

CAPSTONE PROJECT Abdul Samim Mondal(UST,IN)

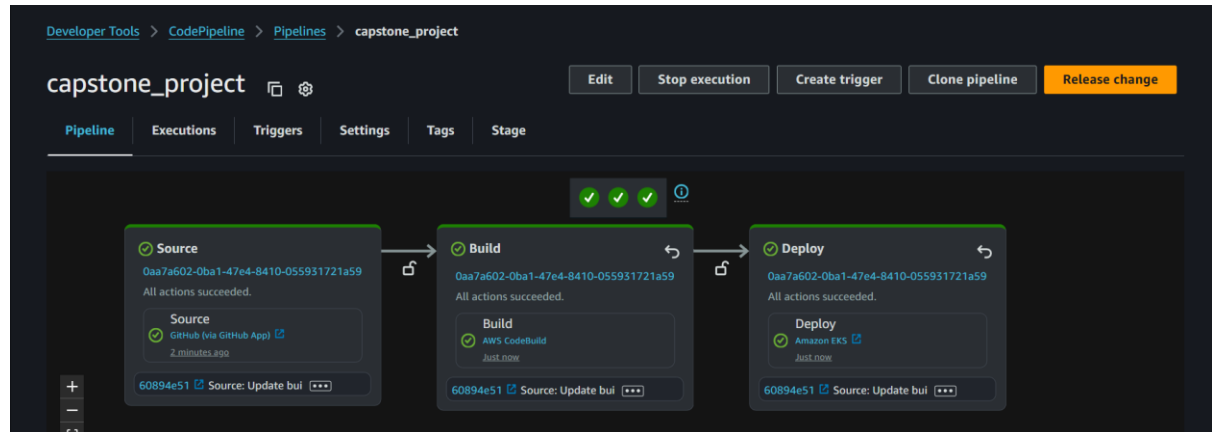
Project repo - <https://github.com/abdulsamimmondal/aws-capstone-samim.git>

Github repo- <https://github.com/abdulsamimmondal/cinema-capstone.git>

Step1: clone the repo

```
root@ip-172-31-86-226:/home/ubuntu/cinema-capstone# ls
Admin.txt      Cinema_Web_Site  LICENSE         'SQL Tables'    capstone_project.zip  classes          src              web.xml
'CSV Files'    Dockerfile       README.md      WebContent      cinema.war            deployment       target          webapp
root@ip-172-31-86-226:/home/ubuntu/cinema-capstone#
```

Pipeline-



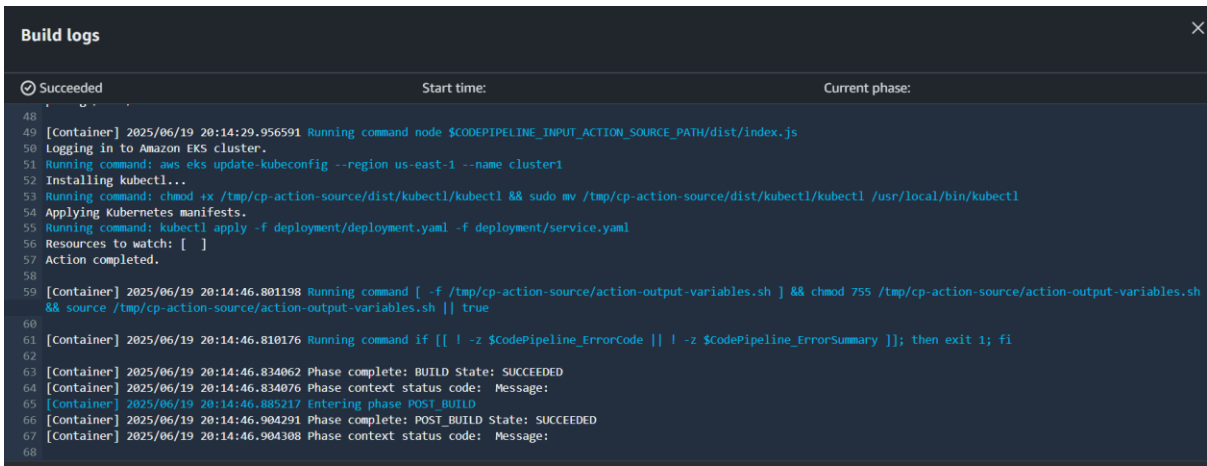
The screenshot shows the 'Build logs' for the 'Build' stage. The logs are marked as 'Succeeded' and 'Current phase: COMPLETED'. The logs show the output of the 'AWS CodeBuild' provider, including file discovery and expansion steps. The logs are as follows:

```
195 [Container] 2025/06/19 19:29:10.841685 Assembling file list
196 [Container] 2025/06/19 19:29:10.841688 Expanding appspec.yml
197 [Container] 2025/06/19 19:29:10.845111 Expanding deployment/**/*
198 [Container] 2025/06/19 19:29:10.848668 Found 4 file(s)
199 [Container] 2025/06/19 19:29:10.950254 Set report auto-discover timeout to 5 seconds
200 [Container] 2025/06/19 19:29:10.950381 Expanding base directory path: .
201 [Container] 2025/06/19 19:29:10.953700 Assembling file list
202 [Container] 2025/06/19 19:29:10.953715 Expanding .
203 [Container] 2025/06/19 19:29:10.957116 Expanding file paths for base directory .
204 [Container] 2025/06/19 19:29:10.957130 Assembling file list
205 [Container] 2025/06/19 19:29:10.957133 Expanding /**/*
206 [Container] 2025/06/19 19:29:10.961494 Found 4 file(s)
207 [Container] 2025/06/19 19:29:10.961528 Report auto-discover file discovery took 0.011273 seconds
208 [Container] 2025/06/19 19:29:10.962212 Phase complete: UPLOAD_ARTIFACTS State: SUCCEEDED
209 [Container] 2025/06/19 19:29:10.962230 Phase context status code: Message:
210
```

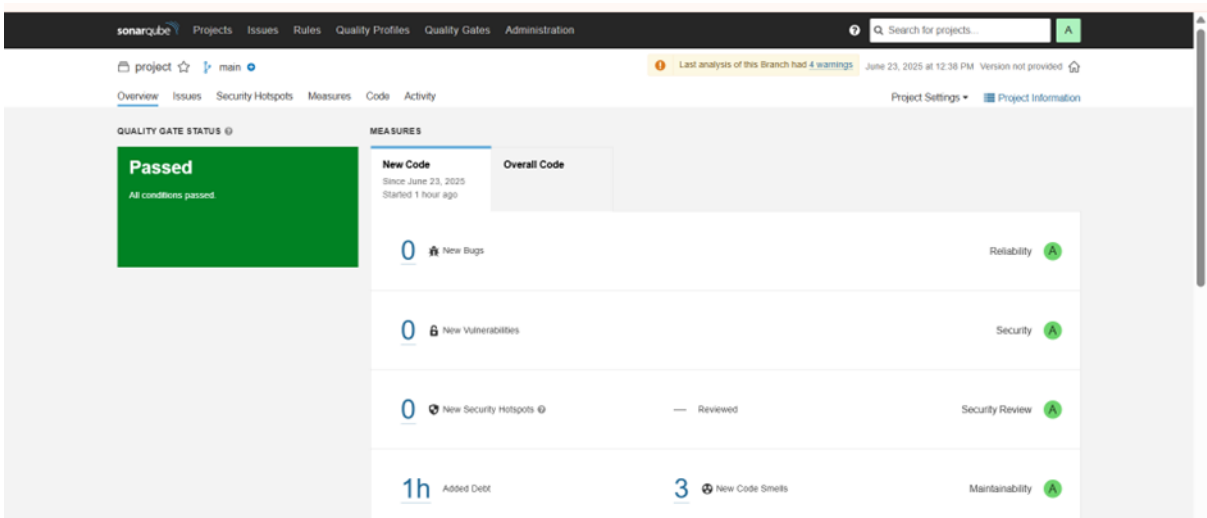
The screenshot shows the 'Build logs' for the 'Deploy' stage. The logs are marked as 'Succeeded' and 'Current phase: COMPLETED'. The logs show the output of the 'Amazon EKS' provider, including file discovery and expansion steps. The logs are as follows:

```
163 [Container] 2025/06/19 20:13:55.701055 Phase complete: POST_BUILD State: SUCCEEDED
164 [Container] 2025/06/19 20:13:55.701066 Phase context status code: Message:
165 [Container] 2025/06/19 20:13:55.919224 Expanding base directory path: .
166 [Container] 2025/06/19 20:13:55.922695 Assembling file list
167 [Container] 2025/06/19 20:13:55.922709 Expanding .
168 [Container] 2025/06/19 20:13:55.925877 Expanding file paths for base directory .
169 [Container] 2025/06/19 20:13:55.925890 Assembling file list
170 [Container] 2025/06/19 20:13:55.925893 Expanding appspec.yml
171 [Container] 2025/06/19 20:13:55.928960 Expanding deployment/**/*
172 [Container] 2025/06/19 20:13:55.932076 Found 4 file(s)
173 [Container] 2025/06/19 20:13:55.934619 Set report auto-discover timeout to 5 seconds
174 [Container] 2025/06/19 20:13:55.934658 Expanding base directory path: .
175 [Container] 2025/06/19 20:13:55.937608 Assembling file list
176 [Container] 2025/06/19 20:13:55.937618 Expanding .
177 [Container] 2025/06/19 20:13:55.940600 Expanding file paths for base directory .
178 [Container] 2025/06/19 20:13:55.940612 Assembling file list
179 [Container] 2025/06/19 20:13:55.940614 Expanding /**/*
180 [Container] 2025/06/19 20:13:55.944173 Found 4 file(s)
181 [Container] 2025/06/19 20:13:55.944190 Report auto-discover file discovery took 0.009572 seconds
182 [Container] 2025/06/19 20:13:55.944686 Phase complete: UPLOAD_ARTIFACTS State: SUCCEEDED
183 [Container] 2025/06/19 20:13:55.944699 Phase context status code: Message:
184
```

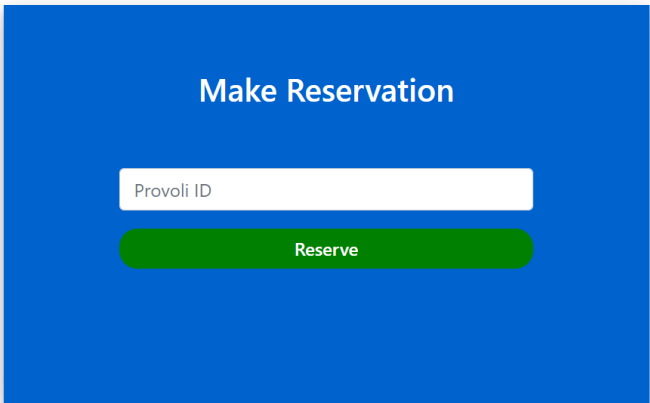
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Sonarqube-



Output:



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SUCCESS! Reservation added to the database.

Make Reservation

Provoli ID

Reserve

SUCCESS! Client added to the database.

Register

Username

Password

Full Name

Register

```
root@ip-172-31-86-226:/home/ubuntu/cinema-capstone# PGPASSWORD=mdonly123 psql -h cinema-db-instance.crqwg8ys63wt.us-east-1.rds.amazonaws.com \
-U postgres -d postgres \
-c "SELECT COUNT(*) FROM clients; SELECT COUNT(*) FROM reservations;"
count
-----
1
(1 row)

count
-----
0
(1 row)
```

```
-c "SELECT * FROM reservations ORDER BY id DESC LIMIT 5;"
id | provoli_id | client_id
-----+-----+-----
1 | 1 | 2
(1 row)

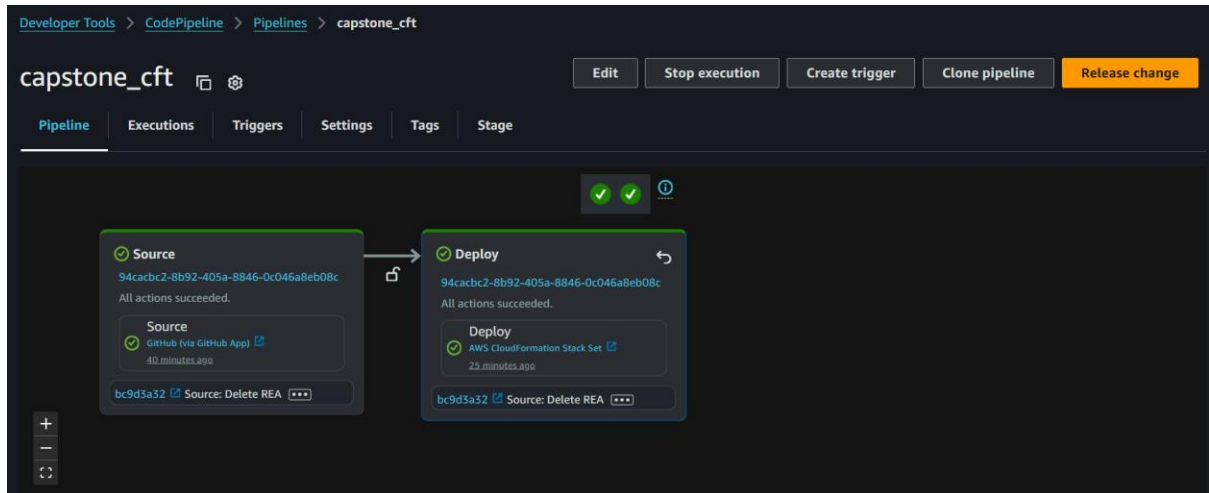
root@ip-172-31-86-226:/home/ubuntu/cinema-capstone# PGPASSWORD=mdonly123 psql -h cinema-db-instance.crqwg8ys63wt.us-east-1.rds.amazonaws.com \
-U postgres -d postgres \
-c "SELECT COUNT(*) FROM reservations;"
count
-----
1
(1 row)
```

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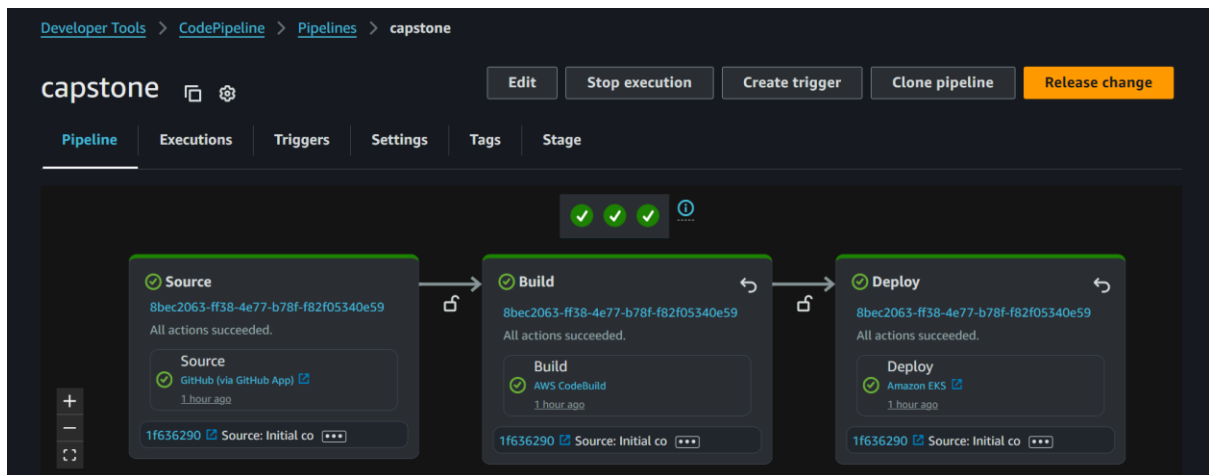
CLOUDFORMATION TEMPLATE

Repo link- https://github.com/abdulsamimmondal/capstone-cft-multi_region.git

Pipeline repo link- <https://github.com/abdulsamimmondal/capstone-east-2.git>

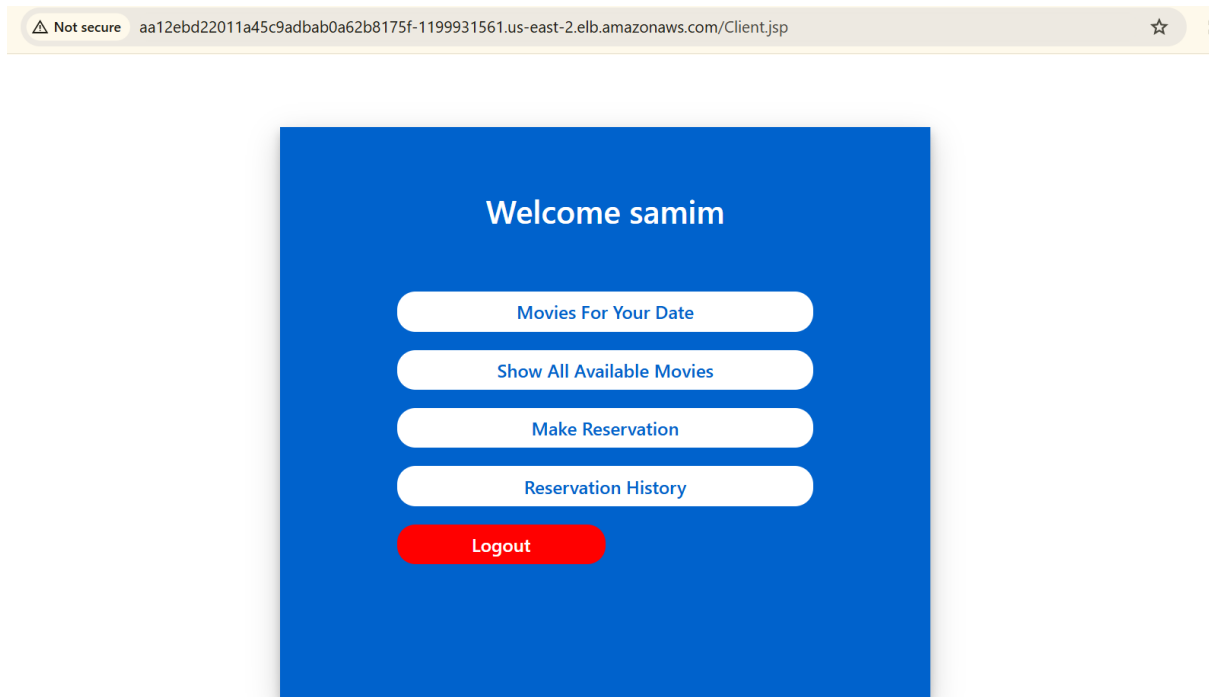


After the resources are created in the other region deploy app through pipeline



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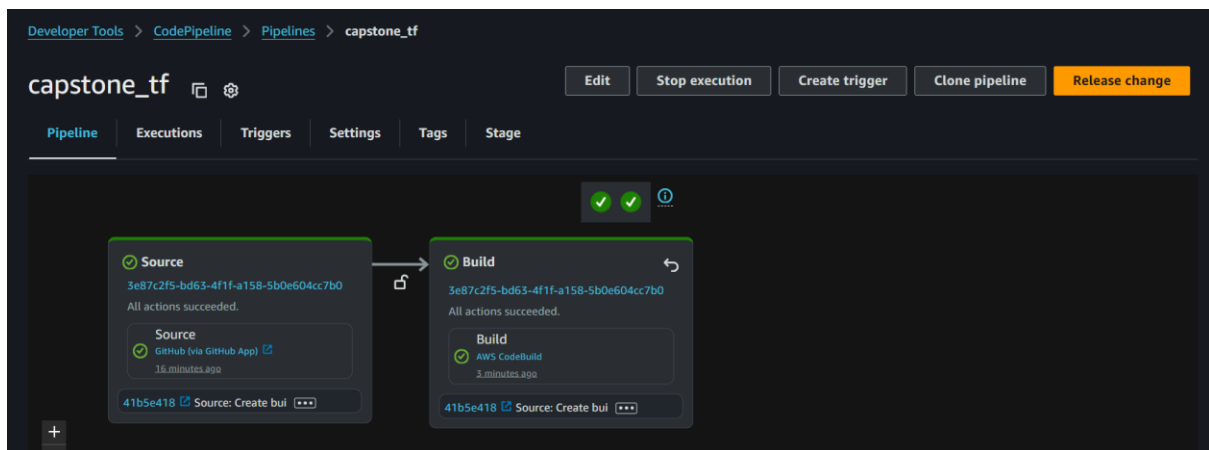
The app is working in the other region.



Terraform template-

Github repo- <https://github.com/abdulsamimmondal/capstone-tf.git>

Pipeline-

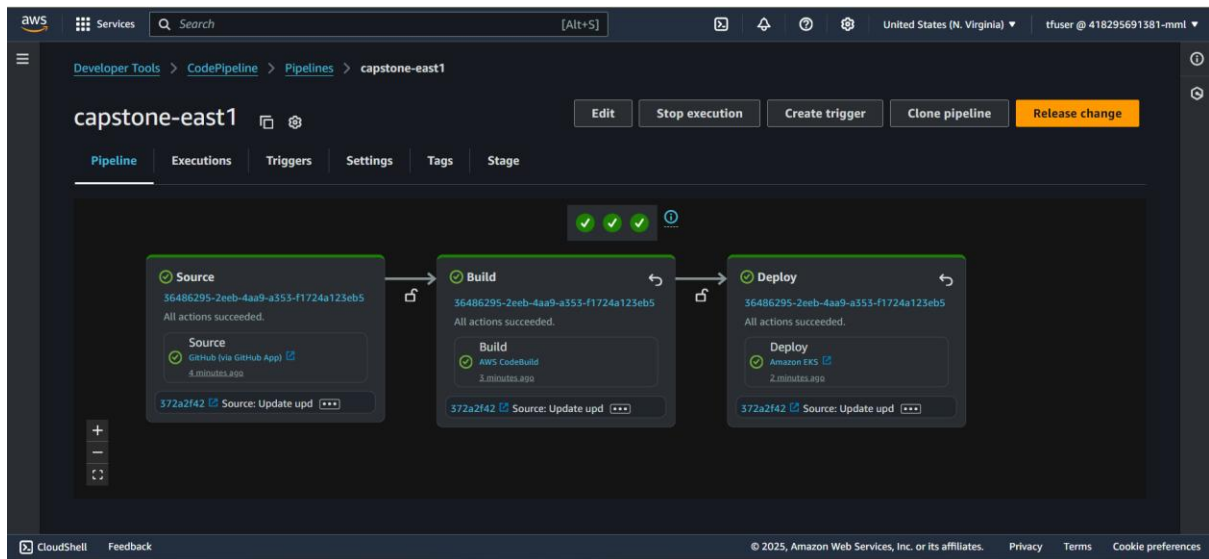


The infrastructure has been created now we will deploy our application on this infrastructure through another pipeline.

Github repo – <https://github.com/abdulsamimmondal/cinema-capstone.git>

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Pipeline-



The app is working-

SUCCESS! Client added to the database.

The image shows a registration form titled 'Register' on a blue background. It contains three input fields: a text field with the value 'samim', a password field with the value '*****', and another text field with the value 'samim'. Below the fields is a green button labeled 'Register'.

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Route 53 failover routing

Domain registration-

The screenshot shows the AWS Route 53 console for the hosted zone **samimcapstone.com**. The interface includes buttons for **Delete zone**, **Test record**, and **Configure query logging**. Below the zone name, there's a section for **Hosted zone details** with an **Edit hosted zone** button. The **Records (4)** tab is active, showing a table of DNS records. The table has columns for Record ID, Type, Routing Policy, Differencing, Alias, and Value/Route traffic to. The records are as follows:

Record ID	Type	Routing Policy	Differencing	Alias	Value/Route traffic to
samimcap...	A	Failover	Primary	Yes	dualstack.ab1d3a862df5943...
samimcap...	A	Failover	Secondary	Yes	dualstack.aa12ebd22011a45...
samimcap...	NS	Simple	-	No	ns-773.awsdns-32.net. ns-1819.awsdns-35.co.uk. ns-1070.awsdns-05.org. ns-21.awsdns-02.com.
samimcap...	SOA	Simple	-	No	ns-773.awsdns-32.net. awsd...

Health checks-

The screenshot shows the AWS Route 53 console for the health checks of the hosted zone **samimcapstone.com**. The interface includes a **Create health check** button. Below the health checks section, there's a table of health checks. The table has columns for ID, Name, Details, Status in last 24 hours, Current status, Alarm, and Actions. The health checks are as follows:

ID	Name	Details	Status in last 24 hours	Current status	Alarm	Actions
50076a35-c5b0-...	primary-us-east-...	http://ab1d3a86...	Healthy	Healthy	None, Create alarm	⋮
b3266ae2-58d3-...	secondary-us-ea...	http://aa12ebd2...	Healthy	Healthy	None, Create alarm	⋮

Domain is working-



The screenshot shows the login page for **samimcapstone.com**. The page has a blue background and a white login form. The form includes a dropdown menu for **Admin**, input fields for **Username** and **Password**, a **Login** button, and a **Register** button.

Access the app at- <http://samimcapstone.com>

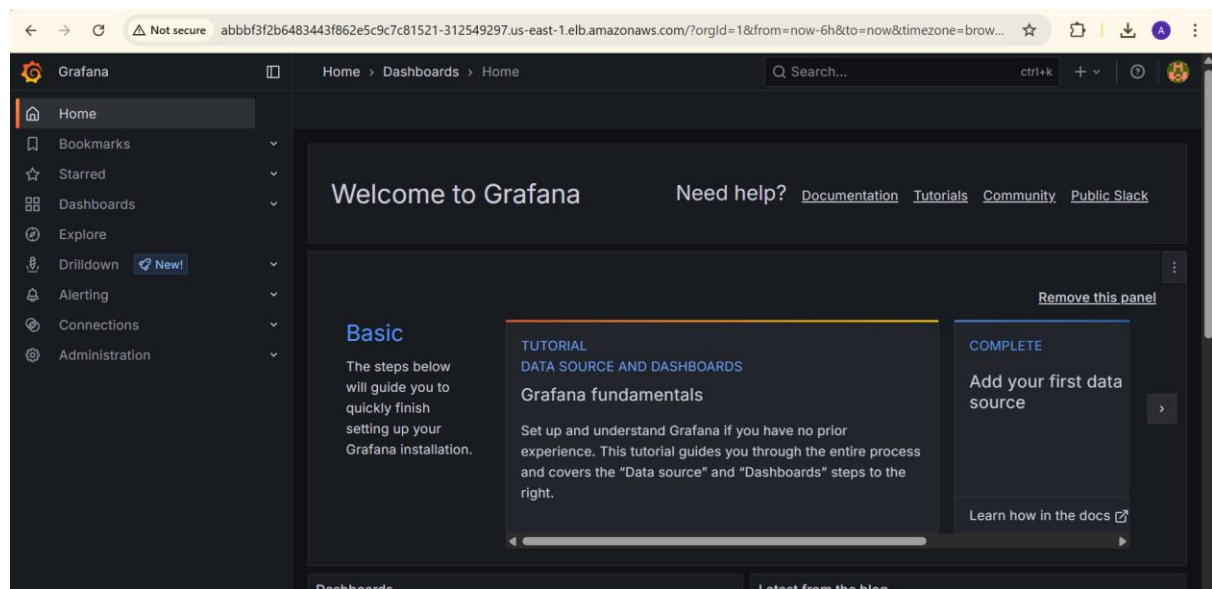
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Prometheus and Grafana -

Install Prometheus and grafana

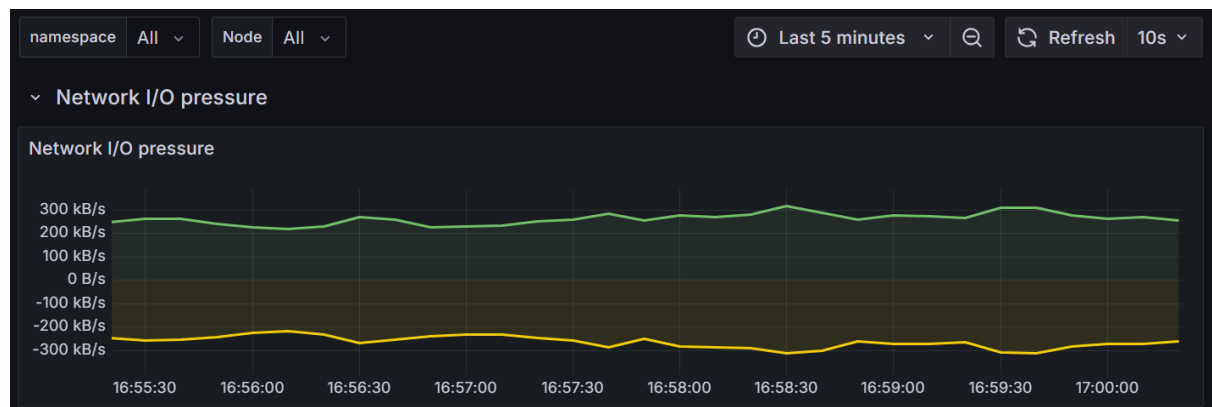
```
root@ip-10-0-6-72:/home/ubuntu# kubectl get pods -n prometheus
NAME                                READY    STATUS    RESTARTS   AGE
alertmanager-stable-kube-prometheus-sta-alertmanager-0  2/2      Running   0           6m50s
prometheus-stable-kube-prometheus-sta-prometheus-0      2/2      Running   0           6m49s
stable-grafana-56bdbb9b4b-7gpqk                        3/3      Running   0           6m53s
stable-kube-prometheus-sta-operator-66847554f8-nf9sk     1/1      Running   0           6m53s
stable-kube-state-metrics-7fc6b5c5d4-tkwqp              1/1      Running   0           6m53s
stable-prometheus-node-exporter-fsfhk                   1/1      Running   0           6m53s
stable-prometheus-node-exporter-rf4rs                   1/1      Running   0           6m53s
root@ip-10-0-6-72:/home/ubuntu# kubectl get svc -n prometheus
NAME                                TYPE               CLUSTER-IP      EXTERNAL-IP      PORT(S)                                AGE
alertmanager-operated              ClusterIP           None             <none>            9093/TCP,9094/TCP,9094/UDP            7m18s
prometheus-operated                 ClusterIP           None             <none>            9090/TCP                              7m17s
stable-grafana                      ClusterIP           172.20.15.192   <none>            80/TCP                                7m21s
stable-kube-prometheus-sta-alertmanager  ClusterIP           172.20.112.194 <none>            9093/TCP,8080/TCP                    7m21s
stable-kube-prometheus-sta-operator     ClusterIP           172.20.72.191  <none>            443/TCP                              7m21s
stable-kube-prometheus-sta-prometheus   ClusterIP           172.20.107.17  <none>            9090/TCP,8080/TCP                    7m21s
stable-kube-state-metrics              ClusterIP           172.20.232.26  <none>            8080/TCP                              7m21s
stable-prometheus-node-exporter         ClusterIP           172.20.237.107 <none>            9100/TCP                              7m21s
root@ip-10-0-6-72:/home/ubuntu#
```

Open Grafana

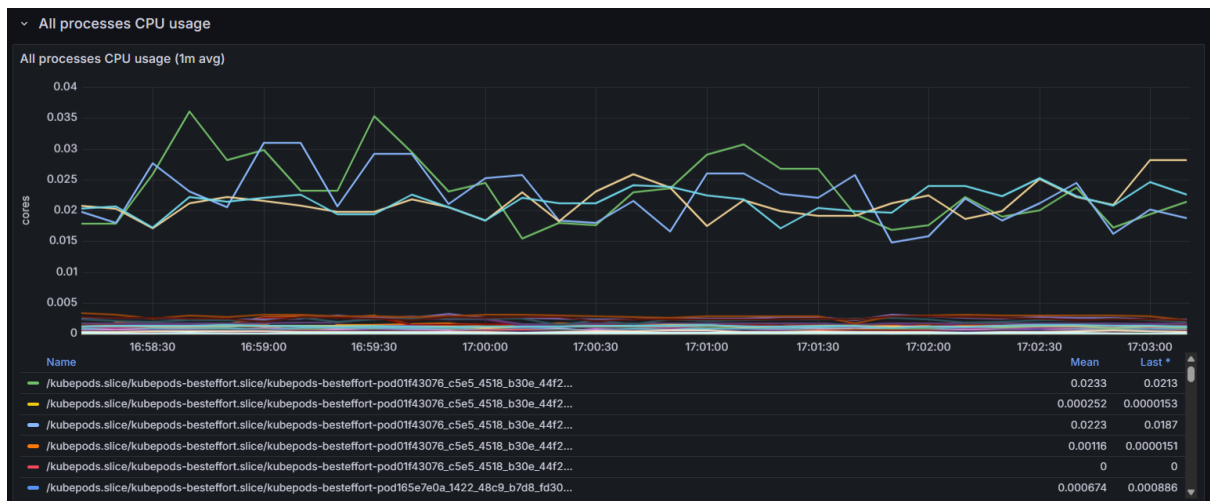


Create dashboard

Kubernetes monitoring dashboard



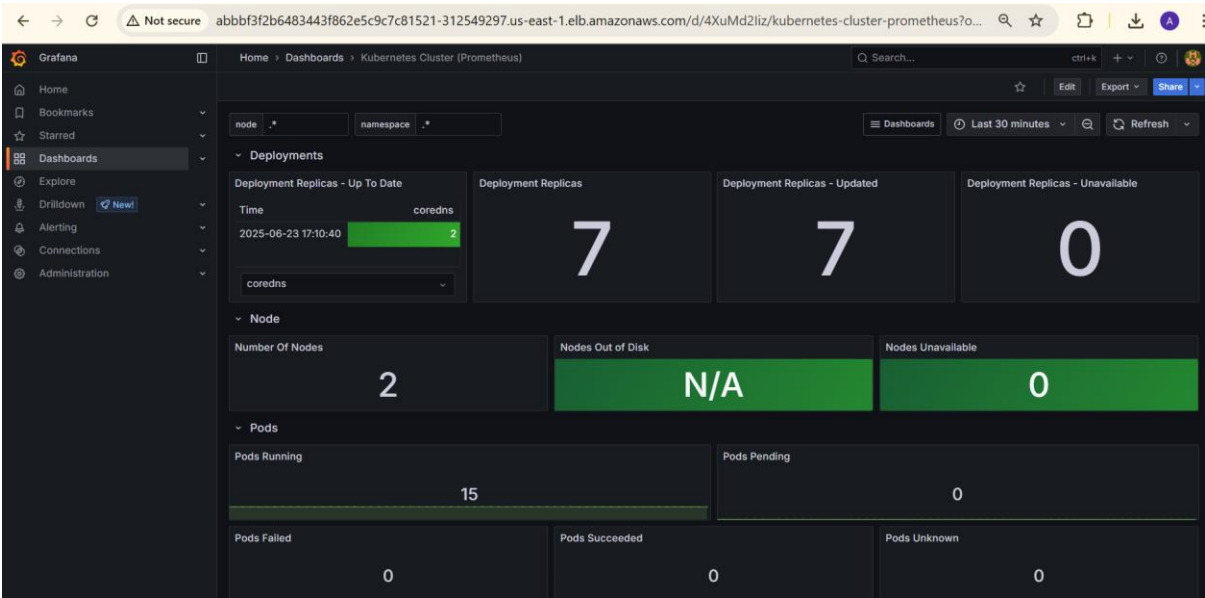
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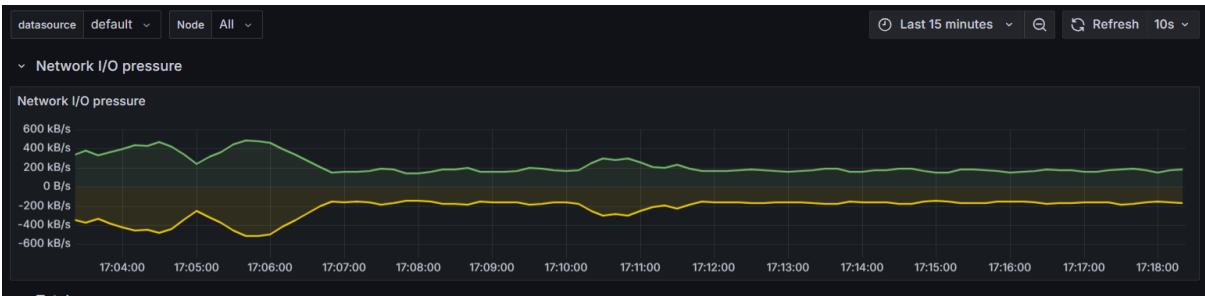
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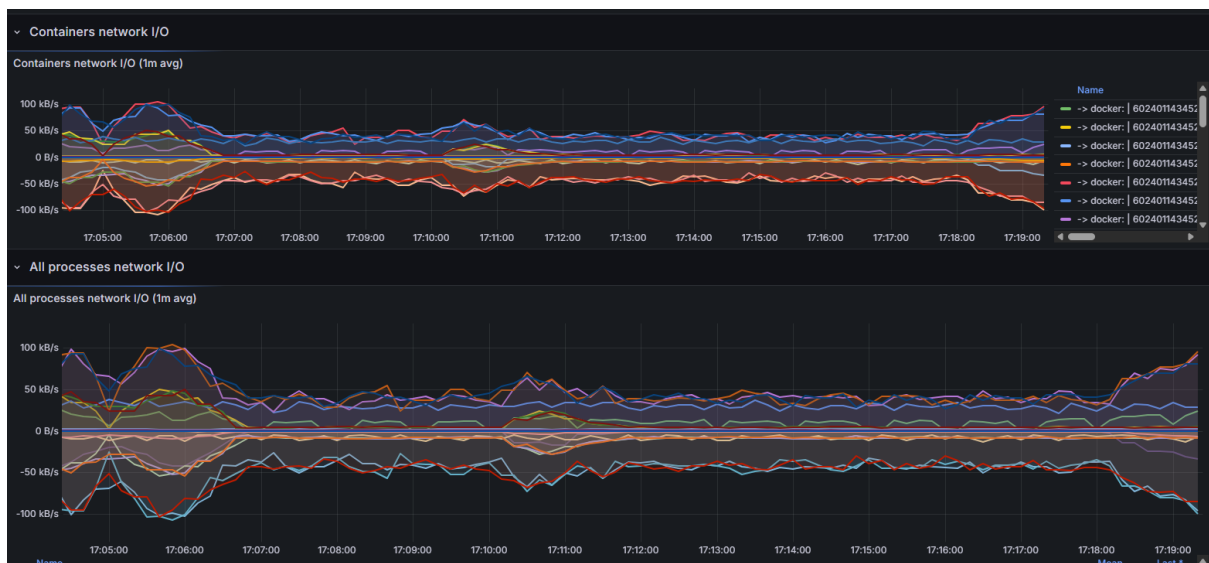
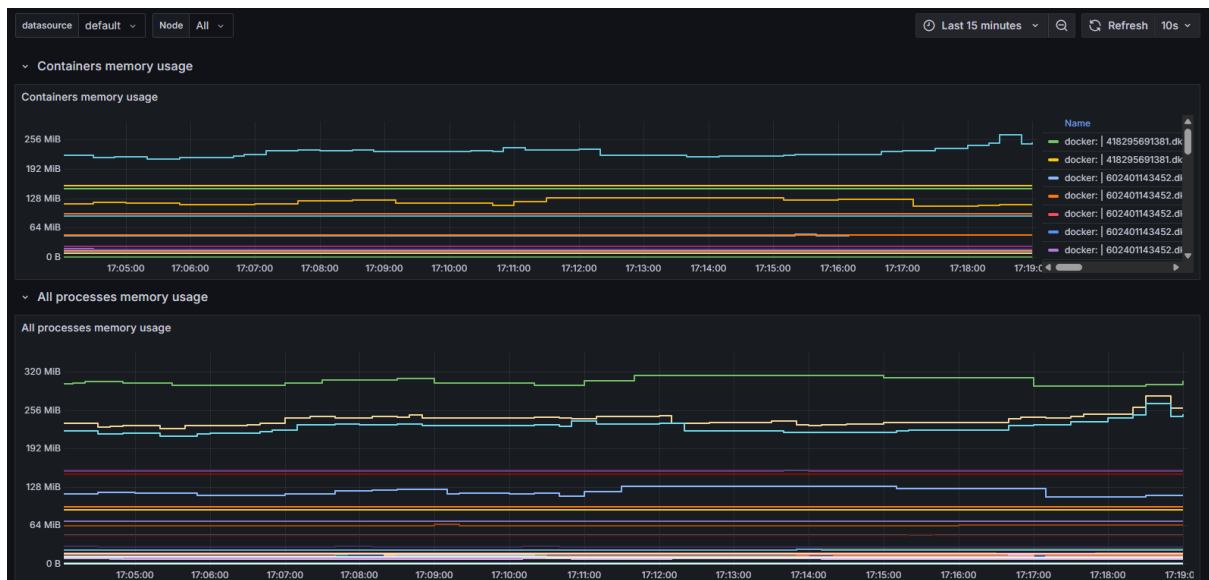
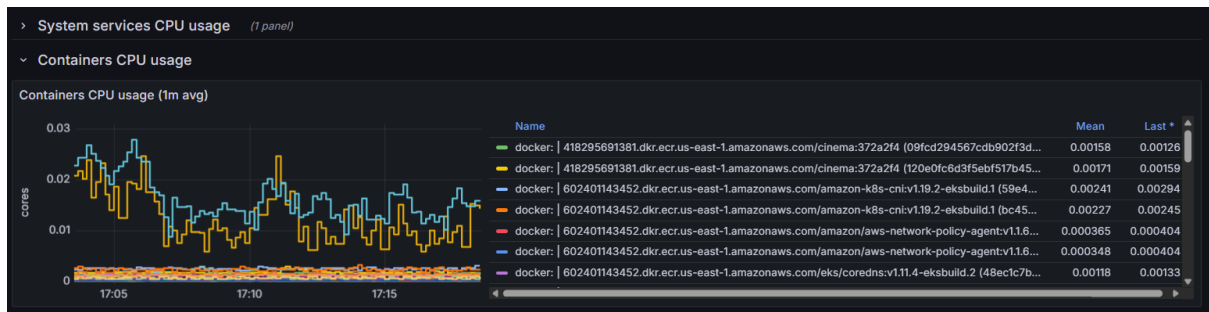
Pod monitoring dashboard



Kubernetes cluster monitoring dashboard



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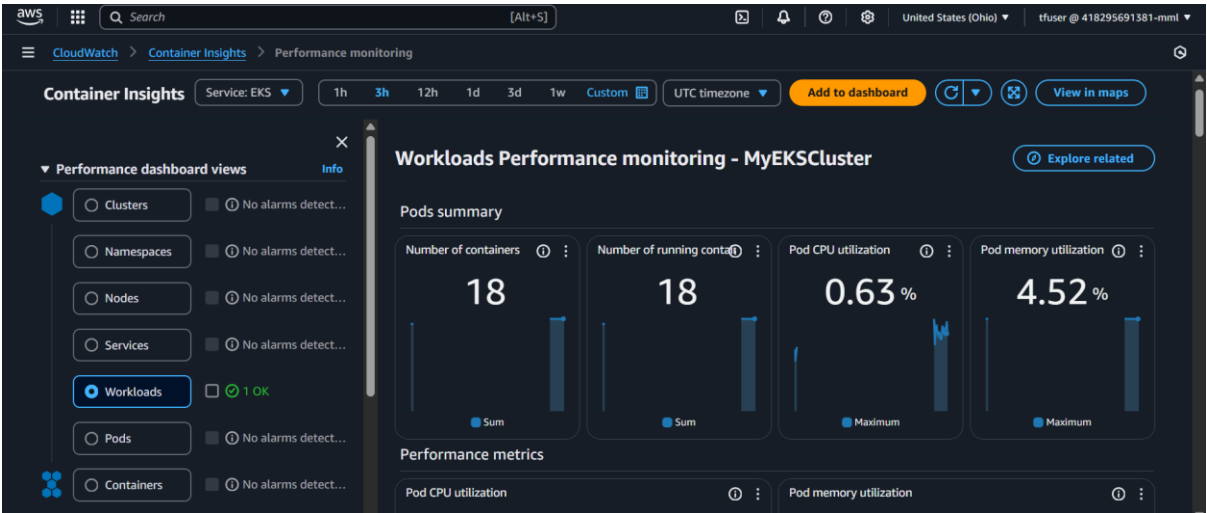
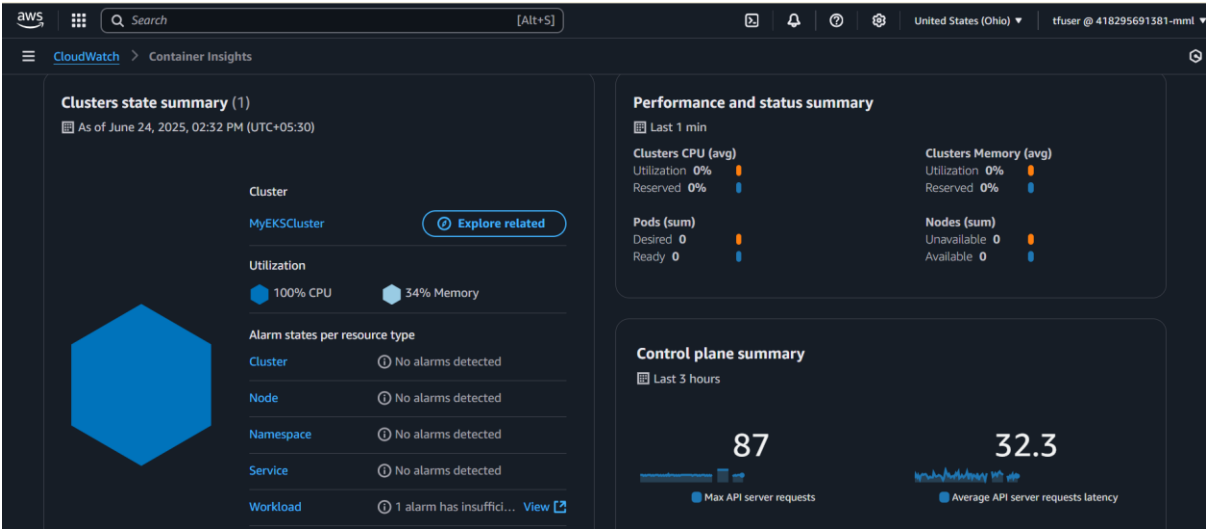
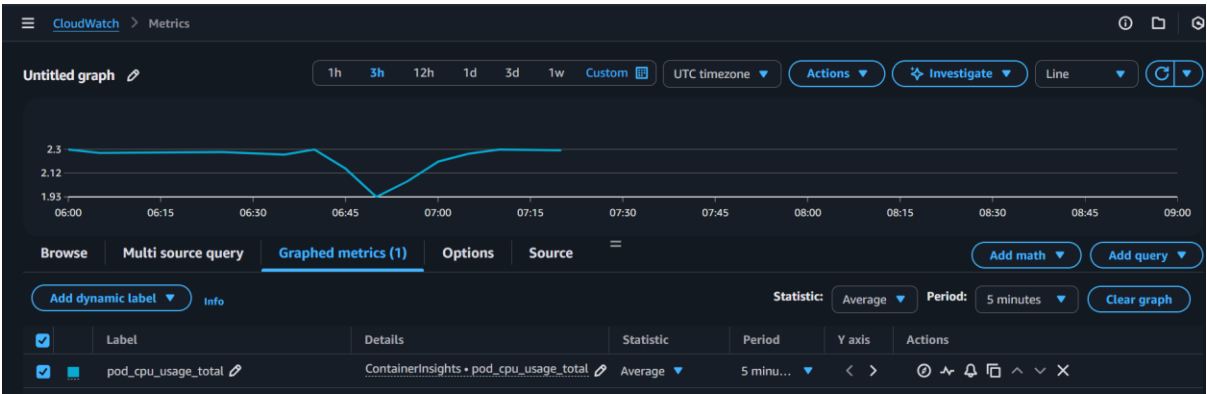


CLOUDWATCH MONITORING

```
root@ip-10-0-0-160:/home/ubuntu# kubectl get pods -n amazon-cloudwatch -w
```

NAME	READY	STATUS	RESTARTS	AGE
amazon-cloudwatch-observability-controller-manager-76c7956t2w19	1/1	Running	0	10s
cloudwatch-agent-hqm5l	1/1	Running	0	4s
cloudwatch-agent-llq9z	1/1	Running	0	4s
fluent-bit-7p9vg	1/1	Running	0	10s
fluent-bit-tr2hf	1/1	Running	0	10s

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NOTIFY PIPELINE FAILURES-

