SPEC® OMPG2012 Result

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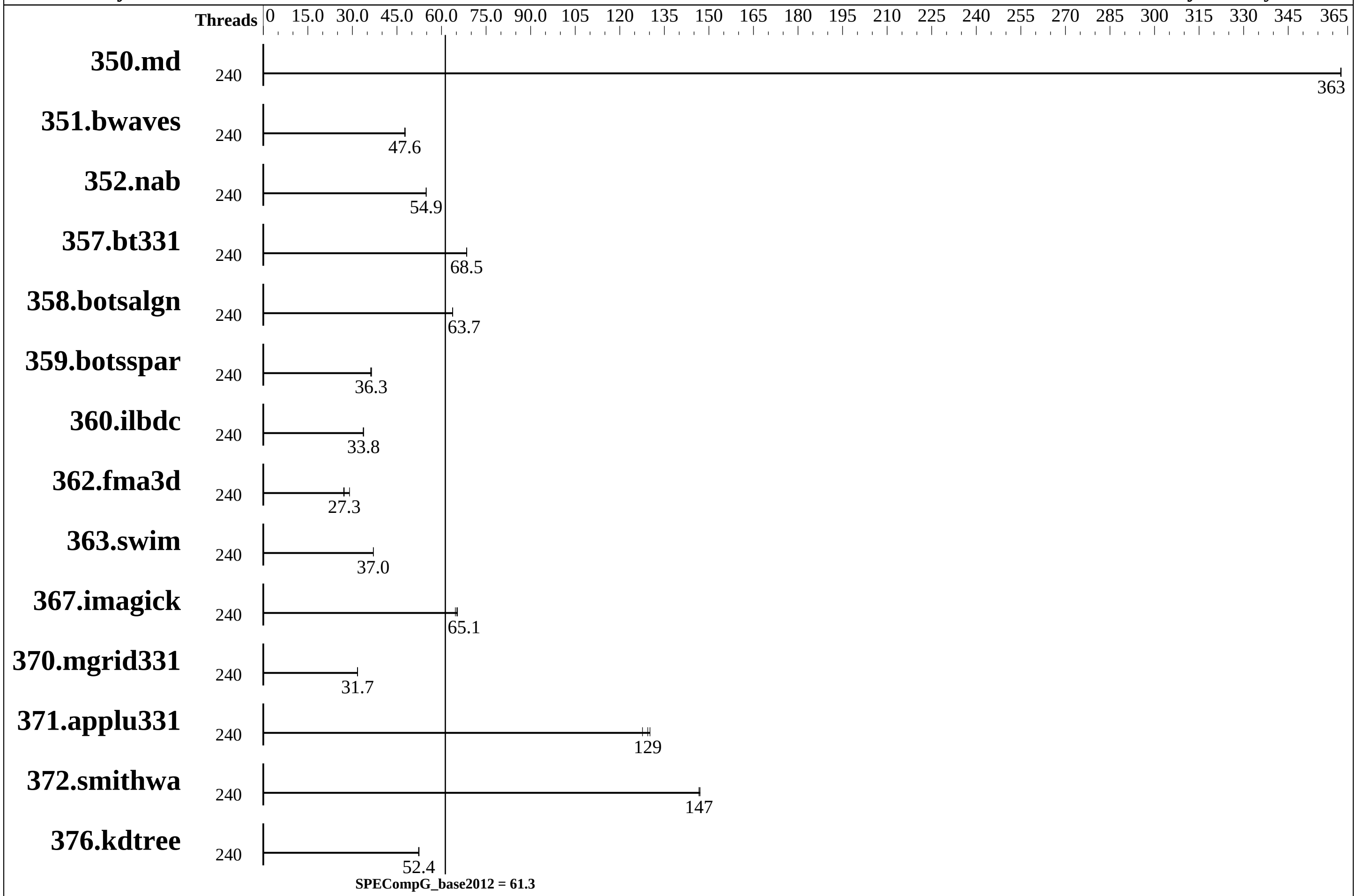
xFusion

FusionServer 2288H V7 (Intel Xeon Platinum 8490H, 1.90 GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 61.3

OMP2012 license:	6488	**Test date:**	Dec-2022
Test sponsor:	xFusion	**Hardware Availability:**	Jan-2023
Tested by:	xFusion	**Software Availability:**	May-2022



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:	120 cores, 2 chips, 60 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:	112.5 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)
Disk Subsystem:	1 x 1920 GB SATA SSD
Other Hardware:	--
Base Threads Run:	240
Minimum Peak Threads:	--

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Software

Operating System:	Red Hat Enterprise Linux Server release 9.0
Compiler:	C/C++: Version 2021.6.0.0 of Intel oneAPI DPC++/C++ Compiler for Linux Build 20220226; Fortran: Version 2021.6.0.0 of Intel Fortran Compiler for Linux Build 20220226;
Auto Parallel:	No
File System:	Linux ext4
System State:	Run Level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other Software:	None

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Maximum Peak Threads: --

Results Table

Benchmark	Base 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	240	**12.8**	**363**	12.8	363	12.8	363							
351.bwaves	240	95.2	47.6	**95.2**	**47.6**	94.7	47.8							
352.nab	240	**70.9**	**54.9**	70.9	54.9	71.0	54.8							
357.bt331	240	**69.2**	**68.5**	69.2	68.5	69.3	68.4							
358.botsalgn	240	**68.2**	**63.7**	68.2	63.7	68.2	63.7							
359.botsspar	240	144	36.5	**145**	**36.3**	145	36.1							
360.ilbdc	240	106	33.6	**105**	**33.8**	105	33.8							
362.fma3d	240	131	29.0	**139**	**27.3**	140	27.1							
363.swim	240	**122**	**37.0**	122	37.0	122	37.0							
367.imagick	240	108	65.4	**108**	**65.1**	109	64.6							
370.mgrid331	240	**139**	**31.7**	139	31.7	139	31.7							
371.applu331	240	46.6	130	47.5	128	**46.8**	**129**							
372.smithwa	240	36.5	147	**36.5**	**147**	36.5	147							
376.kdtree	240	86.1	52.3	**85.9**	**52.4**	85.8	52.5							

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

Platform Notes

```
Sysinfo program /home/specomp/Docs/sysinfo
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
running on localhost.localdomain Wed Dec  7 05:02:40 2022

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
      2 "physical id"s (chips)
      240 "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)

```
      cache size : 115200 KB

   From /proc/meminfo
      MemTotal:       527412440 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   From /etc/*release* /etc/*version*
      os-release:
         NAME="Red Hat Enterprise Linux"
         VERSION="9.0 (Plow)"
         ID="rhel"
         ID_LIKE="fedora"
         VERSION_ID="9.0"
         PLATFORM_ID="platform:el9"
         PRETTY_NAME="Red Hat Enterprise Linux 9.0 (Plow)"
         ANSI_COLOR="0;31"
      redhat-release: Red Hat Enterprise Linux release 9.0 (Plow)
      system-release: Red Hat Enterprise Linux release 9.0 (Plow)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:9::baseos

   uname -a:
      Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu
      Apr 14 12:42:38 EDT 2022 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Dec 6 21:10

   SPEC is set to: /home/specomp
      Filesystem            Type  Size  Used Avail Use% Mounted on
      /dev/mapper/rhel-home xfs   1.7T   68G  1.7T   4% /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 XFUSION 2.00.35 11/30/2022
     Memory:
      16x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800 MT/s

   (End of data from sysinfo program)

   (End of data from sysinfo program)
```

General Notes

```
   ========================================================================
   General base OMP Library Settings
     ENV_KMP_AFFINITY=compact,1
```

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General Notes (Continued)

```
General peak OMP Library Settings
  ENV_KMP_AFFINITY=compact,0,verbose

========================================================================
Per benchmark peak OMP Library Settings

========================================================================
System settings notes:
  Intel Turbo Boost Technology (Turbo)  : Disabled

========================================================================
General OMP Library Settings
  KMP_LIBRARY=turnaround
  KMP_STACKSIZE=292M
  KMP_BLOCKTIME=infinite
  OMP_DYNAMIC=FALSE
  OMP_NESTED=FALSE
  OMP_SCHEDULE=static

Spectre and Meltdown
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that 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-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.
========================================================================
351.bwaves:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

========================================================================
359.botsspar:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

========================================================================
363.swim:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

========================================================================
367.imagick:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

========================================================================
370.mgrid331:peak:
  ENV_KMP_AFFINITY=compact,1,verbose

========================================================================
370.mgrid331:peak:
```

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Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

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 -xCORE-AVX512 -fp-model fast=2 -ansi-alias -no-prec-div -no-prec-sqrt -ipo`

C++ benchmarks:
`-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -ansi-alias -no-prec-div -no-prec-sqrt -ipo`

Fortran benchmarks:
`-O3 -qopenmp -xCORE-AVX512 -fp-model fast=2 -ansi-alias -no-prec-div -no-prec-sqrt -ipo -align all`

The flags files that were used to format this result can be browsed at
http://www.spec.org/omp2012/flags/Intel-ic19-linux64.20210507.html
http://www.spec.org/omp2012/flags/xFusion-Platform-Settings-SPR-V1.0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/omp2012/flags/Intel-ic19-linux64.20210507.xml
http://www.spec.org/omp2012/flags/xFusion-Platform-Settings-SPR-V1.0.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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