Data Loss Prevention: Qwik Start - JSON

30 minutes Free

GSP107

The Data Loss Prevention API provides programmatic access to a powerful detection engine for personally identifiable information (PII) and other privacy-sensitive data in unstructured data streams.

The DLP API provides fast, scalable classification and optional redaction for sensitive data elements like credit card numbers, names, social security numbers, passport numbers, and phone numbers. The API supports text and images – just send data to the API or specify data stored on your Cloud Storage, BigQuery, and Cloud Datastore instances.

In this lab, you will set up a JSON file with to analyze, send it to the Data Loss Prevention API, to inspect a string of data for sensitive information, then redact any sensitive information that was found.

Setup and Requirements

Before you click the Start Lab button

Read these instructions. Labs are timed and you cannot pause them. The timer, which starts when you click **Start Lab**, shows how long Google Cloud resources will be made available to you.

This hands-on lab lets you do the lab activities yourself in a real cloud environment, not in a simulation or demo environment. It does so by giving you new, temporary credentials that you use to sign in and access Google Cloud for the duration of the lab.

To complete this lab, you need:

- Access to a standard internet browser (Chrome browser recommended).

> **Note:** Use an Incognito or private browser window to run this lab. This prevents any conflicts between your personal account and the Student account, which may cause extra charges incurred to your personal account.

- Time to complete the lab---remember, once you start, you cannot pause a lab.

> **Note:** If you already have your own personal Google Cloud account or project, do not use it for this lab to avoid extra charges to your account.

How to start your lab and sign in to the Google Cloud Console

1. Click the **Start Lab** button. If you need to pay for the lab, a pop-up opens for you to select your payment method. On the left is the **Lab Details** panel with the following:
    - The **Open Google Console** button
    - Time remaining
    - The temporary credentials that you must use for this lab

Other information, if needed, to step through this lab

2. Click **Open Google Console**. The lab spins up resources, and then opens another tab that shows the **Sign in** page.

   Tip: Arrange the tabs in separate windows, side-by-side.

   > **Note:** If you see the **Choose an account** dialog, click **Use Another Account**.

3. If necessary, copy the **Username** from the **Lab Details** panel and paste it into the **Sign in** dialog. Click **Next**.

4. Copy the **Password** from the **Lab Details** panel and paste it into the **Welcome** dialog. Click **Next**.

   > **Important:** You must use the credentials from the left panel. Do not use your Google Cloud Skills Boost credentials.

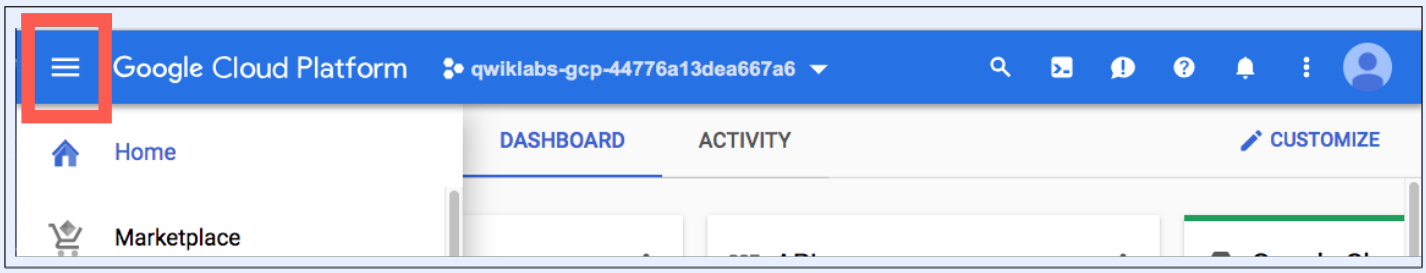
   > **Note:** Using your own Google Cloud account for this lab may incur extra charges.

5. Click through the subsequent pages:

   - Accept the terms and conditions.
   - Do not add recovery options or two-factor authentication (because this is a temporary account).
   - Do not sign up for free trials.

After a few moments, the Cloud Console opens in this tab.

> **Note:** You can view the menu with a list of Google Cloud Products and Services by clicking the **Navigation menu** at the top-left.



Activate Cloud Shell

Cloud Shell is a virtual machine that is loaded with development tools. It offers a persistent 5GB home directory and runs on the Google Cloud. Cloud Shell provides command-line access to your Google Cloud resources.

1. Click **Activate Cloud Shell** at the top of the Google Cloud console.

2. Click **Continue**.

It takes a few moments to provision and connect to the environment. When you are connected, you are already authenticated, and the project is set to your **PROJECT_ID**. The output contains a line that declares the **PROJECT_ID** for this session:

```
Your Cloud Platform project in this session is set to YOUR_PROJECT_ID
```

`gcloud` is the command-line tool for Google Cloud. It comes pre-installed on Cloud Shell and supports tab-completion.

3. (Optional) You can list the active account name with this command:

```
gcloud auth list
```

Output:

```
ACTIVE: *
ACCOUNT: student-01-xxxxxxxxxxxx@qwiklabs.net
To set the active account, run:
    $ gcloud config set account `ACCOUNT`
```

4. (Optional) You can list the project ID with this command:

```
gcloud config list project
```

Output:

```
[core]
project = <project_ID>
```

Example output:

```
[core]
project = qwiklabs-gcp-44776a13dea667a6
```

Note: For full documentation of `gcloud`, in Google Cloud, refer to the gcloud CLI overview guide.

Create a service account key

Set an environment variable for your project ID:

```
export PROJECT_ID=$DEVSHELL_PROJECT_ID
```

Create a Service Account to access the Google Cloud APIs when testing locally:

```
gcloud iam service-accounts create qwiklab \
  --display-name "Qwiklab Service Account"
```

Give your newly created Service Account appropriate permissions:

```
gcloud projects add-iam-policy-binding ${PROJECT_ID} \
--member
serviceAccount:qwiklab@${PROJECT_ID}.iam.gserviceaccount.com \
--role roles/owner
```

After creating your Service Account, create a Service Account key:

```
gcloud iam service-accounts keys create ~/key.json \
--iam-account qwiklab@${PROJECT_ID}.iam.gserviceaccount.com
```

This command generates a service account key stored in a JSON file named *key.json* in your home directory.

Click **Check my progress** to verify your performed task

Create a service account key

Inspect a string for sensitive information

This section shows you how to ask the service to scan sample text using the projects.content.inspect REST method. The JSON file you will make contains an InspectConfig and a ContentItem object.

Using your prefered editor (`nano`, `vim`, etc.) or Cloud Shell, create a JSON request file with the following text, and save it as `inspect-request.json`.

```
{
  "item":{
    "value":"My phone number is (206) 555-0123."
  },
  "inspectConfig":{
    "infoTypes":[
      {
        "name":"PHONE_NUMBER"
      },
      {
        "name":"US_TOLLFREE_PHONE_NUMBER"
      }
    ],
    "minLikelihood":"POSSIBLE",
    "limits":{
      "maxFindingsPerItem":0
    },
    "includeQuote":true
  }
```

```
}
```

In Cloud Shell, authenticate to your service account, passing the location of your service account key file:

```
gcloud auth activate-service-account --key-file=key.json
```

Obtain an authorization token using your service account:

```
gcloud auth print-access-token
```

A huge string will get returned. You will need this token in the next step.

Use `curl` to make a `content:inspect` request, replacing `ACCESS_TOKEN` with the string that was returned in the previous step and `PROJECT_ID` with your Qwiklabs project ID:

```
curl -s \
  -H "Authorization: Bearer ACCESS_TOKEN" \
  -H "Content-Type: application/json" \

https://dlp.googleapis.com/v2/projects/$PROJECT_ID/content:inspect
 \
  -d @inspect-request.json
```

Here's what's going on: To pass a filename to `curl` you use the `-d` option (for "data") and precede the filename with an `@` sign. This file should be in the same directory in which you execute the `curl` command.

You should see a response similar to the following:

```
{
  "result": {
    "findings": [
      {
        "quote": "(206) 555-0123",
        "infoType": {
          "name": "PHONE_NUMBER"
        },
        "likelihood": "LIKELY",
        "location": {
          "byteRange": {
            "start": "19",
            "end": "33"
          },
          "codepointRange": {
```

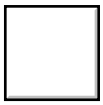
```
            "start": "19",
            "end": "33"
          }
        },
        "createTime": "2018-07-03T02:20:26.043Z"
      }
    ]
  }
}
```

Redacting sensitive data from text content

The Data Loss Prevention API can automatically redact sensitive data from text files instead of giving you a list of findings.

Try sending the API JSON file using deidentifyConfig object, so sensitive information is redacted from the output.

Create a new JSON file (called new-inspect-file) that includes the following:



```
{
  "item": {
     "value":"My email is test@gmail.com",
   },
   "deidentifyConfig": {
     "infoTypeTransformations":{
          "transformations": [
            {
              "primitiveTransformation": {
                "replaceWithInfoTypeConfig": {}
              }
            }
          ]
        }
    },
    "inspectConfig": {
      "infoTypes": {
        "name": "EMAIL_ADDRESS"
      }
    }
}
```

Use `curl` to make a `content:deidentify` request, replacing `ACCESS_TOKEN` with the string that was returned earlier and `PROJECT_ID` wiht your Qwiklabs project ID. Also, replace the filename with the JSON file you configured in the previous step:

```
curl -s \
  -H "Authorization: Bearer ACCESS_TOKEN" \
  -H "Content-Type: application/json" \

https://dlp.googleapis.com/v2/projects/$PROJECT_ID/content:deidenti
 \
  -d @new-inspect-file.json
```

Sample Output:

```
{
  "item": {
    "value": "My email is [EMAIL_ADDRESS]"
  },
  "overview": {
    "transformedBytes": "14",
    "transformationSummaries": [
      {
        "infoType": {
          "name": "EMAIL_ADDRESS"
        },
        "transformation": {
          "replaceWithInfoTypeConfig": {}
        },
        "results": [
          {
            "count": "1",
            "code": "SUCCESS"
          }
        ],
        "transformedBytes": "14"
      }
    ]
  }
}
```

You've sent your first request to the Data Loss Prevention API and redacted sensitive information from output!

Congratulations!

Finish Your Quest

This self-paced lab is part of the Baseline: Deploy & Develop and Security & Identity Fundamentals. A Quest is a series of related labs that form a learning path. Completing this Quest earns you the badge above, to recognize your achievement. You can make your badge (or badges) public and link to them in your online resume or social media account. Enroll in a Quest and get immediate completion credit if you've taken this lab. See other available Qwiklabs Quests.

Take Your Next Lab

Continue your Quest with these suggestions:

- Cloud Function: Qwik Start - Command Line
- Getting Started with Cloud KMS
- Setting up a Private Kubernetes Cluster
- Video Intelligence: Qwik Start

Next Steps / Learn More

This lab is also part of a series of labs called Qwik Starts. These labs are designed to give you a little taste of the many features available with Google Cloud. Search for "Qwik Starts" in the lab catalog to find the next lab you'd like to take!

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