

Q1. What is Google BigQuery and what problem in Data Platforms does it solve?

A: Google BigQuery is a tool or platform that automates or simplifies a specific concern in the Data Platforms domain, reducing manual effort and operational complexity for engineering teams.

Q2. What are the core components or concepts in Google BigQuery?

A: Google BigQuery has key building blocks that work together: a configuration layer defines intent, a runtime layer enforces it, and an API or CLI layer allows operators to manage and observe the system.

Q3. How does Google BigQuery compare to its main alternatives?

A: Google BigQuery trades off simplicity against feature richness differently than its alternatives. Choose Google BigQuery when its specific strengths performance, ecosystem, or ease of use align with your team's primary constraints.

Q4. How do you get started with Google BigQuery for a new project?

A: Install Google BigQuery via its package manager or binary release. Follow the quickstart to initialize a project, configure the minimal required settings, and run the default command to verify the setup works end-to-end.

Q5. What configuration options most affect Google BigQuery's behavior in production?

A: Production-critical settings typically include concurrency limits, timeout values, retry policies, resource limits, and logging levels. Review the official production hardening guide before deploying.

Q6. How does Google BigQuery handle reliability and high availability?

A: Google BigQuery provides HA through leader election, replication, or stateless horizontal scaling. Deploy at least two instances across availability zones and configure health checks for automatic failover.

Q7. What observability does Google BigQuery provide out of the box?

A: Google BigQuery exposes metrics (Prometheus endpoint or built-in dashboard), structured logs, and optionally distributed traces. Define SLOs on the key metrics and alert before users are affected.

Q8. What are common performance bottlenecks in Google BigQuery?

A: Performance bottlenecks typically stem from misconfigured connection pools, large payload sizes, insufficient worker threads, or missing caches. Profile with built-in diagnostics before optimizing.

Q9. What security best practices apply when running Google BigQuery?

A: Run Google BigQuery with the principle of least privilege, enable TLS for all communication, use a secrets manager for credentials, and keep the software patched to the latest stable release.

Q10. What mistakes do teams commonly make when adopting Google BigQuery?

A: Common pitfalls include skipping the documentation and learning the API by trial and error, using default configurations in production, lacking a runbook for operational issues, and not testing failover scenarios.