SPEC® OMPG2012 Result
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Hewlett Packard Enterprise
(Test Sponsor: HPE)

$SPECompG\_peak2012 =$ 134

Superdome Flex (Intel Xeon Gold 6154, 3.00 GHz)
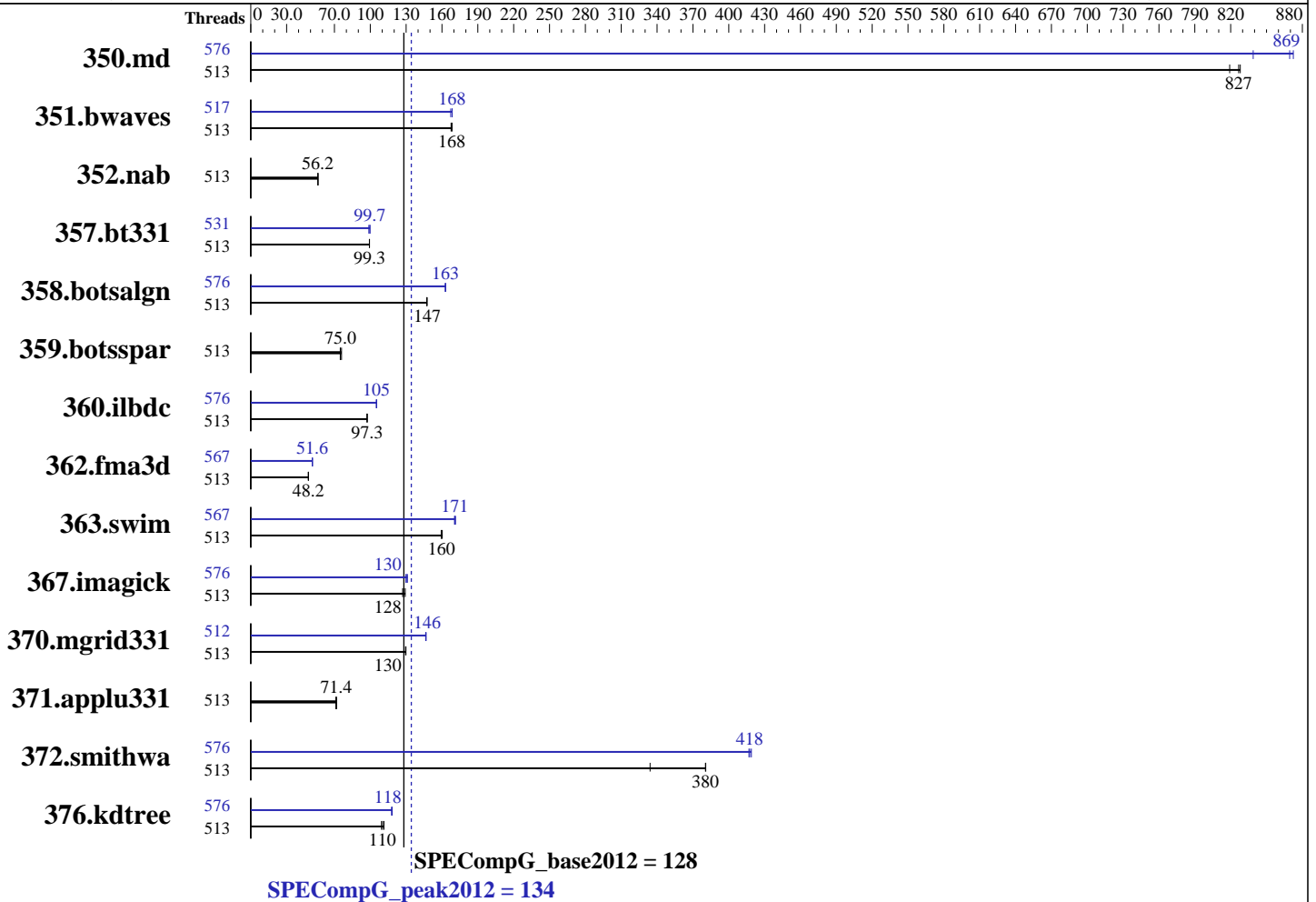
$SPECompG\_base2012 =$ 128

OMP2012 license: 1

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Mar-2018

Software Availability: Mar-2018

SPECompG_base2012 = 128

SPECompG_peak2012 = 134

Hardware

CPU Name:	Intel Xeon Gold 6154
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	3000
CPU MHz Maximum:	3700
FPU:	Integrated
CPU(s) enabled:	576 cores, 32 chips, 18 cores/chip
CPU(s) orderable:	4-32 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	24.75 MB I+D on chip per chip
Other Cache:	None
Memory:	12 TB (384 x 32 GB 2Rx4 PC4-2666V-R)
Disk Subsystem:	tmpfs
Other Hardware:	None
Base Threads Run:	513
Minimum Peak Threads:	512

Software

Operating System:	SUSE Linux Enterprise Server 12 SP2 Kernel 4.4.74-92.38-default
Compiler:	C/C++/Fortran: Version 18.0.0.128 of Intel Composer XE for Linux, Build 20170811
Auto Parallel:	No
File System:	tmpfs
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	HPE Foundation Software 1.0, Build 717a270.sles12sp2-1709012000

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Maximum Peak Threads:	576

Results Table

Benchmark	Base						Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	513	5.65	819	**5.60**	**827**	5.59	828	576	**5.33**	**869**	5.52	839	5.31	872
351.bwaves	513	26.9	168	**26.9**	**168**	27.0	168	517	27.1	167	**26.9**	**168**	26.9	169
352.nab	513	69.2	56.2	**69.2**	**56.2**	69.2	56.2	513	69.2	56.2	**69.2**	**56.2**	69.2	56.2
357.bt331	513	**47.7**	**99.3**	47.8	99.3	47.7	99.4	531	47.5	99.7	48.0	98.8	**47.6**	**99.7**
358.botsalgn	513	29.5	147	29.5	148	**29.5**	**147**	576	26.7	163	**26.7**	**163**	26.7	163
359.botsspar	513	69.1	76.0	**70.0**	**75.0**	70.1	74.9	513	69.1	76.0	**70.0**	**75.0**	70.1	74.9
360.ilbdc	513	**36.6**	**97.3**	36.5	97.5	36.6	97.3	576	33.9	105	33.8	105	**33.8**	**105**
362.fma3d	513	78.8	48.2	78.7	48.3	**78.8**	**48.2**	567	**73.7**	**51.6**	73.8	51.5	73.6	51.6
363.swim	513	**28.4**	**160**	28.4	159	28.3	160	567	26.6	170	26.4	171	**26.5**	**171**
367.imagick	513	54.4	129	55.3	127	**54.9**	**128**	576	54.1	130	**54.0**	**130**	53.6	131
370.mgrid331	513	34.0	130	**34.1**	**130**	34.1	130	512	30.1	147	30.2	146	**30.2**	**146**
371.applu331	513	84.4	71.8	85.1	71.2	**84.8**	**71.4**	513	84.4	71.8	85.1	71.2	**84.8**	**71.4**
372.smithwa	513	14.1	381	**14.1**	**380**	16.0	334	576	**12.8**	**418**	12.9	417	12.8	419
376.kdtree	513	**40.8**	**110**	40.4	111	41.1	109	576	38.2	118	**38.1**	**118**	38.0	118

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

Compiler Invocation Notes

```
COPTIMIZE=-O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1  -qopenmp -ansi-alias -mcmodel=medium -shared-intel
CXXOPTIMIZE=-O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1  -qopenmp -ansi-alias -mcmodel=medium -shared-intel
 FOPTIMIZE=-O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1  -qopenmp -mcmodel=medium -shared-intel
```

Submit Notes

```
    The config file option 'submit' was used.
    For all benchmarks threads were bound to cores using
    the following submit command:
        dplace $command
    This binds threads in order of creation, beginning
    with the master thread on logical cpu 0, the first slave
    thread on logical cpu 1, and so on.
```

Operating System Notes

```
    Transparent Hugepages :
        Transparent Hugepages are disabled by
        echo never > /sys/kernel/mm/transparent_hugepage/enabled

    Software Environment:
```

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Operating System Notes (Continued)

```
    export KMP_AFFINITY=disabled
    export KMP_STACKSIZE=200M
    export KMP_SCHEDULE=static,balanced
    export OMP_DYNAMIC=FALSE
    ulimit -s unlimited

The tmpfs filesystem was set up with:
    mount -t tmpfs -o rw,remount,mode=1777,mpol=interleave tmpfs /dev/shm
```

Platform Notes

```
Rack Management Controller settings:
    modify npar pnum=0 ras=hpc
    modify npar pnum=0 hthread=off
```

Base Compiler Invocation

C benchmarks:
    icc

C++ benchmarks:
    icpc

Fortran benchmarks:
    ifort

Base Portability Flags

    350.md: -free
    367.imagick: -std=c99

Base Optimization Flags

C benchmarks:
    -O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1 -qopenmp -ansi-alias
    -mcmodel=medium -shared-intel

C++ benchmarks:
    -O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1 -qopenmp -ansi-alias
    -mcmodel=medium -shared-intel

Fortran benchmarks:
    -O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1 -qopenmp
    -mcmodel=medium -shared-intel

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Peak Compiler Invocation

C benchmarks:
    icc

C++ benchmarks:
    icpc

Fortran benchmarks:
    ifort

Peak Portability Flags

350.md: `-free`
367.imagick: `-std=c99`

Peak Optimization Flags

C benchmarks:

352.nab: basepeak = yes

358.botsalgn: `-O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1 -qopenmp -ansi-alias -mcmodel=medium -shared-intel`

359.botsspar: basepeak = yes

367.imagick: Same as 358.botsalgn

372.smithwa: Same as 358.botsalgn

C++ benchmarks:
    `-O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1 -qopenmp -ansi-alias -mcmodel=medium -shared-intel`

Fortran benchmarks:

350.md: `-O3 -qopt-zmm-usage=high -xCORE-AVX512 -ipo1 -qopenmp -mcmodel=medium -shared-intel`

351.bwaves: Same as 350.md

357.bt331: Same as 350.md

360.ilbdc: Same as 350.md

362.fma3d: Same as 350.md

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Peak Optimization Flags (Continued)

363.swim: Same as 350.md

370.mgrid331: Same as 350.md

371.applu331: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/omp2012/flags/HPE-OMP2012-ic18.html
http://www.spec.org/omp2012/flags/HPE-Superdome_Flex-RevA.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/omp2012/flags/HPE-OMP2012-ic18.xml
http://www.spec.org/omp2012/flags/HPE-Superdome_Flex-RevA.xml

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

Tested with SPEC OMP2012 v25.
Report generated on Wed Jan 3 13:04:57 2018 by SPEC OMP2012 PS/PDF formatter v541.
Originally published on 3 January 2018.