SPEC® OMPG2012 Result
Copyright 2012-2014 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS B260 M4 (Intel Xeon E7-4890 v2 @ 2.80 GHz)

SPECompG_peak2012 = 9.66
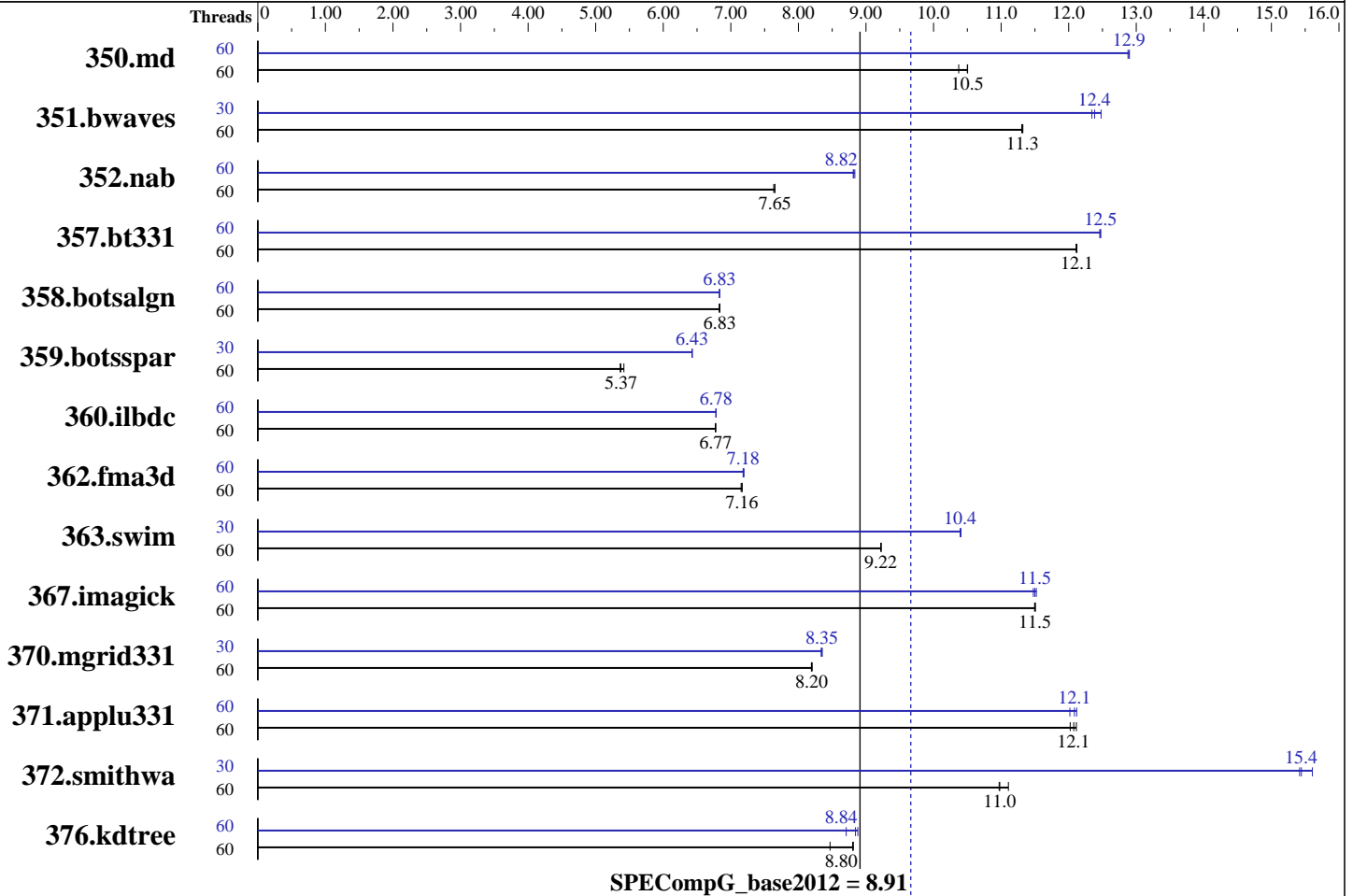
SPECompG_base2012 = 8.91

OMP2012 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Test date: Feb-2014
Hardware Availability: May-2014
Software Availability: Oct-2013

Benchmark	Threads	Result
350.md	60 / 60	12.9 / 10.5
351.bwaves	30 / 60	12.4 / 11.3
352.nab	60 / 60	8.82 / 7.65
357.bt331	60 / 60	12.5 / 12.1
358.botsalgn	60 / 60	6.83 / 6.83
359.botsspar	30 / 60	6.43 / 5.37
360.ilbdc	60 / 60	6.78 / 6.77
362.fma3d	60 / 60	7.18 / 7.16
363.swim	30 / 60	10.4 / 9.22
367.imagick	60 / 60	11.5 / 11.5
370.mgrid331	30 / 60	8.35 / 8.20
371.applu331	60 / 60	12.1 / 12.1
372.smithwa	30 / 60	15.4 / 11.0
376.kdtree	60 / 60	8.84 / 8.80

SPECompG_base2012 = 8.91

SPECompG_peak2012 = 9.66

Hardware

CPU Name: Intel Xeon E7-4890 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz: 2800
CPU MHz Maximum: 3400
FPU: Integrated
CPU(s) enabled: 30 cores, 2 chips, 15 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: 38400 KB I+D on chip per chip
Other Cache: None
Memory: 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC, and CL11)
Disk Subsystem: 1 x 300 GB 15000 RPM SAS
Other Hardware: --
Base Threads Run: 60

Software

Operating System: Red Hat Enterprise Linux Server release 6.4
Compiler: C/C++/Fortran: Version 14.0.1.106 of Intel Composer XE for Linux Build 20131008
Auto Parallel: No
File System: Linux ext4
System State: Default
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: Kernel 2.6.32-358.el6.x86_64

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Minimum Peak Threads: 30
Maximum Peak Threads: 60

Results Table

Benchmark	Base						Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	60	446	10.4	**441**	**10.5**	441	10.5	60	360	12.9	**359**	**12.9**	359	12.9
351.bwaves	60	**400**	**11.3**	401	11.3	400	11.3	30	**366**	**12.4**	367	12.3	363	12.5
352.nab	60	508	7.65	509	7.64	**508**	**7.65**	60	440	8.84	441	8.81	**441**	**8.82**
357.bt331	60	**391**	**12.1**	391	12.1	391	12.1	60	380	12.5	380	12.5	**380**	**12.5**
358.botsalgn	60	637	6.83	636	6.83	**636**	**6.83**	60	637	6.83	637	6.83	**637**	**6.83**
359.botsspar	60	969	5.42	**977**	**5.37**	979	5.36	30	817	6.43	**817**	**6.43**	817	6.43
360.ilbdc	60	525	6.78	526	6.77	**525**	**6.77**	60	525	6.78	**525**	**6.78**	525	6.78
362.fma3d	60	**531**	**7.16**	531	7.15	530	7.17	60	**529**	**7.18**	528	7.20	529	7.18
363.swim	60	**491**	**9.22**	491	9.22	491	9.22	30	**436**	**10.4**	436	10.4	435	10.4
367.imagick	60	**611**	**11.5**	611	11.5	612	11.5	60	610	11.5	613	11.5	**611**	**11.5**
370.mgrid331	60	539	8.20	540	8.19	**539**	**8.20**	30	529	8.35	530	8.34	**529**	**8.35**
371.applu331	60	**502**	**12.1**	500	12.1	504	12.0	60	**501**	**12.1**	504	12.0	500	12.1
372.smithwa	60	489	11.0	**488**	**11.0**	483	11.1	30	**347**	**15.4**	348	15.4	343	15.6
376.kdtree	60	**511**	**8.80**	511	8.81	531	8.47	60	517	8.71	507	8.88	**509**	**8.84**

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

Platform Notes

```
Sysinfo program /opt/omp2012/Docs/sysinfo
$Rev: 395 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963a1e67685e50647
running on specomp Sun Feb  9 13:36:06 2014

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 E7-4890 v2 @ 2.80GHz
     2 "physical id"s (chips)
     60 "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 : 15
     siblings  : 30
     physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
     physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
  cache size : 38400 KB

From /proc/meminfo
```

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Platform Notes (Continued)

```
    MemTotal:       264101684 kB
    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 specomp 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 Feb 9 09:45

SPEC is set to: /opt/omp2012
   Filesystem      Type     Size   Used Avail Use% Mounted on
   /dev/sda1       ext4     275G    23G  238G   9% /

Additional information from dmidecode:
  BIOS Cisco Systems, Inc. EXM4-1.2.2.1.12.012920142034 01/29/2014
  Memory:
   32x    8 GB
   32x 0xCE00 M393B1K70QB0-YK0 8 GB 1333 MHz 2 rank
   16x NO DIMM NO DIMM

(End of data from sysinfo program)
```

General Notes

```
==========================================================================
BIOS settings notes:
Intel Turbo Boost Technology (Turbo)  : Enabled
CPU Performance set to Enterprise
Power Technology set to Custom
General OMP Library Settings
  KMP_STACKSIZE=8192M
  OMP_DYNAMIC=FALSE
  OMP_NESTED=FALSE


==========================================================================
General base OMP Library Settings
  KMP_AFFINITY=compact,0,granularity=fine


==========================================================================
General peak OMP Library Settings
  KMP_AFFINITY=compact,0,granularity=fine
```

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General Notes (Continued)

```
 ========================================================================
 Per benchmark peak OMP Library Settings


 Submitted_by: Rajendra Yogendra<ryogendr@cisco.com>
 Submitted: Tue Mar 18 13:48:44 EDT 2014
 Submission: omp2012-20140227-00049.sub
 ========================================================================
 351.bwaves:peak:
   KMP_AFFINITY=compact,1,granularity=fine
   OMP_SCHEDULE=static,1


 ========================================================================
 357.bt331=peak=default=default:
   OMP_SCHEDULE=static,1
   FOPTIMIZE=-fp-model fast=2 -no-prec-div -no-prec-sqrt -align array64byte
 ========================================================================
 359.botsspar:peak:
   KMP_AFFINITY=compact,1,granularity=fine
   OMP_SCHEDULE=guided
 ========================================================================
 362.fma3d:peak:
   OMP_SCHEDULE=static,1


 ========================================================================
 363.swim:peak:
   KMP_AFFINITY=compact,1,granularity=fine


 ========================================================================
 370.mgrid331:peak:
   KMP_AFFINITY=compact,1,granularity=fine


 ========================================================================
 372.smithwa:peak:
   KMP_AFFINITY=compact,1,granularity=fine
```

Base Compiler Invocation

C benchmarks:
    icc

C++ benchmarks:
    icpc

Fortran benchmarks:
    ifort

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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
```

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 -ansi-alias

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

  367.imagick: Same as 358.botsalgn

  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: -O3 -openmp -ipo  -xAVX -opt-malloc-options=1
                -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-linux64.20130910.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/omp2012/flags/Intel-ic13.0-linux64.20130910.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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