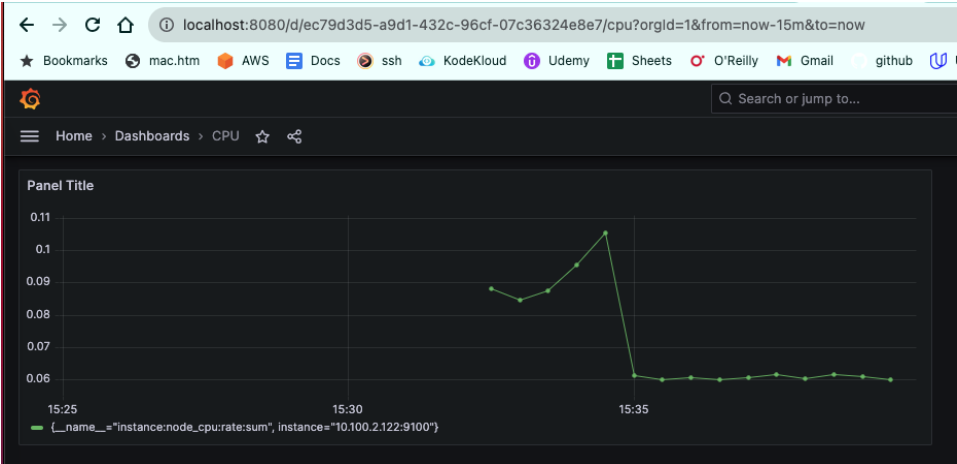# Observing Cloud Resources

SRE Project Template

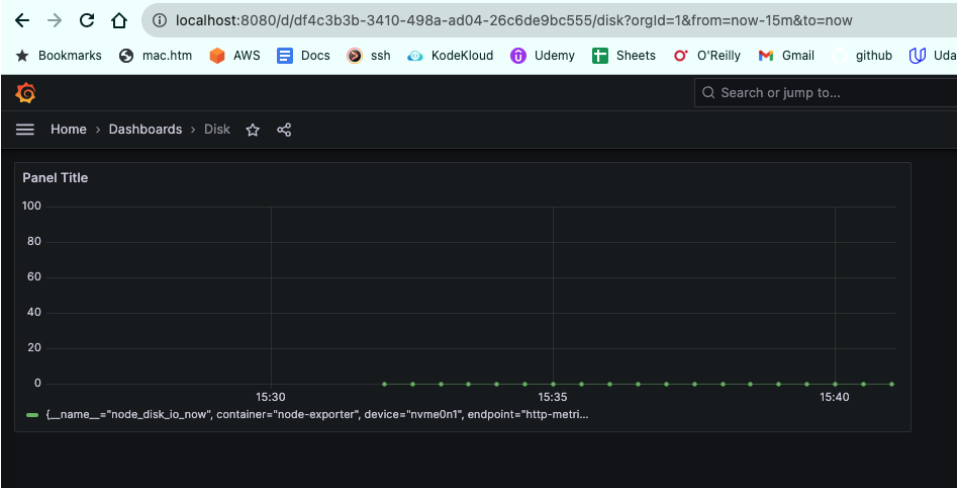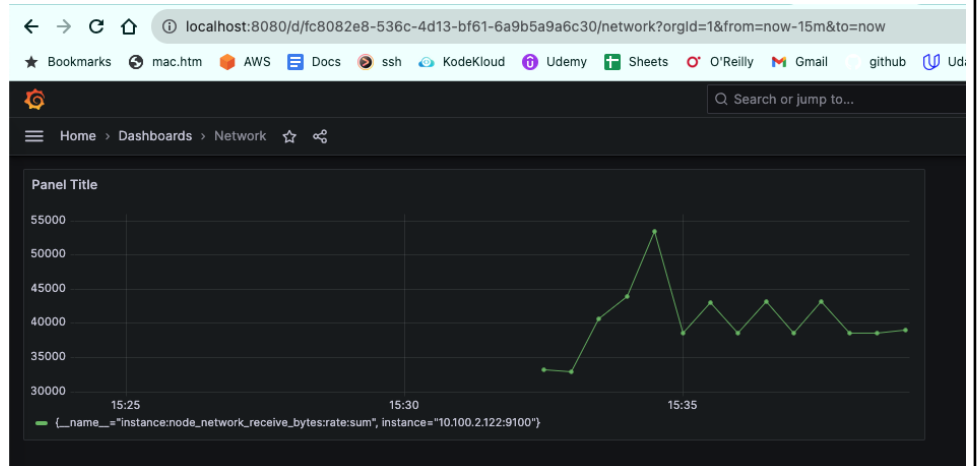## Categorize Responsibilities

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-172-31-43-101:~$
ubuntu@ip-172-31-43-101:~$ 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 Tue 2023-11-21 08:17:28 UTC; 1h 57min ago
   Main PID: 798 (node_exporter)
      Tasks: 4 (limit: 1104)
     CGroup: /system.slice/node_exporter.service
             └─798 /usr/local/bin/node_exporter

Nov 21 08:17:28 ip-172-31-43-101 node_exporter[798]: level=info ts=2023-11-21T08:17:28.527Z caller=node_exporter.g
Nov 21 08:17:28 ip-172-31-43-101 node_exporter[798]: level=info ts=2023-11-21T08:17:28.528Z caller=node_exporter.g
Nov 21 08:17:28 ip-172-31-43-101 node_exporter[798]: level=info ts=2023-11-21T08:17:28.528Z caller=node_exporter.g
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Nov 21 08:17:28 ip-172-31-43-101 node_exporter[798]: level=info ts=2023-11-21T08:17:28.528Z caller=node_exporter.g
Nov 21 08:17:28 ip-172-31-43-101 node_exporter[798]: level=info ts=2023-11-21T08:17:28.528Z caller=tls_config.go:1
ubuntu@ip-172-31-43-101:~$
```

Host Metric (CPU, RAM, Disk, Network)	Dashboard
CPU	
Memory	
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 - For taking care of the change management governance related to hotfix and to ensure that code has all dependencies satisfied . Release Manager also takes care of the communication to stakeholders about this hotfix and manages the implementation and roll back (if necessary). *Monitoring Engineer - To know if there is any incident or issues and take appropriate action during and after hotfix implementation.*
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.
Team Lead - To discuss the scope of work and to direct and assign the work to the Team Members related to the new product. *System Architect - To make recommendations about technology and to document/diagram the infrastructure . System Architect will also highlight any shortcomings and give suggestions to eliminate the same in relation to 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?
Release Manager

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).
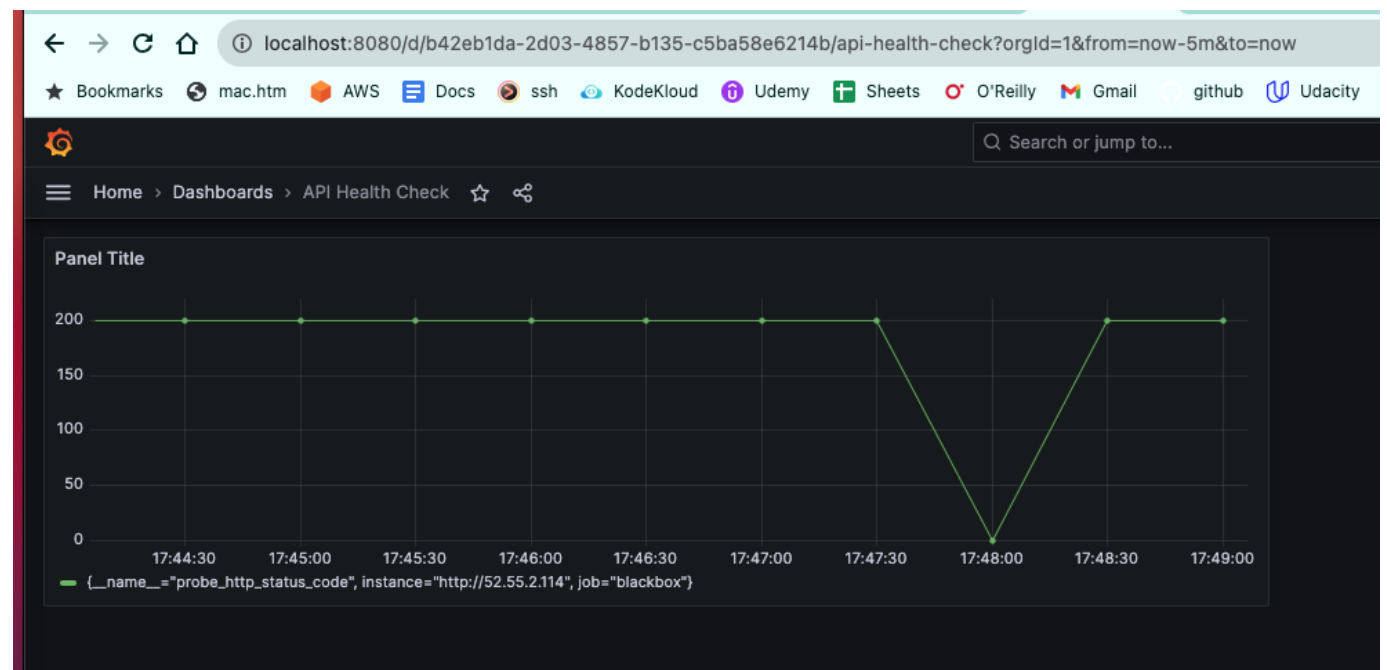
Create a notification channel: Provide a screenshot of the Grafana notification which shows the summary of the issue and when it occurred.
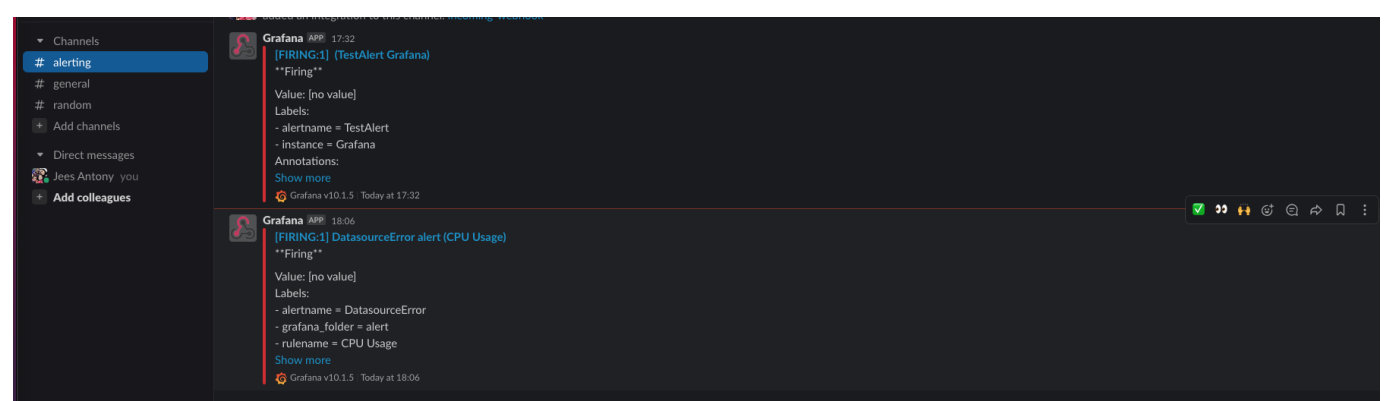
Configure alert rules: Provide a screenshot of the alert rules list in Grafana.

Alerting

- **Alert rules**
- Contact points
- Notification policies
- Silences
- Groups
- Admin

Rules that determine whether an alert will fire

| All data sources | ⌄ |

State Firing Normal Pending

Rule type Alert Recording

Health Ok No Data Error

Search ⓘ

| 🔍 Search |

View as 🗀 Grouped ☰ List ⌁ State

238 rules 3 firing 5 errors 145 normal 85 recording

+ New alert rule   **More ⌄**

Grafana

⌄ 🗁 alert › alert   5 errors 5 normal | ⏱ 10s | ✎ ⇅

State	Name	Health	Summary	Next evaluation	Actions
› Normal	Flask App is offline	⚠ error	flask app is offline	in a few seconds	👁 ✎ 🗐 🗑
› Normal	High CPU Utilisation	⚠ error		in a few seconds	👁 ✎ 🗐 🗑
› Normal	Memory Alert	⚠ error		in a few seconds	👁 ✎ 🗐 🗑
› Normal	Disk I/O	⚠ error		within 10 seconds	👁 ✎ 🗐 🗑
› Normal	Network Alert	⚠ error		within 10 seconds	👁 ✎ 🗐 🗑

Mimir / Cortex / Loki

Applying the Concepts

Graph 1
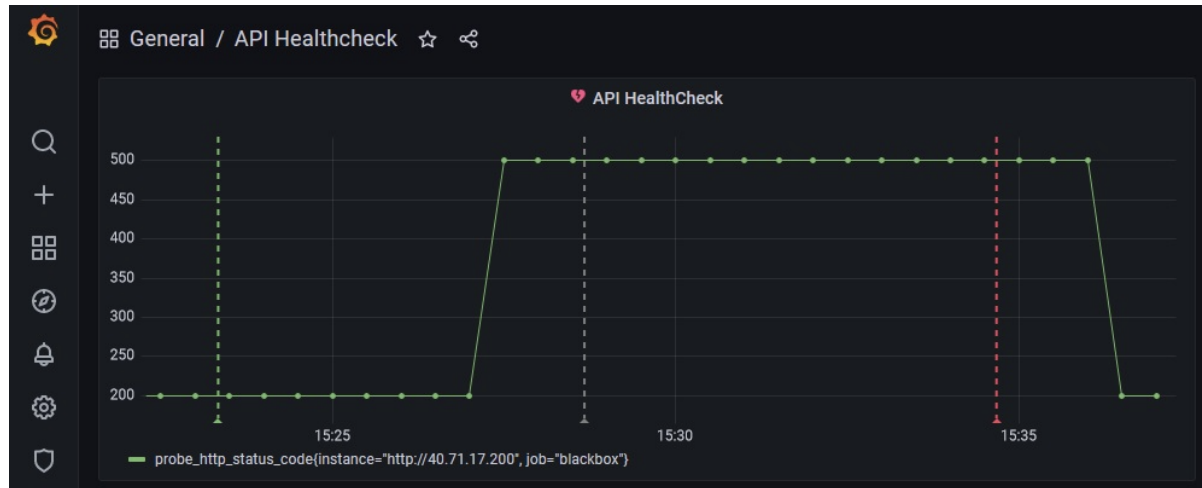
4a. Given the above graph, where does it show that the API endpoint is down? Where on the graph does this show that the API is healthy again?

At 15:27 API endpoint is down
At 15:36 API endpoint is healthy again

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

If there is no SRE Team , there wouldn't be monitoring and alerting. Hence the issue will come to notice only after reporting by customer. This will cause delay in resolving the issue and can cause loss of reputation.

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

Synthetic monitoring should be in place so that the SRE Team receives the callout immediately after the endpoint is down.

Graph 2

Network Bytes Received

Legend:
- instance:node_network_receive_bytes:rate:sum{instance="10.0.0.68:9100"}
- instance:node_network_receive_bytes:rate:sum{instance="10.0.0.5:9100"}
- instance:node_network_receive_bytes:rate:sum{instance="10.0.0.7:9100"}
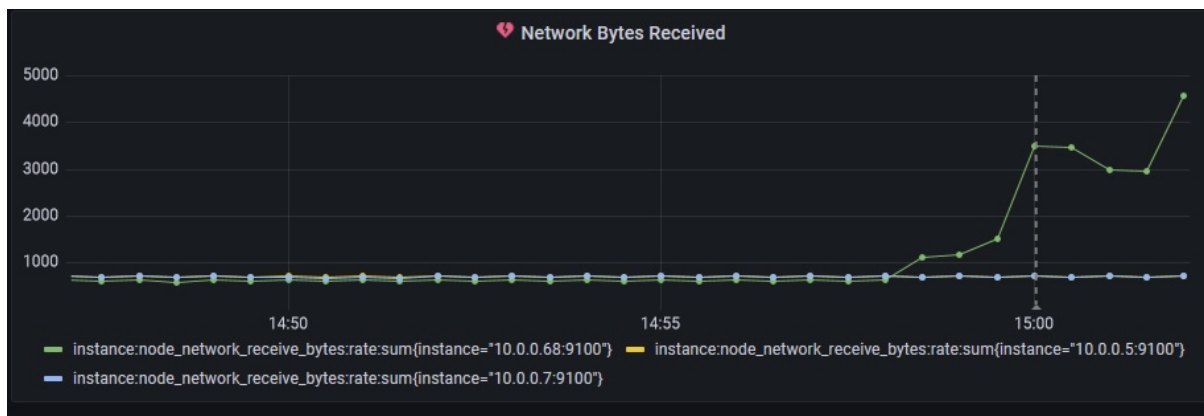
5a. Given the above graph, which instance had the increase in traffic, and approximately how many bytes did it receive (feel free to round)?

Instance 10.0.0.68 had the increase in traffic. It received approximately 450 bytes.

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

Monitoring Engineer and System Architect on the SRE Team would be interested in this graph.

As Monitoring Engineer is responsible for creating the dashboard for important metrics and take care of alert rules , he/she will be interested to know the details about the current traffic data.

As System Architect is responsible for making recommendations about new technologies , he/she will be interested to know the current data about traffic. This data will help him/her to highlight any shortcomings of existing Infrastructure.