Kata Containers metrics report
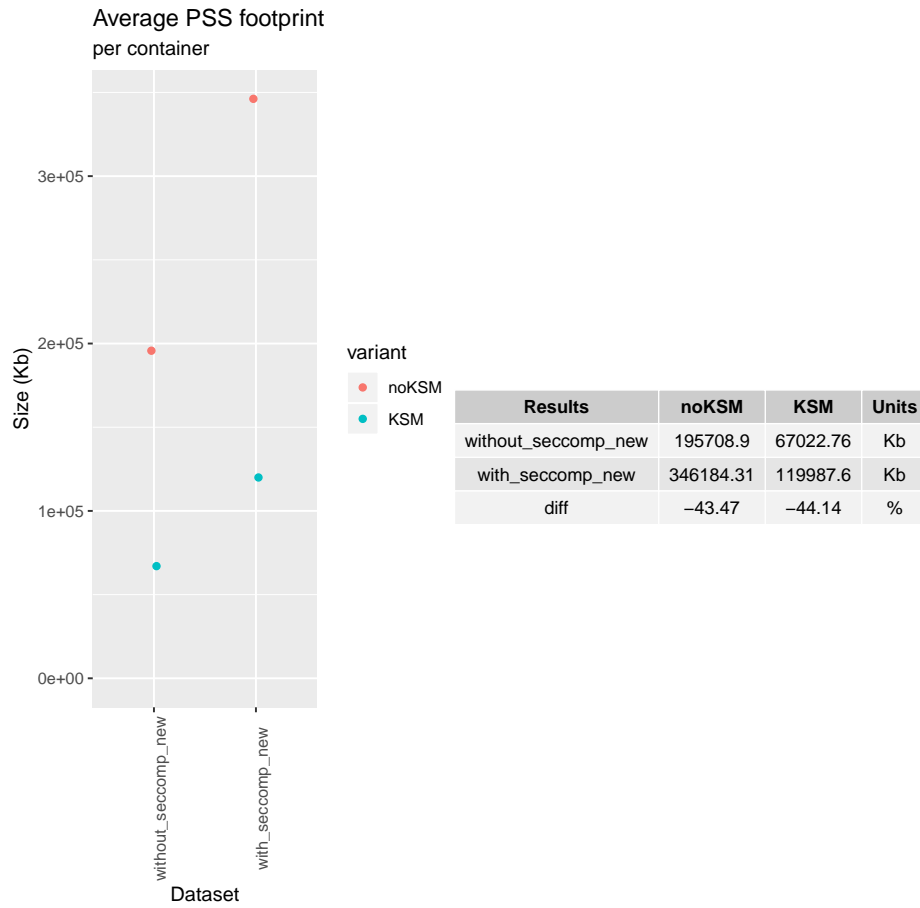
Auto generated

04 September, 2018

Introduction

This report compares the metrics between multiple sets of data generated from the [Kata Containers report generation scripts](#).

This report was generated using the data from the **without_seccomp_new/, with_seccomp_new/** results directories.

Container PSS footprint

This test measures the PSS footprint of all the container runtime components whilst running a number of parallel containers. The results are the mean footprint proportion for a single container.

Average PSS footprint
per container

Results	noKSM	KSM	Units
without_seccomp_new	195708.9	67022.76	Kb
with_seccomp_new	346184.31	119987.6	Kb
diff	−43.47	−44.14	%

Container scaling system footprint

This test measures the system memory footprint impact whilst running an increasing number of containers. For this test, KSM is enabled. The results show how system memory is consumed for different sized containers, and their average system memory footprint cost and density (how many containers you can fit per Gb) is calculated.
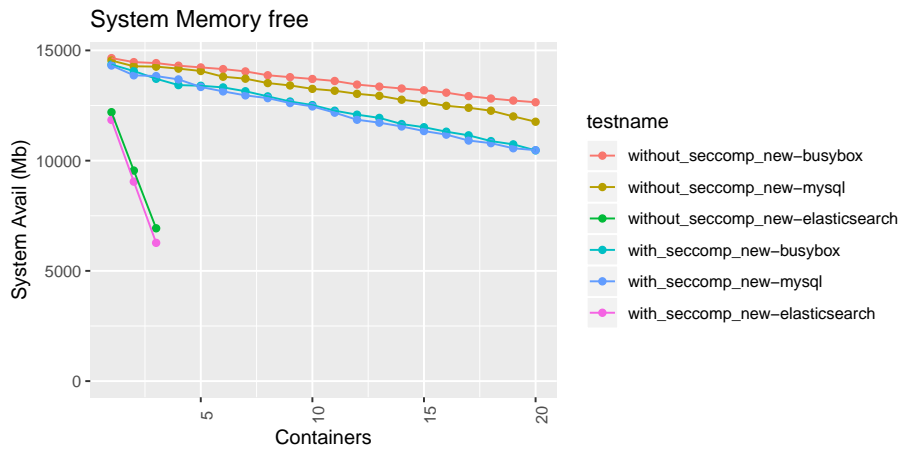

| Test	n	Tot_Kb	avg_Kb	n_per_Gb
without_seccomp_new−busybox	20	2234768	111738.4	9.4
without_seccomp_new−mysql	20	3101740	155087	6.8
without_seccomp_new−elasticsearch	3	8051440	2683813.3	0.4
with_seccomp_new−busybox	20	4329204	216460.2	4.8
with_seccomp_new−mysql	20	4313696	215684.8	4.9
with_seccomp_new−elasticsearch	3	8572032	2857344	0.4

Container Docker boot lifecycle times

This test uses the `date` command on the host and in the container, as well as data from the container kernel `dmesg`, to ascertain how long different phases of the create/boot/run/delete Docker container lifecycle take for the first launched container.

To decode the stats table, the prefixes are 'to(2)' and 'in'. The suffixes are 'kernel', 'workload' and 'quit'. 'tot' is the total time for a complete container start-to-finished cycle.

Lifecycle phase times
Mean

Boot to workload
First container
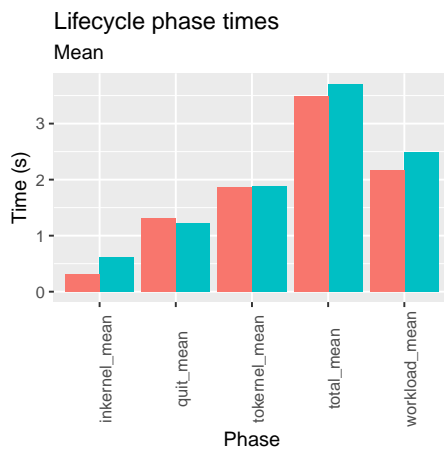
Results	2k	ik	2w	2q	tot
hout_seccomp_new	1.87	0.31	2.18	1.32	3.49
with_seccomp_new	1.87	0.61	2.49	1.22	3.7
Units	s	s	s	s	s
Diff	0 %	−49.18 %	−12.45 %	8.2 %	−5.93
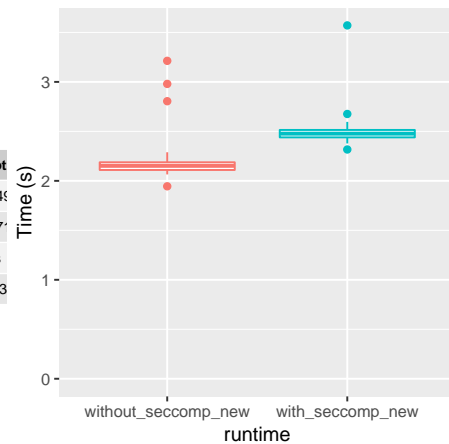
Test setup details

This table describes the test system details, as derived from the information contained in the test results files.

What	without_seccomp_new	with_seccomp_new
Run Ver	1.2.0	1.2.0
Run SHA	39ad9702de5b186322b7a5e47d51d302c8b1ae1e	ba88362107fad58a0f2a4cb8ca672bc6b70e3720
Proxy Ver	1.2.0–6f209b7f3c586c5f17b52df8bd5d6edbc45ee477	1.2.0–6f209b7f3c586c5f17b52df8bd5d6edbc45ee477
Shim Ver	1.2.0–0a37760c0224167143cb3cc920c78f5147f52e70	1.2.0–0a37760c0224167143cb3cc920c78f5147f52e70
Hyper Ver	2.11.0	2.11.0
Image Ver		
Guest Krnl	4.14.49.container	4.14.49.container
Host arch	amd64	amd64
Host Distro	Ubuntu	Ubuntu
Host DistVer	16.04	16.04
Host Model	Intel(R) Core(TM) i7–6700K CPU @ 4.00GHz	Intel(R) Core(TM) i7–6700K CPU @ 4.00GHz
Host Krnl	4.15.0–33–generic	4.15.0–33–generic

Figure 1: System configuration details