



SPEC® OMPG2012 Result

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Huawei

SPECompG_peak2012 = 7.71

Huawei RH5885H V3 (Intel Xeon E7-8893 v3)

SPECompG_base2012 = 7.46

OMP2012 license:27

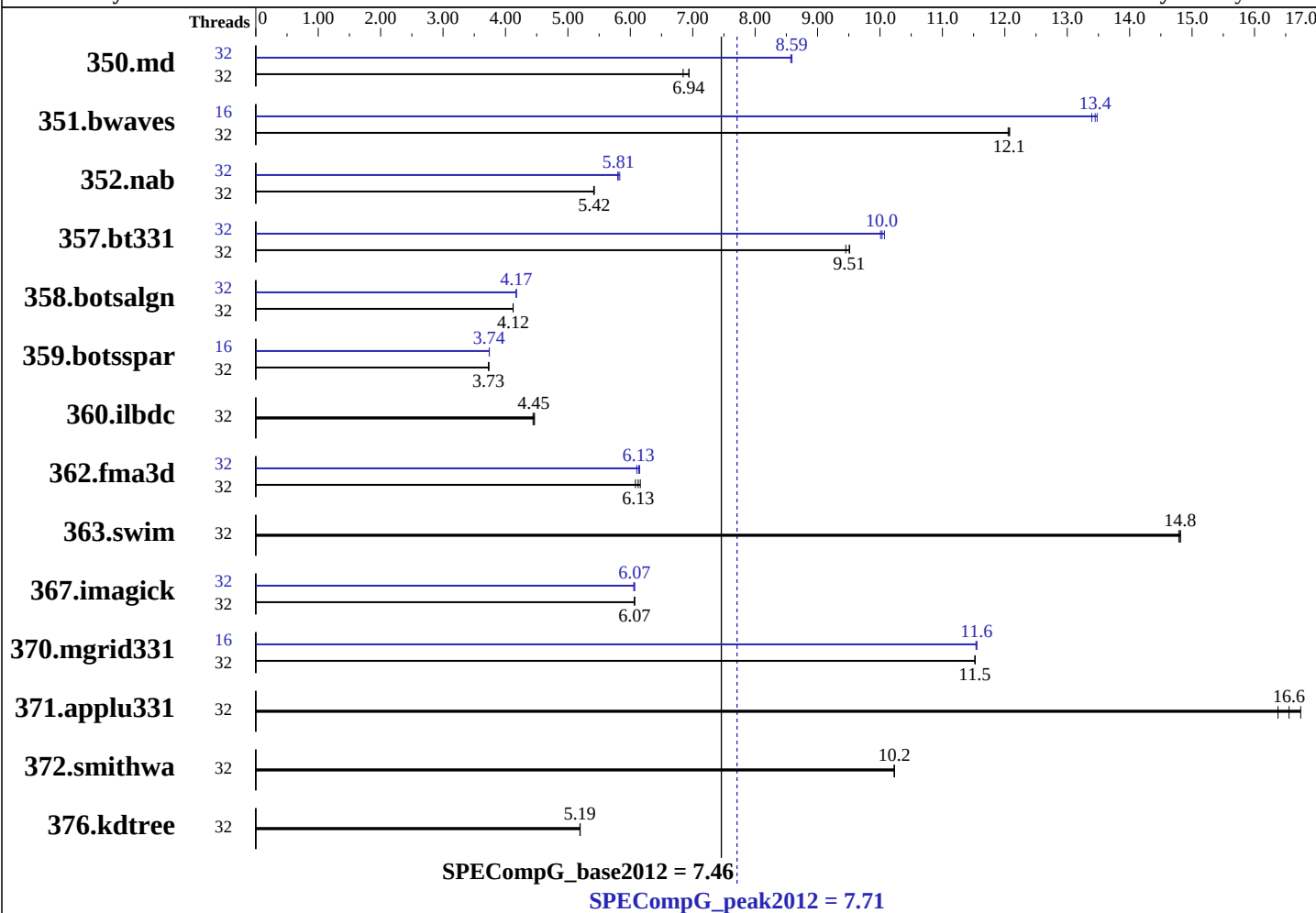
Test sponsor: Huawei

Tested by: Huawei

Test date: Feb-2017

Hardware Availability: May-2015

Software Availability: May-2016



Hardware

CPU Name: Intel Xeon E7-8893 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz: 3200
CPU MHz Maximum: 3500
FPU: Integrated
CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 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 2Rx8 PC4-2400T-R, running at 1600 MHz)
Disk Subsystem: 2 x 600 GB SAS, 10K RPM
Other Hardware: None
Base Threads Run: 32

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Software

Operating System: Red Hat Enterprise Linux Server release 3.10.0-327.el7.x86_64
Red Hat Enterprise Linux Server release 7.2 (Maipo)
3.10.0-327.el7.x86_64
Compiler: C/C++: Version 16.0.2.181 of Intel C++ Studio XE for Linux;
Fortran: Version 16.0.2.181 of Intel Fortran
Auto Parallel: No
File System: xfs
System State: Run level 3
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: None



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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	<u>667</u>	<u>6.94</u>	667	6.94	676	6.85	32	540	8.57	<u>539</u>	<u>8.59</u>	539	8.59
351.bwaves	32	376	12.1	375	12.1	<u>375</u>	<u>12.1</u>	16	<u>337</u>	<u>13.4</u>	336	13.5	338	13.4
352.nab	32	<u>718</u>	<u>5.42</u>	718	5.42	719	5.41	32	671	5.80	<u>670</u>	<u>5.81</u>	667	5.83
357.bt331	32	501	9.45	<u>499</u>	<u>9.51</u>	498	9.51	32	474	10.0	<u>472</u>	<u>10.0</u>	471	10.1
358.botsalgn	32	<u>1055</u>	<u>4.12</u>	1055	4.12	1055	4.12	32	1042	4.17	<u>1042</u>	<u>4.17</u>	1043	4.17
359.botsspar	32	<u>1408</u>	<u>3.73</u>	1405	3.74	1409	3.73	16	<u>1404</u>	<u>3.74</u>	1403	3.74	1404	3.74
360.ilbdc	32	801	4.44	<u>799</u>	<u>4.45</u>	797	4.47	32	801	4.44	<u>799</u>	<u>4.45</u>	797	4.47
362.fma3d	32	625	6.08	617	6.16	<u>620</u>	<u>6.13</u>	32	623	6.10	<u>620</u>	<u>6.13</u>	618	6.15
363.swim	32	306	14.8	306	14.8	<u>306</u>	<u>14.8</u>	32	306	14.8	306	14.8	<u>306</u>	<u>14.8</u>
367.imagick	32	<u>1159</u>	<u>6.07</u>	1159	6.07	1158	6.07	32	1158	6.07	<u>1159</u>	<u>6.07</u>	1161	6.05
370.mgrid331	32	384	11.5	<u>384</u>	<u>11.5</u>	383	11.5	16	383	11.6	383	11.5	<u>383</u>	<u>11.6</u>
371.applu331	32	362	16.7	<u>366</u>	<u>16.6</u>	370	16.4	32	362	16.7	<u>366</u>	<u>16.6</u>	370	16.4
372.smithwa	32	524	10.2	524	10.2	<u>524</u>	<u>10.2</u>	32	524	10.2	524	10.2	<u>524</u>	<u>10.2</u>
376.kdtree	32	<u>866</u>	<u>5.19</u>	866	5.19	866	5.20	32	<u>866</u>	<u>5.19</u>	866	5.19	866	5.20

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

Platform Notes

Sysinfo program /specomp/Docs/sysinfo

\$Rev: 395 \$ \$Date:: 2012-07-25 #\$ 8f8c0fe9e19c658963a1e67685e50647

running on localhost.localdomain Mon Feb 13 09:55:07 2017

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 E7-8893 v3 @ 3.20GHz

4 "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 : 4

siblings : 8

physical 0: cores 1 5 16 20

physical 1: cores 1 5 16 20

physical 2: cores 1 5 16 20

physical 3: cores 1 5 16 20

cache size : 46080 KB

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Platform Notes (Continued)

```
From /proc/meminfo
MemTotal:      528087168 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server

uname -a:
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29
EDT 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 13 09:42

SPEC is set to: /specomp
Filesystem                Type      Size  Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs        50G   27G   24G   54% /

Additional information from dmidecode:
BIOS American Megatrends Inc. BLISV789 12/06/2016
Memory:
32x 16 GB
64x NO DIMM NO DIMM
32x Samsung M393A2K43BB1-CRC 16 GB 1600 MHz 2 rank

(End of data from sysinfo program)
```

General Notes

```
=====
Power profile set with:
cpupower -c all frequency-set -g performance
```

```
System settings notes:
Intel Turbo Boost Technology (Turbo) : Enabled
Memory RAS Configuration set to Maximum Performance
```

```
=====
General Notes and Enviroment variables
```

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General Notes (Continued)

```
ENV_KMP_AFFINITY=compact,1
ENV_KMP_BLOCKTIME=infinite
ENV_KMP_DETERMINISTIC_REDUCTION=1
ENV_OMP_DYNAMIC=FALSE
ENV_KMP_LIBRARY=turnaround
ENV_KMP_SCHEDULE=static,balanced
ENV_KMP_STACKSIZE=256M
ENV_OMP_NESTED=FALSE
ENV_OMP_NUM_THREADS=32
```

=====

General base OMP Library Settings

```
ENV_KMP_AFFINITY=compact,1
```

=====

Base Optimization Flags

```
372.smithwa:base:
-mcmodel=medium
```

```
376.kdtree:base:
-mcmodel=medium
```

=====

General peak OMP Library Settings

```
ENV_KMP_AFFINITY=compact,1
```

=====

Per benchmark peak OMP Library Settings

=====

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
```

=====

372.smithwa:peak:

```
ENV_OMP_SCHEDULE=static,1
```



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Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Base Portability Flags

350.md: -FR
367.imagick: -std=c99

Base Optimization Flags

C benchmarks:

-O2 -openmp -ipo -xCORE-AVX2 -ansi-alias -mmodel=medium
-shared-intel

C++ benchmarks:

-O2 -openmp -ipo -xCORE-AVX2 -ansi-alias -mmodel=medium
-shared-intel

Fortran benchmarks:

350.md: -O2 -openmp -ipo -xCORE-AVX2 -align array64byte
351.bwaves: Same as 350.md
357.bt331: -O2 -openmp -ipo -xCORE-AVX2 -align array64byte
-mmodel=medium(*)
360.ilbdc: Same as 350.md
362.fma3d: Same as 350.md
363.swim: Same as 357.bt331
370.mgrid331: Same as 350.md
371.applu331: Same as 350.md

(*) Indicates an optimization flag that was found in a portability variable.



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Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Peak Portability Flags

350.md: -FR
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: basepeak = yes

C++ benchmarks:

376.kdtree: basepeak = yes

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: -O3 -openmp -ipo -xCORE-AVX2 -fno-alias -fp-model fast=2
-no-prec-div -no-prec-sqrt -align array64byte
-mcmmodel=medium(*)

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Peak Optimization Flags (Continued)

360.ilbdc: basepeak = yes

362.fma3d: -O3 -openmp -ipo -xCORE-AVX2 -fno-alias
-align array64byte

363.swim: basepeak = yes

370.mgrid331: -O3 -openmp -ipo -xCORE-AVX2 -fno-alias
-opt-malloc-options=3 -fp-model strict

371.aplu331: basepeak = yes

(*) Indicates an optimization flag that was found in a portability variable.

The flags file that was used to format this result can be browsed at
<http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20170317.html>

You can also download the XML flags source by saving the following link:
<http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20170317.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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