# gcloud CLI Google Cloud CLI

**START HERE**

`gcloud auth login`
Sign in with your browser

`gcloud storage ls`
List buckets

`gcloud projects list`
See your projects

`gcloud <group> --help`
Explore any command

`gcloud config set project <id>`
Pick the active project

`gcloud config list`
Show active settings

`gcloud compute instances list`
List VMs

`gcloud compute ssh <vm>`
Log into a VM

**Account** who you are → `auth login` → **Configuration** project, region, zone → `config set` → **Command** gcloud compute ... → `--project` → **Resource** VM, bucket, role

## CONCEPTS

Commands read as gcloud <product> <resource> <verb>, e.g. compute instances list. Add --help at any level to explore.

Most commands need a project. Set a default once, or override per call with --project.

Credentials from gcloud auth login are not used by client libraries; use application-default login for those.

## AUTH AND ACCOUNTS

`gcloud auth login`
Sign in via browser

`gcloud auth list`
Show credentialed accounts

`gcloud config set account <email>`
Switch the active account

`gcloud auth application-default login`
Credentials for local code and SDKs
*Separate from gcloud's own login; stored as a local ADC file.*

`gcloud auth activate-service-account --key-file <file>`
Sign in as a service account

## AUTH AND ACCOUNTS (cont.)

`gcloud init`
Guided first-time setup

## CONFIG AND PROJECTS

`gcloud config list`
Show active properties

`gcloud config set project <id>`
Set default project

`gcloud config set compute/region <region>`
Set default region

`gcloud config set compute/zone <zone>`
Set default zone

`gcloud config configurations list`
List named configurations

`gcloud config configurations create <name>`
Create a configuration

`gcloud config configurations activate <name>`
Switch configuration

`gcloud projects list`
List projects you can see

`gcloud services list --enabled`
List enabled APIs

## CONFIG AND PROJECTS (cont.)

`gcloud services enable <api>.googleapis.com`
Enable an API

## COMPUTE INSTANCES

`gcloud compute instances list`
List VMs

`gcloud compute instances describe <vm>`
Show one VM

`gcloud compute instances create <vm>`
Create a VM

`gcloud compute instances create <vm> --machine-type=<type> --image-family=<family> --image-project=<project>`
Create with explicit size and image

`gcloud compute instances start <vm>`
Start a VM

`gcloud compute instances stop <vm>`
Stop a VM

`gcloud compute instances delete <vm>`
Delete a VM

## SSH AND COPY

`gcloud compute ssh <vm>`
SSH into a VM
*Creates and uploads an SSH key on first use.*

`gcloud compute ssh <vm> --zone=<zone>`
SSH naming the zone

`gcloud compute ssh <vm> --command="<cmd>"`
Run one command remotely

`gcloud compute ssh <vm> --tunnel-through-iap`
SSH without a public IP

`gcloud compute ssh <vm> --L <port>:localhost:<port>`
Forward a local port

`gcloud compute scp <file> <vm>:<path>`
Copy a file to a VM

## STORAGE

`gcloud storage ls`
List buckets

`gcloud storage ls gs://<bucket>/<prefix>`
List objects

`gcloud storage cp <src> <dst>`
Copy files to, from or between buckets

`gcloud storage cp -r <dir> gs://<bucket>`
Upload a directory

## STORAGE (cont.)

`gcloud storage mv <src> <dst>`
Move or rename objects

`gcloud storage rm gs://<bucket>/<object>`
Delete an object

`gcloud storage rm -r gs://<bucket>/<prefix>`
Delete recursively

`gcloud storage rsync -r <src> <dst>`
Sync a directory with a bucket

`gcloud storage buckets create gs://<bucket> --location=<loc>`
Create a bucket

## IAM

`gcloud iam service-accounts list`
List service accounts

`gcloud iam service-accounts create <name>`
Create a service account

`gcloud projects get-iam-policy <project>`
Show who has which role

`gcloud projects add-iam-policy-binding <project> --member=<member> --role=<role>`
Grant a role
*Members look like user:a@b.com or serviceAccount:<email>.*

## FORMAT AND FILTER

`--format=json`
Output as JSON

`--format="value(<field>)"`
Print bare values for scripts

`--format="table(<f1>, <f2>)"`
Choose table columns

`--filter="<field>=<value>"`
Keep matching rows

`--project=<id>`
Override the project for one call

## HELP AND DISCOVERY

`gcloud <group> --help`
List subcommands in a group

## RECIPES

**Separate work and personal setups**

```
gcloud config configurations
create work
gcloud config set project
<work-project>
gcloud config set account
<you@work.com>
gcloud config configurations
activate default
```

**Script-friendly VM IPs**

```
gcloud compute instances list \
  --filter="status=RUNNING" \
  --format="value(name,
networkInterfaces[0].
accessConfigs[0].natIP)"
```