

Viewing usage reports

Compute Engine lets you export detailed reports of your Compute Engine usage to a [Google Cloud Storage](#) (/storage) bucket using the usage export feature. Usage reports provide information about the lifetime of your resources. For example, you can see how many VM instances in your project are running an n2-standard-4 machine type and how long each instance has been running. You can also review the storage space of a persistent disk, and information about other Compute Engine features.

Usage reports do not provide billing or activity information, such as information about API requests. For billing information, see the [Billing Export](#) (/billing/docs/how-to/export-data-file) feature. For activity logs, see [Activity logs](#) (/compute/docs/logging/activity-logs).

Before you begin

- If you want to use the command-line examples in this guide:
 1. Install or update to the latest version of the [gcloud command-line tool](#) (/compute/docs/gcloud-compute).
 2. [Set a default region and zone](#) (/compute/docs/gcloud-compute#set_default_zone_and_region_in_your_local_client).
- If you want to use the API examples in this guide, [set up API access](#) (/compute/docs/api/prereqs).

Overview

When you enable usage reports, Compute Engine delivers two types of reports to the Google Cloud Storage bucket you specify:

1. Daily usage reports

These reports are delivered daily and include usage data from the preceding day. Each report is a separate file that contains data from the last period. Data in these reports are immutable, meaning that Compute Engine will not update or rewrite the log file if there are

inaccuracies. Instead, the data is corrected in the next new report that is delivered to the bucket.

Daily usage reports have the following name format:

```
<bucket>/<report_prefix>_<numeric_project_id>_<YYYYMMDD>.csv
```

2. Monthly rollup report

A single monthly rollup report is delivered daily, which contains monthly usage data for that project up to, but not including, that day. The monthly usage report is overwritten each day with new data that reflects the monthly usage of resources up to that date. There will only be one monthly usage data file per project, per month.

Monthly rollup reports have following name format:

```
<bucket>/<report_prefix>_<numeric_project_id>_<YYYYMM>.csv
```

The daily and monthly report files look very similar, except for the difference in date format, where the monthly rollup reports are dated using the year and month (YYYYMM), and the daily usage reports are dated using the year, month, and date (YYYYMMDD).

All usage reports are delivered in comma-separated values (CSV).

(<http://www.ietf.org/rfc/rfc4180.txt>) format and usage report files are prefixed using <report_prefix>. The <report_prefix> is a customizable value chosen by the user. If you don't specify a report prefix, the prefix `usage_gce` will be used by default. All times are given in Pacific time (PST).

Prerequisites

Before you can start using Compute Engine usage export:

- Sign up for Google Cloud Storage (`/storage/docs/signup`) if you haven't already.
- You must have an existing bucket (`/storage/docs/creating-buckets`) to store usage logs.

Setting up usage export

When you first enable the usage export feature, the first report will be sent the following day, detailing the previous day's usage. Afterwards, you will receive reports in 24 hour intervals.

To set up the usage export feature, enable the feature in the `gcloud compute` (`/compute/docs/gcloud-compute`) tool. When you enable this feature, you must define two properties:

1. **The Google Cloud Storage bucket** (`/storage/docs/concepts-techniques#concepts`) **where you would like your reports to be delivered.**

You can select any Cloud Storage bucket for which you are an owner, including buckets that are from different projects. This bucket must exist before you can start exporting reports and you must have owner access to the bucket. Google Cloud Storage charges for usage, so you should review the [Cloud Storage pricessheet](/storage/pricing) (`/storage/pricing`) for information on how you might incur charges for the service.

Any user who has read access to the Cloud Storage bucket will be able to view the usage reports in the bucket. Any user who has write access to the bucket will be able to create, view, and modify existing files in the bucket. For more information, see the [Access control](#) (`#access_control`) section.

2. **The report prefix for your files.**

You can specify the report prefix to use for your usage reports. Your usage reports will have file names that contain this prefix. For example, specifying "my-cool-project-report" as your report prefix results in a file name similar to the format `my-cool-project-report_1234567890_20131230.csv`. If you do not specify a report prefix, the default prefix `usage_gce` is used.

After you decide on these two properties, you can enable the usage export feature in the following ways:

[Console](#)[gcloud](#) (`#gcloud`)[API](#) (`#api`)

1. Go to the **Compute Engine Settings** page.

[Go to the Compute Engine Settings page](https://console.cloud.google.com/compute/settings) (`https://console.cloud.google.com/compute/settings`)

2. Check the **Enable usage export** box.
3. Fill in the field asking for a **Bucket name**. Optionally, provide a **Report prefix**, if desired. If you leave the report prefix empty, the default prefix `usage_gce` is used. All usage reports delivered to the bucket will be named with this prefix.
4. Click **Save**.

Downloading usage export reports

After you start receiving usage reports in your bucket, download your reports like you would download other objects from Cloud Storage. For more information, see [Download objects](/storage/docs/downloading-objects) (/storage/docs/downloading-objects).

Supported metrics

Daily usage reports provide usage information about the following resources:

- Virtual machines
- Persistent disks
- Images
- Snapshots
- Static IP addresses
- Load balancers

Each resource is described using the following metrics:

Metric Name	Metric Properties
-------------	-------------------

- | | |
|-------------|---|
| Report Date | <ul style="list-style-type: none">• Metric Type: string• Description: The date of the usage.• Example: 2013-08-15 |
|-------------|---|

Metric Name	Metric Properties
MeasurementId	<ul style="list-style-type: none"> Metric Type: string Description: The ID of the type of resource that is being measured. For example, VmimageN1Standard-1 machine type (/compute/docs/machine-types). Example: <code>com.google.cloud/services/compute-engine/VmimageN1Standard_1</code>
Quantity	<ul style="list-style-type: none"> Metric Type: integer Description: The amount of usage for the specified date. Example: 86400
Unit	<ul style="list-style-type: none"> Metric Type: string Description: The unit type, such as count, seconds, hours, and so on. Example: seconds
Resource URI	<ul style="list-style-type: none"> Metric Type: string Description: The URI of the specified resource. Example: <code>https://compute.googleapis.com/compute/v1/projects/<project-id>/zones</code>
ResourceId	<ul style="list-style-type: none"> Metric Type: integer Description: A numeric ID that identifies the specific resource. Example: 16557630484925648021
Location	<ul style="list-style-type: none"> Metric Type: string Description: The location of the resource. Either a zone or region name, or GLOBAL for global resources. Example: <code>us-central1-a</code>

If you are using the billing export feature, you can also match the **MeasurementId** fields to find the charges for a particular resource.

An example entry in the report would look like the following:

Report Date	MeasurementId	Quantity	Unit	Resource URI

Report Date	MeasurementId	Quantity	Unit	Resource URI
02/13/2014	com.google.cloud/services/compute-engine/VmimageN1Standard_1	86400	seconds	https://compute.googleapis.com/compute/v1/projects/my-ins

Access control

When you enable the usage export feature for a Cloud Storage bucket, Compute Engine automatically adds itself to the bucket with write access in order to deliver usage reports. As long as Compute Engine has access to the bucket and the usage export feature is enabled, Compute Engine will continue to export usage reports to the specified Cloud Storage bucket.

You can identify that Compute Engine has access to a bucket if you see the following identity added to the bucket access control list:

```
-cluster-analytics-export@google.com
```

Any user who is an owner of the project has full access to the Google Cloud Storage bucket. Other users, such as writers and readers, have different degrees of access to the bucket. To learn about ACLs for a bucket, read the [Cloud Storage access control](#) (/storage/docs/accesscontrol) documentation.

If you disable the usage export feature, Compute Engine will automatically remove write access from Compute Engine to the bucket. If you modify the permissions on the cloud-cluster-analytics-export@google.com account and then disable the usage export feature, Compute Engine will disable the usage export feature but won't remove the account from the project access list. You can choose to remove the account manually if desired.

Checking if usage reports are enabled

You can check on a project's usage export settings by getting information about the project:

```
gcloud compute project-info describe
```

Look for the `usageExportLocation` field:

```

-----+-----+
e          | myproject          |
cription  |                    |
ation-time| 2012-10-18T16:31:52.308-07:00 |
ge        |                    |
napshots  | 1.0/1000.0        |
etworks   | 2.0/2.0           |
irewalls  | 3.0/10.0          |
          |                    |
geExportLocation |                    |
ucketName  | https://storage.googleapis.com/usage-export-sample |
eportNamePrefix |                    |
-----+-----+

```

Disabling usage reports

When you disable usage reports, Compute Engine automatically removes write access for Compute Engine to your Cloud Storage bucket and discontinues sending any new reports.

[Console](#)[gcloud](#) (#gcloud)[API](#) (#api)

1. Go to the **Compute Engine Settings** page.

[Go to the Compute Engine Settings page](https://console.cloud.google.com/compute/settings) (https://console.cloud.google.com/compute/settings)

2. Uncheck the **Enable usage export** box to disable usage export.

What's next

- Turn on the [Billing Export feature](/billing/docs/how-to/export-data-file) to view your billing logs.

- Track the activity in your project using [Activity Logs](/compute/docs/activity-logs/) (/compute/docs/activity-logs).
- Learn more about [Cloud Storage buckets](/storage/docs/creating-buckets/) (/storage/docs/creating-buckets).
- Learn more about [Compute Engine pricing](/compute/all-pricing/) (/compute/all-pricing).
- Use the [pricing calculator](/products/calculator/) (/products/calculator) to get an estimated price.

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