Chaos Engineering Report

22 September 2025

Contents

Summary

This report aggregates 1 experiments spanning over the following subjects:

Experiment

RabbitMQ latency toxic via chaostoxix

This experiment injects artificial network latency into the RabbitMQ connection using Toxiproxy, in order to observe and analyze the impact on the order-api and notifier microservices. The goal is to test the resilience of the system when the database experiences high latency.

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 10:33:02 GMT
Completed	Mon, 22 Sep 2025 10:33:03 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 healthy baseline**".

Before Run   The steady state was verified

Probe	Tolerance	Verified
order-api-200	200	True
notifier-200	200	True

After Run   The steady state was verified

Probe	Tolerance	Verified
order-api-200	200	True
notifier-200	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-latency-rabbitmq
action	create-order
action	remove-latency-rabbitmq

Result

The experiment was conducted on Mon, 22 Sep 2025 10:33:02 GMT and lasted roughly 1 second.

Action - add-latency-rabbitmq

Status	succeeded
Background	False
Started	Mon, 22 Sep 2025 10:33:02 GMT
Ended	Mon, 22 Sep 2025 10:33:02 GMT
Duration	0 seconds
Paused After	1s

The action provider that was executed:

Type	python
Module	chaostoxi.toxic.actions
Function	create_latency_toxic
Arguments	{'for_proxy': 'rabbitmq_proxy', 'toxic_name': 'rabbitmq_latency', 'latency': 30000, 'jitter': 2000}

Action - create-order

Status	succeeded
Background	False
Started	Mon, 22 Sep 2025 10:33:03 GMT
Ended	Mon, 22 Sep 2025 10:33:03 GMT
Duration	0 seconds

The action provider that was executed:

Type	http
URL	http://order-api:8081/orders
Method	POST
Timeout	12
Arguments	{'customer': 'rabbitmq-latency', 'item': 'kopi', 'qty': 1}

Action - remove-latency-rabbitmq

Status	succeeded
Background	False
Started	Mon, 22 Sep 2025 10:33:03 GMT
Ended	Mon, 22 Sep 2025 10:33:03 GMT
Duration	0 seconds

The action provider that was executed:

Type	python
Module	chaostoxi.toxic.actions
Function	delete_toxic
Arguments	{'for__proxy': 'rabbitmq__proxy', 'toxic_name': 'rabbitmq__latency'}

Appendix

Action - add-latency-rabbitmq The *action* returned the following result:

```
True
```

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

```
{'body': '{"status":"created","id":38}',
 'headers': {'Content-Length': '28',
            'Content-Type': 'text/plain; charset=utf-8',
            'Date': 'Mon, 22 Sep 2025 10:33:03 GMT'},
 'status': 201}
```

Action - remove-latency-rabbitmq The *action* returned the following result:

```
True
```