SPEC® OMPG2012 Result

Hewlett Packard Enterprise

(Test Sponsor: HPE)

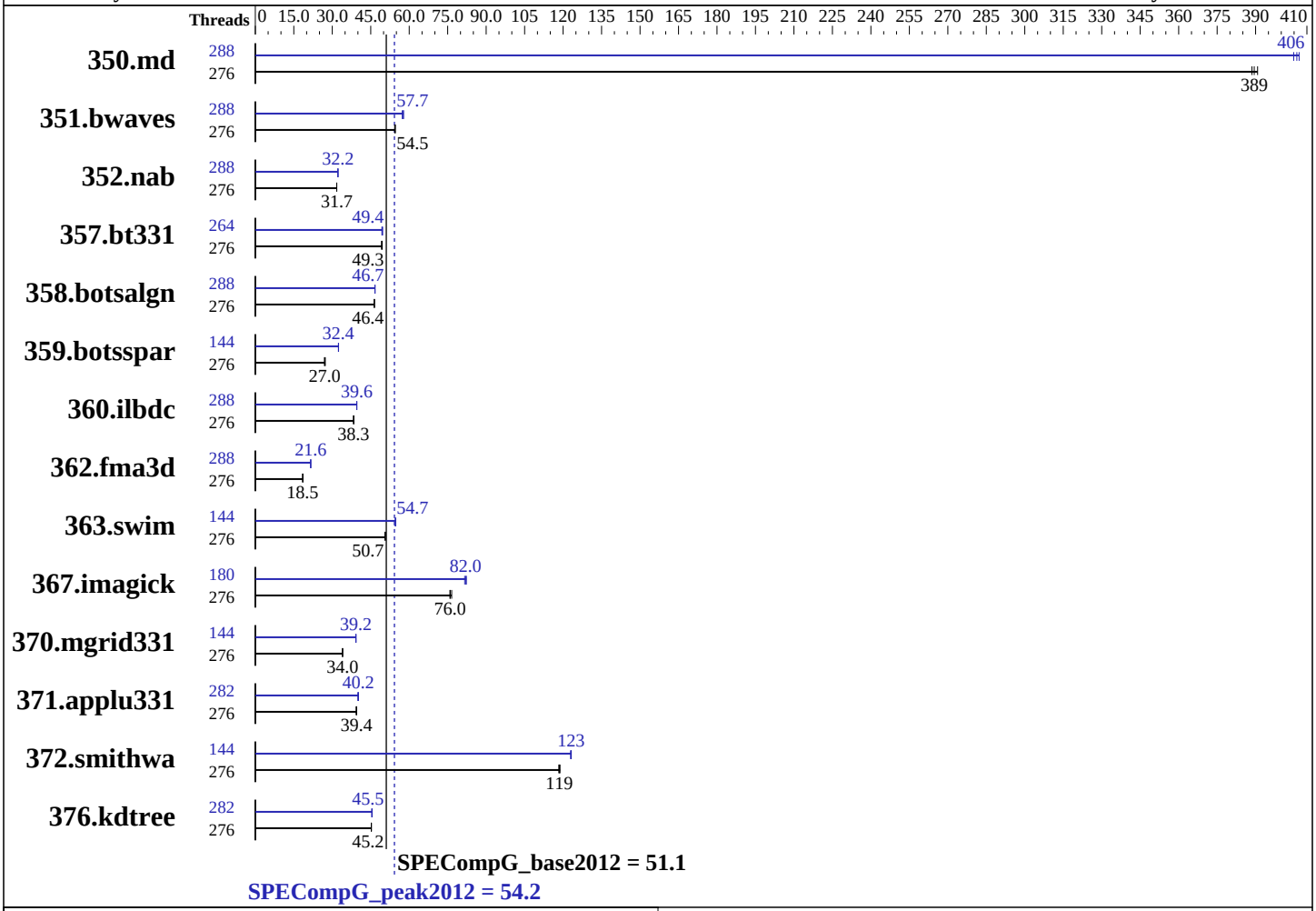
Superdome Flex (Intel Xeon Gold 6154, 3.00 GHz)

SPECompG_peak2012 = 54.2

SPECompG_base2012 = 51.1

OMP2012 license: 1
Test sponsor: HPE
Tested by: HPE

Test date: Dec-2017
Hardware Availability: Dec-2017
Software Availability: Dec-2017



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:	144 cores, 8 chips, 18 cores/chip, 2 threads/core
CPU(s) orderable:	4-8 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:	3 TB (96 x 32 GB 2Rx4 PC4-2666V-R)
Disk Subsystem:	tmpfs
Other Hardware:	None
Base Threads Run:	276
Minimum Peak Threads:	144

Continued on next page

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

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	276	**11.9**	**389**	11.9	389	11.8	391	288	11.4	405	11.4	407	**11.4**	**406**
351.bwaves	276	**83.1**	**54.5**	83.4	54.3	83.0	54.6	288	79.1	57.3	78.4	57.8	**78.5**	**57.7**
352.nab	276	**123**	**31.7**	123	31.7	122	31.8	288	**121**	**32.2**	121	32.2	121	32.2
357.bt331	276	95.8	49.5	96.3	49.2	**96.1**	**49.3**	264	95.4	49.7	96.0	49.4	**95.9**	**49.4**
358.botsalgn	276	93.8	46.4	**93.7**	**46.4**	93.7	46.4	288	93.3	46.6	93.2	46.7	**93.2**	**46.7**
359.botsspar	276	192	27.3	194	27.0	**194**	**27.0**	144	**162**	**32.4**	162	32.5	162	32.4
360.ilbdc	276	92.7	38.4	93.0	38.3	**92.9**	**38.3**	288	90.0	39.5	**90.0**	**39.6**	89.9	39.6
362.fma3d	276	206	18.5	**205**	**18.5**	205	18.5	288	176	21.6	**176**	**21.6**	176	21.6
363.swim	276	**89.4**	**50.7**	89.4	50.7	89.7	50.5	144	**82.9**	**54.7**	82.8	54.7	83.0	54.6
367.imagick	276	92.6	75.9	**92.5**	**76.0**	91.8	76.6	180	85.4	82.3	**85.7**	**82.0**	86.1	81.6
370.mgrid331	276	130	34.0	130	34.0	**130**	**34.0**	144	**113**	**39.2**	113	39.2	113	39.2
371.applu331	276	154	39.3	153	39.5	**154**	**39.4**	282	151	40.2	152	40.0	**151**	**40.2**
372.smithwa	276	45.1	119	**45.2**	**119**	45.3	118	144	**43.5**	**123**	43.5	123	43.6	123
376.kdtree	276	**99.5**	**45.2**	99.4	45.3	99.5	45.2	282	**99.0**	**45.5**	98.9	45.5	99.0	45.4

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:
```

Continued on next page

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 setting:
   modify npar pnum=0 ras=hpc
```

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`

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:
-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

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

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