SPEC® OMPG2012 Result

Cisco Systems

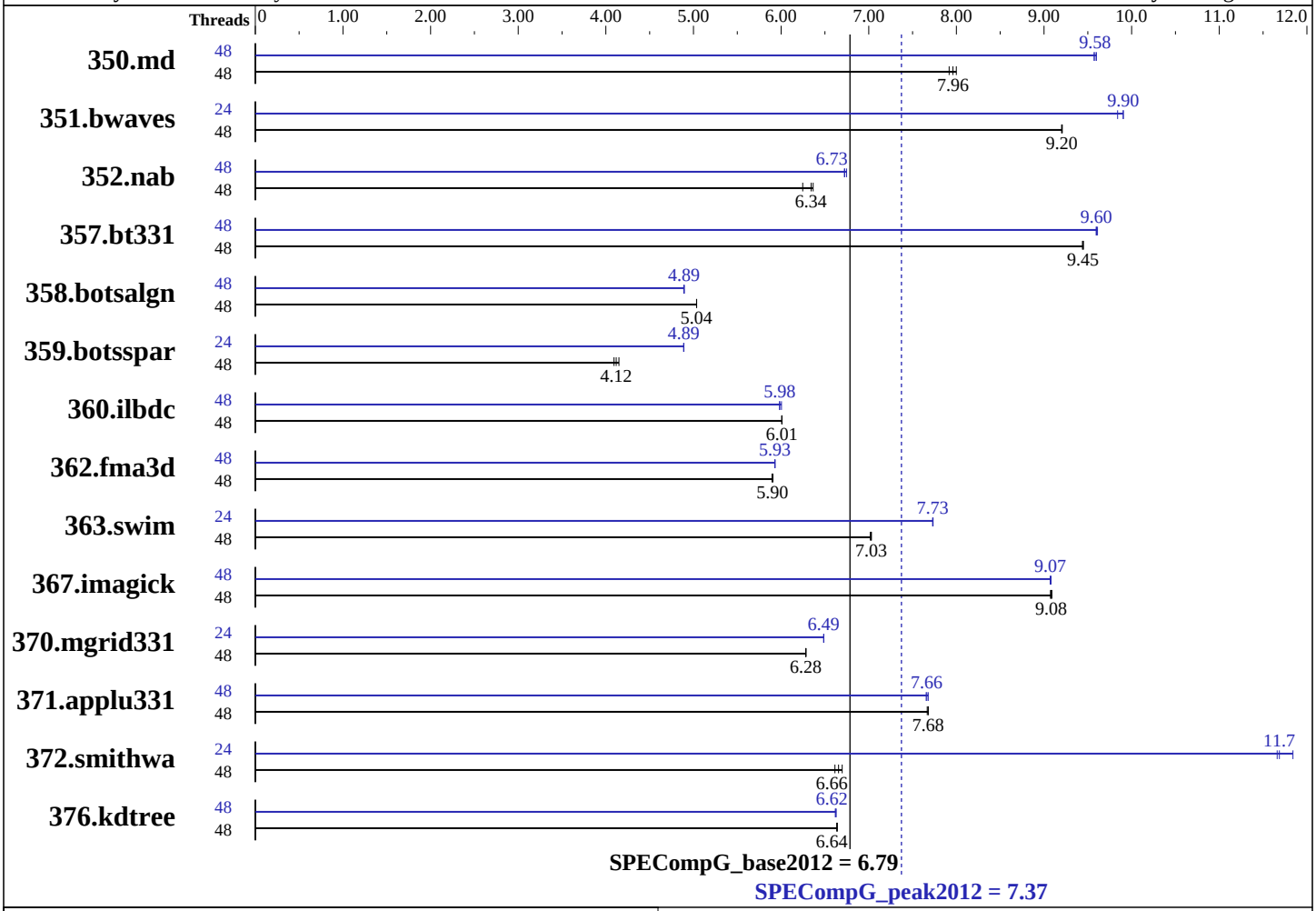
Cisco UCS C240 M3 (Intel Xeon E5-2697 v2 @ 2.70 GHz)

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:	None
Base Threads Run:	48
Minimum Peak Threads:	24

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Software

Operating System:	SUSE Linux Enterprise Server 11 (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:	None

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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
```

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Platform Notes (Continued)

```
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   From /etc/*release* /etc/*version*
      SuSE-release:
         SUSE Linux Enterprise Server 11 (x86_64)
         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

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

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

Continued on next page

General Notes (Continued)

```
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
   ENV_OMP_SCHEDULE=static,1

 ================================================================================
 359.botsspar:peak:
 362.fma3d:peak:
   ENV_KMP_AFFINITY=compact,1
   ENV_OMP_SCHEDULE=guided

 ================================================================================
   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
```

Continued on next page

Peak Optimization Flags (Continued)

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
```


For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC OMP2012 v1.0.
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