SPEC® OMPG2012 Result

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Intel

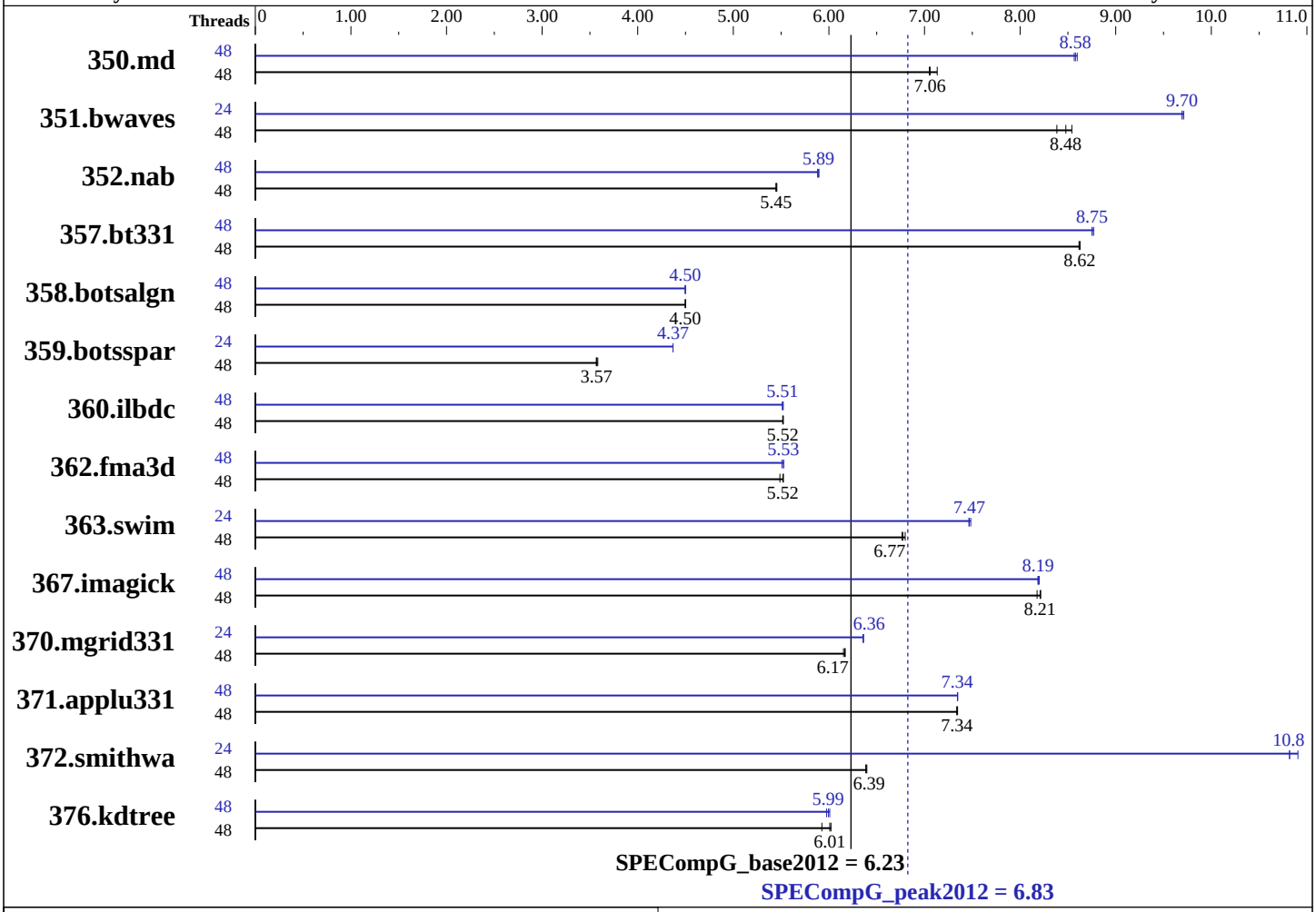
Intel R2208GZ4GC (Intel Xeon E5-2697 v2)

SPECompG_peak2012 = 6.83

SPECompG_base2012 = 6.23

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:	2700
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	**656**	**7.06**	649	7.13	657	7.05	48	**540**	**8.58**	540	8.57	539	8.60
351.bwaves	48	**534**	**8.48**	540	8.38	530	8.54	24	467	9.69	466	9.71	**467**	**9.70**
352.nab	48	713	5.46	714	5.45	**714**	**5.45**	48	**660**	**5.89**	660	5.90	661	5.88
357.bt331	48	549	8.63	**550**	**8.62**	550	8.62	48	542	8.75	540	8.77	**541**	**8.75**
358.botsalgn	48	**967**	**4.50**	967	4.50	967	4.50	48	**967**	**4.50**	967	4.50	967	4.50
359.botsspar	48	1465	3.58	**1471**	**3.57**	1472	3.57	24	**1202**	**4.37**	1202	4.37	1202	4.37
360.ilbdc	48	645	5.52	645	5.52	**645**	**5.52**	48	646	5.51	645	5.52	**646**	**5.51**
362.fma3d	48	692	5.49	688	5.52	**689**	**5.52**	48	**688**	**5.53**	688	5.53	690	5.51
363.swim	48	**669**	**6.77**	666	6.80	670	6.77	24	**607**	**7.47**	605	7.48	607	7.46
367.imagick	48	856	8.22	**856**	**8.21**	860	8.18	48	**858**	**8.19**	857	8.20	859	8.19
370.mgrid331	48	716	6.17	**717**	**6.17**	718	6.15	24	695	6.36	695	6.36	**695**	**6.36**
371.applu331	48	**826**	**7.34**	826	7.34	825	7.35	48	825	7.34	825	7.35	**825**	**7.34**
372.smithwa	48	838	6.40	839	6.39	**839**	**6.39**	24	**495**	**10.8**	491	10.9	495	10.8
376.kdtree	48	747	6.02	**749**	**6.01**	759	5.93	48	749	6.01	**751**	**5.99**	753	5.98

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 20:10:18 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  2.8T  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)  : Disabled
    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: omp2012-20130920-00040.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`

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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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