



Google Cloud Platform – Introduction to BigQuery

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All organizations look for unlocking business insights from their data. But it can be hard to scalably ingest, store, and analyze that data as it rapidly grows. Google's enterprise data warehouse called **BigQuery**, was designed to make large-scale data analysis accessible to everyone.

In this series, we'll look into how BigQuery can help you get valuable insights from your data with ease. If your business has small amounts of data, you might be able to store it in a spreadsheet. But as your amount of data grows to gigabytes, terabytes, or even petabytes, you start to need a more efficient system like a **data warehouse**. That's because all that data isn't very useful unless you have a way to analyze it. Traditionally, larger sets of data mean longer times between asking your questions and getting answers.

BigQuery is designed to handle massive amounts of data, such as log data from thousands of retail systems or IoT data from millions of vehicle sensors across the globe. It's a fully managed and serverless data warehouse which empowers you to focus on analytics instead of managing infrastructure. By design, BigQuery helps you avoid the **Data silo problem** which happens when you have individual teams in your company having their own independent data marts. This can create significant friction between analyzing data across teams and cause challenges with data version control. Thanks to the integration with Google Cloud's native identity and access management, you can assign read or write permissions to specific users, groups, or projects, and keep your sensitive data secure, all while still collaborating across teams.

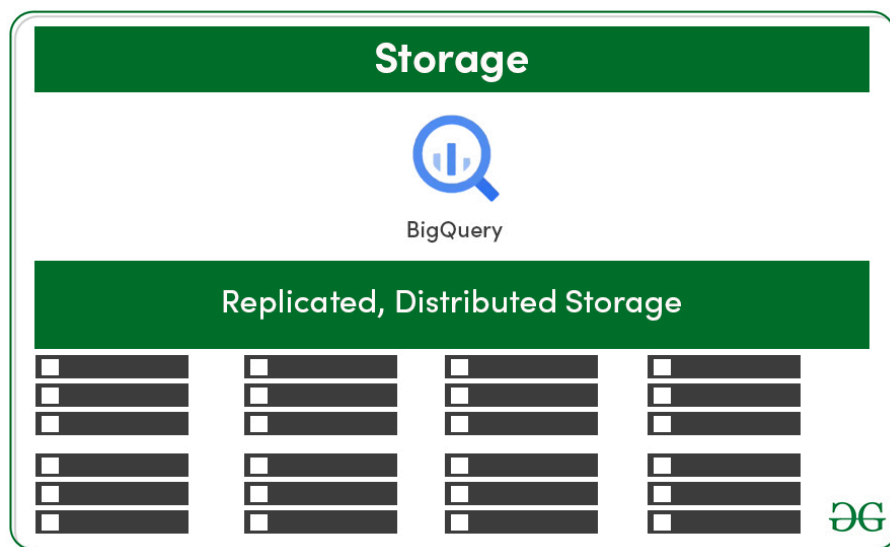
Working with data in BigQuery involves three primary parts:

- **Storage**

• **Integration**

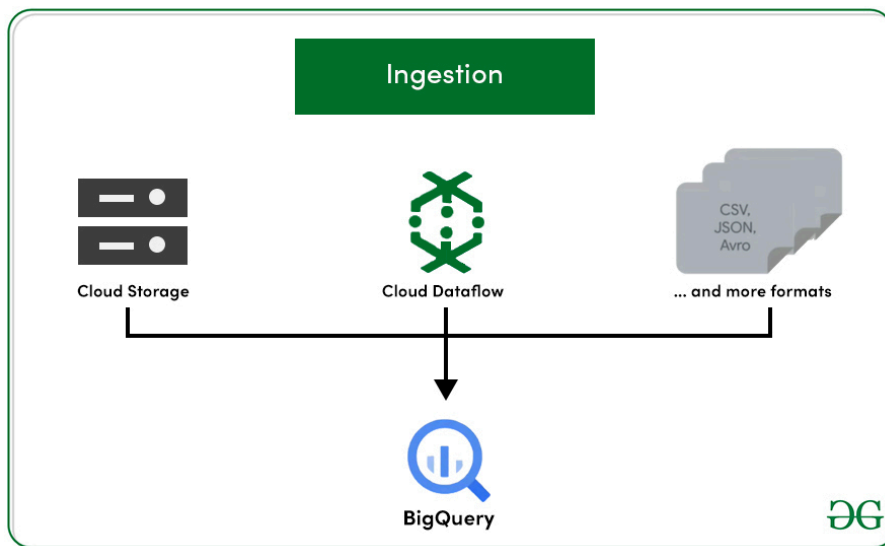
Google handles running everything else. BigQuery is a fully managed service, which means you don't need to set up or install anything. And you don't require a database administrator. You can simply log into your Google Cloud project from a browser and get started.

First, let's talk about BigQuery's storage. Data is stored in a structured table, which means that you can use standard SQL for easy querying and data analysis.



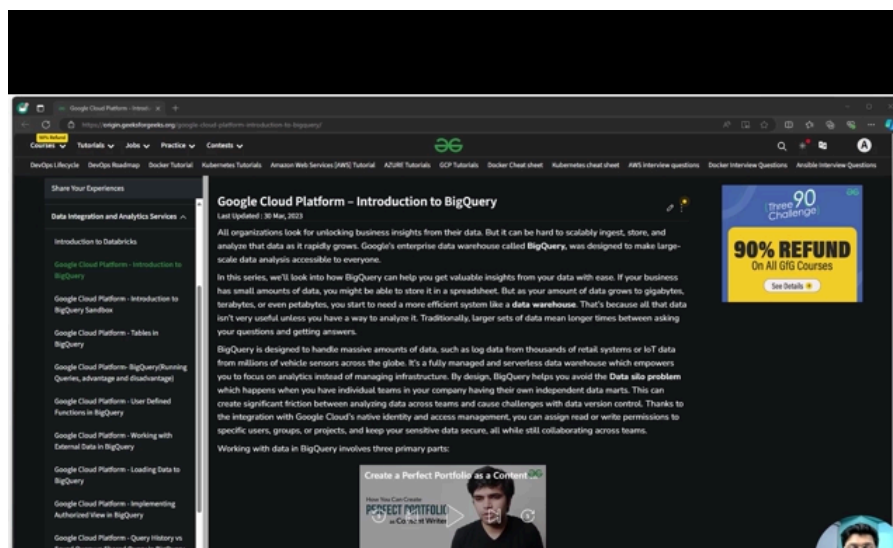
For example, let's say that you have some data that represents the sales for each of your stores in the last year. You could probably use a smaller database for that. But what if you have thousands of stores? And what if you want revenue broken up by product type or by region per time period?

BigQuery is perfect for big data because it manages all that storage and the scaling operations automatically for you. There are lots of ways to do that, as BigQuery is integrated with the rest of the data analytics platform from Google. You can upload data directly from Cloud Storage or stream data from Cloud Dataflow. It can also be used to build an ETL pipeline using Cloud data fusion. You can also import data from a variety of file formats.



Once your data is in BigQuery, you're ready to start answering those questions. BigQuery supports the same Structured Query Language, or **SQL**, that you may be familiar with if you worked with **ANSI-compliant relational databases**.

You can bypass the ingestion and storage steps by analyzing the BigQuery public data sets. These are third-party data sets that have been made public for anyone to query against. Google handles all the storage so that you can focus on figuring out answers to your questions.



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