Kubernetes metrics report

Auto generated

02 December, 2019

Introduction

This report compares the metrics between multiple sets of data generated from the cloud-native-setup report generation scripts.

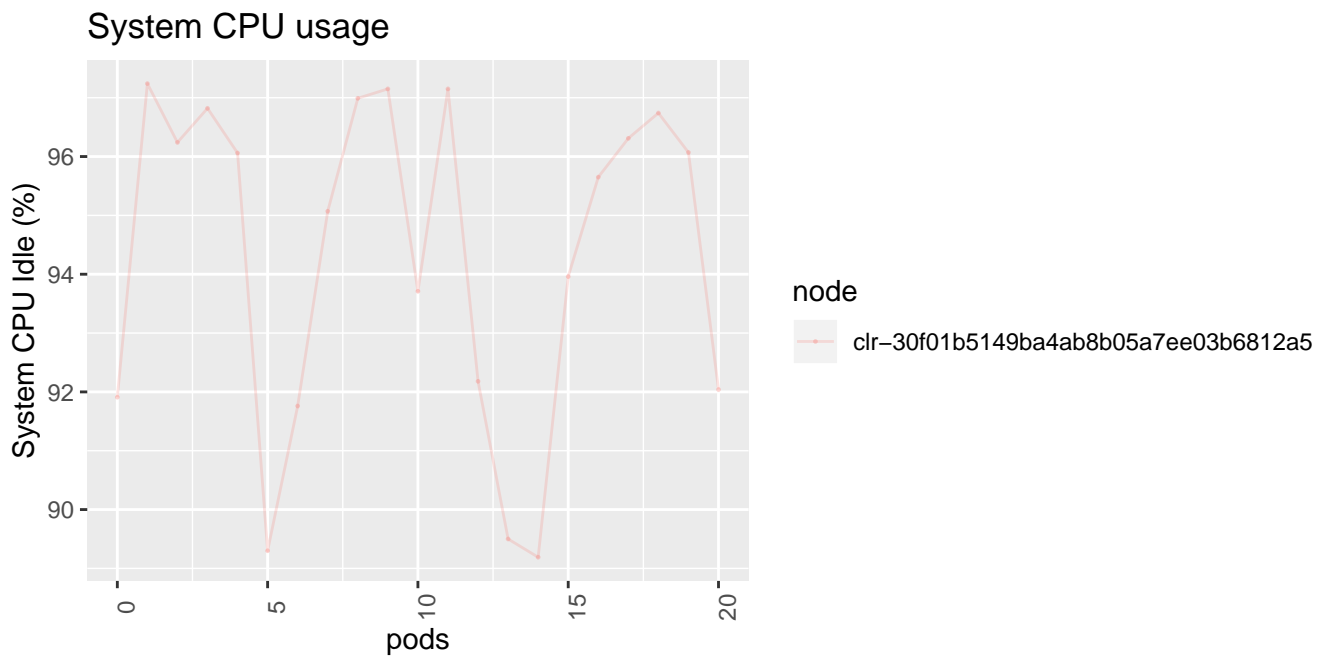This report was generated using the data from the **run1/** results directories.

Runtime scaling

This test measures the system memory 'free' reduction, CPU idle %, free inodes, and pod boot time as it launches more and more idle `busybox` pods on a Kubernetes cluster.

Note: CPU % is measured as a system whole - 100% represents *all* CPUs on the node.

System Memory free
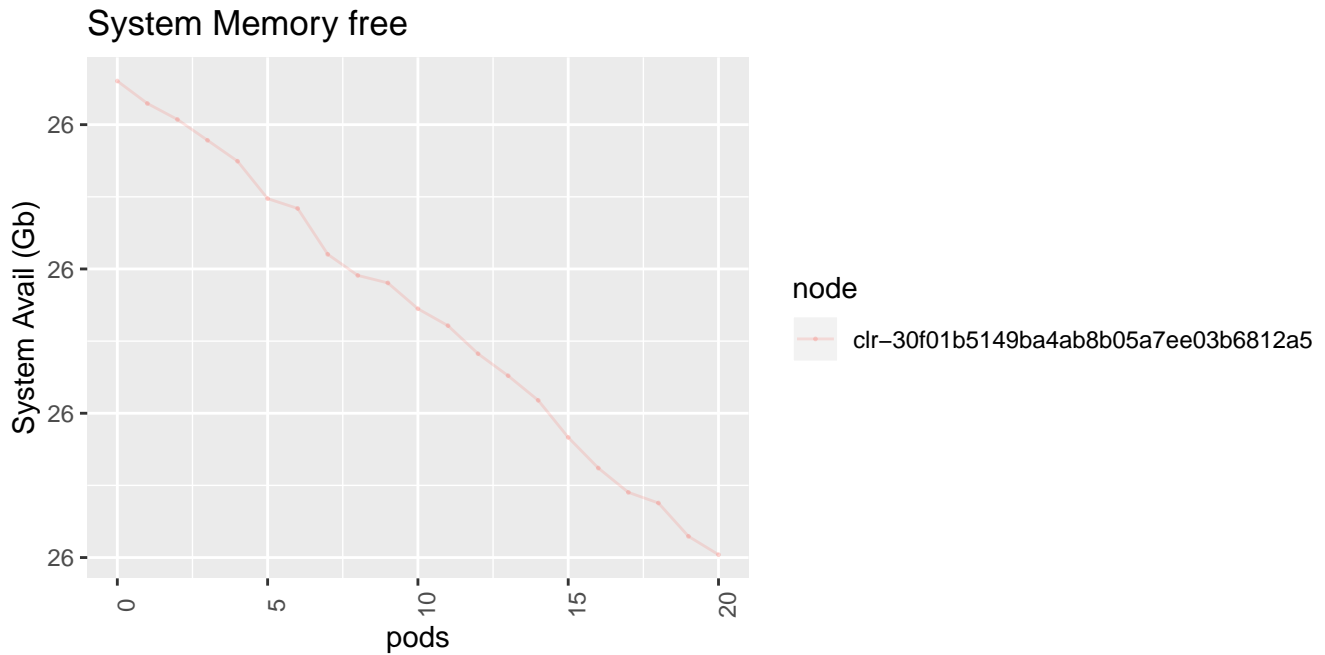
Test	n	Tot_Gb	avg_Gb	n_per_Gb
run1	20	0.328	0.0164	60.93

Figure 1: K8S scaling

System CPU usage

Test	n	Tot_CPU	avg_CPU
run1	20	−0.13	−0.0065

Figure 2: K8S scaling

Pod boot time

testname
run1
run1.clr−30f01b5149ba4ab8b05a7ee03b6812a5

Boot time (s) vs pods
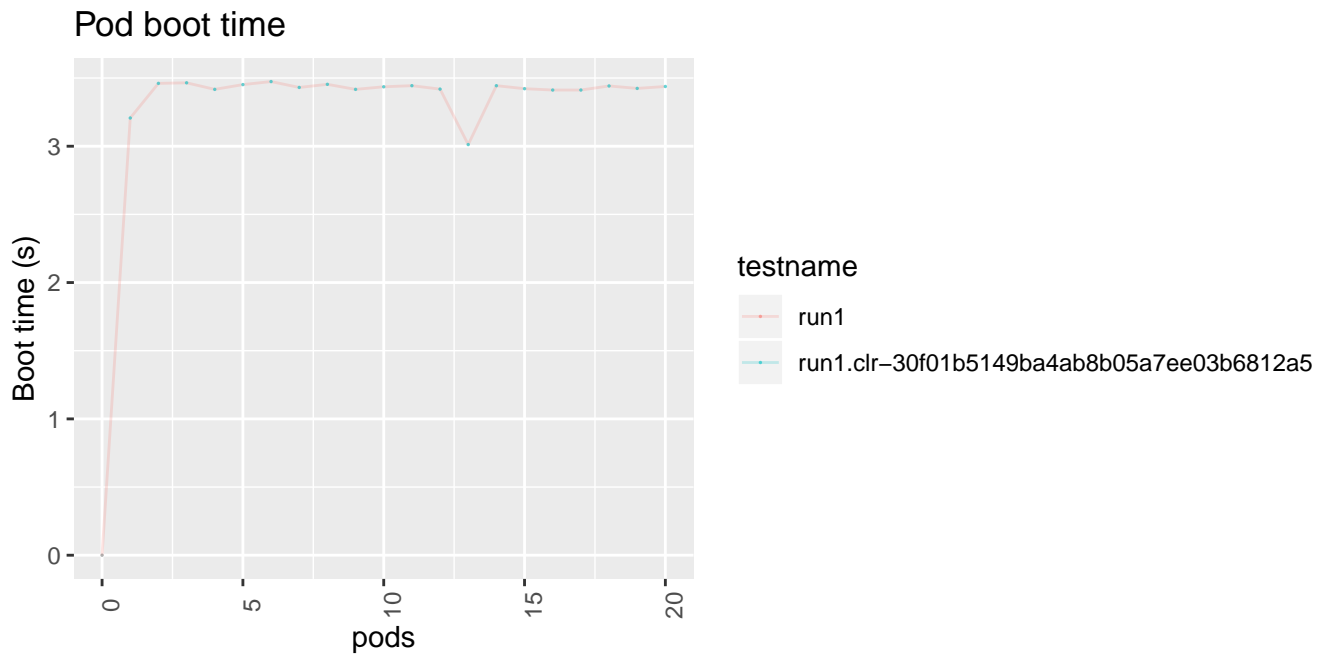
Test	n	median	min	max	sd
run1	20	3.4335	3.012	3.474	0.1071

Figure 3: K8S scaling

inodes free
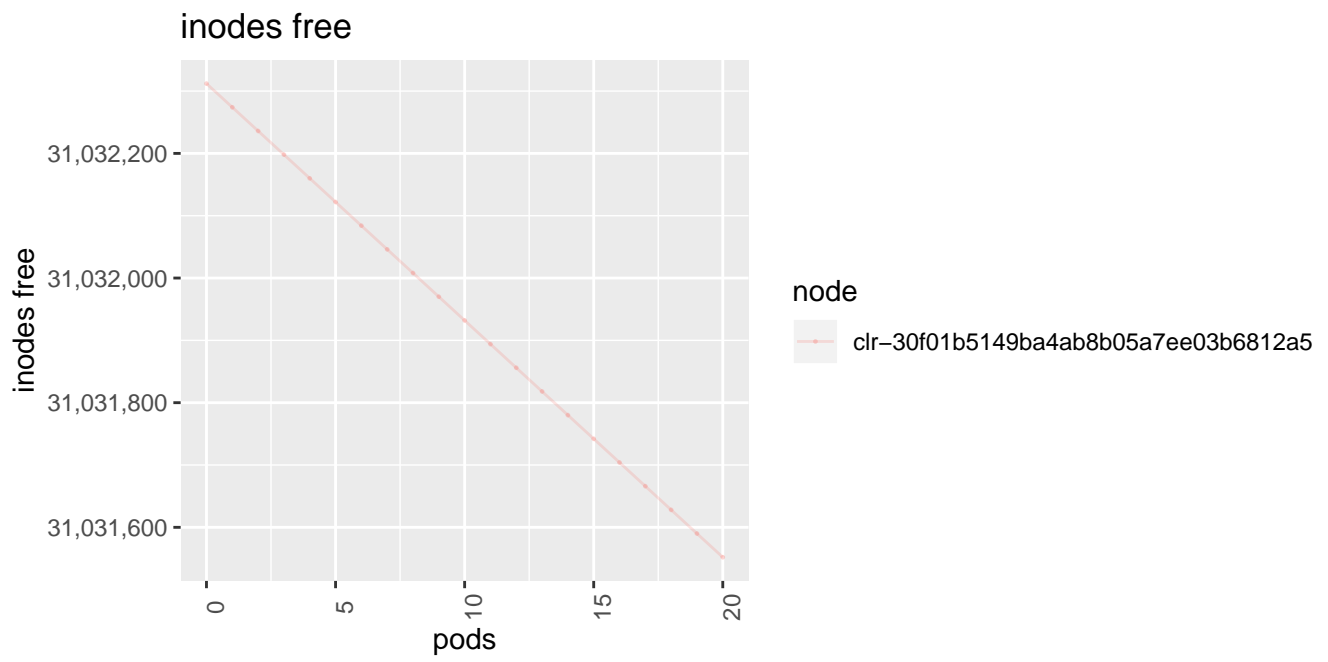
Test	n	Tot_inode	avg_inode
run1	20	760	38

Figure 4: K8S scaling

Runtime parallel scaling

This test measures the time taken to launch and delete pods in parallel using a deployment. The times are how long it takes for the whole deployment operation to complete.

```
## Error in FUN(X[[i]], ...): object 'npod' not found
```

Runtime scaling rapid

This test uses collectd to asynchronously measure CPU idle %, free memory, pod boot time, free inodes, and interface stats as it launches more and more idle `busybox` pods on a Kubernetes cluster.

Note: CPU % is measured as a system whole - 100% represents *all* CPUs on the node.

```
## Error in Position(function(x) x > start_time, node_mem_free_data$epoch): object 'node_mem_free_data' not foun
```

Test setup details

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

What	run1
Client Ver	v1.16.3
Server Ver	v1.16.3
No. nodes	1
– Node0 name	clr–30f01b5149ba4ab8b05a7ee03b6812a
Have Kata	false
CPUs	4
Memory	32831924Ki
MaxPods	5k
PodCIDR	10.244.0.0/20
runtime	containerd://1.3.0
kernel	5.3.11–869.native
kubeProxy	v1.16.3
Kubelet	v1.16.3
OS	Clear Linux OS

Figure 5: System configuration details

Test setup node details

This table describes node details within the Kubernetes cluster that have been used for test.

Node name	CPUs	Memory	Max Pods	Count sockets	Have hypervisor	kernel	OS	Test
clr−30f01b5149ba4a	4	32831924Ki	5k	1	false	5.3.11−869.native	Clear Linux OS	run1

Figure 6: Node information within Kubernetes cluster