

Audit logs

Each GCP service provides the ability to see the logs in the console or web UI. When we start the script which produces messages for Pub/Sub we can see the logs in the console:

```
5113719312087691
128.87.214.70 - - [14/Jul/2022:20:23:12] "PUT /app HTTP/1.1" [200] 46 "http://greene.com/about/" "Mozilla/5.0 (compatible; MSIE 9.0; Windows 98; Win 9x 4.90; Trident/5.0)"
5113718644138958
100.61.149.193 - - [14/Jul/2022:20:23:13] "PUT /wp-content/categories HTTP/1.1" [200] 115 "http://moore.com/about.html" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_6_4) AppleWebKit/535.0 (KHTML, like Gecko) Chrome/22.0.898.0 Safari/535.0"
5113577395319342
137.77.134.99 - - [14/Jul/2022:20:23:15] "GET /wp-content HTTP/1.1" [200] 325 "http://www.castaneda.com/" "Mozilla/5.0 (iPod; U; CPU iPhone OS 3_0 like Mac OS X; mai-IN) AppleWebKit/533.29.3 (KHTML, like Gecko) Version/3.0.5 Mobile/8B116 Safari/6533.29.3"
5113719509817098
70.79.237.225 - - [14/Jul/2022:20:23:17] "GET /blog HTTP/1.1" [200] 511 "http://www.hansen-smith.biz/" "Mozilla/5.0 (Macintosh; U; Intel Mac OS X 10_12_5 rv:4.0; br-FR) AppleWebKit/535.18.6 (KHTML, like Gecko) Version/4.0.5 Safari/535.18.6"
5113773485772897
11
```

Also, when we start Dataflow, we can see logs in the console as well:

```
andrianhevalo@cloudshell:~/capstone-project-scripts/User_log_pipeline (capstone-project-355520)$ python main_pipeline_stream.py --runner DataFlow --project $PROJECT --temp_location $BUCKET/tmp --staging_location $BUCKET/staging --streaming /home/andrianhevalo/.local/lib/python3.9/site-packages/apache_beam/io/gcp/bigquery.py:2205: BeamDeprecationWarning: options is deprecated since First stable release. References to <pipeline> options will not be supported
  is_streaming_pipeline = p.options.view_as(StandardOptions).streaming
INFO:apache_beam.runners.portability.stager:Downloading source distribution of the SDK from PyPi
INFO:apache_beam.runners.portability.stager:Executing command: ['/usr/bin/python', '-m', 'pip', 'download', '--dest', '/tmp/tmp9r3z_', 'apache-beam==2.40.0', '--no-deps', '--no-binary', 'all:']
INFO:apache_beam.runners.portability.stager:Staging SDK sources from PyPi: dataflow_python_sdk.tar
INFO:apache_beam.runners.portability.stager:Downloading binary distribution of the SDK from PyPi
INFO:apache_beam.runners.portability.stager:Executing command: ['/usr/bin/python', '-m', 'pip', 'download', '--dest', '/tmp/tmp9r3z_', 'apache-beam==2.40.0', '--no-deps', '--only-binary', 'all:', '-python-version', '39', '--implementation', 'cp', '--abi', 'cp39', '--platform', 'manylinux1_x86_64']
INFO:apache_beam.runners.portability.stager:Staging binary distribution of the SDK from PyPi: apache-beam-2.40.0-cp39-cp39-manylinux1_x86_64.whl
INFO:apache_beam.runners.dataflow.dataflow_runner:Pipeline has additional dependencies to be installed in SDK worker container, consider using the SDK container image pre-building workflow to avoid repetitive installations. Learn more on https://cloud.google.com/dataflow/docs/guides/using-custom-containers#prebuild
INFO:root:Default Python SDK image for environment is apache/beam_python3.9_sdk:2.40.0
INFO:root:Using provided Python SDK container image: gcr.io/cloud-dataflow/v1beta3/python39-fnapi:2.40.0
INFO:root:Python SDK container image set to "gcr.io/cloud-dataflow/v1beta3/python39-fnapi:2.40.0" for Docker environment
INFO:apache_beam.internal.gcp.auth:Setting socket default timeout to 60 seconds.
INFO:apache_beam.internal.gcp.auth:socket default timeout is 60.0 seconds.
INFO:apache_beam.runners.dataflow.internal.apiclient:Starting GCS upload to gs://capstone-project-scripts/staging/beamapp-andrianhevalo-0714193337-546732-16jyr67e.1657827217.546885/dataflow_python_sdk.tar...
INFO:apache_beam.runners.dataflow.internal.apiclient:Completed GCS upload to gs://capstone-project-scripts/staging/beamapp-andrianhevalo-0714193337-546732-16jyr67e.1657827217.546885/dataflow_python_sdk.tar in 1 seconds.
INFO:apache_beam.runners.dataflow.internal.apiclient:Starting GCS upload to gs://capstone-project-scripts/staging/beamapp-andrianhevalo-0714193337-546732-16jyr67e.1657827217.546885/apache_b
```

Cloud Audit Logging service lets users see historical logs for any service:

<https://cloud.google.com/logging/docs/audit>

For example, we can select Dataflow:

Logs Explorer

REFINE SCOPE

Project

SHARE LINK

Query

Recent (0)

Saved (0)

Suggested (0)

Library

Queries

IK

dataflow

All queries

65

CATEGORY

DESCRIPTION

OCCURRENCES (LAST)

COMPUTE

2

Data...

Dataflow workers err...

Stream

Run

App Engine

2

Cloud Functions

1

Compute Engine

3

Kubernetes

19

STORAGE

3

Cloud Storage

3

DATABASES

1

Cloud SQL

1

NETWORKING

4

Network

4

OPERATIONS

15

Application

15

Deployment Manager

1

IAM

3

Operations Suite

2

BIG DATA

0

BigQuery

0

Then, it produces the following query:

Query details

×

Description

Dataflow workers error and warnings logs

Query

```
1 log_id("dataflow.googleapis.com/worker") AND
2 severity>=WARNING
```

Close

Stream

Run

Save as

Select the date range you are interested in:

Logs Explorer

REFINE SCOPE

Project

SHARE LINK

LEARN

Query

Recent (1)

Saved (0)

Suggested (0)

Library

Clear query

Save

Stream logs

Run query

7/1/22, 8:09 PM – 8/1/22, 9:09 PM

Search all fields

Resource

Log name

Severity

Show query

1

Log fields

Histogram

Create metric

Create alert

Jump to now

More actions

Log fields

Search fields and values

RESOURCE TYPE

GCE Instance Group Manager876

VM Instance850

GCE Instance Template76

Disk72

GCE Instance Group72

Cloud Pub/Sub Topic64

Cloud Pub/Sub Subscription62

Dataflow Step37

Audited Resource36

Google Project13

Histogram

2K

Jul 1, 12:00 AM

9:00 PM

9:00 PM

9:00 PM

9:00 PM

9:00 PM

9:00 PM

9:00 PM

9:00 PM

Aug 2, 12:00 AM

Query results

2,190 log entries

Correlate by

Download

SEVERITY

TIMESTAMP

EEST

SUMMARY

EDIT

> 2022-07-14 23:28:22.071 EEST

compute.googleapis.com

_pute.instanceGroups.removeInstances

--andrianhevalo-071-07141233-yajx-har

> 2022-07-14 23:28:22.433 EEST

compute.googleapis.com

v1.compute.instances.delete

--ianhevalo-071-07141233-yajx-harness-xhtk se

> 2022-07-14 23:28:40.001 EEST

compute.googleapis.com

v1.compute.instances.delete

--ianhevalo-071-07141233-yajx-harness-xhtk se

> 2022-07-14 23:28:58.852 EEST

compute.googleapis.com

...regionInstanceGroupManagers.delete

--andrianhevalo-071-07141233-yajx-har

> 2022-07-14 23:28:59.368 EEST

compute.googleapis.com

...ta.compute.instanceTemplates.delete

--andrianhevalo-071-07141233-yajx-har

> 2022-07-14 23:29:00.896 EEST

compute.googleapis.com

...ta.compute.instanceTemplates.delete

--andrianhevalo-071-07141233-yajx-har

> 2022-07-14 23:29:02.238 EEST

pubsub.googleapis.com

...ub.v1.Subscriber.DeleteSubscription

...erlogs.subscription-11991692707816670

> 2022-07-14 23:29:02.238 EEST

pubsub.googleapis.com

...ub.v1.Subscriber.DeleteSubscription

.../capstone-project-355520/topics/userl

> 2022-07-14 23:29:25.683 EEST

pubsub.googleapis.com

...InternalExpireInactiveSubscription

projects/1057924202447/topics/userlogs

> 2022-07-14 23:29:25.683 EEST

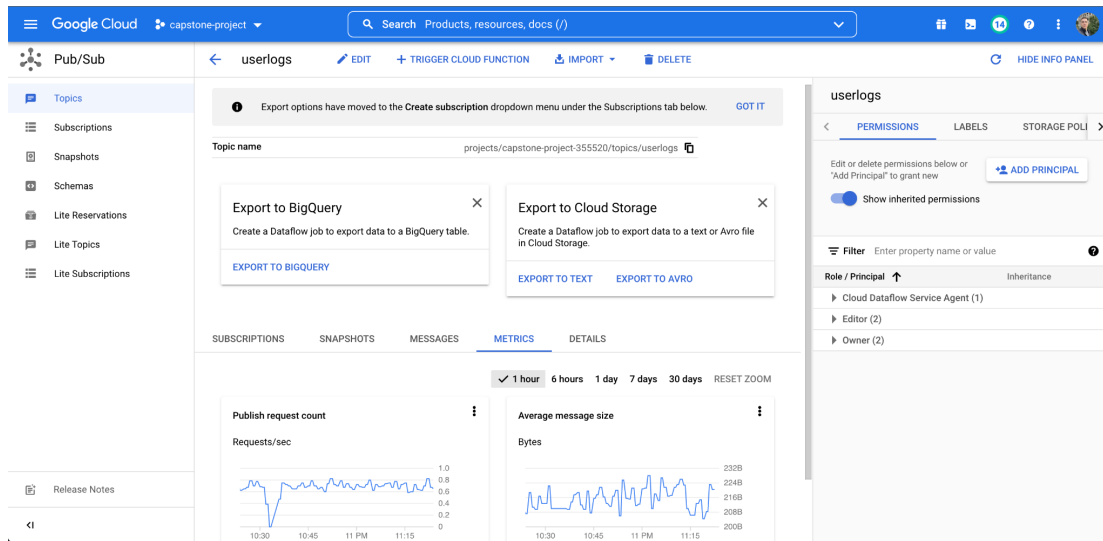
pubsub.googleapis.com

...InternalExpireInactiveSubscription

...erlogs.subscription-11991692707816670

Metrics

Topic metrics can be found here:

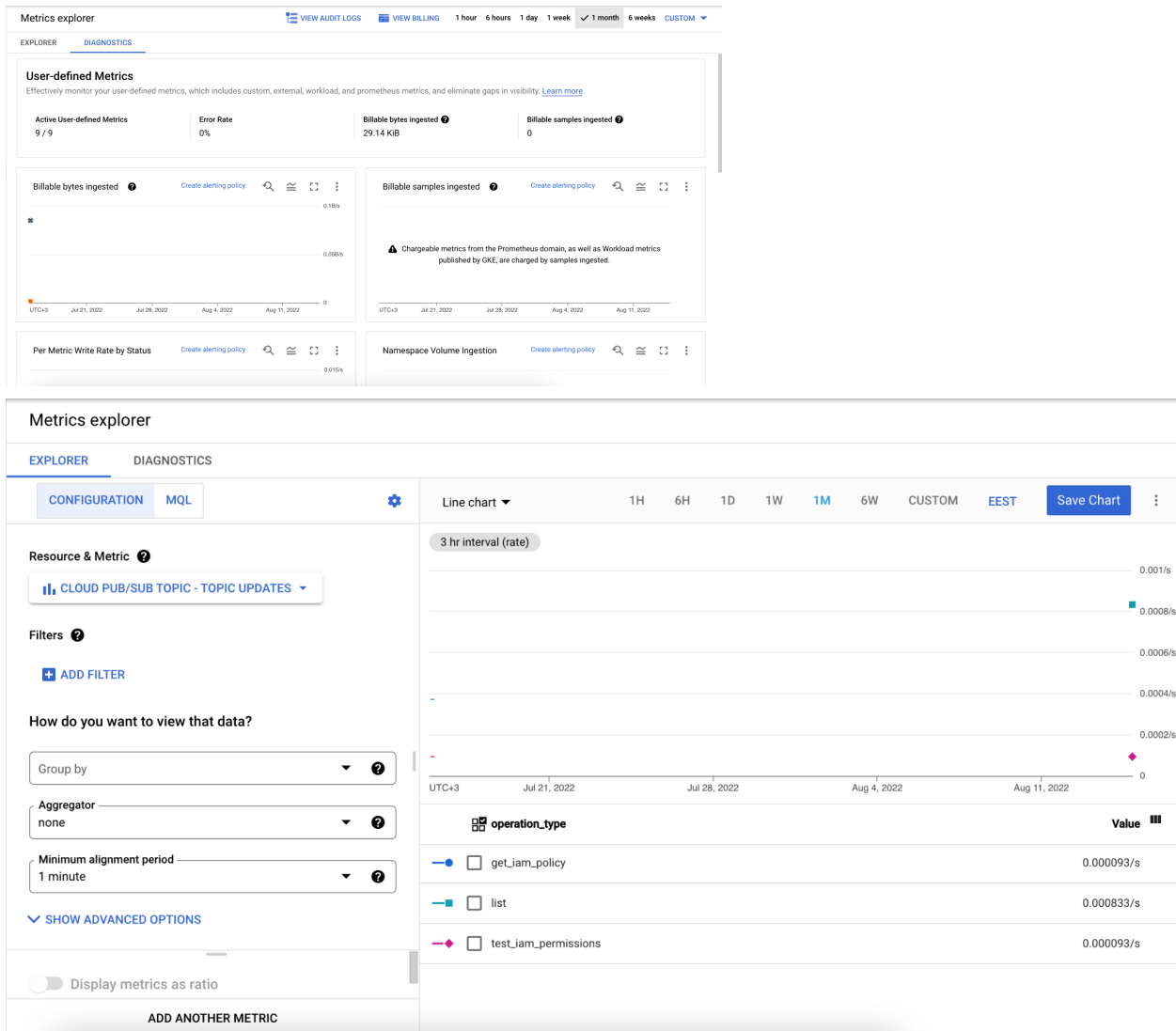


It provides data like request count, average message size, etc.

Cloud Monitoring allows seeing metrics and data diagnostics:

https://cloud.google.com/monitoring/api/metrics_gcp

For example, Cloud Pub/Sub topic updates metric analysis:



Metrics explorer

EXPLORER

DIAGNOSTICS

CONFIGURATION

MQL

Resource & Metric

CLOUD PUB/SUB TOPIC - TOPIC UPDATES

Filters

ADD FILTER

How do you want to view that data?

Group by

Aggregator

none

Minimum alignment period

1 minute

SHOW ADVANCED OPTIONS

Display metrics as ratio

ADD ANOTHER METRIC

Line chart

1H

6H

1D

1W

1M

6W

CUSTOM

EEST

Save Chart

3 hr interval (rate)

0.001/s

0.0008/s

0.0006/s

0.0004/s

0.0002/s

0

UTC+3 Jul 21, 2022 Jul 28, 2022 Aug 4, 2022 Aug 11, 2022

operation_type

Value

☐

get_iam_policy

0.000093/s

☐

list

0.000833/s

☐

test_iam_permissions

0.000093/s