SPEC® OMPG2012 Result

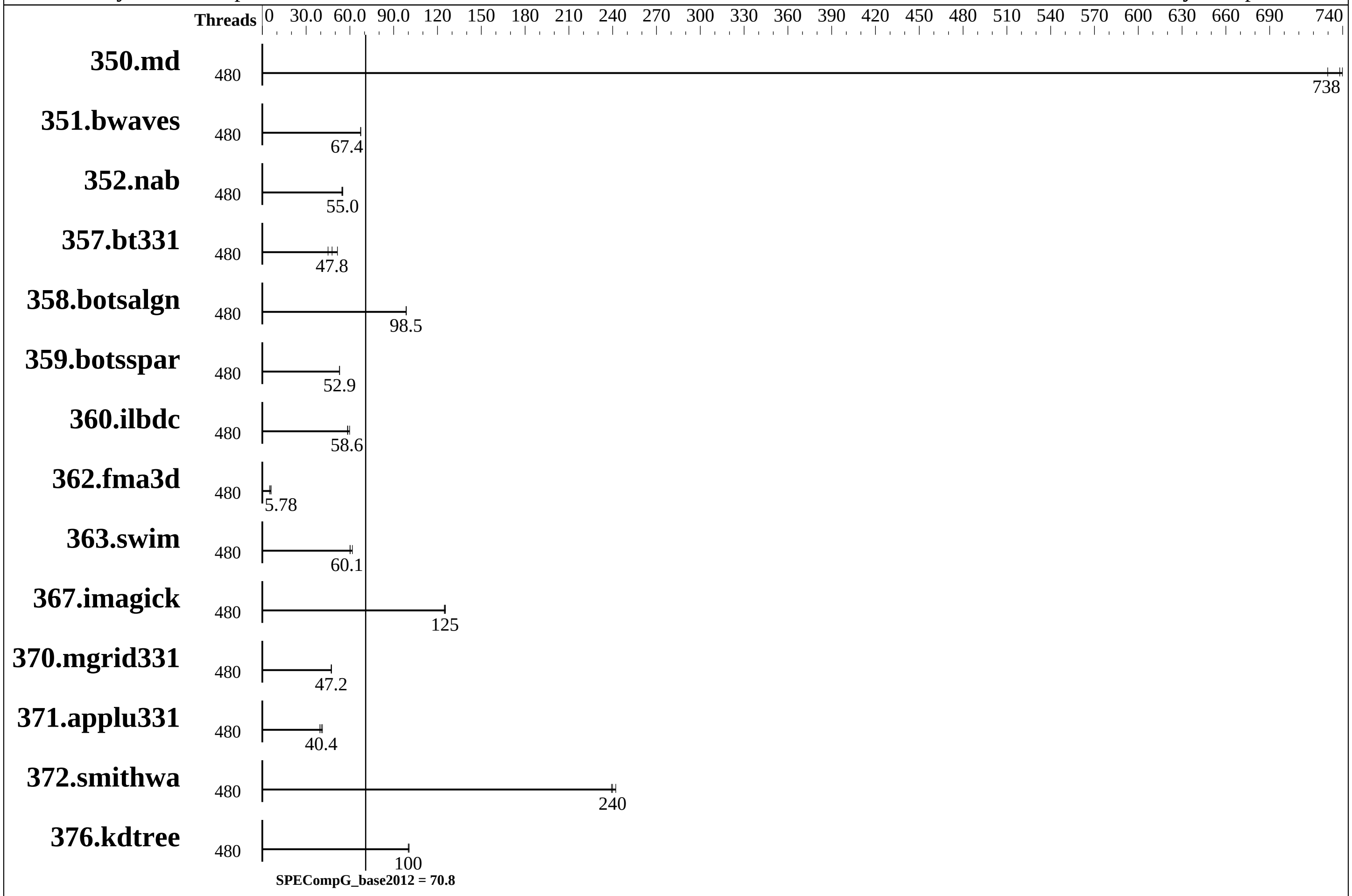
Supermicro

SuperServer SYS-241H-TNRTTP (Intel Xeon Platinum 8490H)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 70.8

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



Hardware

CPU Name:	Intel Xeon Platinum 8490H
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	1900
CPU MHz Maximum:	3500
FPU:	Integrated
CPU(s) enabled:	240 cores, 4 chips, 60 cores/chip, 2 threads/core
CPU(s) orderable:	4 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:	115200 KB I+D on chip per chip
Other Cache:	None
Memory:	2.0 TB (32 x 64 GB 2Rx8 PC5-4800B-R)
Disk Subsystem:	1 x 1.92 TB NVME SSD
Other Hardware:	None
Base Threads Run:	480
Minimum Peak Threads:	--

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Software

Operating System:	SUSE Linux Enterprise High Performance Computing 15 SP4 5.14.21-150400.22-default
Compiler:	C/C++/Fortran: Version 2023.0.0.20221208 of Intel oneAPI DPC++/C++
Auto Parallel:	No
File System:	btrfs
System State:	Jun-2022
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other Software:	None

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Software Availability: Apr-2023

Maximum Peak Threads: --

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	480	**6.27**	**738**	6.34	730	6.26	740							
351.bwaves	480	67.2	67.5	67.3	67.3	**67.2**	**67.4**							
352.nab	480	**70.7**	**55.0**	70.5	55.2	71.4	54.5							
357.bt331	480	92.1	51.5	105	45.0	**99.2**	**47.8**							
358.botsalgn	480	44.1	98.7	**44.2**	**98.5**	44.2	98.4							
359.botsspar	480	**99.2**	**52.9**	99.1	53.0	99.3	52.9							
360.ilbdc	480	61.0	58.3	59.5	59.8	**60.8**	**58.6**							
362.fma3d	480	764	4.97	632	6.01	**657**	**5.78**							
363.swim	480	**75.3**	**60.1**	75.4	60.1	73.4	61.7							
367.imagick	480	**56.2**	**125**	56.4	125	56.0	125							
370.mgrid331	480	93.2	47.4	**93.6**	**47.2**	93.8	47.1							
371.applu331	480	**150**	**40.4**	147	41.2	154	39.4							
372.smithwa	480	**22.3**	**240**	22.1	242	22.4	239							
376.kdtree	480	44.7	101	**45.0**	**100**	45.0	100							

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

Platform Notes

```
Sysinfo program /home/omp2012_3/Docs/sysinfo
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
running on 135-213 Tue Apr  4 11:26:46 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 8490H
      4 "physical id"s (chips)
      480 "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 : 60
      siblings  : 120
      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
      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
```

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Platform Notes (Continued)

```
         physical 2: 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
         physical 3: 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
      cache size : 115200 KB

   From /proc/meminfo
      MemTotal:       2112909432 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   From /etc/*release* /etc/*version*
      os-release:
         NAME="SLES"
         VERSION="15-SP4"
         VERSION_ID="15.4"
         PRETTY_NAME="SUSE Linux Enterprise Server 15 SP4"
         ID="sles"
         ID_LIKE="suse"
         ANSI_COLOR="0;32"
         CPE_NAME="cpe:/o:suse:sles:15:sp4"

   uname -a:
      Linux 135-213 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11
      06:57:18 UTC 2022 (49db222) x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Apr 4 11:21 last=5

   SPEC is set to: /home/omp2012_3
      Filesystem     Type   Size  Used Avail Use% Mounted on
      /dev/nvme0n1p3 btrfs  1.8T   38G  1.8T   3% /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. 1.2 03/17/2023
     Memory:
      32x Micron Technology MTC40F2046S1RC48BA1 64 GB 2 rank 4800 MT/s

   (End of data from sysinfo program)
```

General Notes

```
  ======================================================================
  BIOS Setting:
      Power Performance Tuning = BIOS Controls EPB
```

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General Notes (Continued)

```
    ENERGY_PERF_BIAS_CFG Mode = Extreme Performance
    UMA-Based Clustering = Disable (All2All)
==========================================================================
General OMP Library Settings:
   ENV_KMP_LIBRARY          = turnaround
   ENV_KMP_BLOCKTIME        = infinite
   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-revC_OMP.xml
--define half=240 --tune=base --reportable --iterations=3 --threads=480 --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
```

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 file that was used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Supermicro-ic2022.linux64-oneAPI.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Supermicro-ic2022.linux64-oneAPI.xml

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

Tested with SPEC OMP2012 v1.1.
Report generated on Wed Apr 19 15:14:28 2023 by SPEC OMP2012 PS/PDF formatter v541.
Originally published on 19 April 2023.