SPEC® OMPG2012 Result

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Cisco Systems

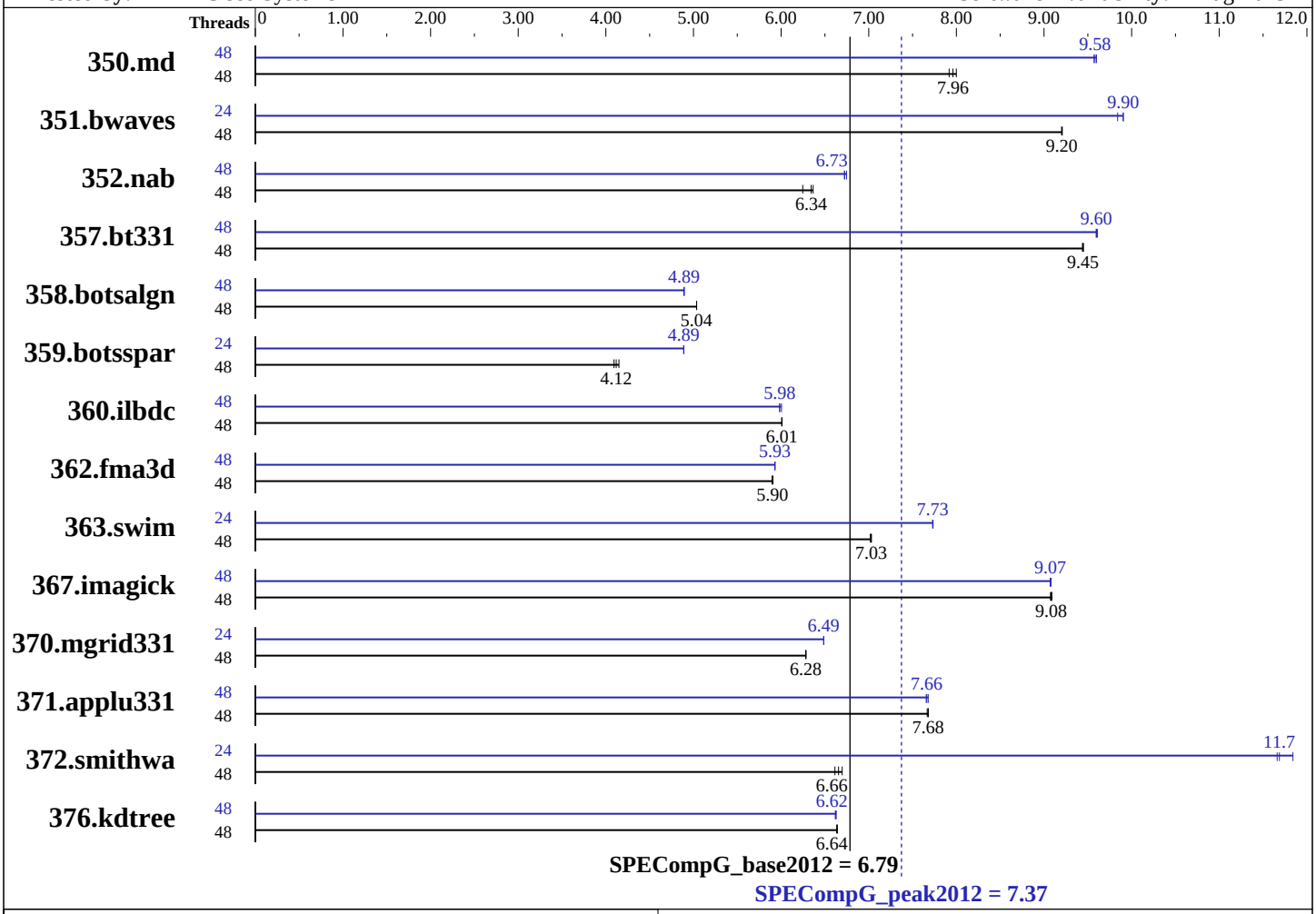
Cisco UCS C240 M3 (Intel Xeon E5-2697 v2 @ 2.70 GHz)

SPECompG_peak2012 = 7.37

SPECompG_base2012 = 6.79

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

Test date: Sep-2013
Hardware Availability: Sep-2013
Software Availability: Aug-2013



Hardware

CPU Name:	Intel Xeon E5-2697 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.5 GHz
CPU MHz:	2700
CPU MHz Maximum:	3500
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:	128 GB (16 x 8 GB 2Rx4 PC3-14900R-11, ECC)
Disk Subsystem:	1 X 300GB SAS, 15K RPM
Other Hardware:	--
Base Threads Run:	48
Minimum Peak Threads:	24

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Software

Operating System:	SUSE Linux Enterprise Server 11 SP3 (x86_64)
Compiler:	C/C++/Fortran: Version 13.1.3 of Intel Composer XE for Linux Build 20130607
Auto Parallel:	No
File System:	ext3
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	Kernel 3.0.76-0.11-default

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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	579	8.00	**582**	**7.96**	585	7.92	48	484	9.57	**483**	**9.58**	482	9.60
351.bwaves	48	492	9.21	**492**	**9.20**	492	9.20	24	457	9.90	460	9.84	**457**	**9.90**
352.nab	48	611	6.37	**613**	**6.34**	623	6.25	48	577	6.75	579	6.72	**578**	**6.73**
357.bt331	48	**502**	**9.45**	502	9.44	502	9.45	48	494	9.59	**494**	**9.60**	493	9.61
358.botsalgn	48	864	5.04	**864**	**5.04**	864	5.04	48	890	4.89	888	4.90	**889**	**4.89**
359.botsspar	48	1265	4.15	**1275**	**4.12**	1283	4.09	24	1074	4.89	1074	4.89	**1074**	**4.89**
360.ilbdc	48	592	6.01	**592**	**6.01**	593	6.01	48	595	5.98	593	6.00	**595**	**5.98**
362.fma3d	48	645	5.90	**644**	**5.90**	643	5.91	48	641	5.93	**641**	**5.93**	641	5.93
363.swim	48	**645**	**7.03**	644	7.03	646	7.02	24	586	7.73	586	7.73	**586**	**7.73**
367.imagick	48	775	9.07	773	9.09	**774**	**9.08**	48	775	9.07	**775**	**9.07**	774	9.08
370.mgrid331	48	703	6.29	704	6.28	**704**	**6.28**	24	681	6.49	682	6.49	**681**	**6.49**
371.applu331	48	**789**	**7.68**	790	7.67	789	7.68	48	789	7.68	**791**	**7.66**	792	7.66
372.smithwa	48	810	6.61	800	6.70	**805**	**6.66**	24	453	11.8	460	11.7	**459**	**11.7**
376.kdtree	48	678	6.63	**678**	**6.64**	678	6.64	48	679	6.63	**680**	**6.62**	680	6.62

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 ompsles11sp3 Mon Sep  9 22:25:17 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:  132132848 kB
HugePages_Total:       0
```

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Platform Notes (Continued)

```
 Hugepagesize:       2048 kB
 From /etc/*release* /etc/*version*
SuSE-release: SUSE Linux Enterprise Server 11
VERSION = 11
PATCHLEVEL = 3
 uname -a:
 Linux ompsles11sp3 3.0.76-0.11-default #1 SMP Fri
 Jun 14 08:21:43 UTC 2013
 (ccab990) x86_64 x86_64 x86_64 GNU/Linux
 run-level 2 Sep 9 22:24 last=S
 SPEC is set to: /opt/omp2012
 Filesystem  Type  Size  Used Avail Use% Mounted on
 /dev/sda1   ext3  275G   17G  245G   7%  /
 Additional information from dmidecode:
 BIOS Cisco Systems, Inc. C240M3.1.5.3.0.081520130943 08/15/2013
 Memory:
 16x 0xAD00 HMT31GR7EFR4C-RD 8 GB 1866 MHz
 8x NO DIMM NO DIMM
 (End of data from sysinfo program)
```

General Notes

```
 Transparent Huge Pages enabled with:
 echo never > /sys/kernel/mm/transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 CPU Performance set to HPC
 Power Technology set to Custom
 Processor Power State C6 set to Enabled
 Processor Power State C1 Enhanced set to Disabled
 Energy Performance set to Performance
 Memory RAS configuration set to Maximum Performance
 DRAM Clock Throttling Set to Balanced
 Low Voltage DDR Mode set to Performance-mode
 DRAM Refresh Rate set to 1x
 General base OMP Library Settings
 ENV_KMP_AFFINITY=compact,0
 ENV_KMP_LIBRARY=turnaround
 ENV_KMP_BLOCKTIME=infinite
 ENV_KMP_STACKSIZE=190M
 ENV_OMP_DYNAMIC=FALSE
 ENV_OMP_NESTED=FALSE
 ------------------------------------------------------------------------
 Per benchmark peak OMP Library Settings


 Submitted_by: "Paul Del Vecchio" <pdelvecc@cisco.com>
 Submitted: Wed Sep 10 22:35:41 PST 2013
 ------------------------------------------------------------------------
 351.bwaves:peak:
 ENV_KMP_AFFINITY=compact,1
```

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General Notes (Continued)

```
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
================================================================================
372.smithwa:peak:
ENV_KMP_AFFINITY=compact,1
```

Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

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

358.botsalgn: -O3 -openmp -ipo -xSSE4.2 -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

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Peak Optimization Flags (Continued)

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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