



# SPEC® OMPG2012 Result

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## Hewlett-Packard Company

### SPECompG\_peak2012 = 21.5

HP ProLiant DL580 Gen9  
(Intel Xeon E7-8890 v3 @ 2.50)

### SPECompG\_base2012 = 20.4

OMP2012 license:l

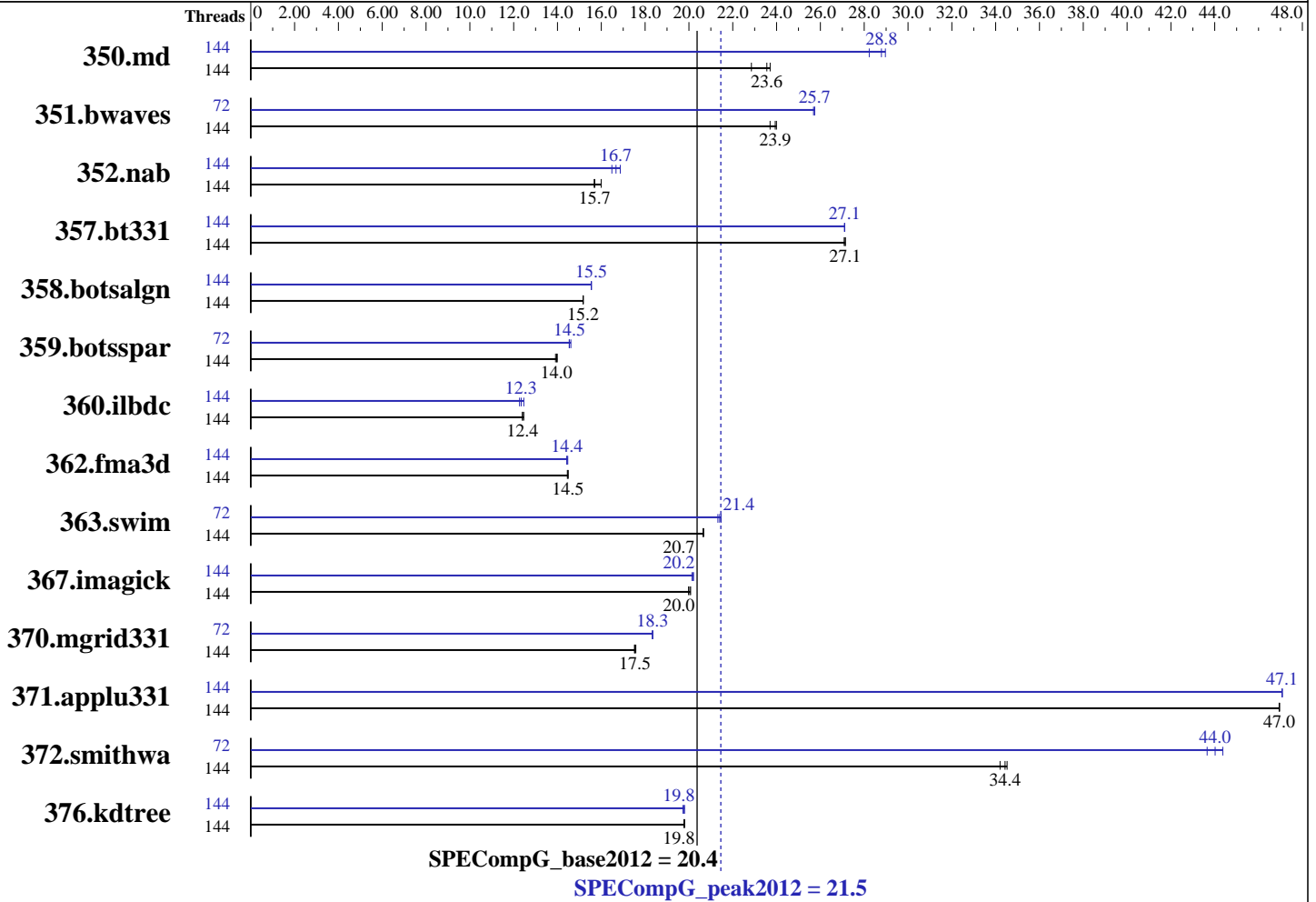
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Apr-2015

Hardware Availability: May-2015

Software Availability: Jan-2015



### Hardware

CPU Name: Intel Xeon E7-8890 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2500  
 CPU MHz Maximum: 3300  
 FPU: Integrated  
 CPU(s) enabled: 72 cores, 4 chips, 18 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: 1.00 TB (64 x 16 GB 2Rx4 PC4-2133P-R, ECC)  
 Disk Subsystem: 1 X 300GB SAS, 10K RPM  
 Other Hardware: None  
 Base Threads Run: 144  
 Minimum Peak Threads: 72

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### Software

Operating System: SUSE Linux Enterprise Server 11 SP3 (x86\_64)  
 Kernel 3.0.76-0.11-default  
 Compiler: C/C++/Fortran: Version 15.0.2.0 of Intel Composer XE for Linux, Build 20150121  
 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: 144

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	144	203	22.9	195	23.7	<b>197</b>	<b>23.6</b>	144	160	29.0	164	28.2	<b>161</b>	<b>28.8</b>
351.bwaves	144	<b>189</b>	<b>23.9</b>	189	24.0	191	23.7	72	<b>176</b>	<b>25.7</b>	176	25.7	176	25.7
352.nab	144	243	16.0	248	15.7	<b>248</b>	<b>15.7</b>	144	<b>233</b>	<b>16.7</b>	231	16.9	236	16.5
357.bt331	144	175	27.1	<b>175</b>	<b>27.1</b>	175	27.1	144	175	27.1	<b>175</b>	<b>27.1</b>	175	27.1
358.botsalgn	144	287	15.2	287	15.2	<b>287</b>	<b>15.2</b>	144	280	15.5	280	15.5	<b>280</b>	<b>15.5</b>
359.botsspar	144	<b>376</b>	<b>14.0</b>	377	13.9	375	14.0	72	359	14.6	<b>361</b>	<b>14.5</b>	361	14.5
360.ilbdc	144	287	12.4	<b>287</b>	<b>12.4</b>	286	12.5	144	<b>288</b>	<b>12.3</b>	290	12.3	286	12.5
362.fma3d	144	<b>263</b>	<b>14.5</b>	263	14.5	262	14.5	144	263	14.4	<b>263</b>	<b>14.4</b>	263	14.5
363.swim	144	219	20.7	<b>219</b>	<b>20.7</b>	219	20.6	72	<b>212</b>	<b>21.4</b>	211	21.5	212	21.3
367.imagick	144	<b>351</b>	<b>20.0</b>	352	20.0	350	20.1	144	348	20.2	<b>348</b>	<b>20.2</b>	349	20.1
370.mgrid331	144	251	17.6	<b>252</b>	<b>17.5</b>	252	17.5	72	<b>241</b>	<b>18.3</b>	241	18.3	241	18.3
371.applu331	144	129	47.0	<b>129</b>	<b>47.0</b>	129	46.9	144	129	47.1	<b>129</b>	<b>47.1</b>	129	47.1
372.smithwa	144	157	34.2	<b>156</b>	<b>34.4</b>	155	34.5	72	<b>122</b>	<b>44.0</b>	123	43.7	121	44.4
376.kdtree	144	227	19.8	<b>227</b>	<b>19.8</b>	228	19.8	144	227	19.8	228	19.7	<b>227</b>	<b>19.8</b>

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 DL580Gen9-6 Mon Apr 20 02:42:02 2015
```

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 E7-8890 v3 @ 2.50GHz
4 "physical id"s (chips)
144 "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 : 18
siblings : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB
```

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### Platform Notes (Continued)

```

From /proc/meminfo
  MemTotal:      1058712696 kB
  HugePages_Total:       0
  Hugepagesize:    2048 kB

/usr/bin/lsb_release -d
  SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
  SuSE-release:
    SUSE Linux Enterprise Server 11 (x86_64)
    VERSION = 11
    PATCHLEVEL = 3

uname -a:
  Linux DL580Gen9-6 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 3 Apr 20 02:25 last=S

SPEC is set to: /opt/omp2012
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/sda3       ext3  273G   41G  232G  15% /

Additional information from dmidecode:
  BIOS HP U17 03/13/2015
  Memory:
    64x HP 752369-081 16 GB 1600 MHz
    32x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)

```

### General Notes

```

=====
Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled
Software Environment:
  ulimit -s unlimited
BIOS settings notes:
  Power Profile = Maximum Performance
  Thermal Configuration = Maximum Cooling
  Collaborative Power Control = Disabled
  Processor Power and Utilization Monitoring = Disabled
  Memory Refresh Rate = 1x
=====
General OMP Library Settings
  ENV_KMP_LIBRARY=turnaround
  ENV_KMP_STACKSIZE=2220M
  ENV_KMP_BLOCKTIME=infinite
  ENV_OMP_DYNAMIC=FALSE

```

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### General Notes (Continued)

```

ENV_OMP_NESTED=FALSE
ENV_OMP_WAIT_POLICY=ACTIVE
=====
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
=====
351.bwaves:peak:
ENV_KMP_AFFINITY=compact,1
ENV_OMP_SCHEDULE=static,1
=====
357.bt331:peak:
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
=====
370.mgrid331:peak:
ENV_KMP_AFFINITY=compact,1
=====
372.smithwa:peak:
ENV_KMP_AFFINITY=compact,1
ENV_OMP_SCHEDULE=guided

```

### Base Compiler Invocation

C benchmarks:  
icc

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

## Base Portability Flags

350.md: -FR  
357.bt331: -mmodel=medium  
363.swim: -mmodel=medium  
367.imagick: -std=c99

## Base Optimization Flags

C benchmarks:  
-O3 -openmp -ipo -xAVX -ansi-alias

C++ benchmarks:  
-O3 -openmp -ipo -xAVX -ansi-alias

Fortran benchmarks:  
-O3 -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: -mmodel=medium  
363.swim: -mmodel=medium  
367.imagick: -std=c99



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## 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

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/hp-ic15.0-linux64.v1.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/omp2012/flags/hp-ic15.0-linux64.v1.xml>



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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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