### GLOBAL FLAGS

Some flags are available throughout the `gcloud` experience, like:

<table>
<thead>
<tr>
<th>Flag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>--help</code></td>
<td>Show help message for a command.</td>
</tr>
<tr>
<td><code>--project</code></td>
<td>If using a project other than the current one.</td>
</tr>
<tr>
<td><code>--quiet</code></td>
<td>Disable interactive prompts (and apply default values for inputs).</td>
</tr>
<tr>
<td><code>--verbosity</code></td>
<td>Can set verbosity levels at debug, info, warning, error, critical, and none.</td>
</tr>
<tr>
<td><code>--format</code></td>
<td>Display <code>gcloud</code> version information (only available at the global level).</td>
</tr>
</tbody>
</table>

### CLEANING UP RESULTS

Extract the most from your output with the filter, format, limit, and sort-by flags. Examples:

- **`gcloud compute instances list`**
  - `--filter="zone ~ ^us AND ~machineType: f1-micro"`
  - For Compute Engine instances with prefix us and not machine type f1-micro

- **`gcloud projects list`**
  - `--format="table(projectNumber, projectName, projectId, createTime.date(tz=LOCAL), createTime.date(tz=LOCAL).split('-')[0], createTime.date(tz=LOCAL).split('-')[1])"`  
  - `--filter="createTime>=2018-01-15T12:00:00" --sort-by=createTime`
  - For a list of projects created on or after 15 January 2018, sorted from oldest to newest, presented as a table with project number, project id and creation time columns with dates and times in local timezone

- **`gcloud compute instances list`**
  - `--filter="labels.my-label:*"`  
  - `--limit=10`
  - For a list of ten Compute Engine instances with a label my-label (of any value)

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### DISCOVERING COMMANDS

The `gcloud` command-line tool is a tree; non-leaf nodes are command groups and leaf nodes are commands. (Also, tab completion works for commands and resources!)

Most `gcloud` commands follow the following format:

```
$ gcloud [command] [optional] [component] [entity] [operation] [positional args] [flags]
```

**For example:**

```
gcloud compute instances create --zone=us-central1-a
```

#### Where:

- **Release Level** refers to the command’s release status
  - `alpha` or `beta` for GA (General Availability) commands require no release level specification

- **Component** refers to different Google Cloud services
  - `compute` for Compute Engine, `app` for App Engine, etc.

- **Entity** refers to the plural form of an element or collection of elements under a component
  - `disks`, `firewalls`, `images`, `instances`, `regions`, `zones` for `compute`

- **Operation** refers to the imperative verb form of the operation to be performed on the entity
  - Common operations are `describe`, `list`, `create/update`, `delete`, `clear`, `import`, `export`, `copy`, `remove`, `add`, `reset`, `restart`, `restore`, `run`, and `deploy`

- **Positional args** refer to the required, order-specific arguments needed to execute the command
  - `INSTANCES` is the required positional argument for `gcloud compute instances create`

- **Flags** refer to the additional arguments, `--flag-name=value`, passed in to the command after positional args
  - `--machine-type=MACHINE_TYPE` and `--preemptible` are optional flags for `gcloud compute instances create`

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### GETTING STARTED

- **`gcloud init`**
  - Initialize, authorize, and configure `gcloud`

- **`gcloud version`**
  - Display version and installed components

- **`gcloud components install`**
  - Install specific components

- **`gcloud components update`**
  - Update the `gcloud` CLI to the latest version

- **`gcloud config set project`**
  - Set a default Google Cloud project to work on

- **`gcloud info`**
  - Display current `gcloud` environment details

- **`gcloud help`**
  - Search `gcloud` reference documents for specific terms

- **`gcloud feedback`**
  - Provide feedback for the `gcloud` CLI team

- **`gcloud topic`**
  - Supplementary help material for non-command topics like accessibility, filtering, and formatting

  * For `apt-get` and `yum`, see [https://cloud.google.com/sdk/install](https://cloud.google.com/sdk/install)

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### PERSONALIZATION

- **`gcloud config set`**
  - Define a property (like `compute/zone`) for current configuration

- **`gcloud config get-value`**
  - Fetch value of a `gcloud` CLI property

- **`gcloud config list`**
  - Display all the properties for the current configuration

- **`gcloud config configurations create`**
  - Create a new named configuration

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### Google Cloud CLI Cheat sheet

[https://cloud.google.com/sdk/gcloud/reference/](https://cloud.google.com/sdk/gcloud/reference/)
### PERSONALIZATION (CONT.)

- `gcloud config configurations list`
  - Display a list of all available configurations
- `gcloud config configurations activate`
  - Switch to an existing named configuration

### CREDENTIALS

- `gcloud auth login`
  - Authorize access for `gcloud` with Google user credentials and set current account as active
- `gcloud auth activate-service-account`
  - Like `gcloud auth login` but with service account credentials
- `gcloud auth list`
  - List all credentialed accounts
- `gcloud auth print-access-token`
  - Display the current account’s access token
- `gcloud auth revoke`
  - Remove access credentials for an account
- `gcloud projects describe`
  - Display metadata for a project (including its ID)
- `gcloud projects add-iam-policy-binding`
  - Add an IAM policy binding to a project

### GOOGLE KUBERNETES ENGINE (GKE)

- `gcloud auth configure-docker`
  - Register `gcloud` as a Docker credential helper
- `gcloud container clusters create`
  - Create a cluster to run GKE containers
- `gcloud container clusters list`
  - List clusters to run GKE containers
- `gcloud container clusters get-credentials`
  - Update kubeconfig to get kubectl to use a GKE cluster
- `gcloud container images list-tags`
  - List tag and digest metadata for a container image

### IDENTITY & ACCESS MANAGEMENT (IAM)

- `gcloud iam list-grantable-roles`
  - List IAM grantable roles for a resource
- `gcloud iam roles create`
  - Create a custom role for a project or org
- `gcloud iam service-accounts create`
  - Create a service account for a project
- `gcloud iam service-accounts keys list`
  - List a service account’s keys
- `gcloud iam service-accounts add-iam-policy-binding`
  - Add an IAM policy to a service account
- `gcloud iam service-accounts set-iam-policy`
  - Replace existing IAM policy

### COMPUTE ENGINE

- `gcloud compute zones list`
  - List Compute Engine zones
- `gcloud compute instances describe`
  - Display a virtual machine (VM) instance’s details
- `gcloud compute instances list`
  - List all VM instances in a project
- `gcloud compute disks snapshot`
  - Create snapshot of persistent disks
- `gcloud compute snapshots describe`
  - Display a specified snapshot’s details
- `gcloud compute snapshots delete`
  - Delete a snapshot
- `gcloud compute ssh`
  - Connect to a VM instance by using SSH

### APP ENGINE

- `gcloud app deploy`
  - Deploy your app’s code and configuration to App Engine server
- `gcloud app versions list`
  - List all versions of all services deployed to the App Engine server
- `gcloud app browse`
  - Open the current app in a web browser
- `gcloud app create`
  - Create an App Engine app within your current project
- `gcloud app logs read`
  - Display the latest App Engine app logs

### MISCELLANEOUS

- `gcloud kms decrypt`
  - Decrypt ciphertext (to a plaintext file) using a Cloud Key Management Service (KMS) key
- `gcloud logging logs list`
  - List your project’s logs
- `gcloud sql backups describe`
  - Display info about a Cloud SQL instance backup
- `gcloud sql export sql`
  - Export data from a Cloud SQL instance to a SQL file

### INSTALLING THE GCLOUD CLI

Docs and installation instructions: https://cloud.google.com/sdk/docs/

### FLAGS & ARGUMENTS

Arguments can be **positional args**, which are set after command name and must respect the order of positional args or **flags**, which are set after positional args where the order of flags doesn’t matter.

A flag is either a name-value pair (–foo=bar) or boolean (–force/no-force). Additionally, flags can either be **required** or **optional**. When optional, the default value is used if the flag isn’t defined.