roduct 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 PHP 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 PHP, along with additional
documentation and examples, go to `opencensus-php-exporter-stackdriver`
(https://github.com/census-ecosystem/opencensus-php-exporter-stackdriver).

1. Install the OpenCensus Stackdriver exporter composer package:

   The previous command also installs the OpenCensus and Trace composer packages.

2. To use the framework integrations (#framework_integrations) described in a later section on this
   page, install the OpenCensus extension:

3. Add the following line to your `php.ini` file:

4. If you're on Windows, then download the DLL file from the pecl download page
   (https://pecl.php.net/package/opencensus) to your extension directory of your PHP installation
   and add the following line to your `php.ini` file:

To enable the OpenCensus library for PHP, complete the following steps:

1. Import the required classes:

w on GitHub (https://github.com/GoogleCloudPlatform/php-docs-samples/blob/master/trace/trace-sample.php)

2. Initialize the `StackdriverExporter` object:

w on GitHub (https://github.com/GoogleCloudPlatform/php-docs-samples/blob/master/trace/trace-sample.php)

If you are running on Google Cloud infrastructure, then you don't need to set `projectId` to your Google Cloud project ID. If you don't set this field, the client library for PHP 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, for PHP, when you don't explicitly set the Google Cloud project ID, the `google-cloud` PHP 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, see Authentication
  (https://github.com/googleapis/google-cloud-php/blob/master/AUTHENTICATION.md#authentication).
To set the environment variable, do the following:

3. Start the tracer:

w on GitHub (https://github.com/GoogleCloudPlatform/php-docs-samples/blob/master/trace/trace-sample.php)

Create the exporter and start the tracer as early as possible in your application.

You can customize the behavior of the Stackdriver Trace library for PHP. For a list of exporter configuration options, go to **opencensus-php-exporter-stackdriver** (https://github.com/census-ecosystem/opencensus-php-exporter-stackdriver) or to OpenCensus PHP API (https://opencensus.io/api/php/api/master/OpenCensus/Trace/Tracer.html).

App Engine flexible environment lets you reduce the performance impact of reporting trace data by having the data sent by a background process. To enable background reporting, do the following:

1. Modify the `runtime_config` section of your `app.yaml` file to specify the `enable_stackdriver_integration` flag:

(https://github.com/GoogleCloudPlatform/php-docs-samples/blob/master/appengine/flexible/logging/app.yaml)

This flag causes the PHP batch processing daemon, `BatchRunner`, to be spawned.

2. Set the environment variable `IS_BATCH_DAEMON_RUNNING` to `true`.

3. Include the `async` option with the value set to `true` in the `clientConfig` options passed to the OpenCensus `StackdriverExporter`. For more details, see <u>StackdriverExporter</u> (https://github.com/census-ecosystem/opencensus-php-exporter-stackdriver/blob/master/src/StackdriverExporter.php)

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The Stackdriver Trace library for PHP automatically creates a trace record for each HTTP request. You can also add custom trace spans within the request:

<u>w on GitHub</u> (https://github.com/GoogleCloudPlatform/php-docs-samples/blob/master/trace/trace-sample.php)

The OpenCensus library provides useful integrations for web frameworks and functions. For more details, go to <u>available integrations</u> (https://github.com/census-instrumentation/opencensus-php/tree/master/src/Trace/Integrations) and

examples for some frameworks

(https://github.com/census-instrumentation/opencensus-php/tree/master/examples).

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:

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-ecosystem/opencensus-php-exporter-stackdriver`
  (https://github.com/census-ecosystem/opencensus-php-exporter-stackdriver)

- OpenCensus PHP API (https://opencensus.io/api/php/api/master/OpenCensus/Trace/Tracer.html)

- Source code (https://github.com/googleapis/google-cloud-php-trace)

- GitHub issue tracker (https://github.com/googleapis/google-cloud-php-trace/issues)

- Stack Overflow (https://stackoverflow.com/questions/tagged/google-cloud-trace)