

SPEC® OMPG2012 Result

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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

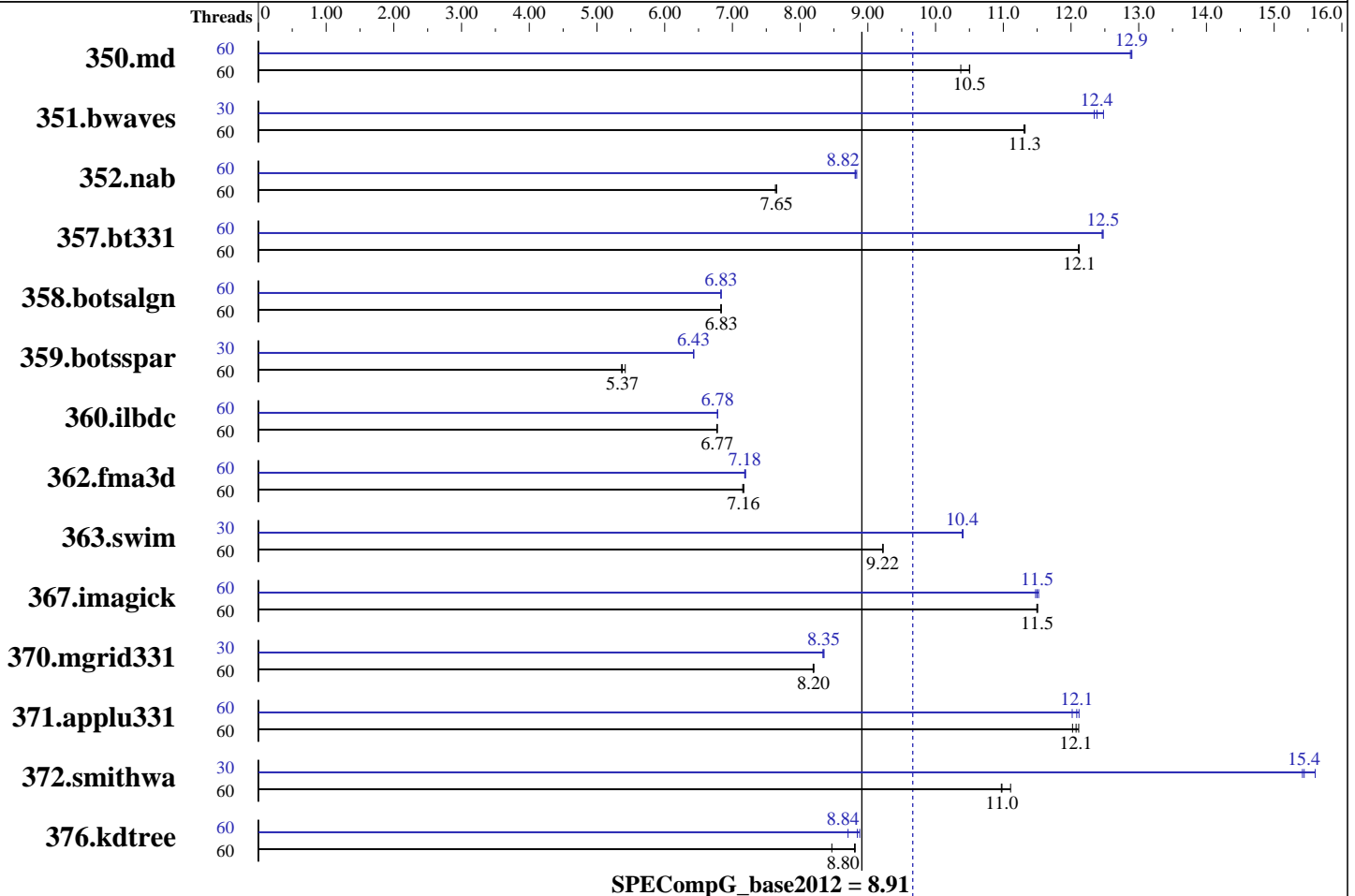
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Feb-2014

Hardware Availability: May-2014

Software Availability: Oct-2013



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

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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: None

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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 $ $Date:: 2012-07-25 #$ 8f8c0fe9e19c658963ale67685e50647
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/sdal 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  
Frequency Floor set to Disabled  
CPU C6 Report set to Disabled  
Enhanced Halt State (C1E) set to Disabled  
Package C State Limit set to C0/C1 State  
Memory RAS Configuration set to Maximum Performance  
Energy Power Saving Mode set to Slow  
DRAM Clock Throttling set to Auto  
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled  
General OMP Library Settings  
ENV_KMP_STACKSIZE=8192M  
ENV_OMP_DYNAMIC=FALSE  
ENV_OMP_NESTED=FALSE
```

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General Notes (Continued)

=====
General base OMP Library Settings

ENV_KMP_AFFINITY=compact,0,granularity=fine

=====
General peak OMP Library Settings

ENV_KMP_AFFINITY=compact,0,granularity=fine

=====
Per benchmark peak OMP Library Settings

=====
351.bwaves:peak:

ENV_KMP_AFFINITY=compact,1,granularity=fine

ENV_OMP_SCHEDULE=static,1

=====
359.botsspar:peak:

362.fma3d:peak:

ENV_KMP_AFFINITY=compact,1,granularity=fine

ENV_OMP_SCHEDULE=guided

=====
ENV_OMP_SCHEDULE=static,1

=====
363.swim:peak:

ENV_KMP_AFFINITY=compact,1,granularity=fine

=====
370.mgrid331:peak:

ENV_KMP_AFFINITY=compact,1,granularity=fine

=====
372.smithwa:peak:

ENV_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: -mcmmodel=medium
363.swim: -mcmmodel=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: -mcmmodel=medium
363.swim: -mcmmodel=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

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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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