Security & Identity Products (https://cloud.google.com/products/security/)
Resource Manager (https://cloud.google.com/resource-manager/)
Documentation (https://cloud.google.com/resource-manager/docs/) Guides

Creating and Managing Labels

This page gives a brief overview of labels and explains how to create and manage labels using the Resource Manager API and the Google Cloud Console.

What are labels?

A label is a key-value pair that helps you organize your Google Cloud instances. You can attach a label to each resource, then filter the resources based on their labels. Information about labels is forwarded to the billing system, so you can break down your billing charges (https://cloud.google.com/billing/docs/how-to/bq-examples) by label.

Common uses of labels

We do not recommend creating large numbers of unique labels, such as for timestamps or individual values for every API call. Here are some common use cases for labels:

- **Team or cost center labels**: Add labels based on team or cost center to distinguish instances owned by different teams (for example, `team:research` and `team:analytics`). You can use this type of label for cost accounting or budgeting.

- **Component labels**: For example, `component:redis`, `component:frontend`, `component:ingest`, and `component:dashboard`.

- **Environment or stage labels**: For example, `environment:production` and `environment:test`.

- **State labels**: For example, `state:active`, `state:readytodelete`, and `state:archive`.

- **Virtual machine labels**: A label can be attached to a virtual machine. Virtual machine tags that you defined in the past will appear as a label without a value.

Note: Do not include sensitive information in labels. This includes information that may be personally identifiable, such as an individual's name or title. Labels are not designed to handle sensitive information.

Requirements for labels

The labels applied to a resource must meet the following requirements:

- Each resource can have multiple labels, up to a maximum of 64.

- Each label must be a key-value pair.

- Keys have a minimum length of 1 character and a maximum length of 63 characters, and cannot be empty. Values can be empty, and have a maximum length of 63 characters.

- Keys and values can contain only lowercase letters, numeric characters, underscores, and dashes. All characters must use UTF-8 encoding, and international characters are allowed.

- The key portion of a label must be unique. However, you can use the same key with multiple resources.

- Keys must start with a lowercase letter or international character.

Creating and managing labels using the Resource Manager API

To create a new project with a label, set the `label` field when you create the project.

REST   **PYTHON**

Request:

```
POST https://cloudresourcemanager.googleapis.com/v1beta1/projects

{
 "labels": {
  "color": "red"
 },
 "name": "myproject",
 "projectId": "our-project-123"
}
```

Response:

```
{
 "projectNumber": "333197460082",
```

```
 "projectId": "our-project-123",
 "lifecycleState": "ACTIVE",
 "name": "myproject",
 "labels": {
  "color": "red"
 },
 "createTime": "2016-01-12T22:18:28.633Z",
}
```

To add labels for existing projects:

- Get the project using the get()
  (https://cloud.google.com/resource-manager/reference/rest/v1beta1/projects/get) method.

- Modify the `label` field.

- Update the project using the update()
  (https://cloud.google.com/resource-manager/reference/rest/v1beta1/projects/update) method.

For details about updating a project's labels, see Updating a Project
(https://cloud.google.com/resource-manager/docs/updating-project).

For details about using labels to filter projects, see Listing Projects
(https://cloud.google.com/resource-manager/docs/listing-projects).

Creating and managing labels using the Cloud Console

To add labels to a single project:

1. Open the **Labels** page in the Cloud Console.
   OPEN THE LABELS PAGE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/PROJECTSELECTOR/IAM-ADMI

2. Select your project from the **Select a project** drop-down.

3. To add a new label entry, click **+ Add label** and enter a label key and value for each label you want to add.

4. When you're finished adding labels, click **Save**.

To add labels for more than one project at the same time:

1. Open the **Manage resources** page in the Cloud Console.

   OPEN THE MANAGE RESOURCES PAGE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/CLOUD-RESOURC

2. On the **Manage resources** page, select the organization and projects for which you want to add labels.

3. On the right side panel, in the **Labels** tab, click **+ Add label** and enter a label key and value for each label you want to add.

4. When you're finished adding labels, click **Save**.

After you add labels, you can filter projects by typing a label key or value in the filter box above the projects list. The filter box will suggest keys and values so you can preview results.

Services currently supporting labels

The following Google Cloud services support labels today:

- BigQuery

- Cloud Bigtable

- Dataflow

- Dataproc

- Cloud Deployment Manager

- Cloud Functions

- Cloud Healthcare API

- Key Management Service

- Pub/Sub

- Cloud Spanner

- Cloud SQL

- Cloud Storage

- Compute Engine

- Google Kubernetes Engine

- Cloud Run (fully managed)

- Networking

- Resource Manager