SPEC® OMPG2012 Result

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Intel

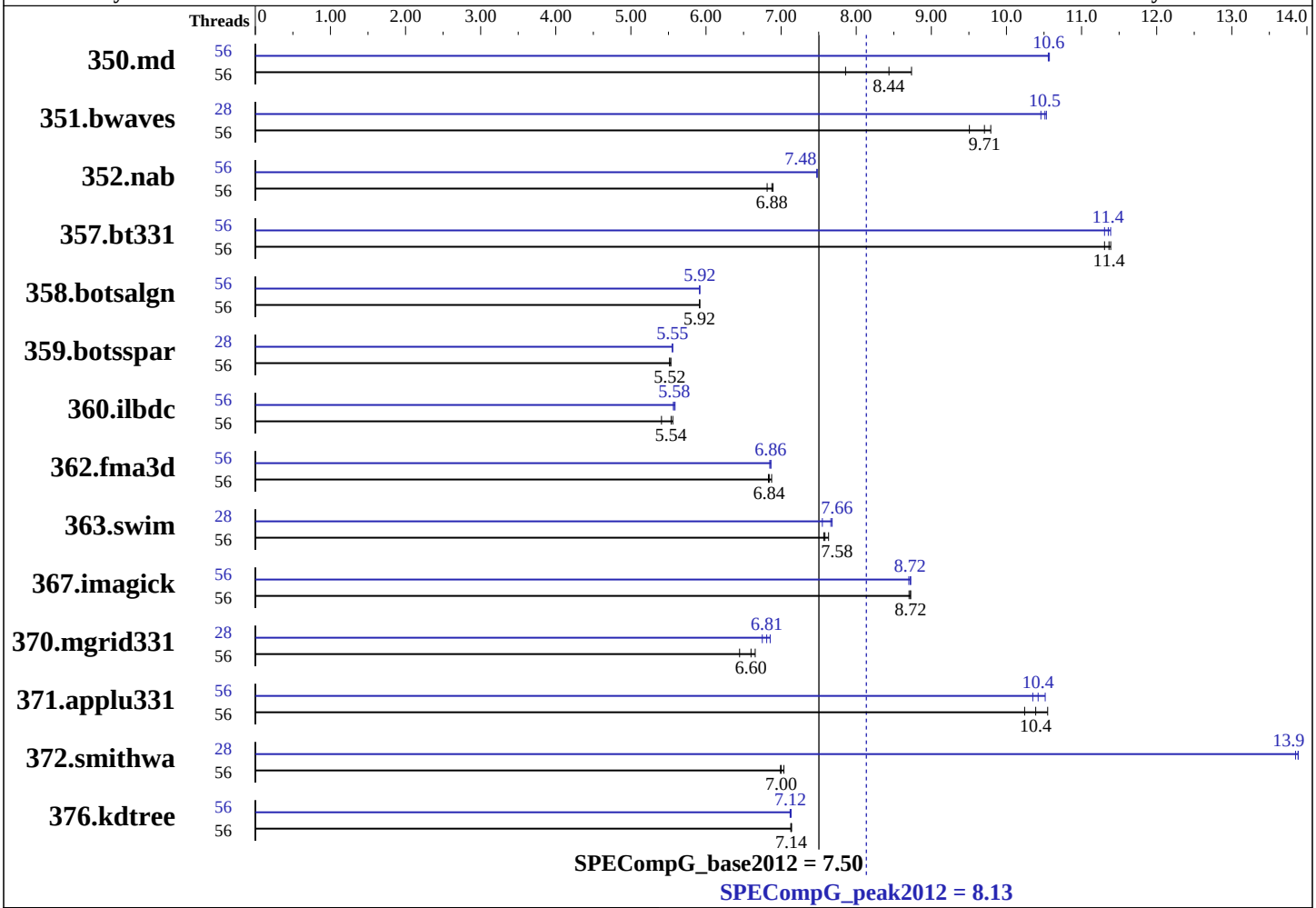
Intel R2208WTTYC1 (Intel Xeon E5-2697 v3)

SPECompG_peak2012 = 8.13

SPECompG_base2012 = 7.50

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:	2600
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	530	8.74	589	7.86	**549**	**8.44**	56	439	10.6	438	10.6	**438**	**10.6**
351.bwaves	56	463	9.79	477	9.51	**467**	**9.71**	28	433	10.5	430	10.5	**431**	**10.5**
352.nab	56	564	6.89	571	6.81	**566**	**6.88**	56	520	7.48	**520**	**7.48**	520	7.48
357.bt331	56	416	11.4	419	11.3	**417**	**11.4**	56	416	11.4	419	11.3	**417**	**11.4**
358.botsalgn	56	735	5.92	735	5.92	**735**	**5.92**	56	735	5.92	**735**	**5.92**	735	5.92
359.botsspar	56	949	5.53	952	5.52	**952**	**5.52**	28	945	5.55	946	5.55	**945**	**5.55**
360.ilbdc	56	640	5.56	658	5.41	**643**	**5.54**	56	640	5.57	637	5.59	**638**	**5.58**
362.fma3d	56	556	6.83	553	6.87	**555**	**6.84**	56	554	6.86	555	6.85	**554**	**6.86**
363.swim	56	594	7.63	**597**	**7.58**	599	7.57	28	590	7.68	**591**	**7.66**	600	7.55
367.imagick	56	808	8.70	806	8.72	**806**	**8.72**	56	808	8.70	806	8.73	**806**	**8.72**
370.mgrid331	56	686	6.45	664	6.65	**670**	**6.60**	28	645	6.85	**649**	**6.81**	655	6.75
371.applu331	56	574	10.5	**583**	**10.4**	592	10.2	56	585	10.4	**581**	**10.4**	576	10.5
372.smithwa	56	767	6.99	762	7.04	**766**	**7.00**	28	386	13.9	387	13.8	**386**	**13.9**
376.kdtree	56	**631**	**7.14**	630	7.14	631	7.13	56	632	7.12	**632**	**7.12**	631	7.13

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 ehk320 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 ehk320 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 14:34

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)  : Disabled

------------------------------------------------------------------------
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
```

Continued on next page

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 other inquiries, please contact webmaster@spec.org.

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