

Observing Cloud Resource

Categorize Responsibilities

Prometheus and Grafana Screenshots

Provide a screenshot of the Prometheus node_exporter service running on the EC2 instance.

```
ubuntu@ip-10-100-10-249:~$ sudo systemctl daemon-reload
ubuntu@ip-10-100-10-249:~$ sudo systemctl enable node_exporter
Created symlink /etc/systemd/system/multi-user.target.wants/node_exporter.service → /etc/systemd/system/node_exporter.service.
ubuntu@ip-10-100-10-249:~$ sudo systemctl start node_exporter
ubuntu@ip-10-100-10-249:~$ sudo systemctl status node_exporter
● node_exporter.service - Node Exporter
   Loaded: loaded (/etc/systemd/system/node_exporter.service; enabled; vendor pr
   Active: active (running) since Sun 2022-07-03 19:00:51 UTC; 245ms ago
   Main PID: 12356 (node_exporter)
   Tasks: 5 (limit: 4617)
   CGroup: /system.slice/node_exporter.service
           └─12356 /usr/local/bin/node_exporter

Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T
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[lines 1-17/18 (END)]...skipping...
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Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4982 caller=node_exporter.go:115 collector=thermal_zone
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4982 caller=node_exporter.go:115 collector=time
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4982 caller=node_exporter.go:115 collector=timex
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4982 caller=node_exporter.go:115 collector=udp_queues
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4982 caller=node_exporter.go:115 collector=uname
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4982 caller=node_exporter.go:115 collector=vmstat
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4982 caller=node_exporter.go:115 collector=xfs
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.4992 caller=node_exporter.go:115 collector=zfs
Jul 03 19:00:51 ip-10-100-10-249 node_exporter[12356]: level=info ts=2022-07-03T19:00:51.5072 caller=node_exporter.go:199 msg="Listening on" address=:9100
```

Host Metric (CPU, RAM, Disk, Network)	Dashboard
CPU%	<p>instance:node_cpu:rate:sum(instance="52.14.161.49:9100")</p>
Available Memory in bytes	<p>node_memory_MemAvailable_bytes(instance="52.14.161.49:9100", job="ec2")</p>
Disk I/O	<p>node_disk_io_now(device="nvme0n1", instance="52.14.161.49:9100", job="ec2")</p>
Network Received in bytes	<p>instance:node_network_receive_bytes:rate:sum(instance="52.14.161.49:9100")</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.

The Release Manager can help to assist the release of the hotfix to production.

- *Ensures code has all dependencies satisfied*
- *Executes the release and rollback procedures*
- *Uses a CI/CD tool along with the source control tool to ensure the code could be released or rolled back, as well as verify the correct changes.*

The Monitoring Engineer can help to monitor the release.

- *Creating dashboards*
- *Managing alerting rules*
- *Usually first to know of an incident*
- *Manages monitoring rules/governance for new/existing IT infrastructure*

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 to ensure the reliability of services.

The Team lead can be the point of contact and form/delegate tasks related to the new product.

- *Directs the work*
- *Keeps team focused*
- *Contributes to architecture meetings*
- *Forms workflows of the team*

The System Architect can assist the infrastructure needs.

- *Create scalable infrastructure*
- *Document/Diagram infrastructure*
- *Make recommendations for new technologies*
- *Provide migration paths to new technology*

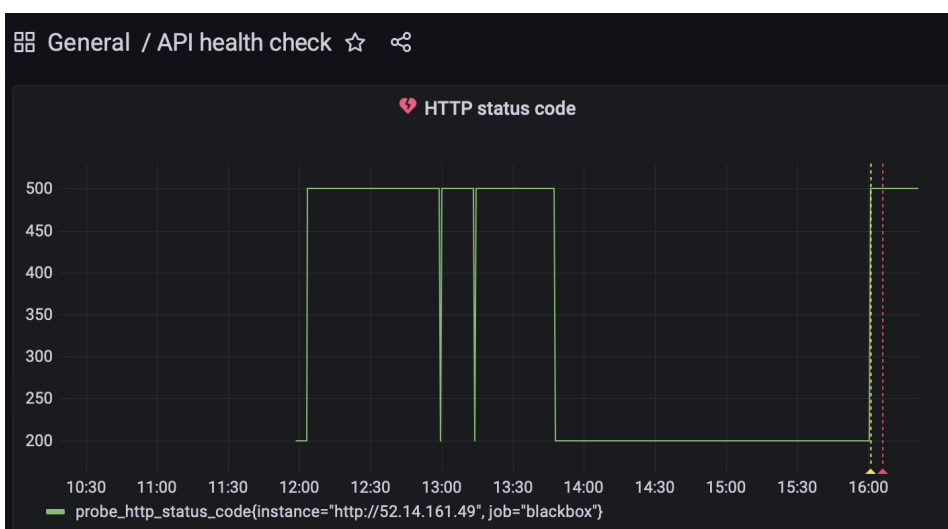
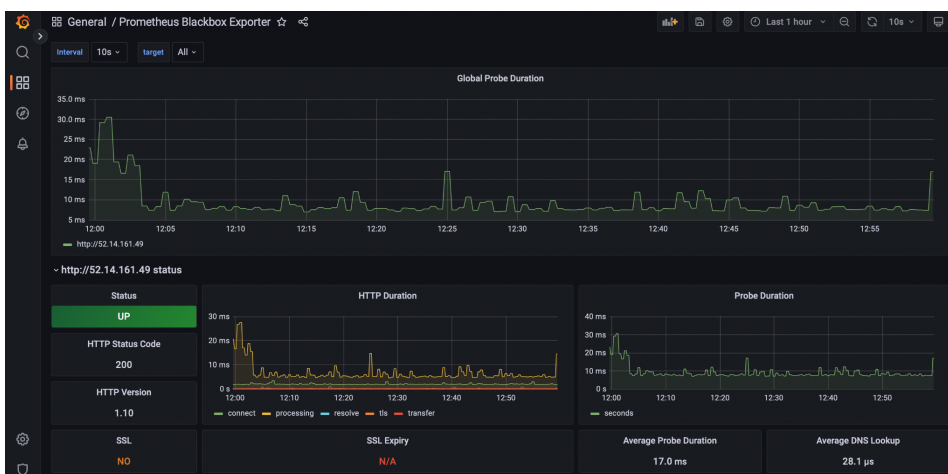
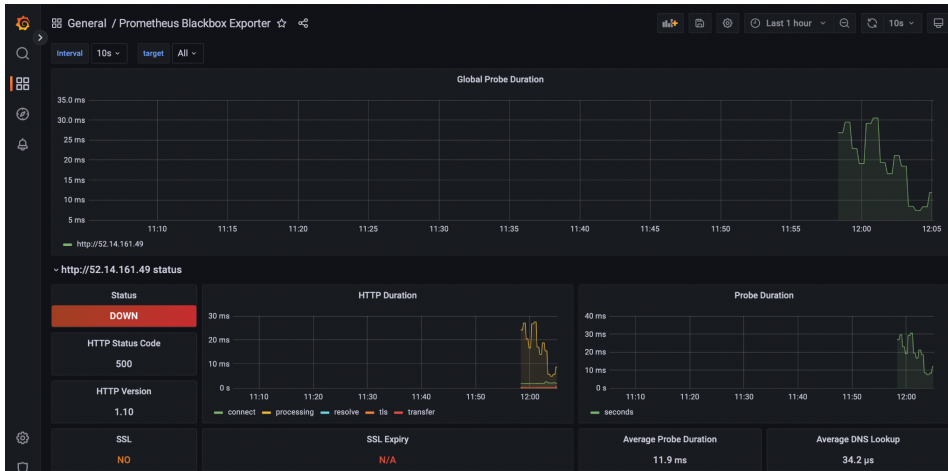
3. The emergency hotfix from question 1 was applied and is causing major issues in production. Which SRE role would primarily be involved in mitigating these issues?

The Release Manager would be involved in mitigating these issues by executing rolling backing procedures.

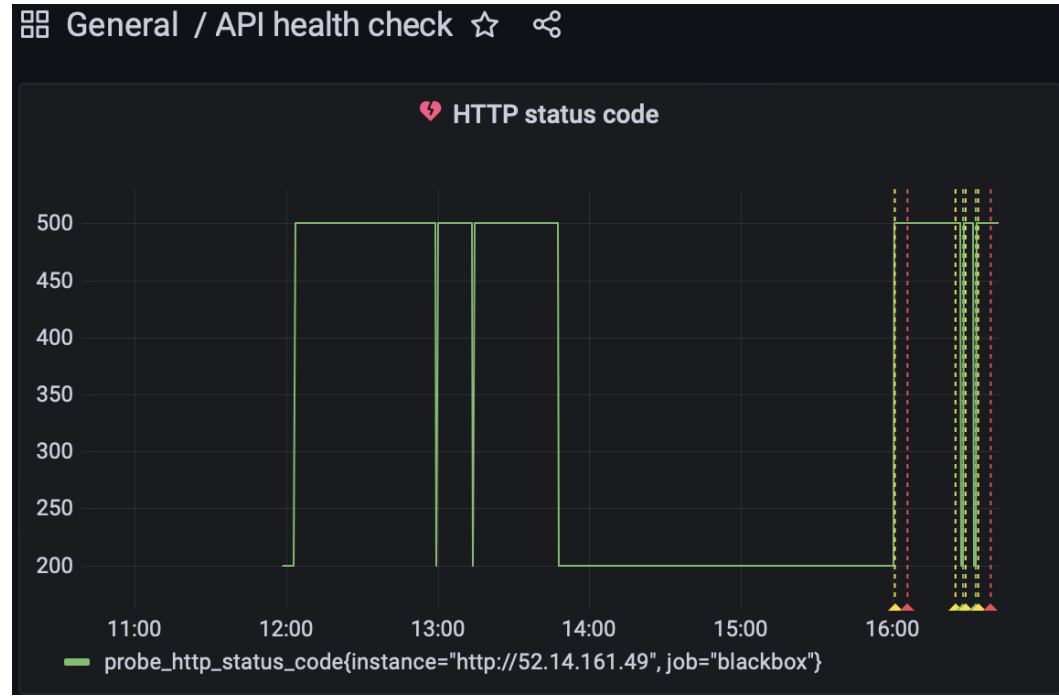
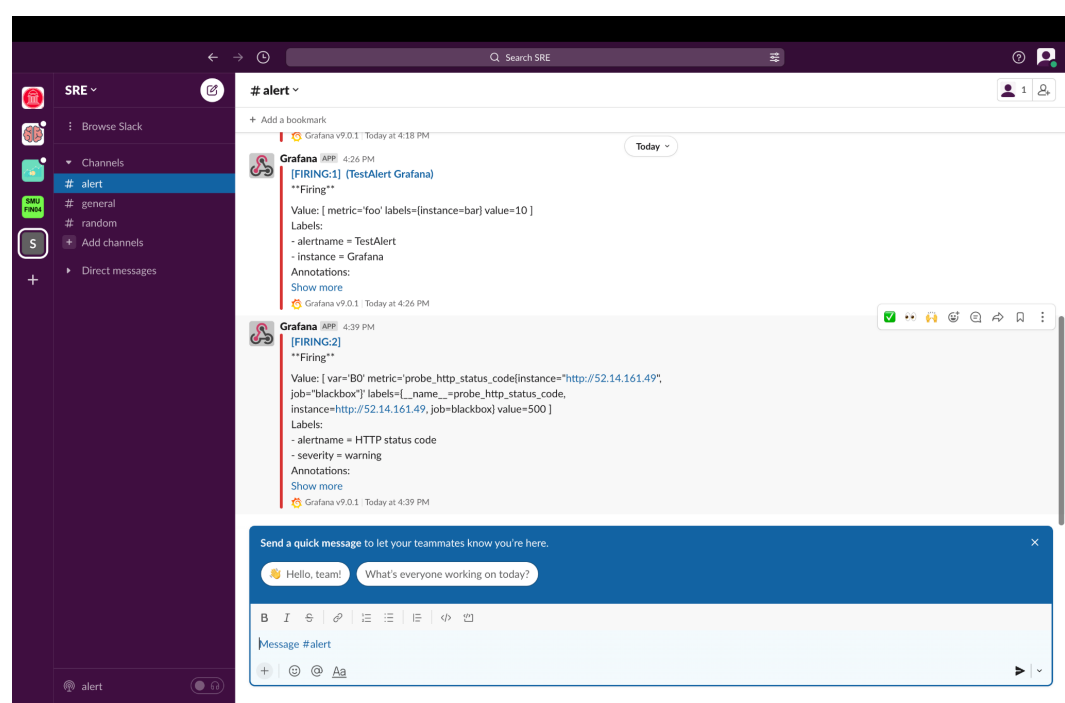
Team Formation and Workflow Identification

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).



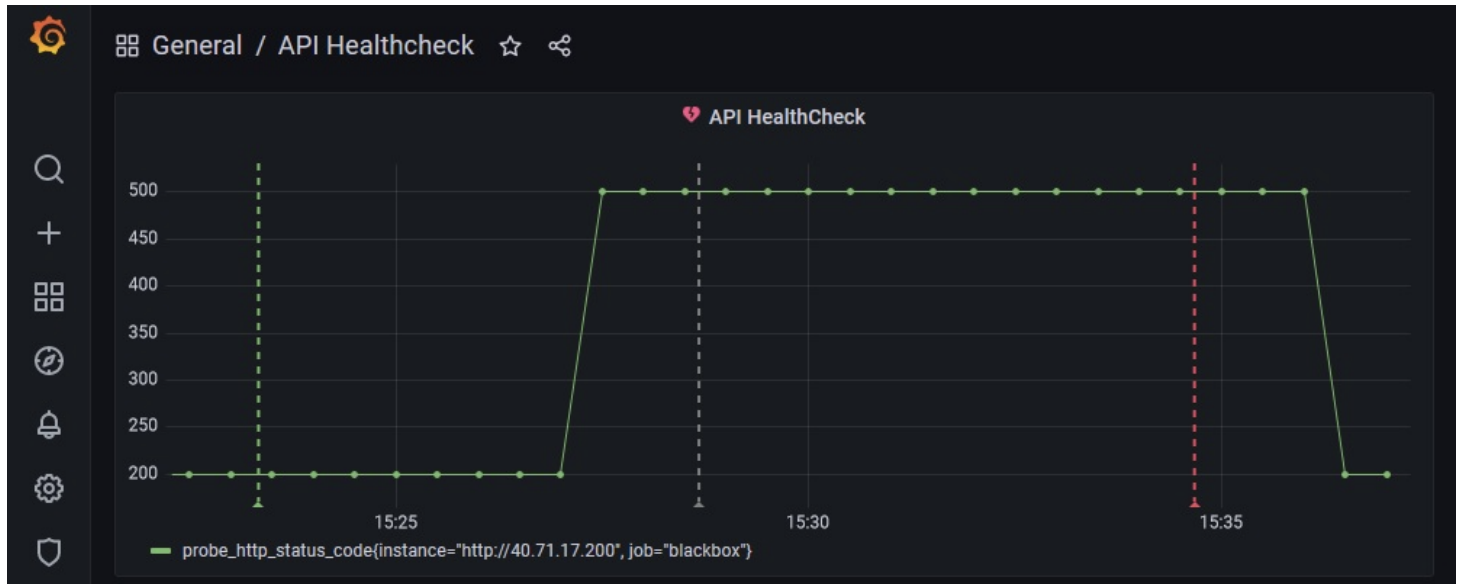
Create a notification channel: Provide a screenshot of the Grafana notification which shows the summary of the issue and when it occurred.



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

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?

Around 15:27, the API was down. Around 15:37, the API is healthy again.

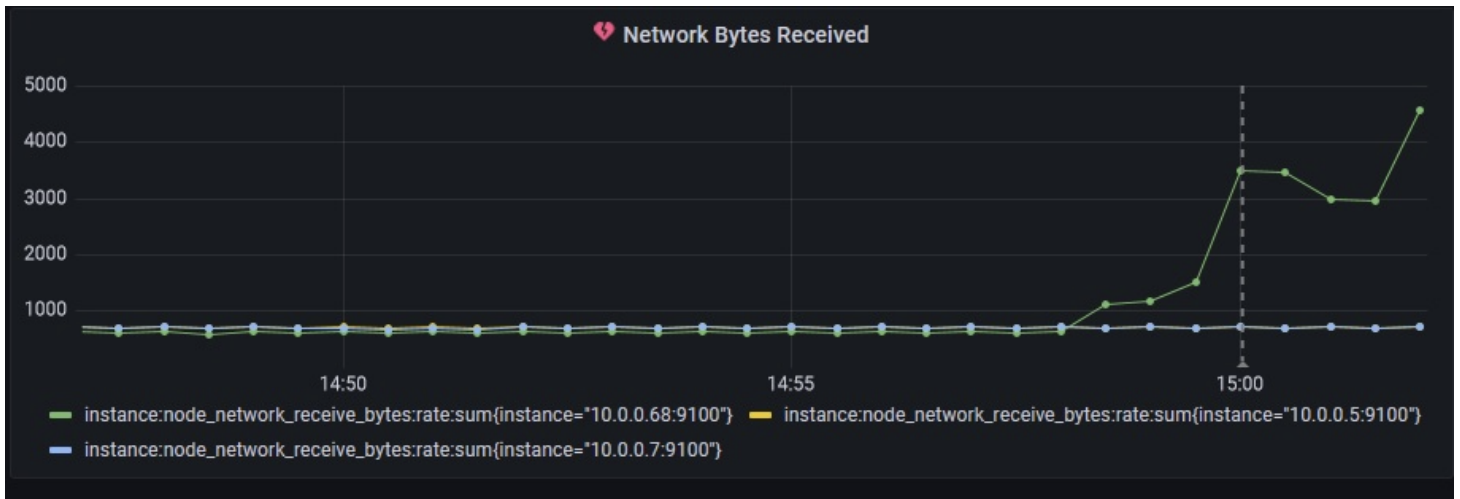
4b. If there was no SRE team, how would this outage affect customers?

The outage will render the service unfunctional and lead to customer dissatisfaction.

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

Monitoring and alerting for system metrics and other metrics that would impact the services could be put in place. So the SRE team would know of the outage before the customer. They might even be able to preemptively fix the issues so that the outage does not occur.

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)?

Instance 10.0.0.69 had an increase in traffic and it received about 4600 bytes at the highest traffic moment shown in the graph.

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

The Monitoring Engineer would be interested in this graph to configure alert rules. The System Architect might be interested in this graph to create scalable infrastructure. The Infrastructure Engineer might also update the system.