

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

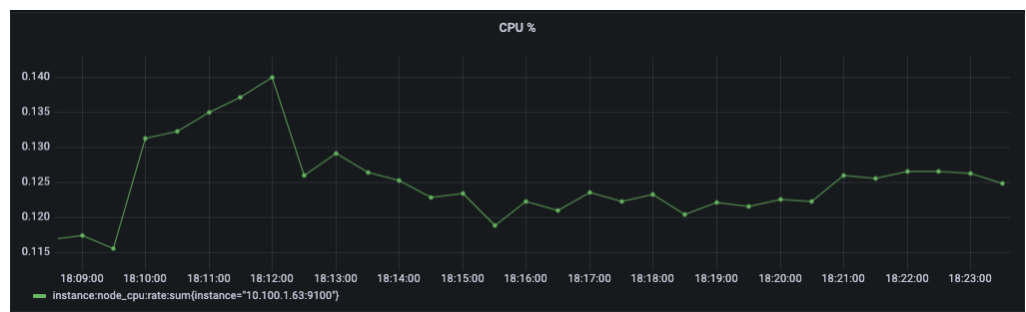
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=thermal_zone
Jan 12 23:24:15 ip-10-100-10-114 node_exporter[4552]: level=info ts=2023-01-12T23:24:15.793Z caller=node_exporter.go:115 collector=time
Jan 12 23:24:15 ip-10-100-10-114 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

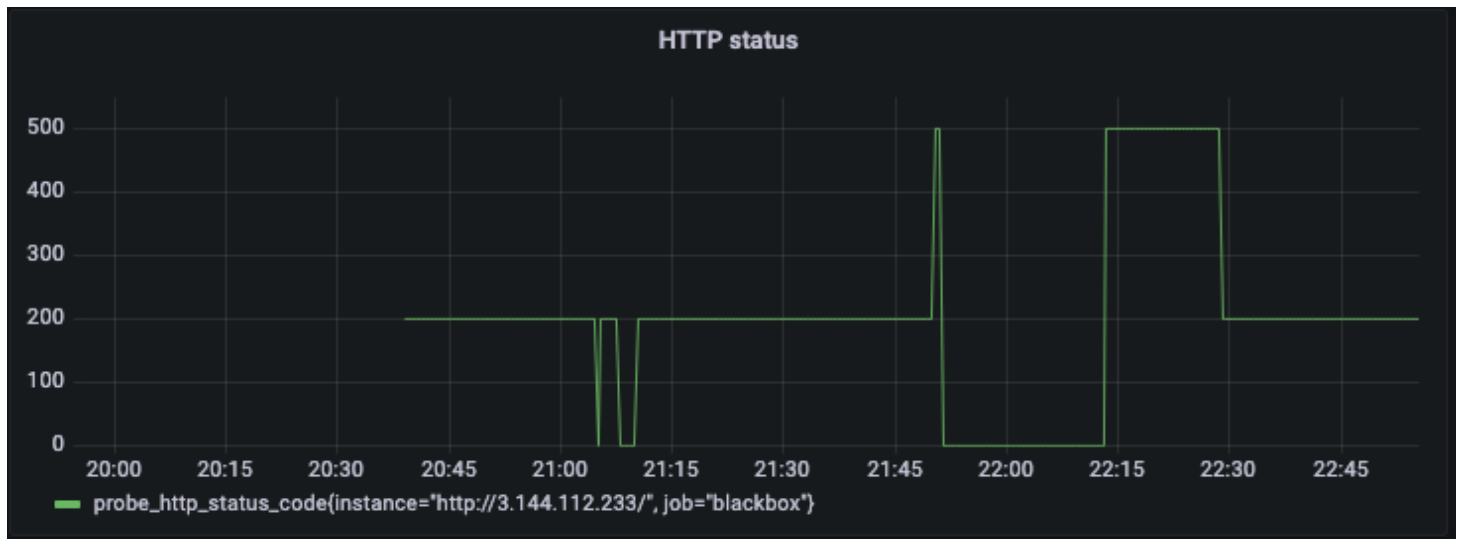


RAM	<p>node_memory_MemAvailable_bytes(container="node-exporter", endpoint="metrics", instance="10.100.1.63:9100", job="node-exporter", namespace="monitoring", pod="prometheus-prometheus-node")</p>
Disk	<p>node_disk_io_now(container="node-exporter", device="nvme0n1", endpoint="metrics", instance="10.100.1.63:9100", job="node-exporter", namespace="monitoring", pod="prometheus-prometheus-node")</p>
Network	<p>instance:node_network_receive_bytes_rate:sum(instance="10.100.1.63:9100")</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.	
<i>Release Manager: to execute release and rollback if needed</i> <i>Monitoring Engineer: create dashboards to monitor the fix</i>	
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.	
<i>System Architect: recommend technologies, design scalable infrastructure</i> <i>Infrastructure Engineer: plan/estimate ops tasks</i>	
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?	
<i>Release manager: to rollback the release</i>	

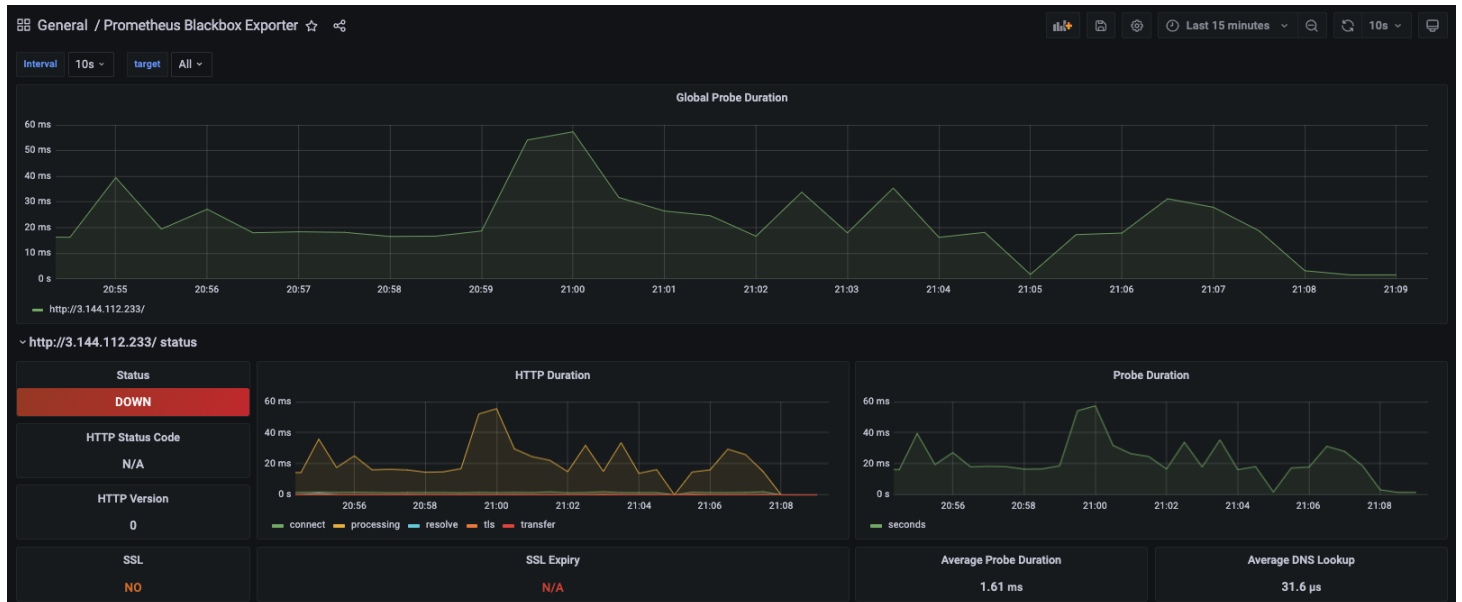
Team Formation and Workflow Identification

API Monitoring and Notifications

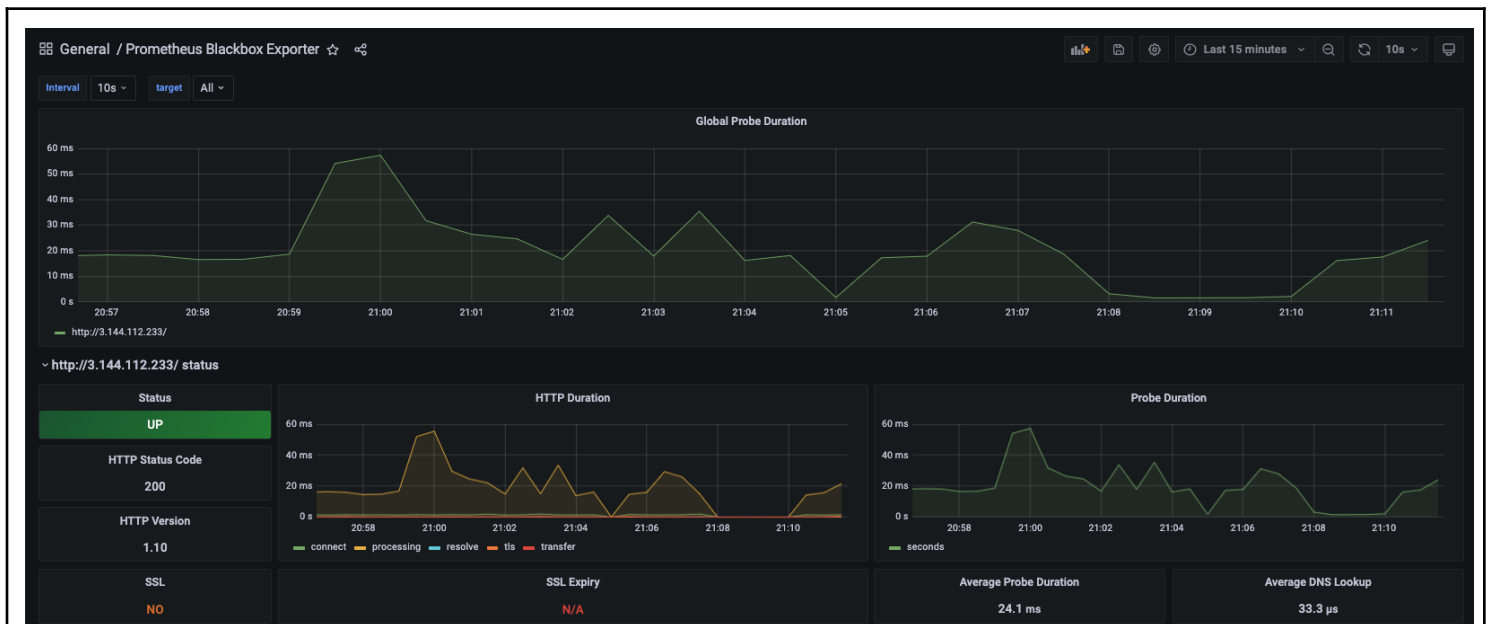
Display the status of an API endpoint: Provide a screenshot of the Grafana dashboard that will show at which point the API is unhealthy (non-200 HTTP code), and when it becomes healthy again (200 HTTP code).



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.



incoming-webhook APP 9:52 PM

[Alerting] CPU % alert

CPU is above 0.1

instance:node_cpu:rate:sum{instance="10.100.2.184:9100"}
0.1379333333333333









Grafana v8.1.2 | Today at 9:52 PM






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

The screenshot shows the Grafana Alerting interface. The header includes a bell icon and the text 'Alerting' and 'Alert rules and notifications'. Below the header, there are two tabs: 'Alert rules' (selected) and 'Notification channels'. A search bar labeled 'Search alerts' and a 'States' dropdown menu are present. The main content area lists two active alert rules, each with a red heart icon and the text 'ALERTING for X minutes'. The first rule is 'CPU % alert' and the second is 'probe_http_status_code alert'. Each rule has 'Pause' and 'Edit alert' buttons.





Alerting


Alert rules and notifications

Alert rules

Notification channels

Search alerts


StatesAll

 CPU % alert

ALERTING for 41 minutes

Pause

Edit alert

 probe_http_status_code alert


OK for 5 minutes

Pause

Edit alert

Query1

Transform0

 Alert1

Rule

NameCPU % alert

Evaluate every1m

For5m

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

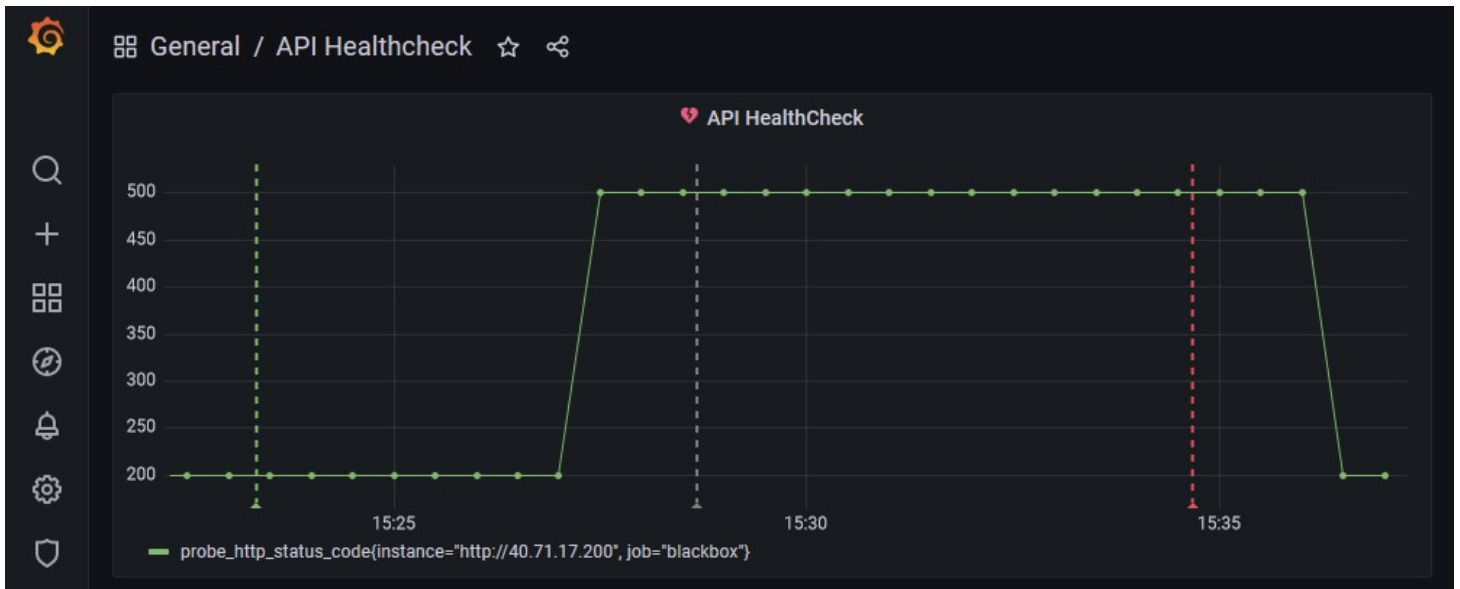
Notifications

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.

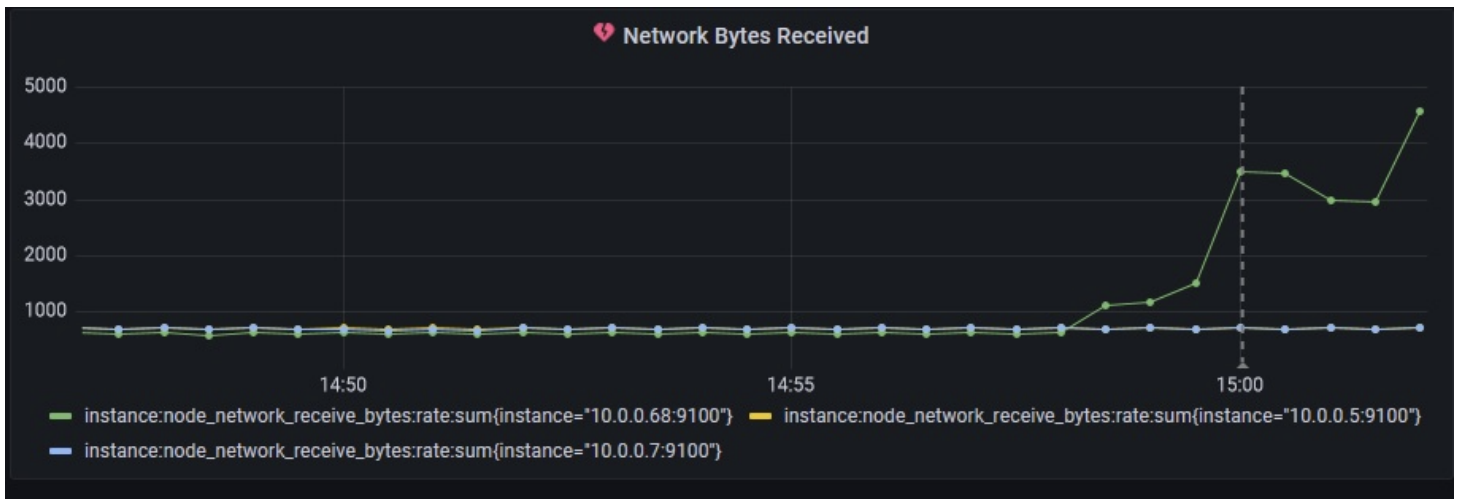
4b. If there was no SRE team, how would this outage affect customers?

Customers would not be able to access the endpoint `http://40.71.17.200`

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.