

Created Google cloud function (serverless) which is able to detect various objects from the images immediately after being uploaded to a GCS bucket. The extracted information about the objects is logged. The designed architecture also has error handling (try-catch block).

The below log information shows the objects information in the image abc.jpeg in vishal-b-bucket.

Activities Google Chrome Mon 11:59

Google Cloud Platform Training

Stackdriver Logging

Logs Viewer

Filter by label or text search

Cloud Function, vishal-object-detect, us-centr... All logs Any log level Last hour Jump to now

Showing logs from the last hour ending at 11:57 AM (IST)

Time	Log Level	Log Message
2019-06-24 11:10:28.034 IST	Info	Cloud Functions UpdateFunction us-central1:vishal-object-detect vishal.bisht@quantiphi.com
2019-06-24 11:11:11.161 IST	Info	Cloud Functions UpdateFunction us-central1:vishal-object-detect vishal.bisht@quantiphi.com
2019-06-24 11:11:59.575 IST	Info	vishal-object-detect 595040290283151 Function execution started
2019-06-24 11:11:59.581 IST	Info	vishal-object-detect 595040290283151 vishal-b-bucket
2019-06-24 11:11:59.581 IST	Info	vishal-object-detect 595040290283151 abc.jpeg
2019-06-24 11:11:59.581 IST	Info	vishal-object-detect 595040290283151 gs://vishal-b-bucket/abc.jpeg
2019-06-24 11:11:59.584 IST	Info	vishal-object-detect 595040290283151 Traceback (most recent call last): File "/env/local/li
2019-06-24 11:11:59.587 IST	Info	vishal-object-detect 595040290283151 Function execution took 13 ms, finished with status: 'u
2019-06-24 11:14:49.412 IST	Info	Cloud Functions UpdateFunction us-central1:vishal-object-detect vishal.bisht@quantiphi.com
2019-06-24 11:16:22.908 IST	Info	Cloud Functions UpdateFunction us-central1:vishal-object-detect vishal.bisht@quantiphi.com
2019-06-24 11:17:19.059 IST	Info	vishal-object-detect 595036238666242 Function execution started
2019-06-24 11:17:19.072 IST	Info	vishal-object-detect 595036238666242 vishal-b-bucket
2019-06-24 11:17:19.072 IST	Info	vishal-object-detect 595036238666242 abc.jpeg
2019-06-24 11:17:19.072 IST	Info	vishal-object-detect 595036238666242 gs://vishal-b-bucket/abc.jpeg
2019-06-24 11:17:25.628 IST	Info	vishal-object-detect 595036238666242 Number of objects found: 3

Activities Google Chrome Mon 11:59

Google Cloud Platform Training

Stackdriver Logging

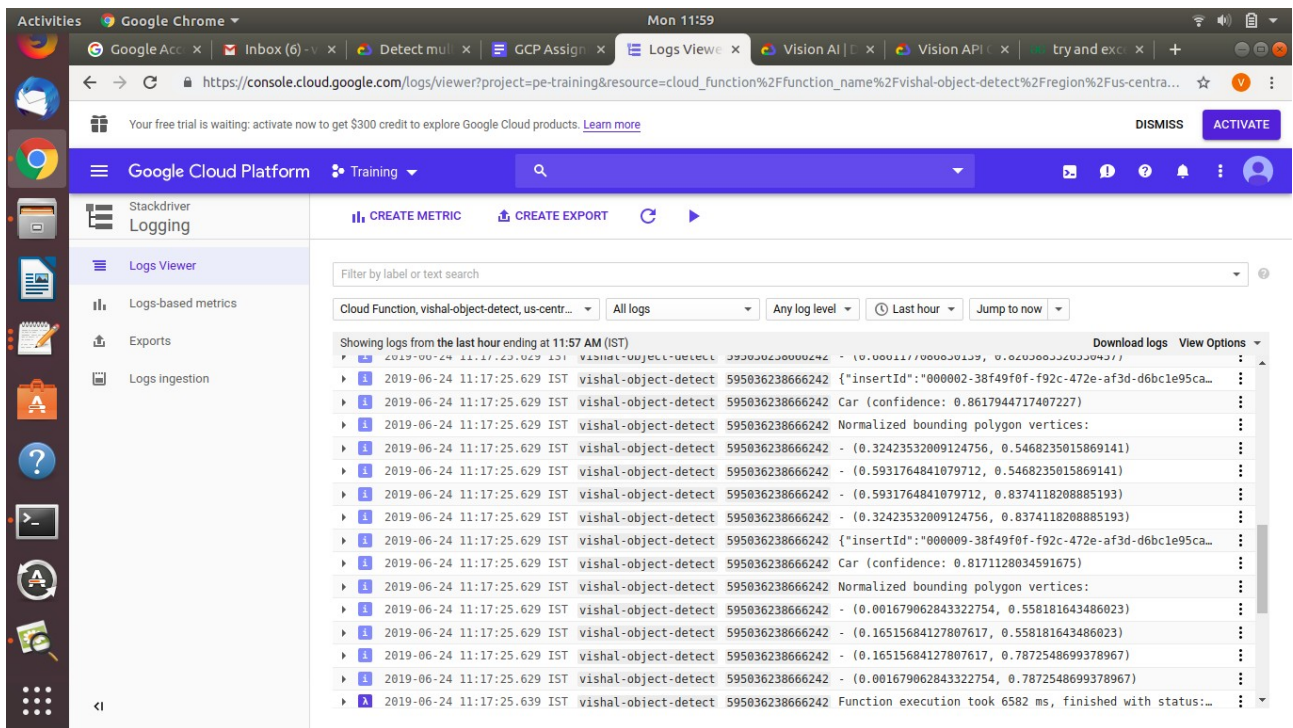
Logs Viewer

Filter by label or text search

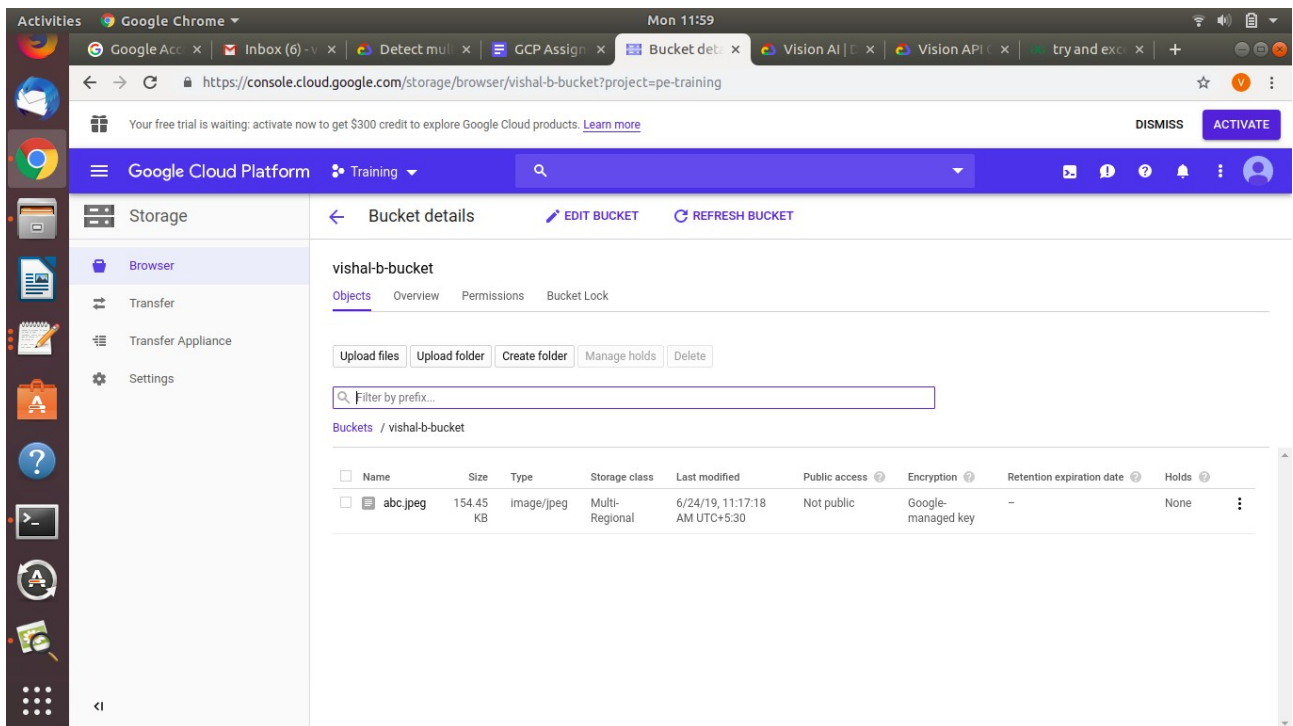
Cloud Function, vishal-object-detect, us-centr... All logs Any log level Last hour Jump to now

Showing logs from the last hour ending at 11:57 AM (IST)

Time	Log Level	Log Message
2019-06-24 11:17:19.059 IST	Info	vishal-object-detect 595036238666242 Function execution started
2019-06-24 11:17:19.072 IST	Info	vishal-object-detect 595036238666242 vishal-b-bucket
2019-06-24 11:17:19.072 IST	Info	vishal-object-detect 595036238666242 abc.jpeg
2019-06-24 11:17:19.072 IST	Info	vishal-object-detect 595036238666242 gs://vishal-b-bucket/abc.jpeg
2019-06-24 11:17:25.628 IST	Info	vishal-object-detect 595036238666242 Number of objects found: 3
2019-06-24 11:17:25.628 IST	Info	vishal-object-detect 595036238666242 {"insertId": "000001-38f49f0f-f92c-472e-af3d-d6bc1e95ca...
2019-06-24 11:17:25.628 IST	Info	vishal-object-detect 595036238666242 Car (confidence: 0.9610316753387451)
2019-06-24 11:17:25.628 IST	Info	vishal-object-detect 595036238666242 Normalized bounding polygon vertices:
2019-06-24 11:17:25.628 IST	Info	vishal-object-detect 595036238666242 - (0.6861177086830139, 0.5463529229164124)
2019-06-24 11:17:25.628 IST	Info	vishal-object-detect 595036238666242 - (0.9451764822006226, 0.5463529229164124)
2019-06-24 11:17:25.629 IST	Info	vishal-object-detect 595036238666242 - (0.9451764822006226, 0.8265883326530457)
2019-06-24 11:17:25.629 IST	Info	vishal-object-detect 595036238666242 - (0.6861177086830139, 0.8265883326530457)
2019-06-24 11:17:25.629 IST	Info	vishal-object-detect 595036238666242 {"insertId": "000002-38f49f0f-f92c-472e-af3d-d6bc1e95ca...
2019-06-24 11:17:25.629 IST	Info	vishal-object-detect 595036238666242 Car (confidence: 0.8617944717407227)
2019-06-24 11:17:25.629 IST	Info	vishal-object-detect 595036238666242 Normalized bounding polygon vertices:



This is the image abc.jpeg in our bucket. The google cloud function (code in Q4.py) is triggered as this image is uploaded in the bucket. The function fetches the name of the bucket and the image file, creates a path to the file and calls google-vision-api which detects the various objects in the image.



Activities Google Chrome Mon 12:00

Google Account x Inbox (6) - vish x Detect multi x GCP Assignm x Object deta x Vision AI | Den x Vision API Clie x try and exc x +

https://console.cloud.google.com/storage/browser/_details/vishal-b-bucket/abc.jpeg?project=pe-training

Your free trial is waiting: activate now to get \$300 credit to explore Google Cloud products. [Learn more](#) DISMISS ACTIVATE

Google Cloud Platform Training

Storage

Browser

Transfer

Transfer Appliance


Settings

Object details

DOWNLOAD EDIT PERMISSIONS DELETE

BUCKETS / vishal-b-bucket / abc.jpeg

Access	Not public
Type	Image/jpeg
Size	154.45 KB
Created	June 24, 2019 at 11:17:18 AM UTC+5:30
Last modified	June 24, 2019 at 11:17:18 AM UTC+5:30
URI	gs://vishal-b-bucket/abc.jpeg
Link URL	https://storage.cloud.google.com/vishal-b-bucket/abc.jpeg



Uploaded another image, table.jpg in the bucket.

Activities Google Chrome Mon 12:06

Google Account x Inbox (6) - vish x Detect multi x GCP Assignm x Object details x Vision AI | Den x Vision API Clie x +

https://console.cloud.google.com/storage/browser/_details/vishal-b-bucket/table.jpg?project=pe-training

Your free trial is waiting: activate now to get \$300 credit to explore Google Cloud products. [Learn more](#) DISMISS ACTIVATE

Google Cloud Platform Training

Storage

Browser

Transfer

Transfer Appliance


Settings

Object details

DOWNLOAD EDIT PERMISSIONS DELETE

BUCKETS / vishal-b-bucket / table.jpg

Type	Image/jpeg
Size	93.49 KB
Created	June 24, 2019 at 12:02:33 PM UTC+5:30
Last modified	June 24, 2019 at 12:02:33 PM UTC+5:30
URI	gs://vishal-b-bucket/table.jpg
Link URL	https://storage.cloud.google.com/vishal-b-bucket/table.jpg



The log of the cloud function triggered is shown below:

The screenshot shows the Google Cloud Platform interface with the Logs Viewer open. The logs are filtered by 'Cloud Function, vishal-object-detect, us-centr...' and show logs from the last hour ending at 12:03 PM (IST). The logs are as follows:

Timestamp	Log Level	Log Message
2019-06-24 12:02:33.349 IST	INFO	Function execution started
2019-06-24 12:02:33.354 IST	INFO	vishal-b-bucket
2019-06-24 12:02:33.354 IST	INFO	table.jpg
2019-06-24 12:02:33.354 IST	INFO	gs://vishal-b-bucket/table.jpg
2019-06-24 12:02:33.869 IST	INFO	Number of objects found: 5
2019-06-24 12:02:33.869 IST	INFO	{ "insertId": "000001-4fa9ca6a-3242-4687-8354-da42eac67a..." }
2019-06-24 12:02:33.869 IST	INFO	Desk (confidence: 0.916041910648346)
2019-06-24 12:02:33.869 IST	INFO	Normalized bounding polygon vertices:
2019-06-24 12:02:33.869 IST	INFO	- (0.021853577345609665, 0.3478679656982422)
2019-06-24 12:02:33.869 IST	INFO	- (0.9014405608177185, 0.3478679656982422)
2019-06-24 12:02:33.869 IST	INFO	- (0.9014405608177185, 0.7721320390701294)
2019-06-24 12:02:33.869 IST	INFO	- (0.021853577345609665, 0.7721320390701294)
2019-06-24 12:02:33.869 IST	INFO	{ "insertId": "000008-4fa9ca6a-3242-4687-8354-da42eac67a..." }
2019-06-24 12:02:33.869 IST	INFO	Vase (confidence: 0.7476428151130676)
2019-06-24 12:02:33.869 IST	INFO	Normalized bounding polygon vertices:

The screenshot shows the Google Cloud Platform interface with the Logs Viewer open. The logs are filtered by 'Cloud Function, vishal-object-detect, us-centr...' and show logs from the last hour ending at 12:03 PM (IST). The logs are as follows:

Timestamp	Log Level	Log Message
2019-06-24 12:02:33.869 IST	INFO	Normalized bounding polygon vertices:
2019-06-24 12:02:33.869 IST	INFO	- (0.0030588244553655386, 0.11999998986721039)
2019-06-24 12:02:33.869 IST	INFO	- (0.28705883026123047, 0.11999998986721039)
2019-06-24 12:02:33.869 IST	INFO	- (0.28705883026123047, 0.4336470663547516)
2019-06-24 12:02:33.869 IST	INFO	- (0.0030588244553655386, 0.4336470663547516)
2019-06-24 12:02:33.869 IST	INFO	{ "insertId": "000015-4fa9ca6a-3242-4687-8354-da42eac67a..." }
2019-06-24 12:02:33.869 IST	INFO	Furniture (confidence: 0.6506387591362)
2019-06-24 12:02:33.869 IST	INFO	Normalized bounding polygon vertices:
2019-06-24 12:02:33.869 IST	INFO	- (0.021853577345609665, 0.3478679656982422)
2019-06-24 12:02:33.869 IST	INFO	- (0.9014405608177185, 0.3478679656982422)
2019-06-24 12:02:33.869 IST	INFO	- (0.9014405608177185, 0.7721320390701294)
2019-06-24 12:02:33.869 IST	INFO	- (0.021853577345609665, 0.7721320390701294)
2019-06-24 12:02:33.869 IST	INFO	{ "insertId": "000022-4fa9ca6a-3242-4687-8354-da42eac67a..." }
2019-06-24 12:02:33.869 IST	INFO	Chest of drawers (confidence: 0.62751704454422)
2019-06-24 12:02:33.869 IST	INFO	Normalized bounding polygon vertices:

Activities Google Chrome Mon 12:04

Google Acc x Inbox (6) x Detect multi x GCP Assign x Logs Viewer x Vision AI x Vision API x try and exc x +

https://console.cloud.google.com/logs/viewer?project=pe-training&resource=cloud_function%2Ffunction_name%2Fvishal-object-detect%2Fregion%2Fus-centra... ☆ V

Your free trial is waiting: activate now to get \$300 credit to explore Google Cloud products. [Learn more](#) DISMISS ACTIVATE

Google Cloud Platform Training

Stackdriver Logging

Logs Viewer

Logs-based metrics Exports Logs ingestion

Filter by label or text search

Cloud Function, vishal-object-detect, us-centr... All logs Any log level Last hour Jump to now

Showing logs from the last hour ending at 12:03 PM (IST)

Download logs View Options

2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	Chest of drawers (confidence: 0.62751704454422)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	Normalized bounding polygon vertices:
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (0.6606398820877075, 0.4093974232673645)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (0.8958306908607483, 0.4093974232673645)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (0.8958306908607483, 0.8021320700645447)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (0.6606398820877075, 0.8021320700645447)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	{"insertId": "000029-4fa9ca6a-3242-4687-8354-da42eac67a...
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	Chest of drawers (confidence: 0.5641127824783325)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	Normalized bounding polygon vertices:
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (0.8603429794311523, 0.20782646536827087)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (1.0, 0.20782646536827087)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (1.0, 0.7698206305503845)
2019-06-24 12:02:33.869 IST	vishal-object-detect	595052745836019	- (0.8603429794311523, 0.7698206305503845)
2019-06-24 12:02:33.876 IST	vishal-object-detect	595052745836019	Function execution took 528 ms, finished with status: ...

No newer entries found matching current filter. Load newer logs

Activities Google Chrome Mon 12:06

Google Acc x Inbox (6) x Detect multi x GCP Assign x Bucket details x Vision AI x Vision API x try and exc x +

https://console.cloud.google.com/storage/browser/vishal-b-bucket?project=pe-training ☆ V

Your free trial is waiting: activate now to get \$300 credit to explore Google Cloud products. [Learn more](#) DISMISS ACTIVATE

Google Cloud Platform Training

Storage

Browser Transfer Transfer Appliance Settings

Bucket details EDIT BUCKET REFRESH BUCKET

vishal-b-bucket

Objects Overview Permissions Bucket Lock

Upload files Upload folder Create folder Manage holds Delete

Filter by prefix...

Buckets / vishal-b-bucket

Name	Size	Type	Storage class	Last modified	Public access	Encryption	Retention expiration date	Holds
abc.jpeg	154.45 KB	image/jpeg	Multi-Regional	6/24/19, 11:17:18 AM UTC+5:30	Not public	Google-managed key	-	None
table.jpg	93.49 KB	image/jpeg	Multi-Regional	6/24/19, 12:02:33 PM UTC+5:30	Not public	Google-managed key	-	None