SPEC® OMPG2012 Result

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Cisco Systems

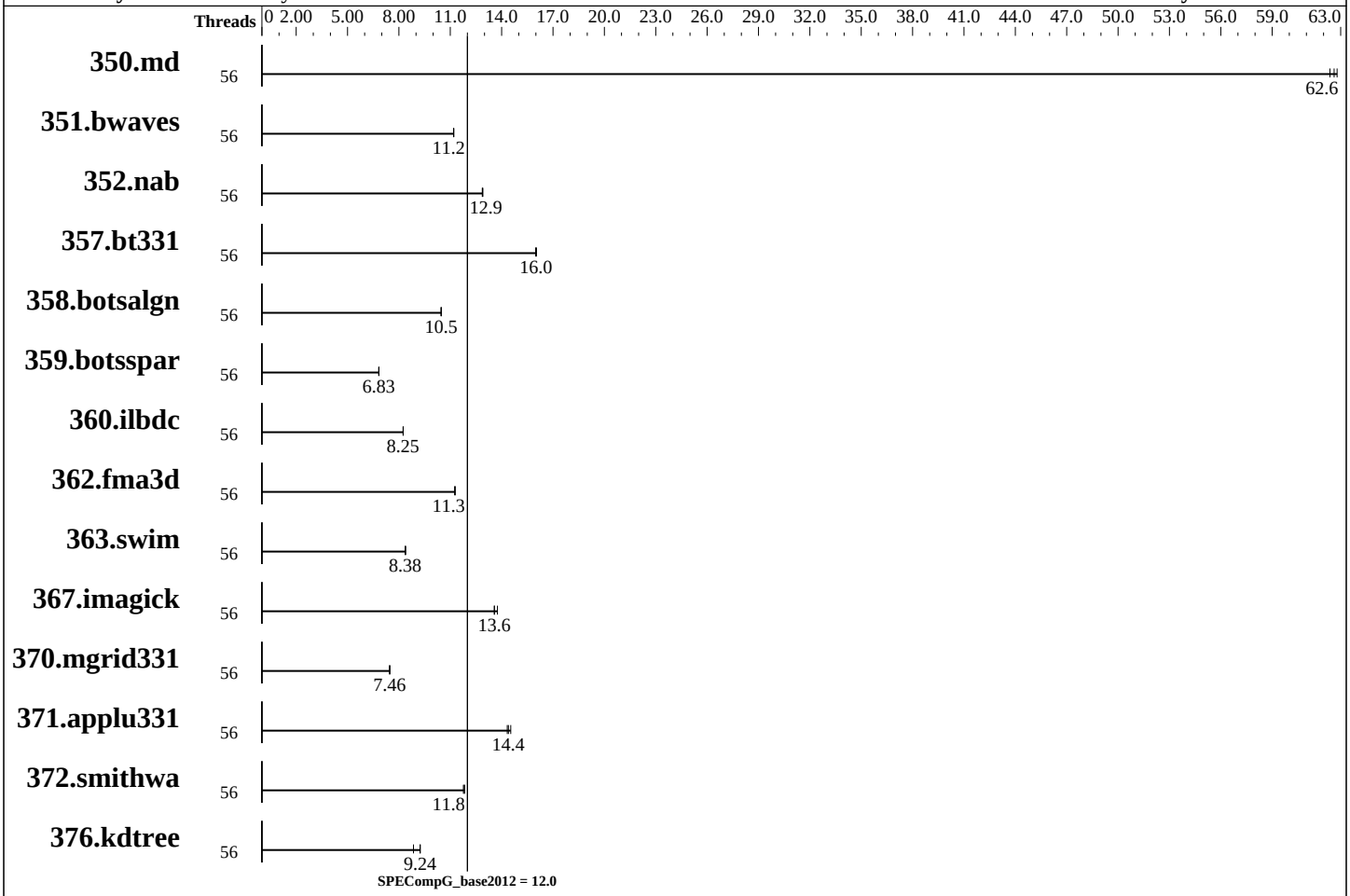
Cisco UCS C240 M5 (Intel Xeon Platinum 8280, 2.70 GHz)

SPECompG_peak2012 = Not Run

SPECompG_base2012 = 12.0

OMP2012 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Test date: Mar-2019
Hardware Availability: Apr-2019
Software Availability: Mar-2019



Hardware

CPU Name:	Intel Xeon Platinum 8280
CPU Characteristics:	Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz:	2700
CPU MHz Maximum:	4000
FPU:	Integrated
CPU(s) enabled:	28 cores, 1 chip, 28 cores/chip, 2 threads/core
CPU(s) orderable:	1 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:	382 GB (12 x 32 GB 2Rx4 PC4-2933V-R)
Disk Subsystem:	1 X 480 GB SSD SAS
Other Hardware:	None
Base Threads Run:	56
Minimum Peak Threads:	--

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Software

Operating System:	SUSE Linux Enterprise Server 15 (x86_64)
Compiler:	C/C++/Fortran: Version 19.0.1.144 of Intel Composer for Linux Build 20181018
Auto Parallel:	No
File System:	btrfs
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	56	74.2	62.4	**73.9**	**62.6**	73.7	62.8							
351.bwaves	56	**404**	**11.2**	404	11.2	405	11.2							
352.nab	56	302	12.9	301	12.9	**302**	**12.9**							
357.bt331	56	296	16.0	296	16.0	**296**	**16.0**							
358.botsalgn	56	415	10.5	415	10.5	**415**	**10.5**							
359.botsspar	56	**769**	**6.83**	769	6.83	768	6.84							
360.ilbdc	56	431	8.25	432	8.25	**432**	**8.25**							
362.fma3d	56	338	11.3	**337**	**11.3**	337	11.3							
363.swim	56	540	8.39	**541**	**8.38**	541	8.38							
367.imagick	56	518	13.6	**518**	**13.6**	511	13.8							
370.mgrid331	56	592	7.47	593	7.46	**592**	**7.46**							
371.applu331	56	417	14.5	**421**	**14.4**	423	14.3							
372.smithwa	56	**453**	**11.8**	456	11.8	453	11.8							
376.kdtree	56	**487**	**9.24**	487	9.25	508	8.85							

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 linux-8ofr Tue Mar 12 10:36:14 2019

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 8280 CPU @ 2.70GHz
      1 "physical id"s (chips)
      56 "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
   cache size : 39424 KB

From /proc/meminfo
   MemTotal:       394840428 kB
```

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Platform Notes (Continued)

```
      HugePages_Total:       0
      Hugepagesize:       2048 kB

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

   uname -a:
      Linux linux-8ofr 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018
      (cd0437b) x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Mar 11 21:06

   SPEC is set to: /home/OMP2012
      Filesystem     Type   Size  Used Avail Use% Mounted on
      /dev/sda3      btrfs  222G   53G  168G  24% /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 Cisco Systems, Inc. C240M5.4.0.3.34.0301190218 03/01/2019
     Memory:
      12x 0xCE00 M393A4K40CB2-CVF 32 GB 2 rank 2933 MT/s, configured at 2934 MT/s
      12x NO DIMM NO DIMM

   (End of data from sysinfo program)
```

General Notes

```
   ------------------------------------------------------------------------
   BIOS settings notes:
     Transparent Huge Pages enabled with:
     echo always > /sys/kernel/mm/transparent_hugepage/enabled
   BIOS settings notes:
     Intel HyperThreading Technology set to Enabled
     CPU performance set to Enterprise
     Power Performance Tuning set to OS
     Sub Numa Clustering (SNC) set to Disabled
     IMC Interleaving set to Auto
   General OMP Library Settings
     ENV_KMP_LIBRARY=turnaround
```

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General Notes (Continued)

```
  ENV_OMP_SCHEDULE=static
  ENV_KMP_BLOCKTIME=200
  ENV_KMP_STACKSIZE=702M
  ENV_OMP_DYNAMIC=FALSE
  ENV_OMP_NESTED=FALSE

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

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 -ipo -xCORE-AVX512 -ansi-alias

C++ benchmarks:
-O3 -qopenmp -ipo -xCORE-AVX512 -ansi-alias

Continued on next page

Base Optimization Flags (Continued)

Fortran benchmarks:
`-O3 -qopenmp -ipo -xCORE-AVX512 -align array64byte`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/omp2012/flags/Intel-ic19.0-linux64.html`
`http://www.spec.org/omp2012/flags/Cisco-Platform-Settings-V1.2-revH.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/omp2012/flags/Intel-ic19.0-linux64.xml`
`http://www.spec.org/omp2012/flags/Cisco-Platform-Settings-V1.2-revH.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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