Google Cloud named a Leader in the 2019 Gartner Magic Quadrant for Operational Database Management Systems

(/gartner-opdbms-mq/)

Forrester names Google a leader in The Forrester Wave™: Database-as-a-Service, 2019. Get your complimentary report here.

(/forrester-dbaas/)

**TRY IT FREE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/FREETRIAL)**

Cloud Spanner is the first scalable, enterprise-grade, globally-distributed, and strongly consistent database service built for the cloud specifically to combine the benefits of relational database structure with non-relational horizontal scale. This combination delivers high-performance transactions and strong consistency across rows, regions, and continents with an industry-leading 99.999% availability SLA, no planned downtime, and enterprise-

grade security. Cloud Spanner revolutionizes database administration and management and makes application development more efficient. See what Cloud Spanner can help you solve (/docs/tutorials#spanner).

	Cloud Spanner	Traditional Relational	Traditional Non-Relational
Schema	✓ **Yes**	✓ Yes	✗ No
SQL	✓ **Yes**	✓ Yes	✗ No
Consistency	✓ **Strong**	✓ Strong	✗ Eventual
Availability	✓ **High**	✗ Failover	✓ High
Scalability	✓ **Horizontal**	✗ Vertical	✓ Horizontal
Replication	✓ **Automatic**	↻ Configurable	↻ Configurable

| Use Case	Before Cloud Spanner	With Cloud Spanner
Financial trading	Inconsistencies lead to potential monetary loss during reconciliation. Global synchronous replication of trades is not feasible.	Cost savings and a consistent, unified, global view.
Insurance	Inconsistencies lead to incomplete views of customers.	Up-to-date customer views provide more accurate, real-time data.
Global call centers	Eventual and out-of-touch.	Real-time and up-to-date.

Use Case	Before Cloud Spanner	With Cloud Spanner
Supply-chain management and manufacturing	Global supply chain presents an inconsistent global view and/or data must be shipped in batches.	Global, real-time, consistent view enables real-time decision making.
Telecom and billing	Processing capacity limited to finite scale-up compute resources.	Scale-out allows improved processing speed.
Logistics and Transportation	Regional reach with many systems glued together.	Global reach with lower latency and a consistent view.
Gaming	Each server or cluster is its own universe.	Consistent, global view delivers a unified experience.
E-Commerce (High Availability)	Limited availability SLA or no SLA guarantees. In practice, potential missed sales.	Guaranteed max of 5 minutes of downtime (including planned downtime) on paper and in practice.
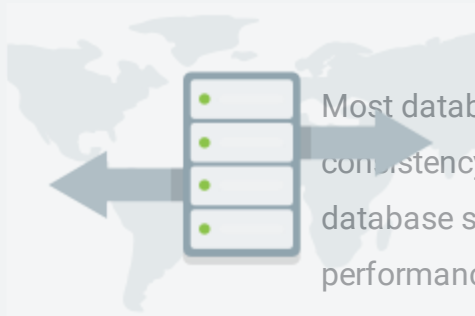
Most databases today require making trade-offs between scale and consistency. With Cloud Spanner, you get the best of relational database structure and non-relational database scale and performance with external strong consistency across rows, regions, and continents.

Cloud Spanner scales horizontally and serves data with low latency while maintaining transactional consistency and industry-leading 99.999% (five 9s) availability - 10x less downtime than four nines (<5 minutes per year). Cloud Spanner helps future-proof your database backend. It can scale to arbitrarily large database sizes to help avoid rewrites and migrations. The use of multiple databases or sharded databases as an alternative solution introduces unnecessary complexity and cost.

IT Admins and DBAs are inundated with thankless tasks. With Cloud Spanner, focus on value-add and innovation instead of mainte. Creating or scaling a globally replicated database for mission-c apps now takes a handful of clicks.
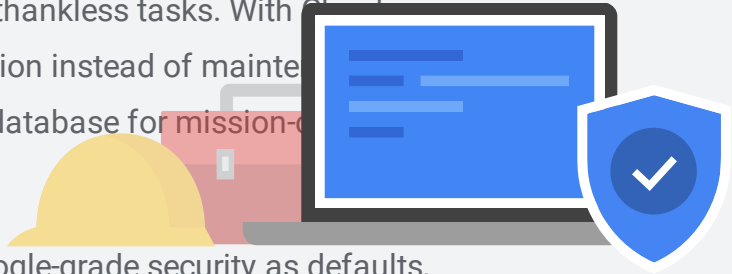
Industry-leading high-availability and Google-grade security as defaults, not expensive add-ons, help ensure your apps stay online and more secure. When architecting apps, Cloud Spanner has a simple billing model that does not charge extra over your configuration choice for high-availability, replication, or ensuring more secure, global strongly consistent data.

Cloud Spanner is a relational database with full relational semantics and es schema changes as an online operation with no planned time. Reuse existing SQL skills to query data in Cloud Spanner using ar, industry-standard ANSI 2011 SQL.

Deliver better experiences for end users with external, strong consistency. Apps must be built for a global user base and you need synchronous replication to deliver correct, accurate, and consistent data. The alternative is possibly inconsistent stale reads, a diminished end-user experience, and complex application logic resulting in difficult, time-consuming bugs.

Cloud Spanner is battle tested by Google's own mission-critical applications and services.

Google-grade security includes <u>encryption by default in transit</u> (/security/encryption-in-transit/) and <u>at rest</u> (/security/encryption-at-rest/), granular <u>identity & access management</u> (/iam/), comprehensive audit

logging, custom-manufactured hardware, hardware tracking and disposal, and the Google-owned and controlled global network (/about/locations/#network-tab/). Learn more about Google Cloud Platform's comprehensive security architecture (/security/secur

.

Global Scale

Horizontally scalable across rows, regions, and continents, from 1 to hundreds or thousands of nodes.

Fully Managed

Ease of deployment at every scale and every stage. Synchronous replication and maintenance are automatic and built-in.

Relational Semantics

Everything you would expect from a relational database—schemas, ACID transactions, and SQL queries (/spanner/docs/query-syntax/) (ANSI 2011).

Multi-Language Support

Client libraries (/spanner/docs/reference/libraries/) in C#, Go, Java, Node.js, PHP, Python, and Ruby. JDBC driver (/spanner/docs/jdbc-drivers) for connectivity with popular third-party tools.

Transactional Consistency

Purpose-built for <u>external</u> (/spanner/docs/true-time-external-consistency), strong, global transactional consistency.

Enterprise Grade Security

Data-layer encryption, <u>IAM integration</u> (/spanner/docs/iam/) for access and controls, and <u>audit logging</u> (/spanner/docs/logs).

Highly Available

Whenever, wherever, your data is <u>highly available</u> (/spanner/sla).

Read
blog → (/blog/products/databases/how-streak-built-a-graph-database-on-cloud-spanner-to-wrangle-billions-of-emails)

Read
blog → (/blog/products/gcp/behind-the-scenes-with-the-dragon-ball-legends-gcp-backend)

Read
case
study   → (/customers/optiva/)

Read
blog   → (/blog/products/gcp/how-
google-cloud-storage-
offers-strongly-consistent-
object-listing-thanks-to-
spanner)

mixpanel

Read
case
study   → (/customers/mixpanel/)

THE**NEXT**PLATFORM

Learn
more   ↗ (https://www.nextplatform.com
the-database-world-with-google

Read the report → (/gartner-opdbms-mq/index.html)

Feature	REGIONAL PRICE (USD)	MULTI-REGION PRICE (USD)
Nodes	From $0.90 per node per hr	From $3.00 per node per hr
Storage	From $0.30 per GB per month	From $0.50 per GB per month
Network Ingress	FREE	
Network Egress	Cross-region and internet egress rates apply	

If you pay in a currency other than USD, the prices listed in your currency on Cloud Platform SKUs

(https://cloud.google.com/skus/) apply.
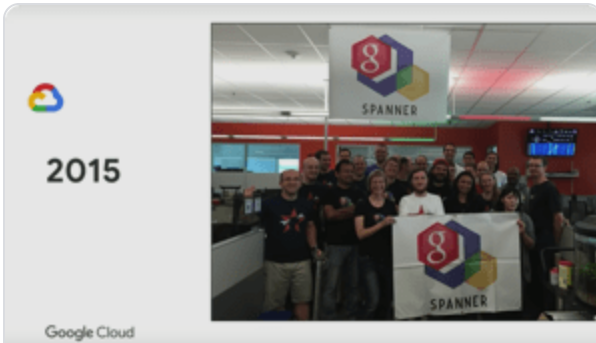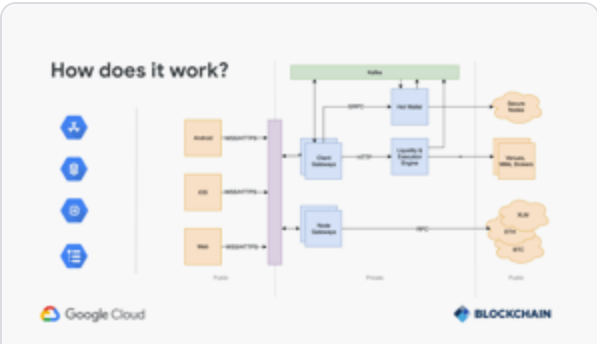
TRY IT FREE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/FREETRIAL)

Java is a registered trademark of Oracle and/or its affiliates.