Observing Cloud Resources

SRE Project Template - Marco Alfaro

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`

```
ubuntu@ip-10-100-12-130:/tmp$ sudo systemctl status node_exporter
● node_exporter.service - Node Exporter
   Loaded: loaded (/etc/systemd/system/node_exporter.service; enabled; vendor pr
   Active: active (running) since Sun 2024-09-01 22:15:20 UTC; 7s ago
 Main PID: 7852 (node_exporter)
    Tasks: 4 (limit: 1109)
   CGroup: /system.slice/node_exporter.service
           └─7852 /usr/local/bin/node_exporter

Sep 01 22:15:20 ip-10-100-12-130 node_exporter[7852]: level=info ts=2024-09-01T2
Sep 01 22:15:20 ip-10-100-12-130 node_exporter[7852]: level=info ts=2024-09-01T2
Sep 01 22:15:20 ip-10-100-12-130 node_exporter[7852]: level=info ts=2024-09-01T2
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Sep 01 22:15:20 ip-10-100-12-130 node_exporter[7852]: level=info ts=2024-09-01T2
```
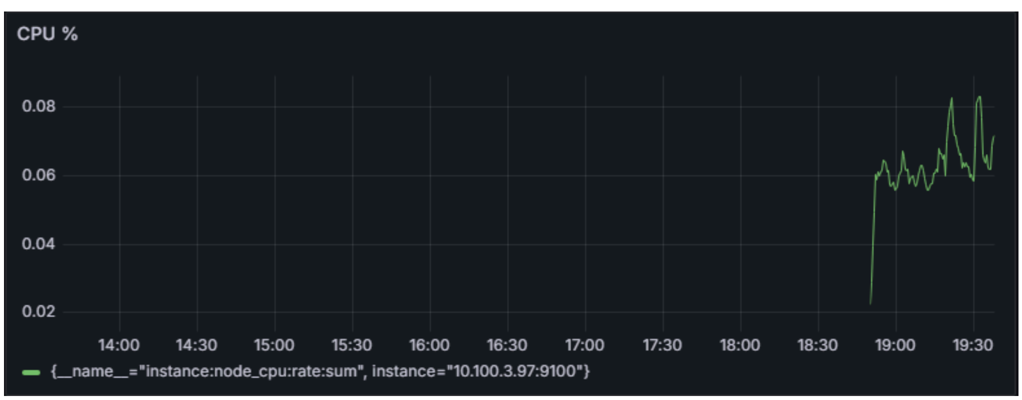
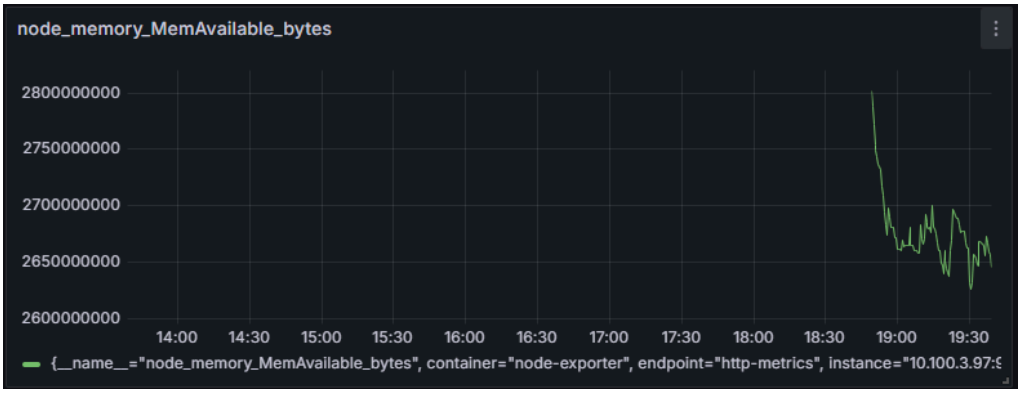
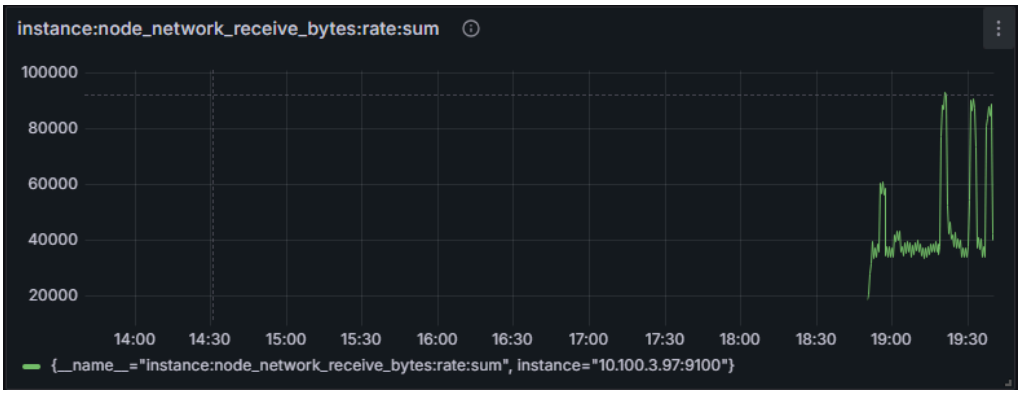

Host Metric (CPU, RAM, Disk, Network)	**Dashboard**
CPU	

Node Mem	
Node Disk	
Network	

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.

The two essential roles required are the Release Manager, who oversees change management and code releases, and the Monitoring Engineer, who typically is the first to become aware of an incident. The Monitoring Engineer can utilize monitoring tools to either anticipate or promptly notify the team in the event of issues.

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.

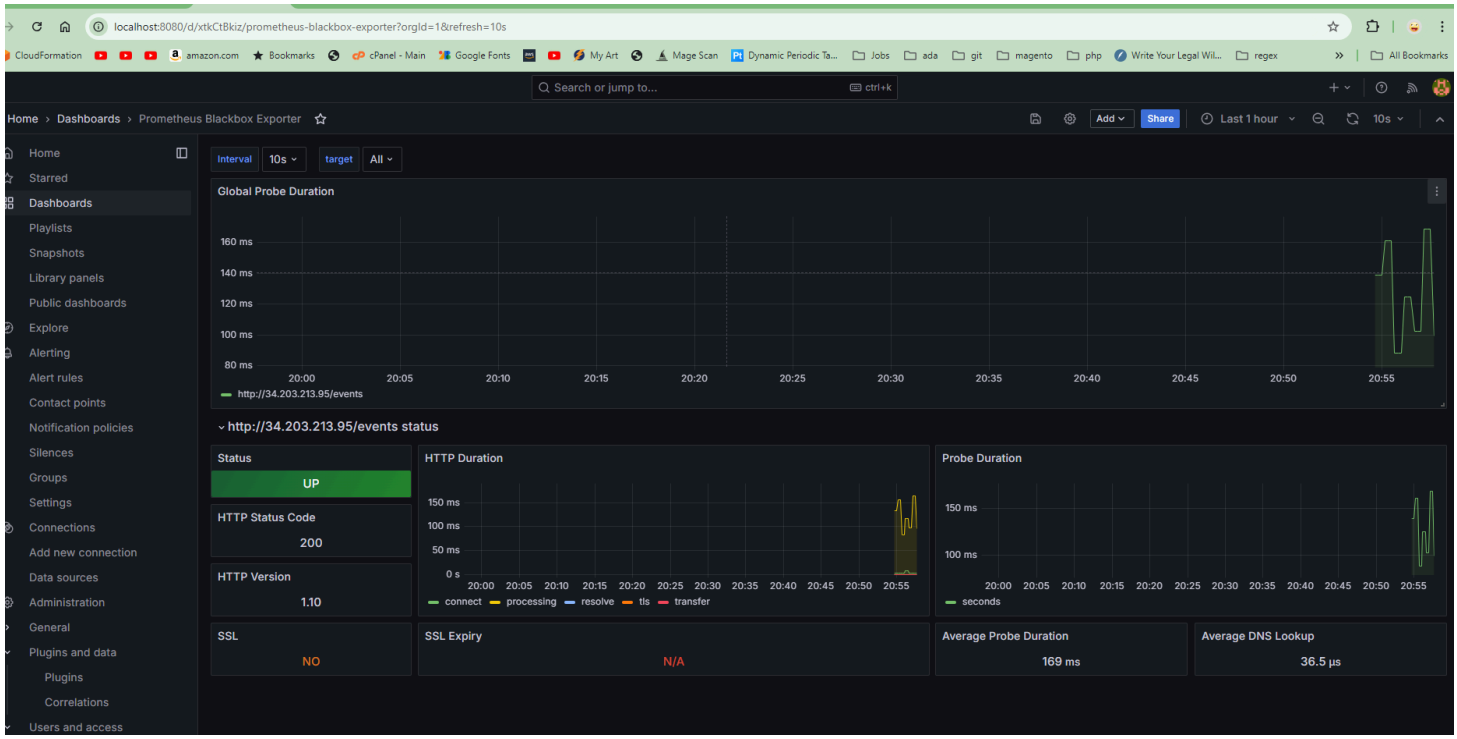
"I'm not sure if this applies, but you might need at least three team members to plan a new product build effectively. The Team Lead should definitely be included, as his input is essential and he needs to be kept informed. The next critical role is the Systems Architect, who will make recommendations and help design the

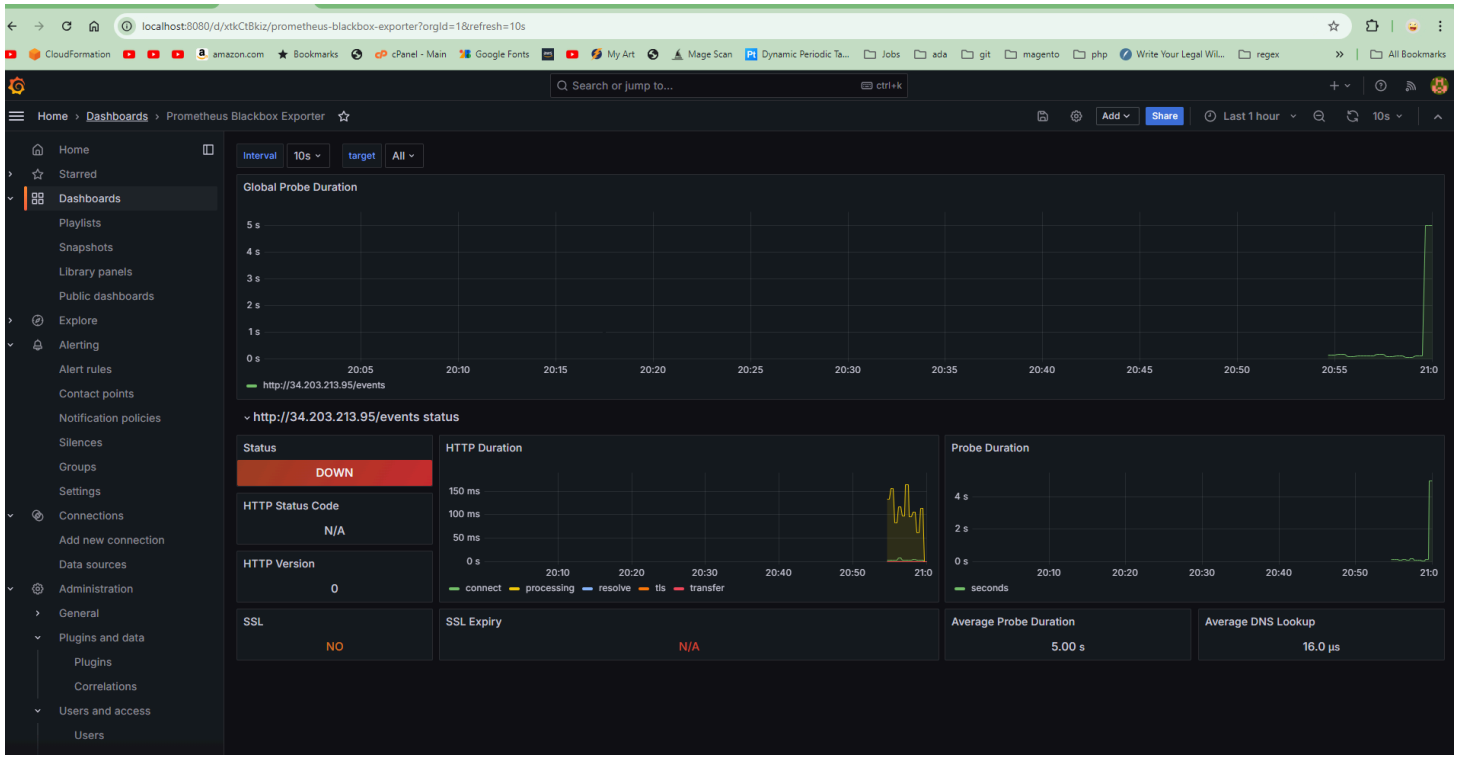
architecture of the new product. Lastly, the Infrastructure Engineer's input is necessary for deciding what needs to be provisioned and how, according to the design of the new product.
3. The emergency hotfix from question 1 was applied and is causing major issues in production. Which SRE role would primarily be involved in mitigating these issues?
First and foremost, the Release Engineer should be considered as he is best equipped to decide if a rollback is necessary.

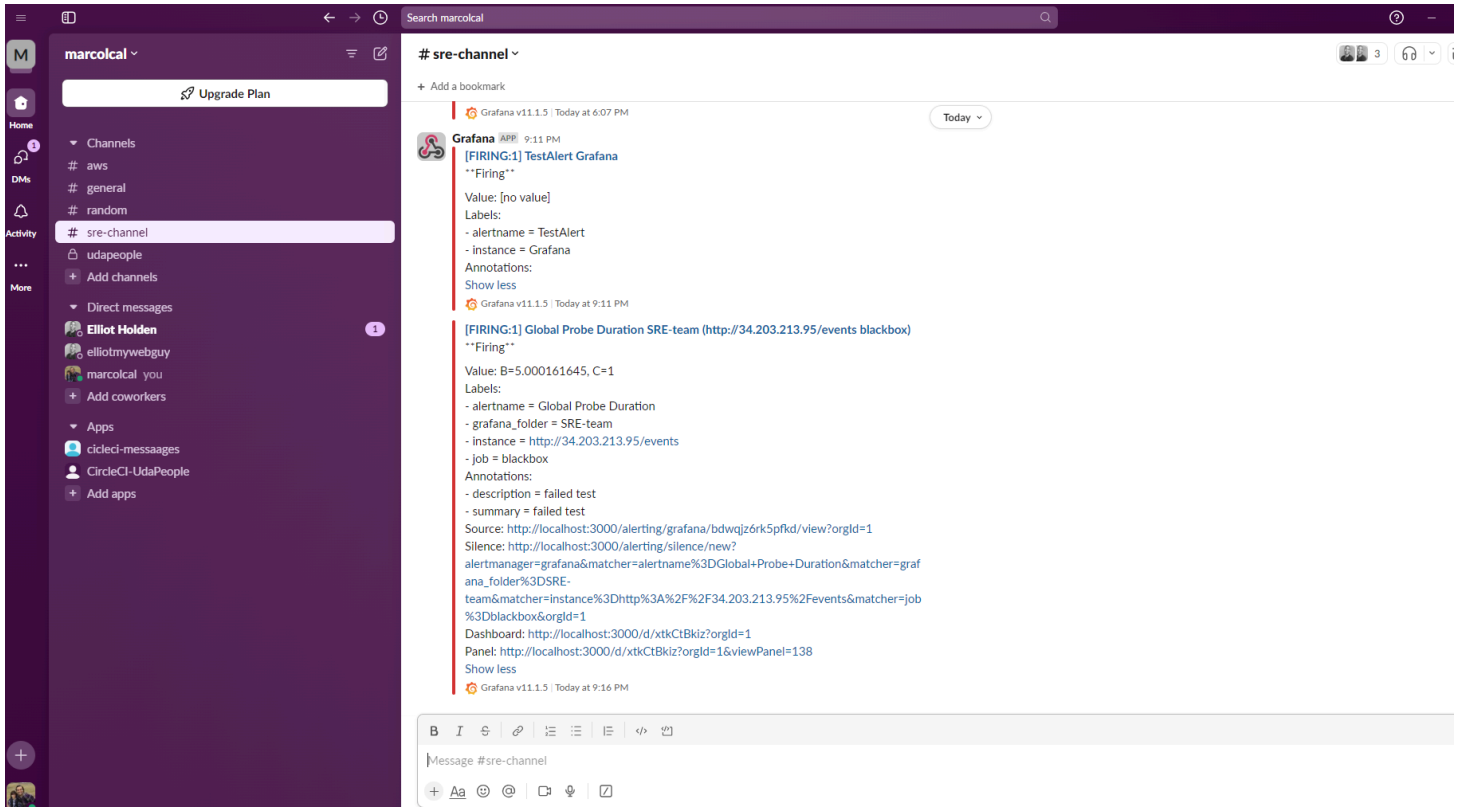
Team Formation and Workflow Identification

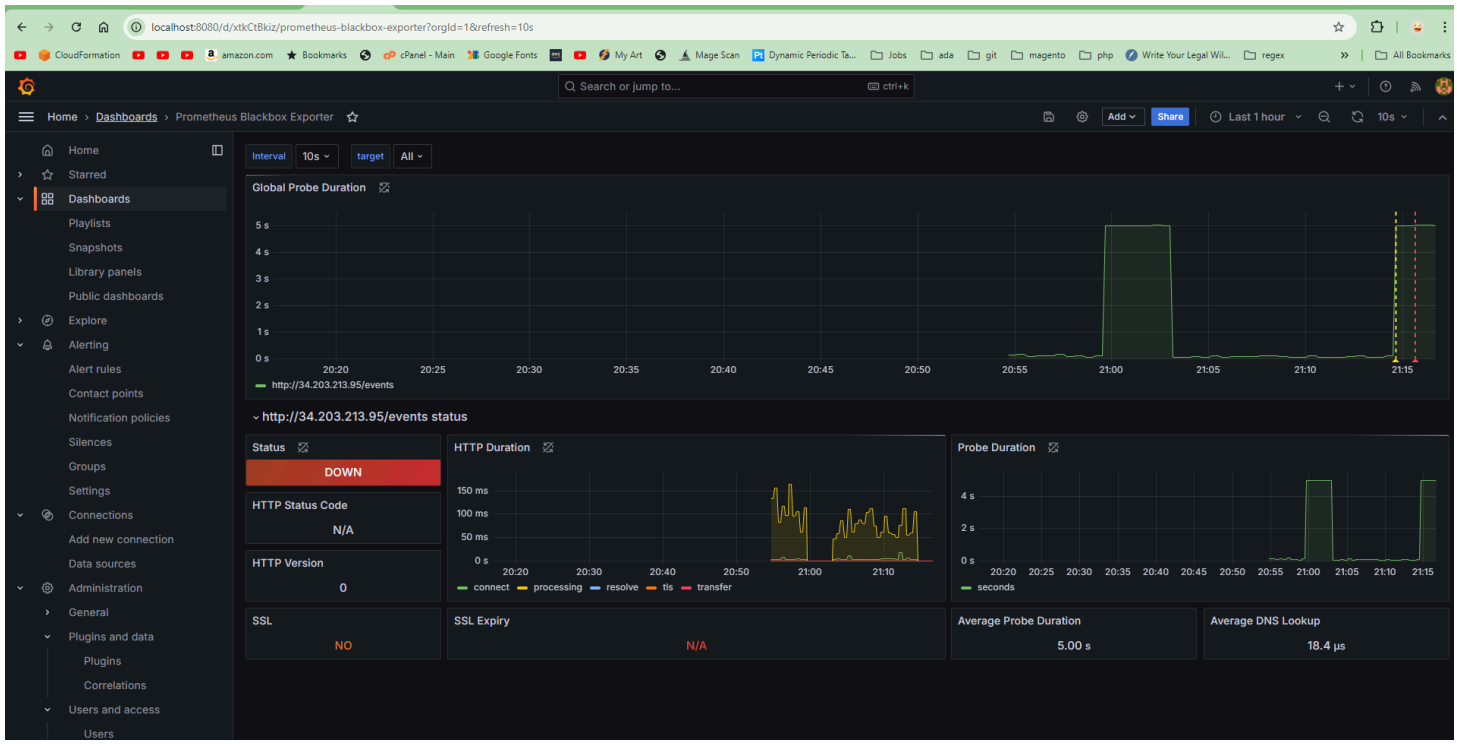
API Monitoring and Notifications

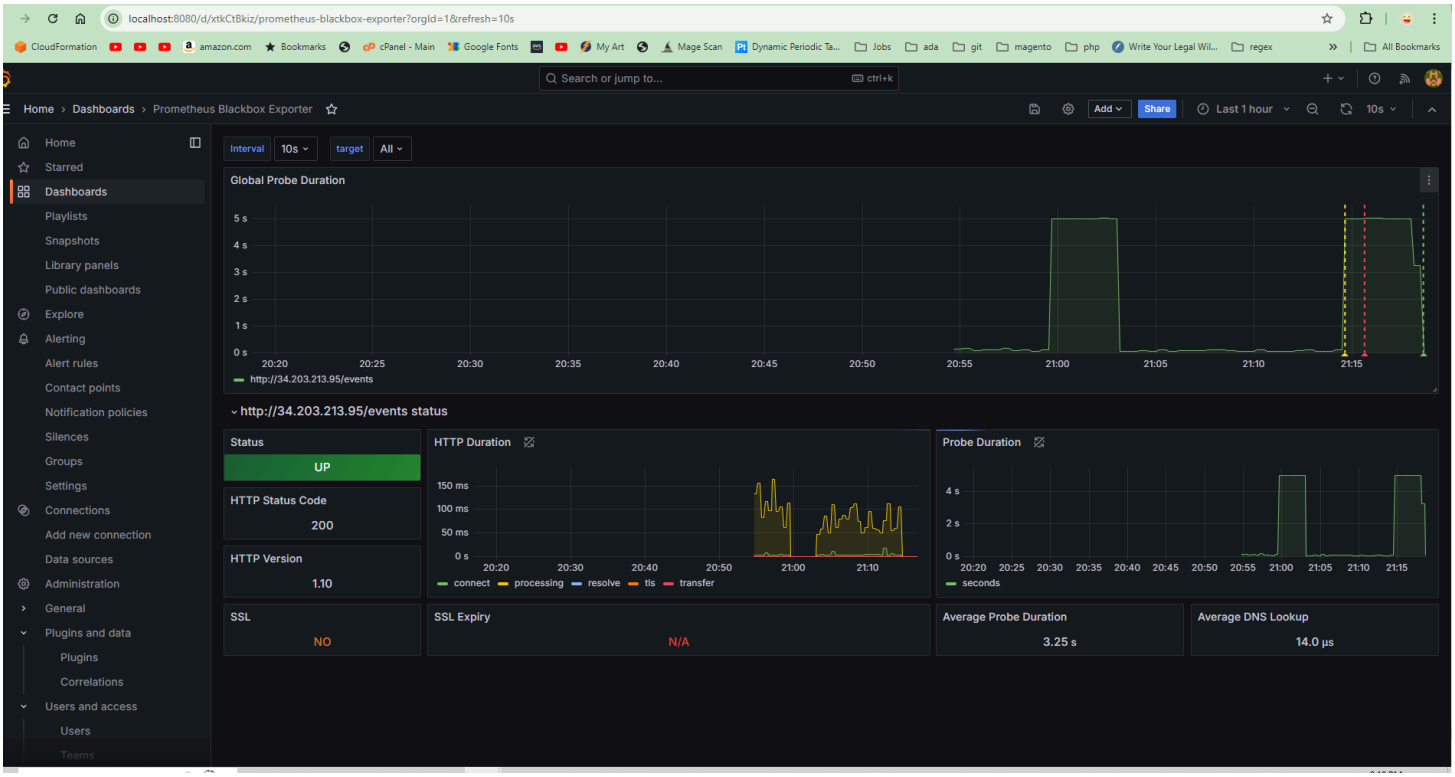
Display the status of an API endpoint: Provide a screenshot of the Grafana dashboard that will show at which point the API is unhealthy (non-200 HTTP code), and when it becomes healthy again (200 HTTP code).



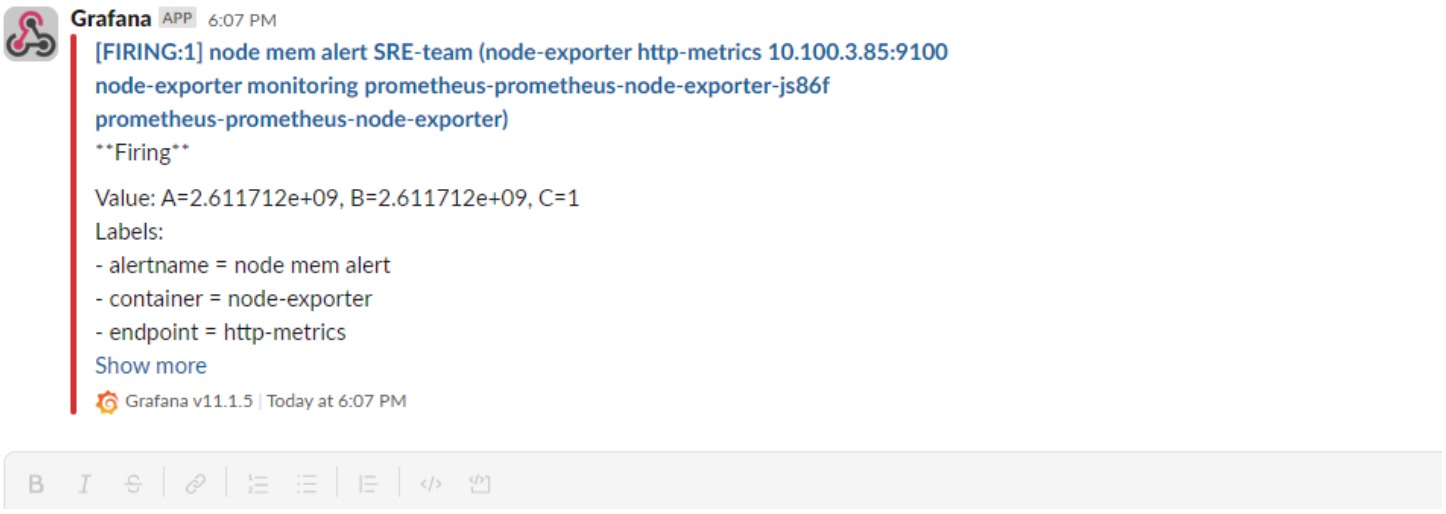



Search marcolcal
marcolcal
Upgrade Plan
Home
DMs
Activity
More
Channels
aws
general
random
sre-channel
udapeople
Add channels
Direct messages
Elliot Holden
elliotmywebguy
marcolcal you
Add coworkers
Apps
cicleci-messaages
CircleCI-UdaPeople
Add apps
sre-channel
Add a bookmark
Grafana v11.1.5 | Today at 6:07 PM
Today
Grafana APP 9:11 PM
[FIRING:1] TestAlert Grafana
Firing
Value: [no value]
Labels:
- alertname = TestAlert
- instance = Grafana
Annotations:
Show less
Grafana v11.1.5 | Today at 9:11 PM
[FIRING:1] Global Probe Duration SRE-team (http://34.203.213.95/events blackbox)
Firing
Value: B=5.000161645, C=1
Labels:
- alertname = Global Probe Duration
- grafana_folder = SRE-team
- instance = http://34.203.213.95/events
- job = blackbox
Annotations:
- description = failed test
- summary = failed test
Source: http://localhost:3000/alerting/grafana/bdwqjz6rk5pfkd/view?orgId=1
Silence: http://localhost:3000/alerting/silence/new?alertmanager=grafana&matcher=alertname%3DGlobal+Probe+Duration&matcher=grafana_folder%3DSRE-team&matcher=instance%3Dhttp%3A%2F%2F34.203.213.95%2Fevents&matcher=job%3Dblackbox&orgId=1
Dashboard: http://localhost:3000/d/xtkCtBkiz?orgId=1
Panel: http://localhost:3000/d/xtkCtBkiz?orgId=1&viewPanel=138
Show less
Grafana v11.1.5 | Today at 9:16 PM
Message #sre-channel

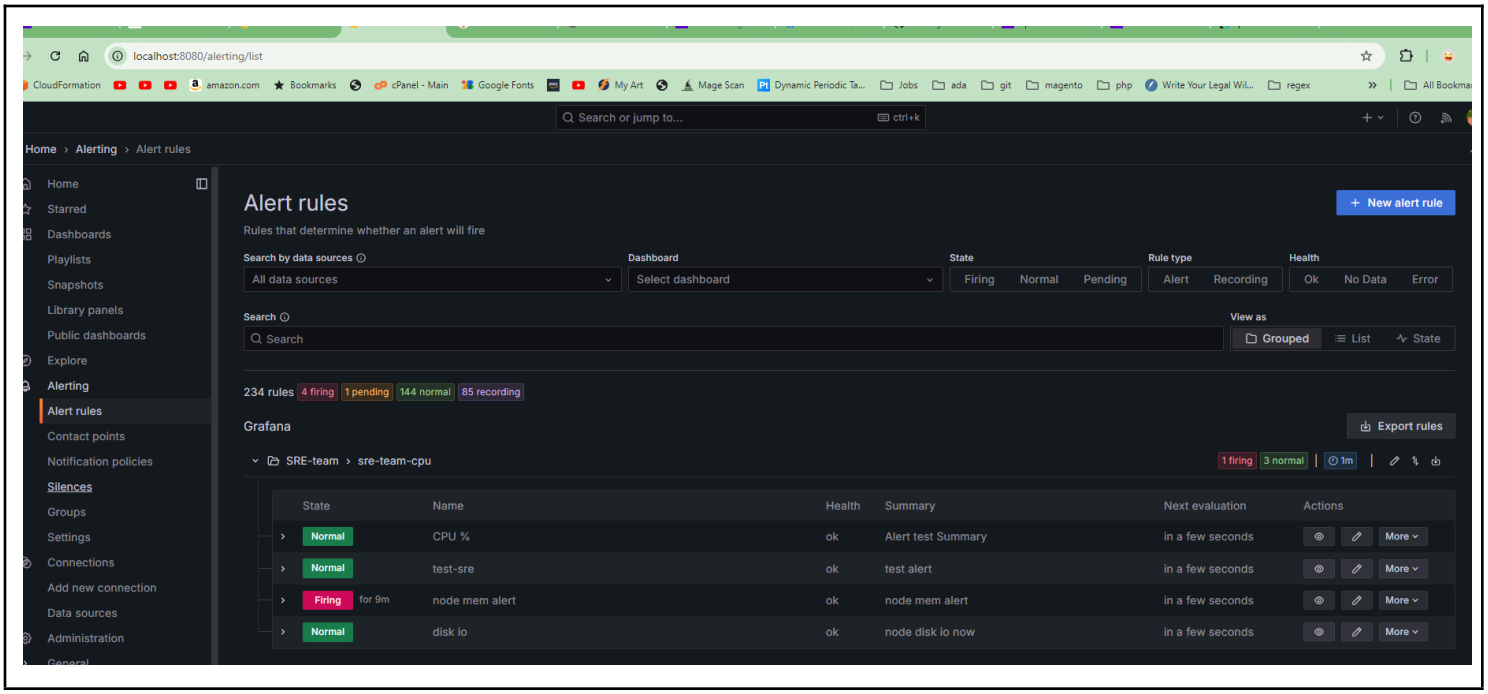

localhost:8080/d/xtkCtBkiz/prometheus-blackbox-exporter?orgId=1&refresh=10s
Search or jump to...
Home › Dashboards › Prometheus Blackbox Exporter
Add
Share
Last 1 hour
10s
Interval
10s
target
All
Global Probe Duration
http://34.203.213.95/events
http://34.203.213.95/events status
Status
DOWN
HTTP Status Code
N/A
HTTP Version
0
HTTP Duration
connect
processing
resolve
tls
transfer
Probe Duration
seconds
SSL
NO
SSL Expiry
N/A
Average Probe Duration
5.00 s
Average DNS Lookup
18.4 µs
Home
Starred
Dashboards
Playlists
Snapshots
Library panels
Public dashboards
Explore
Alerting
Alert rules
Contact points
Notification policies
Silences
Groups
Settings
Connections
Add new connection
Data sources
Administration
General
Plugins and data
Plugins
Correlations
Users and access
Users



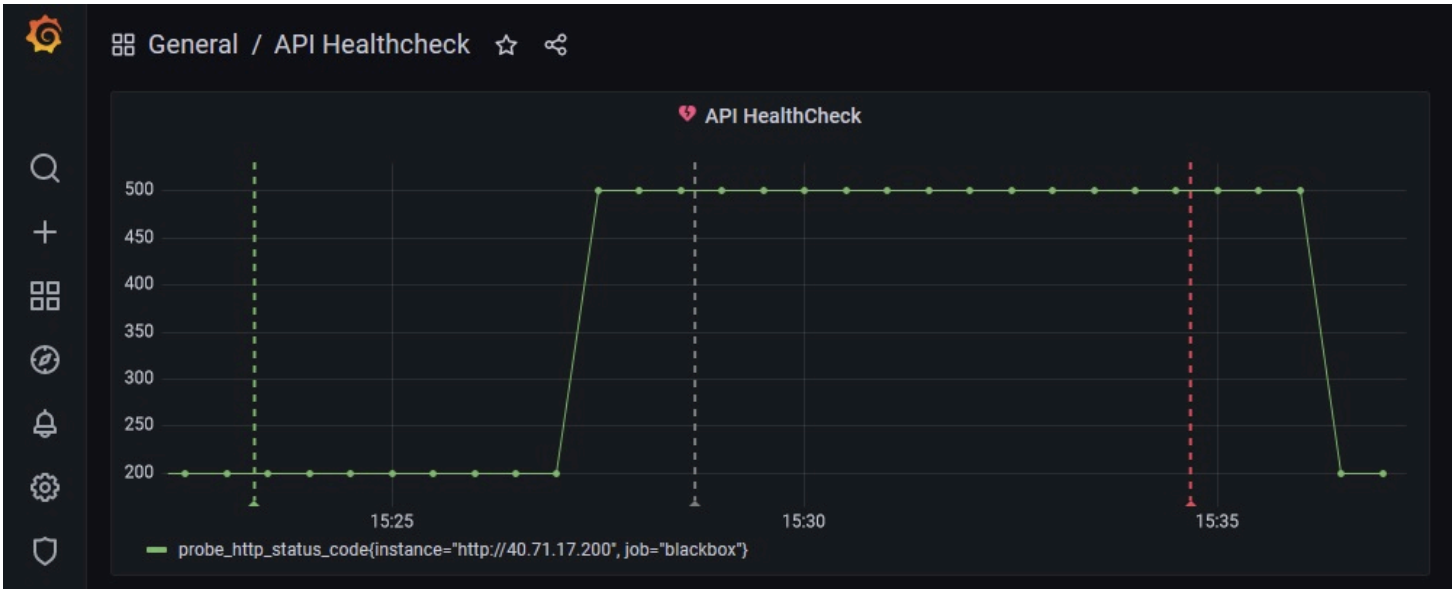
Create a notification channel: Provide a screenshot of the Grafana notification which shows the summary of the issue and when it occurred.



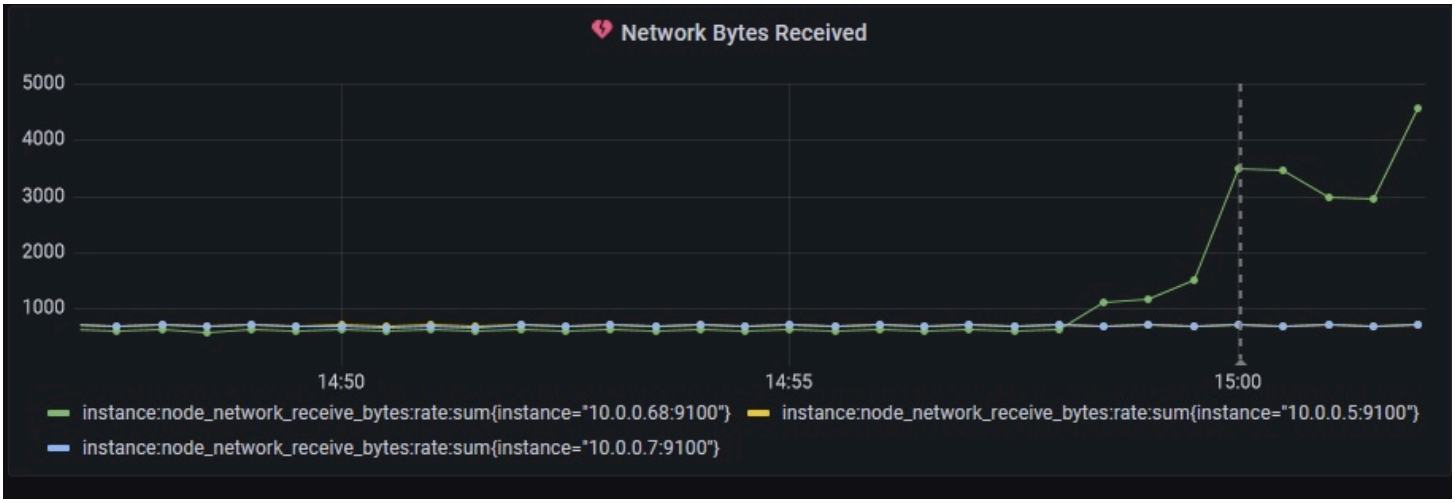
Configure alert rules: Provide a screenshot of the alert rules list in Grafana.


localhost:8080/alerting/list
Search or jump to... ctrl+k
Home › Alerting › Alert rules
Home
Starred
Dashboards
Playlists
Snapshots
Library panels
Public dashboards
Explore
Alerting
Alert rules
Contact points
Notification policies
Silences
Groups
Settings
Connections
Add new connection
Data sources
Administration
Alert rules
Rules that determine whether an alert will fire
New alert rule
Search by data sources
All data sources
Dashboard
Select dashboard
State
Firing Normal Pending
Rule type
Alert Recording
Health
Ok No Data Error
Search
Search
View as
Grouped List State
234 rules 4 firing 1 pending 144 normal 85 recording
Grafana
Export rules
SRE-team › sre-team-cpu
1 firing 3 normal 1m
State Name Health Summary Next evaluation Actions
Normal CPU % ok Alert test Summary in a few seconds More
Normal test-sre ok test alert in a few seconds More
Firing for 9m node mem alert ok node mem alert in a few seconds More
Normal disk io ok node disk io now in a few seconds More

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?
The API endpoint is down aprox 15:27, and it shows that is healthy again between 15:36 and 15:37
4b. If there was no SRE team, how would this outage affect customers?
This would have the site inaccessible by customer for aprox 9 minutes assuming that someone would have ever found out at the same rate as the SRE team would is hard to believe.
4c. What could be put in place so that the SRE team could know of the outage before the customer does?
Various proactive monitoring and alerting mechanisms can be implemented, like infrastructure and log monitoring.

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 was 10.0.0.68 and it received about 3500 bytes.

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

I would probably name two teams: the Monitoring Engineers and the Release Engineers. Both could analyze the data to understand the probability and reflect on what caused the spike.