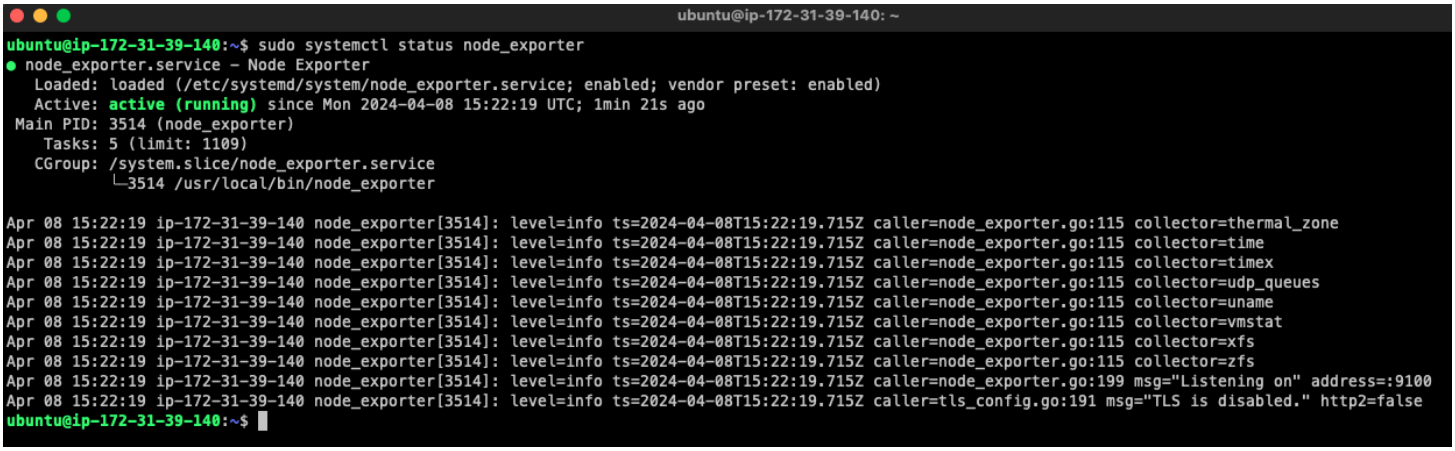
Observing Cloud Resources

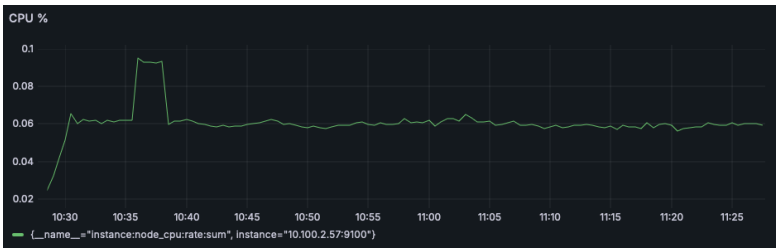
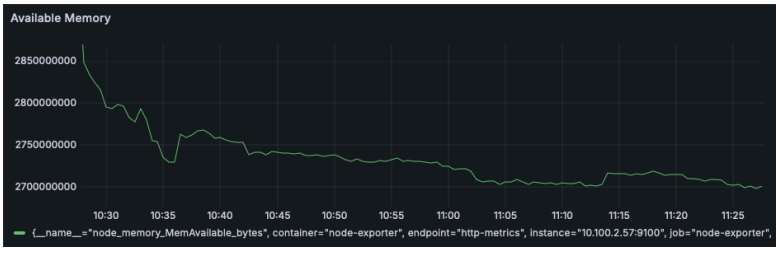
SRE Project Template, filled in by Eric Seidler

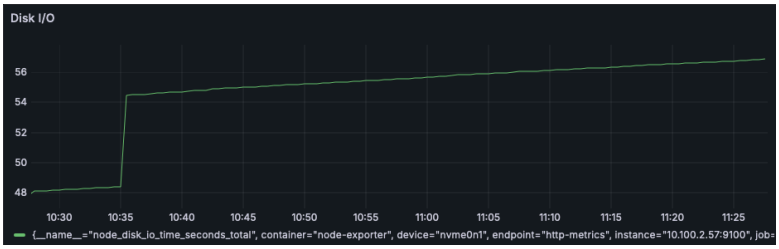
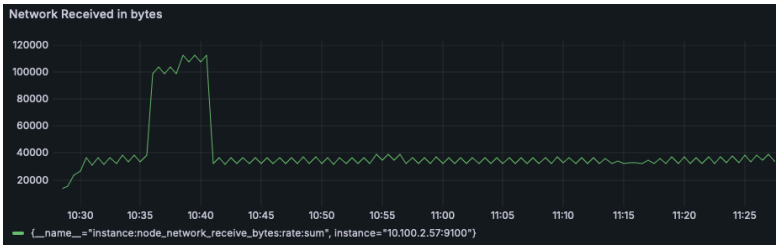
Categorize Responsibilities

Prometheus and Grafana Screenshots

Provide a screenshot of the Prometheus node_exporter service running on the EC2 instance. Use the following command to show that the system is running: `sudo systemctl status node_exporter`



Host Metric (CPU, RAM, Disk, Network)	Dashboard
instance:node_cpu:rate:sum	
node_memory_MemAvailable_bytes	

node_disk_io	
instance:node_network_receive_bytes:rate:sum	

Responsibilities

1. The development team wants to release an emergency hotfix to production. Identify two roles of the SRE team who would be involved in this and why.

Two roles of the SRE team that would be involved are someone specializing in Release Coordination and someone specializing in Postmortems. The former would make sure the emergency hotfix release is handled properly and communicated with the various involved parties. The latter would investigate what happened and take steps to help ensure the same problem does not happen again.

2. The development team is in the early stages of planning to build a new product. Identify two roles of the SRE team that should be invited to the meeting and why.

Invite one person who specializes in capacity planning, and one who specializes in monitoring and alerting. The person who specializes in capacity planning can help make sure the right infrastructure is spec'd out for the anticipated user base. The person who specializes in monitoring and alerting can make sure the new app has monitoring capabilities from the get-go instead of bolting it in later.

3. The emergency hotfix from question 1 was applied and is causing major issues in production. Which SRE role would primarily be involved in mitigating these issues?

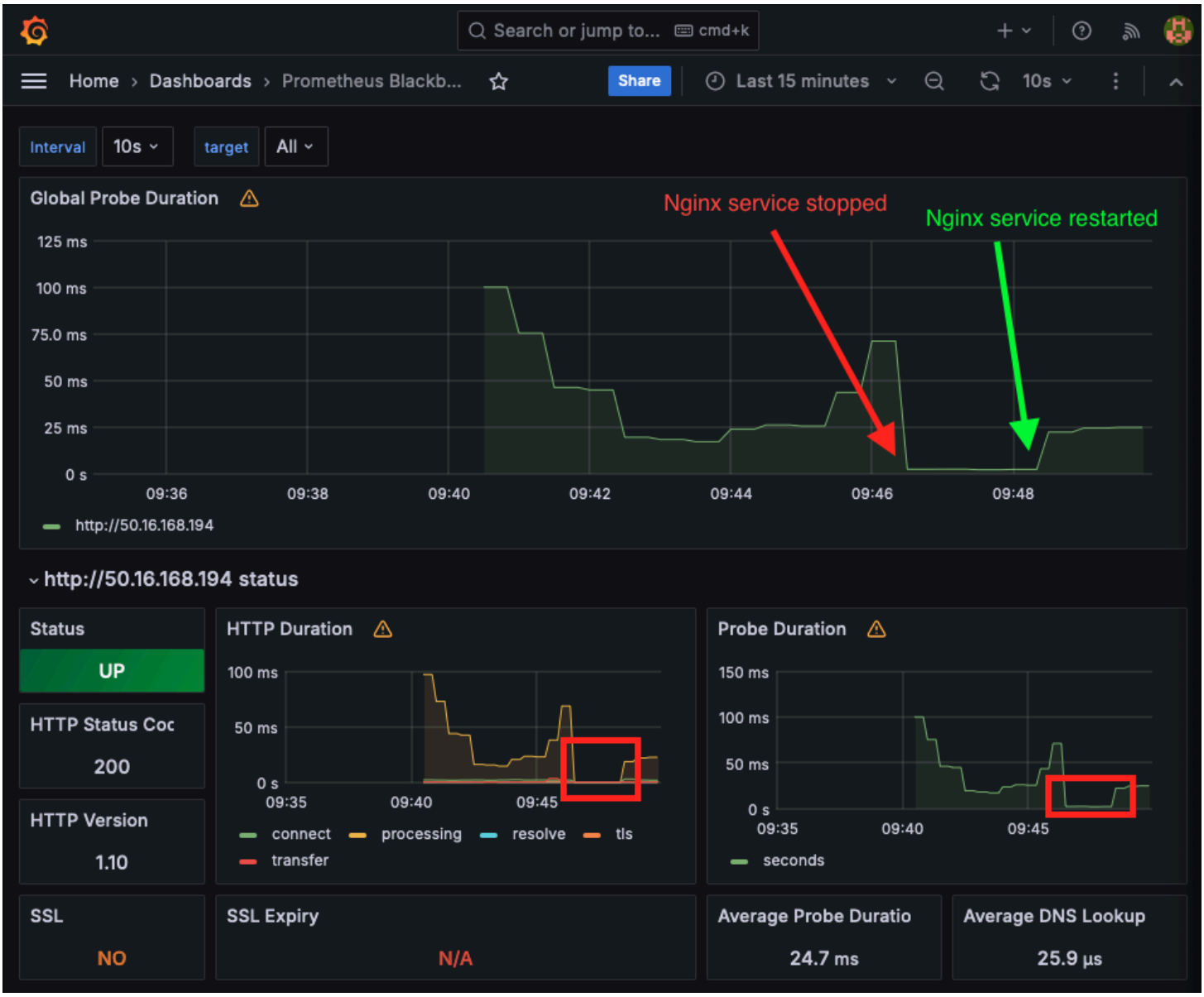
I'd say that someone who specializes in Incident Response should be involved in triaging and mitigating the issue, passing the various action items to the right team.

Team Formation and Workflow Identification

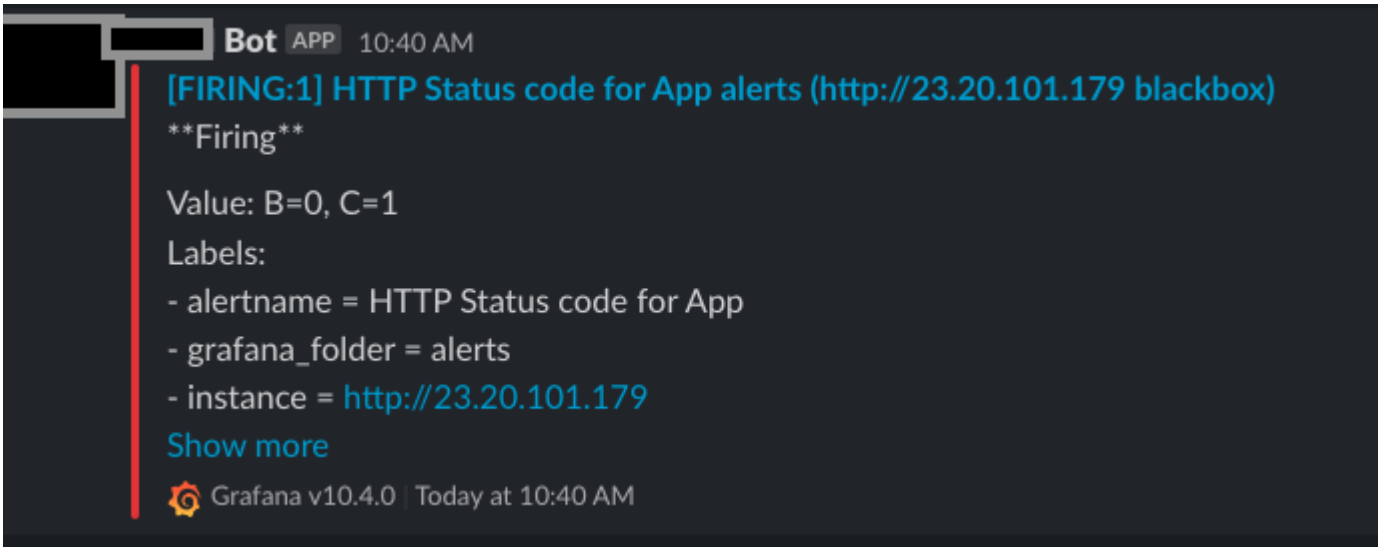
API Monitoring and Notifications

Display the status of an API endpoint: Provide a screenshot of the Grafana dashboard that will show at which point the API is unhealthy (non-200 HTTP code), and when it becomes healthy again (200 HTTP code).

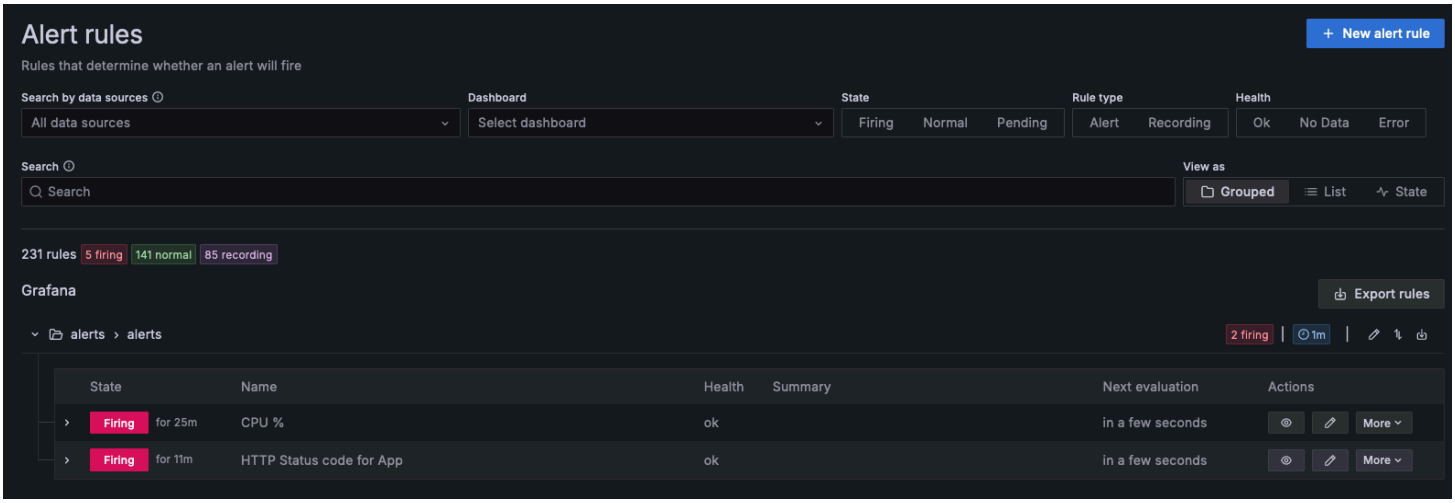
I simulated unhealthy by manually stopping and restarting the nginx service on the ec2 instance. Screenshot below.



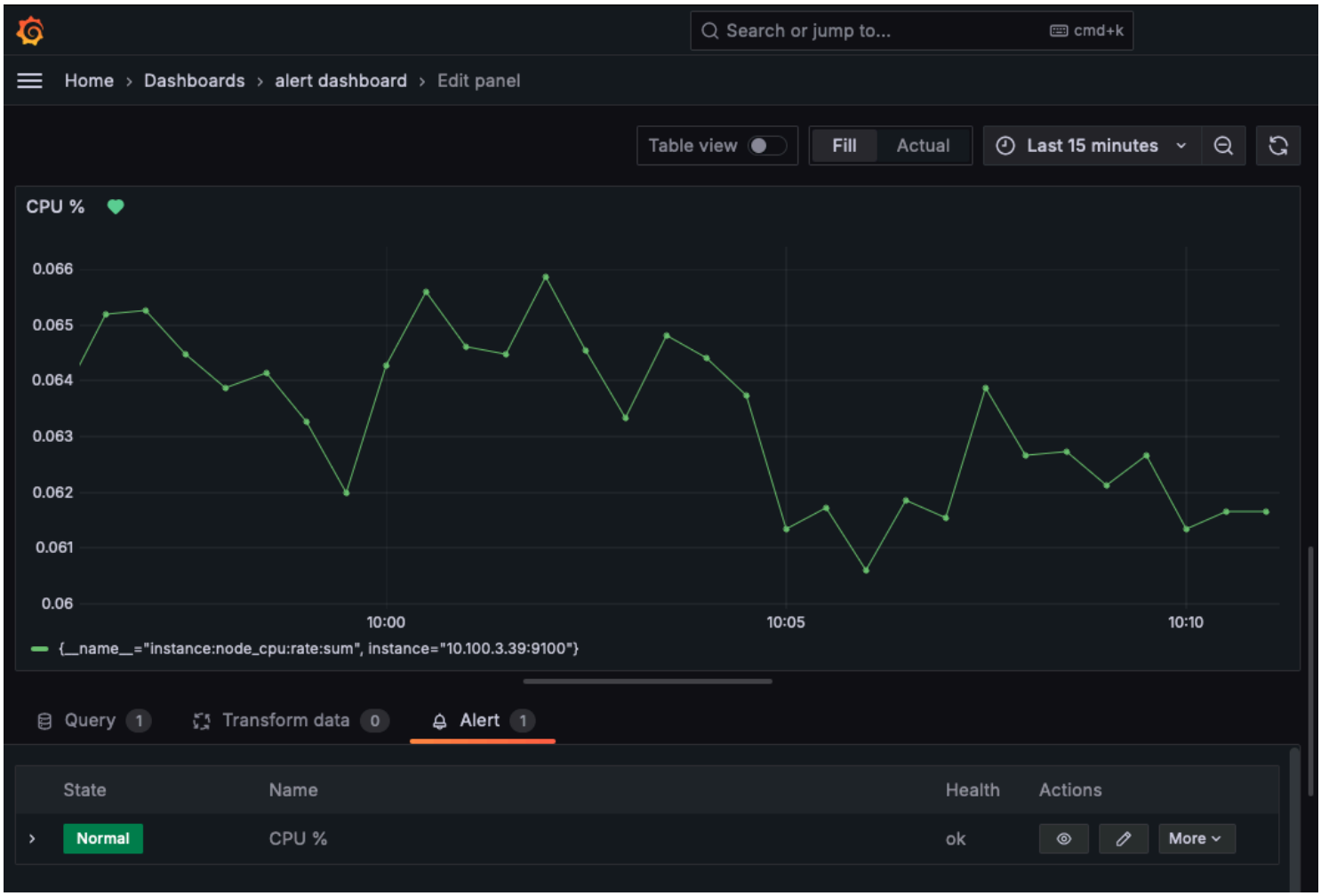
Create a notification channel: Provide a screenshot of the Grafana notification which shows the summary of the issue and when it occurred.

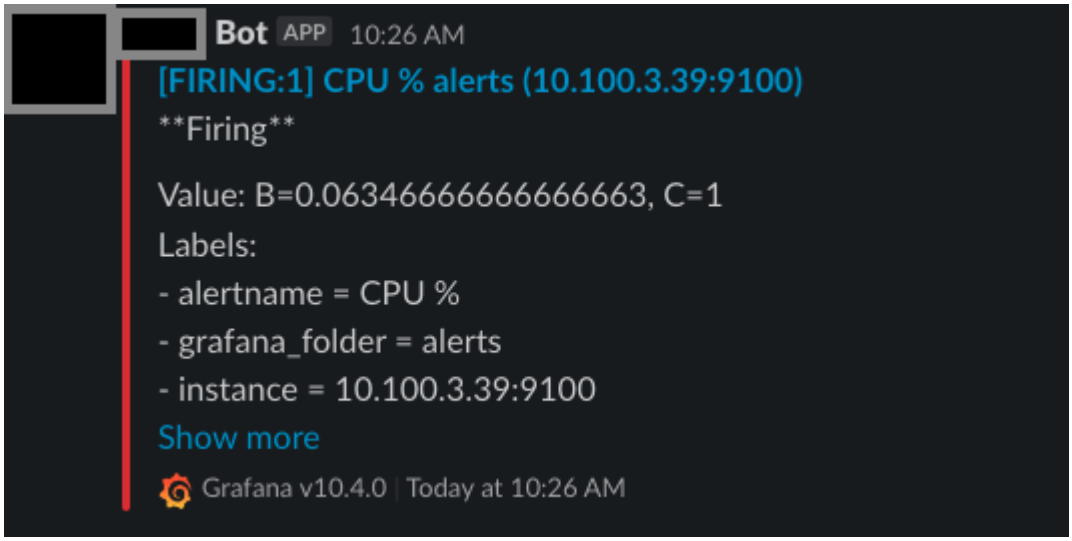


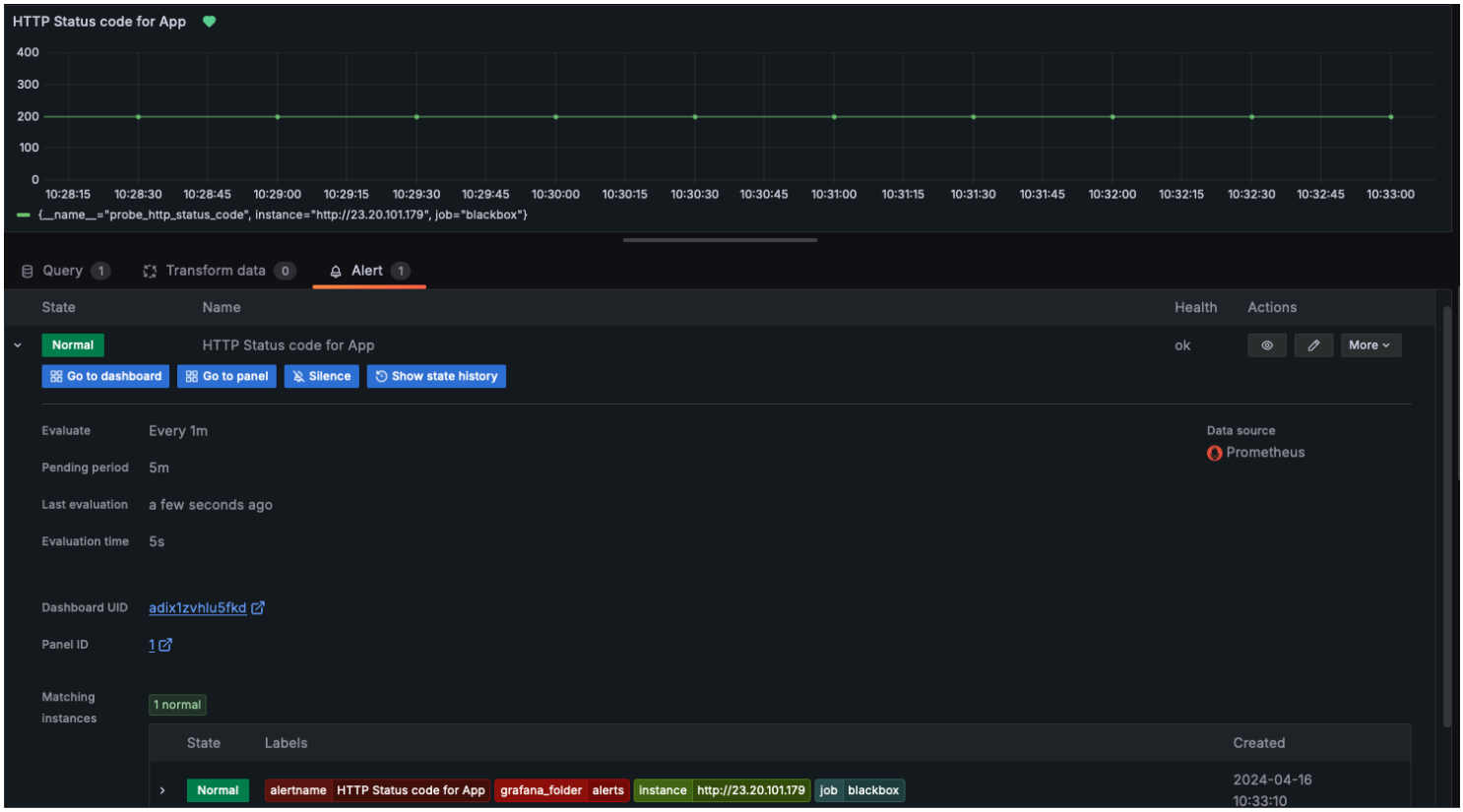
Configure alert rules: Provide a screenshot of the alert rules list in Grafana.

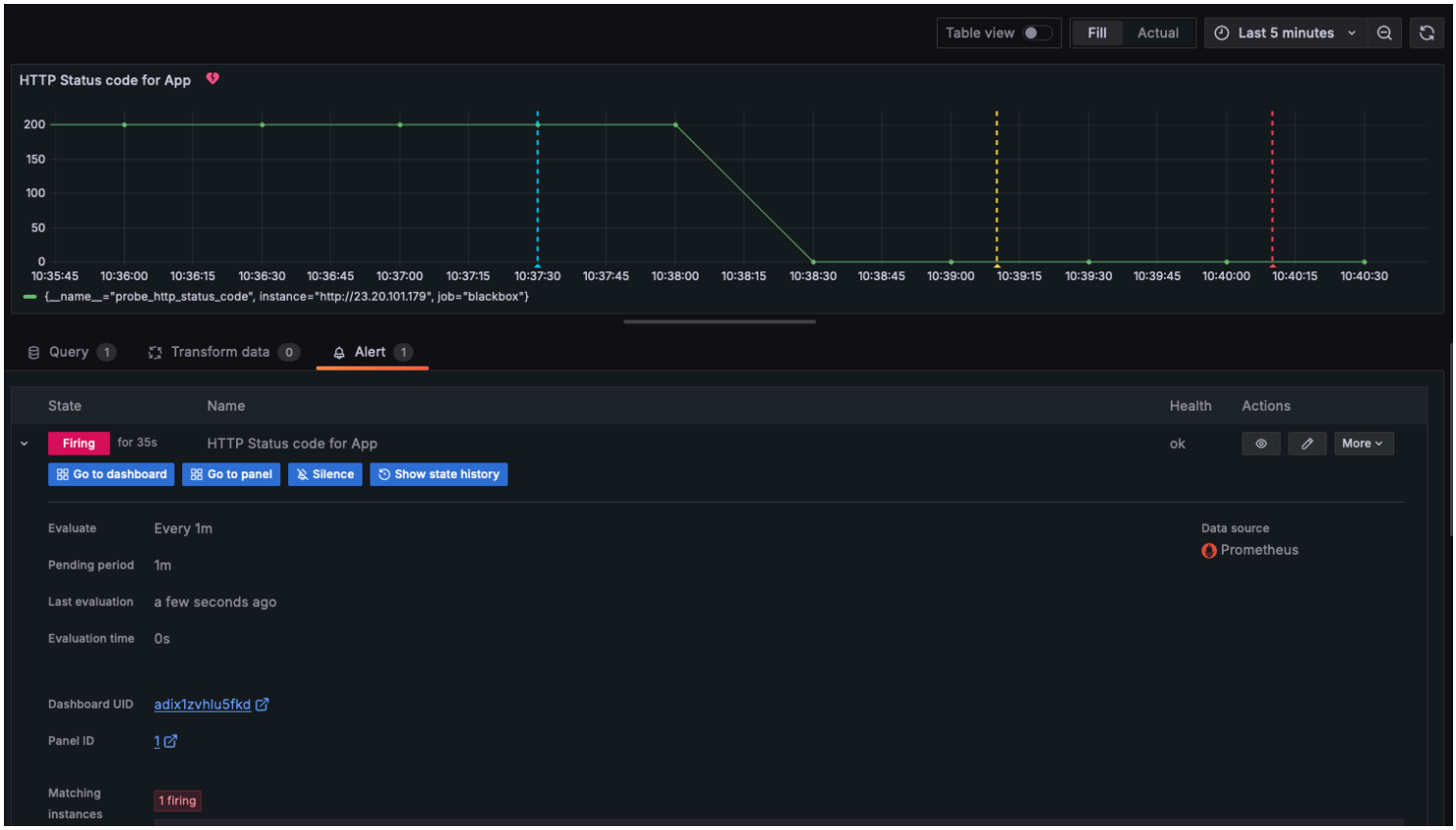


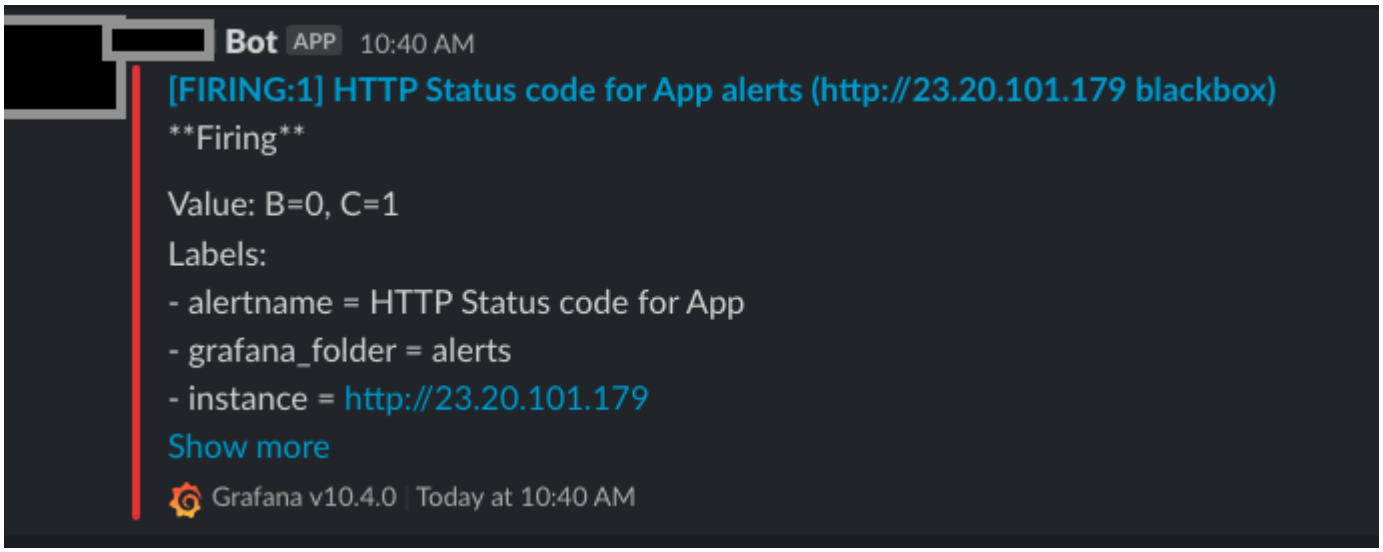
Extra Screenshots from the work in the last Section




Bot APP 10:26 AM
[FIRING:1] CPU % alerts (10.100.3.39:9100)
Firing
Value: B=0.06346666666666663, C=1
Labels:
- alertname = CPU %
- grafana_folder = alerts
- instance = 10.100.3.39:9100
Show more
Grafana v10.4.0 | Today at 10:26 AM

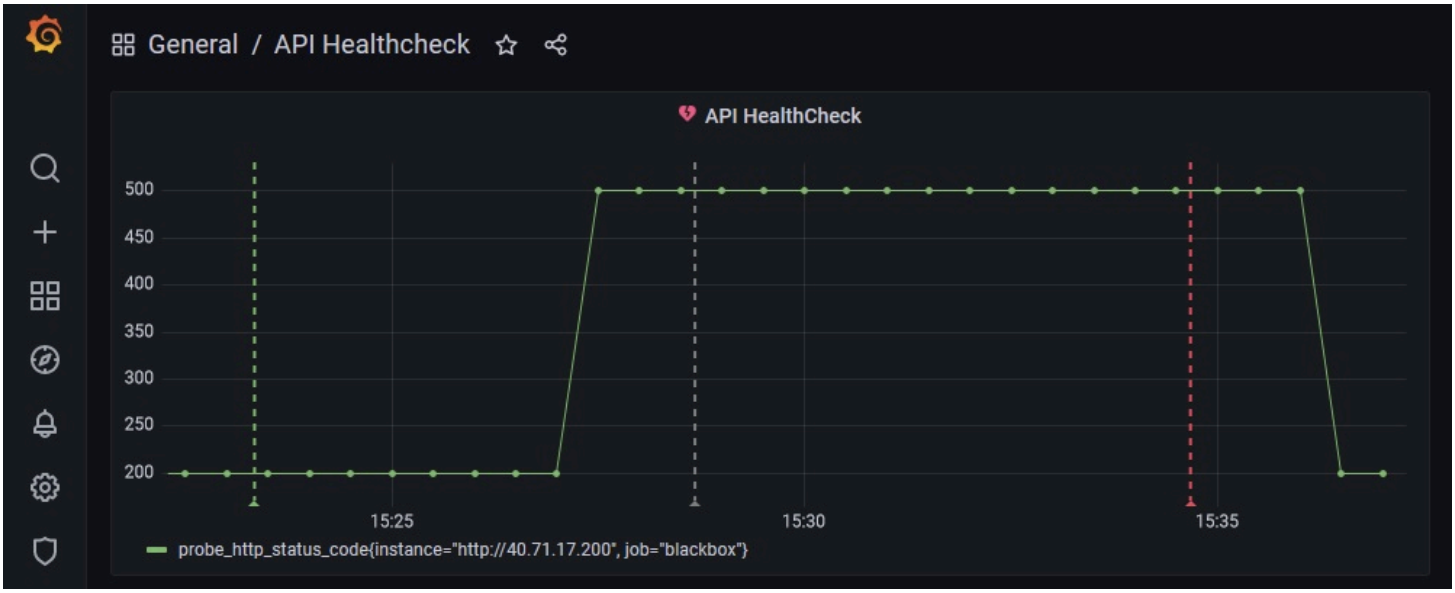

HTTP Status code for App
400
300
200
100
0
10:28:15 10:28:30 10:28:45 10:29:00 10:29:15 10:29:30 10:29:45 10:30:00 10:30:15 10:30:30 10:30:45 10:31:00 10:31:15 10:31:30 10:31:45 10:32:00 10:32:15 10:32:30 10:32:45 10:33:00
{__name__="probe_http_status_code", instance="http://23.20.101.179", job="blackbox"}
Query 1
Transform data 0
Alert 1
State
Name
Health
Actions
Normal
HTTP Status code for App
ok
More
Go to dashboard
Go to panel
Silence
Show state history
Evaluate
Every 1m
Pending period
5m
Last evaluation
a few seconds ago
Evaluation time
5s
Data source
Prometheus
Dashboard UID
adix1zvhlu5fkd
Panel ID
1
Matching instances
1 normal
State
Labels
Created
Normal
alertname HTTP Status code for App
grafana_folder alerts
instance http://23.20.101.179
job blackbox
2024-04-16 10:33:10





Applying the Concepts

Graph 1



4a. Given the above graph, where does it show that the API endpoint is down? Where on the graph does this show that the API is healthy again?

API endpoint is down when the green line bumps up from a value of 200 to a value of 500, between 15:25 and 15:30. API endpoint is healthy again on the right side of the graph where the green line drops from a value of 500 to a value of 200, after 15:35.

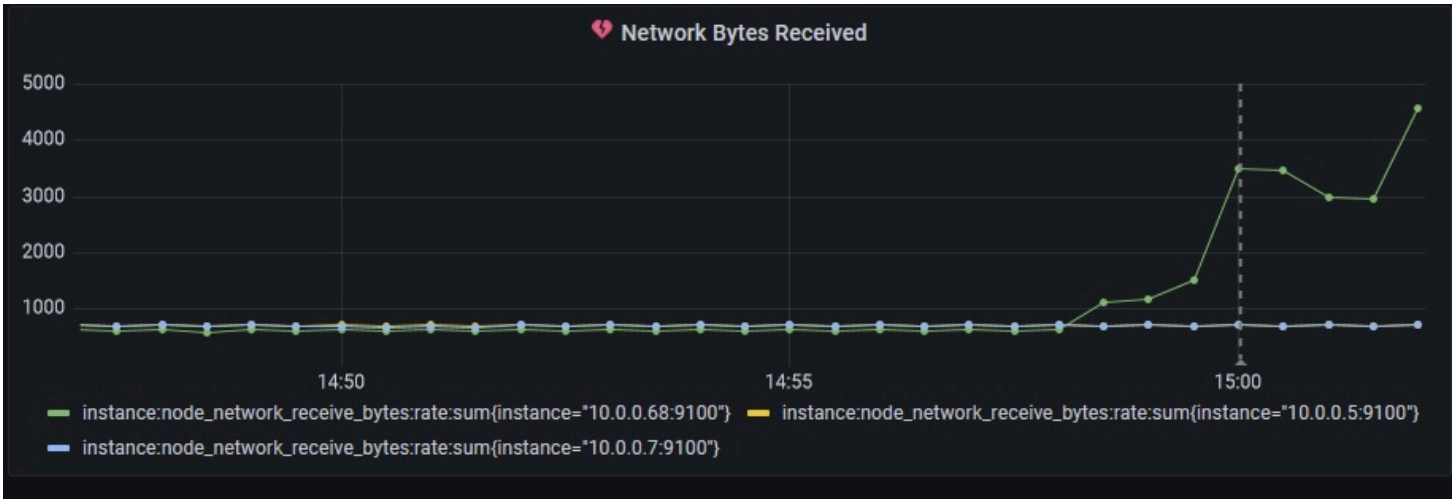
4b. If there was no SRE team, how would this outage affect customers?

The API would be unavailable until another team could figure out what happened, maybe the ops team. Furthermore, the customers might find out first because no one put alerting in place because management didn't want to pay for an SRE team.

4c. What could be put in place so that the SRE team could know of the outage before the customer does?

Alerting could be put in place so that the SRE team could know about the outage before customers.

Graph 2



5a. Given the above graph, which instance had the increase in traffic, and approximately how many bytes did it receive (feel free to round)?

The instance with IP 10.0.0.68 experienced the increase in traffic, ending at about 4,700 bytes received.

5b. Which team members on the SRE team would be interested in this graph and why?

The monitoring and alerting members and the incident response members would want to know about this so they could send out or create automated alerts and do a root-cause investigation, respectively.