



SPEC® OMPG2012 Result

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Intel

SPECompG_peak2012 = 21.0

S4TR2KUQ (Intel Xeon E7-8890 v3)

SPECompG_base2012 = 19.6

OMP2012 license:13

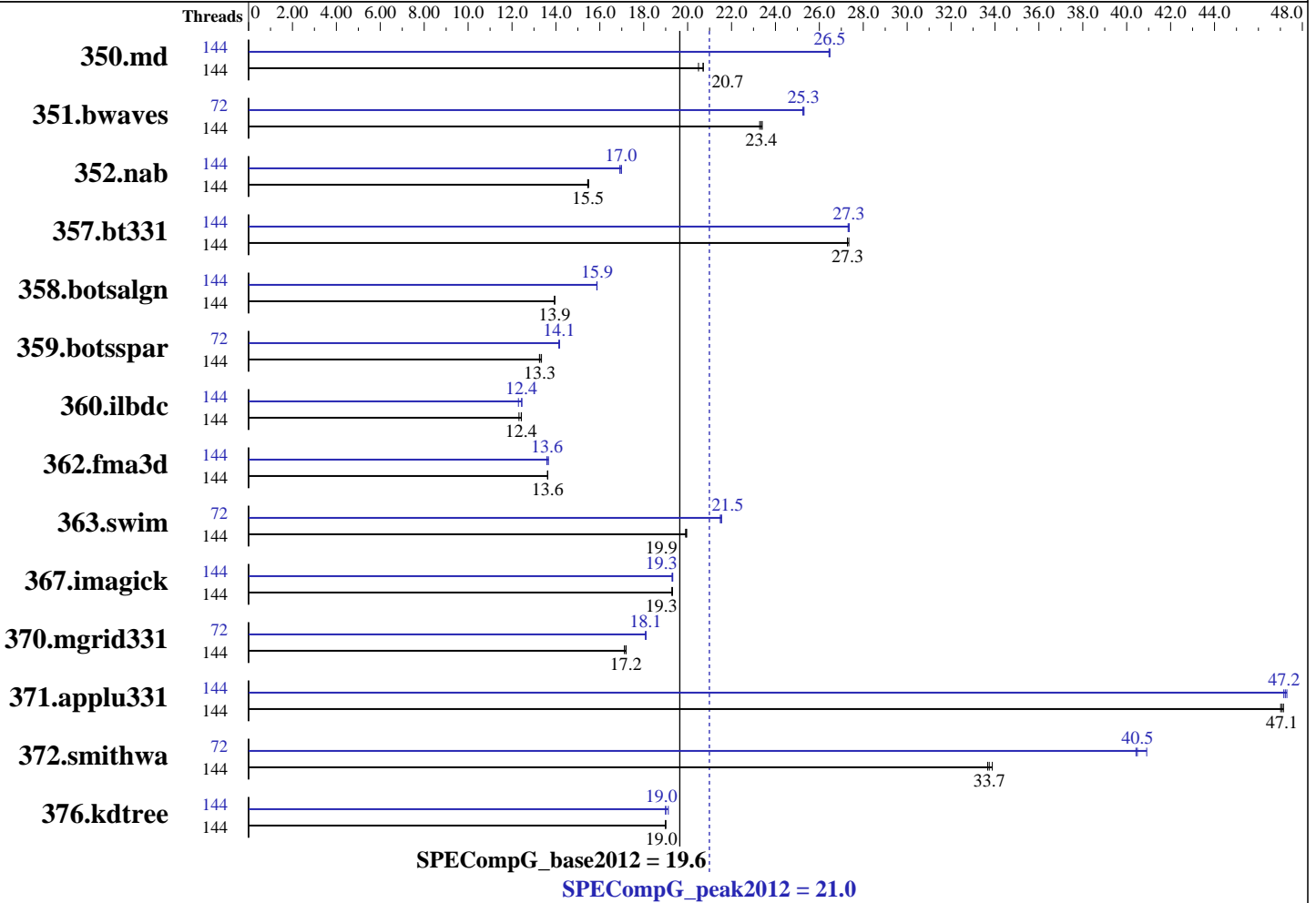
Test sponsor: Intel

Tested by: Intel

Test date: May-2015

Hardware Availability: May-2015

Software Availability: Jan-2014



Hardware

CPU Name: Intel Xeon E7-8890 v3
 CPU Characteristics: 2500
 CPU MHz: 3300
 CPU MHz Maximum: 3300
 FPU: Integrated
 CPU(s) enabled: 72 cores, 4 chips, 18 cores/chip, 2 threads/core
 CPU(s) orderable: 1-4 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: 45 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (32 x 16 GB 2Rx4 PC4-17000R-15, ECC)
 Disk Subsystem: Panasas ActiveStor 14 connected via 1Gbps Ethernet
 Other Hardware: --
 Base Threads Run: 144
 Minimum Peak Threads: 72

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Software

Operating System: Red Hat Enterprise Linux Server release 6.5
 Compiler: C/C++/Fortran: Version 14.0.2.144 of Intel Composer XE for Linux Build 20140120
 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: 144

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	144	223	20.7	<u>224</u>	<u>20.7</u>	226	20.5	144	175	26.4	<u>175</u>	<u>26.5</u>	175	26.5
351.bwaves	144	195	23.3	<u>194</u>	<u>23.4</u>	194	23.4	72	<u>179</u>	<u>25.3</u>	179	25.3	179	25.2
352.nab	144	251	15.5	252	15.4	<u>252</u>	<u>15.5</u>	144	230	16.9	229	17.0	<u>229</u>	<u>17.0</u>
357.bt331	144	173	27.3	174	27.3	<u>174</u>	<u>27.3</u>	144	173	27.4	<u>173</u>	<u>27.3</u>	174	27.3
358.botsalgn	144	312	13.9	<u>312</u>	<u>13.9</u>	312	13.9	144	<u>274</u>	<u>15.9</u>	274	15.9	274	15.9
359.botsspar	144	393	13.3	<u>396</u>	<u>13.3</u>	396	13.2	72	371	14.1	371	14.2	<u>371</u>	<u>14.1</u>
360.ilbdc	144	<u>287</u>	<u>12.4</u>	286	12.4	289	12.3	144	290	12.3	286	12.4	<u>286</u>	<u>12.4</u>
362.fma3d	144	279	13.6	<u>279</u>	<u>13.6</u>	279	13.6	144	<u>279</u>	<u>13.6</u>	280	13.6	278	13.7
363.swim	144	227	20.0	228	19.9	<u>227</u>	<u>19.9</u>	72	<u>210</u>	<u>21.5</u>	211	21.5	210	21.5
367.imagick	144	364	19.3	365	19.3	<u>364</u>	<u>19.3</u>	144	364	19.3	364	19.3	<u>364</u>	<u>19.3</u>
370.mgrid331	144	<u>257</u>	<u>17.2</u>	258	17.1	257	17.2	72	244	18.1	<u>244</u>	<u>18.1</u>	244	18.1
371.applu331	144	129	47.0	<u>129</u>	<u>47.1</u>	129	47.1	144	128	47.3	129	47.2	<u>128</u>	<u>47.2</u>
372.smithwa	144	158	33.9	159	33.7	<u>159</u>	<u>33.7</u>	72	133	40.4	<u>132</u>	<u>40.5</u>	131	40.9
376.kdtree	144	237	19.0	<u>237</u>	<u>19.0</u>	237	19.0	144	235	19.1	237	19.0	<u>237</u>	<u>19.0</u>

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

Platform Notes

```

Sysinfo program /panfs/projects/innl/aknyazel/OMP2012/1.0/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 $# 8f8c0fe9e19c658963ale67685e50647
running on ehx07 Fri May 22 22:04:37 2015

```

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 E7-8890 v3 @ 2.50GHz
 4 "physical id"s (chips)
 144 "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 : 18
siblings : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB

```

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Platform Notes (Continued)

```

From /proc/meminfo
  MemTotal:      529146648 kB
  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 ehx07 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 May 22 05:08

SPEC is set to: /panfs/projects/innl/aknyazel/OMP2012/1.0
Filesystem      Type  Size  Used Avail Use% Mounted on
panfs://36.101.211.31/projects
                panfs 32T   28T  4.1T  88% /panfs/projects

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=190M
  ENV_KMP_BLOCKTIME=infinite
  ENV_OMP_DYNAMIC=FALSE
  ENV_OMP_NESTED=FALSE
  ENV_OMP_SCHEDULE=static
=====

```

```

=====
General base OMP Library Settings
  ENV_KMP_AFFINITY=compact,0
=====

```

```

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

```

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General Notes (Continued)

=====
Per benchmark peak OMP Library Settings

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

=====
357.bt331:peak:
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_KMP_AFFINITY=compact,1
ENV_OMP_SCHEDULE=static,1

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort



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Base Portability Flags

350.md: -FR
357.bt331: -mcmmodel=medium
363.swim: -mcmmodel=medium
367.imagick: -std=c99

Base Optimization Flags

C benchmarks:
-O3 -openmp -ipo -xCORE-AVX2 -ansi-alias
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: -mcmmodel=medium
363.swim: -mcmmodel=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

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Peak Optimization Flags (Continued)

358.botsalgn: -O3 -openmp -ipo -xSSE4.2 -fno-alias -ansi-alias

359.botsspar: -O3 -openmp -ipo -xCORE-AVX2 -fno-alias -ansi-alias

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

372.smithwa: -O3 -openmp -ipo -xSSE4.2 -fno-alias
-opt-streaming-stores always -opt-malloc-options=1
-ansi-alias

C++ benchmarks:

-O3 -openmp -ipo -xCORE-AVX2 -fno-alias -ansi-alias

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 -opt-malloc-options=1
-align array64byte

362.fma3d: -O3 -openmp -ipo -xCORE-AVX2 -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: -O3 -openmp -ipo -xSSE4.2 -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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