376.kdtree	256	**76.8**	**58.6**	76.8	58.6	76.9	58.5							

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

Platform Notes

```
Sysinfo program /home/OMP/Docs/sysinfo
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
running on 195-221 Tue Nov 14 16:33:30 2023

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 8592+
      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 : 327680 KB

   From /proc/meminfo
      MemTotal:       1055995848 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   From /etc/*release* /etc/*version*
      os-release:
         NAME="SLES"
         VERSION="15-SP5"
         VERSION_ID="15.5"
         PRETTY_NAME="SUSE Linux Enterprise Server 15 SP5"
         ID="sles"
         ID_LIKE="suse"
         ANSI_COLOR="0;32"
         CPE_NAME="cpe:/o:suse:sles:15:sp5"

   uname -a:
      Linux 195-221 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10
      07:56:26 UTC 2023 (b630043) x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Nov 14 16:29 last=5

   SPEC is set to: /home/OMP
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/nvme0n1p5 xfs   688G  152G  536G  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 American Megatrends International, LLC. 2.0 10/07/2023
     Memory:
      16x Micron Technology MTC40F2046S1RC56BD1 64 GB 2 rank 5600 MT/s

   (End of data from sysinfo program)
```

General Notes

```
 ==========================================================================
 BIOS Setting:
     Power Performance Tuning = BIOS Controls EPB
     ENERGY_PERF_BIAS_CFG Mode = Extreme Performance
     Turbo mode = Disable
 ==========================================================================
 General OMP Library Settings:
    ENV_KMP_LIBRARY          = turnaround
    ENV_KMP_BLOCKTIME        = infinite
```

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General Notes (Continued)

```
   ENV_OMP_STACKSIZE        = 500M
   ENV_OMP_SCHEDULE         = static
   ENV_OMP_NESTED           = FALSE
   ENV_OMP_DYNAMIC          = FALSE
   ENV_KMP_AFFINITY         = compact,0
=========================================================================
    NA: 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:
    Stack size set to unlimited using "ulimit -s unlimited"
=========================================================================
Invocation command line:
runspec --config=config.cfg --flagsurl=supermicro-oneAPI.xml
--flagsurl=Supermicro-Platform-Settings-V1.2-SPR-revF.xml
--define half=128 --tune=base --reportable --iterations=3 --threads=256 --size=ref all
```

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 -ipo1 -xCORE-AVX512 -qopt-zmm-usage=high -shared-intel -ansi-alias`

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Base Optimization Flags (Continued)

C++ benchmarks:

```
-O3 -qopenmp -ipo1 -xCORE-AVX512 -qopt-zmm-usage=high -shared-intel
-ansi-alias
```

Fortran benchmarks:

```
-O3 -qopenmp -ipo1 -xCORE-AVX512 -qopt-zmm-usage=high -shared-intel
-align array64byte
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Supermicro-ic2022.linux64-oneAPI.html
http://www.spec.org/omp2012/flags/Supermicro-Platform-Settings-V1.2-SPR-revF.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/omp2012/flags/Supermicro-ic2022.linux64-oneAPI.xml
http://www.spec.org/omp2012/flags/Supermicro-Platform-Settings-V1.2-SPR-revF.xml

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

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