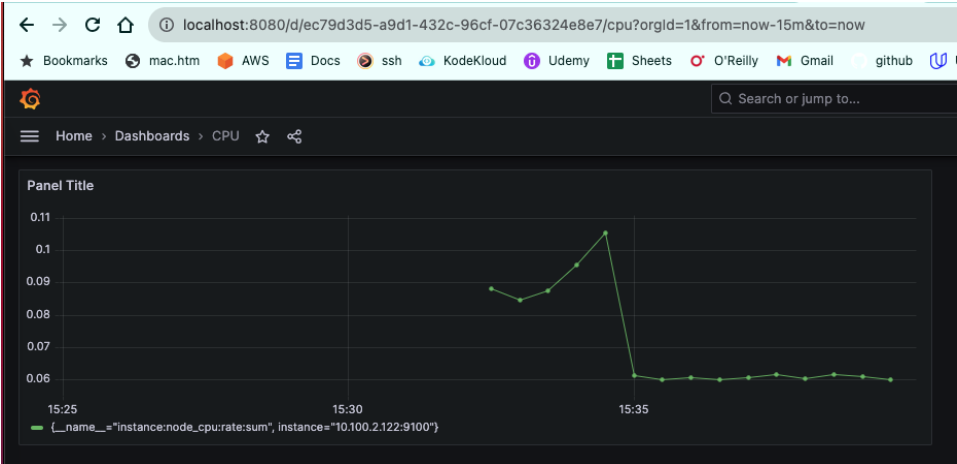# Observing Cloud Resources

SRE Project Template

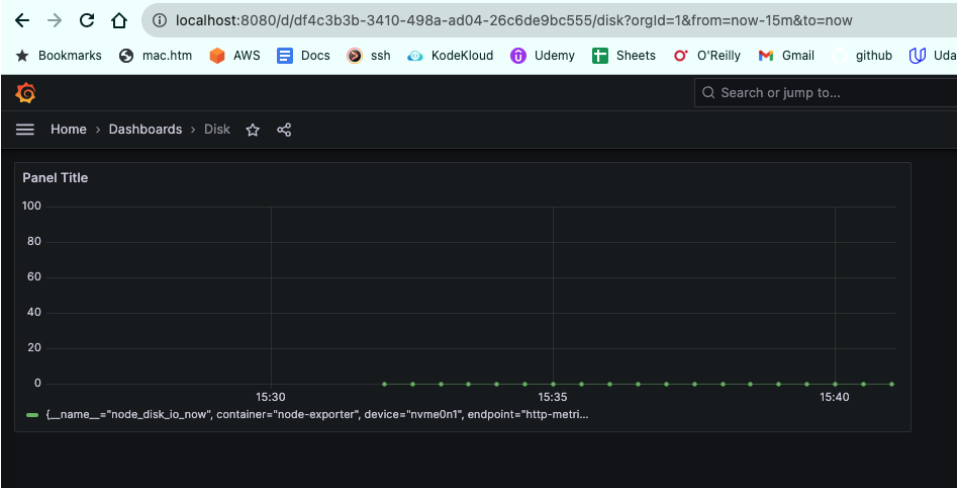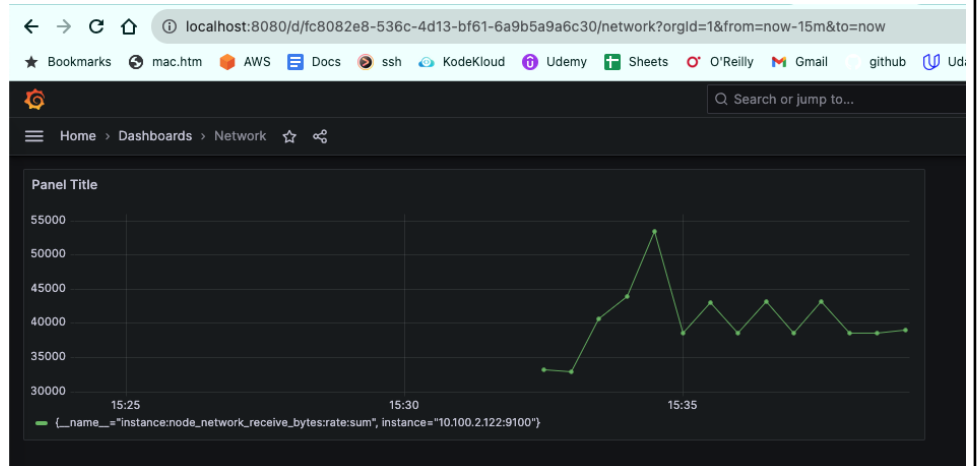## Categorize Responsibilities

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.
Smooth Operations - To make sure operations are running smoothly before and after implementing the hotfix. *Monitoring and alerting - To receive callout and take appropriate action incase of issues 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.
Capacity Planning - To understand if the existing system has the capacity to run the new product. Also to know if there is any capacity upgrade required for the new product. *Smooth Operations - To know about any existing issues, challenges in current infrastructure.*
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?
Incident Response

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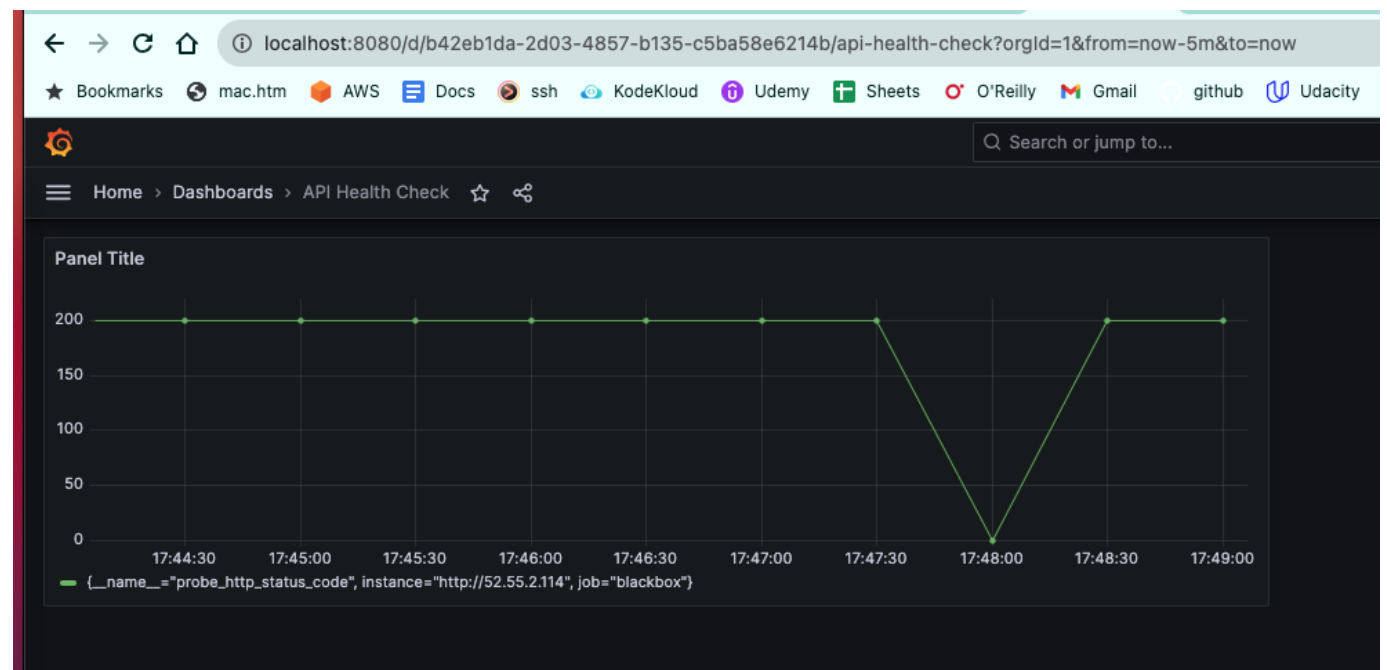
Create a notification channel: Provide a screenshot of the Grafana notification which shows the summary of the issue and when it occurred.
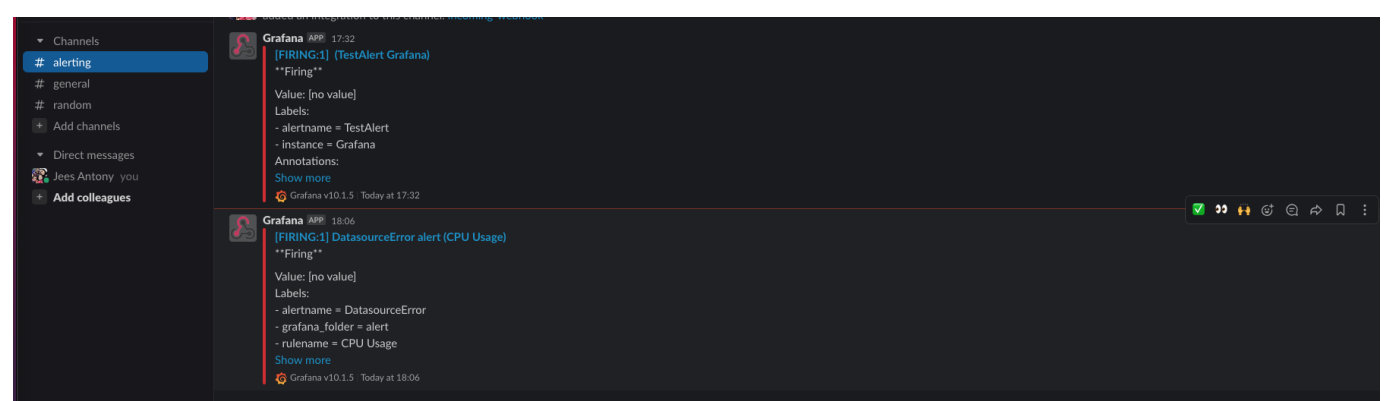
Configure alert rules: Provide a screenshot of the alert rules list in Grafana.

Alerting

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

Rules that determine whether an alert will fire

Search by data sources ⓘ

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
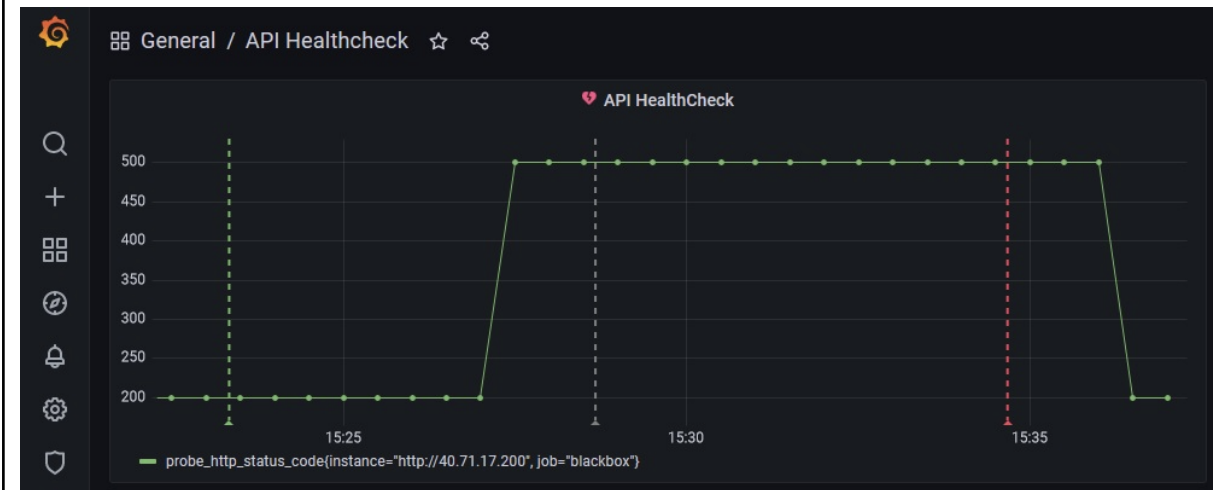
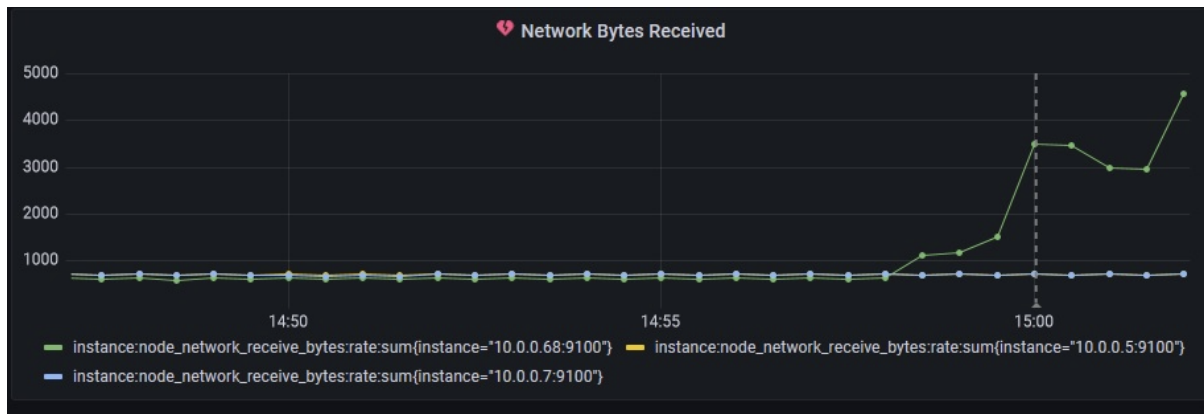| Graph 1 |
| :---: |
| |
| 4a. Given the above graph, where does it show that the API endpoint is down? Where on the graph does this show that the API is healthy again? |
| *At 15:27 API endpoint is down*
At 15:36 API endpoint is healthy again |
| 4b. If there was no SRE team, how would this outage 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?

Capacity Planning Team members on the SRE Team would be interested in this graph as this data will help in planning for the resource requirements of the system .