Google Cloud

Partner Certification Academy

Professional Cloud Developer

v2309

Quiz questions*

BigQuery

** These are for practice only and are not actual exam questions*

Question: Which Google Cloud service can be used in conjunction with BigQuery to create a data processing pipeline using Apache Spark?

- A. Google Cloud Storage
- B. Dataproc
- C. Cloud Functions
- D. Cloud Pub/Sub

Question: What is the primary purpose of a dataset in BigQuery?

- A. To store billing information
- B. To organize and control access to tables and views
- C. To execute SQL queries
- D. To manage user permissions

Question: What happens when you try to query tables from datasets located in different regions?

- A. The query executes normally
- B. BigQuery automatically moves one of the datasets
- C. The query fails
- D. BigQuery charges extra for cross-region queries

Question: Which of the following is incorrect regarding BigQuery datasets?

- A. Dataset location can only be set at creation time
- B. Dataset names must be unique for each project
- C. Datasets can only contain tables, not views
- D. All tables in a query must be stored in datasets in the same location

Question: How are you billed for the storage used by a dataset in BigQuery by default?

- A. Physical bytes
- B. Logical bytes
- C. Number of tables
- D. Number of queries

Question: What is the primary security measure to control access to datasets in BigQuery?

- A. Two-factor authentication
- B. IP whitelisting

- C. IAM Access controls
- D. Encryption keys

Question: When creating a dataset in BigQuery, where do you specify the location for storing your data?

- A. After creating the dataset
- B. During the creation of the first table
- C. At the time of dataset creation
- D. It's automatically set based on the user's location

Question: Which of the following is NOT a supported format for loading data into BigQuery from Cloud Storage?

- A. Avro
- B. CSV
- C. PDF
- D. Parquet

Question: In BigQuery, what does a table contain?

- A. SQL Queries
- B. Individual records organized in rows
- C. Datasets
- D. Google Cloud Projects

Question: Which of the following is NOT a type of table that BigQuery supports?

- A. Standard BigQuery tables
- B. External tables
- C. Views
- D. Dynamic tables

Question: What are views in BigQuery?

- A. Physical tables stored in BigQuery storage
- B. Logical tables defined by using a SQL query
- C. Copies of BigQuery tables
- D. Tables that reference data stored outside BigQuery

Question: What is the primary difference between a standard BigQuery table and an external table?

- A. External tables are stored in BigQuery storage, while standard tables are not.
- B. Standard tables are logical tables, while external tables store actual data.
- C. External tables reference data stored outside BigQuery.
- D. Standard tables can only store structured data, while external tables can store unstructured data.

Question: What is a view in BigQuery?

- A. A physical table defined by a SQL query.
- B. A virtual table defined by a SQL query.
- C. A materialized table that caches query results.
- D. A temporary table used for transient operations.

Question: Which of the following is a key characteristic of BigQuery materialized views?

- A. They are physically stored and provide a reusable reference to a set of data.
- B. They are virtual and do not physically store any data.
- C. They require manual updates when the base tables change.
- D. They are used to store temporary data for short-term operations.

Question: What is the primary difference between BigQuery's logical views and materialized views?

- A. Logical views are physically stored, while materialized views are virtual.
- B. Logical views require manual updates, while materialized views are automatically updated.
- C. Logical views are virtual and do not physically store data, while materialized views physically store the data.
- D. Logical views can be queried directly, while materialized views cannot.

Question: Which of the following is an INCORRECT statement about BigQuery views?

- A. Views are read-only.
- B. The dataset containing the view and the dataset containing the tables referenced by the view must be in the same location.
- C. You can run DML (insert, update, delete) queries against a view.
- D. You cannot reference a view in a wildcard table query.

Question: In BigQuery, which type of query job does BigQuery run on demand?

- A. Interactive query jobs
- B. Batch query jobs
- C. Scheduled query jobs
- D. Dry run query jobs

Question: Which type of query job does BigQuery wait to run until idle compute resources are available?

- A. Interactive query jobs
- B. Batch query jobs
- C. Scheduled query jobs
- D. Dry run query jobs

Question: By default, how does BigQuery run your queries?

- A. As batch query jobs
- B. As interactive query jobs
- C. As scheduled query jobs
- D. Without any specific type

Question: Once you reach the concurrent query limit in BigQuery, what happens to additional queries?

- A. They are discarded
- B. They are converted to batch queries
- C. They wait in a queue
- D. They are executed with lower priority

Question: Where does BigQuery save query results by default?

- A. In a permanent table
- B. In a temporary table
- C. In a cache
- D. In a dataset

Question: Which IAM role allows a user to read, query, copy, or export tables in a BigQuery dataset?

- A. bigquery.dataEditor
- B. bigquery.dataViewer
- C. bigquery.dataOwner
- D. bigquery.jobUser

Question: If a user has the bigquery.dataEditor role, what additional capabilities do they have over the bigquery.dataViewer role?

- A. Can delete datasets
- B. Can edit or append data in the dataset
- C. Can revoke or change any project role
- D. Can read BI Engine reservations

Question: Which role should be granted to a user if you want them to have complete access to all BigQuery resources in a project, including the ability to delete any dataset?

- A. bigquery.dataViewer

- B. bigquery.dataEditor
- C. bigquery.dataOwner
- D. bigquery.user

Question: Which of the following roles allows a user to create new empty datasets in BigQuery?

- A. bigquery.jobUser
- B. bigquery.dataViewer
- C. bigquery.dataEditor
- D. bigquery.dataOwner

Question: When setting up a service account in Compute Engine to access BigQuery, which IAM role should be granted to allow the service account to run BigQuery jobs but not manage datasets or tables?

- A. bigquery.dataViewer
- B. bigquery.jobUser
- C. bigquery.dataEditor
- D. bigquery.user

Question: If you want your Compute Engine service account to manage BigQuery datasets and tables but not run jobs, which IAM role should you assign?

- A. bigquery.dataOwner
- B. bigquery.admin
- C. bigquery.dataEditor
- D. bigquery.jobUser

Question: For a service account in Compute Engine that needs to view BigQuery datasets and tables without modifying them, which IAM role should be assigned?

- A. bigquery.dataViewer
- B. bigquery.dataEditor
- C. bigquery.user
- D. bigquery.admin

Question: If you want a service account in Compute Engine to have full control over BigQuery, including managing datasets, tables, and running jobs, which IAM role should you grant?

- A. bigquery.dataViewer
- B. bigquery.jobUser
- C. bigquery.dataEditor
- D. bigquery.admin

Question: When you encounter a "Resources exceeded during query execution" error in BigQuery, what is the most likely cause?

- A. The query is referencing a non-existent table.
- B. The user has exceeded their quota of query jobs per day.
- C. The query is too complex and is consuming too many resources.
- D. BigQuery service is temporarily unavailable.

Question: What should you check first if you receive a "Permission denied" error when trying to access a BigQuery dataset?

- A. Ensure the dataset exists.

- B. Check if BigQuery service is down.
- C. Verify the IAM roles and permissions.
- D. Ensure you are using the correct SQL syntax.

Question: If you're experiencing slow query performance in BigQuery, what is a recommended best practice to improve it?

- A. Increase the number of nodes in the cluster.
- B. Use the CACHE keyword in your SQL query.
- C. Reduce the amount of data returned.
- D. Store data in a different region.

Answers to Quiz questions

BigQuery

Question: Which Google Cloud service can be used in conjunction with BigQuery to create a data processing pipeline using Apache Spark?

- A. Google Cloud Storage
- B. Dataproc
- C. Cloud Functions
- D. Cloud Pub/Sub

Correct Answer: B. Dataproc

Explanation: Dataproc is a managed Apache Spark and Apache Hadoop service that can be used to process vast amounts of data. The BigQuery Connector for Apache Spark allows Data Scientists to blend the power of BigQuery's seamlessly scalable SQL engine with Apache Spark's Machine Learning capabilities. In this context, Dataproc, BigQuery, and Apache Spark can be used together to perform machine learning on datasets.

Resource: Use Dataproc, BigQuery, and Apache Spark ML for Machine Learning

Question: What is the primary purpose of a dataset in BigQuery?

- A. To store billing information
- B. To organize and control access to tables and views
- C. To execute SQL queries
- D. To manage user permissions

Correct Answer: B. To organize and control access to tables and views

Explanation: Datasets in BigQuery are top-level containers that are used to organize and control access to tables and views. They help in structuring the data and managing access.
Resource: Introduction to datasets | BigQuery | Google Cloud

Question: What happens when you try to query tables from datasets located in different regions?

- A. The query executes normally
- B. BigQuery automatically moves one of the datasets
- C. The query fails
- D. BigQuery charges extra for cross-region queries

Correct Answer: C. The query fails

Explanation: All tables that are referenced in a query must be stored in datasets in the same location. If they are in different locations, the query will not execute.
Resource: Introduction to datasets | BigQuery | Google Cloud

Question: Which of the following is incorrect regarding BigQuery datasets?

- A. Dataset location can only be set at creation time
- B. Dataset names must be unique for each project
- C. Datasets can only contain tables, not views

- D. All tables in a query must be stored in datasets in the same location

Correct Answer: C. Datasets can only contain tables, not views

Explanation: Datasets in BigQuery can contain both tables and views..
Resource: Introduction to datasets | BigQuery | Google Cloud

Question: How are you billed for the storage used by a dataset in BigQuery by default?

- A. Physical bytes
- B. Logical bytes
- C. Number of tables
- D. Number of queries

Correct Answer: B. Logical bytes

Explanation: By default, the storage used by a dataset in BigQuery is billed using logical bytes as the unit of consumption.
Resource: Introduction to datasets | BigQuery | Google Cloud

Question: What is the primary security measure to control access to datasets in BigQuery?

- A. Two-factor authentication
- B. IP whitelisting
- C. IAM Access controls
- D. Encryption keys

Correct Answer: C. IAM Access controls

Explanation: To control access to datasets in BigQuery, IAM access controls are used. This allows administrators to specify who can view or manage the data.
Resource: Introduction to datasets | BigQuery | Google Cloud

Question: When creating a dataset in BigQuery, where do you specify the location for storing your data?

- A. After creating the dataset
- B. During the creation of the first table
- C. At the time of dataset creation
- D. It's automatically set based on the user's location

Correct Answer: C. At the time of dataset creation

Explanation: You specify a location for storing your BigQuery data when you create a dataset. Once set, this location cannot be changed.
Resource: Introduction to datasets | BigQuery | Google Cloud

Question: Which of the following is NOT a supported format for loading data into BigQuery from Cloud Storage?

- A. Avro
- B. CSV
- C. PDF
- D. Parquet

Correct Answer: C. PDF

Explanation: BigQuery supports loading data from various formats like Avro, CSV, Parquet, etc. However, PDF is not a supported format for data loading.
Resource: Introduction to datasets | BigQuery | Google Cloud

Question: In BigQuery, what does a table contain?

- A. SQL Queries
- B. Individual records organized in rows
- C. Datasets

- D. Google Cloud Projects

Correct Answer: B. Individual records organized in rows

Explanation: A BigQuery table contains individual records that are organized in rows. Each record is composed of columns, also known as fields.
Resource: Introduction to tables

Question: Which of the following is NOT a type of table that BigQuery supports?

- A. Standard BigQuery tables
- B. External tables
- C. Views
- D. Dynamic tables

Correct Answer: D. Dynamic tables

Explanation: BigQuery supports Standard BigQuery tables, External tables, and Views. Dynamic tables are not a recognized type in BigQuery.
Resource: Introduction to tables

Question: What are views in BigQuery?

- A. Physical tables stored in BigQuery storage
- B. Logical tables defined by using a SQL query
- C. Copies of BigQuery tables
- D. Tables that reference data stored outside BigQuery

Correct Answer: B. Logical tables defined by using a SQL query

Explanation: Views in BigQuery are logical tables that are defined by using a SQL query. They don't store data but represent data that's stored in other tables.
Resource: Introduction to tables

Question: What is the primary difference between a standard BigQuery table and an external table?

- A. External tables are stored in BigQuery storage, while standard tables are not.
- B. Standard tables are logical tables, while external tables store actual data.
- C. External tables reference data stored outside BigQuery.
- D. Standard tables can only store structured data, while external tables can store unstructured data.

Correct Answer: C. External tables reference data stored outside BigQuery.

Explanation: External tables in BigQuery refer to data that's stored outside of BigQuery, such as in Cloud Storage, Google Drive, or Cloud Bigtable. In contrast, standard BigQuery tables contain structured data stored in BigQuery storage.
Resource: Introduction to tables

Question: What is a view in BigQuery?

- A. A physical table defined by a SQL query.
- B. A virtual table defined by a SQL query.
- C. A materialized table that caches query results.
- D. A temporary table used for transient operations.

Correct Answer: B. A virtual table defined by a SQL query.

Explanation: In BigQuery, a view is a virtual table that is defined by a SQL query. It does not physically store any data but provides a reusable reference to a set of data.
Resource: Introduction to views

Question: Which of the following is a key characteristic of BigQuery materialized views?

- A. They are physically stored and provide a reusable reference to a set of data.
- B. They are virtual and do not physically store any data.
- C. They require manual updates when the base tables change.
- D. They are used to store temporary data for short-term operations.

Correct Answer: A. They are physically stored and provide a reusable reference to a set of data.

Explanation: Materialized views in BigQuery are precomputed views that periodically cache the results of a query for increased performance and efficiency.
Resource: Introduction to materialized views

Question: What is the primary difference between BigQuery's logical views and materialized views?

- A. Logical views are physically stored, while materialized views are virtual.
- B. Logical views require manual updates, while materialized views are automatically updated.
- C. Logical views are virtual and do not physically store data, while materialized views physically store the data.
- D. Logical views can be queried directly, while materialized views cannot.

Correct Answer: C. Logical views are virtual and do not physically store data, while materialized views physically store the data.

Explanation: Logical views in BigQuery are virtual and provide a reusable reference to a set of data without physically storing any data. On the other hand, materialized views are precomputed and physically store the data.
Resource: Introduction to views

Question: Which of the following is an INCORRECT statement about BigQuery views?

- A. Views are read-only.
- B. The dataset containing the view and the dataset containing the tables referenced by the view must be in the same location.
- C. You can run DML (insert, update, delete) queries against a view.
- D. You cannot reference a view in a wildcard table query.

Correct Answer: C. You can run DML (insert, update, delete) queries against a view.

Explanation: BigQuery views are read-only, and you cannot run DML queries against them.
Resource: Introduction to views

Question: In BigQuery, which type of query job does BigQuery run on demand?

- A. Interactive query jobs
- B. Batch query jobs
- C. Scheduled query jobs
- D. Dry run query jobs

Correct Answer: A. Interactive query jobs

Explanation: Interactive query jobs are jobs that BigQuery runs on demand, as soon as possible.
Resource: Run a query

Question: Which type of query job does BigQuery wait to run until idle compute resources are available?

- A. Interactive query jobs

- B. Batch query jobs
- C. Scheduled query jobs
- D. Dry run query jobs

Correct Answer: B. Batch query jobs

Explanation: Batch query jobs are jobs that BigQuery waits to run until idle compute resources are available.
Resource: Run a query

Question: By default, how does BigQuery run your queries?

- A. As batch query jobs
- B. As interactive query jobs
- C. As scheduled query jobs
- D. Without any specific type

Correct Answer: B. As interactive query jobs

Explanation: By default, BigQuery runs your queries as interactive query jobs, which are run as soon as possible.
Resource: Run a query

Question: Once you reach the concurrent query limit in BigQuery, what happens to additional queries?

- A. They are discarded
- B. They are converted to batch queries
- C. They wait in a queue
- D. They are executed with lower priority

Correct Answer: C. They wait in a queue

Explanation: Once you reach the concurrent query limit in BigQuery, additional queries wait in a queue.
Resource: Run a query

Question: Where does BigQuery save query results by default?

- A. In a permanent table
- B. In a temporary table
- C. In a cache
- D. In a dataset

Correct Answer: B. In a temporary table

Explanation: By default, BigQuery saves query results to a temporary table.
Resource:Run a query

Question: Which IAM role allows a user to read, query, copy, or export tables in a BigQuery dataset?

- A. bigquery.dataEditor
- B. bigquery.dataViewer
- C. bigquery.dataOwner
- D. bigquery.jobUser

Correct Answer: B. bigquery.dataViewer

Explanation: The bigquery.dataViewer role allows users to read, query, copy, or export tables in a dataset.
Resource: Introduction to IAM

Question: If a user has the bigquery.dataEditor role, what additional capabilities do they have over the bigquery.dataViewer role?

- A. Can delete datasets
- B. Can edit or append data in the dataset
- C. Can revoke or change any project role
- D. Can read BI Engine reservations

Correct Answer: B. Can edit or append data in the dataset

Explanation: The bigquery.dataEditor role allows users to edit or append data in the dataset, in addition to the capabilities of the bigquery.dataViewer role.
Resource: Basic roles and permissions

Question: Which role should be granted to a user if you want them to have complete access to all BigQuery resources in a project, including the ability to delete any dataset?

- A. bigquery.dataViewer
- B. bigquery.dataEditor
- C. bigquery.dataOwner
- D. bigquery.user

Correct Answer: C. bigquery.dataOwner

Explanation: The bigquery.dataOwner role provides complete access to all BigQuery resources in a project, including the ability to delete any dataset.
Resource: Introduction to IAM

Question: Which of the following roles allows a user to create new empty datasets in BigQuery?

- A. bigquery.jobUser
- B. bigquery.dataViewer
- C. bigquery.dataEditor
- D. bigquery.dataOwner

Correct Answer: C. bigquery.dataEditor

Explanation: The bigquery.dataEditor role allows users to create new empty datasets in BigQuery. The bigquery.dataOwner allows this as well, but provides additional permissions over what is needed. Keep the principle of least privilege in mind when choosing roles.
Resource: Basic roles and permissions

Question: When setting up a service account in Compute Engine to access BigQuery, which IAM role should be granted to allow the service account to run BigQuery jobs but not manage datasets or tables?

- A. bigquery.dataViewer
- B. bigquery.jobUser
- C. bigquery.dataEditor
- D. bigquery.user

Correct Answer: B. bigquery.jobUser

Explanation: The bigquery.jobUser role allows the service account to submit jobs to BigQuery, such as running SQL queries, but does not grant permissions to manage datasets or tables.
Resource: Predefined roles and permissions

Question: If you want your Compute Engine service account to manage BigQuery datasets and tables but not run jobs, which IAM role should you assign?

- A. bigquery.dataOwner
- B. bigquery.admin
- C. bigquery.dataEditor
- D. bigquery.jobUser

Correct Answer: C. bigquery.dataEditor

Explanation: The bigquery.dataEditor role allows the service account to manage datasets and tables, including creating, updating, and deleting, but does not grant permissions to run jobs.
Resource: Predefined roles and permissions

Question: For a service account in Compute Engine that needs to view BigQuery datasets and tables without modifying them, which IAM role should be assigned?

- A. bigquery.dataViewer
- B. bigquery.dataEditor
- C. bigquery.user
- D. bigquery.admin

Correct Answer: A. bigquery.dataViewer

Explanation: The bigquery.dataViewer role allows the service account to view datasets and tables but does not grant permissions to modify or manage them.
Resource: Predefined roles and permissions

Question: If you want a service account in Compute Engine to have full control over BigQuery, including managing datasets, tables, and running jobs, which IAM role should you grant?

- A. bigquery.dataViewer
- B. bigquery.jobUser
- C. bigquery.dataEditor
- D. bigquery.admin

Correct Answer: D. bigquery.admin

Explanation: The bigquery.admin role provides full control over BigQuery resources, including the ability to manage datasets, tables, and run jobs.
Resource: Predefined roles and permissions

Question: When you encounter a "Resources exceeded during query execution" error in BigQuery, what is the most likely cause?

- A. The query is referencing a non-existent table.
- B. The user has exceeded their quota of query jobs per day.
- C. The query is too complex and is consuming too many resources.
- D. BigQuery service is temporarily unavailable.

Correct Answer: C. The query is too complex and is consuming too many resources.

Explanation: This error typically indicates that the query cannot be executed because it would consume too many resources. It's often related to the complexity of the query itself.
Resource: Troubleshooting errors

Question: What should you check first if you receive a "Permission denied" error when trying to access a BigQuery dataset?

- A. Ensure the dataset exists.
- B. Check if BigQuery service is down.
- C. Verify the IAM roles and permissions.
- D. Ensure you are using the correct SQL syntax.

Correct Answer: C. Verify the IAM roles and permissions.

Explanation: A "Permission denied" error typically indicates that the user or service account does not have the necessary IAM roles or permissions to access the dataset.
Resource: Access control

Question: If you're experiencing slow query performance in BigQuery, what is a recommended best practice to improve it?

- A. Increase the number of nodes in the cluster.

- B. Use the CACHE keyword in your SQL query.
- C. Reduce the amount of data returned.
- D. Store data in a different region.

Correct Answer: C. Reduce the amount of data returned.

Explanation: Denormalizing data and using partitioned tables can improve query performance by reducing the amount of data that needs to be scanned.
Resource:Optimize query computation