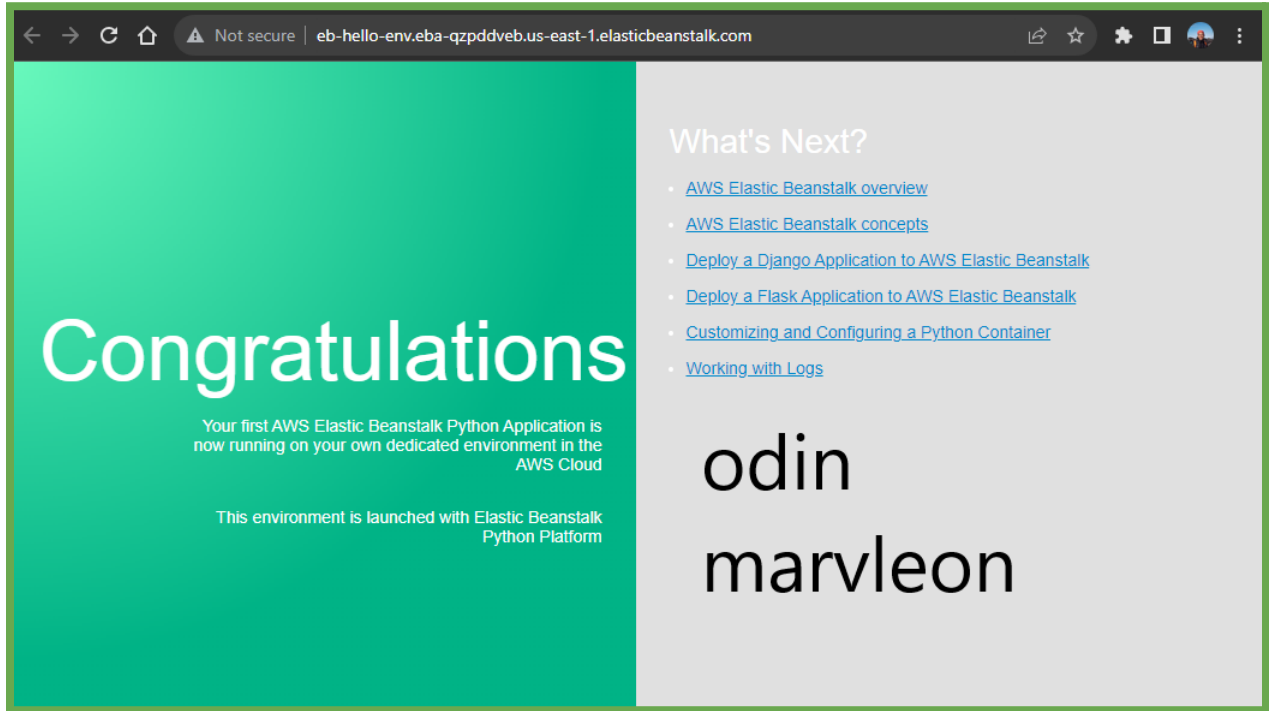


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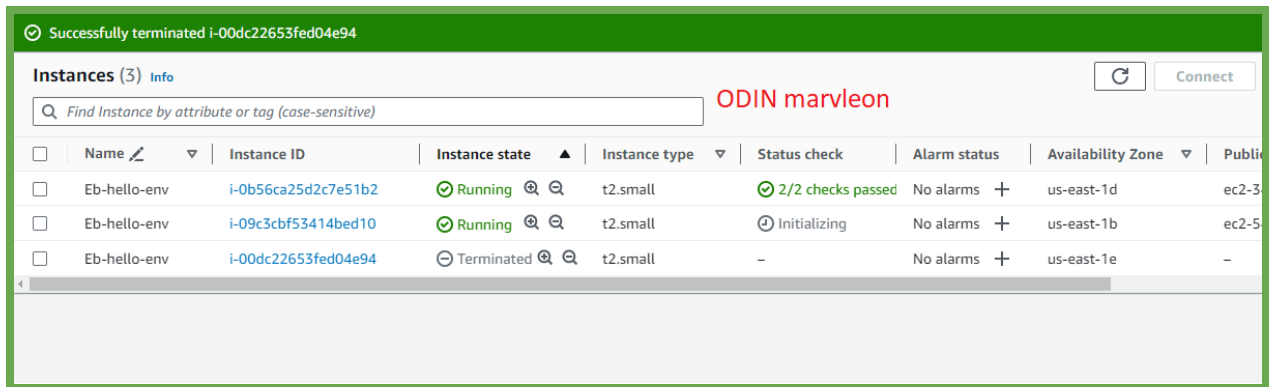
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6.1a EB Guestbook

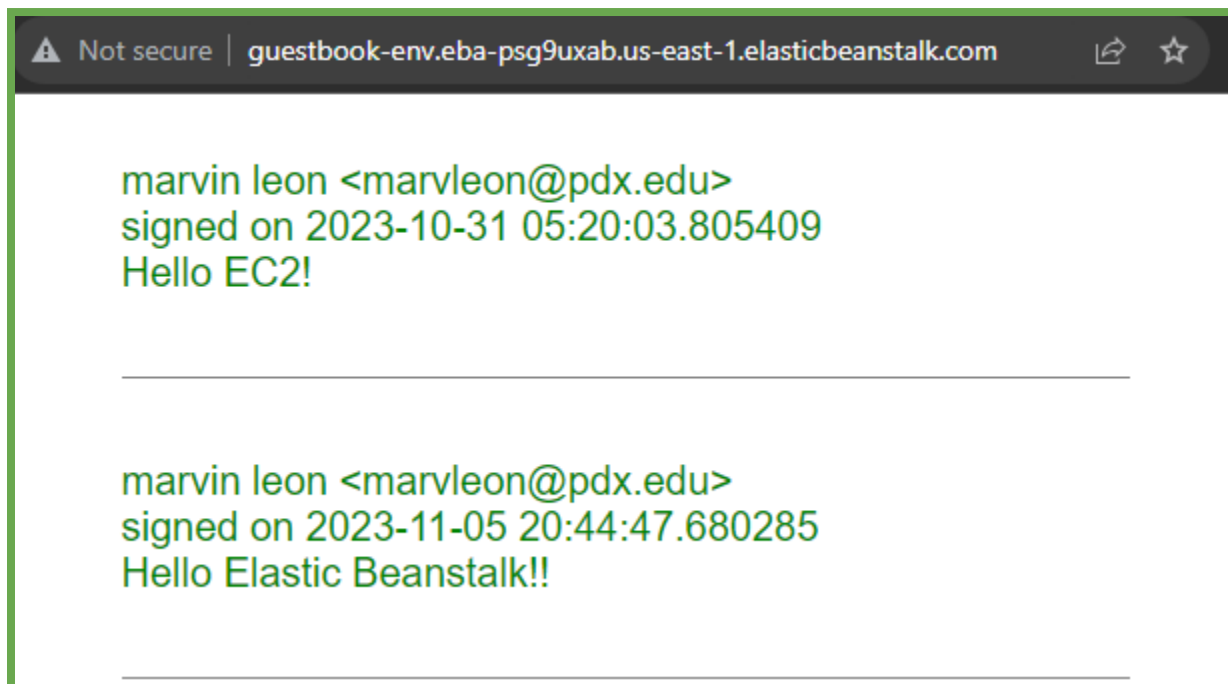
6.1.3 Running the application



6.1.4 Handling failures seamlessly



6.1.7 Deploying the Guestbook

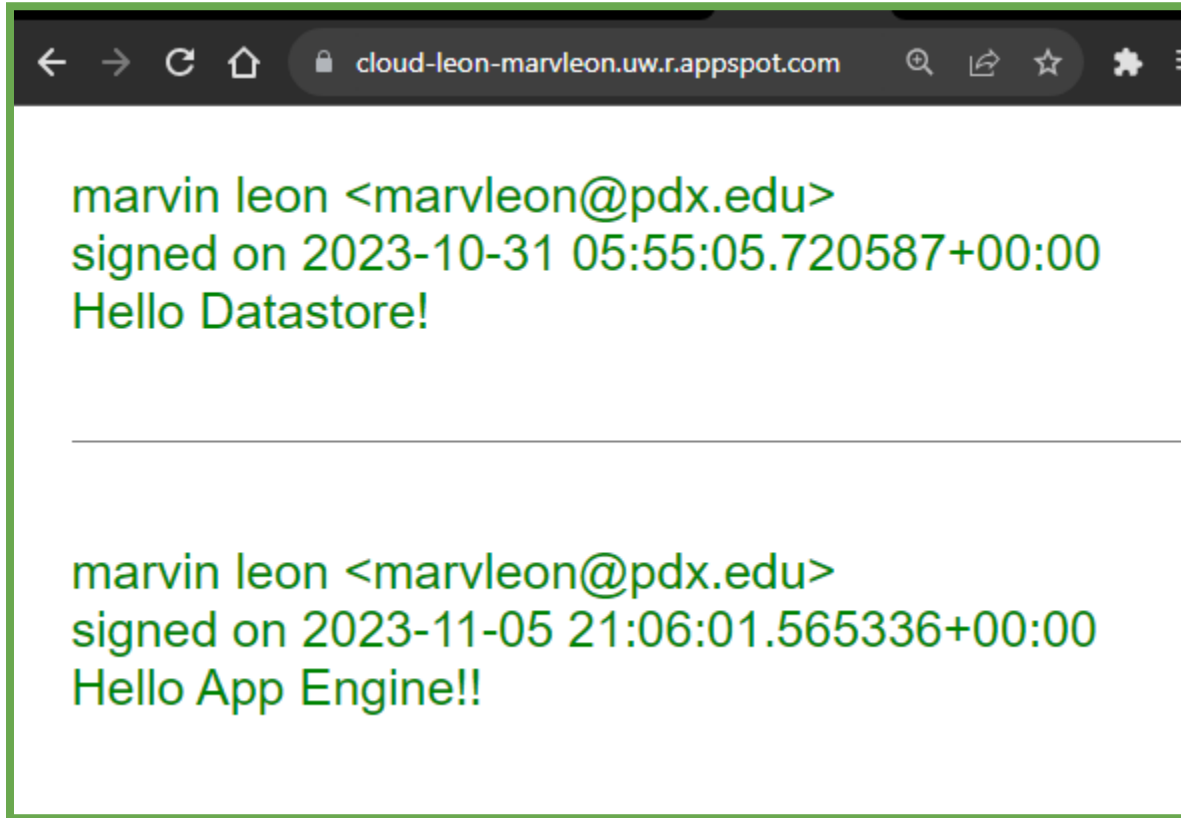


A screenshot of the AWS Management Console 'Instances' page. The page title is 'Instances (6) Info marvleon'. There are buttons for 'Refresh', 'Connect', 'Instance state', 'Actions', and a 'Launch' button. A search bar contains the text 'Find Instance by attribute or tag (case-sensitive)'. Below the search bar is a table with the following columns: Name, Instance ID, Instance state, Instance type, and Status check.

	Name	Instance ID	Instance state	Instance type	Status check
<input type="checkbox"/>	guestbook-env	i-0785e0ed8e21e1aed	Running	t3.micro	2/2 checks passed
<input type="checkbox"/>	guestbook-env	i-094e78424841f1e8f	Running	t3.micro	2/2 checks passed
<input type="checkbox"/>	guestbook-env	i-089c15399afc8dc0d	Running	t3.micro	2/2 checks passed

6.1g App Engine Guestbook

6.1.3 Deploying the Guestbook

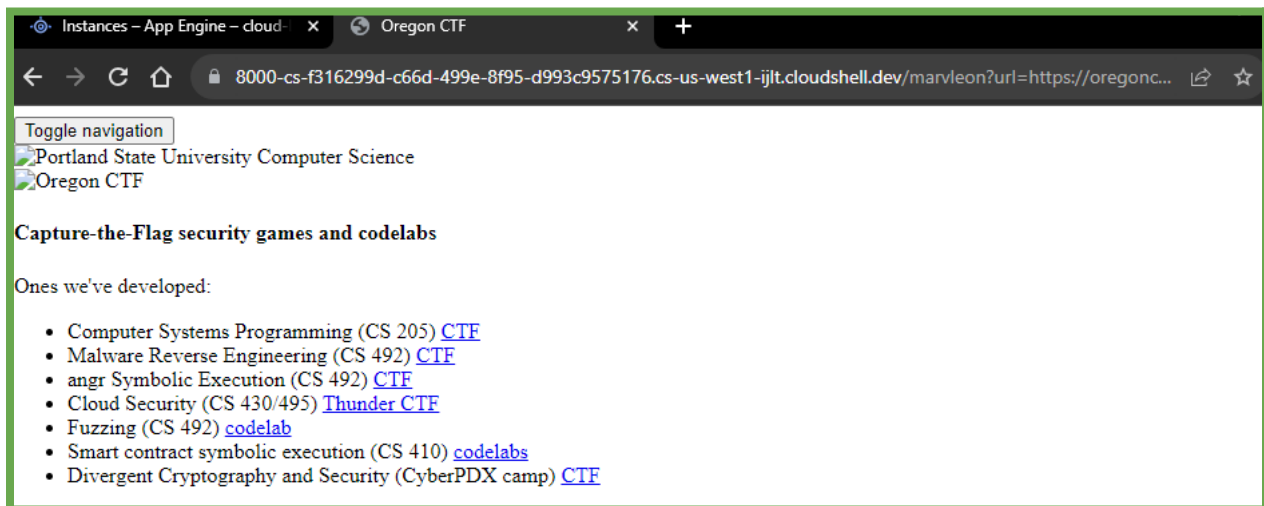
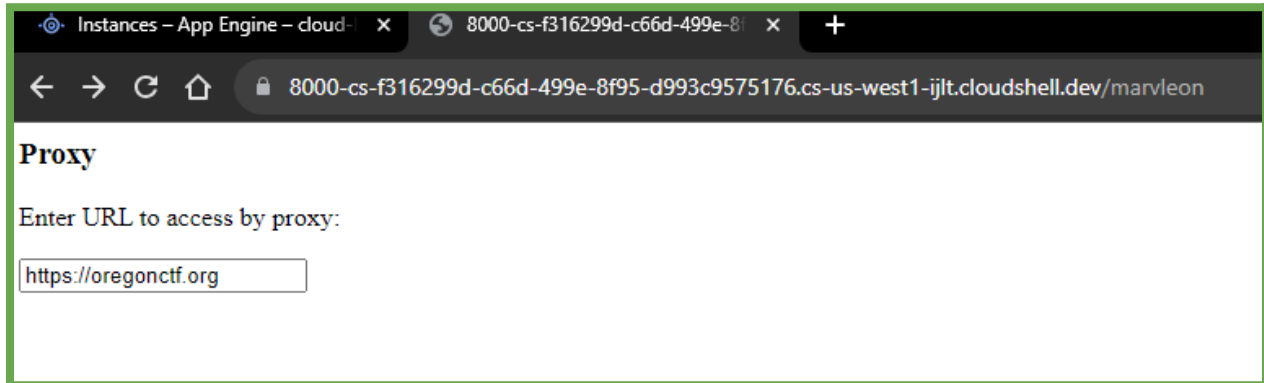


6.1.4 Handling failures seamlessly

Google Cloud						
cloud-Leon-marvleon		appengine		Search		
App Engine						
Instances						
Instances						
ID	QPS	Latency	Requests	Errors	Memory	
0037d6d5d3ac152e983740c047972...	0	0 ms	5	0	94.2 MB	
0037d6d5d3c150fb8c8b398e7d73e...	0	0 ms	4	0	91.4 MB	

6.2g Cloud Run, Secret Manager (Web Proxy)

6.2.8 Setup secret proxy



What is the security advantage of passing in the secret proxy route as an environment variable?



When the Docker container is stopped or removed the environment variables disappear with it. The environment variable is only accessible to the process running inside the Docker container. Also, configuration is separated from the code (the secret route is not hardcoded).

6.2.9 Cloud Build and Container Registry

secret-proxy

gcr.io > cloud-leon-marvleon > secret-proxy

Filter Enter property name or value

<input type="checkbox"/>	Name	Tags	Virtual Size	Created	Uploaded	
<input type="checkbox"/>	 dec18f1ea5d8	latest	51.2 MB	7 minutes ago	7 minutes ago	

6.2.10 Deploy to Cloud Run

Cloud Shell x secret-proxy-66hghciqcq-uw.a.run x +

secret-proxy-66hghciqcq-uw.a.run.app/marvleon-env-cloudrun

Proxy

Enter URL to access by proxy:

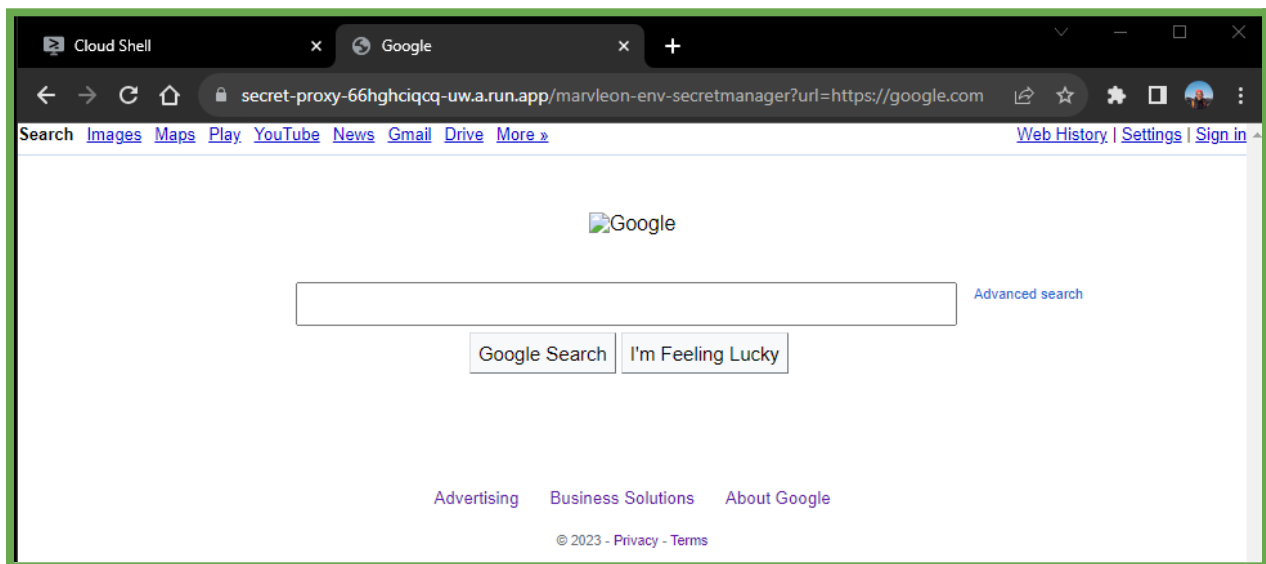
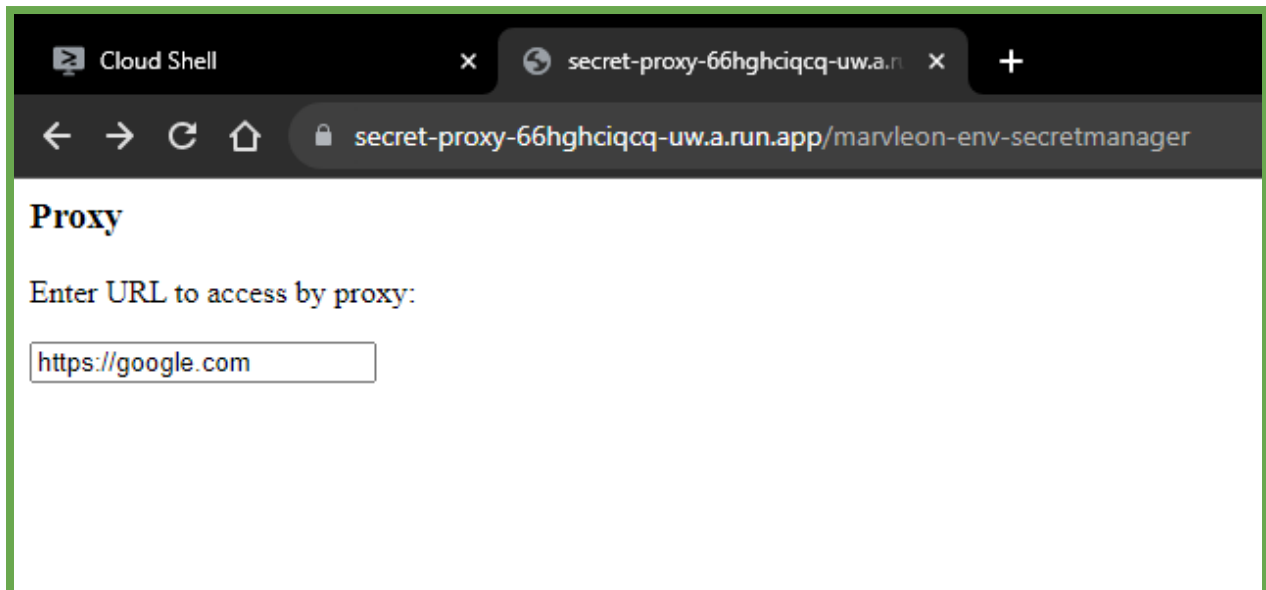
Cloud Shell x 404 Not Found x +

secret-proxy-66hghciqcq-uw.a.run.app/marvleon-env-cloudrun

Not Found

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

6.2.12 Deploy to Cloud Run with Secret Manager



Identify the vulnerability that Google has prevented.

Google has prevented Server-Side Request Forgery by requiring a special HTTP header called Metadata-Flavor to be included in requests to its metadata server. Without this, any app can be tricked into querying the computeMetadata URLs and showing sensitive information.

6.3a ECS Guestbook

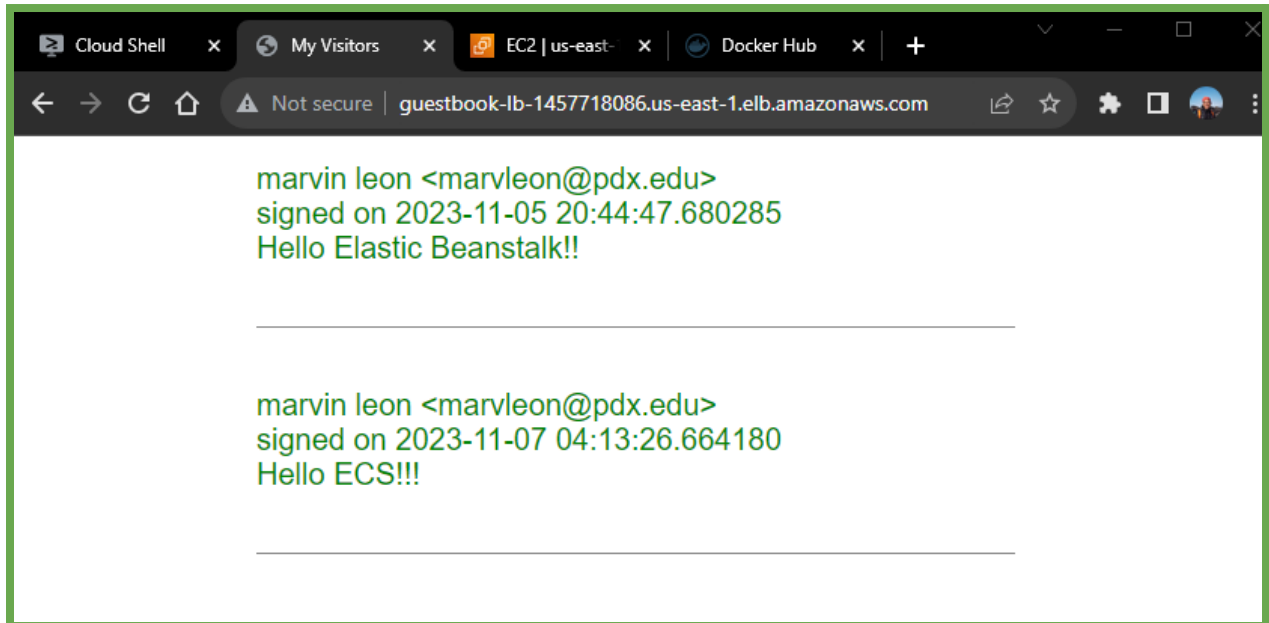
6.3.5 Examine the service

The screenshot shows the AWS Management Console interface for an Elastic Load Balancing service named 'guestbook-lb'. The top navigation bar includes the AWS logo, a search bar, and navigation links for Cloud9, EC2, Elastic Beanstalk, and Elastic Container Service. The user's profile and account information are visible in the top right corner.

The main content area displays the details of the 'guestbook-lb' service. The 'Details' section is expanded, showing a table of service attributes. The 'Status' is 'Active', and the 'Hosted zone' is 'Z35SXDOTRQ7X7K'. The 'VPC' is 'vpc-007e556669d12ef57'. The 'IP address type' is 'IPv4'. The 'Date created' is 'November 6, 2023, 20:04 (UTC-08:00)'. The 'Availability Zones' are listed as 'us-east-1b (use1-az6)', 'us-east-1c (use1-az1)', 'us-east-1f (use1-az5)', 'us-east-1d (use1-az2)', 'us-east-1e (use1-az3)', and 'us-east-1a (use1-az4)'. The 'Load balancer ARN' is 'arn:aws:elasticloadbalancing:us-east-1:856497040029:loadbalancer/app/guestbook-lb/fad55fda0c942420'. The 'DNS name' is 'guestbook-lb-1457718086.us-east-1.elb.amazonaws.com (A Record)'. A red bracket highlights the 'DNS name' and 'Load balancer ARN' fields.

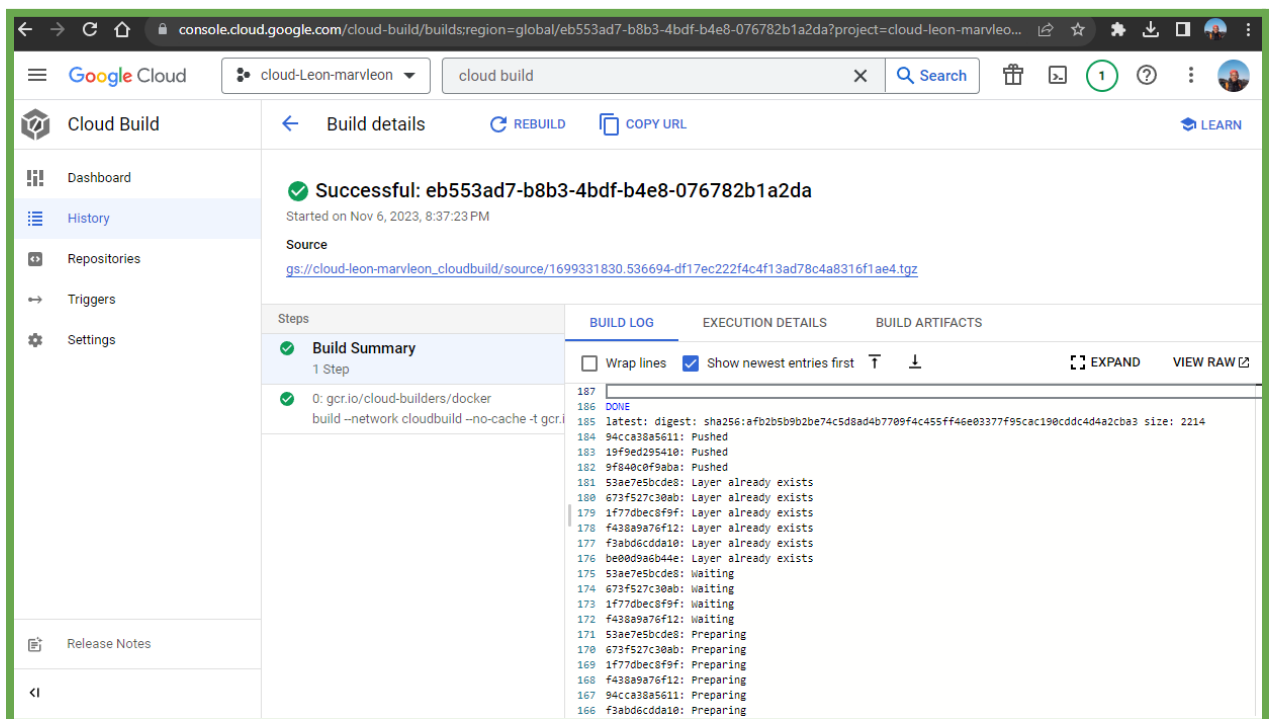
▼ Details			
Load balancer type	Status	VPC	IP address type
Application	Active	vpc-007e556669d12ef57	IPv4
Scheme	Hosted zone	Availability Zones	Date created
Internet-facing	Z35SXDOTRQ7X7K	subnet-0ee6ea8975b90229c us-east-1b (use1-az6) subnet-015eb973a29a19ab9 us-east-1c (use1-az1) subnet-0a74c21ec36ddb1da us-east-1f (use1-az5) subnet-0fea817fee5cc6df1 us-east-1d (use1-az2) subnet-0fde752f7f7ea496e us-east-1e (use1-az3) subnet-04cedb98789d3a8b0 us-east-1a (use1-az4)	November 6, 2023, 20:04 (UTC-08:00)
Load balancer ARN		DNS name Info	
arn:aws:elasticloadbalancing:us-east-1:856497040029:loadbalancer/app/guestbook-lb/fad55fda0c942420		guestbook-lb-1457718086.us-east-1.elb.amazonaws.com (A Record)	

6.3.6 Visit the site



6.3g Cloud Run Guestbook

6.3.2 Prepare a container image



Google Cloud console showing Cloud Build details for a successful build.

Build details

Successful: eb553ad7-b8b3-4bdf-b4e8-076782b1a2da

Started on Nov 6, 2023, 8:37:23 PM

Source

gs://cloud-leon-marvleon_cloudbuild/source/1699331830.536694-df17ec222f4c4f13ad78c4a8316f1ae4.tgz

Steps	Duration
Build Summary	00:04:02
1 Step	
0: gcr.io/cloud-builders...	00:01:34
build --network cloudb...	

EXECUTION DETAILS

Build id	eb553ad7-b8b3-4bdf-b4e8-076782b1a2da
Status	Successful
Region	global
Timing	
Created	November 6, 2023 at 8:37:23 PM UTC-8
Started	November 6, 2023 at 8:37:23 PM UTC-8
Finished	November 6, 2023 at 8:41:26 PM UTC-8
Queued time	0 sec
Total build time	4 min 2 sec
Fetch source	9 sec
Build step(s)	1 min 35 sec
Push	2 min 16 sec
Timeout	15 min
Source	gs://cloud-leon-marvleon_cloudbuild/source/1699331830.536694-df17ec222f4c4f13ad78c4a8316f1ae4.tgz
Image	gcr.io/cloud-leon-marvleon/gcp_gb
Service Account	156874191619@cloudbuild.gserviceaccount.com
Built-in substitutions	
BUILD_ID	eb553ad7-b8b3-4bdf-b4e8-076782b1a2da
LOCATION	global
PROJECT_ID	cloud-leon-marvleon
PROJECT_NUMBER	156874191619

6.3.3 View container image

Google Cloud console showing Container Registry details for the gcp_gb image.

Container Registry

Images

Container Registry is deprecated. After May 15, 2024, Artifact Registry will host images for the gcr.io domain in projects without previous Container Registry usage. [Learn more](#)

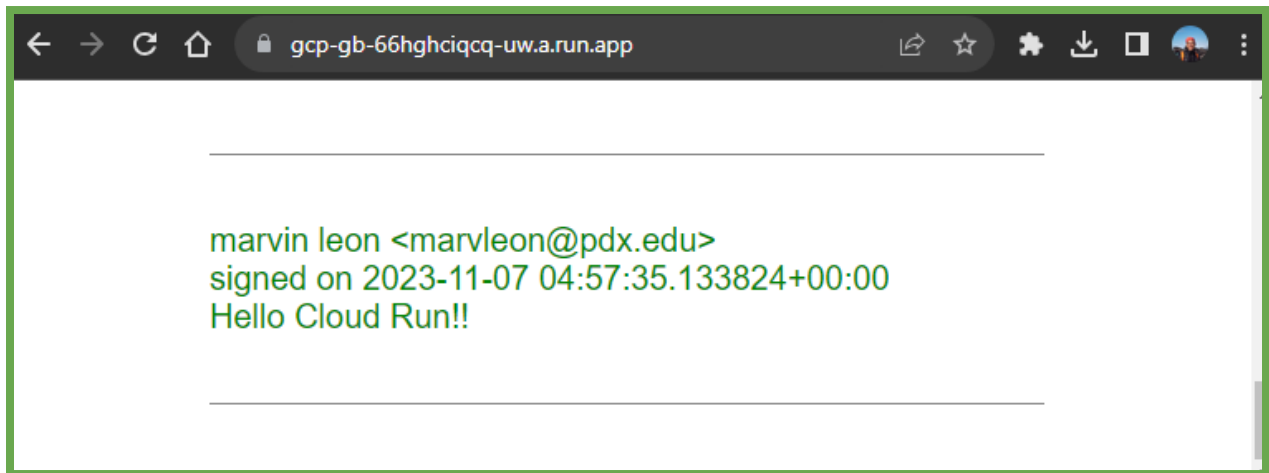
gcp_gb

gcr.io > cloud-leon-marvleon > gcp_gb

Filter Enter property name or value

Name	Tags	Virtual Size	Created	Uploaded
afb2b5b9b2be	latest	1.1 GB	9 minutes ago	7 minutes ago

6.3.5 View the Guestbook



What port do container instances listen on?

8080

What are the maximum number of instances Cloud Run will autoscale up to?

100

6.4 Cloud Functions PubSub

6.4.4 -

After downloading the file from the bucket, where is it stored?

Somewhere locally, determined by the `tempfile.mkstemp()` function.

What class in the ImageMagick package is used to do the blurring of the file?

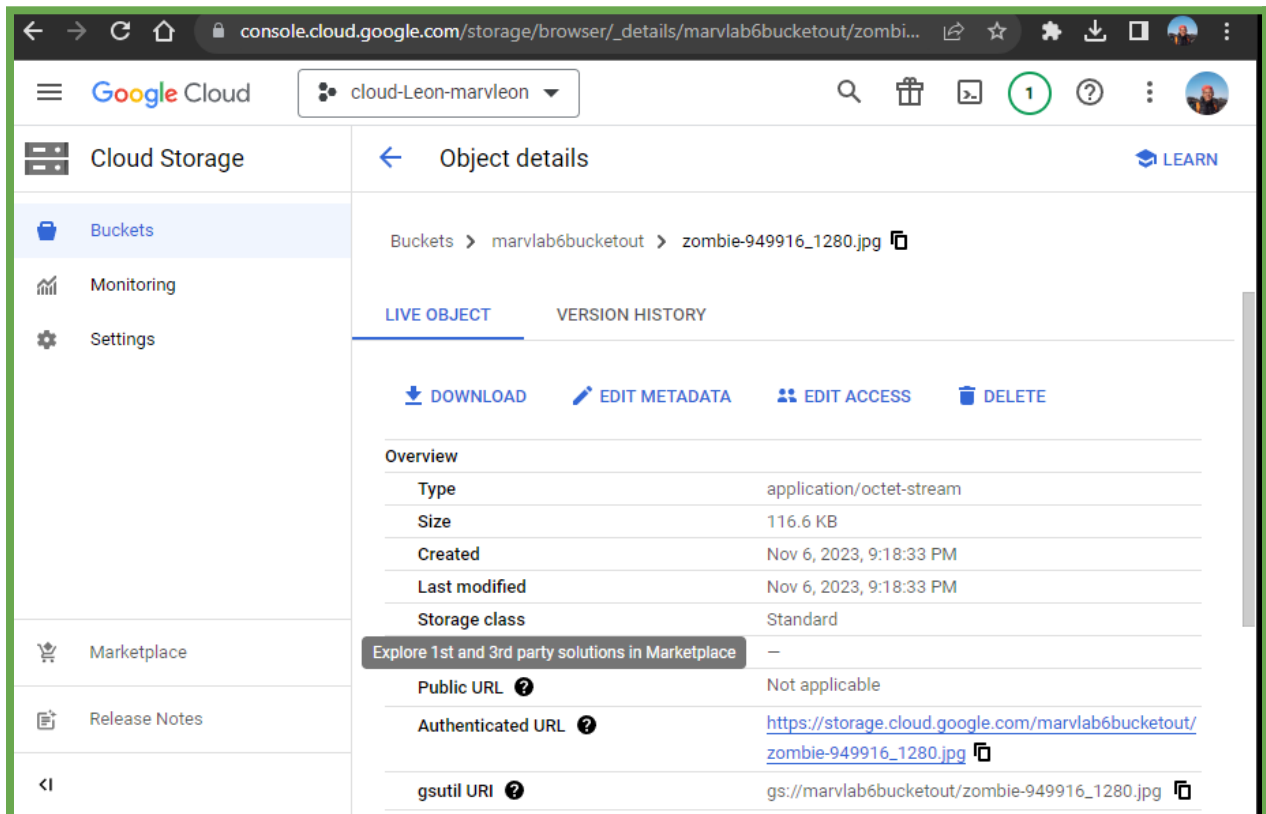
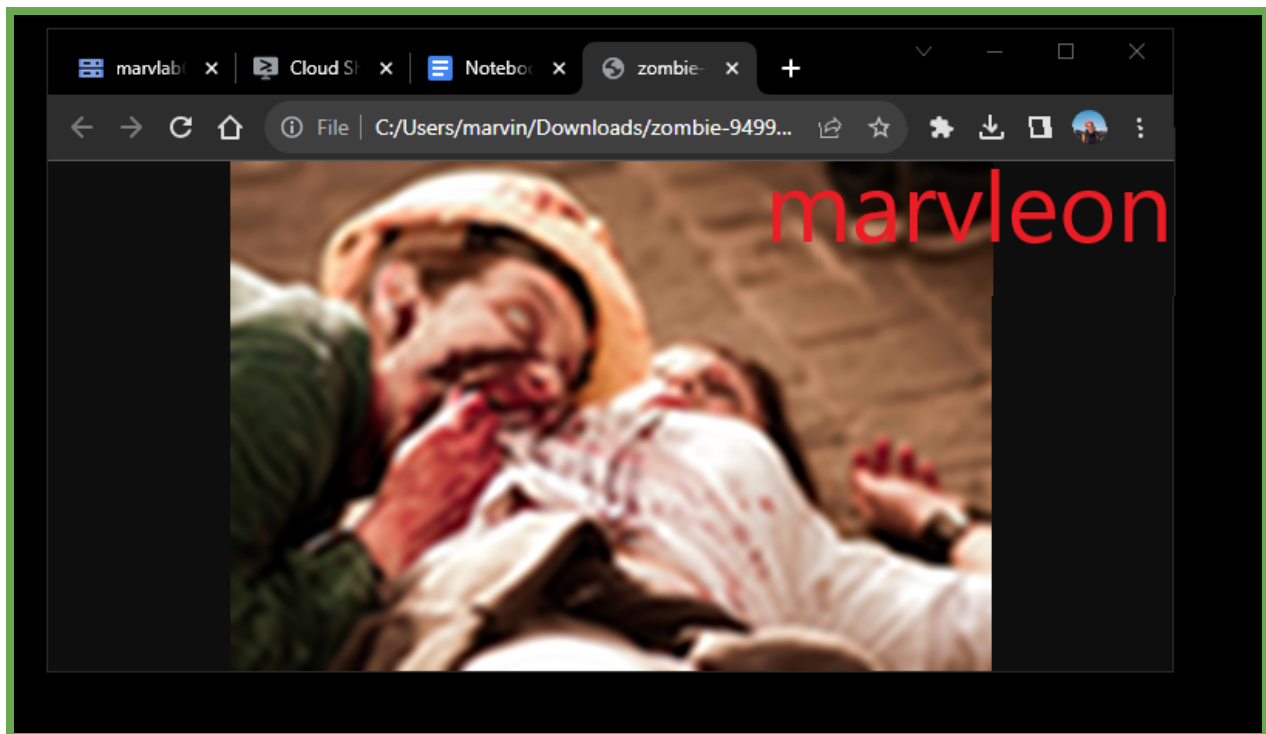
The `Image` class from the Wand library.

What lines of code perform the blurring of the image and its storage back into the filesystem?

Lines 72-74

```
with Image(filename=temp_local_filename) as image:
    image.resize(*image.size, blur=16, filter="hamming")
    image.save(filename=temp_local_filename)
```

6.4.7 Test function



```
(cloud-leon-marvleon) X + v
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.182
LOG: Function execution took 1609 ms, finished with status: 'ok'

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.180
LOG:

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.180
LOG: Blurred image uploaded to: gs://marvlab@bucketout/sombie-949916_1280.jpg

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.026
LOG:

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.026
LOG: Image zombie-949916_1280.jpg was blurred.

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.120
LOG:

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.120
LOG: Image zombie-949916_1280.jpg was downloaded to /tmp/tmp1k17_sn4r.

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.069
LOG:

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:32.069
LOG: The image zombie-949916_1280.jpg was detected as inappropriate.

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:31.763
LOG:

LEVEL: I
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:31.763
LOG: Analysing zombie-949916_1280.jpg.

LEVEL: D
NAME: blur_offensive_images
EXECUTION ID: 2h2buvhpfkf7
TIME UTC: 2023-11-07 05:18:31.572
LOG: Function execution started

LEVEL: E
NAME: blur_offensive_images
EXECUTION ID:
TIME UTC: 2023-11-07 05:18:30.427
LOG: /layers/google.python.pip/pip/lib/python3.7/site-packages/google/auth/_init_.py:40: Python37DeprecationWarning: After January 1, 2024, new releases of this library will drop support for Python 3.7. More details about Python 3.7 support can be found at https://cloud.google.com/python/docs/python37-sunset/
warnings.warn(message, Python37DeprecationWarning)

LEVEL: E
NAME: blur_offensive_images
EXECUTION ID:
TIME UTC: 2023-11-07 05:18:30.422
LOG: /layers/google.python.pip/pip/lib/python3.7/site-packages/google/auth/_init_.py:55: Python37DeprecationWarning: After January 1, 2024, new releases of this library will drop support for Python 3.7. More details about Python 3.7 support can be found at https://cloud.google.com/python/docs/python37-sunset/
warnings.warn(message, Python37DeprecationWarning)

LEVEL: E
NAME: blur_offensive_images
EXECUTION ID:
TIME UTC: 2023-11-07 05:16:11.207
LOG: /layers/google.python.pip/pip/lib/python3.7/site-packages/google/auth/_init_.py:40: Python37DeprecationWarning: After January 1, 2024, new releases of this library will drop support for Python 3.7. More details about Python 3.7 support can be found at https://cloud.google.com/python/docs/python37-sunset/
warnings.warn(message, Python37DeprecationWarning)
```

6.4.11 PubSub via CLI

Why are there no items returned?

The user subscribed after the message was published, so the new subscriber cannot pull the old message.

6.4.12 -

What is the messageId of the published message?

9584811683418593

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

+-----+-----+-----+-----+-----+
|      DATA      | MESSAGE_ID | ORDERING_KEY | ATTRIBUTES | DELIVERY_ATTE |
| MPT |          |              |            |               |
|      ACK_ID     |            |              |            |               |
+-----+-----+-----+-----+-----+

Message #2 | 9584811683418593 |
| U0RQBhYsXUZIUTcZCGhRDk9eIz81IchFEgkLTwIoXXkyTSJBWRoHUQ0ZcnxpJztSFwVQE |
| FIoVVrsRDXptXG2Q-ZqDRF9BfG9SFwkDRFV2XF8aBW1VX127zYKTxqnQVHBmK5aq0slIf4uSsexv |
| ZiA9XhJLLD5-NSxFQV5AEkw-GURJUytDCypYEUEISE-MD5F |
+-----+-----+-----+-----+

marvleon@pubsub:~$
```

6.4.15 Test programs and cleanup

```
(env) marvleon@cloudshell:~/code/publisher$ python publisher.py
Enter a message to send: hello this is my first message ODIN marvleon!
Published 9585090044935254 to topic projects/cloud-leon-marvleon/topics/my_topic
Enter a message to send: second message greetings from cloudshell!
Published 9584705834967372 to topic projects/cloud-leon-marvleon/topics/my_topic
Enter a message to send: third message: the response time is getting quicker!
Published 9584718467812321 to topic projects/cloud-leon-marvleon/topics/my_topic
Enter a message to send: fourth message: how many is considered 'several'?
Published 9584934469197754 to topic projects/cloud-leon-marvleon/topics/my_topic
Enter a message to send:
```

```
ssh.cloud.google.com/v2/ssh/projects/cloud-leon-marvleon/zones/us-west1-b/instances/pubsub?authuser=0&hl=en_US&projectNumber=156874191619&useAdminProxy=true&enableByoidOsLogin=tr...
ssh.cloud.google.com/v2/ssh/projects/cloud-leon-marvleon/zones/us-west1-b/instances/pubsub?authuser=0&hl=en_US&projectNumber=156874191619&useAdminProxy=true&enableBy...
SSH-in-browser
[+] UPLOAD FILE [v] DOWNLOAD FILE [i] [k] [s] [o] [g]
```

```
(env) marvleon@pubsub:~$ python subscriber.py
Received message 9585090044935254: 2023-11-07 06:30:47 (projects/cloud-leon-marvleon/topics/my_topic) : hello this is my first message ODIN marvleon!
Received message 9584705834967372: 2023-11-07 06:31:03 (projects/cloud-leon-marvleon/topics/my_topic) : second message greetings from cloudshell!
Received message 9584718467812321: 2023-11-07 06:31:23 (projects/cloud-leon-marvleon/topics/my_topic) : third message: the response time is getting quicker
Received message 9584934469197754: 2023-11-07 06:31:48 (projects/cloud-leon-marvleon/topics/my_topic) : fourth message: how many is considered 'several'?

```