SPEC® OMPG2012 Result

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Supermicro

(Test Sponsor: Technische Universitaet Dresden)

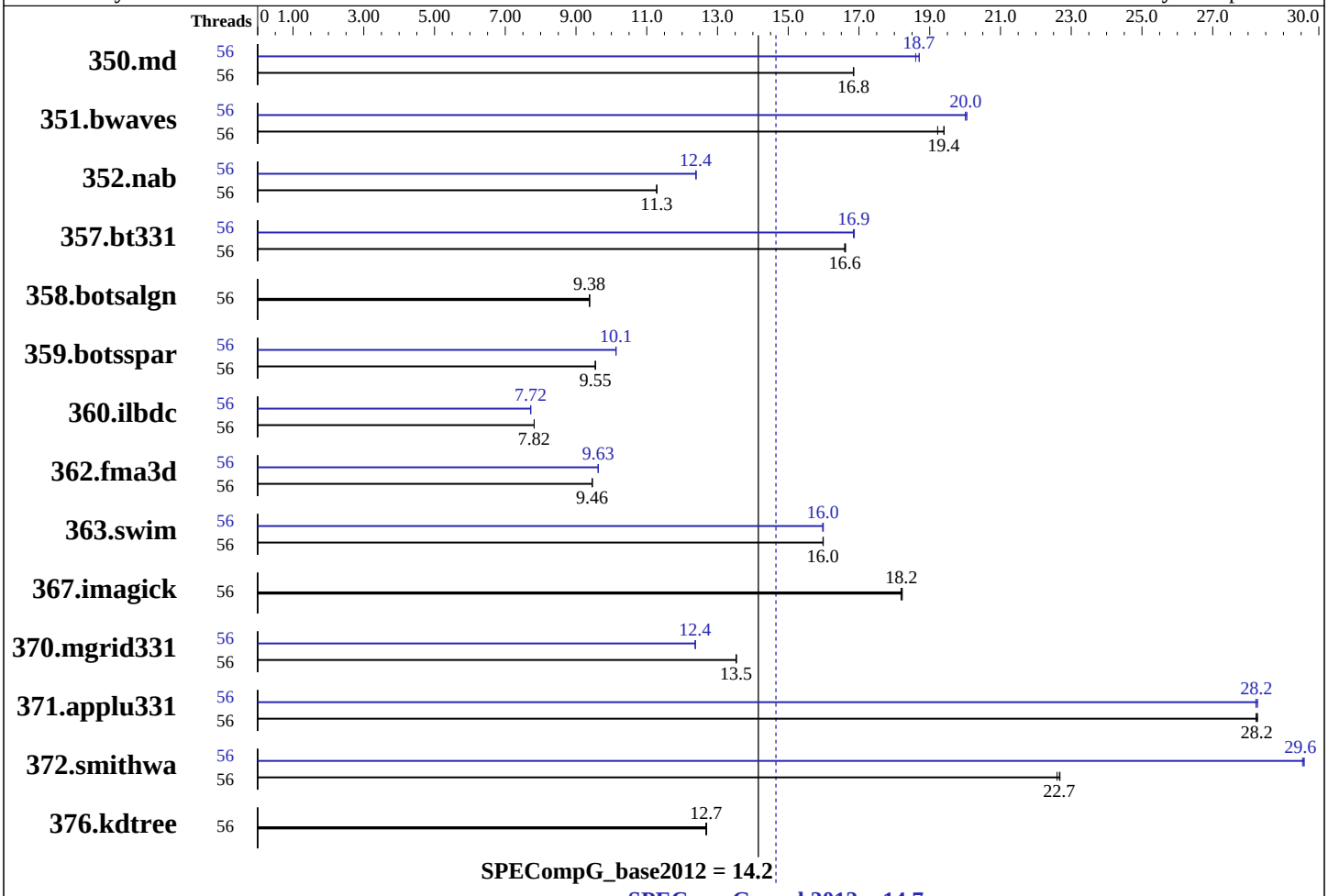
Supermicro SYS-4048B-TR4FT (Intel Xeon E7-4850 v3 @ 2.20 GHz)

SPECompG_peak2012 = 14.7

SPECompG_base2012 = 14.2

OMP2012 license: 37A
Test sponsor: Technische Universitaet Dresden
Tested by: Technische Universitaet Dresden

Test date: Sep-2017
Hardware Availability: Jul-2015
Software Availability: Sep-2017



Hardware

CPU Name:	Intel Xeon E7-4850 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 2.8 GHz Intel HyperThreading: Disabled
CPU MHz:	2200
CPU MHz Maximum:	2800
FPU:	Integrated
CPU(s) enabled:	56 cores, 4 chips, 14 cores/chip
CPU(s) orderable:	1,2,3,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	35 MB I+D on chip per chip
Other Cache:	None
Memory:	2 TB (64 x 32 GB 4Rx4 PC4-2133P-L, running at 1333 MHz)
Disk Subsystem:	256 GB Micron SSD 1100
Other Hardware:	None

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.9 (Santiago) Kernel 2.6.32-696.3.1.el6.Bull.118.x86_64
Compiler:	C/C++/Fortran: Version 18.0.0.128 of Intel Composer Build 20170811
Auto Parallel:	No
File System:	ext3
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	None

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Base Threads Run: 56
Minimum Peak Threads: 56
Maximum Peak Threads: 56

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	56	275	16.8	275	16.9	**275**	**16.8**	56	249	18.6	248	18.7	**248**	**18.7**
351.bwaves	56	233	19.4	**234**	**19.4**	236	19.2	56	226	20.0	**226**	**20.0**	226	20.1
352.nab	56	345	11.3	**345**	**11.3**	345	11.3	56	314	12.4	314	12.4	**314**	**12.4**
357.bt331	56	285	16.6	**285**	**16.6**	286	16.6	56	281	16.9	**281**	**16.9**	281	16.8
358.botsalgn	56	464	9.38	464	9.38	**464**	**9.38**	56	464	9.38	464	9.38	**464**	**9.38**
359.botsspar	56	550	9.55	550	9.55	**550**	**9.55**	56	518	10.1	518	10.1	**518**	**10.1**
360.ilbdc	56	**455**	**7.82**	455	7.82	455	7.82	56	461	7.72	461	7.72	**461**	**7.72**
362.fma3d	56	402	9.46	402	9.46	**402**	**9.46**	56	**395**	**9.63**	395	9.63	394	9.63
363.swim	56	**283**	**16.0**	283	16.0	283	16.0	56	283	16.0	284	16.0	**283**	**16.0**
367.imagick	56	**386**	**18.2**	387	18.2	386	18.2	56	**386**	**18.2**	387	18.2	386	18.2
370.mgrid331	56	**327**	**13.5**	327	13.5	327	13.5	56	**357**	**12.4**	357	12.4	357	12.4
371.applu331	56	**215**	**28.2**	214	28.3	215	28.2	56	215	28.2	214	28.3	**215**	**28.2**
372.smithwa	56	**236**	**22.7**	236	22.7	237	22.6	56	**181**	**29.6**	181	29.5	181	29.6
376.kdtree	56	354	12.7	**355**	**12.7**	355	12.7	56	354	12.7	**355**	**12.7**	355	12.7

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

Platform Notes

```
Sysinfo program /tmp/spec/1.1/Docs/sysinfo
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
running on taurussmp7 Wed Sep 13 06:47:42 2017

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) CPU E7-4850 v3 @ 2.20GHz
      4 "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 : 14
      siblings  : 14
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
```

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Platform Notes (Continued)

```
      cache size : 35840 KB

   From /proc/meminfo
      MemTotal:       2117575728 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      Red Hat Enterprise Linux Server release 6.9 (Santiago)

   From /etc/*release* /etc/*version*
      redhat-release: Red Hat Enterprise Linux Server release 6.9 (Santiago)
      system-release: Red Hat Enterprise Linux Server release 6.9 (Santiago)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

   uname -a:
      Linux taurussmp7 2.6.32-696.3.1.el6.Bull.118.x86_64 #1 SMP Thu Jun 15
      17:05:40 CEST 2017 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Jun 27 16:11

   SPEC is set to: /tmp/spec/1.1
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/sda4      ext4   99G  1.7G   92G   2% /tmp

   Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'

   (End of data from sysinfo program)
```

General Notes

```
System settings:
 HyperThreading: disabled
Environment variables:
 ENV_KMP_AFFINITY=compact,0
 ENV_KMP_LIBRARY=turnaround
 ENV_KMP_BLOCKTIME=infinite
 ENV_KMP_STACKSIZE=190M
 ENV_OMP_DYNAMIC=FALSE
 ENV_OMP_NESTED=FALSE
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Continued on next page

Base Compiler Invocation (Continued)

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:
-O2 -openmp -ipo -xCORE-AVX2 -ansi-alias

C++ benchmarks:
-O2 -openmp -ipo -xCORE-AVX2 -ansi-alias

Fortran benchmarks:
-O2 -openmp -ipo -xCORE-AVX2 -align array64byte

Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Peak Portability Flags

350.md: -FR
357.bt331: -mcmodel=medium
363.swim: -mcmodel=medium
367.imagick: -std=c99

Peak Optimization Flags

C benchmarks:

352.nab: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -opt-malloc-options=1 -opt-calloc -fp-model fast=2 -no-prec-div -no-prec-sqrt -ansi-alias`

358.botsalgn: `basepeak = yes`

359.botsspar: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -ansi-alias`

367.imagick: `basepeak = yes`

372.smithwa: `-O2 -openmp -ipo -xSSE4.2 -fno-alias -opt-streaming-stores always -opt-malloc-options=1 -ansi-alias`

C++ benchmarks:

376.kdtree: `basepeak = yes`

Fortran benchmarks:

350.md: `-O2 -openmp -ipo -xCORE-AVX2 -fno-alias -opt-malloc-options=1 -fp-model fast=2 -no-prec-div -no-prec-sqrt -align array64byte`

351.bwaves: `-O3 -openmp -ipo -xAVX -fno-alias -fp-model fast=2 -no-prec-div -no-prec-sqrt -align array64byte`

357.bt331: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -fp-model fast=2 -no-prec-div -no-prec-sqrt -align array64byte`

360.ilbdc: `-O3 -openmp -ipo -xAVX -align array64byte`

362.fma3d: `-O3 -openmp -ipo -xAVX -fno-alias -align array64byte`

363.swim: `-O2 -openmp -ipo -xAVX -fno-alias -align array64byte`

370.mgrid331: `-O2 -openmp -ipo -xSSE4.2 -fno-alias -opt-malloc-options=3 -align array64byte`

371.applu331: `-O2 -openmp -ipo -xAVX -align array64byte`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/omp2012/flags/icc2018-openmp.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/omp2012/flags/icc2018-openmp.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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