Observing Cloud Resources

SRE Project Template <Eslam Adel - eslam.adel.me@gmail.com>

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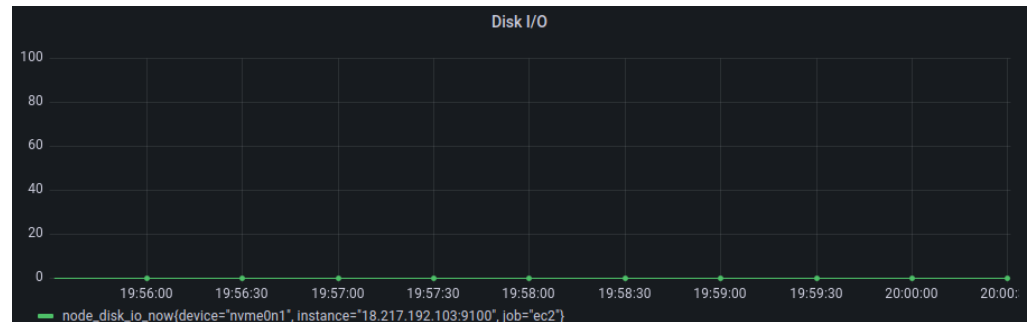
Prometheus and Grafana Screenshots
Provide a screenshot of the Prometheus node_exporter service running on the EC2 instance. Use the following command to show that the system is running: `sudo systemctl status node_exporter`

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

CPU	CPU chart showing instance:node_cpu:ratio{instance="18.217.192.103:9100", job="ec2"}
Network	Network chart showing instance:node_network_transmit_bytes:rate:sum{instance="18.217.192.103:9100"}
Memory	Memory chart showing node_memory_MemTotal_bytes{instance="18.217.192.103:9100", job="ec2"}

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.

Monitoring Engineer: is responsible for creating Dashboards, creating alerts, he is the first one to know if an issue also he manages monitoring rules for infrastructure.

Release Engineer: is responsible to check code and its dependencies, using CI/CD to ensure code could be released or not and execute rollback procedures if necessary.

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 leader: is responsible to contribute to architecture meetings, create workflows of the team and keep them focused.

The architect: is responsible for documentation, making recommendations for new technologies, create a highly scalable 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?

The Release Manager is responsible for handling these situations by running rolling back procedures.

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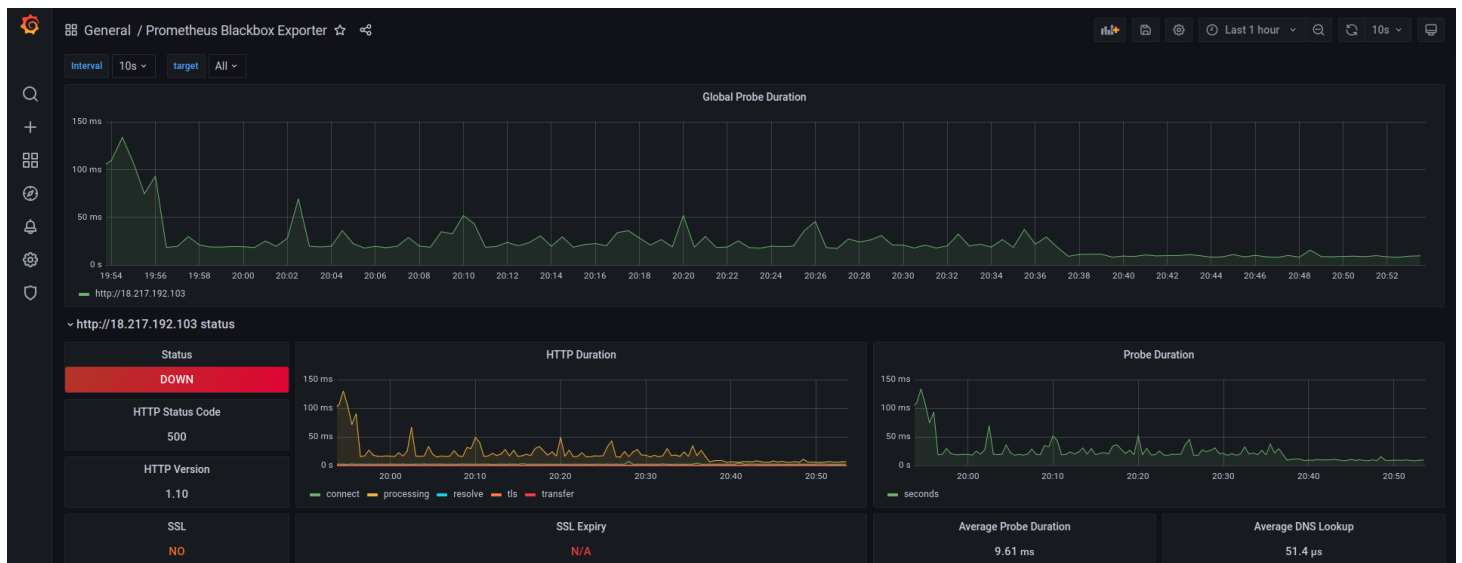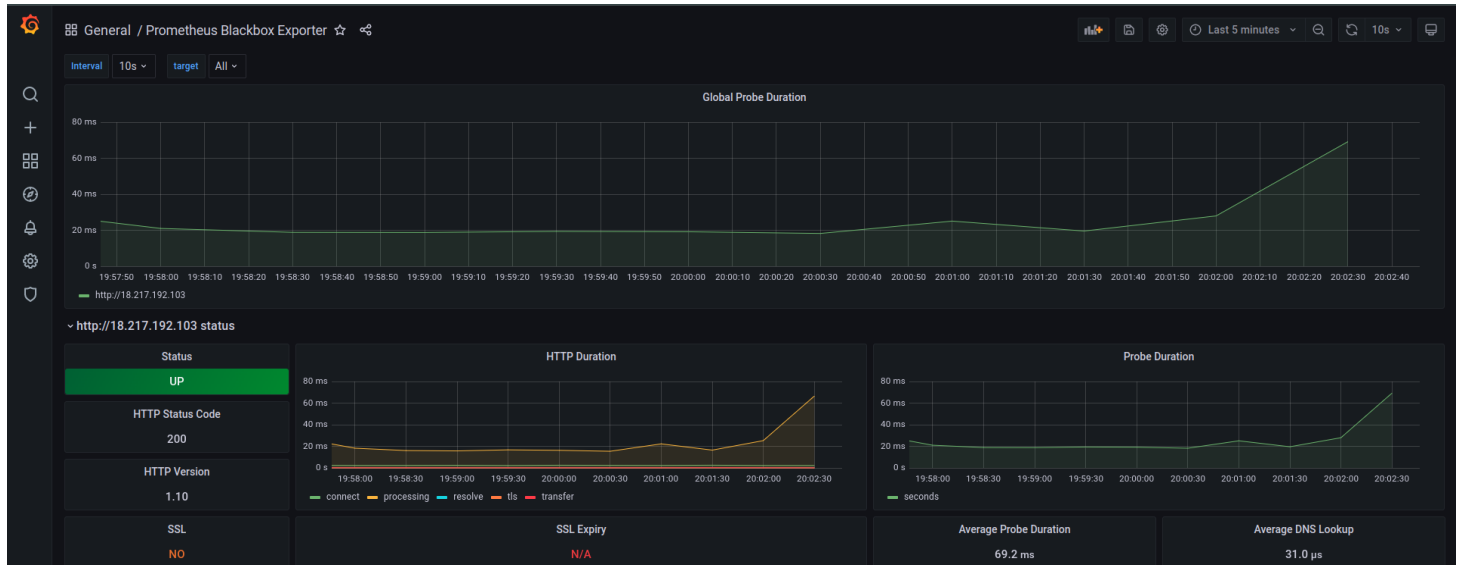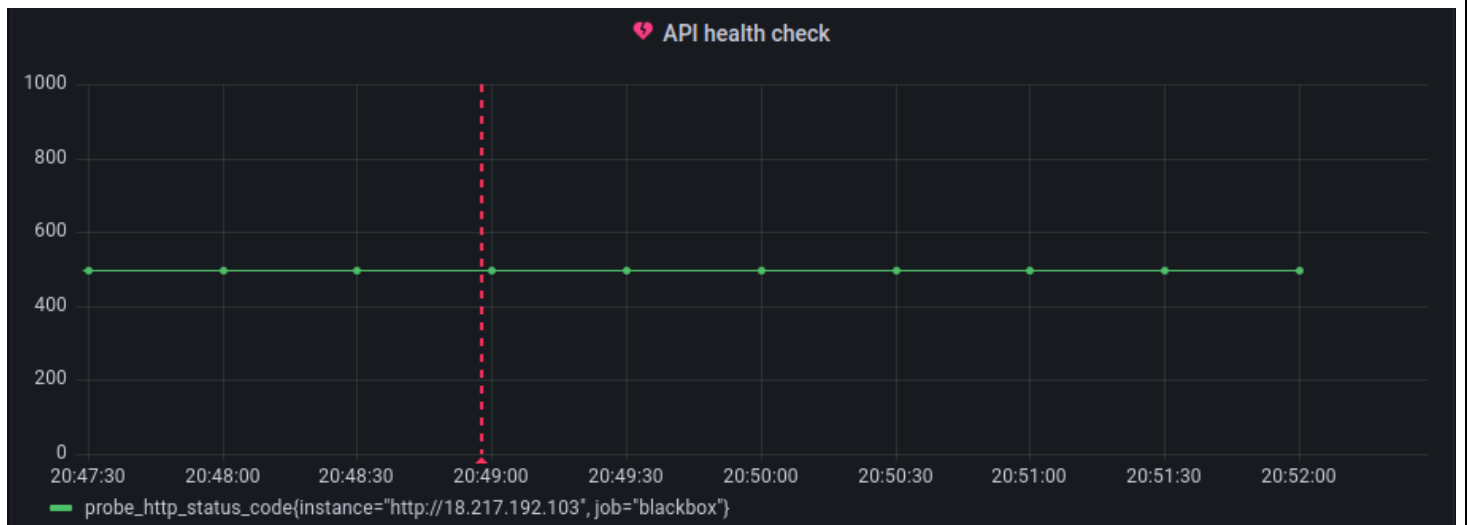
Create a notification channel: Provide a screenshot of the Grafana notification which shows the summary of the issue and when it occurred.

High bandwidth above 710
instance:node_network_transmit_bytes:rate:sum{instance="18.217.192.103:9100"}
1274.4582566258

Grafana v8.1.2 | Today at 8:39 PM

[Alerting] CPU alert
high load CPU above 0.00120
instance:node_cpu:ratio{instance="18.217.192.103:9100", job="ec2"}
0.0041549204810057

Grafana v8.1.2 | Today at 8:43 PM

incoming-webhook `APP` 8:48 PM

[Alerting] API health check alert
API is down
probe_http_status_code{instance="http://18.217.192.103", job="blackbox"}
500

Grafana v8.1.2 | Today at 8:48 PM

[OK] Network alert
Grafana v8.1.2 | Today at 8:49 PM

[OK] CPU alert
Grafana v8.1.2 | Today at 8:51 PM

[OK] API health check alert
Grafana v8.1.2 | Today at 8:55 PM

[Alerting] Network Bytes received alert
instance:node_network_receive_bytes:rate:sum{instance="10.100.3.108:9100"}
27008.921212121

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

States | All | How to add an alert

API health check alert
OK for 2 minutes

Pause | Edit alert

CPU alert
PENDING for a few seconds

Pause | Edit alert

Memory alert
OK for 26 minutes

Pause | Edit alert

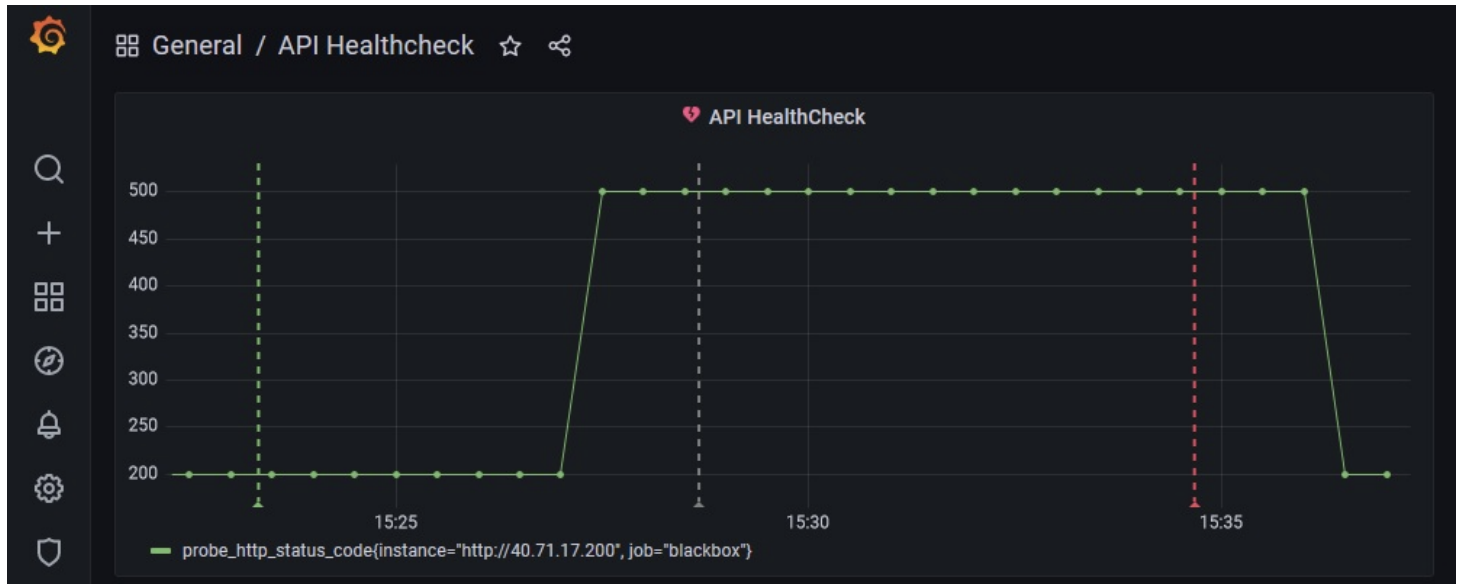**Network Bytes received alert**
ALERTING for a minute

Pause | Edit alert

Network alert
OK for 9 minutes

Pause | Edit alert

UDACITY

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 was down, status code was changed form 200 to 500, and it becomes healthy again at 15:37.

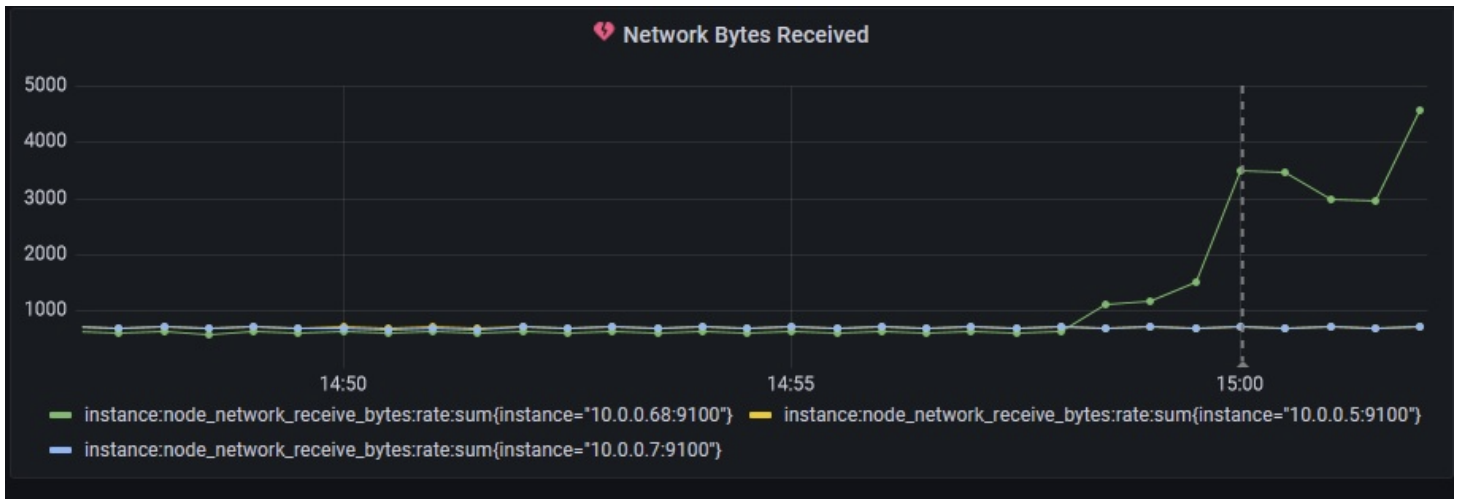**4b. If there was no SRE team, how would this outage affect customers?**

Will not be able to access the app and the customer would complain about it.

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

By Setting Alerts to send notifications about the problem when they occur to our channels like slack at this project.

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)?

10.0.0.68:9100 instance, received 3.6k bytes.

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

Monitoring Engineers, because its his responsibilities and also he is responsible with:
- *Creating dashboards*
- *Creating and manage alerting rules*
- *He should be the first who knows the issue*
- *He probably use tools like Prometheus/Grafana and ELK.*

UDACITY