Does switching a GCE Nodepool impact severely our availability?

24 avril 2018

Abstract

Assuming a swap of a nodepool to another, what is the impact on our system?

Contents

Summary

Status	completed
Tagged	kubernetes, gce, cloudnative
Executed From	sylvain-laptop
Platform	Linux-4.13.0-39-generic-x86_64-with-Ubuntu-17.10-artful
Started	Tue, 24 Apr 2018 16:31:28 GMT
Completed	Tue, 24 Apr 2018 16:34:07 GMT
Duration	2 minutes

Experiment

The experiment was made of 2 actions, to vary conditions in your system, and 0 probes, to collect objective data from your system during the experiment.

Steady State Hypothesis

The steady state hypothesis this experiment tried was "**Function is available**".

Before Run

The steady state was verified

Probe	Tolerance	Verified
function-must-exist	200	True
function-must-respond	200	True

After Run

The steady state was verified

Probe	Tolerance	Verified
function-must-exist	200	True
function-must-respond	200	True

Method

The experiment method defines the sequence of activities that help gathering evidence towards, or against, the hypothesis.

The following activities were conducted as part of the experimental's method:

Type	Name
action	simulate-user-traffic-under-moderate-load
action	create-a-new-nodepool-and-swap-to-it

Result

The experiment was conducted on Tue, 24 Apr 2018 16:31:28 GMT and lasted roughly 2 minutes.
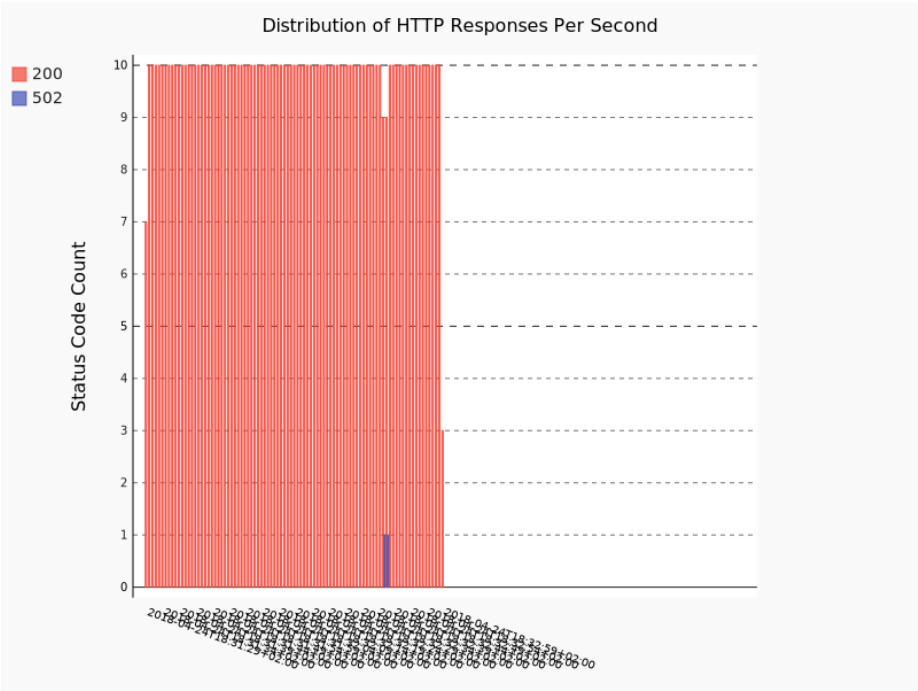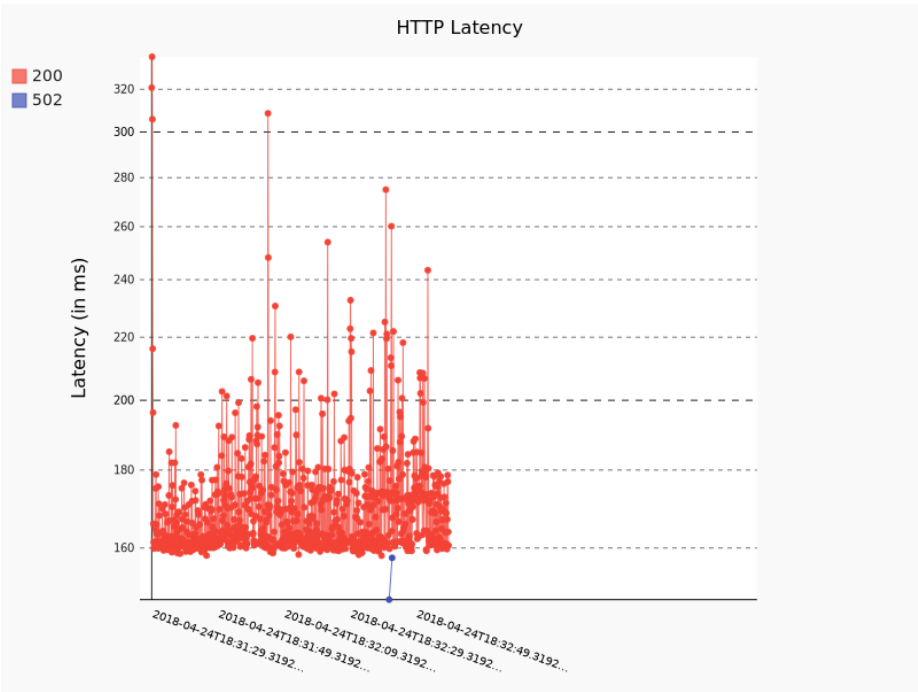
Action - simulate-user-traffic-under-moderate-load

Status	succeeded
Background	True
Started	Tue, 24 Apr 2018 16:31:29 GMT
Ended	Tue, 24 Apr 2018 16:32:59 GMT
Duration	1 minute

The action provider that was executed:

Type	process
Path	vegeta
Timeout	N/A
Arguments	attack -targets=data/scenario.txt -workers=5 -rate=10 -timeout=3s -duration=90s -output=result.bin

```
Requests       [total, rate]            900, 10.01
Duration       [total, attack, wait]    1m30.060611901s, 1m29.899999886s, 160.612015ms
Latencies      [mean, 50, 95, 99, max]  170.548265ms, 164.494918ms, 199.283684ms, 243.452245m
Bytes In       [total, mean]            170620, 189.58
Bytes Out      [total, mean]            22200, 24.67
Success        [ratio]                  99.78%
Status Codes   [code:count]             200:898  502:2
Error Set:
502 Bad Gateway
```

HTTP Latency

Latency (in ms)

200
502

2018-04-24T18:31:29.3192... 2018-04-24T18:31:49.3192... 2018-04-24T18:32:09.3192... 2018-04-24T18:32:29.3192... 2018-04-24T18:32:49.3192...

Distribution of HTTP Responses Per Second

Status Code Count

200
502

Action - create-a-new-nodepool-and-swap-to-it

Status	succeeded
Background	False
Started	Tue, 24 Apr 2018 16:31:29 GMT
Ended	Tue, 24 Apr 2018 16:32:51 GMT
Duration	1 minute

The action provider that was executed:

Type	python
Module	chaosgce.nodepool.actions
Function	swap_nodepool
Arguments	{'old_node_pool_id': 'other-pool', 'delete_old_node_pool': False, 'new_nodepool_body': {'nodePool': {'name': 'yet-other-pool', 'management': {}, 'initialNodeCount': 1, 'version': '1.9.6-gke.0', 'config': {'diskSizeGb': 100, 'imageType': 'COS', 'machineType': 'n1-standard-1', 'oauthScopes': ['https://www.googleapis.com/auth/devstorage.read_only', 'https://www.googleapis.com/auth/logging.write', 'https://www.googleapis.com/auth/monitoring', 'https://www.googleapis.com/auth/service.management.readonly', 'https://www.googleapis.com/auth/servicecontrol', 'https://www.googleapis.com/auth/trace.append', 'https://www.googleapis.com/auth/compute'], 'serviceAccount': 'default'}}}}

Appendix

Action - simulate-user-traffic-under-moderate-load

The *action* returned the following result:

```
{'status': 0, 'stderr': '', 'stdout': ''}
```

Action - create-a-new-nodepool-and-swap-to-it

The *action* returned the following result:

```
{'name': 'operation-1524587490129-18667d86',
 'operationType': 'CREATE_NODE_POOL',
 'selfLink': 'https://container.googleapis.com/v1/projects/2056874473/zones/us-west1-a/opera
```

'startTime': '2018-04-24T16:31:30.129656842Z',
'status': 'RUNNING',
'targetLink': 'https://container.googleapis.com/v1/projects/2056874473/zones/us-west1-a/clu
'zone': 'us-west1-a'}