- Cloud Firestore

- A document-oriented database storing key-value pairs. Optimized for small documents and easy to use with mobile applications.

- Cloud Datastore

- A document database built for automatic scaling, high performance, and ease of use.

Comparison between Native(Firestore) mode and Datastore mode

Property	Firestore	Datastore
Data model	Document database organized into documents and collections.	Entities organized into kinds and entity groups.
Queries and transactions	• Strongly consistent queries across the entire database • Up to 500 documents per transaction across any number of collections. • Limitation: No projection queries	• Removes the previous consistency limitations of Datastore • Strongly consistent queries across the entire database • Transactions can access any number of entity groups
Datastore v1 API support	No, requests are denied	Yes
Firestore v1 API support	Yes	No, requests are denied
Offline data persistence	The mobile and web client libraries support offline data persistence	Not supported
Client libraries	Firestore client libraries: • Java • Python • PHP • Go • Ruby • C# • Node.js • Android • iOS • Web	Datastore Client libraries: • Java • Python • PHP • Go • Ruby • C# • Node.js

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Security	Identity and Access Management (IAM) manages database access • Firestore Security Rules support serverless authentication and authorization for the mobile and web client libraries	IAM manages database access
Performance	Automatically scales to millions of concurrent clients. Max 10,000 writes per second.	Automatically scales to millions of writes per second
Console	Firebase Console and Cloud Console Firestore Viewer	Cloud Console Datastore Viewer
App Engine client library integration	Not supported in the App Engine standard environment Python 2.7 and PHP 5.5 runtimes Supported in the App Engine standard environment Python 3.7, PHP 7.2, Java 8, Go, and Node.js runtimes Supported in the App Engine flexible environment, all runtimes	Supported in all runtimes

Comparison with traditional databases

Concept	Datastore	Firestore	Relational database
Category of object	Kind	Collection group	Table
One object	Entity	Document	Row
Individual data for an object	Property	Field	Column
Unique ID for an object	Key	Document ID	Primary key

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Google documents - Comparison

	Native mode	Datastore mode
	Enable all of Cloud Firestore's features, with offline support and real-time synchronization.	Leverage Cloud Datastore's system behavior on top of Cloud Firestore's powerful storage layer.
	SELECT NATIVE MODE	SELECT DATASTORE MODE
API	Firestore	Datastore
Scalability	Automatically scales to millions of concurrent clients	Automatically scales to millions of writes per second
App engine support	Not supported in the App Engine standard Python 2.7 and PHP 5.5 runtimes	All runtimes
Max writes per second	10,000	No limit
Real-time updates	✓	✕
Mobile/web client libraries with offline data persistence	✓	✕
Query consistency	Strong	Strong
Data model	Documents / collections	Entities / kinds
Web console	Firestore page in Google Cloud Platform and Firebase	Datastore page in Google Cloud Platform

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