SPEC® OMPG2012 Result
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xFusion

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

SPECompG_peak2012 = Not Run
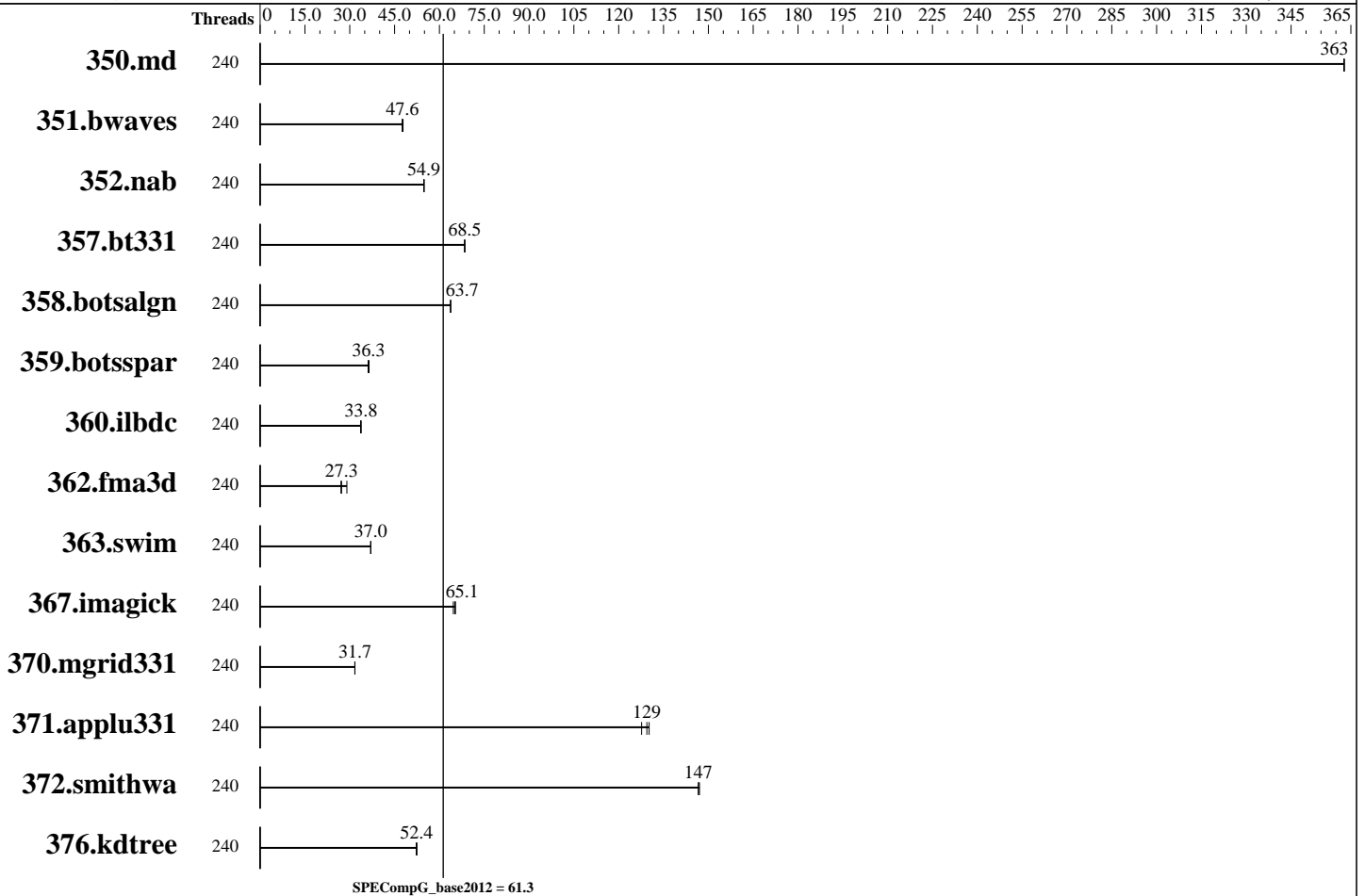
SPECompG_base2012 = 61.3

OMP2012 license: 6488
Test sponsor: xFusion
Tested by: xFusion

Test date: Dec-2022
Hardware Availability: Jan-2023
Software Availability: May-2022

SPECompG_base2012 = 61.3

Benchmark	Threads	Score
350.md	240	363
351.bwaves	240	47.6
352.nab	240	54.9
357.bt331	240	68.5
358.botsalgn	240	63.7
359.botsspar	240	36.3
360.ilbdc	240	33.8
362.fma3d	240	27.3
363.swim	240	37.0
367.imagick	240	65.1
370.mgrid331	240	31.7
371.applu331	240	129
372.smithwa	240	147
376.kdtree	240	52.4

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:	--

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							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	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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