Observing Cloud Resources

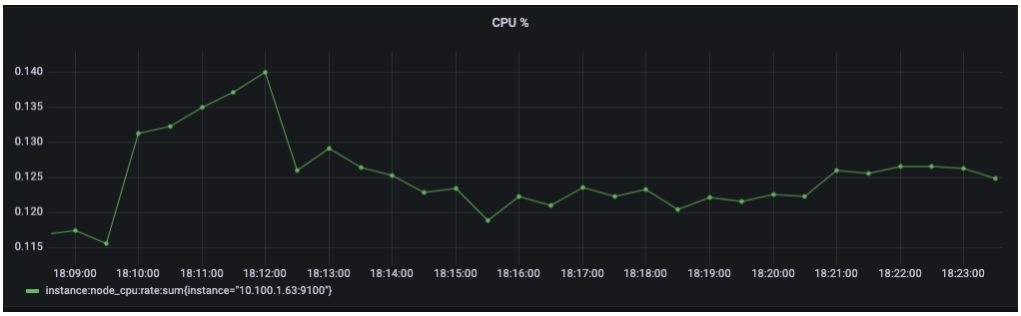
SRE Project Template

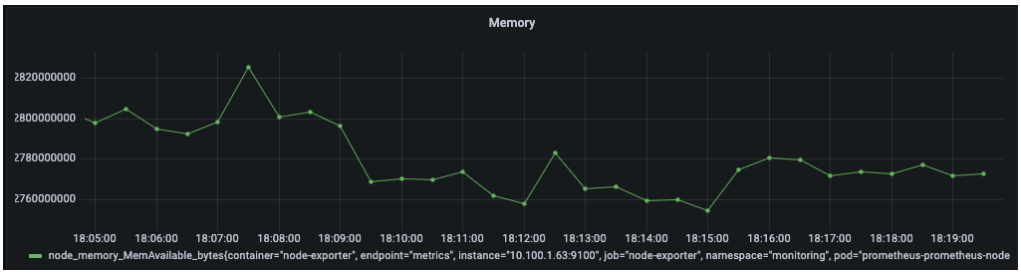
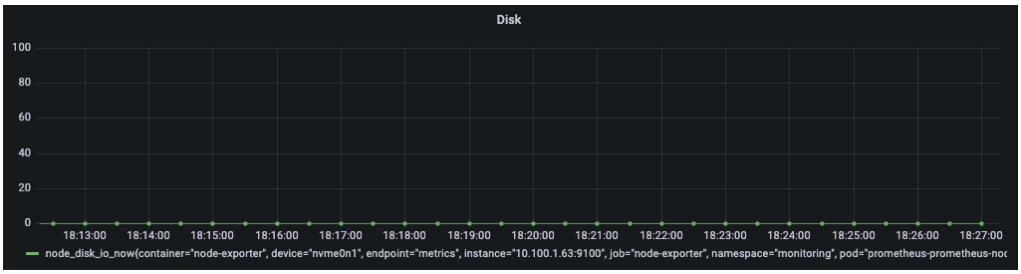
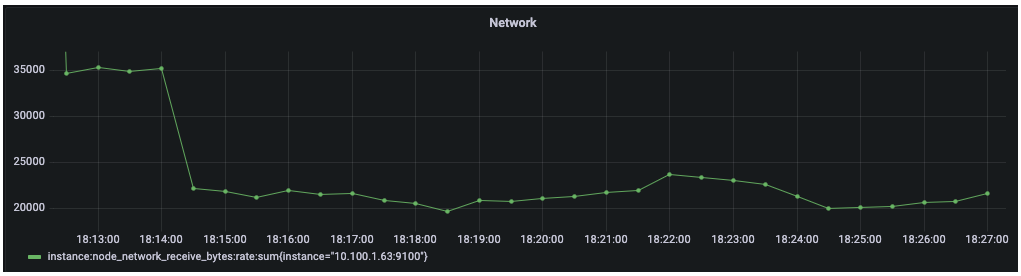
Categorize Responsibilities

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-10-100-10-114:~$ sudo systemctl status node_exporter
● node_exporter.service - Node Exporter
   Loaded: loaded (/etc/systemd/system/node_exporter.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-01-12 23:24:15 UTC; 1h 6min ago
 Main PID: 4552 (node_exporter)
    Tasks: 4 (limit: 1109)
   CGroup: /system.slice/node_exporter.service
           └─4552 /usr/local/bin/node_exporter

Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=thermal_zone
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=time
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=timex
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=udp_queues
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=uname
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=vmstat
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=xfs
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=zfs
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:199 msg="Listening on" address=:9100
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.799Z caller=tls_config.go:191 msg="TLS is disabled." http2=false
ubuntu@ip-10-100-10-114:~$
```

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

RAM	
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.

Release Manager: to execute release and rollback if needed
Monitoring Engineer: create dashboards to monitor the fix

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.

System Architect: recommend technologies, design scalable infrastructure
Infrastructure Engineer: plan/estimate ops tasks

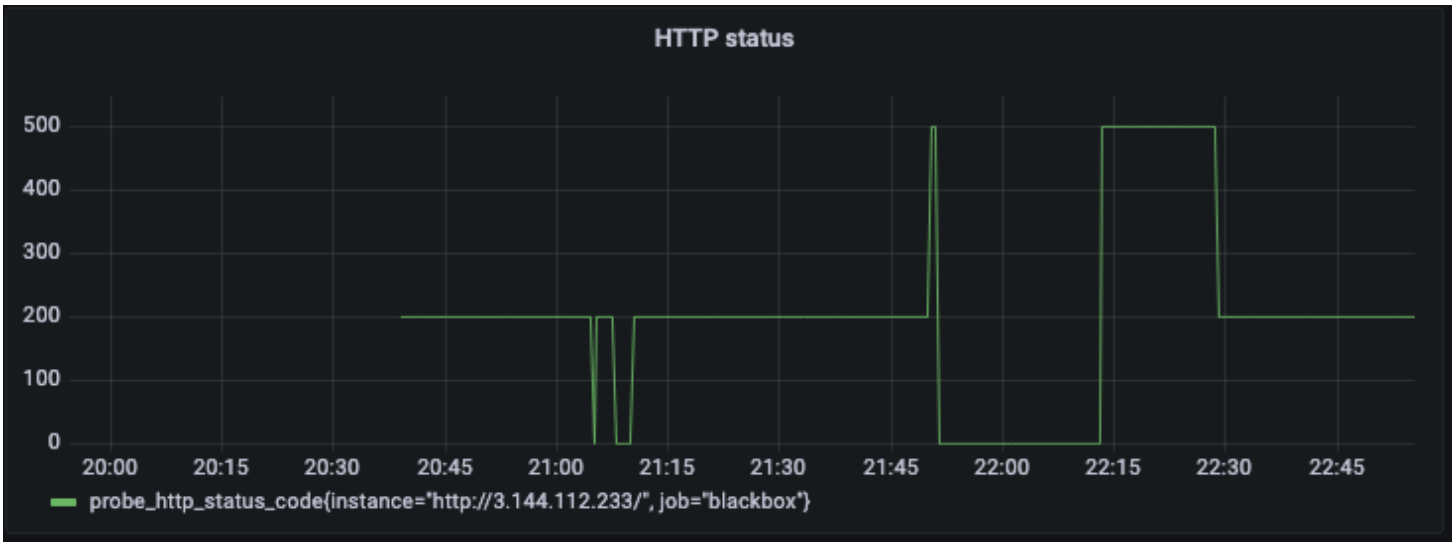
3. The emergency hotfix from question 1 was applied and is causing major issues in production. Which SRE role would primarily be involved in mitigating these issues?

Release manager: to rollback the release

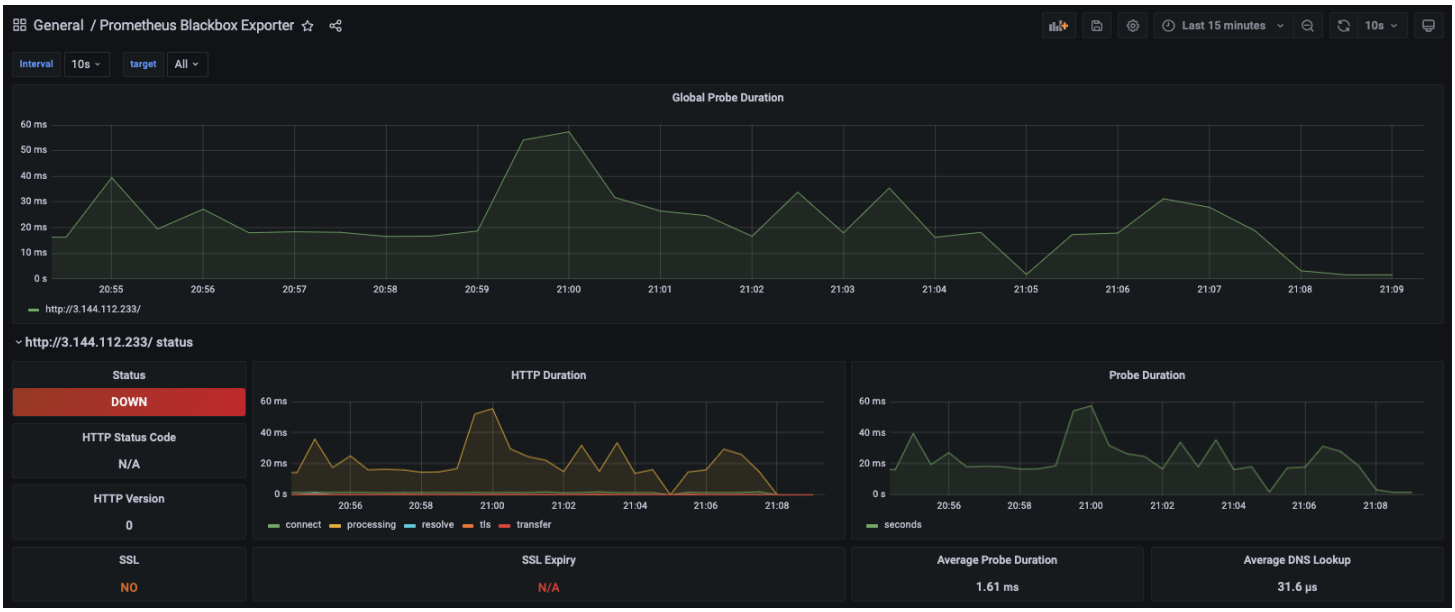
Team Formation and Workflow Identification

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).

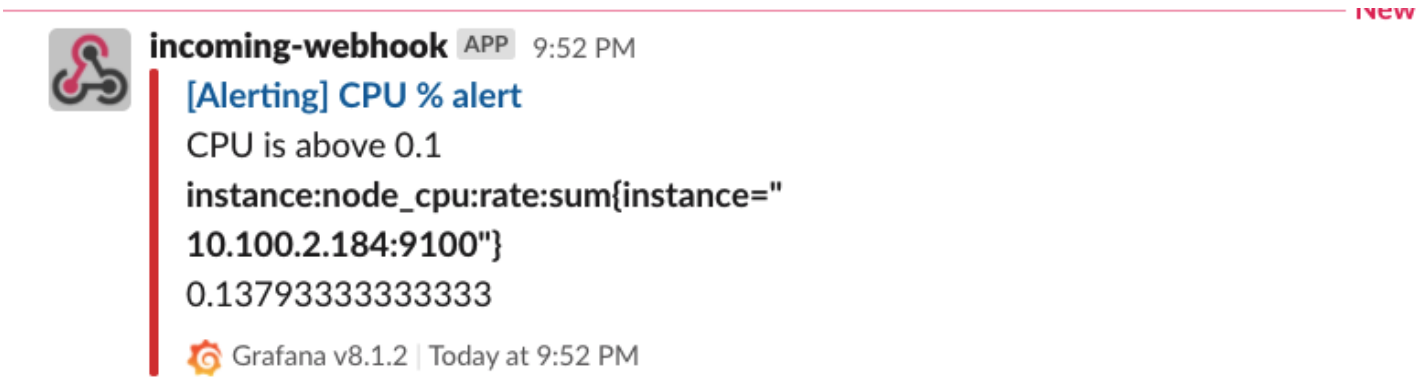


sudo systemctl stop nginx at 21:08 for 2 minutes

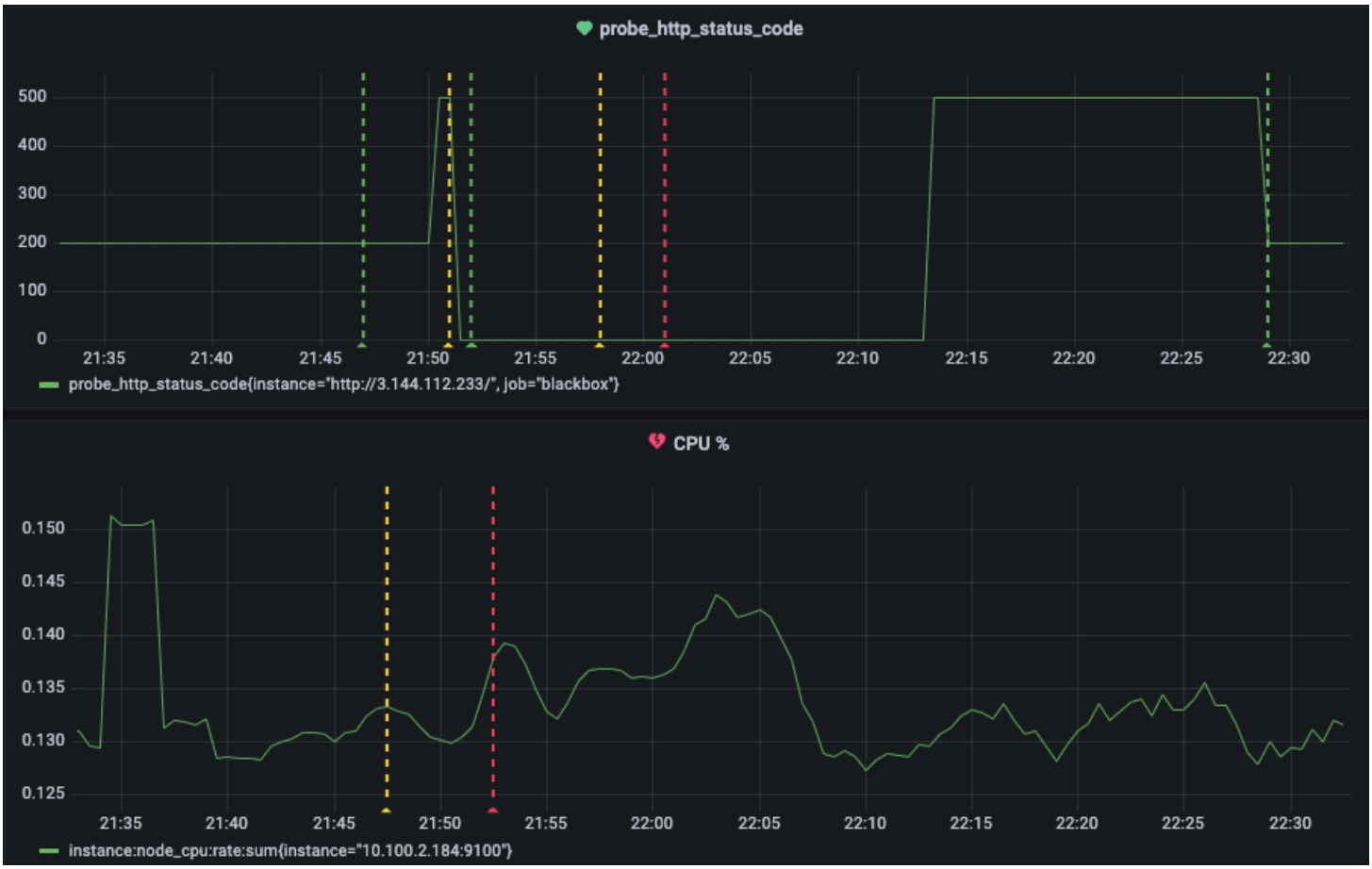


sudo systemctl start nginx

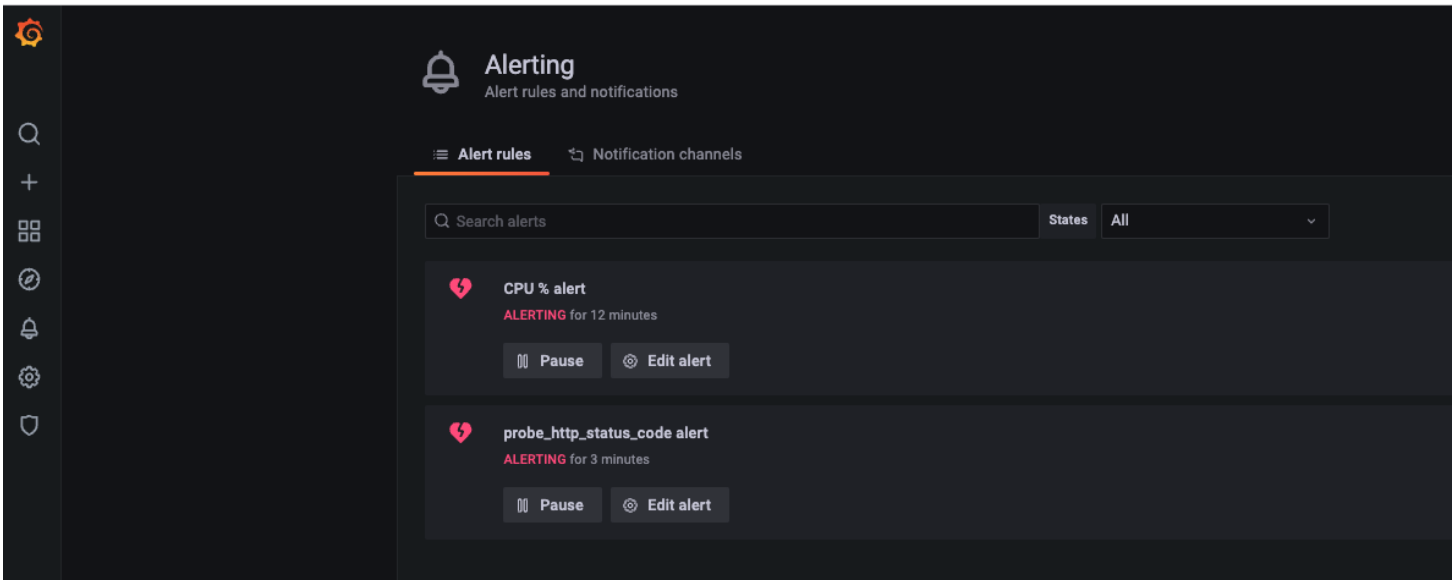
Create a notification channel: Provide a screenshot of the Grafana notification which shows the summary of the issue and when it occurred.

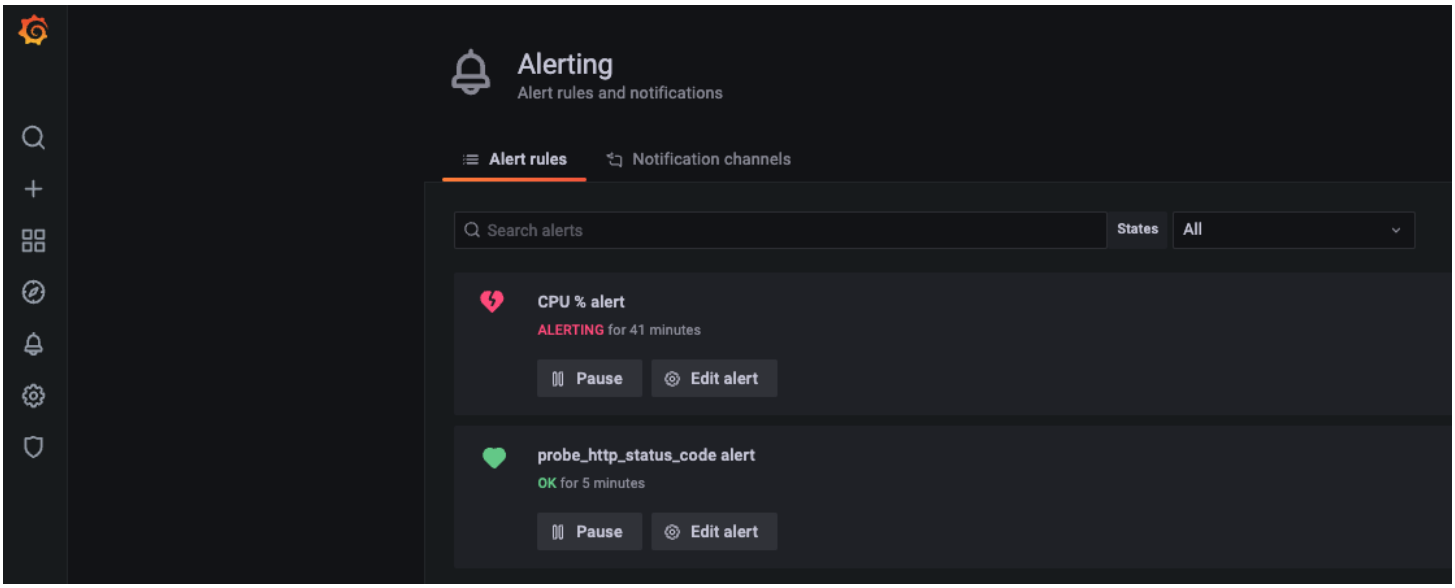


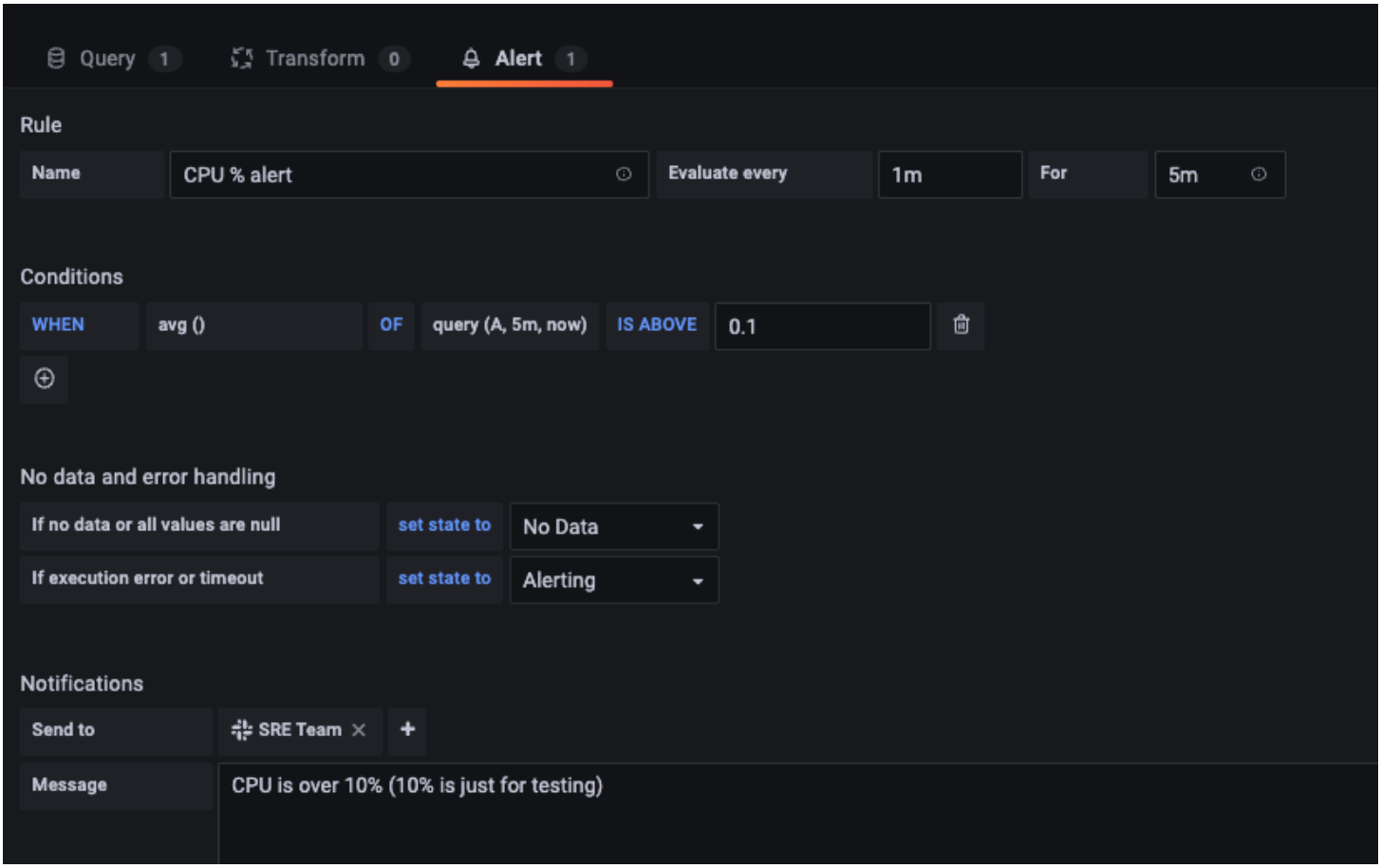

probe_http_status_code
500
400
300
200
100
0
21:25
21:30
21:35
21:40
21:45
21:50
21:55
22:00
22:05
22:10
22:15
22:20
probe_http_status_code{instance="http://3.144.112.233/", job="blackbox"}
CPU %
0.150
0.145
0.140
0.135
0.130
0.125
21:25
21:30
21:35
21:40
21:45
21:50
21:55
22:00
22:05
22:10
22:15
22:20
instance:node_cpu:rate:sum{instance="10.100.2.184:9100"}

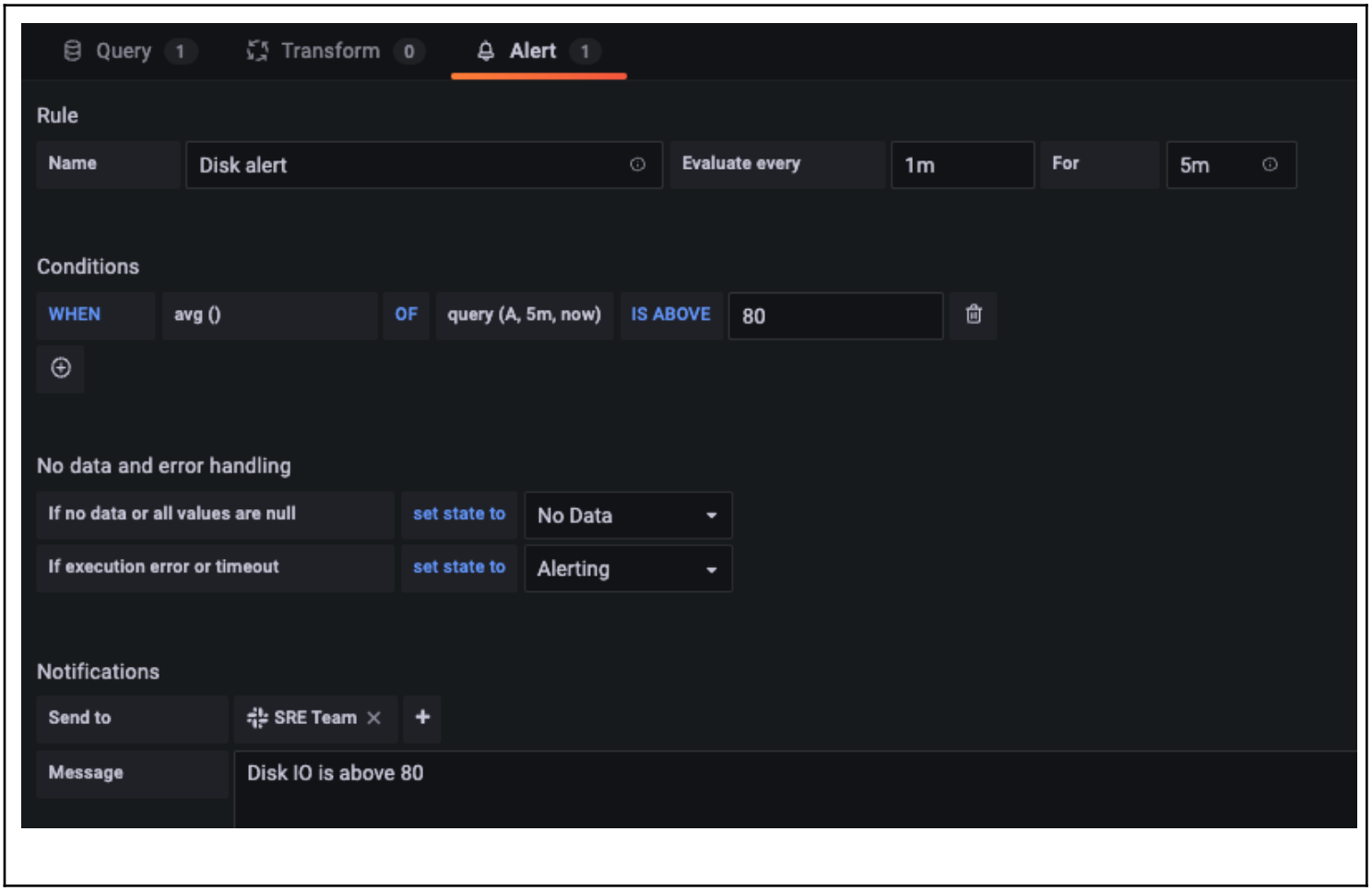


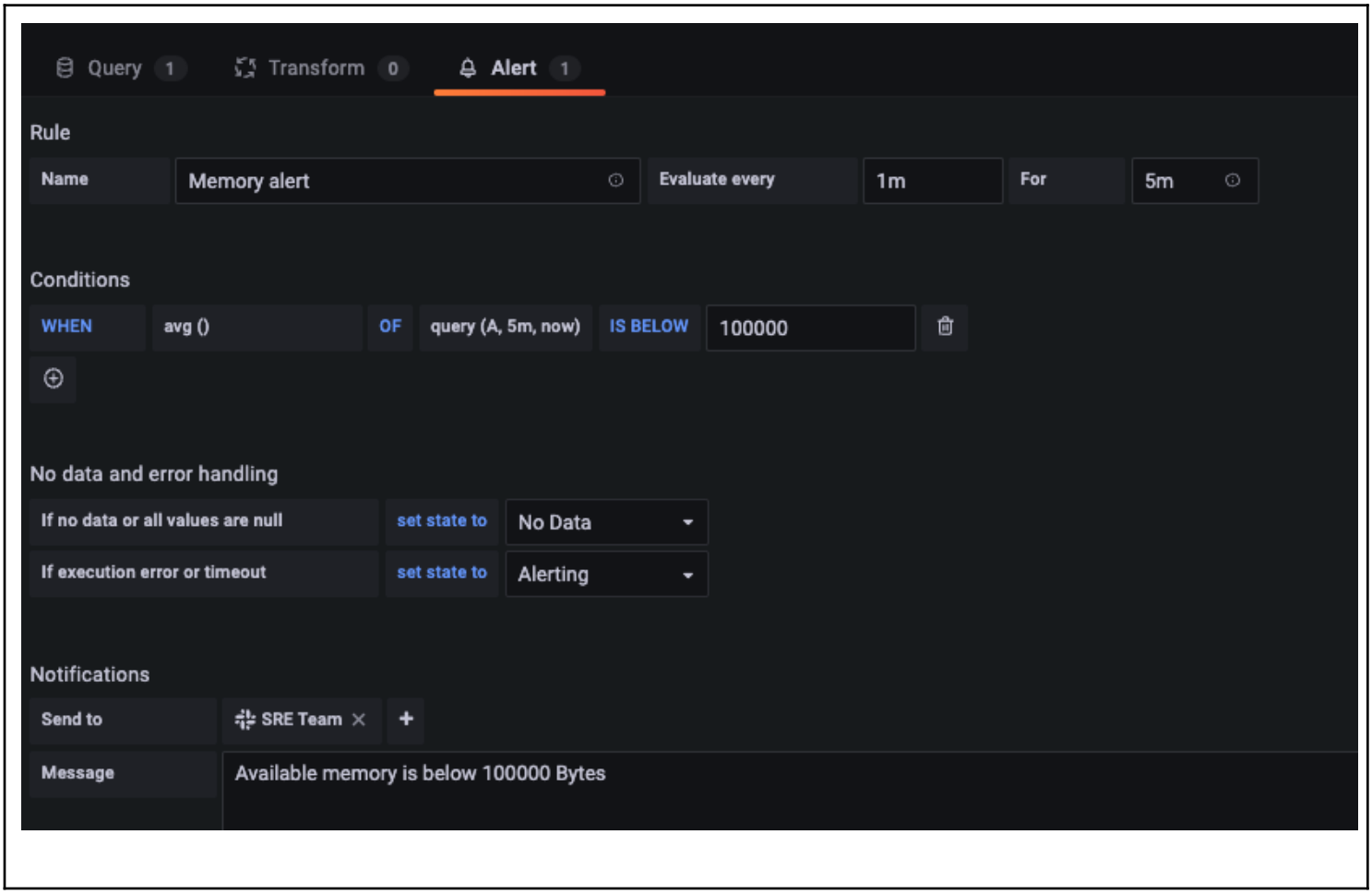
Configure alert rules: Provide a screenshot of the alert rules list in Grafana.

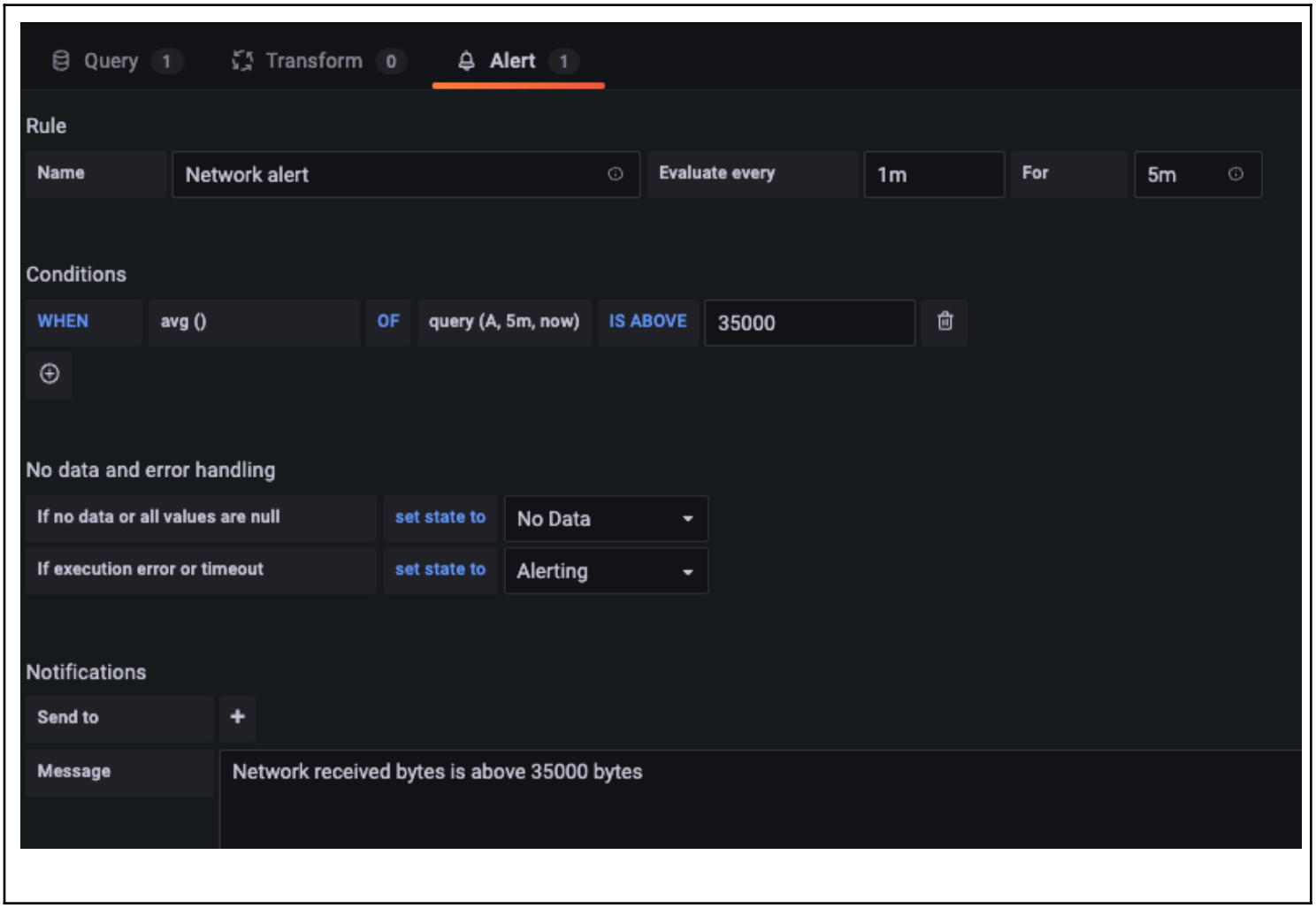



Alerting
Alert rules and notifications
Alert rules
Notification channels
Search alerts
States
All
CPU % alert
ALERTING for 41 minutes
Pause
Edit alert
probe_http_status_code alert
OK for 5 minutes
Pause
Edit alert

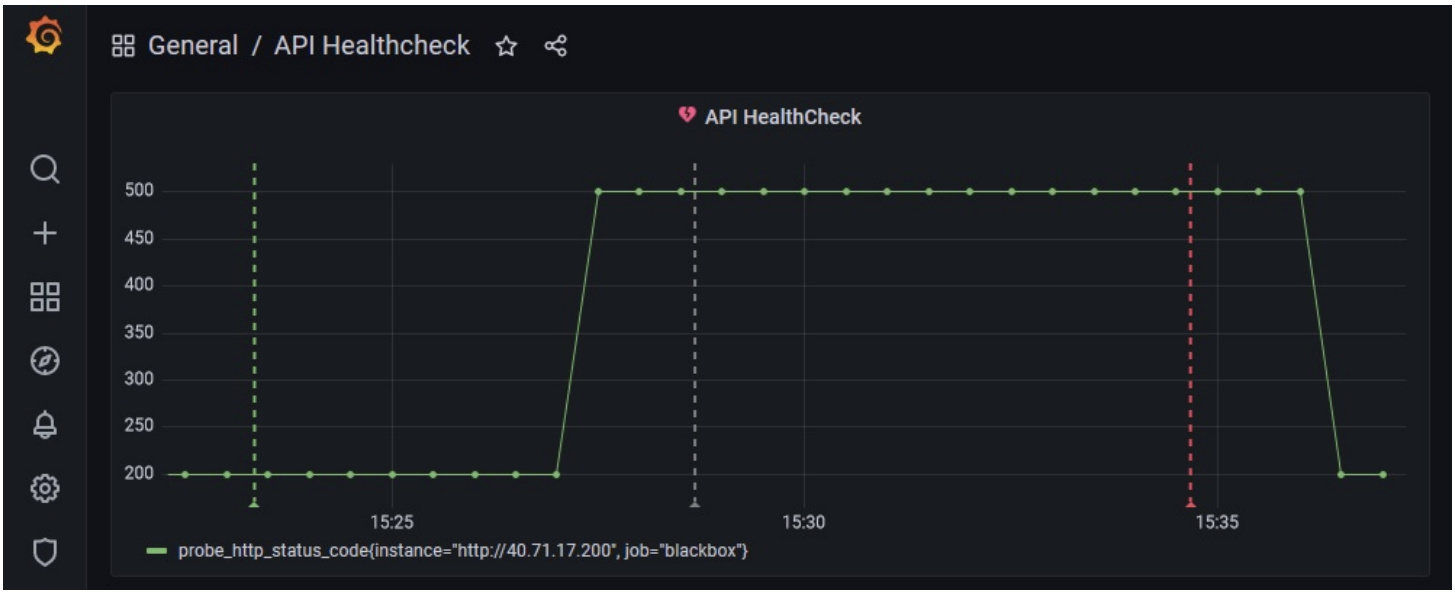

Query 1
Transform 0
Alert 1
Rule
Name
CPU % alert
Evaluate every
1m
For
5m
Conditions
WHEN
avg ()
OF
query (A, 5m, now)
IS ABOVE
0.1
No data and error handling
If no data or all values are null
set state to
No Data
If execution error or timeout
set state to
Alerting
Notifications
Send to
SRE Team
Message
CPU is over 10% (10% is just for testing)


Query 1
Transform 0
Alert 1
Rule
Name
Disk alert
Evaluate every
1m
For
5m
Conditions
WHEN
avg ()
OF
query (A, 5m, now)
IS ABOVE
80
No data and error handling
If no data or all values are null
set state to
No Data
If execution error or timeout
set state to
Alerting
Notifications
Send to
SRE Team
Message
Disk IO is above 80

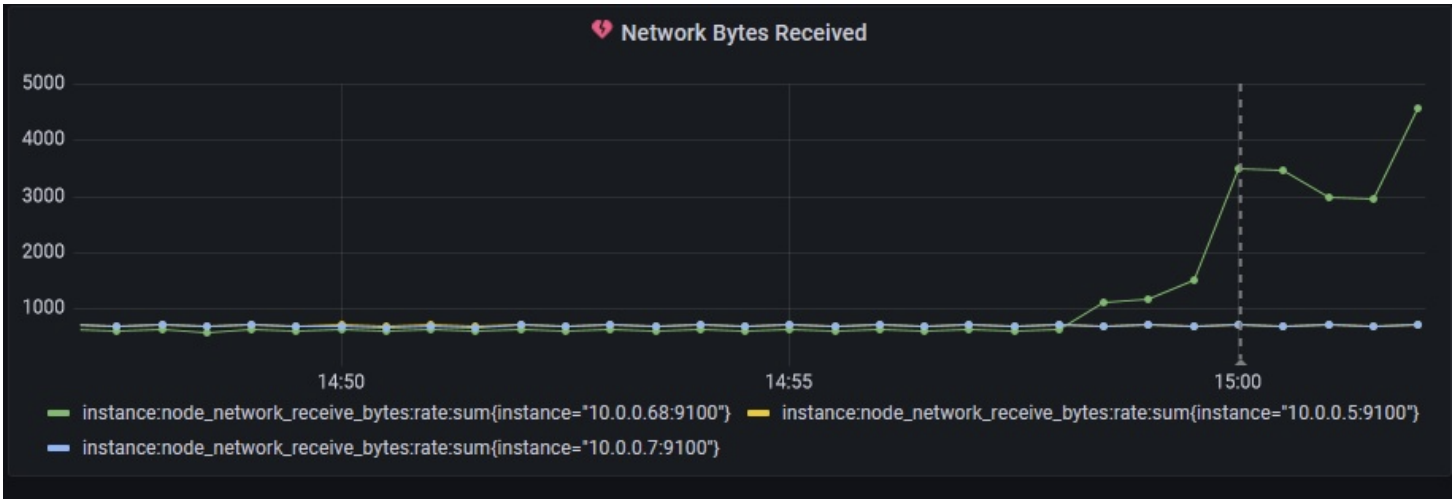

Query 1
Transform 0
Alert 1
Rule
Name
Memory alert
Evaluate every
1m
For
5m
Conditions
WHEN
avg ()
OF
query (A, 5m, now)
IS BELOW
100000
No data and error handling
If no data or all values are null
set state to
No Data
If execution error or timeout
set state to
Alerting
Notifications
Send to
SRE Team
Message
Available memory is below 100000 Bytes


Query 1
Transform 0
Alert 1
Rule
Name
Network alert
Evaluate every
1m
For
5m
Conditions
WHEN
avg ()
OF
query (A, 5m, now)
IS ABOVE
35000
No data and error handling
If no data or all values are null
set state to
No Data
If execution error or timeout
set state to
Alerting
Notifications
Send to
Message
Network received bytes is above 35000 bytes

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?
Down at around 15:28. Healthy again at 15:37.
4b. If there was no SRE team, how would this outage affect customers?
Yes
4c. What could be put in place so that the SRE team could know of the outage before the customer does?
Setup an alert to slack/email the SRE team when the endpoint is down

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)?

10.0.0.68 almost 5000 bytes at 15:02

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

Infrastructure Engineer: since traffic increases in that instance, we might want to add an auto scaling group to provision more instances to share the load.