SPEC® OMPG2012 Result

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Intel

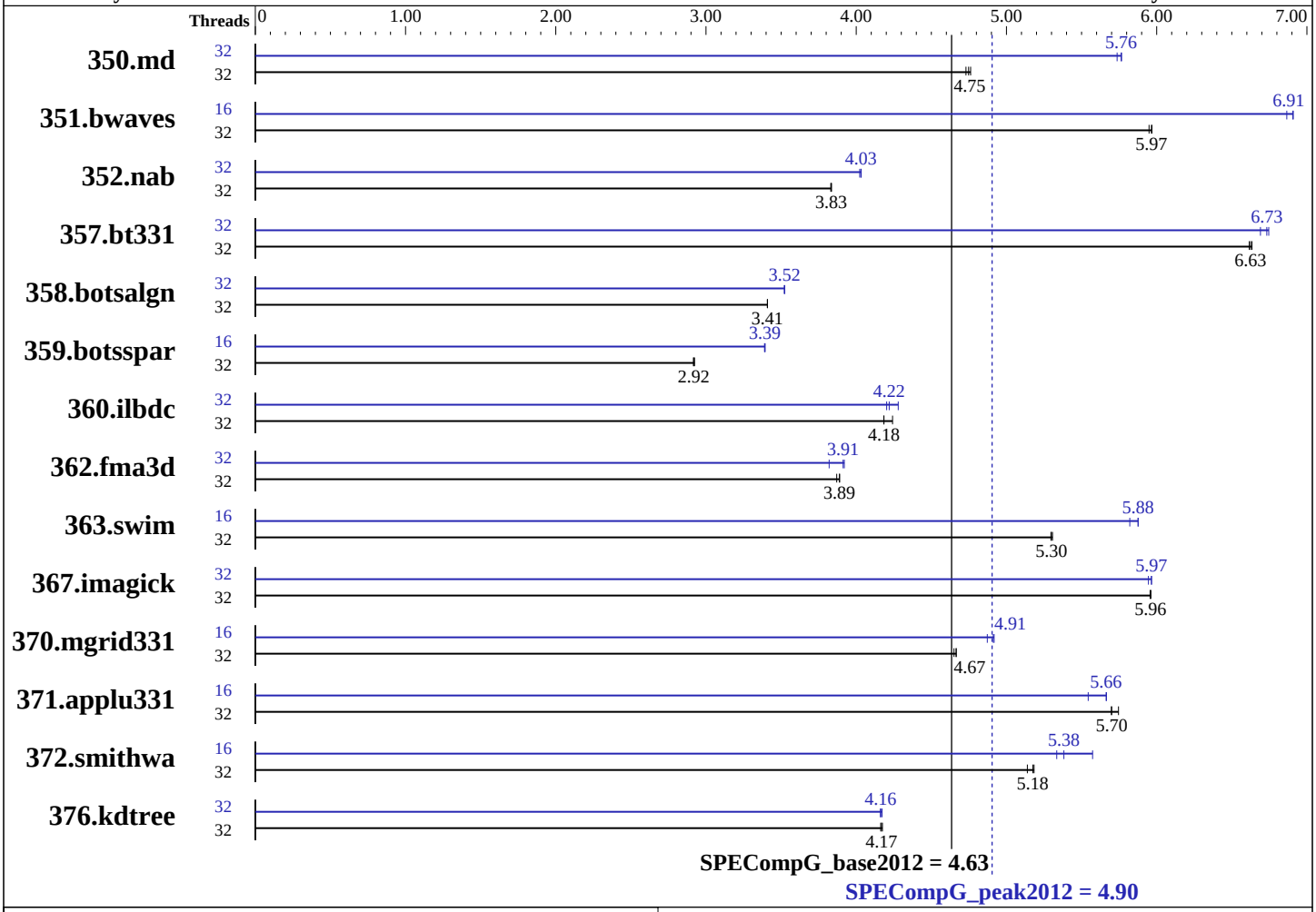
Intel R2208GZ4GC (Intel Xeon E5-2670)

SPECompG_peak2012 = 4.90

SPECompG_base2012 = 4.63

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

Test date: Feb-2013
Hardware Availability: Nov-2012
Software Availability: Jan-2013



Hardware

CPU Name:	Intel Xeon E5-2670
CPU Characteristics:	
CPU MHz:	2600
CPU MHz Maximum:	3300
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	Panasas ActiveStor 3050 Fileserver 64 disks, 250GB/disk, 16TB total, 4 Shelves connected via 1Gbps Ethernet
Other Hardware:	--

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.1(Santiago)
Compiler:	C/C++/Fortran: Version 13.1.0.146 of Intel Composer XE for Linux Build 20130121
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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Base Threads Run: 32
Minimum Peak Threads: 16
Maximum Peak Threads: 32

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	32	979	4.73	**975**	**4.75**	972	4.76	32	**803**	**5.76**	803	5.77	807	5.74
351.bwaves	32	**759**	**5.97**	761	5.95	759	5.97	16	656	6.91	**656**	**6.91**	660	6.87
352.nab	32	1016	3.83	1014	3.83	**1014**	**3.83**	32	**965**	**4.03**	964	4.03	967	4.02
357.bt331	32	716	6.62	**715**	**6.63**	714	6.63	32	**704**	**6.73**	703	6.75	708	6.69
358.botsalgn	32	**1276**	**3.41**	1276	3.41	1276	3.41	32	**1235**	**3.52**	1234	3.52	1235	3.52
359.botsspar	32	1796	2.92	**1799**	**2.92**	1800	2.92	16	**1548**	**3.39**	1547	3.39	1549	3.39
360.ilbdc	32	839	4.24	851	4.18	**851**	**4.18**	32	**844**	**4.22**	832	4.28	847	4.20
362.fma3d	32	982	3.87	**977**	**3.89**	977	3.89	32	969	3.92	**971**	**3.91**	995	3.82
363.swim	32	855	5.30	854	5.31	**855**	**5.30**	16	771	5.88	**771**	**5.88**	778	5.82
367.imagick	32	1180	5.96	**1180**	**5.96**	1179	5.96	32	**1179**	**5.97**	1178	5.97	1182	5.95
370.mgrid331	32	950	4.65	**947**	**4.67**	947	4.67	16	**900**	**4.91**	899	4.92	907	4.87
371.applu331	32	**1063**	**5.70**	1055	5.75	1063	5.70	16	1070	5.67	**1070**	**5.66**	1093	5.54
372.smithwa	32	1034	5.18	**1036**	**5.18**	1043	5.14	16	1005	5.33	962	5.57	**996**	**5.38**
376.kdtree	32	1078	4.17	**1080**	**4.17**	1081	4.16	32	1079	4.17	**1081**	**4.16**	1082	4.16

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

Platform Notes

```
Sysinfo program /panfs/panfs2/home2/aknyaze1/OMP2012/1.0/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647
running on esg263 Mon Feb 25 23:54:35 2013

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 E5-2670 0 @ 2.60GHz
      2 "physical id"s (chips)
      32 "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 : 8
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7
      physical 1: cores 0 1 2 3 4 5 6 7
   cache size : 20480 KB
```

Continued on next page

Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       66055220 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux esg263 2.6.32-131.0.15.el6.x86_64.crt.1 #3 SMP Fri May 20 16:57:43 PDT
   2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 22 08:04

SPEC is set to: /panfs/panfs2/home2/aknyaze1/OMP2012/1.0
   Filesystem     Type    Size  Used Avail Use% Mounted on
   panfs://36.107.212.1/home2
                  panfs     14T  9.1T  4.7T  67% /panfs/panfs2/home2

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

(End of data from sysinfo program)
```

General Notes

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

------------------------------------------------------------------------
General OMP Library Settings
  ENV_KMP_LIBRARY=turnaround
  ENV_KMP_STACKSIZE=256M
  ENV_KMP_BLOCKTIME=infinite
  ENV_OMP_DYNAMIC=FALSE
  ENV_OMP_NESTED=FALSE

------------------------------------------------------------------------
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

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

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

==============================================================================
371.applu331:peak:
  ENV_KMP_AFFINITY=compact,1

==============================================================================
372.smithwa:peak:
  ENV_KMP_AFFINITY=compact,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:
`-O2 -openmp -ipo -xAVX -ansi-alias`

C++ benchmarks:
`-O2 -openmp -ipo -xAVX -ansi-alias`

Continued on next page

Base Optimization Flags (Continued)

Fortran benchmarks:
-O2 -openmp -ipo -xAVX

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 -xAVX -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 -xSSE4.2 -fno-alias -ansi-alias

359.botsspar: -O3 -openmp -ipo -xAVX -fno-alias -ansi-alias

367.imagick: -O2 -openmp -ipo -xAVX -ansi-alias

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

C++ benchmarks:
-O3 -openmp -ipo -xAVX -fno-alias -ansi-alias

Fortran benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

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

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

357.bt331: `Same as 351.bwaves`

360.ilbdc: `-O3 -openmp -ipo -xAVX -opt-malloc-options=1`

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

363.swim: `-O3 -openmp -ipo -xSSE4.2 -fno-alias -opt-streaming-stores always -opt-malloc-options=3`

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

371.applu331: `-O2 -openmp -ipo -xAVX -fno-alias`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20130320.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20130320.xml`

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For other inquiries, please contact webmaster@spec.org.

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