

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-172-31-38-37:~$ 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 Mon 2022-10-03 03:21:25 UTC; 2min 48s ago
     Main PID: 3583 (node_exporter)
        Tasks: 4 (limit: 1109)
       CGroup: /system.slice/node_exporter.service
               └─3583 /usr/local/bin/node_exporter

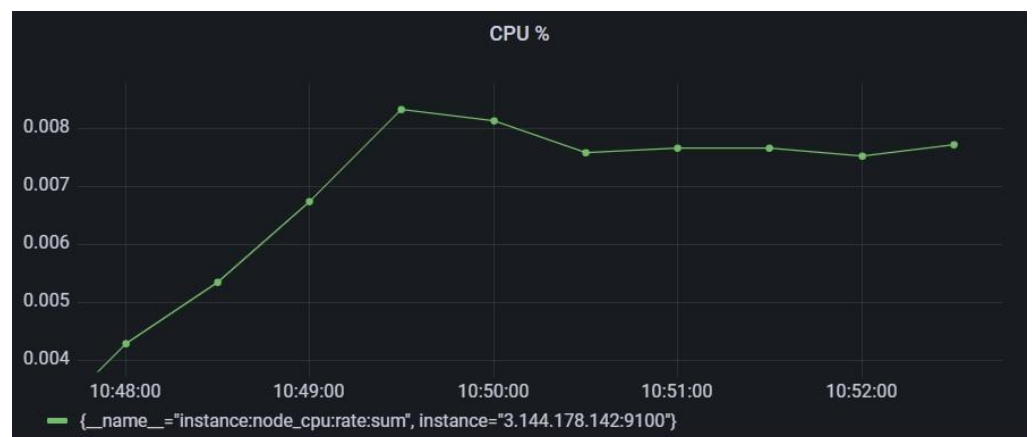
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.463Z caller=node_exporter.go:115 collector=thermal_zone
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.463Z caller=node_exporter.go:115 collector=time
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.463Z caller=node_exporter.go:115 collector=timex
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.463Z caller=node_exporter.go:115 collector=udp_queues
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.463Z caller=node_exporter.go:115 collector=uname
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.464Z caller=node_exporter.go:115 collector=vmstat
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.464Z caller=node_exporter.go:115 collector=xfs
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.464Z caller=node_exporter.go:115 collector=zfs
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.464Z caller=node_exporter.go:199 msg="Listening on" address=:9100
Oct 03 03:21:25 ip-172-31-38-37 node_exporter[3583]: level=info ts=2022-10-03T03:21:25.464Z caller=tls_config.go:191 msg="TLS is disabled." http2=false
ubuntu@ip-172-31-38-37:~$
```

Host Metric

(CPU, RAM, Disk, Network)

Dashboard

CPU



RAM	<p>Available Memory in bytes</p> <p>357000000 356000000 355000000 354000000 353000000 352000000</p> <p>10:40 10:45 10:50</p> <p>{__name__="node_memory_MemAvailable_bytes", instance="3.144.178.142:9100", job="ec2"}</p>
Disk	<p>Disk I/O</p> <p>100 80 60 40 20 0</p> <p>10:40 10:45 10:50</p> <p>{__name__="node_disk_io_now", device="nvme0n1", instance="3.144.178.142:9100", job="ec2"}</p>
Network	<p>Network Received in bytes</p> <p>350 300 250 200 150 100</p> <p>10:40 10:45 10:50</p> <p>{__name__="instance:node_network_receive_bytes:rate:sum", instance="3.144.178.142:9100"}</p>

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 and Monitoring Engineer.

Release Manager handles the release and rollback process.

The Monitoring Engineer is the first to know about incidents and, if they are found, can report the release to the manager for rollback.

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 and System Architect.

The Team Lead participates in architectural meetings, forms the team's workflow and directs the work.

The System Architect creates scalable architectures, creates diagrams and documentation, and makes recommendations for new technologies.

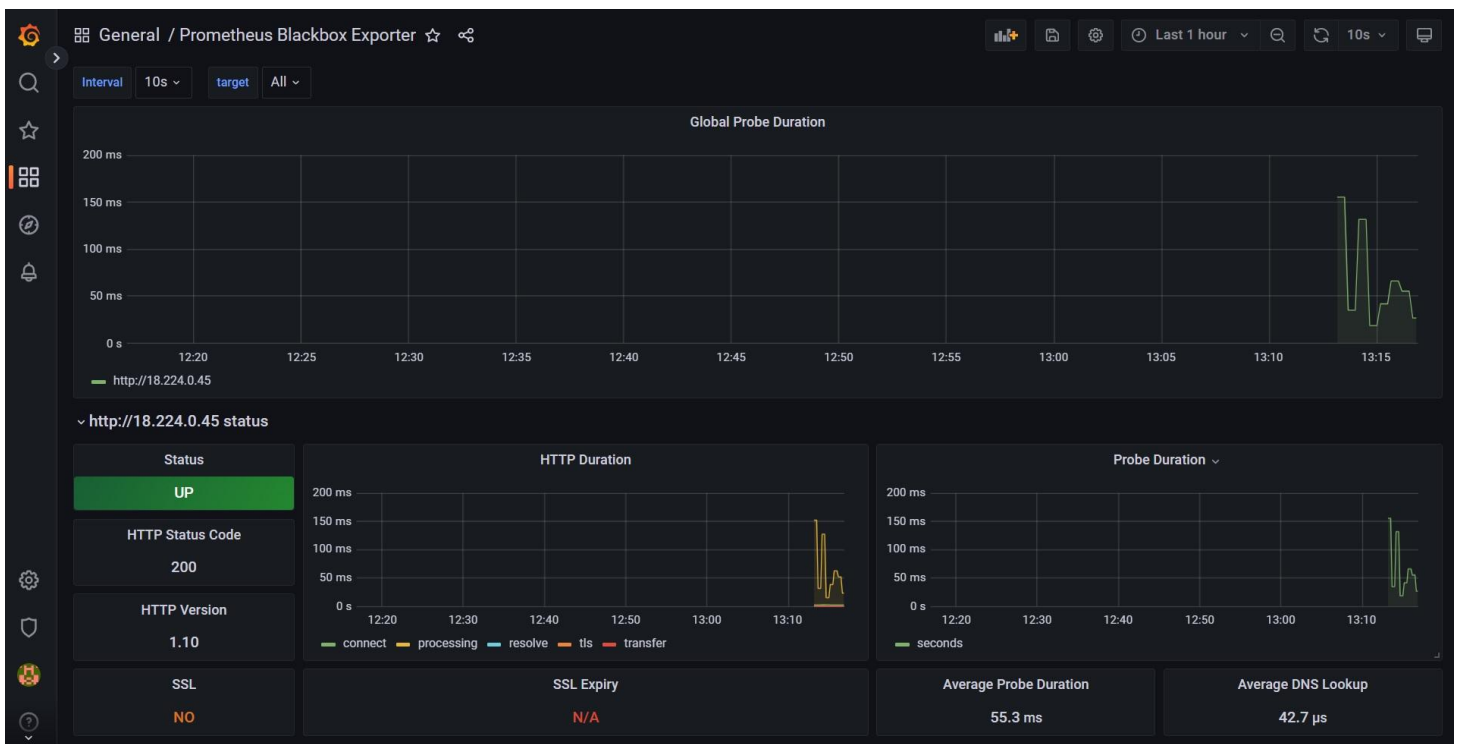
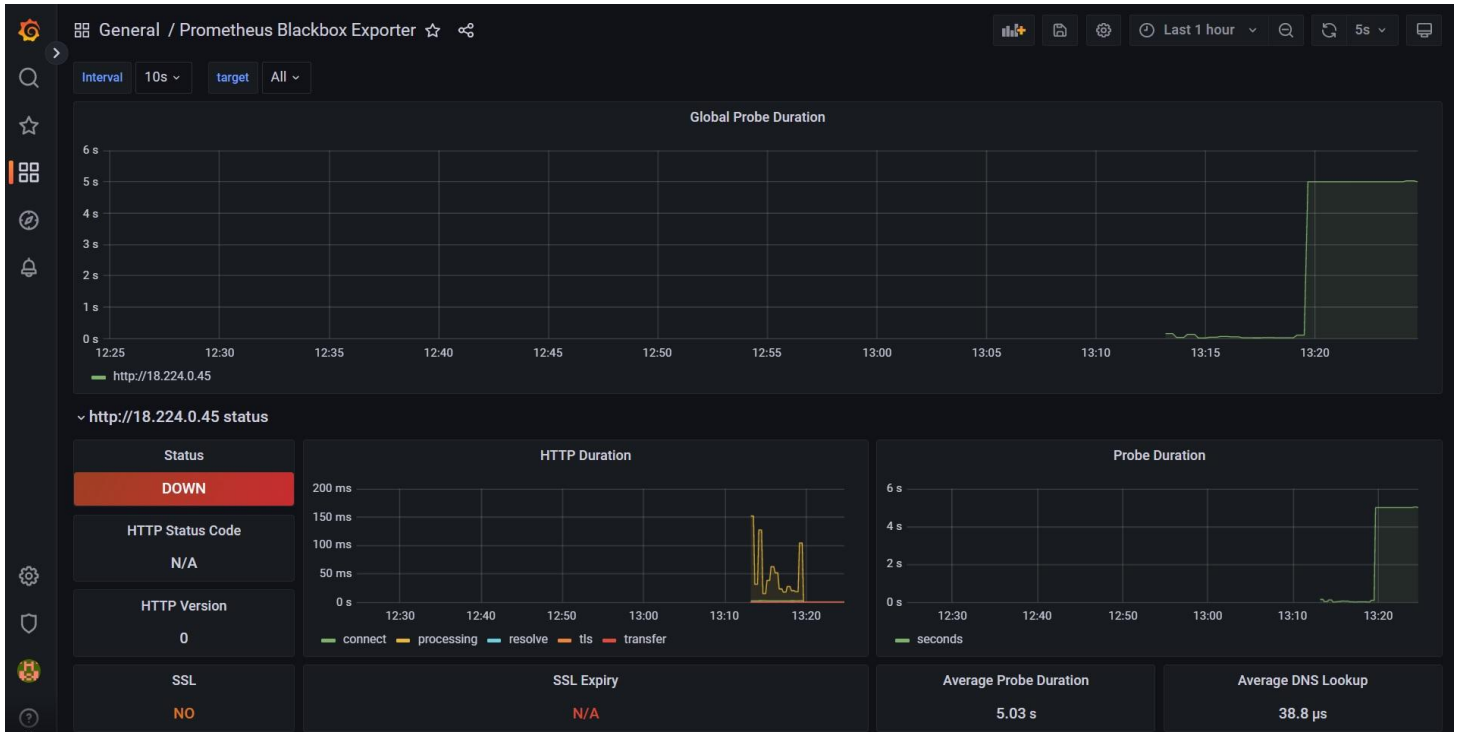
3. The emergency hotfix from question 1 was applied and is causing major issues in production. Which SRE role would primarily be involved in mitigating these issues?

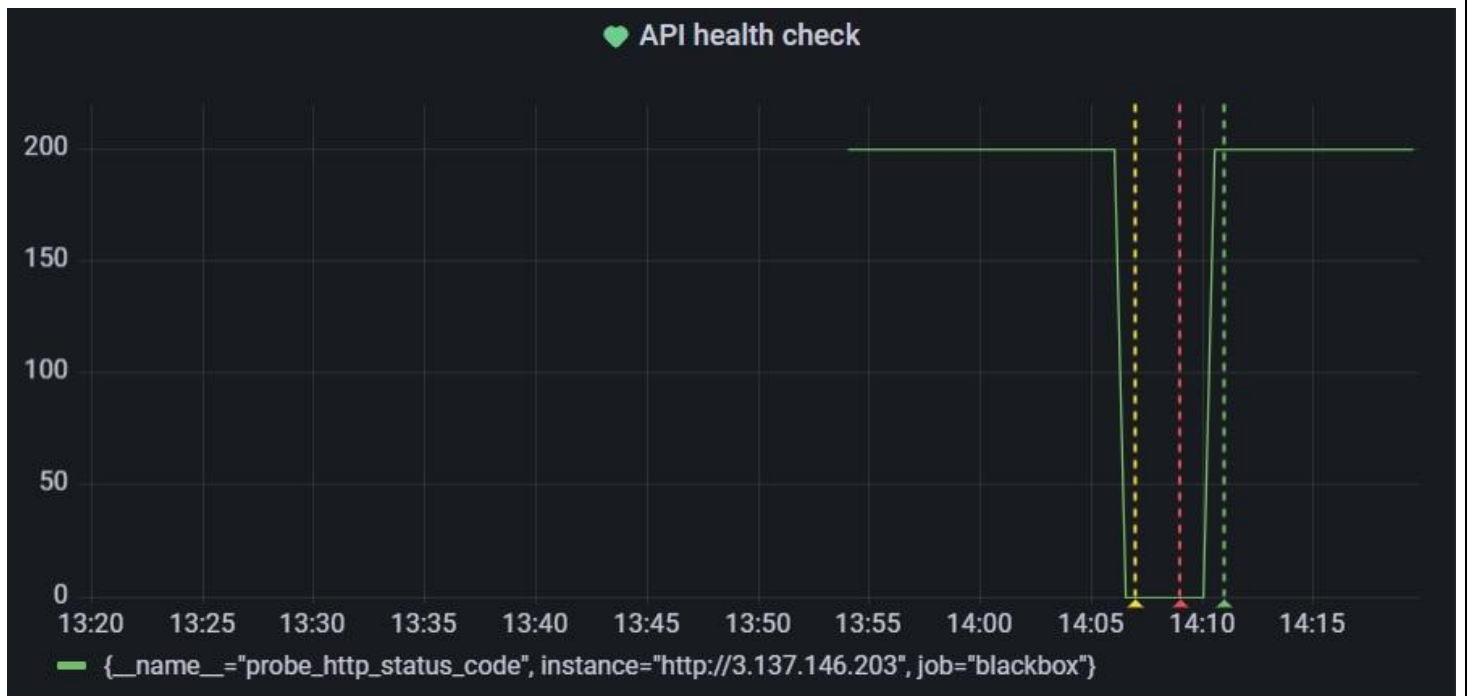
The release manager is responsible for such cases by performing a rollback process.

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.



Grafana APP 2:09 PM

[FIRING:1] API health check sre (flask)

[FIRING:1] API health check sre (flask)

****Firing****

Value: [var='B0' metric='Value' labels={__name__=probe_http_status_code, instance=<http://3.137.146.203>, job=blackbox} value=0]

Labels:

- alertname = API health check
- app = flask
- grafana_folder = sre

[Show more](#)

 Grafana v9.1.6 | Today at 2:09 PM



Grafana APP 11:24 AM

[FIRING:1] CPU % sre (flask)

[FIRING:1] CPU % sre (flask)

****Firing****

Value: [var='B0' metric='Value' labels={__name__=instance:node_cpu:rate:sum, instance=3.144.178.142:9100} value=1.5873333333333335]

Labels:

- alertname = CPU %
- app = flask
- grafana_folder = sre

[Show more](#)

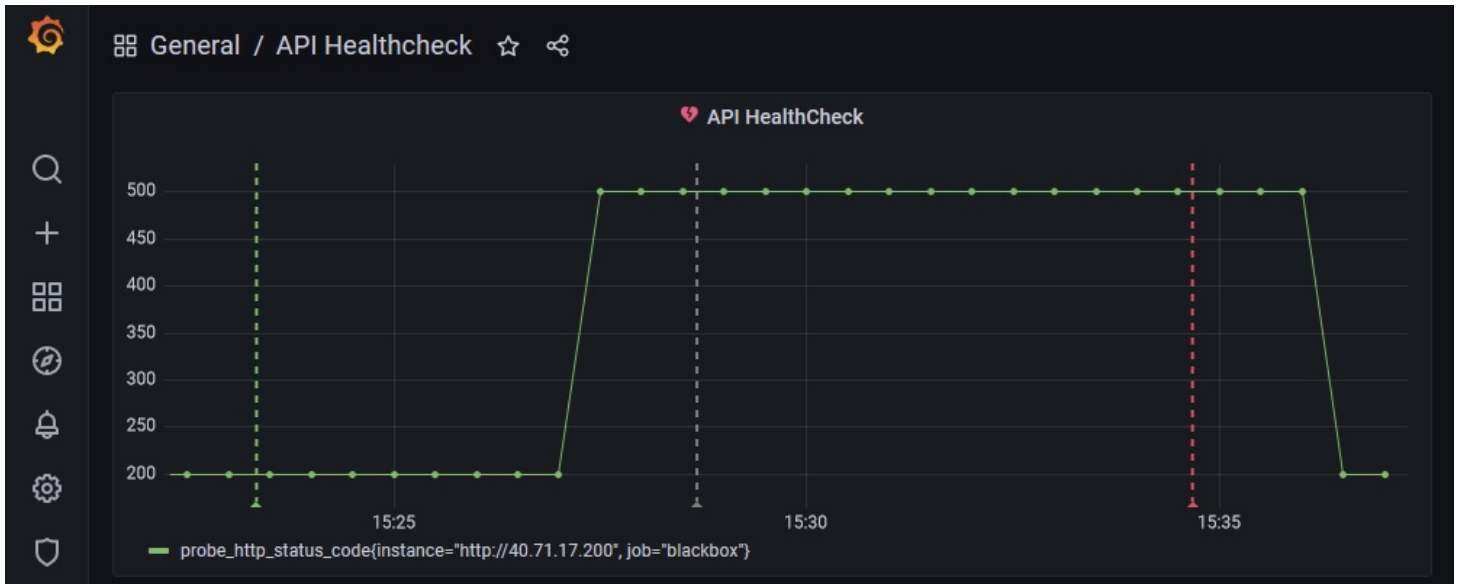
 Grafana v9.1.6 | Today at 11:24 AM

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

State	Name	Health	Summary
> Firing for 16s	API health check	ok	
> Normal	Available Memory in bytes	ok	
> Normal	CPU %	ok	
> Normal	Disk IO	ok	
> Normal	Network Received in bytes	ok	

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?

15:27 API endpoint was down - status code changed from 200 to 500.

15:36 API endpoint became healthy - status code changed from 500 to 200.

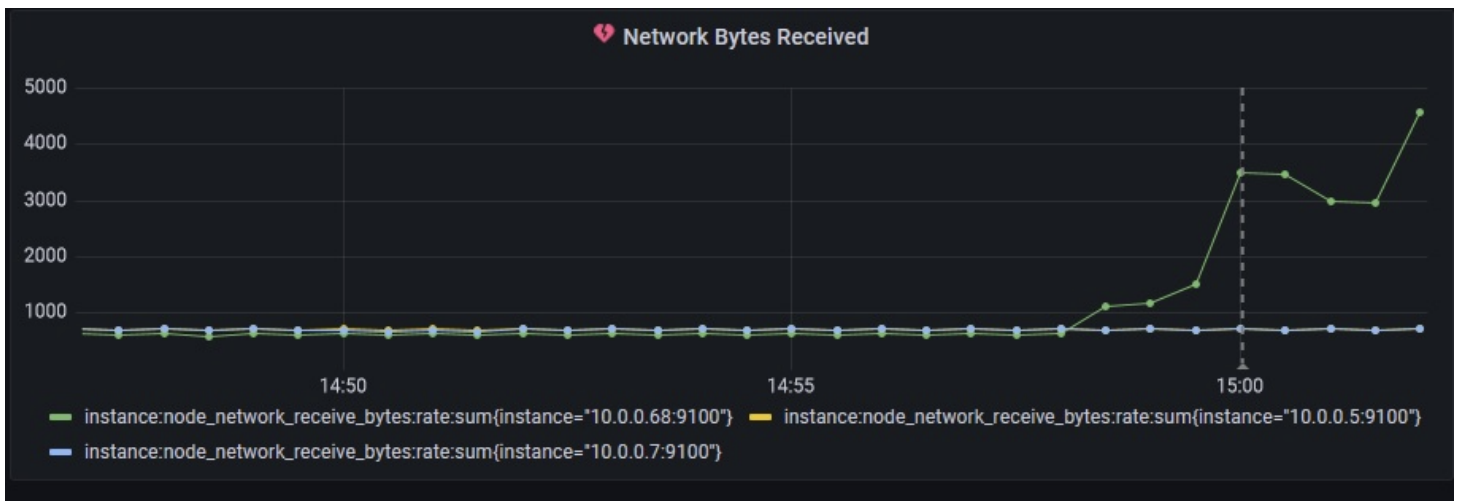
4b. If there was no SRE team, how would this outage affect customers?

Customers did not have access to the application, and perhaps customers began to complain that the application was not available. In the worst case, this will ruin the user experience and they will move on to competitors.

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

Set up synthetic monitoring (Blackbox Exporter) and alerts rules.

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)?

10.0.0.68:9100 - received 3600 bytes.

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

Monitoring Engineer usually first to know of an incident and managing alerting rules. After the analysis, he/she can report to other team members.