Chaos Engineering Report

22 September 2025

Contents

Summary

This report aggregates 1 experiments spanning over the following subjects:

Experiment

MongoDB timeout toxic via chaostoxi

This experiment injects a timeout toxic into the MongoDB proxy using chaostoxi to simulate database timeouts and observe the impact on the microservices.

Summary

Status	completed
Tagged	
Executed From	338331afb042
Platform	Linux-6.15.11-orbstack-00539-g9885ebd8e3f4-x86_64-with-glibc2.41
Started	Mon, 22 Sep 2025 08:29:39 GMT
Completed	Mon, 22 Sep 2025 08:29:40 GMT
Duration	1 second

Definition

The experiment was made of 3 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 "**Services may degrade**".

Before Run   The steady state was verified

Probe	Tolerance	Verified
order-api-health	[200]	True
notifier-health	[200]	True

After Run   The steady state was verified

Probe	Tolerance	Verified
order-api-health	[200]	True
notifier-health	[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	add-timeout-mongo
action	create-order
action	remove-timeout-mongo

Result

The experiment was conducted on Mon, 22 Sep 2025 08:29:39 GMT and lasted roughly 1 second.

Action - add-timeout-mongo

Status	succeeded
Background	False
Started	Mon, 22 Sep 2025 08:29:39 GMT
Ended	Mon, 22 Sep 2025 08:29:39 GMT
Duration	0 seconds
Paused After	1s

The action provider that was executed:

Type	python
Module	chaostoxi.toxic.actions
Function	create_timeout_toxic
Arguments	{'for_proxy': 'mongo_proxy', 'toxic_name': 'mongo_timeout', 'timeout': 5000}

Action - create-order

Status	succeeded
Background	False
Started	Mon, 22 Sep 2025 08:29:40 GMT
Ended	Mon, 22 Sep 2025 08:29:40 GMT
Duration	0 seconds

The action provider that was executed:

Type	http
URL	http://order-api:8081/orders
Method	POST
Timeout	20
Arguments	{'customer': 'mongo-timeout', 'item': 'kopi', 'qty': 1}

Action - remove-timeout-mongo

Status	succeeded
Background	False
Started	Mon, 22 Sep 2025 08:29:40 GMT
Ended	Mon, 22 Sep 2025 08:29:40 GMT
Duration	0 seconds

The action provider that was executed:

Type	python
Module	chaostoxi.toxic.actions
Function	delete_toxic
Arguments	{'for_proxy': 'mongo_proxy', 'toxic_name': 'mongo_timeout'}

Appendix

Action - add-timeout-mongo   The *action* returned the following result:

```
True
```

Action - create-order   The *action* returned the following result:

```
{'body': '{"status":"created","id":11}',
 'headers': {'Content-Length': '28',
            'Content-Type': 'text/plain; charset=utf-8',
            'Date': 'Mon, 22 Sep 2025 08:29:40 GMT'},
 'status': 201}
```

Action - remove-timeout-mongo   The *action* returned the following result:

```
True
```