SPEC® OMPG2012 Result

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Intel

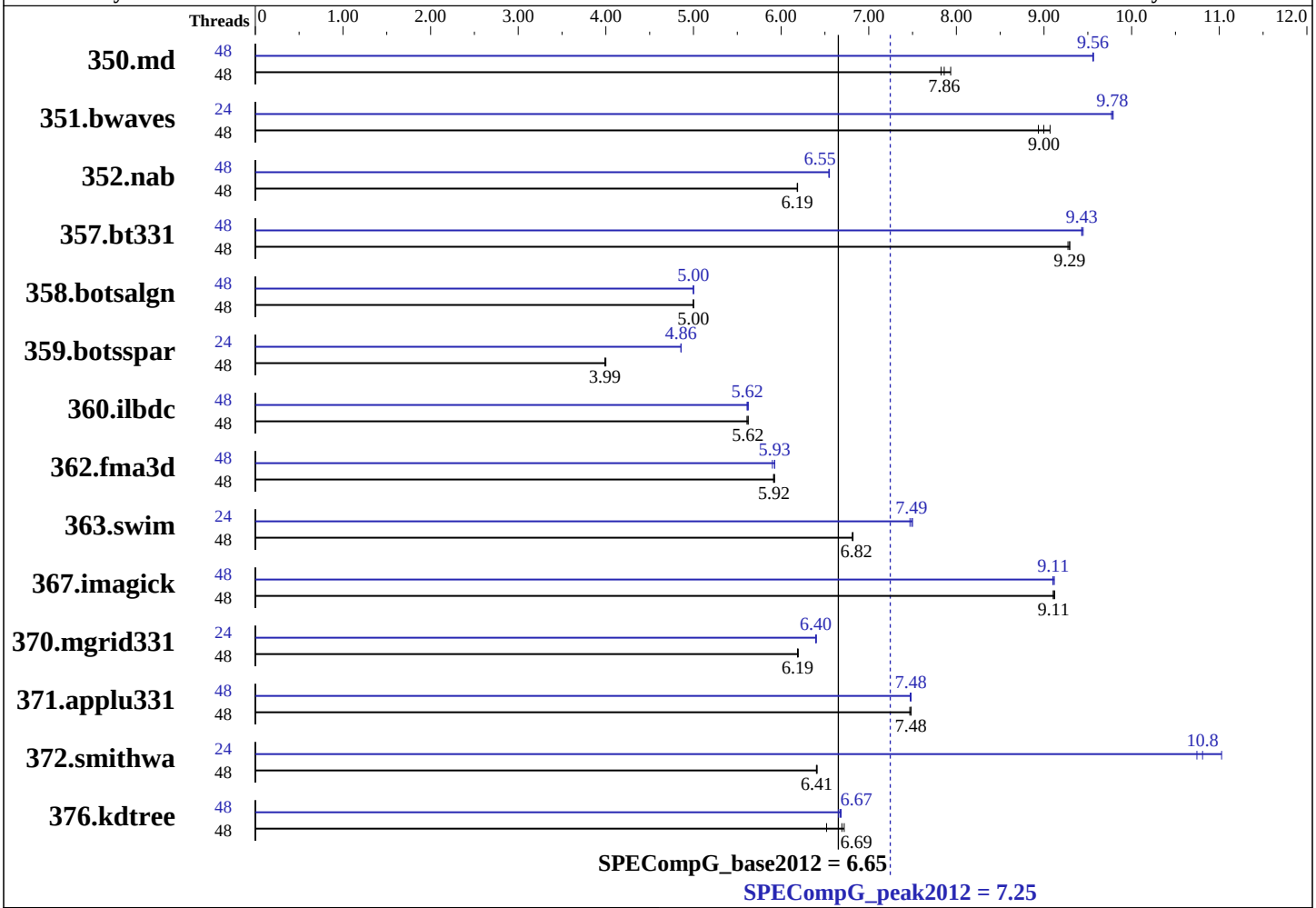
Intel R2208GZ4GC (Intel Xeon E5-2697 v2)

SPECompG_peak2012 = 7.25

SPECompG_base2012 = 6.65

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

Test date: Sep-2013
Hardware Availability: Sep-2013
Software Availability: Jun-2013



Hardware

CPU Name:	E5-2697 v2
CPU Characteristics:	
CPU MHz:	2700
CPU MHz Maximum:	3500
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	NFS connected via 1Gbps Ethernet
Other Hardware:	--
Base Threads Run:	48
Minimum Peak Threads:	24

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4
Compiler:	C/C++/Fortran: Version 13.1.3 of Intel Composer XE for Linux Build 20130607
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: 48

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	48	**589**	**7.86**	583	7.93	592	7.82	48	484	9.56	484	9.56	**484**	**9.56**
351.bwaves	48	499	9.07	**503**	**9.00**	507	8.94	24	464	9.77	463	9.79	**463**	**9.78**
352.nab	48	629	6.18	629	6.19	**629**	**6.19**	48	594	6.54	594	6.55	**594**	**6.55**
357.bt331	48	511	9.27	510	9.29	**510**	**9.29**	48	502	9.45	**503**	**9.43**	503	9.43
358.botsalgn	48	870	5.00	**870**	**5.00**	870	5.00	48	870	5.00	870	5.00	**870**	**5.00**
359.botsspar	48	1312	4.00	1316	3.99	**1315**	**3.99**	24	1081	4.86	**1081**	**4.86**	1081	4.86
360.ilbdc	48	635	5.61	**633**	**5.62**	633	5.62	48	634	5.61	**634**	**5.62**	633	5.63
362.fma3d	48	643	5.91	641	5.93	**642**	**5.92**	48	644	5.90	**641**	**5.93**	641	5.93
363.swim	48	**665**	**6.82**	664	6.82	665	6.81	24	**605**	**7.49**	604	7.50	606	7.47
367.imagick	48	**772**	**9.11**	771	9.12	772	9.11	48	**772**	**9.11**	771	9.12	772	9.10
370.mgrid331	48	714	6.19	**714**	**6.19**	713	6.20	24	690	6.40	691	6.40	**691**	**6.40**
371.applu331	48	810	7.48	**810**	**7.48**	811	7.47	48	**810**	**7.48**	810	7.48	811	7.47
372.smithwa	48	837	6.40	836	6.41	**837**	**6.41**	24	**496**	**10.8**	499	10.7	486	11.0
376.kdtree	48	690	6.52	**672**	**6.69**	670	6.72	48	**674**	**6.67**	676	6.66	673	6.69

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

Platform Notes

```
Sysinfo program /nfs/pdx/home/aknyaze1/OMP2012/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647
running on cthor-ivt1 Wed Sep 18 03:44:01 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 E5-2697 v2 @ 2.70GHz
      2 "physical id"s (chips)
      48 "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 : 12
      siblings  : 24
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
   cache size : 30720 KB

From /proc/meminfo
   MemTotal:       65920688 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 6.4 (Santiago)

   From /etc/*release* /etc/*version*
      redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
      system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

   uname -a:
      Linux cthor-ivt1 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
      x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Sep 15 19:26

   SPEC is set to: /nfs/pdx/home/aknyaze1/OMP2012
      Filesystem     Type    Size  Used Avail Use% Mounted on
      cthor-fs1.jf.intel.com:/home/aknyaze1
                     nfs     4.8T  2.7T  2.1T  58% /nfs/pdx/home/aknyaze1

   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
    Transparent Huge Pages Disabled via "echo never > /sys/kernel/mm/redhat_transparent_hugepage/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)

```
Submitted_by: "Knyazev, Alexander" <Alexander.Knyazev@intel.com>
Submitted: Fri Sep 20 12:19:18 EDT 2013
Submission: omp2012-20130920-00039.sub
 ================================================================================
 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

 ================================================================================
 362.fma3d:peak:
   ENV_OMP_SCHEDULE=static,1

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

 ================================================================================
 370.mgrid331:peak:
   ENV_KMP_AFFINITY=compact,1

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

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Base Portability Flags

350.md: -FR

Continued on next page

Base Portability Flags (Continued)

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`

Fortran benchmarks:
`-O2 -openmp -ipo -xAVX -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 -xAVX -fno-alias -opt-malloc-options=1 -opt-calloc -fp-model fast=2 -no-prec-div -no-prec-sqrt -ansi-alias`

Continued on next page

Peak Optimization Flags (Continued)

358.botsalgn: `-O2 -openmp -ipo -xAVX -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:

350.md: `-O2 -openmp -ipo -xAVX -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: `Same as 351.bwaves`

360.ilbdc: `-O2 -openmp -ipo -xAVX -fno-alias -align array64byte`

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

363.swim: `-O3 -openmp -ipo -xSSE4.2 -fno-alias -opt-streaming-stores always -opt-malloc-options=3 -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/Intel-ic13.0-linux64.20131002.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20131002.xml`

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