

[Cloud Spanner](https://cloud.google.com/spanner/) (<https://cloud.google.com/spanner/>)

[Documentation](https://cloud.google.com/spanner/docs/) (<https://cloud.google.com/spanner/docs/>) [Reference](#)

Cloud Spanner Client Libraries

This page shows how to get started with the Cloud Client Libraries for the Cloud Spanner API. Read more about the client libraries for Cloud APIs, including the older Google APIs Client Libraries, in [Client Libraries Explained](https://cloud.google.com/apis/docs/client-libraries-explained) (<https://cloud.google.com/apis/docs/client-libraries-explained>).

The Cloud Spanner client libraries mentioned on this page are supported on Compute Engine, App Engine flexible environment, Google Kubernetes Engine, and Cloud Functions. The Cloud Spanner client library for Java is supported on App Engine standard environment with Java 8.

If you are using the App Engine standard environment with Go, PHP, or Python, use the [REST interface](https://cloud.google.com/spanner/docs/reference/rest/) (<https://cloud.google.com/spanner/docs/reference/rest/>) to access Cloud Spanner.

Note: [Additional client libraries \(#more-libraries\)](#) are available for Java applications.

Installing the client library

C#	GO	JAVA	NODE.JS	MORE ▾
-----------	----	------	---------	--------

For more information, see [Setting Up a C# Development Environment](https://cloud.google.com/dotnet/docs/setup) (<https://cloud.google.com/dotnet/docs/setup>). To install the `Google.Cloud.Spanner.Data` client library in Visual Studio, do the following:

1. Right-click your solution in Visual Studio and select **Manage Nuget packages for solution**.
2. Select the **Include prerelease** checkbox.
3. Search for and install the package named `Google.Cloud.Spanner.Data`.

Setting up authentication

To run the client library, you must first set up authentication by creating a service account and setting an environment variable. Complete the following steps to set up authentication. For

other ways to authenticate, see the [GCP authentication documentation](https://cloud.google.com/docs/authentication/production) (<https://cloud.google.com/docs/authentication/production>).

CLOUD CONSOLE

COMMAND LINE

1. In the Cloud Console, go to the **Create service account key** page.

GO TO THE CREATE SERVICE ACCOUNT KEY PAGE ([HTTPS://CONSOLE.CLOUD.GOOGLE.COM/API](https://console.cloud.google.com/apis)

2. From the **Service account** list, select **New service account**.
3. In the **Service account name** field, enter a name.
4. From the **Role** list, select **Project > Owner**.

★ **Note:** The **Role** field authorizes your service account to access resources. You can view and change this field later by using the [Cloud Console](https://console.cloud.google.com/) (<https://console.cloud.google.com/>). If you are developing a production app, specify more granular permissions than **Project > Owner**. For more information, see [granting roles to service accounts](https://cloud.google.com/iam/docs/granting-roles-to-service-accounts) (<https://cloud.google.com/iam/docs/granting-roles-to-service-accounts>).

5. Click **Create**. A JSON file that contains your key downloads to your computer.

Provide authentication credentials to your application code by setting the environment variable **GOOGLE_APPLICATION_CREDENTIALS**. Replace **[PATH]** with the file path of the JSON file that contains your service account key, and **[FILE_NAME]** with the filename. This variable only applies to your current shell session, so if you open a new session, set the variable again.

LINUX OR MACOS

WINDOWS

```
export GOOGLE_APPLICATION_CREDENTIALS="[PATH]"
```

For example:

```
export GOOGLE_APPLICATION_CREDENTIALS="/home/user/Downloads/[FILE_NAME].json"
```

Using the client library

The following example shows how to use the client library.

C#

GO

JAVA

NODE.JS

MORE ▾

[CLOUDPLATFORM/DOTNET-DOCS-SAMPLES/BLOB/MASTER/SPANNER/API/QUICKSTART/PROGRAM.CS](#)

FEEDBACK (#)

```
using Google.Cloud.Spanner.Data;
using System;
using System.Threading.Tasks;

namespace GoogleCloudSamples.Spanner
{
    public class QuickStart
    {
        static async Task MainAsync()
        {
            string projectId = "YOUR-PROJECT-ID";
            string instanceId = "my-instance";
            string databaseId = "my-database";
            string connectionString =
                $"Data Source=projects/{projectId}/instances/{instanceId}/"
                + $"databases/{databaseId}";
            // Create connection to Cloud Spanner.
            using (var connection = new SpannerConnection(connectionString))
            {
                // Execute a simple SQL statement.
                var cmd = connection.CreateSelectCommand(
                    @"SELECT ""Hello World"" as test");
                using (var reader = await cmd.ExecuteReaderAsync())
                {
                    while (await reader.ReadAsync())
                    {
                        Console.WriteLine(
                            reader.GetFieldValue<string>("test"));
                    }
                }
            }
        }
        public static void Main(string[] args)
        {
            MainAsync().Wait();
        }
    }
}
```

```
}  
}
```

Additional resources

C#	GO	JAVA	NODE.JS	MORE ▾
-----------	----	------	---------	--------

- [API Reference Documentation](https://googleapis.github.io/google-cloud-dotnet/docs/Google.Cloud.Spanner.Data)
(<https://googleapis.github.io/google-cloud-dotnet/docs/Google.Cloud.Spanner.Data>)
- [Source Code](https://github.com/GoogleCloudPlatform/google-cloud-dotnet) (<https://github.com/GoogleCloudPlatform/google-cloud-dotnet>)
- [GitHub Issue Tracker](https://github.com/GoogleCloudPlatform/google-cloud-dotnet/issues) (<https://github.com/GoogleCloudPlatform/google-cloud-dotnet/issues>)
- [Stack Overflow](https://stackoverflow.com/search?q=%5Bgoogle-cloud-spanner%5D+%5Bc%23%5D)
(<https://stackoverflow.com/search?q=%5Bgoogle-cloud-spanner%5D+%5Bc%23%5D>)

Additional client libraries

In addition to the libraries shown above, a [Spring Data](https://spring.io/projects/spring-data) (<https://spring.io/projects/spring-data>) module is available for Java applications. Spring Data Cloud Spanner helps you use Cloud Spanner in any application that's built with the [Spring Framework](https://spring.io/projects/spring-framework) (<https://spring.io/projects/spring-framework>).

To get started, learn how to [add Spring Data Cloud Spanner to your application](https://cloud.google.com/spanner/docs/adding-spring) (<https://cloud.google.com/spanner/docs/adding-spring>).

Except as otherwise noted, the content of this page is licensed under the [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/) (<https://creativecommons.org/licenses/by/4.0/>), and code samples are licensed under the [Apache 2.0 License](https://www.apache.org/licenses/LICENSE-2.0) (<https://www.apache.org/licenses/LICENSE-2.0>). For details, see our [Site Policies](https://developers.google.com/terms/site-policies) (<https://developers.google.com/terms/site-policies>). Java is a registered trademark of Oracle and/or its affiliates.

Last updated October 29, 2019.