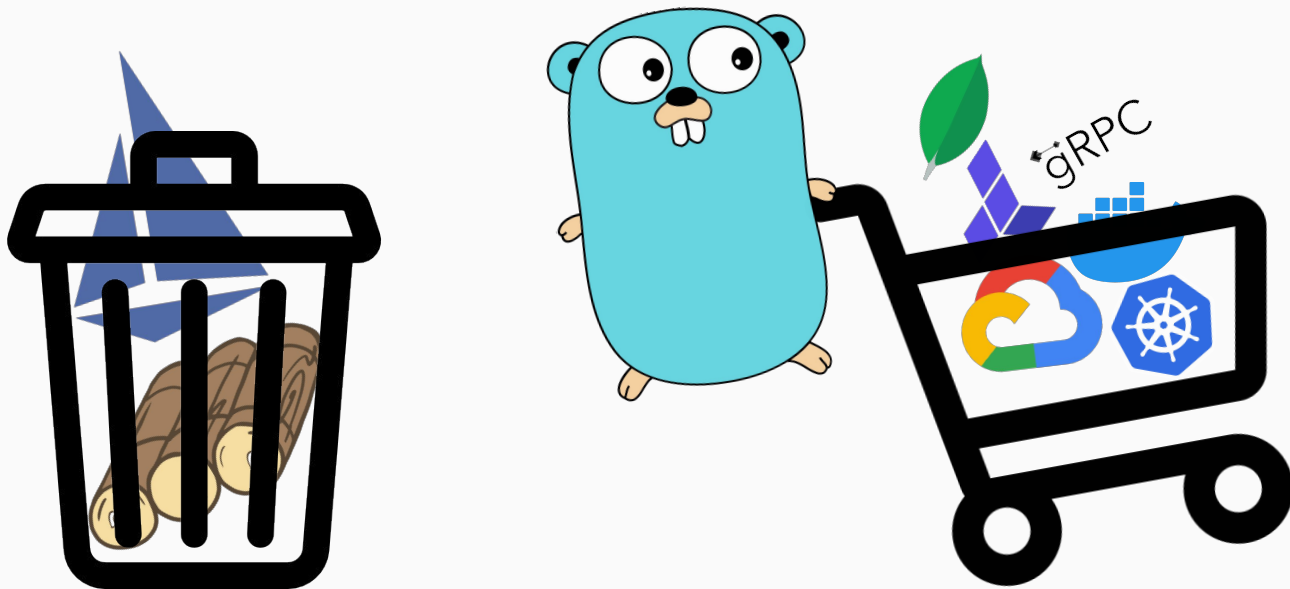


GO (Shopping) Cart!

Dan
Koen
Konrad
Krzysztof
Melchior
Rahim

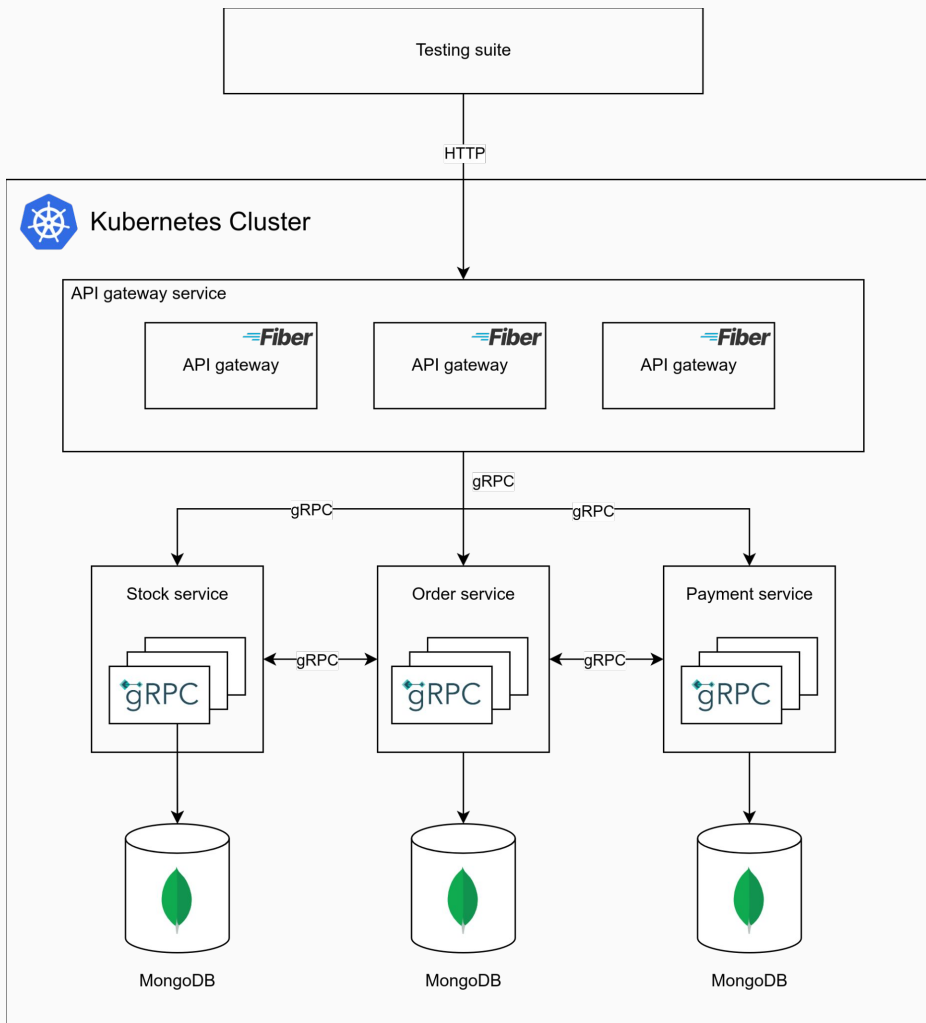


What was used and what not?



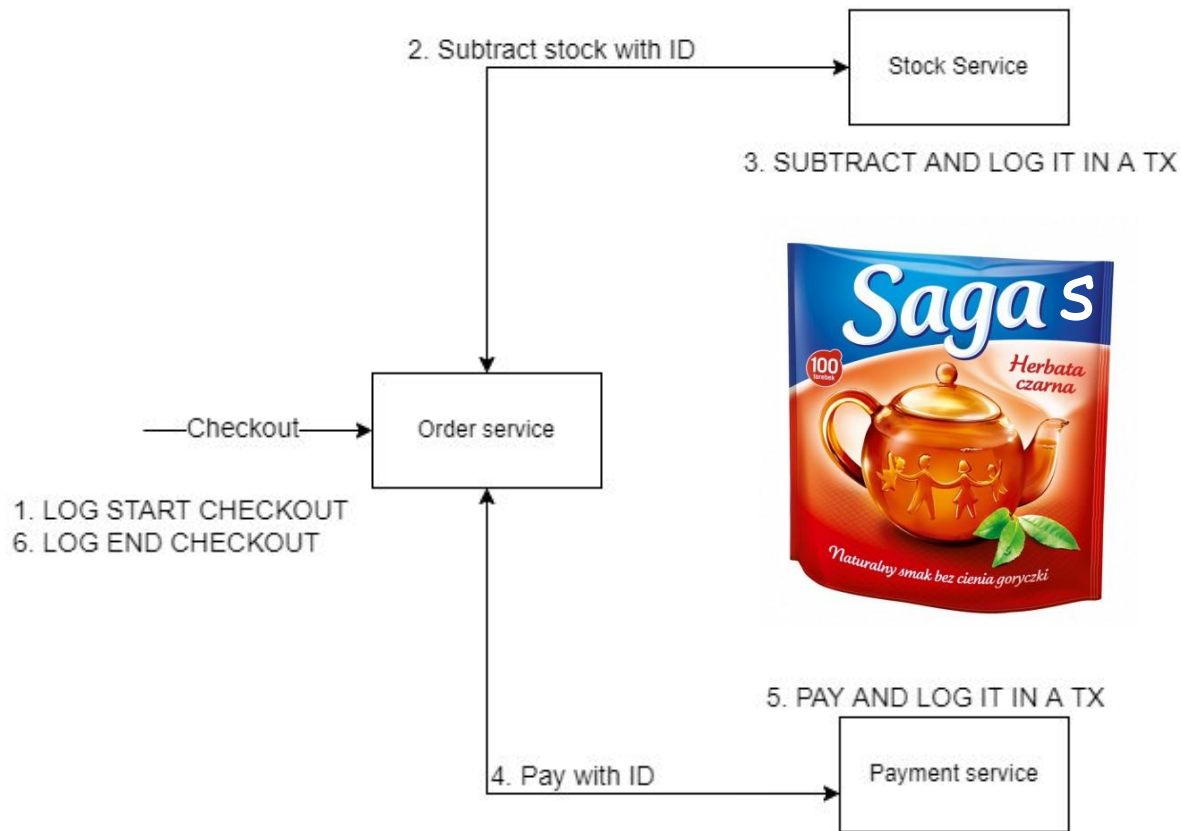
System architecture

- Stateless HTTP API gateway
- Stateless microservices
- MongoDB for persistence
- Transactions ensured on the microservice level
- gRPC for communication between services



Transaction handling

- Sagas
- Use mongodb for storing logs
- Use mongodb transactions



Transaction handling

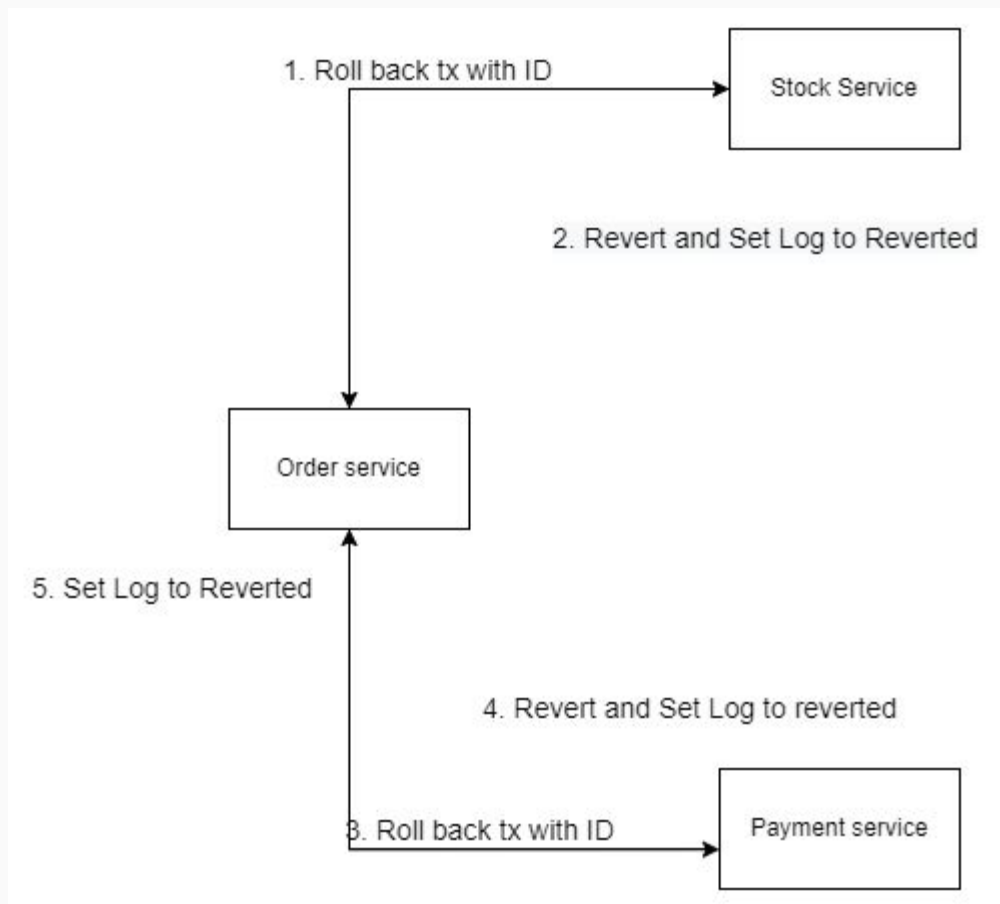
OrderLog	
_id	Objectid
status	String
order_id	Objectid
time	Date

PayLog	
_id	Objectid
status	String
order_id	Objectid
user_id	Objectid
amount	int64

PayLog	
_id	Objectid
status	String
items	Array<Objectid>

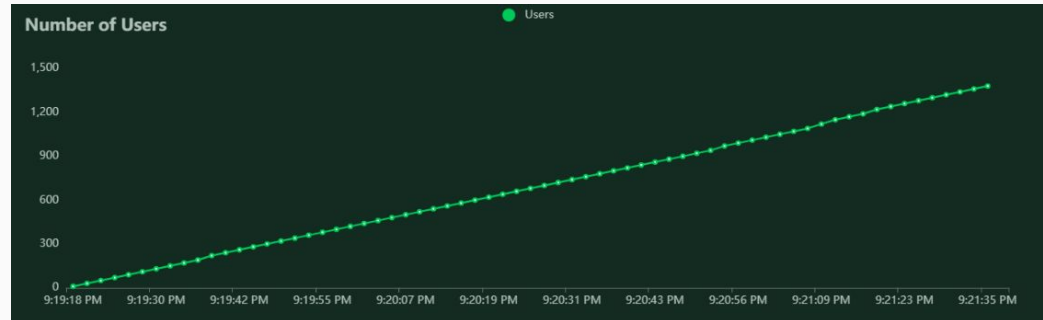
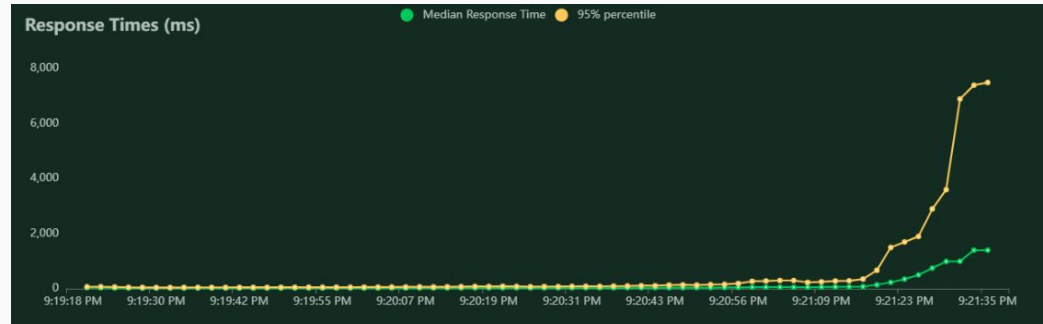
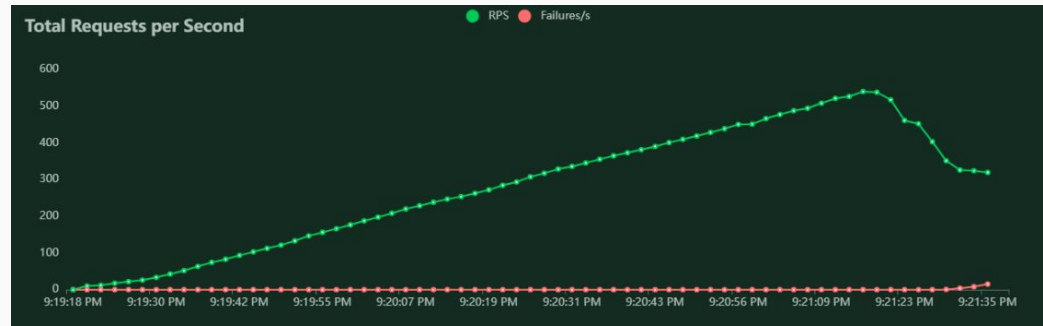
Transaction fault-tolerance

- At startup, find old logs in started state.
- Send Compensating requests.
- Set state to reverted.



Stress test results

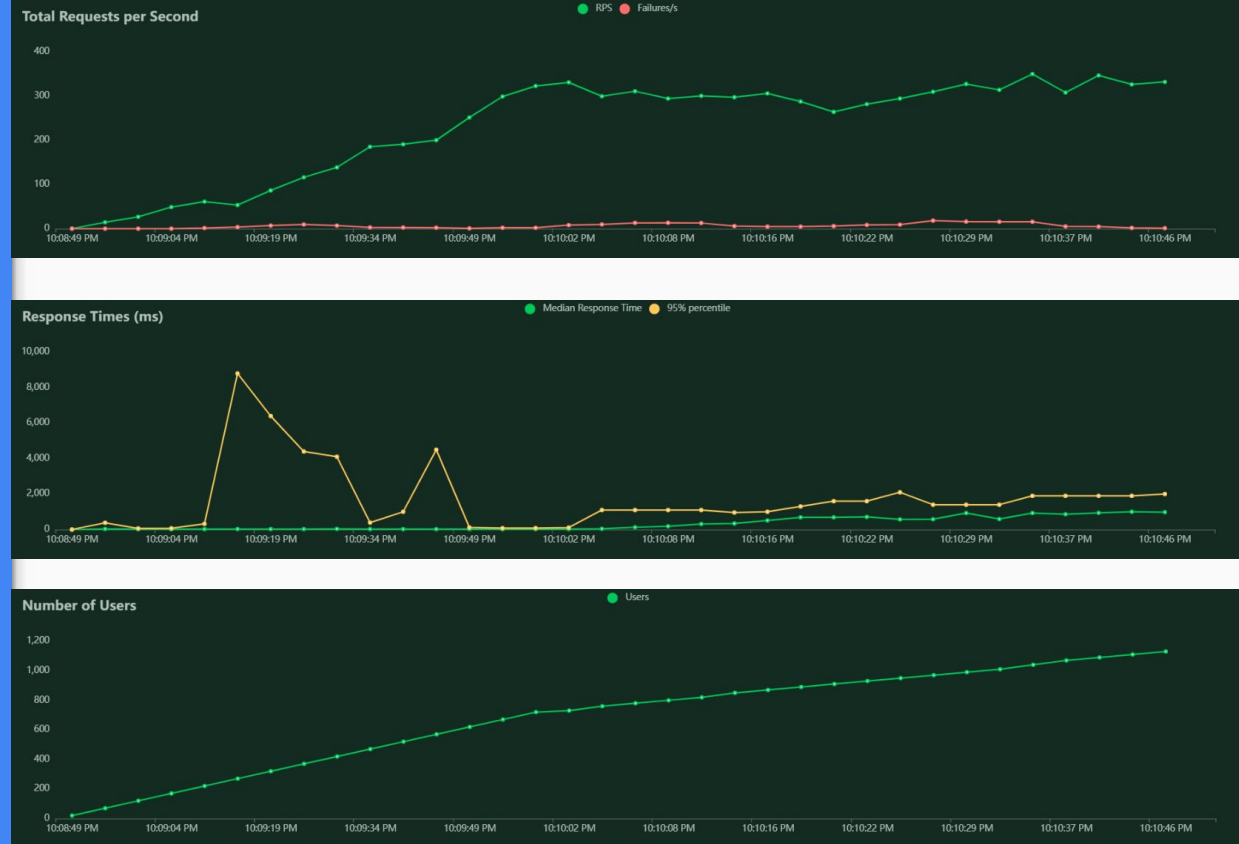
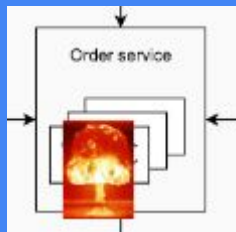
- Total requests per second Graph
- Response times graph
- Instances with 2 vCPU, 4 GB RAM. 3 for app, 3 for mongo.



Stress test results (turning off instances randomly)



Aka. trying to nuke the system



Median Latency

140 ms

90%ile

1300 ms

99%ile

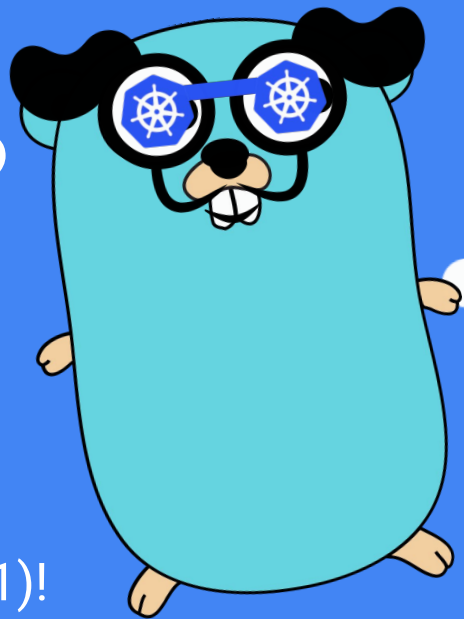
5000 ms

2% failure rate


```
krysb@DESKTOP-NSUQB91 MINGW64 ~/Documents/GitHub/wdm-project-benchmark/consistency-test (master)
$ python run_consistency_test.py
INFO - 09:28:06 - Consistency test - Creating tmp folder...
INFO - 09:28:06 - Consistency test - tmp folder created
INFO - 09:28:06 - Consistency test - Populating the databases...
INFO - 09:28:06 - populate - Creating items ...
INFO - 09:28:06 - populate - Items created
INFO - 09:28:06 - populate - Creating users ...
INFO - 09:28:09 - populate - Users created
INFO - 09:28:09 - Consistency test - Databases populated
INFO - 09:28:09 - Consistency test - Starting the load test...
INFO - 09:28:09 - stress - Creating orders...
INFO - 09:28:13 - stress - Orders created ...
INFO - 09:28:13 - stress - Running concurrent checkouts...
INFO - 09:28:21 - stress - Concurrent checkouts finished...
INFO - 09:28:21 - Consistency test - Load test completed
INFO - 09:28:21 - Consistency test - Starting the consistency evaluation...
INFO - 09:28:21 - verify - Stock service inconsistencies in the logs: 0
INFO - 09:28:23 - verify - Stock service inconsistencies in the database: 0
INFO - 09:28:23 - verify - Payment service inconsistencies in the logs: 0
INFO - 09:28:23 - verify - Payment service inconsistencies in the database: 0
INFO - 09:28:23 - Consistency test - Consistency evaluation completed
```

Consistency test results

SURVIVAL ~~Hype~~ driven development?



DO NOT try this at HOME (127.0.0.1)!