oduct or feature is in a pre-release state and might change or have limited support. For more information, see the pr
stages (/products/#product-launch-stages).

You can enable Stackdriver Trace for Python applications by using OpenCensus (https://opencensus.io/). OpenCensus is a set of instrumentation libraries for collecting trace and metric data that work with multiple backends. For the latest details about OpenCensus for Python, along with additional documentation and examples, go to census-instrumentation/opencensus-python (https://github.com/census-instrumentation/opencensus-python).

To collect traces, you need to import the Stackdriver exporter and the OpenCensus tracer packages. Your application must also instantiate `StackdriverExporter` and `Tracer` objects:

View on GitHub (https://github.com/GoogleCloudPlatform/python-docs-samples/blob/master/trace/main.py)

For more information on the exporter, see OpenCensus Tracing (https://opencensus.io/exporters/supported-exporters/python/stackdriver/).

If you are running on Google Cloud infrastructure, then you don't need to set `project_id` to your Google Cloud project ID. If you don't set this field, the client library for Python automatically gathers this data from a Google Cloud metadata server.

If you aren't running on Google Cloud infrastructure, then you must supply your Google Cloud project ID to your application.

Regardless of your infrastructure, when you don't explicitly set the Google Cloud project ID, the `google-cloud` Python library, which is invoked by OpenCensus, automatically determines if the environment variable `GOOGLE_CLOUD_PROJECT` is set, and if so, the library uses the value of `GOOGLE_CLOUD_PROJECT` as your Google Cloud project ID. For more information on authentication when using client libraries, see Authentication (https://googleapis.dev/python/google-api-core/latest/auth.html). For general information, see Getting started with authentication (/docs/authentication/getting-started).

To set the environment variable, do the following:

To reduce the performance impact of reporting trace data, have this data sent by a background process. To configure background reporting of trace data, include `transport=AsyncTransport` when initializing the `StackdriverExporter`.

You can use Trace on Google Cloud and when your application runs outside of Google Cloud.

When your application is running on Google Cloud, your application is automatically authenticated and you don't need to provide authentication credentials. However, you do need to ensure that your Google Cloud platform has the Stackdriver Trace API access scope (https://developers.google.com/identity/protocols/googlescopes#cloudtracev2) enabled.

For the following configurations, the default settings for the access scopes have the Stackdriver Trace API enabled:

- App Engine flexible environment
- App Engine standard environment
- Google Kubernetes Engine
- Compute Engine

If you use custom access scopes, then you must ensure that Stackdriver Trace API access scope (https://developers.google.com/identity/protocols/googlescopes#cloudtracev2) enabled. For `gcloud` users, specify access scopes using the `--scopes` flag and include the `trace.append` Stackdriver Trace API access scope. For example, to create a GKE cluster with only the Stackdriver Trace API enabled, do the following:

When your application is running outside of Google Cloud, you must provide authentication credentials in the form of a service account to the client library. The service account must contain the

Cloud Trace agent role (/trace/docs/iam#roles). For instructions, see Creating a service account (/iam/docs/creating-managing-service-accounts).

Google Cloud client libraries use Application default credentials (ADC) (/docs/authentication/production) to find your application's credentials. You provide these credentials by setting the `GOOGLE_APPLICATION_CREDENTIALS` environment variable:

View on GitHub (https://github.com/GoogleCloudPlatform/python-docs-samples/blob/master/trace/main.py)

After deployment, you can view the traces in the Cloud Console Trace Viewer.

Go to the Trace Viewer page (https://console.cloud.google.com/traces/overview)

- OpenCensus (https://opencensus.io/)
- GitHub: `census-instrumentation/opencensus-python` (https://github.com/census-instrumentation/opencensus-python)
- Source code (https://github.com/googleapis/google-cloud-python)
- GitHub issue tracker (https://github.com/googleapis/google-cloud-python/issues)
- Stack Overflow (https://stackoverflow.com/questions/tagged/google-cloud-trace)