Banking Application

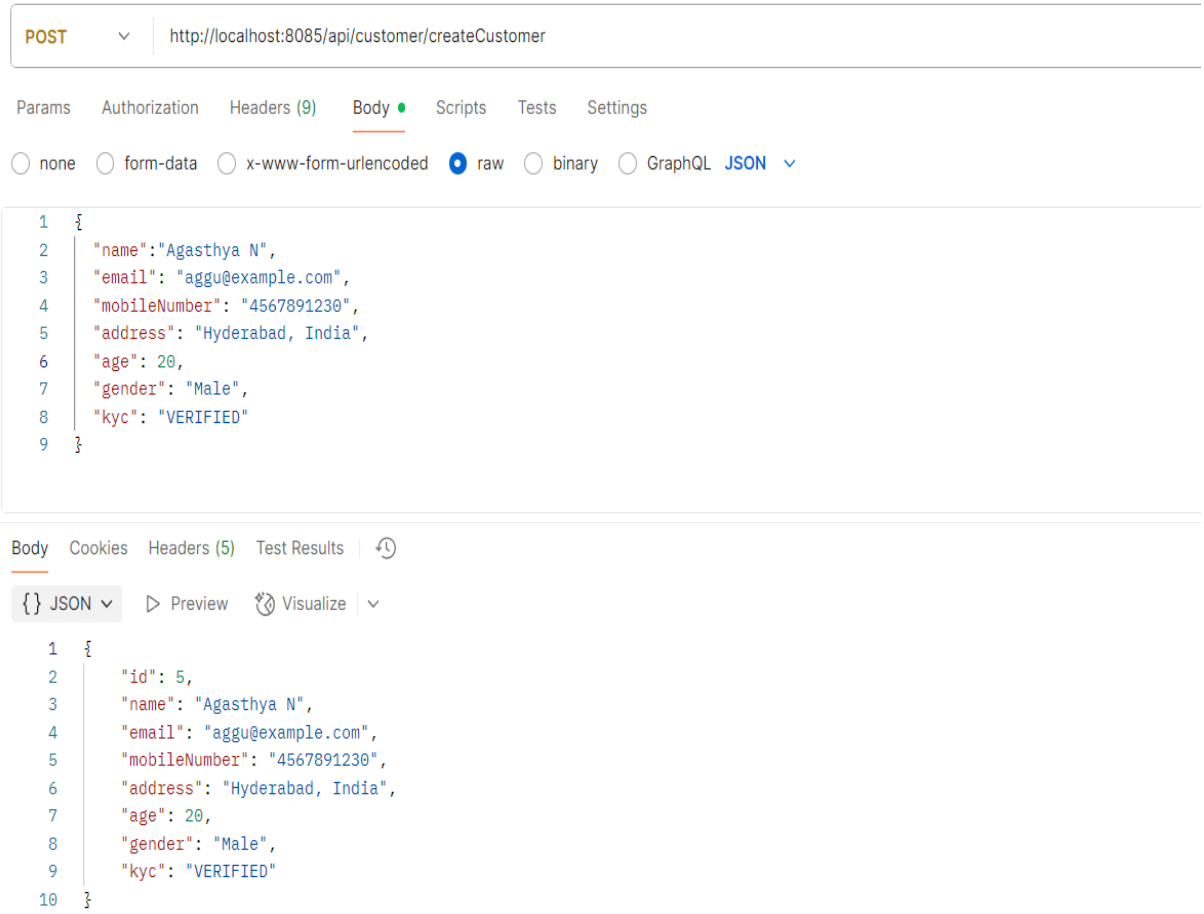
Backend:

Customer Service

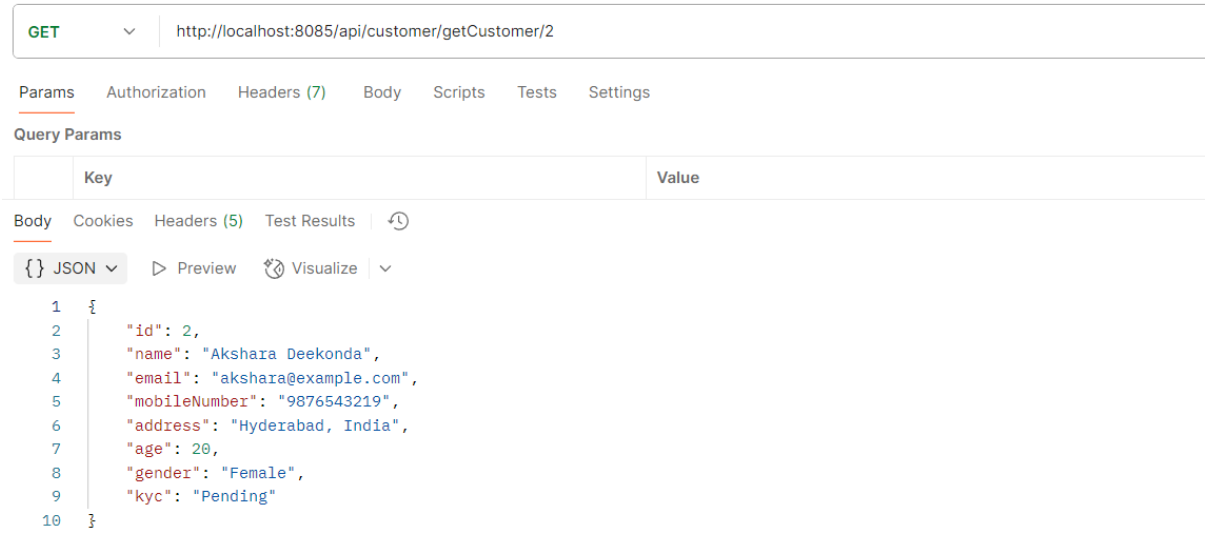
(“/api/customer”)

Endpoints:

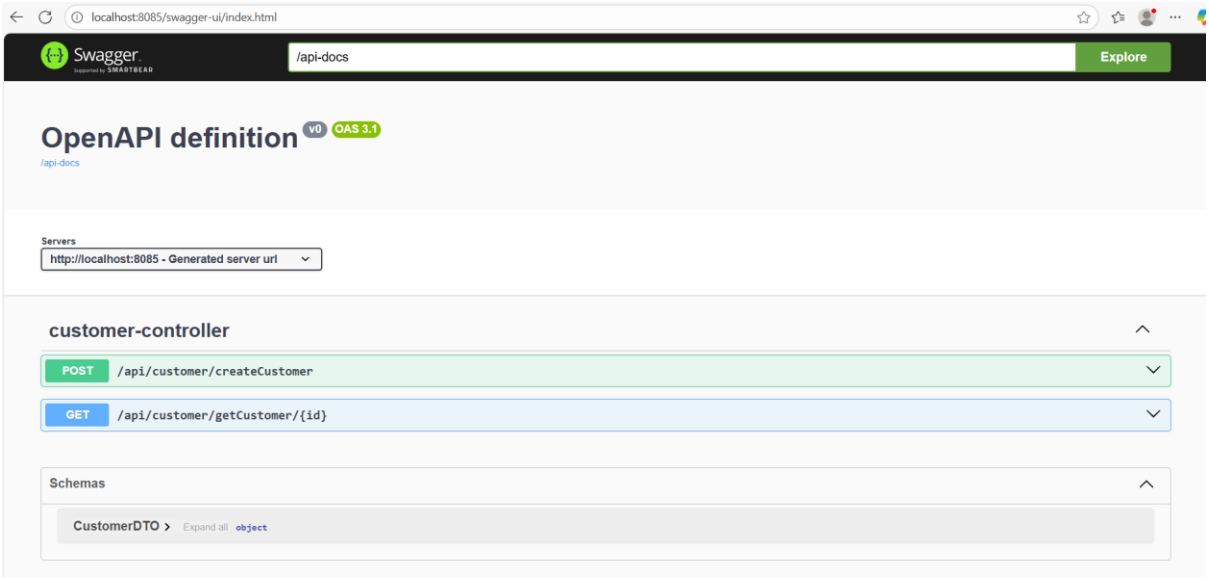
@PostMapping("/createCustomer")



@GetMapping("/getCustomer/{id}")

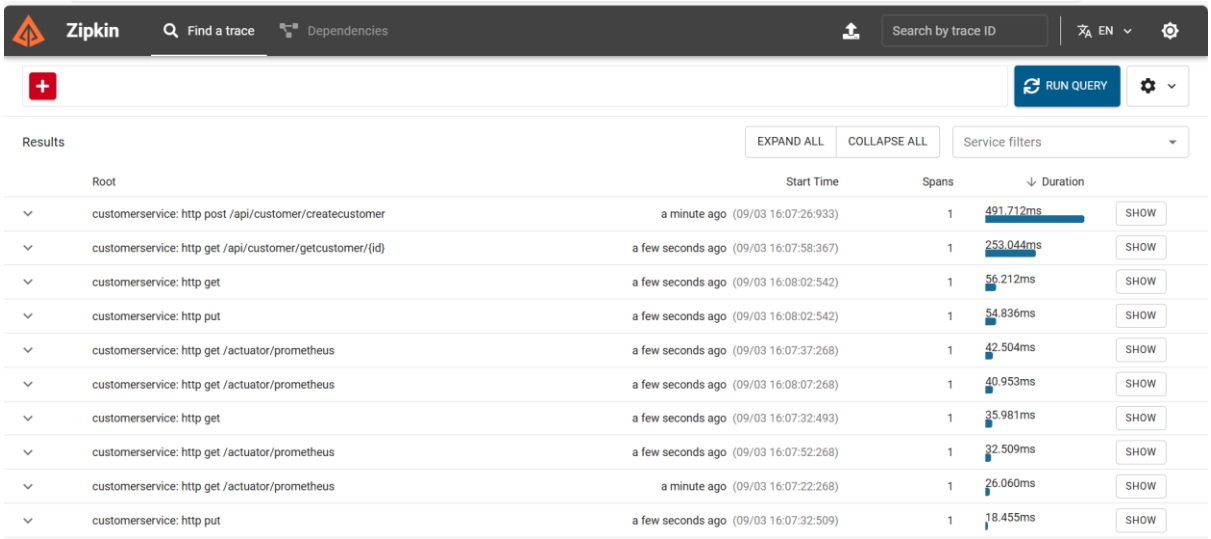


Swagger

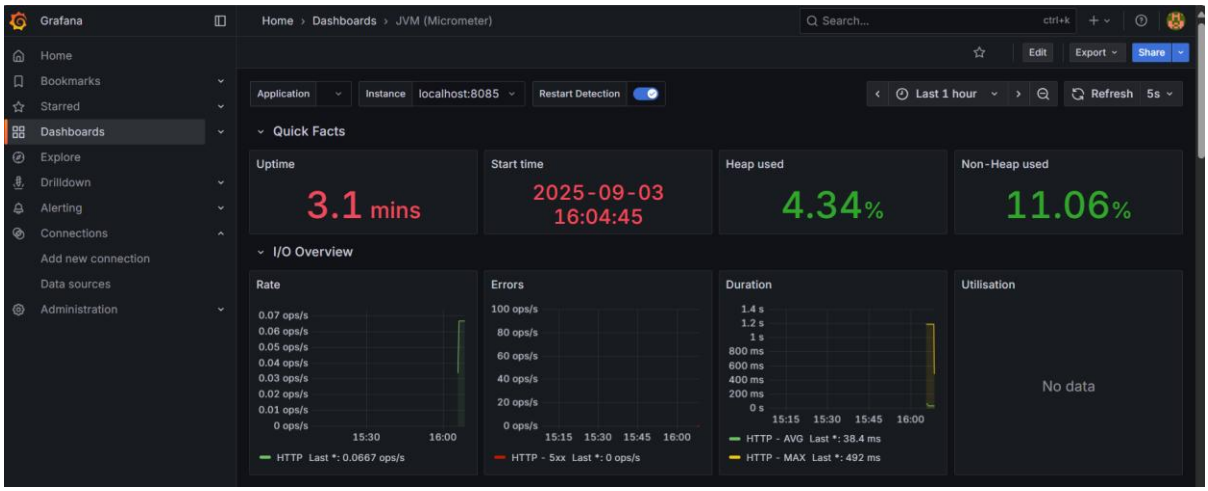


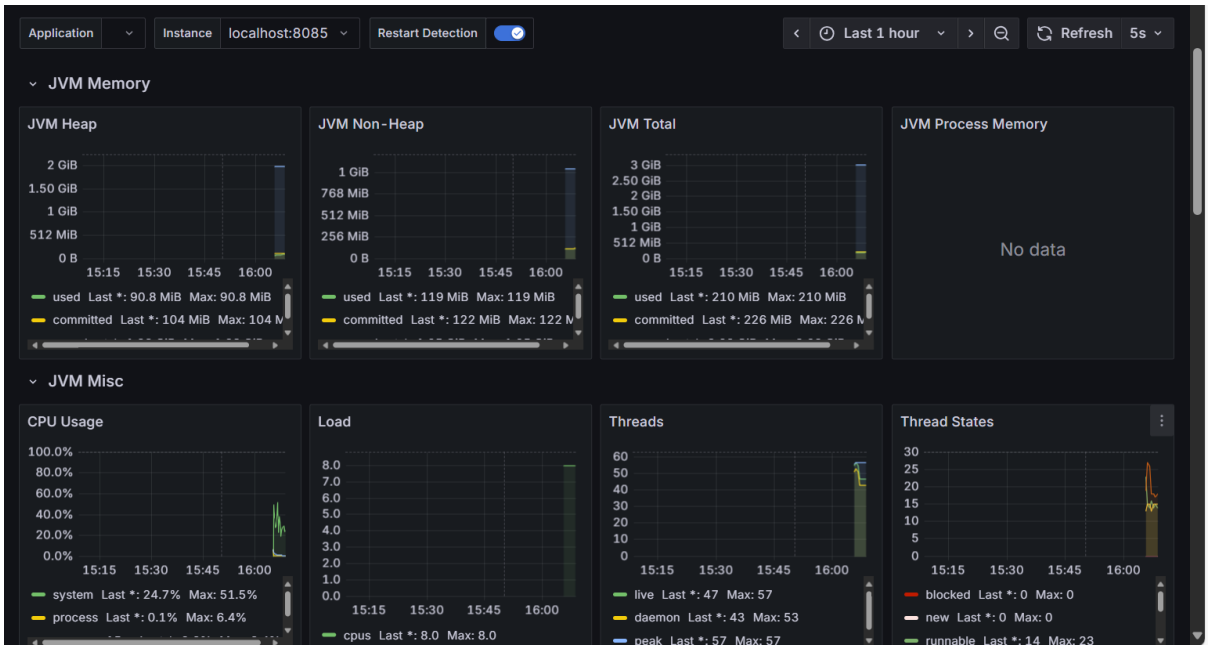
Api-docs

ZipKin

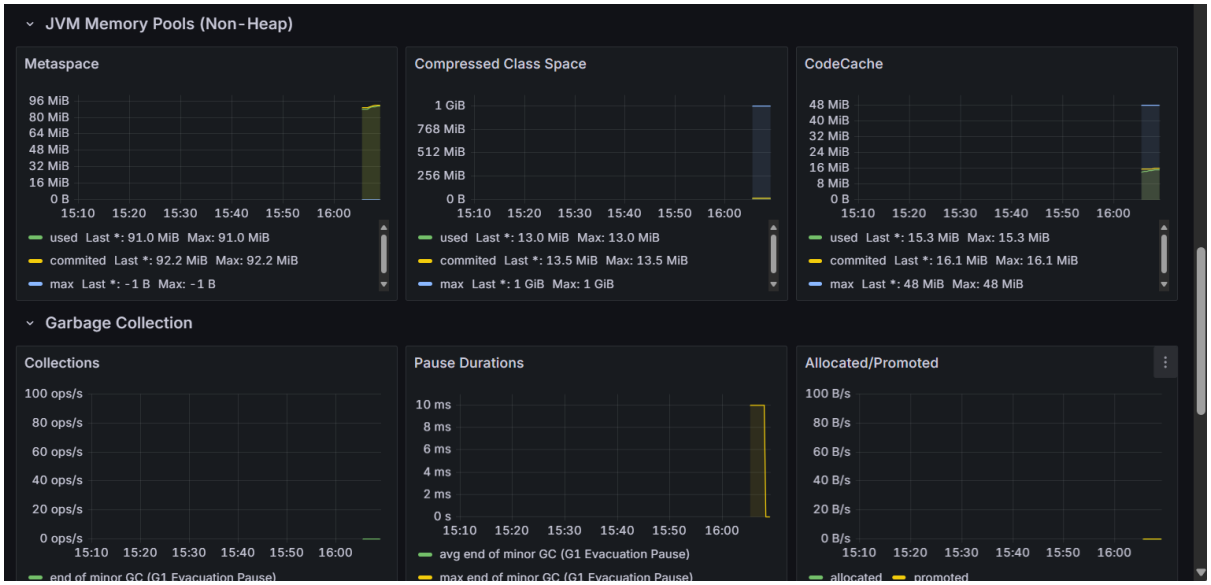


Prometheus-Graphana


Grafana
Home › Dashboards › JVM (Micrometer)
Search...
Edit
Export
Share
Home
Bookmarks
Starred
Dashboards
Explore
Drilldown
Alerting
Connections
Add new connection
Data sources
Administration
Application
Instance
localhost:8085
Restart Detection
Last 1 hour
Refresh
5s
Quick Facts
Uptime
3.1 mins
Start time
2025-09-03 16:04:45
Heap used
4.34%
Non-Heap used
11.06%
I/O Overview
Rate
Errors
Duration
Utilisation
No data
HTTP Last *: 0.0667 ops/s
HTTP - 5xx Last *: 0 ops/s
HTTP - AVG Last *: 38.4 ms
HTTP - MAX Last *: 492 ms


Application
Instance
localhost:8085
Restart Detection
Last 1 hour
Refresh
5s
JVM Memory
JVM Heap
JVM Non-Heap
JVM Total
JVM Process Memory
No data
used Last *: 90.8 MiB Max: 90.8 MiB
committed Last *: 104 MiB
used Last *: 119 MiB Max: 119 MiB
committed Last *: 122 MiB
used Last *: 210 MiB Max: 210 MiB
committed Last *: 226 MiB
JVM Misc
CPU Usage
Load
Threads
Thread States
system Last *: 24.7% Max: 51.5%
process Last *: 0.1% Max: 6.4%
cpus Last *: 8.0 Max: 8.0
live Last *: 47 Max: 57
daemon Last *: 43 Max: 53
blocked Last *: 0 Max: 0
new Last *: 0 Max: 0

Application
Instance
localhost:8085
Restart Detection
Last 1 hour
Refresh
5s
GC Pressure
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
15:15
15:30
15:45
16:00
CPU time spent on GC Last *: 0.0% Max:
Log Events
3 ops/m
2 ops/m
1 ops/m
0 ops/m
15:10
15:20
15:30
15:40
15:50
16:00
debug Last *: 0 ops/m Max: 0 ops/m
error Last *: 0 ops/m Max: 2 ops/m
info Last *: 0 ops/m Max: 0 ops/m
trace Last *: 0 ops/m Max: 0 ops/m
warn Last *: 0 ops/m Max: 1 ops/m
File Descriptors
No data
JVM Memory Pools (Heap)
G1 Eden Space
32 MiB
24 MiB
16 MiB
8 MiB
0 B
used Last *: 31 MiB Max: 31 MiB
commited Last *: 35 MiB Max: 35 MiB
max Last *: -1 B Max: -1 B
G1 Old Gen
2 GiB
1.50 GiB
1 GiB
512 MiB
0 B
used Last *: 61 MiB Max: 61 MiB
commited Last *: 67 MiB Max: 67 MiB
max Last *: 1.98 GiB Max: 1.98 GiB
G1 Survivor Space
2 MiB
1.50 MiB
1 MiB
512 KiB
0 B
used Last *: 1.84 MiB Max: 1.84 MiB
commited Last *: 2 MiB Max: 2 MiB
max Last *: -1 B Max: -1 B

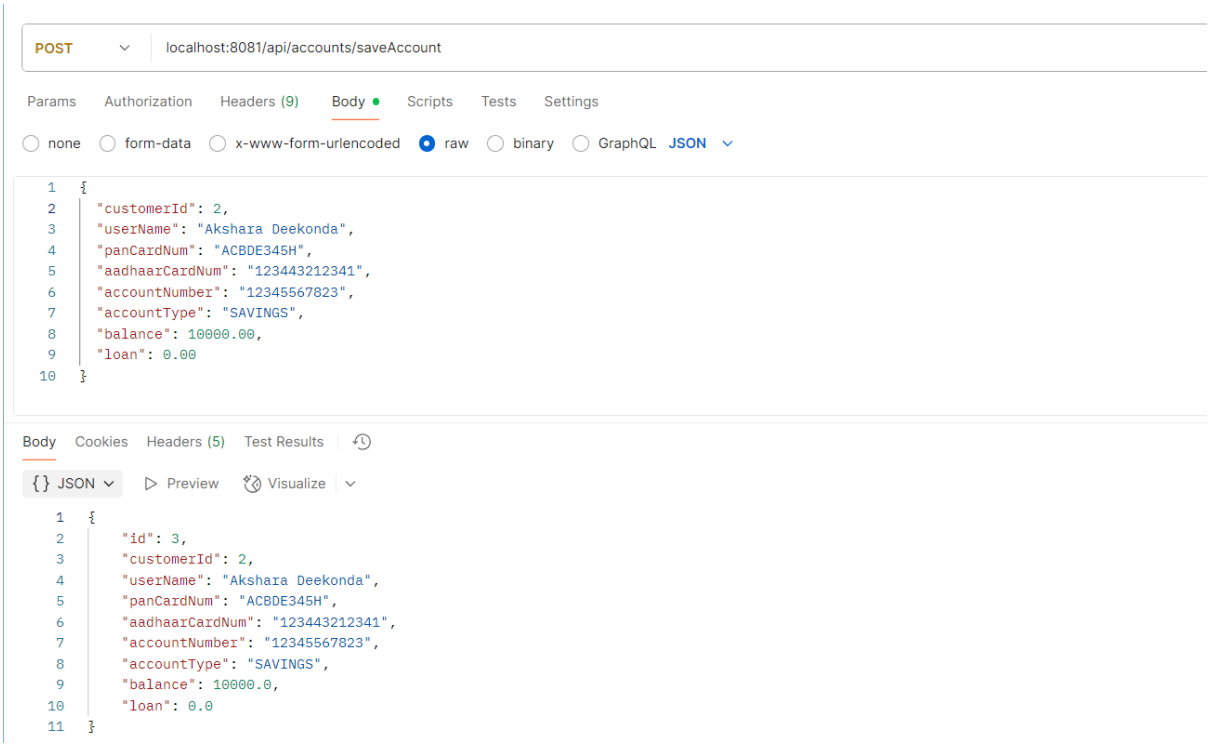

JVM Memory Pools (Non-Heap)
Metaspace
96 MiB
80 MiB
64 MiB
48 MiB
32 MiB
16 MiB
0 B
15:10
15:20
15:30
15:40
15:50
16:00
used Last *: 91.0 MiB Max: 91.0 MiB
commited Last *: 92.2 MiB Max: 92.2 MiB
max Last *: -1 B Max: -1 B
Compressed Class Space
1 GiB
768 MiB
512 MiB
256 MiB
0 B
used Last *: 13.0 MiB Max: 13.0 MiB
commited Last *: 13.5 MiB Max: 13.5 MiB
max Last *: 1 GiB Max: 1 GiB
CodeCache
48 MiB
40 MiB
32 MiB
24 MiB
16 MiB
8 MiB
0 B
used Last *: 15.3 MiB Max: 15.3 MiB
commited Last *: 16.1 MiB Max: 16.1 MiB
max Last *: 48 MiB Max: 48 MiB
Garbage Collection
Collections
100 ops/s
80 ops/s
60 ops/s
40 ops/s
20 ops/s
0 ops/s
15:10
15:20
15:30
15:40
15:50
16:00
end of minor GC (G1 Evacuation Pause)
Pause Durations
10 ms
8 ms
6 ms
4 ms
2 ms
0 s
avg end of minor GC (G1 Evacuation Pause)
max end of minor GC (G1 Evacuation Pause)
Allocated/Promoted
100 B/s
80 B/s
60 B/s
40 B/s
20 B/s
0 B/s
allocated
promoted

Account Service

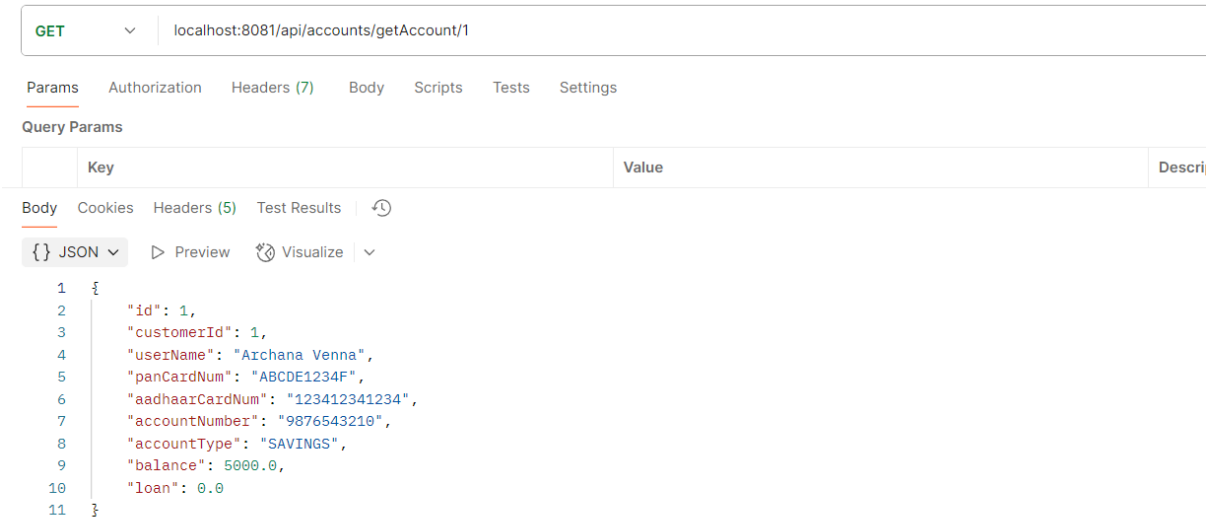
(“/api/accounts”)

Endpoints:

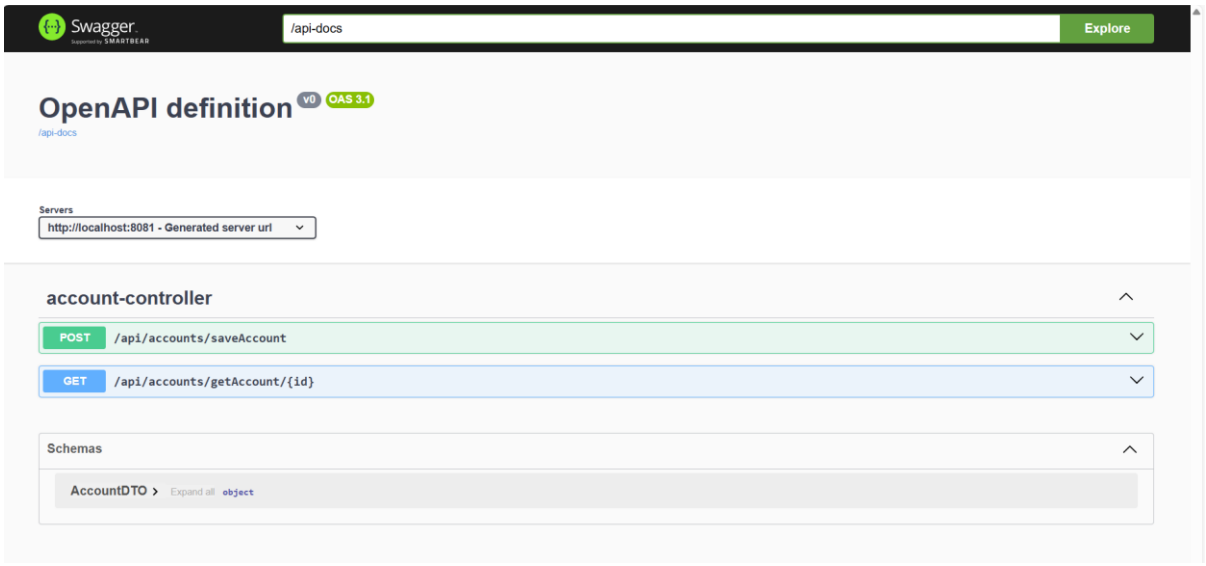
@PostMapping("/saveAccount")



@GetMapping("/getAccount/{id}")

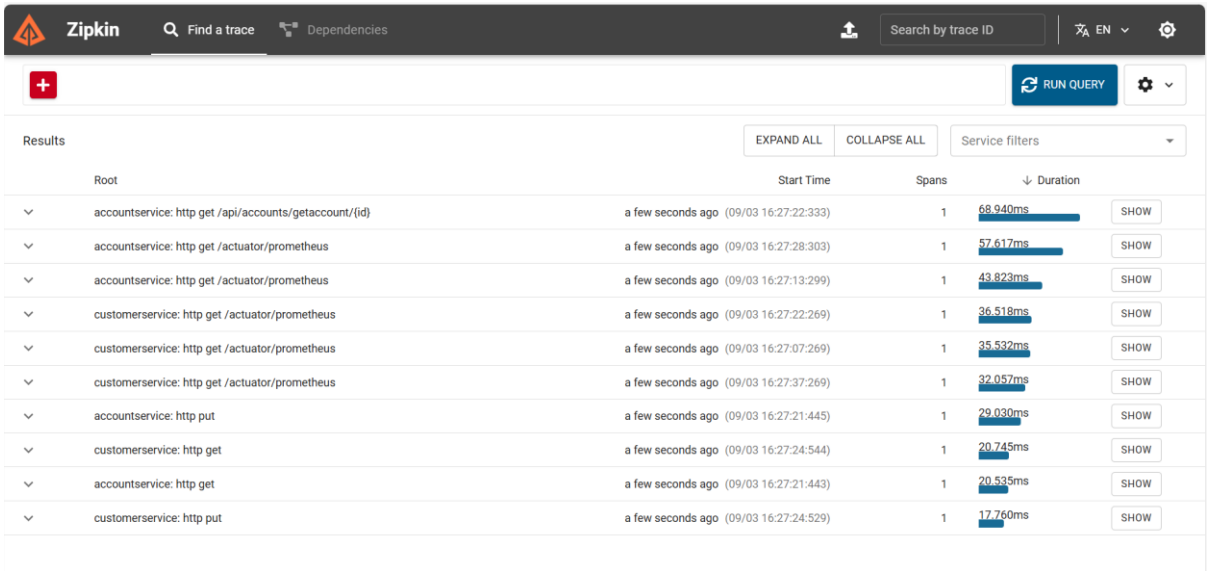


Swagger

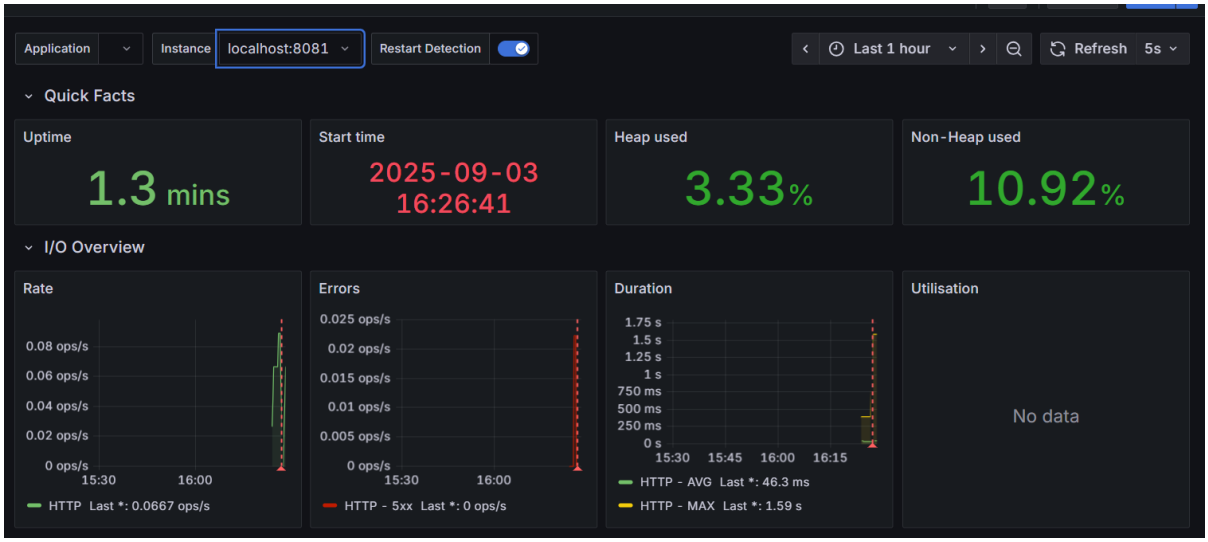


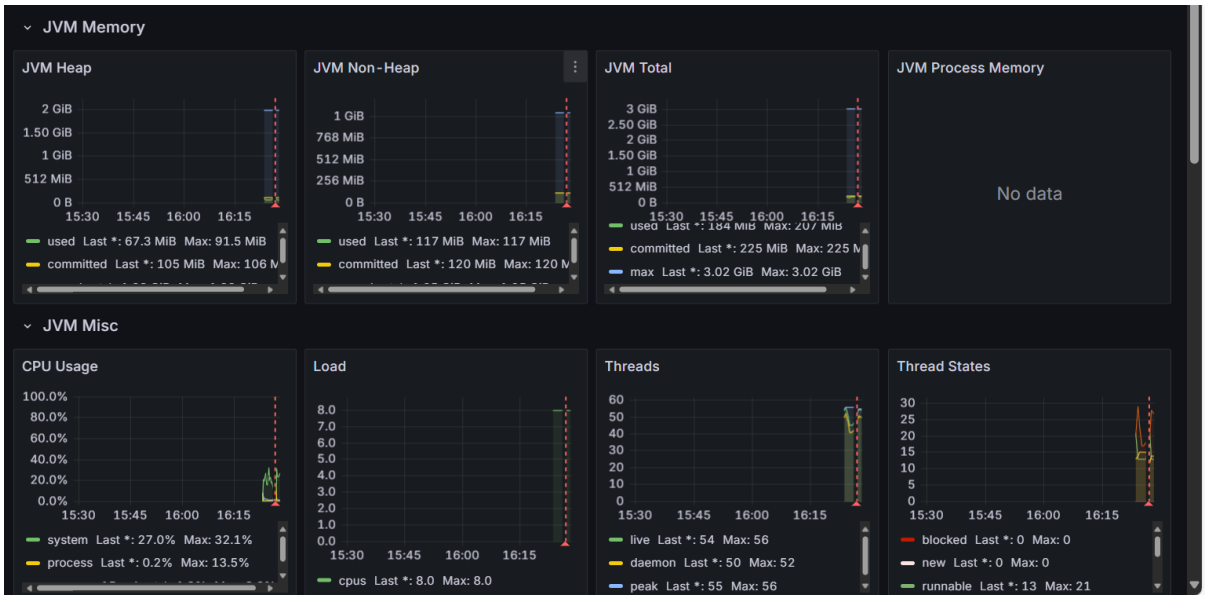
Api-docs

Zipkin

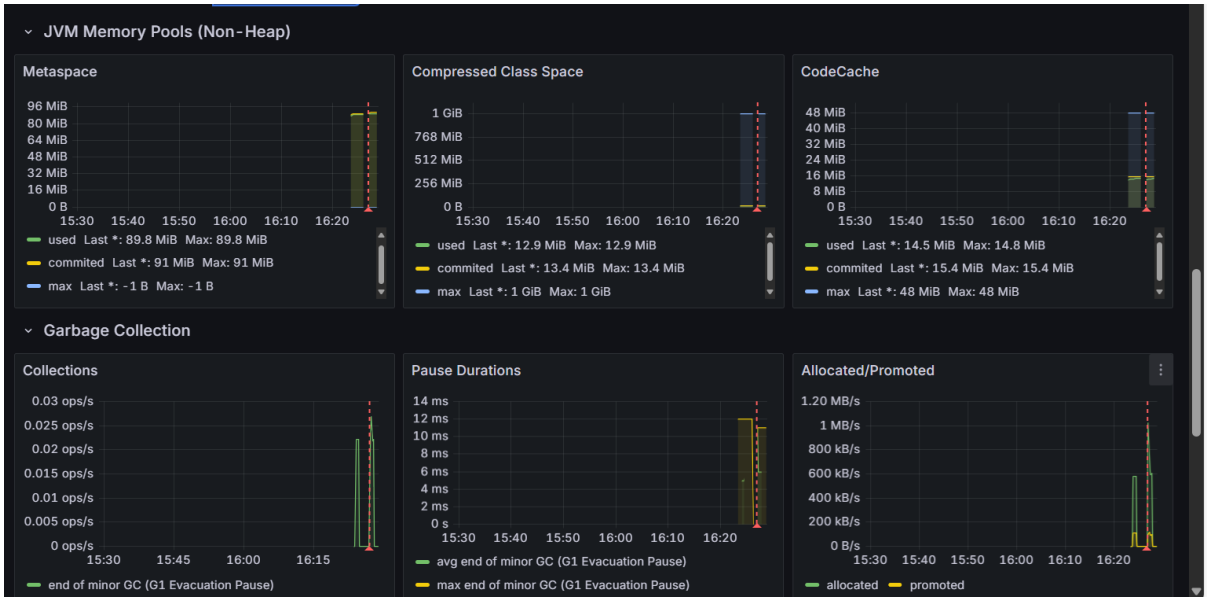


Prometheus-Graphana





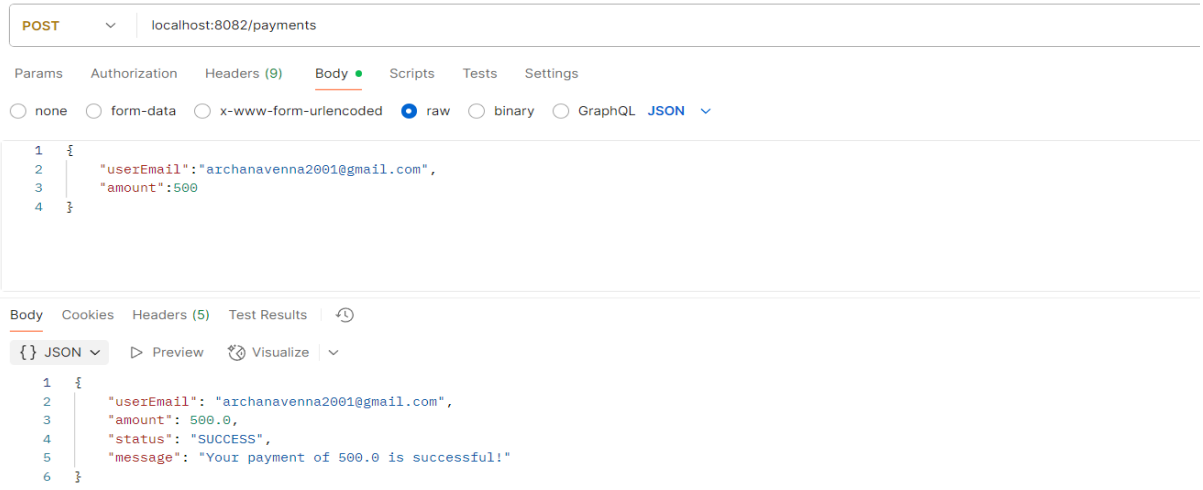
GC Pressure
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
15:30 15:45 16:00 16:15
CPU time spent on GC Last *: 0.0% Max:
Log Events
3 ops/m
2 ops/m
1 ops/m
0 ops/m
15:30 15:40 15:50 16:00 16:10 16:20
debug Last *: 0 ops/m Max: 0 ops/m
error Last *: 0 ops/m Max: 1 ops/m
info Last *: 0 ops/m Max: 0 ops/m
trace Last *: 0 ops/m Max: 0 ops/m
warn Last *: 3 ops/m Max: 3 ops/m
File Descriptors
No data
JVM Memory Pools (Heap)
G1 Eden Space
40 MiB
32 MiB
24 MiB
16 MiB
8 MiB
0 B
15:30 15:40 15:50 16:00 16:10 16:20
used Last *: 9 MiB Max: 33 MiB
commited Last *: 36 MiB Max: 40 MiB
max Last *: -1 B Max: -1 B
G1 Old Gen
2 GiB
1.50 GiB
1 GiB
512 MiB
0 B
15:30 15:40 15:50 16:00 16:10 16:20
used Last *: 58.1 MiB Max: 58.1 MiB
commited Last *: 66 MiB Max: 66 MiB
max Last *: 1.98 GiB Max: 1.98 GiB
G1 Survivor Space
5 MiB
4 MiB
3 MiB
2 MiB
1 MiB
0 B
15:30 15:40 15:50 16:00 16:10 16:20
used Last *: 2.21 MiB Max: 4.73 MiB
commited Last *: 3 MiB Max: 5 MiB
max Last *: -1 B Max: -1 B


JVM Memory Pools (Non-Heap)
Metaspace
96 MiB
80 MiB
64 MiB
48 MiB
32 MiB
16 MiB
0 B
15:30 15:40 15:50 16:00 16:10 16:20
used Last *: 89.8 MiB Max: 89.8 MiB
commited Last *: 91 MiB Max: 91 MiB
max Last *: -1 B Max: -1 B
Compressed Class Space
1 GiB
768 MiB
512 MiB
256 MiB
0 B
15:30 15:40 15:50 16:00 16:10 16:20
used Last *: 12.9 MiB Max: 12.9 MiB
commited Last *: 13.4 MiB Max: 13.4 MiB
max Last *: 1 GiB Max: 1 GiB
CodeCache
48 MiB
40 MiB
32 MiB
24 MiB
16 MiB
8 MiB
0 B
15:30 15:40 15:50 16:00 16:10 16:20
used Last *: 14.5 MiB Max: 14.8 MiB
commited Last *: 15.4 MiB Max: 15.4 MiB
max Last *: 48 MiB Max: 48 MiB
Garbage Collection
Collections
0.03 ops/s
0.025 ops/s
0.02 ops/s
0.015 ops/s
0.01 ops/s
0.005 ops/s
0 ops/s
15:30 15:45 16:00 16:15
end of minor GC (G1 Evacuation Pause)
Pause Durations
14 ms
12 ms
10 ms
8 ms
6 ms
4 ms
2 ms
0 s
15:30 15:40 15:50 16:00 16:10 16:20
avg end of minor GC (G1 Evacuation Pause)
max end of minor GC (G1 Evacuation Pause)
Allocated/Promoted
1.20 MB/s
1 MB/s
800 kB/s
600 kB/s
400 kB/s
200 kB/s
0 B/s
15:30 15:40 15:50 16:00 16:10 16:20
allocated
promoted

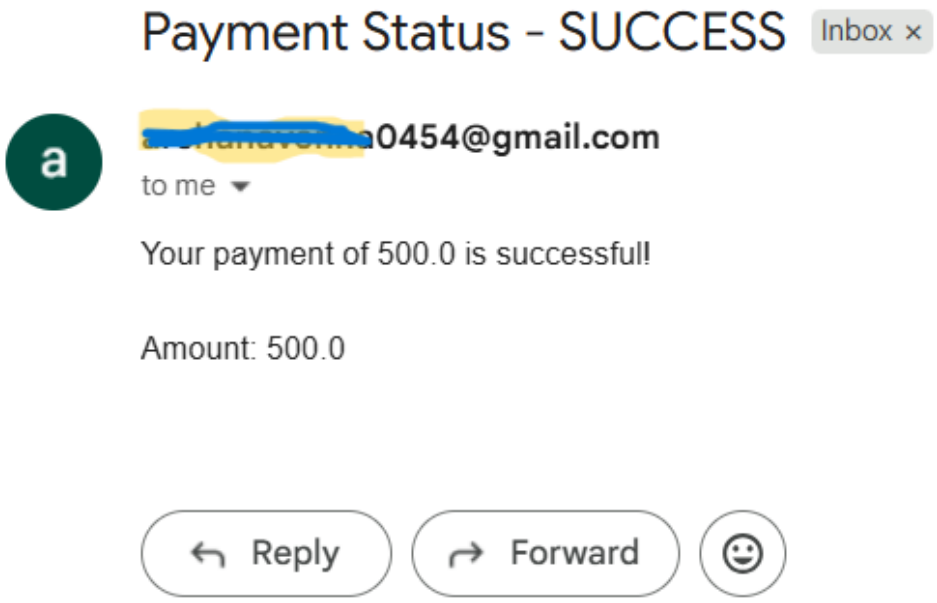
Payment Services ---------->Notification Service (Using Kafka)

Kafka can be used to **publish events** like user registrations or order updates to a topic, and a **consumer service** can process these events to send **email notifications**.
This makes the notification system **scalable, asynchronous, and loosely coupled** from the main application.

@PostMapping("/payments")



Email using smtp

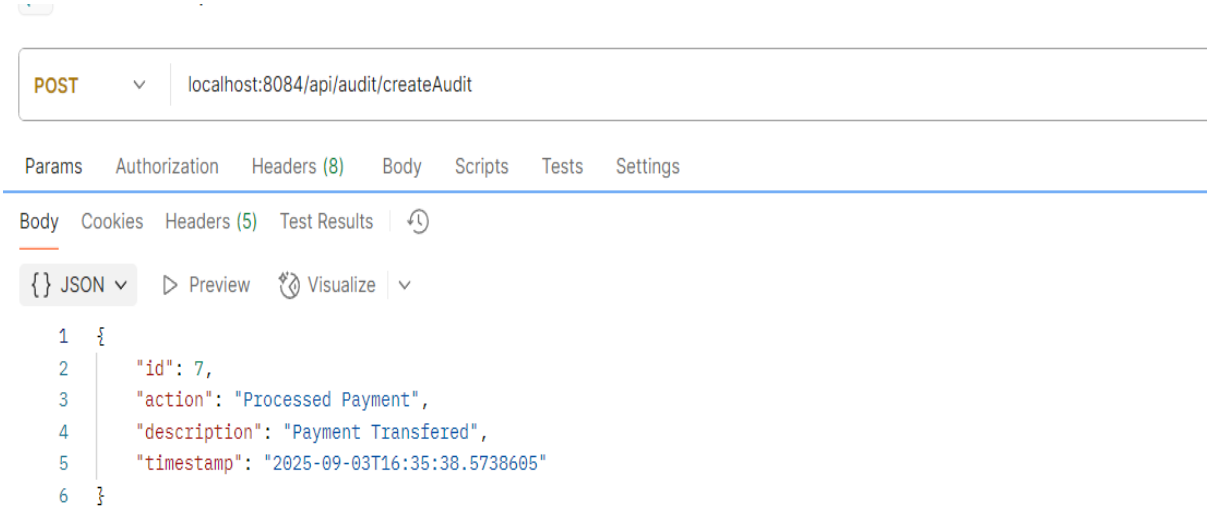


AuditLog Service

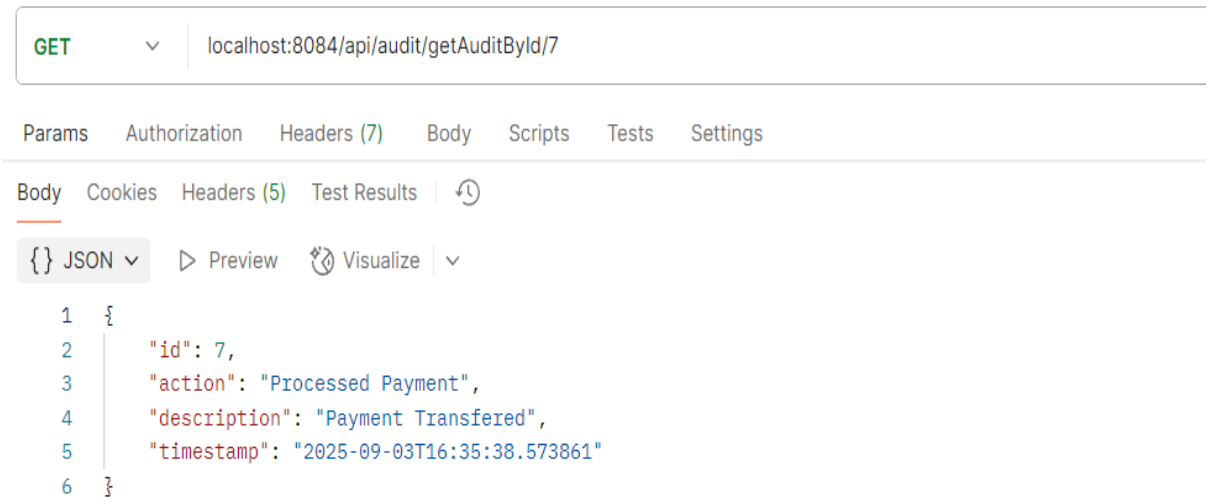
("/api/audit")

Endpoint:

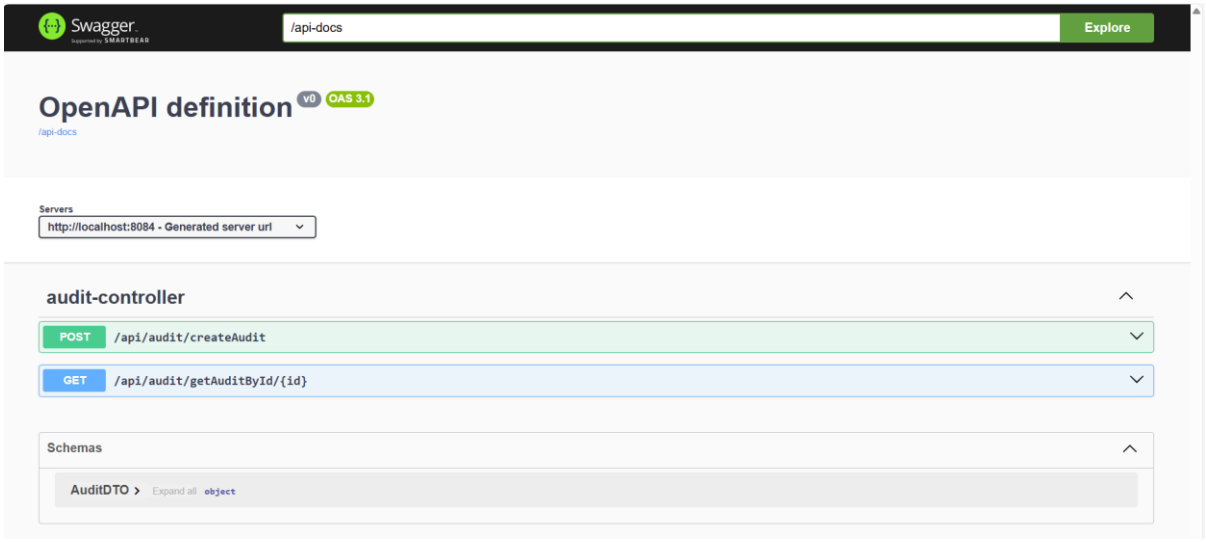
@PostMapping("/createAudit")



@GetMapping("/getAuditById/{id}")

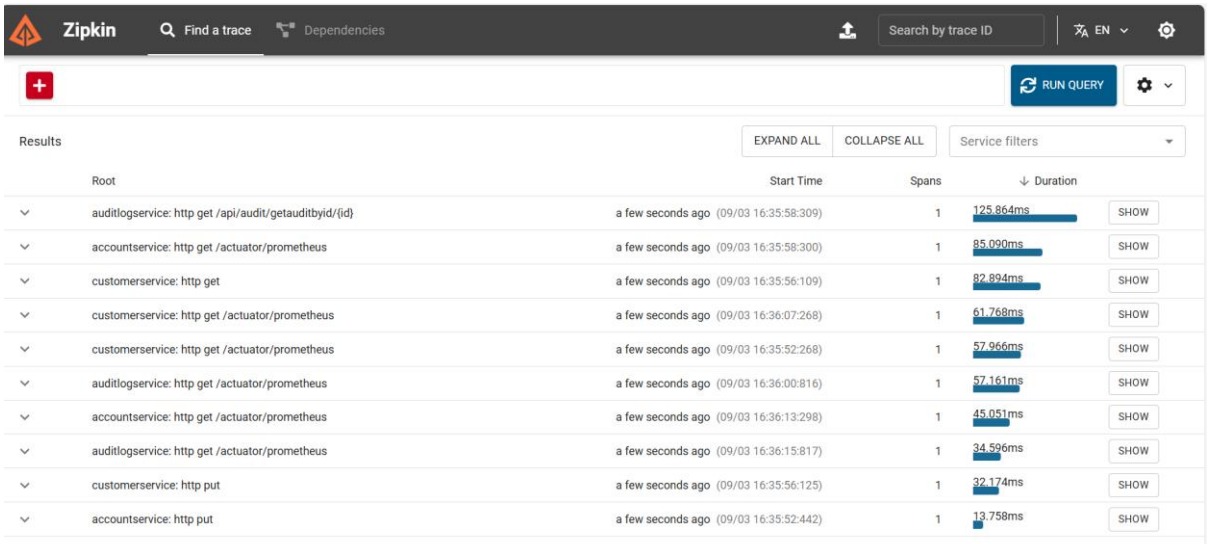


Swagger

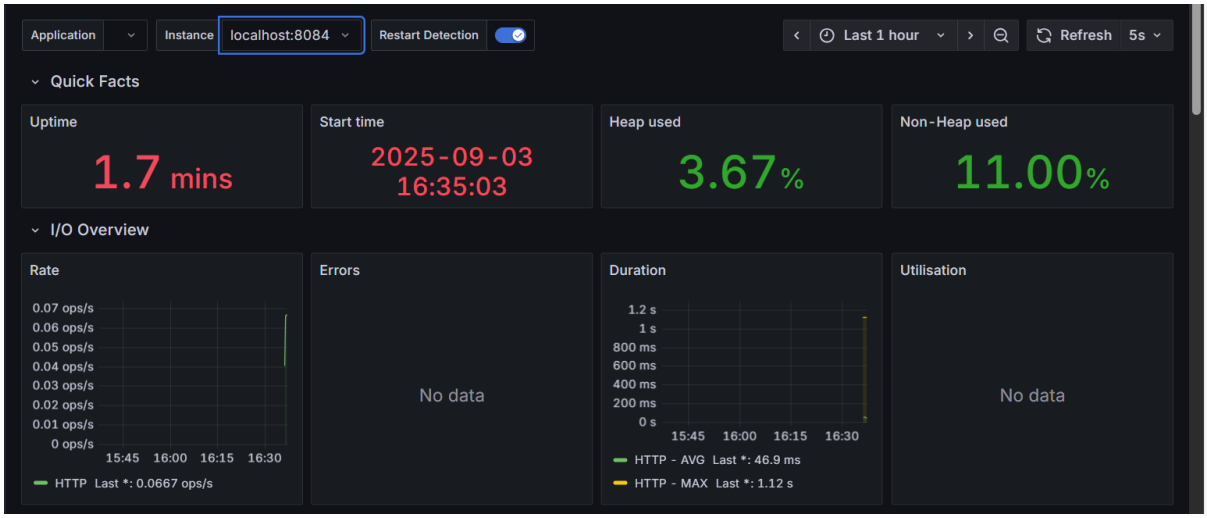


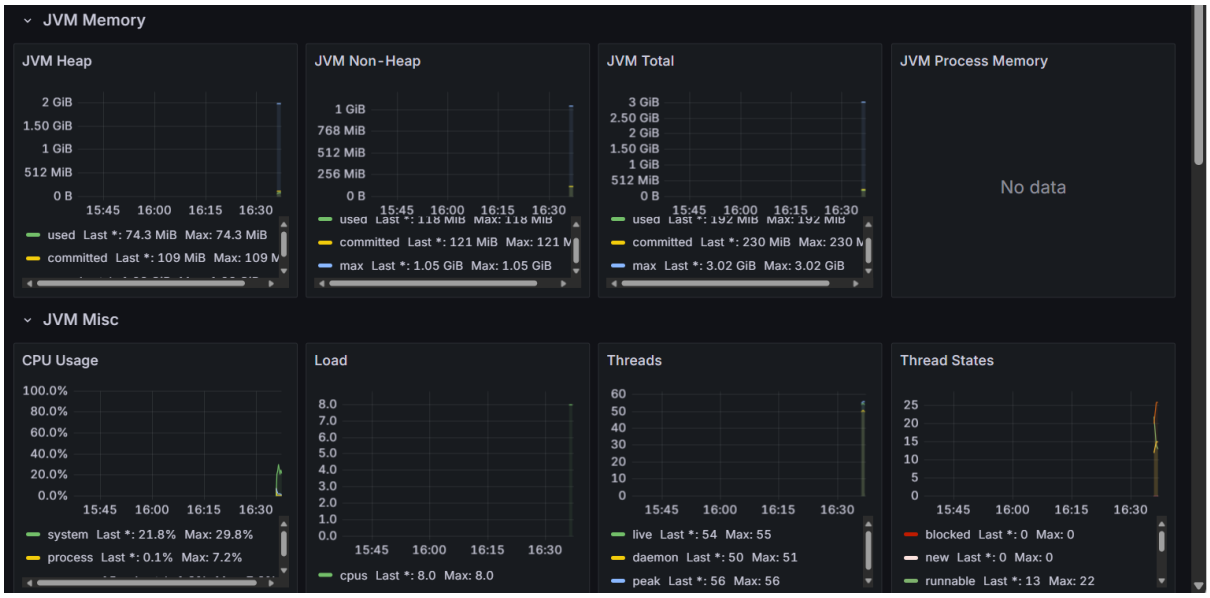
Api-docs

Zipkin

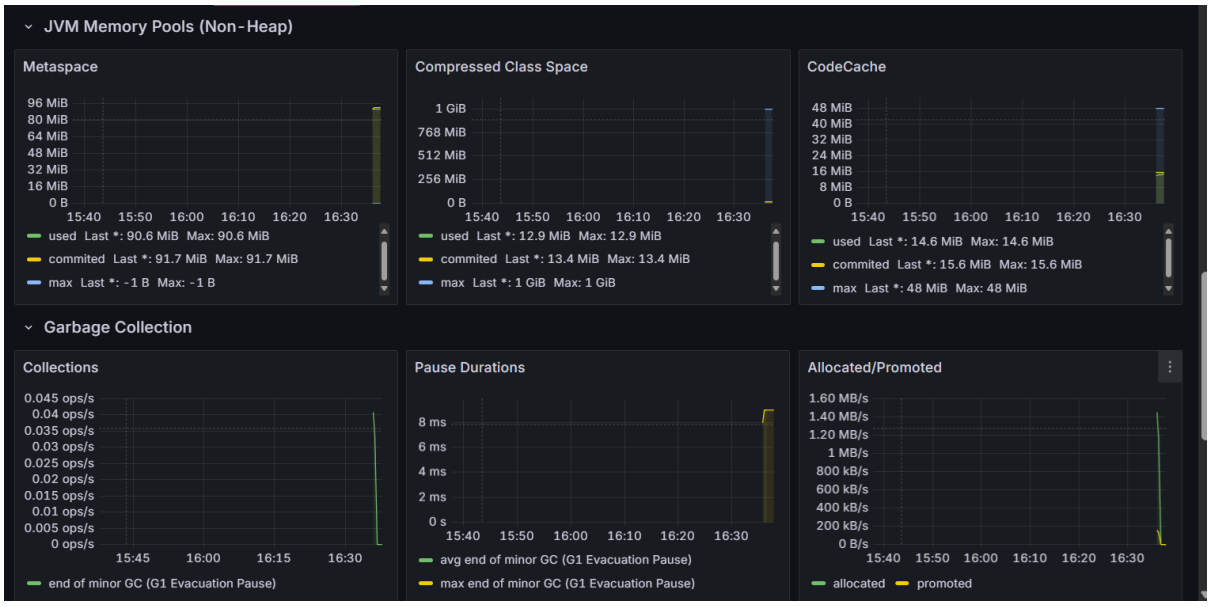


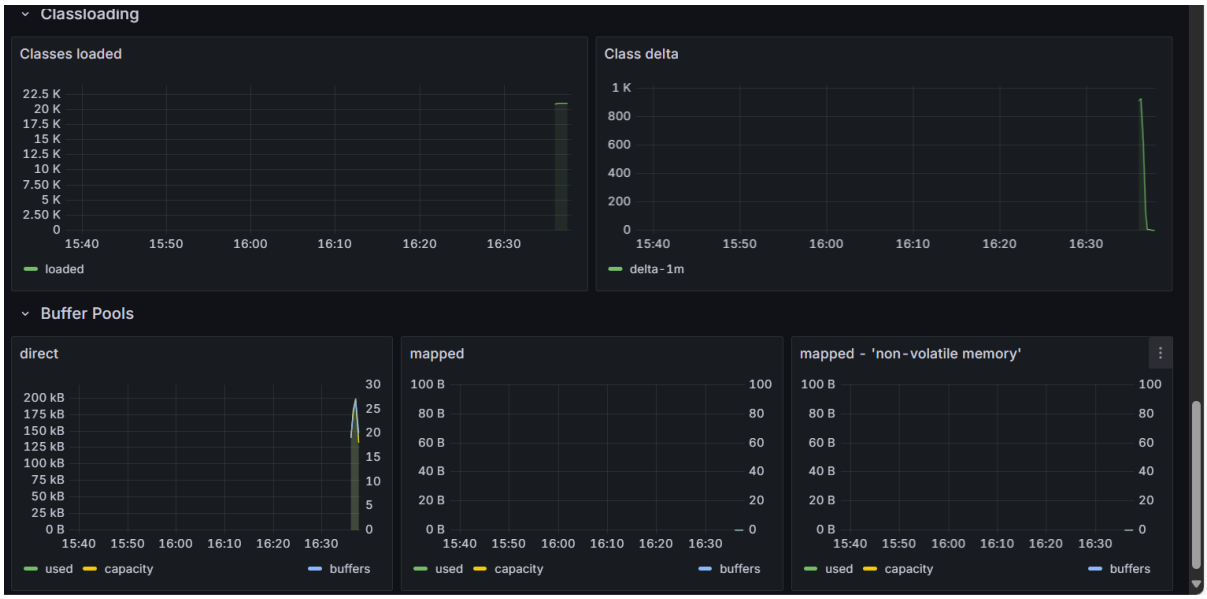
Prometheus-Graphana





GC Pressure
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
15:45 16:00 16:15 16:30
CPU time spent on GC Last *: 0.0% Max:
Log Events
100 ops/m
80 ops/m
60 ops/m
40 ops/m
20 ops/m
0 ops/m
15:40 15:50 16:00 16:10 16:20 16:30
debug Last *: 0 ops/m Max: 0 ops/m
error Last *: 0 ops/m Max: 0 ops/m
info Last *: 0 ops/m Max: 0 ops/m
trace Last *: 0 ops/m Max: 0 ops/m
warn Last *: 0 ops/m Max: 0 ops/m
File Descriptors
No data
JVM Memory Pools (Heap)
G1 Eden Space
32 MiB
24 MiB
16 MiB
8 MiB
0 B
15:40 15:50 16:00 16:10 16:20 16:30
used Last *: 13 MiB Max: 13 MiB
commited Last *: 33 MiB Max: 33 MiB
max Last *: -1 B Max: -1 B
G1 Old Gen
2 GiB
1.50 GiB
1 GiB
512 MiB
0 B
15:40 15:50 16:00 16:10 16:20 16:30
used Last *: 61.2 MiB Max: 61.2 MiB
commited Last *: 73 MiB Max: 73 MiB
max Last *: 1.98 GiB Max: 1.98 GiB
G1 Survivor Space
3 MiB
2.50 MiB
2 MiB
1.50 MiB
1 MiB
512 KiB
0 B
15:40 15:50 16:00 16:10 16:20 16:30
used Last *: 2.08 MiB Max: 2.08 MiB
commited Last *: 3 MiB Max: 3 MiB
max Last *: -1 B Max: -1 B

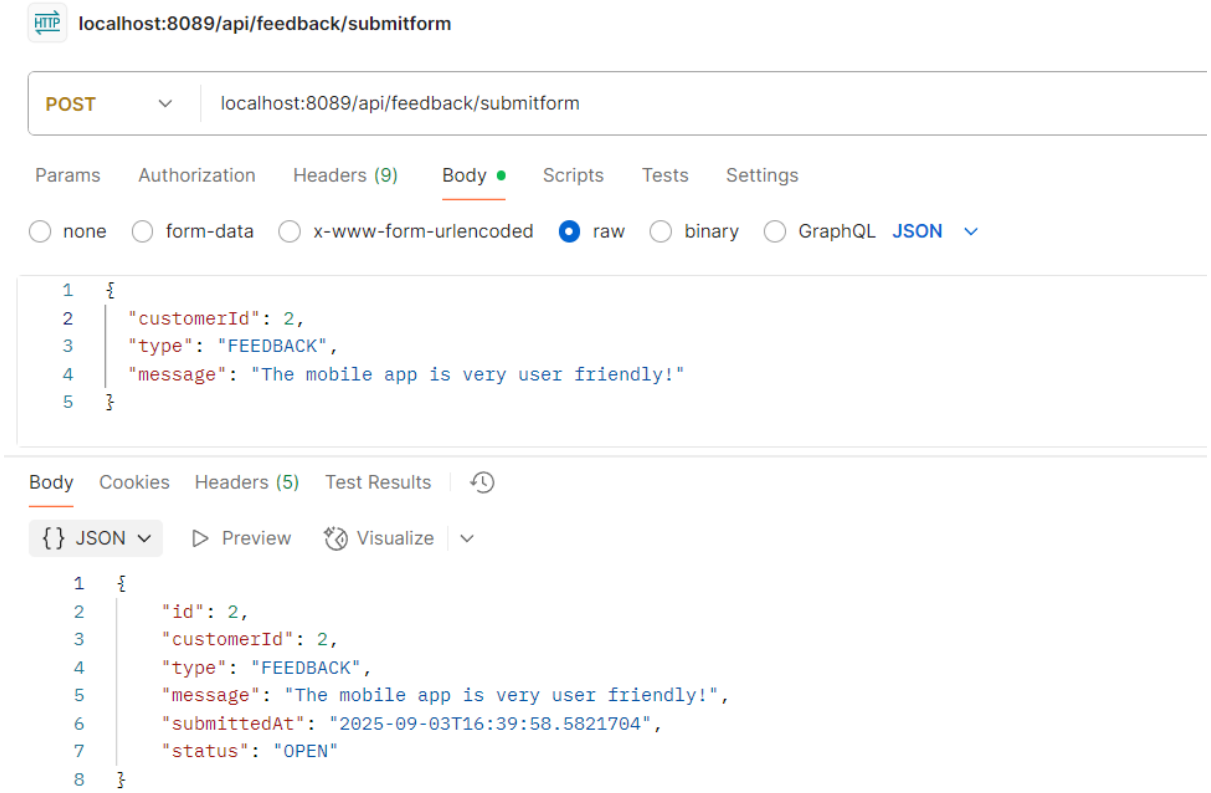

JVM Memory Pools (Non-Heap)
Metaspace
96 MiB
80 MiB
64 MiB
48 MiB
32 MiB
16 MiB
0 B
15:40 15:50 16:00 16:10 16:20 16:30
used Last *: 90.6 MiB Max: 90.6 MiB
commited Last *: 91.7 MiB Max: 91.7 MiB
max Last *: -1 B Max: -1 B
Compressed Class Space
1 GiB
768 MiB
512 MiB
256 MiB
0 B
15:40 15:50 16:00 16:10 16:20 16:30
used Last *: 12.9 MiB Max: 12.9 MiB
commited Last *: 13.4 MiB Max: 13.4 MiB
max Last *: 1 GiB Max: 1 GiB
CodeCache
48 MiB
40 MiB
32 MiB
24 MiB
16 MiB
8 MiB
0 B
15:40 15:50 16:00 16:10 16:20 16:30
used Last *: 14.6 MiB Max: 14.6 MiB
commited Last *: 15.6 MiB Max: 15.6 MiB
max Last *: 48 MiB Max: 48 MiB
Garbage Collection
Collections
0.045 ops/s
0.04 ops/s
0.035 ops/s
0.03 ops/s
0.025 ops/s
0.02 ops/s
0.015 ops/s
0.01 ops/s
0.005 ops/s
0 ops/s
15:45 16:00 16:15 16:30
end of minor GC (G1 Evacuation Pause)
Pause Durations
8 ms
6 ms
4 ms
2 ms
0 s
15:40 15:50 16:00 16:10 16:20 16:30
avg end of minor GC (G1 Evacuation Pause)
max end of minor GC (G1 Evacuation Pause)
Allocated/Promoted
1.60 MB/s
1.40 MB/s
1.20 MB/s
1 MB/s
800 kB/s
600 kB/s
400 kB/s
200 kB/s
0 B/s
15:40 15:50 16:00 16:10 16:20 16:30
allocated
promoted



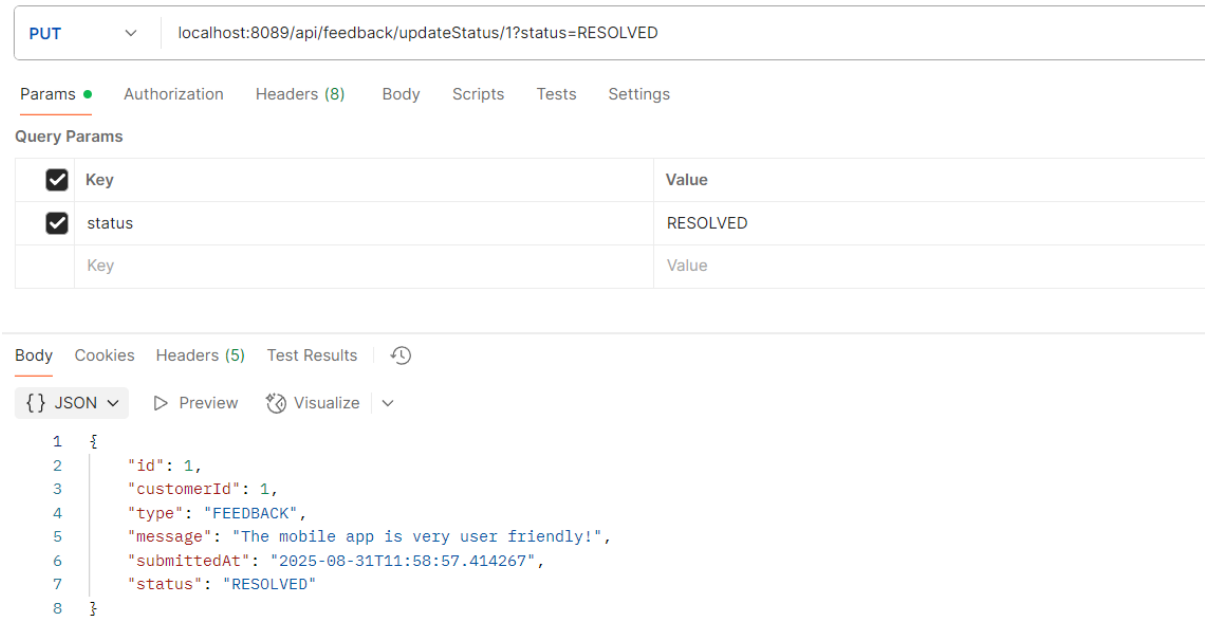
FeedBack Service

("/api/feedback")

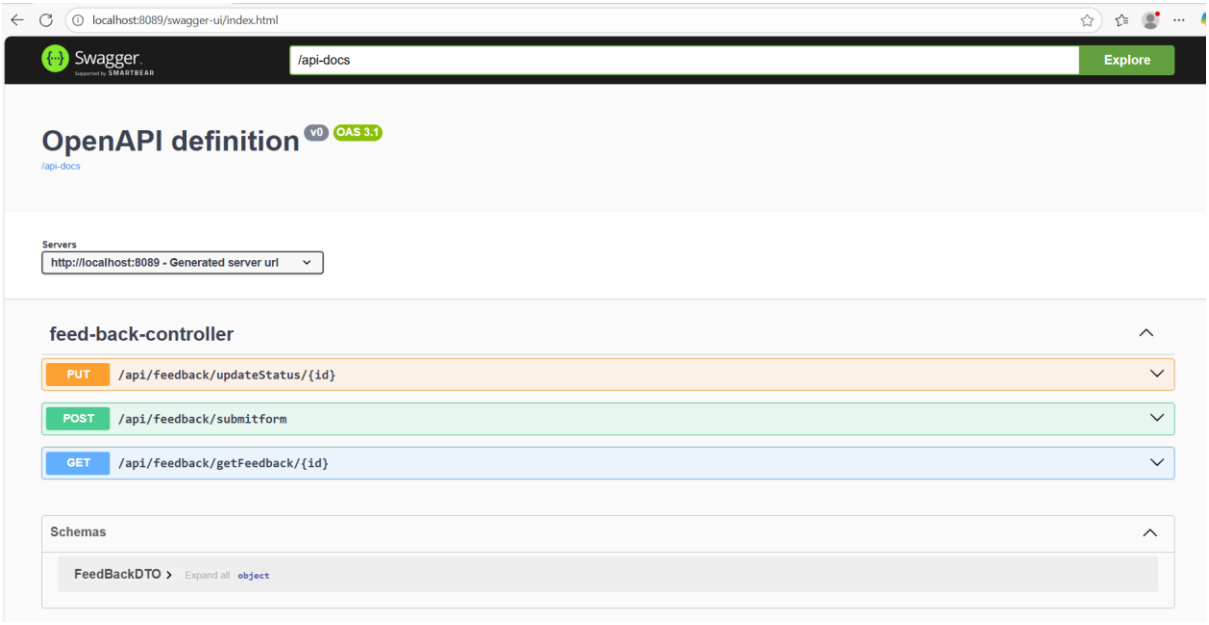
Endpoints:



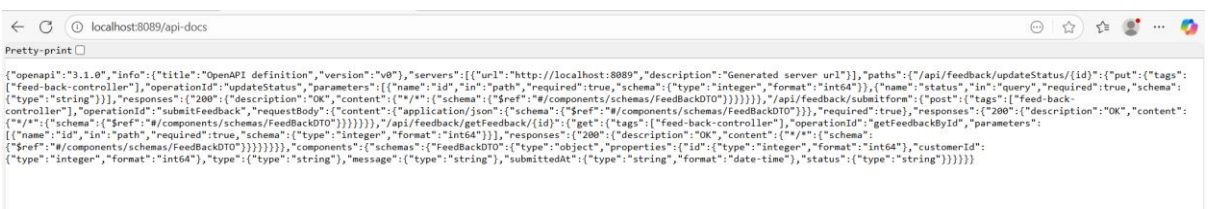
@GetMapping("/getFeedback/{id}")



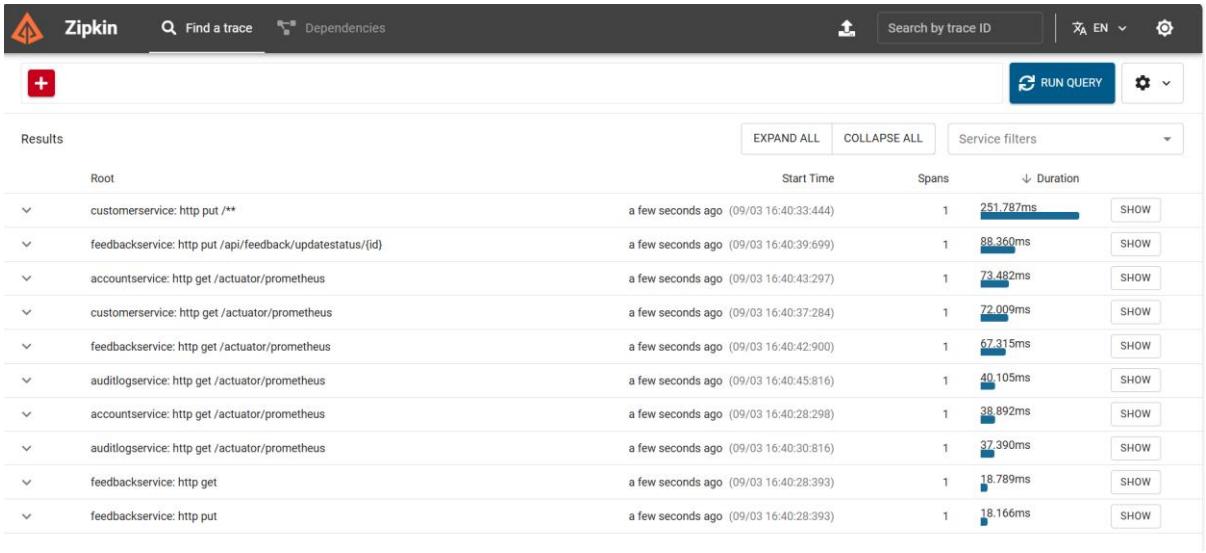
Swagger



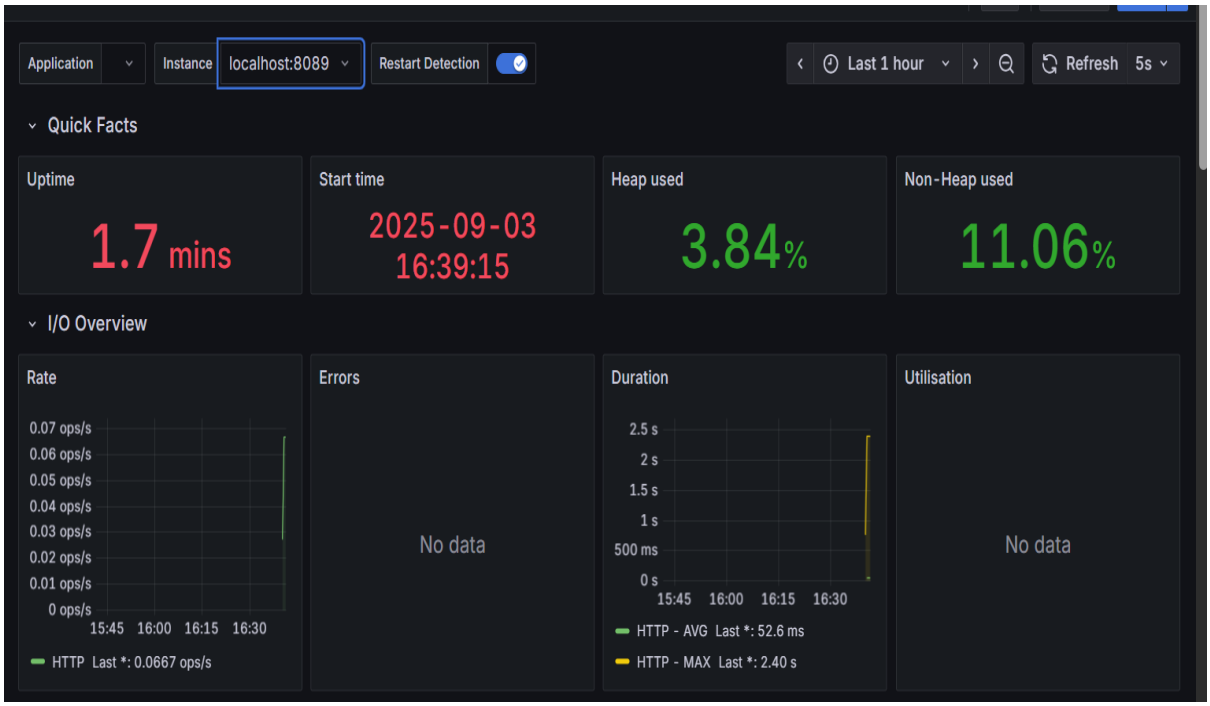
Api-docs

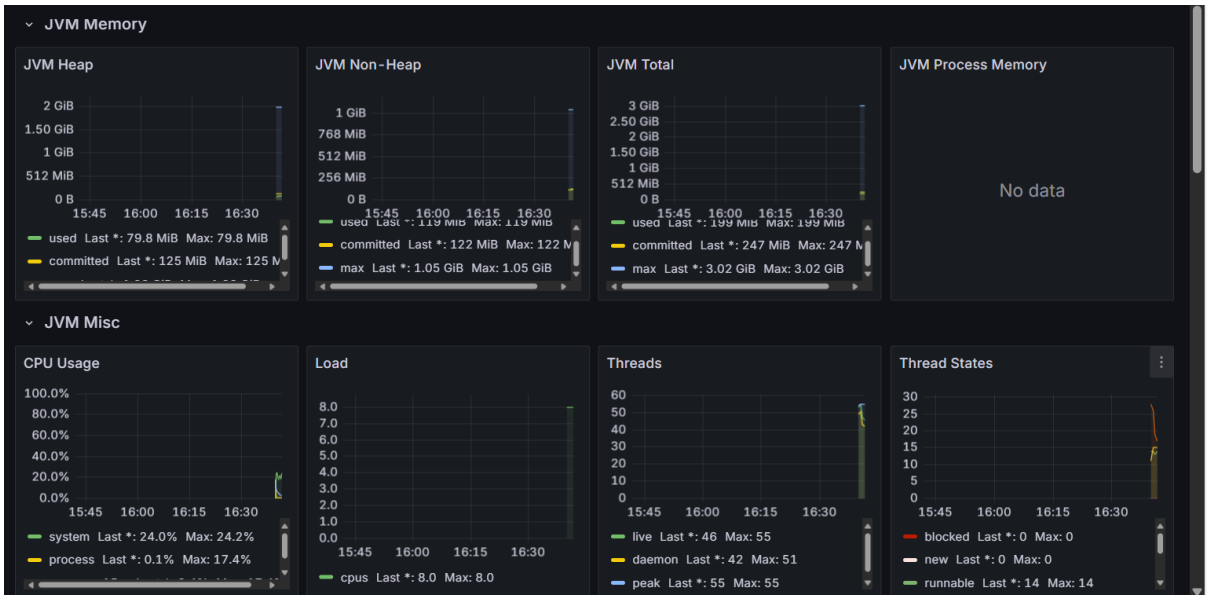


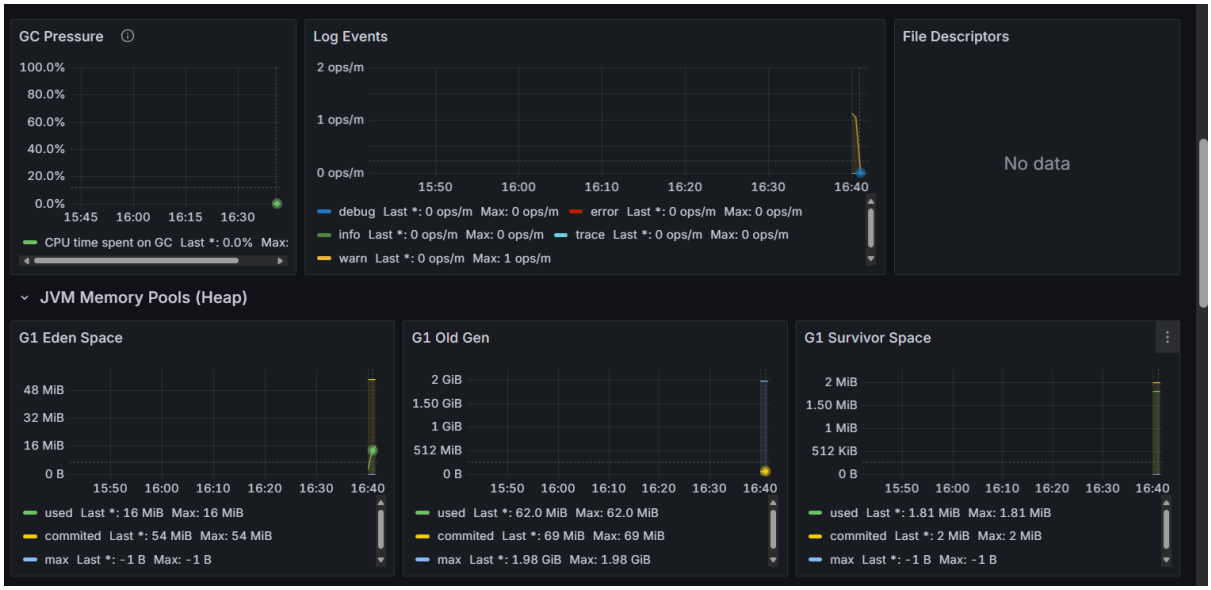
Zipkin



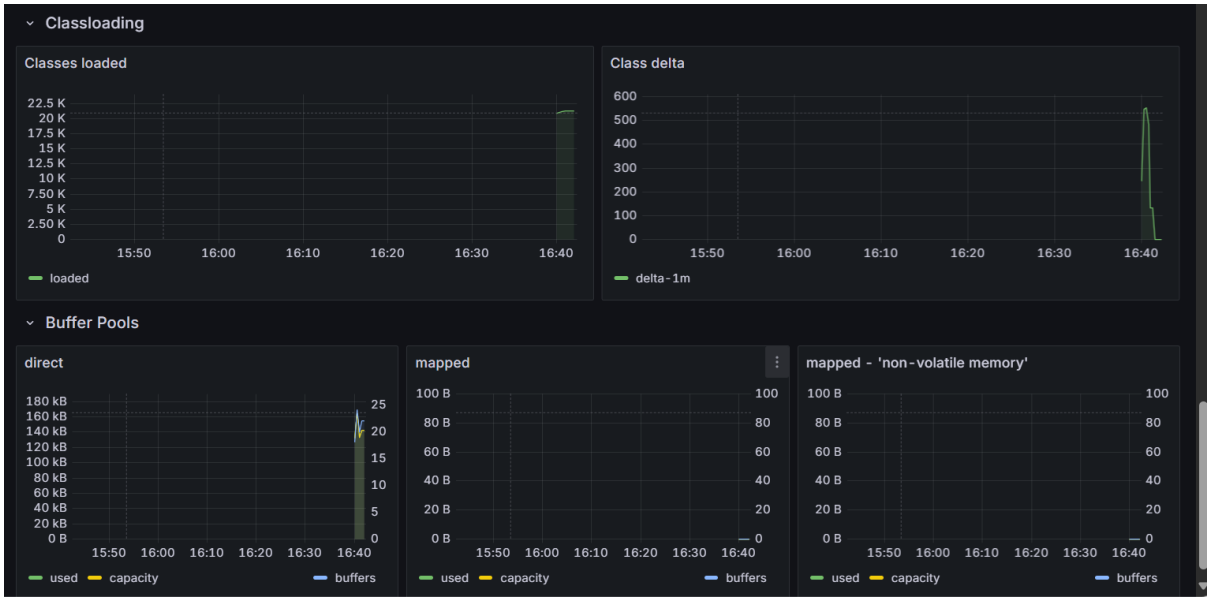
Prometheus-Graphana




JVM Memory
JVM Heap
2 GiB
1.50 GiB
1 GiB
512 MiB
0 B
15:45 16:00 16:15 16:30
used Last *: 79.8 MiB Max: 79.8 MiB
committed Last *: 125 MiB Max: 125 M
JVM Non-Heap
1 GiB
768 MiB
512 MiB
256 MiB
0 B
15:45 16:00 16:15 16:30
committed Last *: 122 MiB Max: 122 M
max Last *: 1.05 GiB Max: 1.05 GiB
JVM Total
3 GiB
2.50 GiB
2 GiB
1.50 GiB
1 GiB
512 MiB
0 B
15:45 16:00 16:15 16:30
committed Last *: 247 MiB Max: 247 M
max Last *: 3.02 GiB Max: 3.02 GiB
JVM Process Memory
No data
JVM Misc
CPU Usage
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
15:45 16:00 16:15 16:30
system Last *: 24.0% Max: 24.2%
process Last *: 0.1% Max: 17.4%
Load
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
15:45 16:00 16:15 16:30
cpus Last *: 8.0 Max: 8.0
Threads
60
50
40
30
20
10
0
15:45 16:00 16:15 16:30
live Last *: 46 Max: 55
daemon Last *: 42 Max: 51
peak Last *: 55 Max: 55
Thread States
30
25
20
15
10
5
0
15:45 16:00 16:15 16:30
blocked Last *: 0 Max: 0
new Last *: 0 Max: 0
runnable Last *: 14 Max: 14


GC Pressure
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
15:45 16:00 16:15 16:30
CPU time spent on GC Last *: 0.0% Max:
Log Events
2 ops/m
1 ops/m
0 ops/m
15:50 16:00 16:10 16:20 16:30 16:40
debug Last *: 0 ops/m Max: 0 ops/m
error Last *: 0 ops/m Max: 0 ops/m
info Last *: 0 ops/m Max: 0 ops/m
trace Last *: 0 ops/m Max: 0 ops/m
warn Last *: 0 ops/m Max: 1 ops/m
File Descriptors
No data
JVM Memory Pools (Heap)
G1 Eden Space
48 MiB
32 MiB
16 MiB
0 B
15:50 16:00 16:10 16:20 16:30 16:40
used Last *: 16 MiB Max: 16 MiB
commited Last *: 54 MiB Max: 54 MiB
max Last *: -1 B Max: -1 B
G1 Old Gen
2 GiB
1.50 GiB
1 GiB
512 MiB
0 B
15:50 16:00 16:10 16:20 16:30 16:40
used Last *: 62.0 MiB Max: 62.0 MiB
commited Last *: 69 MiB Max: 69 MiB
max Last *: 1.98 GiB Max: 1.98 GiB
G1 Survivor Space
2 MiB
1.50 MiB
1 MiB
512 KiB
0 B
15:50 16:00 16:10 16:20 16:30 16:40
used Last *: 1.81 MiB Max: 1.81 MiB
commited Last *: 2 MiB Max: 2 MiB
max Last *: -1 B Max: -1 B

JVM Memory Pools (Non-Heap)
Metaspace
96 MiB
80 MiB
64 MiB
48 MiB
32 MiB
16 MiB
0 B
15:50 16:00 16:10 16:20 16:30 16:40
used Last *: 91.5 MiB Max: 91.5 MiB
commited Last *: 92.6 MiB Max: 92.6 MiB
max Last *: -1 B Max: -1 B
Compressed Class Space
1 GiB
768 MiB
512 MiB
256 MiB
0 B
15:50 16:00 16:10 16:20 16:30 16:40
used Last *: 13.1 MiB Max: 13.1 MiB
commited Last *: 13.6 MiB Max: 13.6 MiB
max Last *: 1 GiB Max: 1 GiB
CodeCache
48 MiB
40 MiB
32 MiB
24 MiB
16 MiB
8 MiB
0 B
15:50 16:00 16:10 16:20 16:30 16:40
used Last *: 14.4 MiB Max: 14.4 MiB
commited Last *: 15.8 MiB Max: 15.8 MiB
max Last *: 48 MiB Max: 48 MiB
Garbage Collection
Collections
0.03 ops/s
0.025 ops/s
0.02 ops/s
0.015 ops/s
0.01 ops/s
0.005 ops/s
0 ops/s
15:45 16:00 16:15 16:30
end of minor GC (G1 Evacuation Pause)
Pause Durations
8 ms
6 ms
4 ms
2 ms
0 s
15:50 16:00 16:10 16:20 16:30 16:40
avg end of minor GC (G1 Evacuation Pause)
max end of minor GC (G1 Evacuation Pause)
Allocated/Promoted
900 kB/s
800 kB/s
700 kB/s
600 kB/s
500 kB/s
400 kB/s
300 kB/s
200 kB/s
100 kB/s
0 B/s
15:50 16:00 16:10 16:20 16:30 16:40
allocated
promoted


Classloading
Classes loaded
22.5 K
20 K
17.5 K
15 K
12.5 K
10 K
7.50 K
5 K
2.50 K
0
15:50 16:00 16:10 16:20 16:30 16:40
loaded
Class delta
600
500
400
300
200
100
0
15:50 16:00 16:10 16:20 16:30 16:40
delta-1m
Buffer Pools
direct
180 kB
160 kB
140 kB
120 kB
100 kB
80 kB
60 kB
40 kB
20 kB
0 B
25
20
15
10
5
0
15:50 16:00 16:10 16:20 16:30 16:40
used capacity buffers
mapped
100 B
80 B
60 B
40 B
20 B
0 B
100
80
60
40
20
0
15:50 16:00 16:10 16:20 16:30 16:40
used capacity buffers
mapped - 'non-volatile memory'
100 B
80 B
60 B
40 B
20 B
0 B
100
80
60
40
20
0
15:50 16:00 16:10 16:20 16:30 16:40
used capacity buffers