

# Amazon

## Exam Questions AWS-Certified-Data-Analytics-Specialty

AWS Certified Data Analytics - Specialty



#### NEW QUESTION 1

A data analyst is designing a solution to interactively query datasets with SQL using a JDBC connection. Users will join data stored in Amazon S3 in Apache ORC format with data stored in Amazon Elasticsearch Service (Amazon ES) and Amazon Aurora MySQL.

Which solution will provide the MOST up-to-date results?

- A. Use AWS Glue jobs to ETL data from Amazon ES and Aurora MySQL to Amazon S3. Query the data with Amazon Athena.
- B. Use Amazon DMS to stream data from Amazon ES and Aurora MySQL to Amazon Redshift.
- C. Query the data with Amazon Redshift.
- D. Query all the datasets in place with Apache Spark SQL running on an AWS Glue developer endpoint.
- E. Query all the datasets in place with Apache Presto running on Amazon EMR.

**Answer: C**

#### NEW QUESTION 2

A financial services company needs to aggregate daily stock trade data from the exchanges into a data store. The company requires that data be streamed directly into the data store, but also occasionally allows data to be modified using SQL. The solution should integrate complex, analytic queries running with minimal latency. The solution must provide a business intelligence dashboard that enables viewing of the top contributors to anomalies in stock prices.

Which solution meets the company's requirements?

- A. Use Amazon Kinesis Data Firehose to stream data to Amazon S3. Use Amazon Athena as a data source for Amazon QuickSight to create a business intelligence dashboard.
- B. Use Amazon Kinesis Data Streams to stream data to Amazon Redshift.
- C. Use Amazon Redshift as a data source for Amazon QuickSight to create a business intelligence dashboard.
- D. Use Amazon Kinesis Data Firehose to stream data to Amazon Redshift.
- E. Use Amazon Redshift as a data source for Amazon QuickSight to create a business intelligence dashboard.
- F. Use Amazon Kinesis Data Streams to stream data to Amazon S3. Use Amazon Athena as a data source for Amazon QuickSight to create a business intelligence dashboard.

**Answer: C**

#### NEW QUESTION 3

A company is planning to create a data lake in Amazon S3. The company wants to create tiered storage based on access patterns and cost objectives. The solution must include support for JDBC connections from legacy clients, metadata management that allows federation for access control, and batch-based ETL using PySpark and Scala. Operational management should be limited.

Which combination of components can meet these requirements? (Choose three.)

- A. AWS Glue Data Catalog for metadata management
- B. Amazon EMR with Apache Spark for ETL
- C. AWS Glue for Scala-based ETL
- D. Amazon EMR with Apache Hive for JDBC clients
- E. Amazon Athena for querying data in Amazon S3 using JDBC drivers
- F. Amazon EMR with Apache Hive, using an Amazon RDS with MySQL-compatible backed metastore

**Answer: BEF**

#### NEW QUESTION 4

An ecommerce company stores customer purchase data in Amazon RDS. The company wants a solution to store and analyze historical data. The most recent 6 months of data will be queried frequently for analytics workloads. This data is several terabytes large. Once a month, historical data for the last 5 years must be accessible and will be joined with the more recent data. The company wants to optimize performance and cost.

Which storage solution will meet these requirements?

- A. Create a read replica of the RDS database to store the most recent 6 months of data.
- B. Copy the historical data into Amazon S3. Create an AWS Glue Data Catalog of the data in Amazon S3 and Amazon RDS.
- C. Run historical queries using Amazon Athena.
- D. Use an ETL tool to incrementally load the most recent 6 months of data into an Amazon Redshift cluster.
- E. Run more frequent queries against this cluster.
- F. Create a read replica of the RDS database to run queries on the historical data.
- G. Incrementally copy data from Amazon RDS to Amazon S3. Create an AWS Glue Data Catalog of the data in Amazon S3. Use Amazon Athena to query the data.
- H. Incrementally copy data from Amazon RDS to Amazon S3. Load and store the most recent 6 months of data in Amazon Redshift.
- I. Configure an Amazon Redshift Spectrum table to connect to all historical data.

**Answer: D**

#### NEW QUESTION 5

A marketing company is using Amazon EMR clusters for its workloads. The company manually installs third-party libraries on the clusters by logging in to the master nodes. A data analyst needs to create an automated solution to replace the manual process.

Which options can fulfill these requirements? (Choose two.)

- A. Place the required installation scripts in Amazon S3 and execute them using custom bootstrap actions.
- B. Place the required installation scripts in Amazon S3 and execute them through Apache Spark in Amazon EMR.
- C. Install the required third-party libraries in the existing EMR master node.
- D. Create an AMI out of that master node and use that custom AMI to re-create the EMR cluster.
- E. Use an Amazon DynamoDB table to store the list of required applications.
- F. Trigger an AWS Lambda function with DynamoDB Streams to install the software.
- G. Launch an Amazon EC2 instance with Amazon Linux and install the required third-party libraries on the instance.
- H. Create an AMI and use that AMI to create the EMR cluster.

**Answer:** AE

**Explanation:**

<https://aws.amazon.com/about-aws/whats-new/2017/07/amazon-emr-now-supports-launching-clusters-with-cust>  
[https://docs.aws.amazon.com/de\\_de/emr/latest/ManagementGuide/emr-plan-bootstrap.html](https://docs.aws.amazon.com/de_de/emr/latest/ManagementGuide/emr-plan-bootstrap.html)

**NEW QUESTION 6**

A company uses Amazon Redshift as its data warehouse. A new table includes some columns that contain sensitive data and some columns that contain non-sensitive data. The data in the table eventually will be referenced by several existing queries that run many times each day. A data analytics specialist must ensure that only members of the company's auditing team can read the columns that contain sensitive data. All other users must have read-only access to the columns that contain non-sensitive data. Which solution will meet these requirements with the LEAST operational overhead?

- A. Grant the auditing team permission to read from the table.
- B. Load the columns that contain non-sensitive data into a second table.
- C. Grant the appropriate users read-only permissions to the second table.
- D. Grant all users read-only permissions to the columns that contain non-sensitive data. Use the GRANT SELECT command to allow the auditing team to access the columns that contain sensitive data.
- E. Grant all users read-only permissions to the columns that contain non-sensitive data. Attach an IAM policy to the auditing team with an explicit Allow action that grants access to the columns that contain sensitive data.
- F. Grant the auditing team permission to read from the table. Create a view of the table that includes the columns that contain non-sensitive data. Grant the appropriate users read-only permissions to that view.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/jp/about-aws/whats-new/2020/03/announcing-column-level-access-control-for-amazon>

**NEW QUESTION 7**

A manufacturing company uses Amazon Connect to manage its contact center and Salesforce to manage its customer relationship management (CRM) data. The data engineering team must build a pipeline to ingest data from the contact center and CRM system into a data lake that is built on Amazon S3. What is the MOST efficient way to collect data in the data lake with the LEAST operational overhead?

- A. Use Amazon Kinesis Data Streams to ingest Amazon Connect data and Amazon AppFlow to ingest Salesforce data.
- B. Use Amazon Kinesis Data Firehose to ingest Amazon Connect data and Amazon Kinesis Data Streams to ingest Salesforce data.
- C. Use Amazon Kinesis Data Firehose to ingest Amazon Connect data and Amazon AppFlow to ingest Salesforce data.
- D. Use Amazon AppFlow to ingest Amazon Connect data and Amazon Kinesis Data Firehose to ingest Salesforce data.

**Answer:** B

**NEW QUESTION 8**

A company analyzes historical data and needs to query data that is stored in Amazon S3. New data is generated daily as .csv files that are stored in Amazon S3. The company's analysts are using Amazon Athena to perform SQL queries against a recent subset of the overall data. The amount of data that is ingested into Amazon S3 has increased substantially over time, and the query latency also has increased. Which solutions could the company implement to improve query performance? (Choose two.)

- A. Use MySQL Workbench on an Amazon EC2 instance, and connect to Athena by using a JDBC or ODBC connector.
- B. Run the query from MySQL Workbench instead of Athena directly.
- C. Use Athena to extract the data and store it in Apache Parquet format on a daily basis.
- D. Query the extracted data.
- E. Run a daily AWS Glue ETL job to convert the data files to Apache Parquet and to partition the converted file.
- F. Create a periodic AWS Glue crawler to automatically crawl the partitioned data on a daily basis.
- G. Run a daily AWS Glue ETL job to compress the data files by using the .gzip format.
- H. Query the compressed data.
- I. Run a daily AWS Glue ETL job to compress the data files by using the .lzo format.
- J. Query the compressed data.

**Answer:** BC

**NEW QUESTION 9**

An online retailer needs to deploy a product sales reporting solution. The source data is exported from an external online transaction processing (OLTP) system for reporting. Roll-up data is calculated each day for the previous day's activities. The reporting system has the following requirements:

Have the daily roll-up data readily available for 1 year.

After 1 year, archive the daily roll-up data for occasional but immediate access.

The source data exports stored in the reporting system must be retained for 5 years. Query access will be needed only for re-evaluation, which may occur within the first 90 days.

Which combination of actions will meet these requirements while keeping storage costs to a minimum? (Choose two.)

- A. Store the source data initially in the Amazon S3 Standard-Infrequent Access (S3 Standard-IA) storage class.
- B. Apply a lifecycle configuration that changes the storage class to Amazon S3 Glacier Deep Archive 90 days after creation, and then deletes the data 5 years after creation.
- C. Store the source data initially in the Amazon S3 Glacier storage class.
- D. Apply a lifecycle configuration that changes the storage class from Amazon S3 Glacier to Amazon S3 Glacier Deep Archive 90 days after creation, and then deletes the data 5 years after creation.
- E. Store the daily roll-up data initially in the Amazon S3 Standard storage class.
- F. Apply a lifecycle configuration that changes the storage class to Amazon S3 Glacier Deep Archive 1 year after data creation.
- G. Store the daily roll-up data initially in the Amazon S3 Standard storage class.
- H. Apply a lifecycle configuration that changes the storage class to Amazon S3 Standard-Infrequent Access (S3 Standard-IA) 1 year after data creation.
- I. Store the daily roll-up data initially in the Amazon S3 Standard-Infrequent Access (S3 Standard-IA) storage class.

J. Apply a lifecycle configuration that changes the storage class to Amazon S3 Glacier 1 year after data creation.

**Answer:** AD

#### NEW QUESTION 10

A company has an application that uses the Amazon Kinesis Client Library (KCL) to read records from a Kinesis data stream. After a successful marketing campaign, the application experienced a significant increase in usage. As a result, a data analyst had to split some shards in the data stream. When the shards were split, the application started throwing an ExpiredIteratorExceptions error sporadically. What should the data analyst do to resolve this?

- A. Increase the number of threads that process the stream records.
- B. Increase the provisioned read capacity units assigned to the stream's Amazon DynamoDB table.
- C. Increase the provisioned write capacity units assigned to the stream's Amazon DynamoDB table.
- D. Decrease the provisioned write capacity units assigned to the stream's Amazon DynamoDB table.

**Answer:** C

#### NEW QUESTION 11

A data analytics specialist is setting up workload management in manual mode for an Amazon Redshift environment. The data analytics specialist is defining query monitoring rules to manage system performance and user experience of an Amazon Redshift cluster. Which elements must each query monitoring rule include?

- A. A unique rule name, a query runtime condition, and an AWS Lambda function to resubmit any failed queries in off hours
- B. A queue name, a unique rule name, and a predicate-based stop condition
- C. A unique rule name, one to three predicates, and an action
- D. A workload name, a unique rule name, and a query runtime-based condition

**Answer:** C

#### NEW QUESTION 12

An airline has .csv-formatted data stored in Amazon S3 with an AWS Glue Data Catalog. Data analysts want to join this data with call center data stored in Amazon Redshift as part of a daily batch process. The Amazon Redshift cluster is already under a heavy load. The solution must be managed, serverless, well-functioning, and minimize the load on the existing Amazon Redshift cluster. The solution should also require minimal effort and development activity. Which solution meets these requirements?

- A. Unload the call center data from Amazon Redshift to Amazon S3 using an AWS Lambda function. Perform the join with AWS Glue ETL scripts.
- B. Export the call center data from Amazon Redshift using a Python shell in AWS Glue.
- C. Perform the join with AWS Glue ETL scripts.
- D. Create an external table using Amazon Redshift Spectrum for the call center data and perform the join with Amazon Redshift.
- E. Export the call center data from Amazon Redshift to Amazon EMR using Apache Sqoop.
- F. Perform the join with Apache Hive.

**Answer:** C

#### Explanation:

<https://docs.aws.amazon.com/redshift/latest/dg/c-spectrum-external-tables.html>

#### NEW QUESTION 13

An Amazon Redshift database contains sensitive user data. Logging is necessary to meet compliance requirements. The logs must contain database authentication attempts, connections, and disconnections. The logs must also contain each query run against the database and record which database user ran each query.

Which steps will create the required logs?

- A. Enable Amazon Redshift Enhanced VPC Routing
- B. Enable VPC Flow Logs to monitor traffic.
- C. Allow access to the Amazon Redshift database using AWS IAM roles
- D. Log access using AWS CloudTrail.
- E. Enable audit logging for Amazon Redshift using the AWS Management Console or the AWS CLI.
- F. Enable and download audit reports from AWS Artifact.

**Answer:** C

#### NEW QUESTION 14

An online retail company with millions of users around the globe wants to improve its ecommerce analytics capabilities. Currently, clickstream data is uploaded directly to Amazon S3 as compressed files. Several times each day, an application running on Amazon EC2 processes the data and makes search options and reports available for visualization by editors and marketers. The company wants to make website clicks and aggregated data available to editors and marketers in minutes to enable them to connect with users more effectively.

Which options will help meet these requirements in the MOST efficient way? (Choose two.)

- A. Use Amazon Kinesis Data Firehose to upload compressed and batched clickstream records to Amazon Elasticsearch Service.
- B. Upload clickstream records to Amazon S3 as compressed file
- C. Then use AWS Lambda to send data to Amazon Elasticsearch Service from Amazon S3.
- D. Use Amazon Elasticsearch Service deployed on Amazon EC2 to aggregate, filter, and process the data. Refresh content performance dashboards in near-real time.
- E. Use Kibana to aggregate, filter, and visualize the data stored in Amazon Elasticsearch Service
- F. Refresh content performance dashboards in near-real time.
- G. Upload clickstream records from Amazon S3 to Amazon Kinesis Data Streams and use a Kinesis Data Streams consumer to send records to Amazon Elasticsearch Service.

**Answer:** AD

**NEW QUESTION 15**

A company is hosting an enterprise reporting solution with Amazon Redshift. The application provides reporting capabilities to three main groups: an executive group to access financial reports, a data analyst group to run long-running ad-hoc queries, and a data engineering group to run stored procedures and ETL processes. The executive team requires queries to run with optimal performance. The data engineering team expects queries to take minutes. Which Amazon Redshift feature meets the requirements for this task?

- A. Concurrency scaling
- B. Short query acceleration (SQA)
- C. Workload management (WLM)
- D. Materialized views

**Answer:** D

**Explanation:**

Materialized views:

**NEW QUESTION 16**

A medical company has a system with sensor devices that read metrics and send them in real time to an Amazon Kinesis data stream. The Kinesis data stream has multiple shards. The company needs to calculate the average value of a numeric metric every second and set an alarm for whenever the value is above one threshold or below another threshold. The alarm must be sent to Amazon Simple Notification Service (Amazon SNS) in less than 30 seconds. Which architecture meets these requirements?

- A. Use an Amazon Kinesis Data Firehose delivery stream to read the data from the Kinesis data stream with an AWS Lambda transformation function that calculates the average per second and sends the alarm to Amazon SNS.
- B. Use an AWS Lambda function to read from the Kinesis data stream to calculate the average per second and sent the alarm to Amazon SNS.
- C. Use an Amazon Kinesis Data Firehose deliver stream to read the data from the Kinesis data stream and store it on Amazon S3. Have Amazon S3 trigger an AWS Lambda function that calculates the average per second and sends the alarm to Amazon SNS.
- D. Use an Amazon Kinesis Data Analytics application to read from the Kinesis data stream and calculate the average per second and send the results to an AWS Lambda function that sends the alarm to Amazon SNS.
- E. Send the results to an AWS Lambda function that sends the alarm to Amazon SNS.

**Answer:** D

**NEW QUESTION 17**

A healthcare company uses AWS data and analytics tools to collect, ingest, and store electronic health record (EHR) data about its patients. The raw EHR data is stored in Amazon S3 in JSON format partitioned by hour, day, and year and is updated every hour. The company wants to maintain the data catalog and metadata in an AWS Glue Data Catalog to be able to access the data using Amazon Athena or Amazon Redshift Spectrum for analytics.

When defining tables in the Data Catalog, the company has the following requirements:

Choose the catalog table name and do not rely on the catalog table naming algorithm. Keep the table updated with new partitions loaded in the respective S3 bucket prefixes.

Which solution meets these requirements with minimal effort?

- A. Run an AWS Glue crawler that connects to one or more data stores, determines the data structures, and writes tables in the Data Catalog.
- B. Use the AWS Glue console to manually create a table in the Data Catalog and schedule an AWS Lambda function to update the table partitions hourly.
- C. Use the AWS Glue API CreateTable operation to create a table in the Data Catalog.
- D. Create an AWS Glue crawler and specify the table as the source.
- E. Create an Apache Hive catalog in Amazon EMR with the table schema definition in Amazon S3, and update the table partition with a scheduled job.
- F. Migrate the Hive catalog to the Data Catalog.

**Answer:** C

**Explanation:**

Updating Manually Created Data Catalog Tables Using Crawlers: To do this, when you define a crawler, instead of specifying one or more data stores as the source of a crawl, you specify one or more existing Data Catalog tables. The crawler then crawls the data stores specified by the catalog tables. In this case, no new tables are created; instead, your manually created tables are updated.

**NEW QUESTION 18**

A large ride-sharing company has thousands of drivers globally serving millions of unique customers every day. The company has decided to migrate an existing data mart to Amazon Redshift. The existing schema includes the following tables.

A trips fact table for information on completed rides. A drivers dimension table for driver profiles. A customers fact table holding customer profile information. The company analyzes trip details by date and destination to examine profitability by region. The drivers data rarely changes. The customers data frequently changes.

What table design provides optimal query performance?

- A. Use DISTSTYLE KEY (destination) for the trips table and sort by date
- B. Use DISTSTYLE ALL for the drivers and customers tables.
- C. Use DISTSTYLE EVEN for the trips table and sort by date
- D. Use DISTSTYLE ALL for the drivers table. Use DISTSTYLE EVEN for the customers table.
- E. Use DISTSTYLE KEY (destination) for the trips table and sort by date
- F. Use DISTSTYLE ALL for the drivers table
- G. Use DISTSTYLE EVEN for the customers table.
- H. Use DISTSTYLE EVEN for the drivers table and sort by date
- I. Use DISTSTYLE ALL for both fact tables.

**Answer:** C

**Explanation:**

<https://www.matillion.com/resources/blog/aws-redshift-performance-choosing-the-right-distribution-styles/#:~:>

[https://docs.aws.amazon.com/redshift/latest/dg/c\\_best-practices-best-dist-key.html](https://docs.aws.amazon.com/redshift/latest/dg/c_best-practices-best-dist-key.html)

#### NEW QUESTION 19

A company has several Amazon EC2 instances sitting behind an Application Load Balancer (ALB) The company wants its IT Infrastructure team to analyze the IP addresses coming into the company's ALB The ALB is configured to store access logs in Amazon S3 The access logs create about 1 TB of data each day, and access to the data will be infrequent The company needs a solution that is scalable, cost-effective and has minimal maintenance requirements Which solution meets these requirements?

- A. Copy the data into Amazon Redshift and query the data
- B. Use Amazon EMR and Apache Hive to query the S3 data
- C. Use Amazon Athena to query the S3 data
- D. Use Amazon Redshift Spectrum to query the S3 data

**Answer: D**

#### NEW QUESTION 20

A hospital uses an electronic health records (EHR) system to collect two types of data

- Patient information, which includes a patient's name and address
- Diagnostic tests conducted and the results of these tests

Patient information is expected to change periodically Existing diagnostic test data never changes and only new records are added

The hospital runs an Amazon Redshift cluster with four dc2.large nodes and wants to automate the ingestion of the patient information and diagnostic test data into respective Amazon Redshift tables for analysis The EHR system exports data as CSV files to an Amazon S3 bucket on a daily basis Two sets of CSV files are generated One set of files is for patient information with updates, deletes, and inserts The other set of files is for new diagnostic test data only

What is the MOST cost-effective solution to meet these requirements?

- A. Use Amazon EMR with Apache Hadoop
- B. Run daily ETL jobs using Apache Spark and the Amazon Redshift JDBC driver
- C. Use an AWS Glue crawler to catalog the data in Amazon S3 Use Amazon Redshift Spectrum to perform scheduled queries of the data in Amazon S3 and ingest the data into the patient information table and the diagnostic tests table.
- D. Use an AWS Lambda function to run a COPY command that appends new diagnostic test data to the diagnostic tests table Run another COPY command to load the patient information data into the staging tables Use a stored procedure to handle create, update, and delete operations for the patient information table
- E. Use AWS Database Migration Service (AWS DMS) to collect and process change data capture (CDC) records Use the COPY command to load patient information data into the staging table
- F. Use a stored procedure to handle create, update and delete operations for the patient information table

**Answer: B**

#### NEW QUESTION 21

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