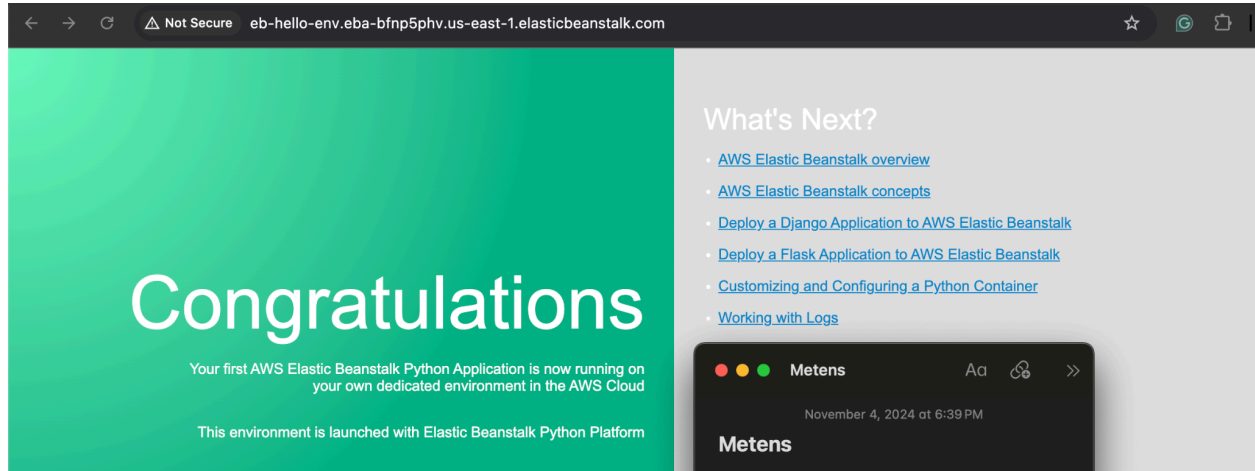


# Week #6 Labs

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## 06.1a: EB Guestbook

### 3. Running the application



### 4. Handling failures seamlessly






















Find Instance by attribute or tag (case-sensitive)

All states

<


1


>

<input type="checkbox"/>	Name 	Instance ID	Instance state 	Instance type 	Status check	Alarm status
<input type="checkbox"/>	Eb-hello-env	i-05a5685303b2d255d	 Pending  	t2.small	-	<a href="#">View alarms</a> 
<input type="checkbox"/>	Eb-hello-env	i-0497421de6dca0483	 Terminated  	t2.small	-	<a href="#">View alarms</a> 
<input type="checkbox"/>	guestbook	i-0cbcb1229a3c413e3	 Running  	t2.micro	 2/2 checks passec	<a href="#">View alarms</a> 
<input type="checkbox"/>	Eb-hello-env	i-05283f9411a2a0395	 Running  	t2.small	 2/2 checks passec	<a href="#">View alarms</a> 


Metens

Aa





November 4, 2024 at 6:39 PM



## 7. Deploying the Guestbook

← → ↻ ⚠ Not Secure guestbook-env.eba-f2kuimpe.us-east-1.elasticbeanstalk.com ☆

Nathan Metens <metens@pdx.edu>  
signed on 2024-11-05 04:39:52.560737  
Hello EC2!

---

Nathan Metens <metens@pdx.edu>  
signed on 2024-11-06 05:41:14.756183  
Hello Elastic Beanstalk!

---

Instances (4) [Info](#)

Last updated 1 minute ago

Connect

Instance state ▼

Actions ▼

Launch instances ▼

All states ▼

Instance state = running X

Clear filters

< 1 > ⚙

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	guestbook-env	i-05b038fd2093bda58	Running	t3.micro	3/3 checks passed	<a href="#">View alarms</a> +	us-east-1b
<input type="checkbox"/>	guestbook	i-0cbcb1229a3c413e3	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a> +	us-east-1b
<input type="checkbox"/>	guestbook-env	i-060142d94e86dad9c	Running	t3.micro	3/3 checks passed	<a href="#">View alarms</a> +	us-east-1a
<input type="checkbox"/>	guestbook-env	i-0e44ea61e898568ab	Running	t3.micro	3/3 checks passed	<a href="#">View alarms</a> +	us-east-1c

Select an instance

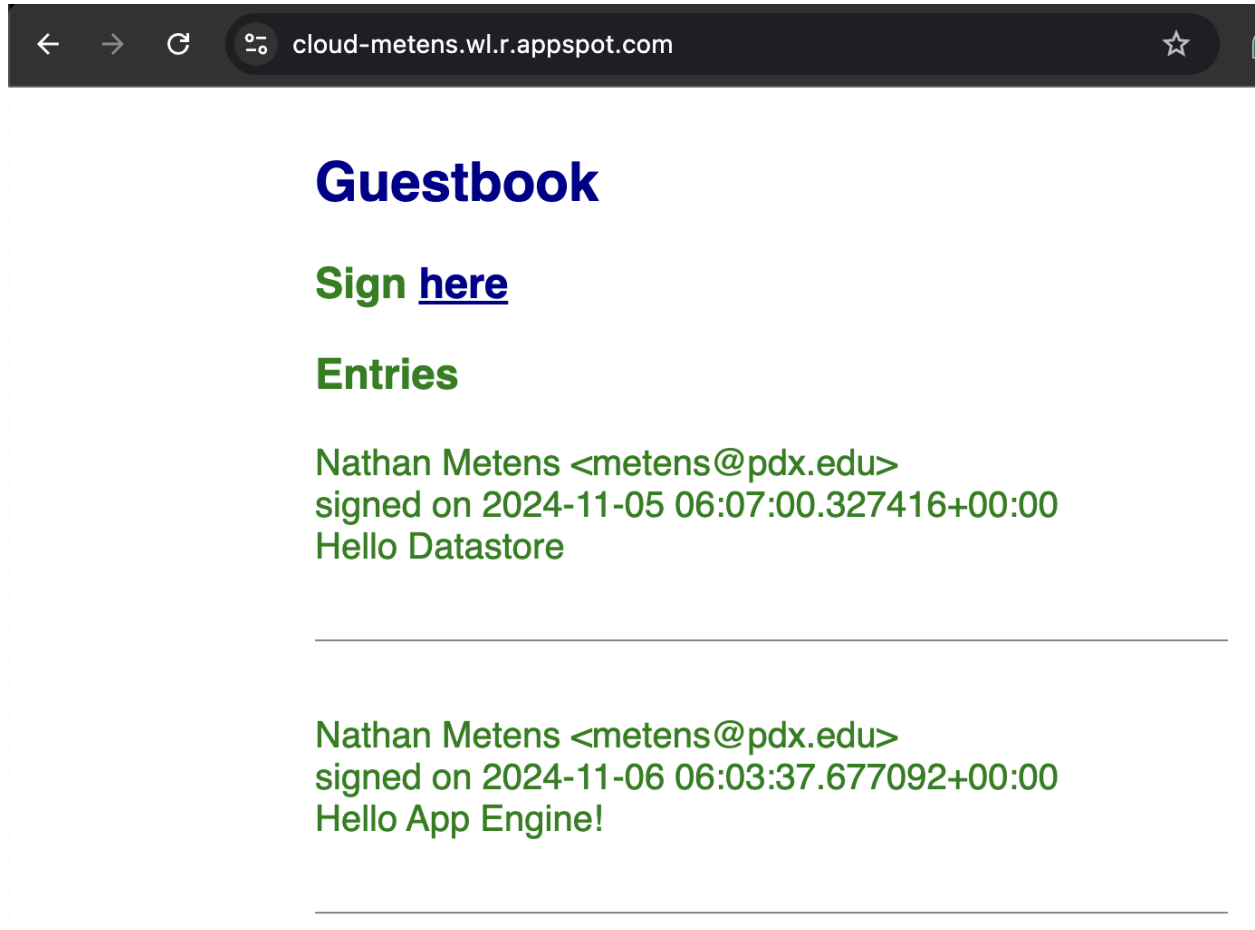
Metens

November 4, 2024 at 6:39 PM

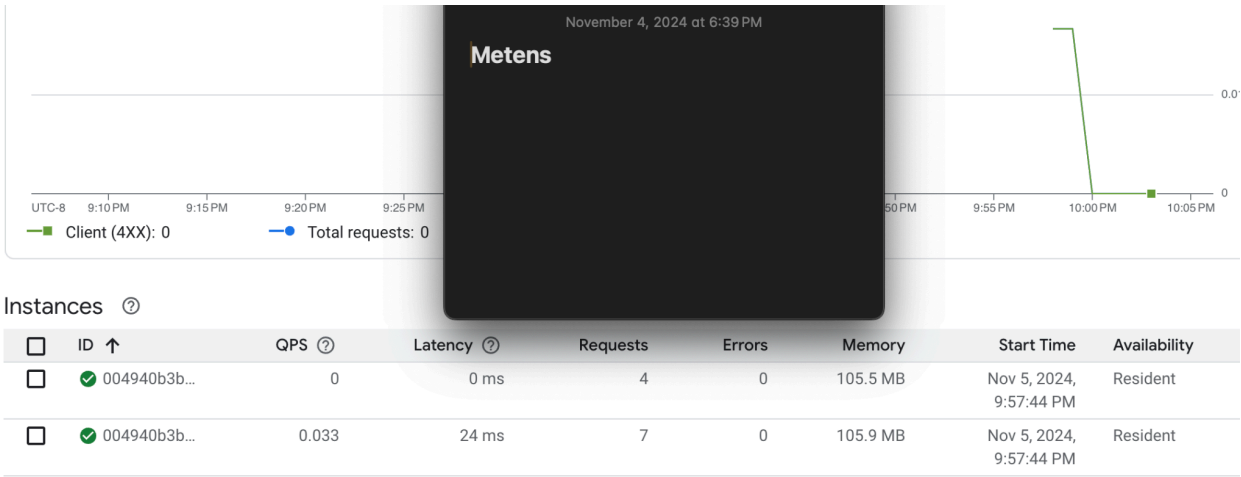
Metens

## 06.1g: App Engine Guestbook

### 3. Deploying the Guestbook



## 4. Handling failures seamlessly



## 06.2g: Cloud Run, Secret Manager (Web proxy)

## 8. Setup secret proxy

8000-cs-292029700782-default.cs-us-west1-ijlt.cloudshell.dev/metens?url=%20https://oregonctf.org

Toggle navigation

- Portland State University Computer Science
- Oregon CTF

**Capture-the-Flag security games and codelabs**

Ones we've developed:

- Computer Systems Programming (CS 205) [CTF](#)
- Malware Reverse Engineering (CS 492) [CTF](#)
- angr Symbolic Execution (CS 492) [CTF](#)
- Cloud Security (CS 430/495) [Thunder CTF](#)
- Fuzzing (CS 492) [codelab](#)
- Divergent Cryptography and Security (CyberPDX camp) [CTF](#)

Ones we like to teach from:


- bandit (Linux tools) [CTF](#)
- natas (Web Security) [CTF](#)
- PortSwigger (Web Security) [CTF](#)
- OWASP Damn Vulnerable NodeJS Application (Web Security) [CTF](#)
- flaws.cloud (Cloud Security) [v1](#) | [v2](#)
- CloudGoat (Cloud Security) [exercises](#)
- Microcorruption (Reverse Engineering) [CTF](#)
- CryptoPals (Cryptanalysis) [CTF](#)

Portland State's CTF Slack channel [here](#)

**Resources**


The advantage of passing in a secret proxy route as an environment variable is that the secret proxy route won't be embedded in the application code which would make it visible to anyone who has access to the application.


## 10. Cloud Build





cloud-metens

artifact

Artifact Registry





8f82c3b9f57bb

DELETE

SETUP INSTRUCTIONS

DEP

Repositories

Settings

us-west1-docker.pkg.dev > cloud-metens > secret-proxy-repo > se

OVERVIEW


PULL

MANIFEST

FILES

ATTACHMENTS

Format

 Docker

Media type

application/vnd.docker.distribution.manifest.v2+json

Project

cloud-metens

Location

us-west1 (Oregon)

Repository


secret-proxy-repo

Image

secret-proxy

Digest

sha256:8f82c3b9f57bbe4e443c74927b65ee786723c97ad804f8adb

Virtual size 

52.5 MB

Built


Nov 5, 2024, 11:37:20 PM

Created


Nov 5, 2024, 11:37:34 PM

Updated

Nov 5, 2024, 11:37:34 PM

Tags 

latest







Subject digest

—

Artifact type

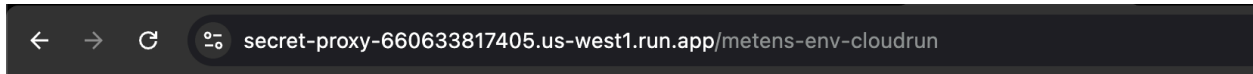
—

## 11. Deploy to cloud run

    secret-proxy-660633817405.us-west1.run.app/metens-env-cloudrun

### Proxy

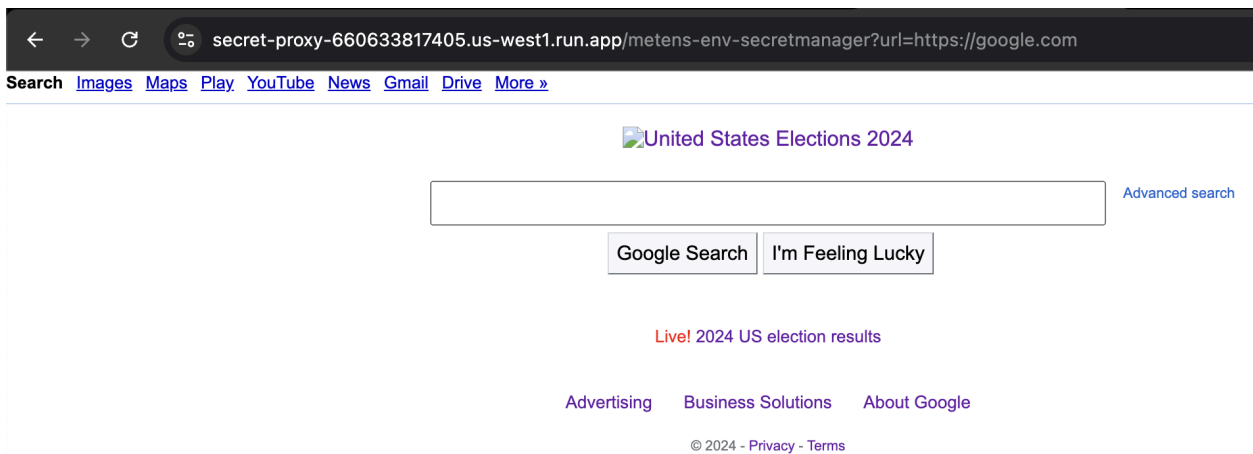
Enter URL to access by proxy:



## Not Found

The requested URL was not found on the server. If you entered the URL manually please check your spelling and try again.

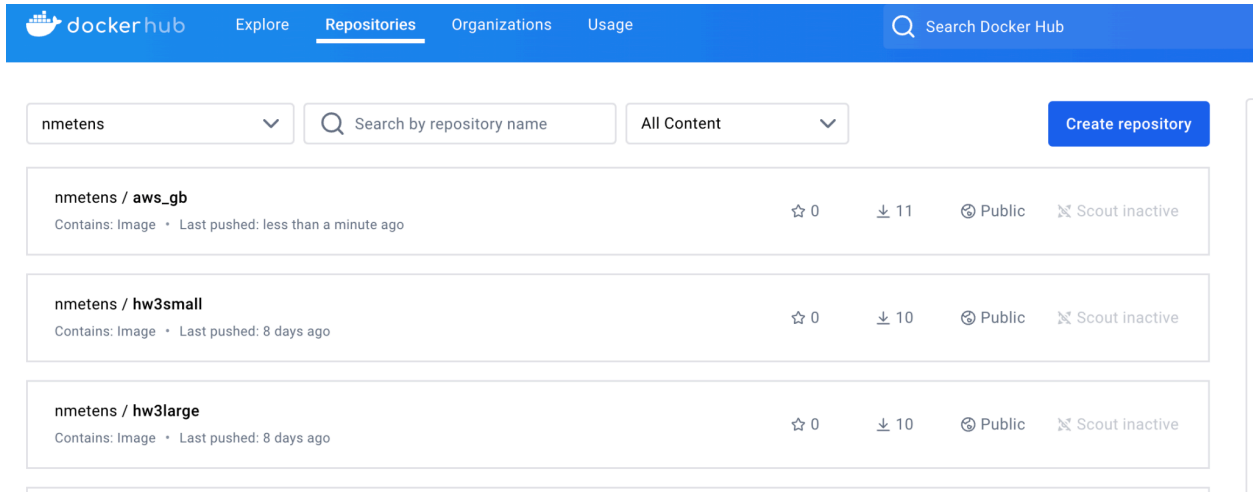
### 13. Deploy to Cloud Run with Secret Manager



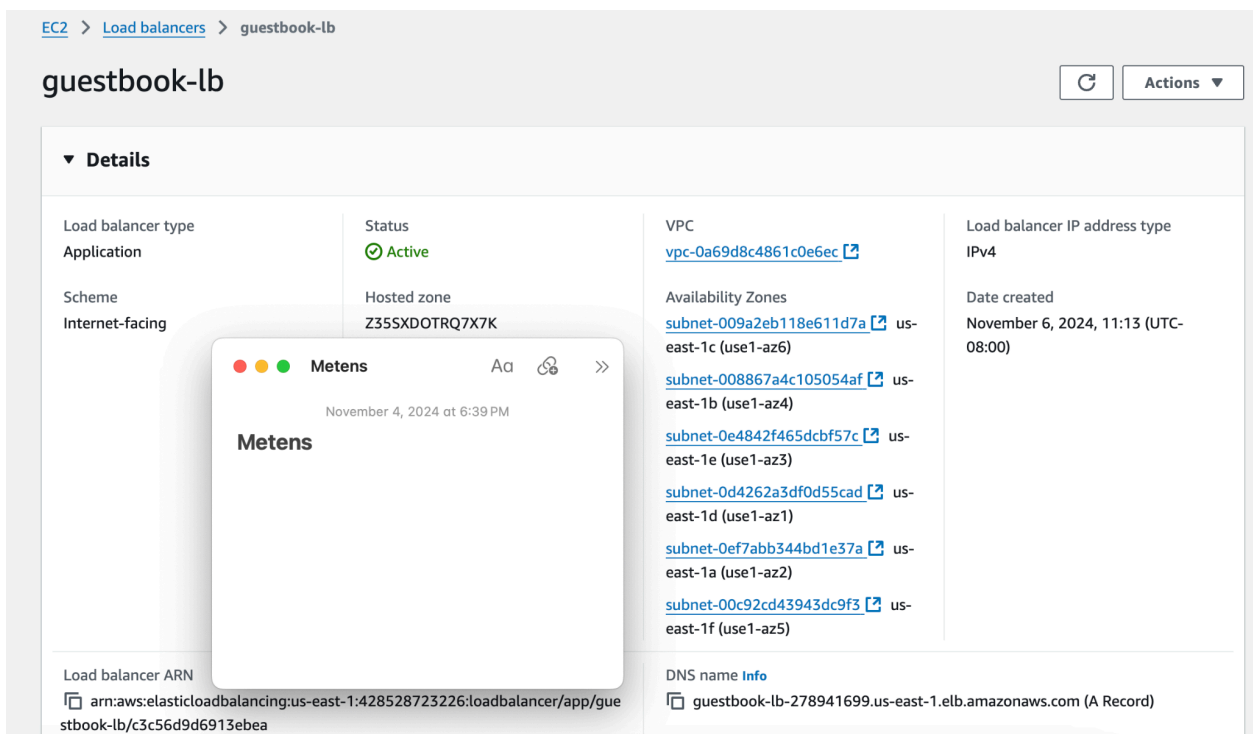
Upon attempting to access the metadata service associated with the VM by entering the two urls into the proxy, Google is preventing us from accessing this metadata from the url as we are not directly inside the VM itself. The metadata is highly sensitive and shouldn't be accessible outside of itself. "An SSRF allows an external attacker to access the endpoint because the request originates from the machine (server side) but sends the output to the attacker's browser/client."

## 06.3a: ECS Guestbook

### 1. Prepare a container image



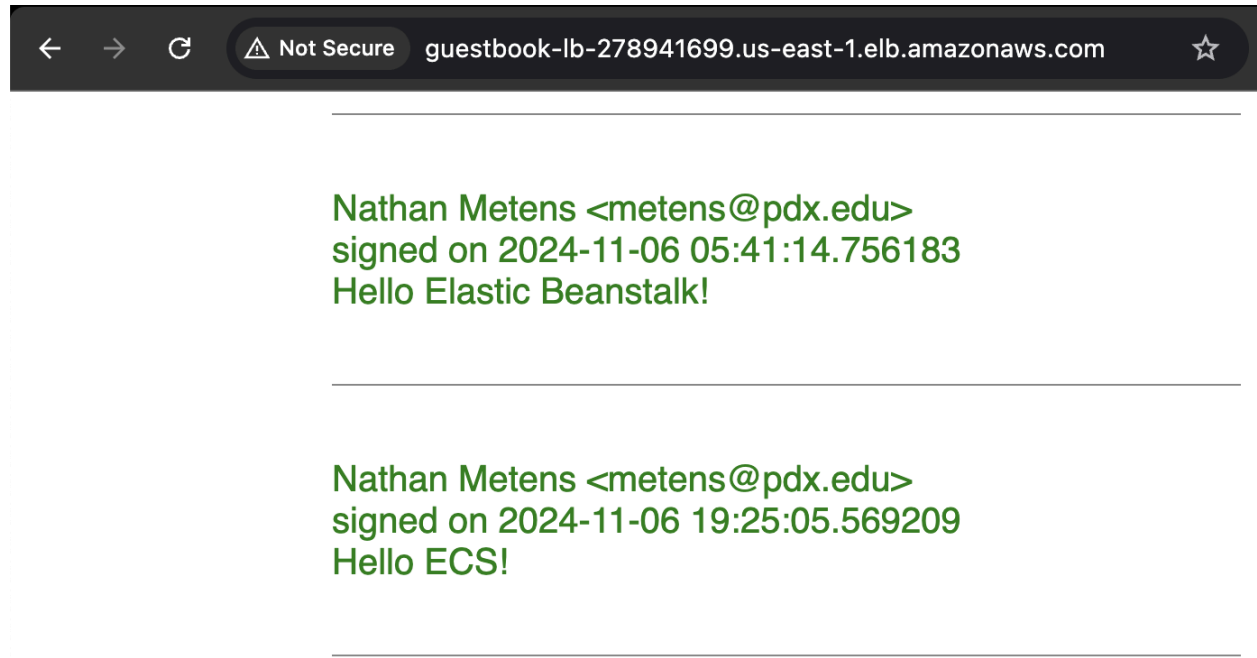
### 5. Examine the service



The DNS name of the guestbook-lb load balancer is in the bottom right corner of the image.



## 6. Visit the site



# 06.3g: Cloud Run Guestbook

## 2. Prepare a container image

Google Cloud

cloud-metens

build

Cloud Build

Build details

Rebuild

Copy url

Dashboard

History

Repositories

Triggers

Settings

Successful: cd598f45-e0d7-47ec-9e93-3f0eb735a463

Started on Nov 6, 2024, 5:48:22 PM

Source

[gs://cloud-metens\\_cloudbuild/source/1730944100.722678-f613d32744374e7f8a4b7bef2ff702ef.tgz](gs://cloud-metens_cloudbuild/source/1730944100.722678-f613d32744374e7f8a4b7bef2ff702ef.tgz)

Steps	Duration
Build Summary 1 Step	00:04:05
0: gcr.io/cloud-builders/docker build --network cloudbuild --no-cac...	00:01:26

Build Summary

Build log

Execution details

Build artifacts

☒ Wrap lines ☐ Show newest entries first

216 The push refers to repository [us-west1-docker.pkg.dev/clo

217 2291a8b5d464: Preparing

218 e7a47f585198: Preparing

219 bfe78bbdc673: Preparing

220 291f90f559d0: Preparing

221 d048c852986a: Preparing

222 744a36b3b6e5: Preparing

223 1f2242bb8a0f: Preparing

224 5fd0946a90ac: Preparing

225 ef5f5ddeb0a6: Preparing

226 744a36b3b6e5: Waiting

227 1f2242bb8a0f: Waiting

228 5fd0946a90ac: Waiting

229 ef5f5ddeb0a6: Waiting

230 e7a47f585198: Pushed

231 bfe78bbdc673: Pushed

232 744a36b3b6e5: Pushed

233 1f2242bb8a0f: Pushed

234 5fd0946a90ac: Pushed



23be91769e65e



DELETE

SETUP INSTRUCTI

us-west1-docker.pkg.dev > cloud-metens > guestbook-repo

OVERVIEW

PULL

MANIFEST

FILES

ATT/

Format

 Docker

Media type

application/vnd.docker.distribution.manifest.v2+json

Project

cloud-metens

Location

us-west1 (Oregon)

Repository

guestbook-repo

Image

gcp\_gb

Digest

sha256:23be91769e65ed88165213cf4c650e34a4e605

Virtual size ?

1.2 GB

Built

Nov 6, 2024, 5:49:54 PM

Created

Nov 6, 2024, 5:52:27 PM

Updated

Nov 6, 2024, 5:52:27 PM

Tags ?

latest



Subject digest

—

Artifact type

—

#### 4. View the guestbook

Apparently this step has to do with previous labs working. I was unable to get lab 5 to work, so this step inevitably isn't working, no matter what I tried.

## 06.4g: Cloud Functions, PubSub

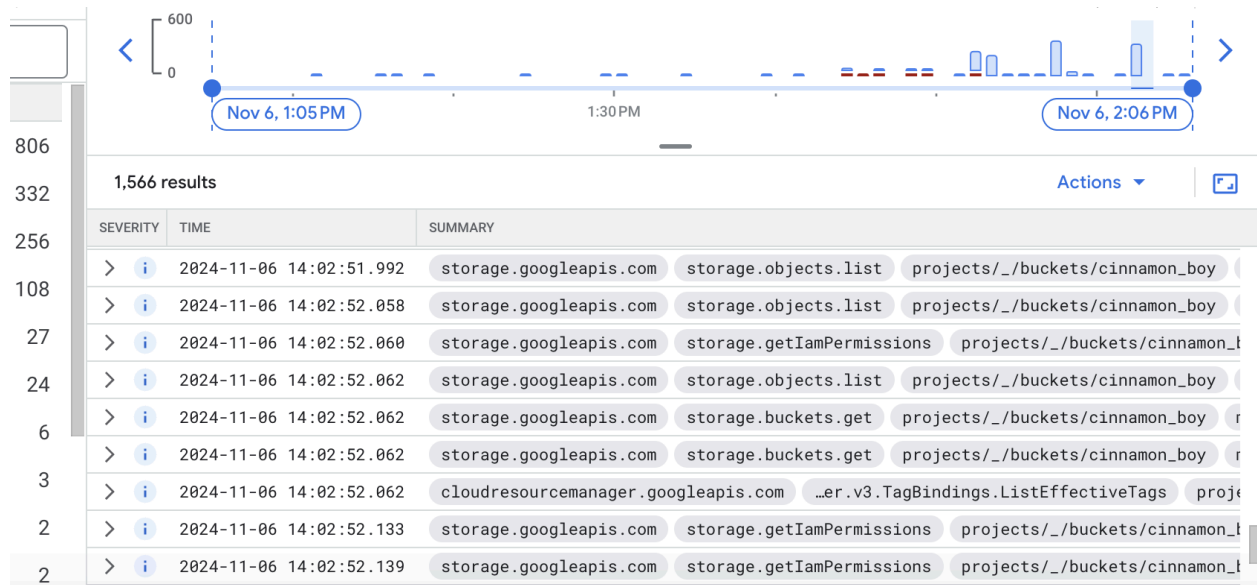
4. -

After downloading the file from the bucket, the file is stored in **temp\_local\_filename**.

The **Image** class from the **ImageMagic** package is used to blur the file.

**Lines 71-74** in main.py blur the image and store it back into the file system.

## 7. Test function



```
metens@cloudshell:~/python-docs-samples/functions/imagemagick (cloud-metens)$ gcloud functions logs read blur_offensive_images --region=us-west1
LEVEL:
NAME: blur-offensive-images
EXECUTION_ID: rLi8COHgHbH1
TIME_UTC: 2024-11-06 21:59:37.763
LOG: Blurred image uploaded to: gs://cinnamon_boy/zombie-949916_1280.jpg

LEVEL:
NAME: blur-offensive-images
EXECUTION_ID: rLi8COHgHbH1
TIME_UTC: 2024-11-06 21:59:37.576
LOG: Image zombie-949916_1280.jpg was blurred.

LEVEL:
NAME: blur-offensive-images
EXECUTION_ID: rLi8COHgHbH1
TIME_UTC: 2024-11-06 21:59:29.571
LOG: Image zombie-949916_1280.jpg was downloaded to /tmp/tmp6mga60w.

LEVEL:
NAME: blur-offensive-images
EXECUTION_ID: rLi8COHgHbH1
TIME_UTC: 2024-11-06 21:59:29.469
LOG: The image zombie-949916_1280.jpg was detected as inappropriate.

LEVEL:
NAME: blur-offensive-images
EXECUTION_ID: rLi8COHgHbH1
TIME_UTC: 2024-11-06 21:59:29.204
LOG: Analyzing zombie-949916_1280.jpg.

LEVEL: I
NAME: blur-offensive-images
EXECUTION_ID:
TIME_UTC: 2024-11-06 21:59:28.983
LOG:

LEVEL: I
NAME: blur-offensive-images
EXECUTION_ID:
TIME_UTC: 2024-11-06 21:58:17.921
LOG: Default STARTUP TCP probe succeeded after 1 attempt for container "worker" on port 8080.

LEVEL: I
NAME: blur-offensive-images
EXECUTION_ID:
TIME_UTC: 2024-11-06 21:53:41.611
LOG: Default STARTUP TCP probe succeeded after 1 attempt for container "worker" on port 8080.
metens@cloudshell:~/python-docs-samples/functions/imagemagick (cloud-metens)$
```

11. PubSub via CLI

There were no messages returned because we created the pubsub subscription account AFTER we published a message in the cloud shell. When a message is published, it's delivered to all **active subscriptions** at the time of publishing, so our subscription account wasn't active at that moment.

12. -

The message id: **12536115043899277**.

```
metens@pubsub:~$ gcloud pubsub subscriptions pull sub-${USER}

+-----+-----+-----+-----+-----+
| DATA | MESSAGE_ID | ORDERING_KEY | ATTRIBUTES | DELIVERY_ATTEMPT |
|-----+-----+-----+-----+-----+
|      | ACK_ID      |      |      |      |
+-----+-----+-----+-----+-----+
| Message #2 | 12536115043899277 |      |      |      | BhYsXUZIUTczCGhRDk9eIz81IChFFwMCTwIoXXkwTSBXXMDPg0ZcnlhdGNZEwJQFwV8C1
| 4RDmJcTkQHSfLa7fRXV0tbEQQBQ1J_W1sfDmBVVXcAViWo9MSPube1NRs-fay9wNItdLdW5t-Q1ZiI9XhJLLD5-NTJFQV5AEkw-B0RJUytDCypYEU4EISE-MD5FU0RQ |
+-----+-----+-----+-----+-----+

metens@pubsub:~$

metens@pubsub:~$ gcloud pubsub subscriptions pull sub-${USER} --auto-ack

+-----+-----+-----+-----+-----+-----+
| DATA | MESSAGE_ID | ORDERING_KEY | ATTRIBUTES | DELIVERY_ATTEMPT | ACK_STATUS |
+-----+-----+-----+-----+-----+-----+
| Message #2 | 12536115043899277 |      |      |      | SUCCESS |
+-----+-----+-----+-----+-----+-----+

metens@pubsub:~$
```

## 15. Test programs and clean up

```
(env) metens@cloudshell:~/pub (cloud-metens)$ vim publisher.py
```

```
[1]+  Stopped                  vim publisher.py
```

```
(env) metens@cloudshell:~/pub (cloud-metens)$ python3 publisher.py
```

```
Enter a message to send: Hello World!
```

```
Published 12537239037791892 to topic projects/cloud-metens/topics/my_topic
```

```
Enter a message to send: Message #2
```

```
Published 12537246088049295 to topic projects/cloud-metens/topics/my_topic
```

```
Enter a message to send: Meessage #3
```

```
Published 12886888364888768 to topic projects/cloud-metens/topics/my_topic
```

```
Enter a message to send: 
```

```
(env) metens@pubsub:~$ python3 subscriber.py
```

```
Received message 12537239037791892: 2024-11-06 23:35:00 (projects/cloud-metens/topics/my_topic) : Hello World!
```

```
Received message 12537246088049295: 2024-11-06 23:35:22 (projects/cloud-metens/topics/my_topic) : Message #2
```

```
Received message 12886888364888768: 2024-11-06 23:35:36 (projects/cloud-metens/topics/my_topic) : Meessage #3
```