SPEC® OMPG2012 Result

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Intel

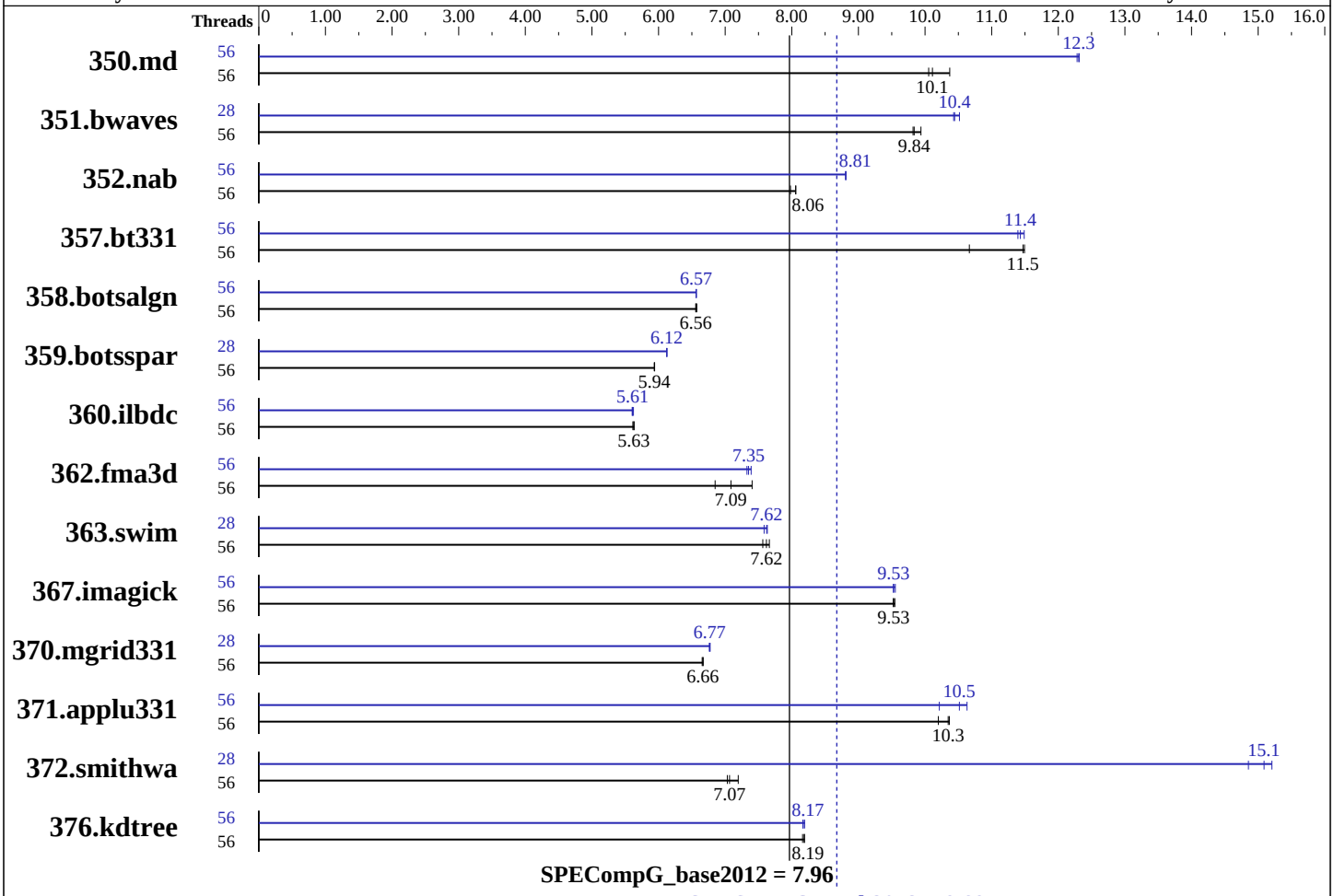
Intel R2208WTTYC1 (Intel Xeon E5-2697 v3)

SPECompG_peak2012 = 8.68

SPECompG_base2012 = 7.96

OMP2012 license: 13
Test sponsor: Intel
Tested by: Intel

Test date: Aug-2014
Hardware Availability: Sep-2014
Software Availability: Jan-2014



Hardware

CPU Name:	E5-2697 v3
CPU Characteristics:	
CPU MHz:	2600
CPU MHz Maximum:	3600
FPU:	Integrated
CPU(s) enabled:	28 cores, 2 chips, 14 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 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:	64 GB (8 x 8 GB 2Rx4 PC4-17000R-15, ECC)
Disk Subsystem:	Panasas ActiveStor 14
Other Hardware:	--
Base Threads Run:	56
Minimum Peak Threads:	28

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.5
Compiler:	C/C++/Fortran: Version 15.0.011 of Intel Composer XE for Linux Build 20140127
Auto Parallel:	No
File System:	Linux ext3
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	None

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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	460	10.1	446	10.4	**458**	**10.1**	56	377	12.3	376	12.3	**376**	**12.3**
351.bwaves	56	461	9.82	456	9.94	**461**	**9.84**	28	434	10.4	431	10.5	**434**	**10.4**
352.nab	56	487	7.98	**483**	**8.06**	483	8.06	56	441	8.81	**442**	**8.81**	442	8.81
357.bt331	56	412	11.5	**413**	**11.5**	444	10.7	56	413	11.5	**415**	**11.4**	416	11.4
358.botsalgn	56	662	6.57	**663**	**6.56**	663	6.56	56	662	6.57	663	6.56	**662**	**6.57**
359.botsspar	56	**884**	**5.94**	884	5.94	884	5.94	28	**857**	**6.12**	857	6.12	857	6.13
360.ilbdc	56	632	5.63	634	5.61	**633**	**5.63**	56	633	5.62	**635**	**5.61**	635	5.60
362.fma3d	56	555	6.85	**536**	**7.09**	513	7.40	56	**517**	**7.35**	519	7.33	514	7.39
363.swim	56	**595**	**7.62**	591	7.66	599	7.56	28	597	7.58	**594**	**7.62**	593	7.63
367.imagick	56	736	9.55	**738**	**9.53**	738	9.52	56	**738**	**9.53**	736	9.55	738	9.52
370.mgrid331	56	**663**	**6.66**	663	6.67	664	6.65	28	652	6.77	**653**	**6.77**	654	6.76
371.applu331	56	594	10.2	585	10.4	**586**	**10.3**	56	**576**	**10.5**	570	10.6	593	10.2
372.smithwa	56	745	7.20	**759**	**7.07**	762	7.03	28	352	15.2	**355**	**15.1**	361	14.9
376.kdtree	56	549	8.19	**550**	**8.19**	551	8.16	56	**551**	**8.17**	551	8.17	549	8.19

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

Platform Notes

```
Sysinfo program /panfs/projects/innl/aknyaze1/OMP2012/1.0/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647
running on ehs164 Mon Aug 18 09:36:31 2014

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 E5-2697 v3 @ 2.60GHz
      2 "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  : 28
      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
   cache size : 35840 KB

From /proc/meminfo
   MemTotal:       65837336 kB
```

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Platform Notes (Continued)

```
    HugePages_Total:       0
    Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
    Linux ehs164 2.6.32-358.6.2.el6.x86_64.crt1 #4 SMP Fri May 17 15:33:33 MDT
    2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 14 11:26

SPEC is set to: /panfs/projects/innl/aknyaze1/OMP2012/1.0
    Filesystem           Type   Size  Used Avail Use% Mounted on
    panfs://36.101.211.1/projects
                         panfs   32T   31T 1006G  97% /panfs/projects

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

(End of data from sysinfo program)
```

General Notes

```
------------------------------------------------------------------------
System settings notes:
  Intel Turbo Boost Technology (Turbo)  : Enabled

------------------------------------------------------------------------
General OMP Library Settings
  KMP_LIBRARY=turnaround
  KMP_STACKSIZE=256M
  KMP_BLOCKTIME=infinite
  OMP_DYNAMIC=FALSE
  OMP_NESTED=FALSE
  OMP_SCHEDULE=static
------------------------------------------------------------------------
General base OMP Library Settings
  ENV_KMP_AFFINITY=compact,0

------------------------------------------------------------------------
General peak OMP Library Settings
  ENV_KMP_AFFINITY=compact,0

------------------------------------------------------------------------
Per benchmark peak OMP Library Settings
```

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General Notes (Continued)

```
================================================================================
351.bwaves:peak:
  ENV_KMP_AFFINITY=compact,1
  ENV_OMP_SCHEDULE=static,1

================================================================================
359.botsspar:peak:
  ENV_KMP_AFFINITY=compact,1
  ENV_OMP_SCHEDULE=guided

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

================================================================================
370.mgrid331:peak:
  ENV_KMP_AFFINITY=compact,1
================================================================================
372.smithwa:peak:
  ENV_OMP_SCHEDULE=static,1
```

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 -openmp -ipo -xCORE-AVX2 -ansi-alias`

Continued on next page

Base Optimization Flags (Continued)

C++ benchmarks:
```
-O3 -openmp -ipo  -xCORE-AVX2 -ansi-alias
```

Fortran benchmarks:
```
-O3 -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: `-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -ansi-alias`

359.botsspar: `Same as 358.botsalgn`

367.imagick: `-O3 -openmp -ipo  -xCORE-AVX2 -ansi-alias`

372.smithwa: `-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -opt-streaming-stores always -opt-malloc-options=1 -ansi-alias`

C++ benchmarks:
```
-O3 -openmp -ipo  -xCORE-AVX2 -fno-alias -ansi-alias
```

Continued on next page

Peak Optimization Flags (Continued)

Fortran benchmarks:

350.md: `-O3 -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 -xCORE-AVX2 -fno-alias -fp-model fast=2 -no-prec-div -no-prec-sqrt -align array64byte`

357.bt331: `Same as 351.bwaves`

360.ilbdc: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -align array64byte`

362.fma3d: `Same as 360.ilbdc`

363.swim: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -opt-streaming-stores always -opt-malloc-options=3 -align array64byte`

370.mgrid331: `-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -opt-malloc-options=3 -align array64byte`

371.applu331: `-O3 -openmp -ipo -xCORE-AVX2 -align array64byte`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20140219.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20140219.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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