

# Chaos Engineering Report

27 April 2021

## Contents

|  |          |
|--|----------|
| <b>Summary</b>   | <b>2</b> |
| <b>Experiment</b>                                      | <b>3</b> |
| What happens if we abort and delay responses . . . . . | 3        |
| Summary . . . . .                                      | 3        |
| Definition . . . . .                                   | 3        |
| Result . . . . .                                       | 4        |
| Appendix . . . . .                                     | 5        |

## Summary

This report aggregates 1 experiments spanning over the following subjects:

*http, k8s, istio*

## Experiment

### What happens if we abort and delay responses

If responses are aborted and delayed, the dependant application should retry and/or timeout requests

#### Summary

|                      |  |
|----------------------|--|
| <b>Status</b>        | completed                                    |
| <b>Tagged</b>        | k8s, istio, http                             |
| <b>Executed From</b> | luisreciomelero-HP-Pavilion-Laptop-15-ck0xx  |
| <b>Platform</b>      | Linux-5.8.0-50-generic-x86_64-with-glibc2.29 |
| <b>Started</b>       | Tue, 27 Apr 2021 16:45:16 GMT                |
| <b>Completed</b>     | Tue, 27 Apr 2021 16:46:19 GMT                |
| <b>Duration</b>      | 1 minute                                     |

#### Definition

The experiment was made of 1 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 “**The app is healthy**”.

#### Before Run

The steady state was verified

| Probe                    | Tolerance | Verified |
|--------------------------|-----------|----------|
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 200       | True     |

#### After Run

The steady state was verified

| Probe                    | Tolerance | Verified |
|--------------------------|-----------|----------|
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 200       | True     |
| app-responds-to-requests | 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 | delay |

## Result

The experiment was conducted on Tue, 27 Apr 2021 16:45:16 GMT and lasted roughly 1 minute.

### Action - delay

|                     |                               |
|---------------------|-------------------------------|
| <b>Status</b>       | succeeded                     |
| <b>Background</b>   | False                         |
| <b>Started</b>      | Tue, 27 Apr 2021 16:45:43 GMT |
| <b>Ended</b>        | Tue, 27 Apr 2021 16:45:44 GMT |
| <b>Duration</b>     | 1 second                      |
| <b>Paused After</b> | 5s                            |

The action provider that was executed:

|                  |   |
|------------------|---|
| <b>Type</b>      | python  |
| <b>Module</b>    | chaosistio.fault.actions  |
| <b>Function</b>  | add_delay_fault   |
| <b>Arguments</b> | {'virtual_service_name': 'mg-v1-vs', 'fixed_delay': '10s',<br>'routes': [{ 'destination': { 'host':<br>'mg-v1.default.svc.cluster.local', 'subset': 'primary' } }],<br>'percentage': 50, 'version': 'networking.istio.io/v1alpha3'} |

## Appendix

### Action - delay

The *action* returned the following result:

```
{'body': {'apiVersion': 'networking.istio.io/v1alpha3',
  'kind': 'VirtualService',
  'metadata': {'annotations': {'kubectll.kubernetes.io/last-applied-configuration': '...',
    'creationTimestamp': '2021-04-26T19:12:53Z',
    'generation': 2,
    'managedFields': [{'apiVersion': 'networking.istio.io/v1alpha3',
      'fieldsType': 'FieldsV1',
      'fieldsV1': {'f:metadata': {'f:annotations': {'f:.': {}},
        'f:spec': {'f:.': {}},
          'f:hosts': {},
          'f:http': {}},
        'manager': 'kubectll-client-side-apply',
        'operation': 'Update',
        'time': '2021-04-26T19:12:53Z'}]},
      'name': 'mg-v1-vs',
      'namespace': 'default',
      'resourceVersion': '3504',
      'uid': '14949f29-652e-4db8-8951-371976c9fe8f'},
    'spec': {'hosts': ['mg-v1'],
      'http': [{'route': [{'destination': {'host': 'mg-v1',
        'port': {'number': 8081},
        'subset': 'primary'}}]}]}]},
    'headers': {'Cache-Control': 'no-cache, private',
      'Content-Length': '1081',
      'Content-Type': 'application/json',
      'Date': 'Tue, 27 Apr 2021 16:45:44 GMT',
      'X-Kubernetes-Pf-Flowschema-Uid': 'ca338ed9-6f9e-4cbe-97a8-df989999be000',
      'X-Kubernetes-Pf-Prioritylevel-Uid': 'b23d468f-1284-456c-b90c-415700e009a5'},
    'status': 200}
```